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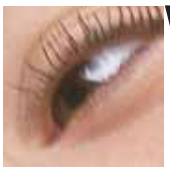
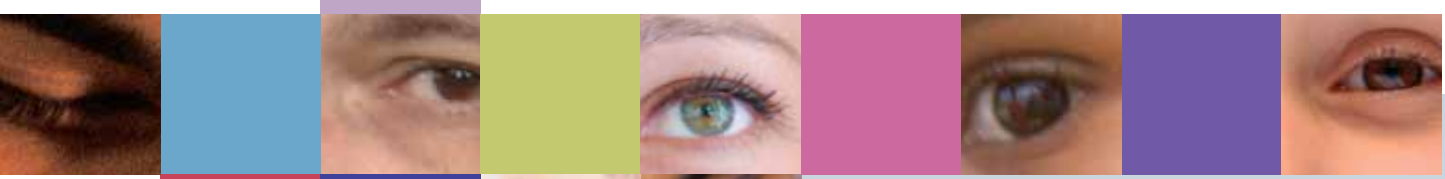


World Social Science Report



2010

Knowledge Divides

World Social Science Report

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UNESCO Publishing

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Foreword

I welcome the publication of the 2010 *World Social Science Report,* the first thorough overview of this important field in more than a decade. Edited by and co-published with the International Social Science Council (ISSC), it is the product of the active engagement of hundreds of professional social scientists who have contributed their expertise to make this publication a reference.

The Report reaffirms UNESCO's commitment to the social sciences, and our desire to set a new global agenda to promote them as an invaluable tool for the advancement of the internationally agreed development goals. UNESCO, with its emphasis on the management of social transformation, is concerned that the social sciences should be put to use to improve human well-being and to respond to global challenges. As long ago as 1974, UNESCO's General Conference adopted a Recommendation on the Status of Scientific Researchers which emphasized 'the need to apply science and technology in a great variety of specific fields of wider than national concern: namely such vast and complex problems as the preservation of international peace and the elimination of want'.

Today, the social sciences bring greater clarity to our understanding of how human populations interact with one another, and, by extension, with the environment. The ideas and information they generate can therefore make a precious contribution to the formulation of effective policies to shape our world for the greater good.

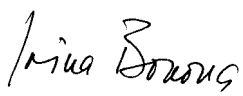
Yet, social scientific knowledge is at risk in the parts of the world where it is most needed. The huge disparities in research capacities across countries and the fragmentation of knowledge hamper the capacity of social sciences to respond to the challenges of today and tomorrow. While we may be building a 'knowledge society', it is one that looks very different depending on one's regional perspective. Social scientists produce work of outstanding quality and tremendous practical value, but, as this Report illustrates, social scientific knowledge is often the least developed in those parts of the world where it is most keenly needed – hence this publication's title, 'Knowledge Divides'.

Global divides reproduce themselves in each generation, in our institutions and in our methods of creating and using knowledge. Global divides affect all indicators of human development, hampering the accumulation, transmission and use of knowledge in our societies, to the detriment of equitable development. Consider the world's one billion poorest who live on less than US$1.25 per day. There is a consensus that their lot should urgently be improved but why do well-intentioned policies so often produce so little? We may, perhaps, need better intentions; we certainly need better and more accessible knowledge that can provide policies with the evidence that they need to make a difference.

Social scientific endeavour is also poorer for its bias towards English and English-speaking developed countries. This is a missed opportunity to explore perspectives and paradigms that are embedded in other cultural and linguistic traditions. A more culturally and linguistically diverse approach by the social sciences would be of tremendous value to organizations such as UNESCO in our efforts to foster mutual understanding and intercultural dialogue.

All these findings are profoundly challenging – they emphasize that without conscious and coordinated effort, the drift of the global social science landscape is towards fragmentation, lack of pluralism and estrangement between scientific endeavour and social needs. Clearly, institutions matter hugely for research performance. But their strength can hardly be taken for granted in today's economic circumstances. The production of rigorous, relevant and pluralistic social science knowledge requires international coordination, a long-term vision and a stable environment.

I am confident that this Report will help to galvanize the energies of all of those who are concerned to see the social sciences flourish in the years to come.



Irina Bokova
Director-General of UNESCO

Foreword

By its Constitution, by its programmes, by its whole ethos, UNESCO is committed to the view that knowledge should bring together and unify. The publication of a report entitled 'Knowledge Divides' – which emphasizes the huge disparities in research capacities across countries and the fragmentation of knowledge that hamper the capacity of the social sciences to respond to the challenges of today and tomorrow – is therefore at once an opportunity and a challenge. From both perspectives, I take great pleasure in welcoming the 2010 World Social Science Report.

The opportunity, responding to the conclusions of the Report, is to reaffirm our commitment to the importance of the social sciences and to set a new global agenda to promote them. And 'our' is, here, no mere figure of speech. The 2010 *World Social Science Report* is a genuinely collaborative effort. It brings together under one banner the International Social Science Council (ISSC), the primary professional umbrella organization of social science, and UNESCO, an intergovernmental organization with 193 sovereign Member States serving policy communities as a capacity-builder and a broker of scientific knowledge. It builds, furthermore, on the active engagement of hundreds of professional social scientists who have contributed in various ways to its development: as authors, as editorial board members, as reviewers or as participants in the World Social Science Forum successfully convened by the ISSC in Bergen, and organized in cooperation with the University of Bergen and the Stein Rokkan Centre for Social Studies, Norway, in May 2009.

The very existence of the Report shows that knowledge divides in the social sciences are not insurmountable. Nonetheless, its findings are profoundly challenging. They emphasize that, without conscious and coordinated effort, the drift of the global social science landscape is towards fragmentation, lack of pluralism and estrangement between scientific endeavour and social needs. The production of rigorous, relevant and pluralistic social science knowledge requires a long-term vision and a stable environment. As the findings of the 2010 *World Social Science Report* clearly show, institutions matter hugely for research performance. But their strength can hardly be taken for granted in today's economic and financial circumstances.

As a consequence of fragmentation, we may be building a 'knowledge society', but it is one that looks very different depending on one's regional perspective. Global divides affect all indicators of human development, hampering the accumulation, transmission and use of knowledge in our societies, to the detriment of equitable development. Global divides reproduce themselves in each generation, in our institutions and in our methods of creating and using knowledge.

Consider, for example, those that Paul Collier, in his award-winning 2007 book, called the 'bottom billion' – those living in 'extreme' poverty on less than US$1.25 per day. There is a consensus, in principle, that their lot should urgently be improved. But how should this be done – and why do well-intentioned policies so often produce so little? We may, perhaps, need better intentions; we certainly need better and more accessible knowledge that can provide policies with the evidence that they need to make a difference.

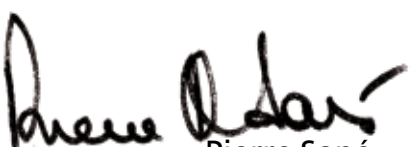
UNESCO, with its ethical mandate, and through its Management of Social Transformations (MOST) Programme, is concerned that the social sciences should be put to use to improve human well-being, with a view in particular to achieving the Millennium Development Goals and responding to other global challenges, such as the social impacts of climate change. Yet, social scientific knowledge is at risk in the parts of the world where it is most needed because it is neither generated, nor transmitted, nor used. In too many places, even a proper census cannot be carried out.

Another highly significant divide is language. As the 2010 *World Social Science Report* shows, the production and circulation of social science are heavily biased towards English and towards the countries where English is most widely spoken in academic circles. Such linguistic hegemony does not merely create barriers to the participation of those scholars whose English is inadequate for academic communication. It also, and much more importantly, crowds out perspectives and paradigms that are embedded in other linguistic and cultural traditions – thereby impoverishing the social sciences as a whole.

The linguistic question is of great importance from a UNESCO perspective, especially in 2010, the International Year for the Rapprochement of Cultures, for which UNESCO has the lead role within the UN system. The goal of the International Year is to celebrate the world's cultural diversity and help strengthen dialogue among cultures. Ensuring greater linguistic pluralism in international social science will, in this respect, not just strengthen social science. In so far as social science is one aspect of the self-understanding of contemporary societies, linguistic pluralism will also contribute directly to a truly global, and appropriately diverse, self-understanding.

Furthermore, Article 27.1 of the Universal Declaration of Human Rights stipulates that everyone has the right to share in scientific advancement and its benefits. This is not the best known of the fundamental human rights, but it is not the least important. In so far as social science provides benefits – which are the corollary of the damage bad social science can do, via misguided policies – it is essential and urgent to create the conditions in which they can be truly shared. The knowledge divides identified by the 2010 *World Social Science Report* are barriers to such sharing. They are thus among the key challenges that need to be addressed by the international community, by each state at its own level, and by national and international scientific associations.

As long ago as 1974, the UNESCO General Conference adopted a Recommendation on the Status of Scientific Researchers which, among other things, emphasized 'the need to apply science and technology in a great variety of specific fields of wider than national concern: namely, such vast and complex problems as the preservation of international peace and the elimination of want and other problems which can only be effectively tackled on an international basis'. After more than a third of a century, the world has not lived up to this commitment. It is time to take it seriously, and for that we need social science to take its place in an integrated landscape of science and technology, and policy-makers to listen – among other voices – to what social science has to say. The 2010 *World Social Science Report* makes a welcome and valuable contribution to these crucial tasks.



Pierre Sané
Assistant Director-General for
Social and Human Sciences
UNESCO

Preface

One planet, worlds apart – same map?

A celebration of success

Never before have there been so many social scientists in the world – many more than the 200,000 population of Margaret Mead's famous Samoa. Never before have the social sciences been so influential: economists run ministries of finance, political scientists staff public administrations and MBAs run corporations. Indeed, social scientists have not just entered boardrooms, but since Kinsey also bedrooms. Never before have social scientists had such an impact on public opinion, in terms of both how the world is seen and how it is acted upon. Terms that were once specialized – for example, 'comparative advantage' or 'self-fulfilling prophecy' – dot the media and have entered everyday language. However, in spite of this impact, humans face crises that tax their understanding and their capacity to cope.

Social science: a mixed blessing

Social scientists' foresight has been poor at key junctures, and social science's influence a mixed blessing. Social scientists did not foresee the fall of the Berlin Wall in 1989, which was afterwards prominently interpreted as 'the end of history'[1] – the final victory of constitutional democracy and free markets. As the current economic crisis was unfurling in October 2008, Alan Greenspan, recognized as 'the maestro', and the chair of the US Federal Reserve from 1987 to 2006, conceded that his free-market conception of shunning regulation was deficient. 'Yes, I found a flaw', he said in a congressional hearing: 'That is precisely the reason I was shocked because I'd been going for 40 years or more with very considerable evidence that it was working exceptionally well.'[2] His social science map no longer provided guidance. In Malawi, the World Bank has undertaken self-criticism for pushing private markets, opposing government regulation and fertilizer subsidies aimed at promoting cash crops for exports – a policy that resulted in food shortages.[3] More broadly, from Marx and Myrdal to the Washington consensus, development theories have been only modestly successful.

Furthermore, part of the diagnosis of the present global economic predicament is that social scientists were instrumental in constructing – or misconstructing – both the toxic 'financial instruments' and flawed institutions. More than that, social scientists, sometimes for opportunistic reasons, did not understand how their own creation worked or monitor how it unfolded. In short: if it is not good when the social science models of the world are misconstrued, it is even worse when its models for the world lead to misconstruction of the world itself.[4]

A confluence of crises, increasing demand for social science

Notwithstanding these, and no doubt other, problems, the demand for more social science and better social science is likely to increase. This is the result of the state of the world, and more specifically of what could be called 'a confluence of crises': that is, contemporary crises that mutually reinforce one another. The climate is worsening, largely as a result of human activities, and the consequences of this change will be dire for humans. Given modern modes of travel, epidemics can spread faster than at any previous time in human history. Economically, the world faced the worst global crisis since the 1930s in 2008–09. Social conflicts arising from divergent religious worldviews have multiplied. These crises prove that the planet is one indeed, and one commons at that.

The planet is becoming more crowded – more than 2 billion people will be added to the global population over the next 40 years.[5] The world's population is not just growing, it is also greying, with dependency ratios increasing on all

1. Francis Fukuyama, 1992, *The End of History and the Last Man*, New York: Free Press.
2. *New York Times*, 23 October 2008.
3. 'Ending famine, simply by ignoring the experts', *New York Times*, 2 December 2007.
4. See, for example, the commentary by Harvard professor Dani Rodrik, 'Blame the economists, not economics', http://www.project-syndicate.org/commentary/rodrik29 (accessed 3 March 2010), or the speech by the *Financial Times* chief economics commentator Martin Wolf in November 2008, 'A time for humility', http://blogs.ft.com/economistsforum/2008/11/a-time-for-humility/ (accessed 3 March 2010).
5. See UN Population Division, http://esa.un.org/unpp/p2k0data.asp (accessed 20 September 2009).

continents.[6] The number of poor may also be increasing.[7] Obtaining food is becoming precarious for more millions of people across the globe: the first Millennium Development Goal, the eradicating of extreme poverty and hunger by 2015, may be unattainable.[8] Water resources are becoming scarcer; nearly 900 million people have inadequate access to safe drinking water, while about 2.5 billion have inadequate access to water for sanitation and waste disposal.[9] The crises affect those worst off most adversely.

The net outcome of this confluence of crises is that conflicts, old and new, increase and intensify. They are exacerbated by several factors. One is that the peoples of the world are more tightly coupled in the sense that impacts from one country spread wider, faster and stronger than at any time before in human history. We learned from the present economic crisis that Asian and Latin American countries were not decoupled from the American or European economies or vice versa; rather, impacts cascaded and ricocheted around the world in less than eighty days. We have learned from AIDS, SARS and the H1N1 ('swine') flu virus that no country is an island to itself, and that viruses travel without passports. What happens to a country is increasingly decided outside its own borders. The fact that we live on one planet means that there are no safe havens. Wise responses depend on our understanding of how the world works and how it can be changed.

Social science emerging from the Enlightenment and the Industrial Revolution

To a great extent, the social sciences grew out of the seventeenth-century European Enlightenment, when new ideas about religion, reason, humanity and society were merged into a fairly coherent worldview that stressed human rights, individualism and constitutionalism. Studies of alien societies were used as a contrast when analysing a country's institutions and customs. A range of new, fundamental conceptions was articulated, for example:

- about the autonomy of the individual and inviolable rights
- about individual freedom and the sovereignty of the people
- about the tripartition of state power and the independence of the state from religious supremacy
- about the unfairness of inherited privileges
- about the principles for organizing a market economy.

Equally basic to the birth of Modernity was the recognition that a plurality of opinions and an open, critical debate were necessary to gain new insights and for citizens to forge their own history. Education for all, including women, was articulated as a political goal. A free press and the dissemination of knowledge were regarded as a means for enlightenment and personal development. Power, it was argued, could only be legitimate if it promoted the welfare of the people. Even today, many of these issues remain contentious.

The development of social theory has accelerated in periods of rapid social change. For example, the Industrial Revolution was accompanied by an intellectual revolution: that is, a fundamental change in the thinking about how the economy works and what the guiding principles for economic policy should be. A key part of the analysis focused on the divergence between, on the one hand, the increase in the output and wealth of nations, and on the other, the effects of competition on the conditions of workers; that is, the impact of unfettered capitalism on social dislocation and the misery of labourers, including women and children. This story about the changing interrelationship between industrial production and social conditions is not history. It is an unfolding story of life on the globe, now called globalization, which signifies an ever more unfettered flow of goods, monies, peoples and ideas. Globalization has been justified and accelerated by social theories, but in turn, it challenges social sciences' current understanding of the continuing processes.[10]

6. UN Department of Economic and Social Affairs, Population Division (2002), *World Population Ageing: 1950–2050*; http://www.un.org/esa/population/publications/worldageing19502050/ http://www.un.org/esa/population/publications/worldageing19502050/
7. 'World Bank poverty figures: what do they mean', http://www.stwr.org/globalization/world-bank-poverty-figures-what-do-they-mean.html (accessed 3 March 2010). In 2009, an estimated 55 million to 90 million more people will be living in extreme poverty than anticipated before the crisis. See http://www.un.org/millenniumgoals/pdf/PR_Global_MDG09_EN.pdf (accessed 3 March 2010).
8. According to FAO's *Hunger Report 2008*, another 40 million people have been pushed into hunger in 2008, bringing the overall number of undernourished people in the world to 963 million, compared with 923 million in 2007, http://km.fao.org/fsn/news-events0/fsn-detail/en/news/8903/icode/ (accessed 3 March 2010).
9. WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (2008), Progress in Drinking-water and Sanitation: special focus on sanitation (MDG Assessment Report 2008), p. 25; Updated Numbers: WHO-UNICEF JMP Report 2008.
10. Three examples are Francis Fukuyama (1992) *The End of History and the Last Man,* New York: Free Press; Samuel P. Huntington (1996) *The Clash of Civilizations and the Remaking of World Order,* New York, Simon & Schuster; and Joseph E. Stiglitz (2002), *Globalization and its Discontents,* New York: Norton, each of which has generated extensive debate.

Crises are not anticipated

The themes introduced above are not new, but are still topical. They have been addressed and analysed for two centuries; rethinking them today is, however, timely and pertinent. They concern all the social sciences, since not just national economies are changing, but also ethnic boundaries, institutional arrangements, cultural habits and individual mindsets. In other words, living on one planet integrated by advancing technologies, expanding exchange and real-time communication means a mismatch between globalization and governance; that is, between the reach and adversity of impacts and the range and ability of existing institutions to deal with them. Few people anticipated the present confluence of crises. The question is whether we did not see it coming because we used the wrong spectacles, or simply because we never looked properly, even after the first whistles were blown. There is also considerable professional disagreement on what is to be done, on effective remedies and the impacts these may have on what will happen in the near or distant future. Social scientists clash on many of these crucial questions.

The state of the art: what should be the ambition?

In many ways, the social sciences themselves are fragmented. Indeed, some argue that the disciplines are in disorder, that there is not one 'social science' but many; rather than one paradigm, there are competing schools. This is a problem because we are increasingly made aware that while we live on one planet, we belong to worlds apart. And if the social sciences are not even on the same map, what should be done? Does a more integrated world require a more integrated social science?

Several attempts at Grand Theory have been challenged or have disintegrated: for example, Marxism, structural functionalism, also socio-biology and the neoclassical synthesis. Should we retain this (grand-theoretical) ambition? Is there one social science or many? Should we strive for what physicists call 'a theory of everything'? Can there be a single encompassing theory of all human behaviour? What is our situation now – what theories do we have to start with?

First of all, we have no single, generally accepted model of humanity.[11] We can draw on a wide range of such models, from the Freudian conception to 'administrative man',[12] and increasingly the less calculating, less predictable and partly irrational relatives of 'rational man'. As the faith in simple rational actor models has been shattered, a series of half-breeds has been developed, a whole bestiary of model actors with engaging stories about the properties they are supposed to embody. Some of the most interesting ones have been developed in cognitive psychology and behavioural economics.[13] Amartya Sen, for one, has advised us to set aside a one-dimensional approach to human identity, which results in the 'civilizational and religious partitioning of the world', and adopt a multiplex conception.[14] Is such a conception more appropriate in modern societies which function as mixing vessels for the reassortment of partial identities from different cultures and epochs?

Not only have the social sciences produced a wide range of 'humanoids' – that is, theoretical constructs that are our lookalikes – there is also a wide range of mechanisms at our disposal. These mechanisms range from self-fulfilling prophecies to prisoners' dilemmas, from cobweb models to selection models, all useful for interpreting and explicating different actual situations or events. Should our goal be to identify such mechanisms, explicate their logic and then eclectically use and combine them to explain why different social processes unfold as they do? Should our goal, as Robert Merton had it, be 'theories of the middle range'[15] rather than Grand Theory? Or, as James S. Coleman argued, should we search for 'sometimes true theories'[16] that are useful for interpreting and illuminating different specific phenomena, rather than strive for a Theory of Everything? In general, these and other issues and questions press on social science.

11. The term was coined by Herbert Simon (1957) *Models of Man, Social and Rational: Mathematical Essays on Rational Human Behavior in a Social Setting*, New York: Wiley.
12. The term 'administrative man' is also associated with Herbert Simon and his modifications of the classical model or 'rational man', characterized by bounded rationality and 'satisficing'.
13. Among the themes of behavioural economics is the use of rules of thumb, heuristics and cognitive bias rather than rational decisions, the framing of problems, which affects decision making and market inefficiencies. For a popular introduction to some of the topics, see Dan Ariely (2008) *Predictably Irrational: The Hidden Forces That Shape Our Decisions,* New York: Harper Collins.
14. Amartya Sen (2006) *Identity and Violence: The Illusion of Destiny,* New York: W. W. Norton.
15. Robert K. Merton (1968) 'On the sociological theories of the middle range', in *Social Theory and Social Structure*, enlarged edition, New York: Free Press.
16. James S. Coleman (1964) *Introduction to Mathematical Sociology,* Glencoe, Ill.: Free Press.

The task: simultaneously addressing the state of the world and the state of the art

What is the moral to be drawn from the state of our art? I would advocate not so much interdisciplinary research as cross-disciplinary or even integrated research: that is, research that in its very design, execution, application and presentation brings together the humanities and the natural and social sciences in joint research projects.

Climate change, and managing disasters and catastrophes, are examples of topics requiring such integrated research. Climate change is the unfolding of the forces of nature triggered by human action. We cannot change the way the forces of nature work, but we can change the ways humans act. This is why integrated research is critical for the destiny of our planet afflicted by climate change: identifying its social causes and mapping its human impacts, calculating costs and advising policies – all well within the purview of social science. Social science must help measure, assess, negotiate and organize, and in the process, help preserve human diversity and culture. The message of the Intergovernmental Panel on Climate Change is that the planet itself may be imperilled: that is, that the forces that have been unleashed through energy use or pollution, if not addressed immediately, intelligently and forcefully, may cause irreversible damage to our common global environment.

When I say 'immediately, intelligently and forcefully', I am no longer talking about natural phenomena but about human responses, about social science knowledge and about evidence-based policy making. More than that: it is a plea for integrated research where the humanities and the natural and social sciences jointly address natural phenomena, social processes, institutional design, cultural interpretations, ethical norms and mindsets.

We have to address simultaneously the state of the world and the state of the art, the course of events and our capacity to analyse and cope with them. In order to make social science relevant, pertinent and potent, we as social scientists have to scrutinize our concepts about how society works, and engage in vigorous self-examination of how our approaches fare in order to define common tasks and set a shared agenda. Societies and behaviours are forever changing – partly as a consequence of the models and interpretations of social scientists.

Hence, striving for the likeness of a theory of mechanics or the chemistry of natural phenomena unaffected by how we analyse them would be in vain. However, we can be optimistic with respect to the role that the social sciences can and must play in addressing the state of the world and the confluence of global crises that we face, even if we have to relinquish the ambition of finding an all-encompassing global theory of social behaviour and development.

Indeed, a token of the optimism is this 2010 *World Social Science Report* which UNESCO entrusted the International Social Science Council to produce. The ISSC is grateful for this challenge and the opportunity it provided for continued close collaboration with UNESCO.

Gudmund Hernes

President, International Social Science Council

Acknowledgments

This Report is the product of a cooperative effort. The selection of themes, topics and authors was made by the WSSR Editorial Team under the guidance of the Editorial Board and with the support of scholars and advisers worldwide. The authors are essentially responsible for the quality of the content of the different chapters. The editorial team wrote the different chapter presentations, introductions, unsigned articles and boxes, executive summary and overall conclusions.

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David E. Apter passed away on 4 May, before what was possibly his last piece of writing came out in the present Report. He was a scholar who truly transcended several social science disciplines. In addition to his article, he provided support and insightful comments throughout the preparation of the Report.

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This paper was presented at the ISSC World Social Science Forum, Bergen, Norway, May 2009. The audio file is available at www.worldsocialscience.org

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UN assists elections in Burundi
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General introduction

In 1999, UNESCO published the first *World Social Science Report*. Ten years later, UNESCO asked the International Social Science Council (ISSC) to prepare this second edition, which is published in 2010. The main goal of this new Report is to present an overview of the social sciences in the different areas of the world.

Today's fast-changing global reality presents new challenges to social sciences, and this Report addresses their capacity to respond to them. Since the first Report, social science has expanded fast and become globalized. Social sciences are now produced and taught almost everywhere in the world. Yet their production, their reach and their use are still marked by disparities and fragmentation. This publication analyses these divides and the extent to which they undermine the ability to address challenges which have themselves become global. It takes stock of worldwide developments in social science over the first decade of the twenty-first century and focuses on the knowledge divides that affect them.

Growth or crisis for the social sciences?

At the beginning of the twenty-first century, social sciences are taught in most if not all universities. The number of social science students, lecturers, professors and researchers has increased rapidly, as has the number of books and articles produced in different languages. As a result of this production, a large number of social scientists work not only as scholars and researchers, but also as experts in national public administrations; they advise their governments and sometimes steer the development of their economies. Advances in information technology allow social scientists to communicate more often and more quickly, among themselves as well as with civil society. In the first decade of the twenty-first century, social sciences expertise remains in high demand from policy-makers, media and the public. Social scientists have knowledge and skills that are needed to identify, analyse and decipher structures and changes in society, as well as the seeds of future change. Much is expected from social sciences knowledge and expertise when seeking to solve challenges such as, to name just a few, poverty, climate change and the food crisis.

With the success and growth of social science come criticisms. Every discipline seems to be accused of major misdeeds. Economists are often blamed for being too engrossed in abstract, sophisticated models and for losing sight of social reality. Too confident in the value of the market, they did not warn against poor financial practices and did not foresee, much less prevent, the biggest financial and economic crisis of the present globalized era. Political scientists are sometimes accused of not anticipating deep changes in opinion in society, of not foreseeing election results correctly, or of being compromised by contact with the polling industry. Sociologists are blamed for failing to identify major social trends, or for doing so too slowly. More generally, social sciences have been going through a crisis of recognition and through broad epistemological debates for several decades.

While decision-makers and society in general would require more input from social sciences to solve global and local problems, some social scientists prefer distanced analysis and critical observation, and refrain from engaging in action. Some are blamed for over-specializing, developing theoretical models and addressing only academic discourse. Others are accused of being too local and of not theorizing enough, thus losing global relevance. These tensions have animated debates among social scientists for many years, but have become more acute following recent changes in the overall context of social sciences.

Recent changes in the social environment of the social sciences

Three changes in the environment of social science production are particularly likely to affect their content, role and function. These are first, globalization, leading to the parallel internationalization of some public concerns and of social science research itself; second, changes in the institutional and social organization of social sciences; and third, the increased role of new information technology (IT) in the production and dissemination of social sciences.

Economic and financial globalization is not a recent phenomenon. But its effects on people's lives have

become more obvious. They include increased inequalities between and within countries, between and within regions of the world, and between those who have access to knowledge and those who do not. A much less familiar aspect of globalization is the internationalization of higher education and research, including social science research. Some issues that used to be analysed at national level have become global concerns. The mobilization of the international community in the fight against poverty around the Millennium Development Goals (2000), the issue of water and food security, and recent debates and mobilization over climate change and sustainable development are all cases in point. The internationalization of social science research, and its mobilization in connection with global issues, is likely to influence both the type of research done, which will become more interdisciplinary, and the choice of research themes in different parts of the world.

Rapid changes in the mode of production of social science research are also likely to influence its content and function. In most regions of the world, these disciplines were – and still are – developed in universities and rely mostly on public funds. Pressure to limit or reduce public expenditures, which is a consequence of economic globalization and of the neoliberal paradigm that dominated economic thinking throughout the period under review; the pressure for more diversified sources of funding; the increased use of managerial tools in the management of research systems; and the increased production of knowledge outside universities, are all changes in the organization of social sciences whose impact on content, quality and relevance needs to be assessed.

New technologies and digital tools constitute a third type of change. They allow new questions to be raised, and encourage new and larger forms of collaboration. They radically change the ways in which materials can be found, displayed and analysed. They facilitate the construction of databases and broaden access to them. Information technologies and new collaborative tools are evolving rapidly. If it is impossible to predict where this road leads, preliminary assessments are possible.

As a first literature review has suggested, very little is known about the three changes mentioned above and how they have affected social sciences. Yet social scientists are well aware that ideas, methods and data are never completely independent of their mode of production and of the form of their social environment. One of the objectives of this Report is to address these gaps and contribute to a better understanding of the current dynamics of the social sciences worldwide, their geography, and the institutional, material and social structures of their production and circulation.

The 1999 *World Social Science Report* paid considerable attention to the history and prospects of social sciences, to intellectual trends in their contents and organization, and to their methods and data. This 2010 Report focuses more on organizational and institutional aspects of the production, dissemination and use of knowledge. The reasons for such a focus – which was approved by the WSSR Editorial Board in its first meeting – are:

- Many of the intellectual trends and debates outlined in the 1999 Report are still structuring social science disciplines today.

- A comprehensive review of disciplinary trends worldwide goes well beyond the scope of one single report, assuming it is possible to carry out such an exercise at all. Such an exercise is very difficult to carry out without a huge international and interdisciplinary research team. The explosion of social sciences fields and subfields, the exponential increase in themes, objects and methods, the varying definition of social sciences, and the fact that much social science research produced in local languages remains largely invisible, all complicate this task.

- As mentioned above, it is widely accepted among social scientists that ideas and concepts are highly dependent on institutional and historical context.

The 2010 Report does not neglect the intellectual and substantive dimensions of the social sciences nevertheless. It limits itself to a few aspects: boundaries between disciplines, subdisciplines and epistemic

communities; and tensions between hegemonic ideas, methods and problems and counter-hegemonic currents of social science research. The Report analyses the dynamics of the divisions and connections between researchers, and how they affect the quality and relevance of social sciences.

The theme: knowledge divides

A divide is generally defined as the distance and the depth of the division between two units. Divides will be analysed in the following chapters on the assumption that they reduce the ability of social sciences to analyse social reality and address global problems. Yet although social sciences have divisions, not all divisions are problematic. Some are produced by well-known social processes, such as the division of labour. The Report investigates when divisions, diversities or asymmetries undermine the strength, quality or efficiency of social sciences.

For any observer of social sciences worldwide, the most striking divide is between countries and regions. There is not much in common between a social science department in a well-endowed university of the global North and a social science research institute in a Southern country suffering from economic and political instability. Underlying this regional divide are many other divides, such as the capacity divide between countries that have large number of researchers, well-functioning institutions and research systems, and other countries that do not. Unequal production and asymmetries in international visibility are other aspects of this regional divide. The linguistic dimension is closely connected to the regional divide in a world where English journals and bibliographical databases dominate and possibly dictate the hierarchy of research agendas.

From an epistemological point of view, social sciences have been diverse and are characterized by a multiplicity of methods, approaches, disciplines, paradigms, national traditions and underlying political and social philosophies. To many, this diversity is an asset and not a divide. To others it is a liability because it prevents the social sciences from addressing burning issues effectively. The extent to which this is the case is discussed in the Report.

Other divides concern access to knowledge, including databases, books and academic journals. The production of social science knowledge in recent years has been marked by increased competition between institutions and between researchers, as a result of ranking and of increasingly quantitative methods of evaluation and project funding. The Report discusses whether these trends result in improved quality and relevance for social science.

Defining the social sciences

The Report analyses all social sciences, calling upon specialists in different disciplines, but without entering into the specifics of the recent intellectual or institutional changes in each discipline. A constant debate in the social sciences concerns the boundaries of social science. This debate has found different regional, epistemological and historical answers. For historical reasons, the social sciences are often defined as the disciplines that are in between the humanities and the natural sciences. As a result, the decision on which disciplines are parts of social sciences and which are not varies a great deal from one country to another and over time. In some countries education is considered part of social sciences, in others it is not. In some countries history is part of social sciences; in others it is part of the humanities. Some countries – and consequently some authors in the Report – do not include professional fields such as business and management; others do.

We have adopted a pragmatic and institutional approach to the problem of defining social sciences. In this Report we have considered as social sciences all the disciplines whose professional association is part of ISSC. Consequently we have tried to involve as many representatives of different disciplines as possible. Authors used different disciplinary definitions, which often correspond to those used in their country. When providing statistics, a number of authors are unable to separate social sciences from humanities, and therefore they discuss trends concerning both. When comparing

statistics from one article to another or from one country to another, the reader should keep in mind that various definitions are used. Where education, legal studies, business and management are included in social sciences, the proportion of social science students, professors and researchers in the overall figure will be larger than for a country which uses a more restrictive definition. In order to clarify the issue and to allow more comparisons, we decided to produce statistical tables on the production of social sciences in major countries. These statistics appear in Annex 1. The author of the Annex, who worked in collaboration with the UNESCO Institute for Statistics and OECD, explains the difficulties in obtaining reliable statistics and the issues that result from problems of categorization and international comparison. This is a first and major endeavour, even though data is still missing for a large number of countries. We hope that this data will be improved in subsequent reports.

Production of the Report

An Editorial Board composed of renowned scholars of different disciplinary and geographic origins advised the editorial team on the content, format and structure of this Report. The Board met twice during the production of the Report, followed its progress and approved its conclusions and recommendations.

After a preliminary analysis of the literature on the current trends in the social sciences and on recent contextual changes affecting their production and diffusion, we produced a list of issues to be covered and a tentative outline. This early process led to an international call for papers. This call was advertised in a variety of social science research networks, in regional associations of social sciences, among ISSC members and on the ISSC websites. Several hundred proposals reached the editorial team. Proposals were then selected on the basis of their quality and relevance to the outline. While doing so, attention was paid to the geographical, gender and disciplinary distribution of authors. One concern has always been to ensure that researchers from all parts of the world, and from the various disciplines of the social sciences, have a voice.

In addition, selected papers on the state of social science in different regions, and the Annex on basic statistics on the production of social sciences, were commissioned. Institutional partners of ISSC have been invited to contribute to special sections, such as those on major trends and issues in social sciences by region. Several keynote speakers at the ISSC World Social Science Forum, which took place in Bergen, Norway, in May 2009, were also asked to contribute a paper. On the basis of literature surveys, a small series of additional authors were invited to contribute a paper. This process led to the large number of papers included in the Report – more than 80. Yet not all regions, nor all themes that were intended to be included, are covered in the present Report. Some of the gaps have been filled by the editorial team preparing short articles, but most gaps will have to be addressed in future Reports.

Structure of the Report

This Report is primarily addressed to policy-makers, to agencies financing and evaluating social science research in different countries (for example research councils), international organizations and development agencies concerned with social issues, and social science research associations. It should also interest academic institutions and researchers, as well as the many civil society users of social sciences such as non-governmental organizations (NGOs) and the media.

The Report starts with an analysis of some global problems as perceived by renowned specialists from different social science disciplines (Chapter 1). In this chapter, the regional councils of social sciences also give their views on the major trends and issues in social sciences in their different regions. Chapter 2 focuses on the institutional geography of social sciences. It provides a detailed description of the state of social sciences in nine different regions of the world, with an emphasis on organizational aspects of social science research. Chapter 3 analyses the inequalities in knowledge production that result from major inequalities in capacity across regions and countries. The two following chapters analyse the effect of the internationalization of social sciences. Chapter

4 illustrates the extent to which some countries are more 'central' than others to the production and dissemination of social sciences, while Chapter 5 discusses the impact of such inequality on the content of social science knowledge and the plurality (or lack of it) in their production.

Chapter 6 looks at issues arising from present divisions between social science disciplines, fields and subfields, as well as the division between the social and natural sciences. It discusses the problem of interdisciplinarity already discussed by the 1996 International Gulbenkian Commission on the Restructuring of Social Sciences.

Chapter 7 continues this theme by discussing divisions that may emerge from growing competition in higher education and research due to the application of new management methods. The two following chapters analyse the divisions and interactions between social science and society, reviewing in particular the various forms of knowledge dissemination (Chapter 8) and the sometimes tense interactions between social sciences and decision-makers (Chapter 9). The last chapter outlines the main conclusions of the Report and identifies future lines of action (Chapter 10).

Each chapter contains several articles produced by different authors. These have been regrouped in sections. Each chapter and section starts with an introduction that summarizes the major issues raised.

A bibliography and list of references is to be found at the end of each chapter. Due to the large number of articles presented, the size of each has had to be limited. A longer version of some articles, or a longer bibliography, will be found on the ISSC and UNESCO websites. When this is the case, it is indicated by a specific sign in the margin. A few papers were presented at the World Social Science Forum in Bergen, and an audio version of their presentation is also available on the web. This is also signalled in the Report with a sign.

This report is a unique collection of information on the institutional and organizational aspects of social sciences, and on the various divides that characterize their production and use. The articles highlight the enormous but skewed growth in social science production; the large but uneven influence of this production on society and on policy-making; the explosion and comprehensiveness of the themes covered, despite the continued fragmentation of social science knowledge; and the globalization of social sciences, despite the persistence of geographical and knowledge gaps in the social science map. We hope that the Report will prove useful and relevant to different readerships, and that its recommendations will lead to constructive discussions in a wide range of different circles.

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Climate change hits poor people hardest. Thailand
© Still Pictures/UNEP/Werchai Wansamngan

Chapter 1
Social sciences facing the world

Flooding in UK, 2007
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Social sciences facing the world

Chapter presentation

Ernest Rutherford, the Nobel Prize winner for chemistry, famously said that the only possible conclusion in social sciences is that 'some do, some don't'. This may be true of some research, but not of all. Rutherford's belief in hard, natural sciences was so strong that he downgraded 'the rest' as 'stamp collecting'. But were he still alive, he might amend his position. Maybe he would even admit today's need for collaboration between different types of knowledge. Overcoming global challenges and understanding major trends in human societies have become multiplayer games. And they are games in which the social sciences can make a difference. The social sciences are concerned with providing the main classificatory, descriptive and analytical tools and narratives that allow us to see, name and explain the developments that confront human societies. They allow us to decode underlying conceptions, assumptions and mental maps in the debates surrounding these developments. They may assist decision-making processes by attempting to surmount them. And they provide the instruments to gauge policies and initiatives, 'and to determine what works and what does not'.

This chapter has two focuses. In the first section, distinguished scholars in different disciplines engage with global challenges and major trends in societies: environmental change, poverty, financial crises, inequality, marginalization, ageing and the future of cities. It is obvious that some social sciences are particularly suited to illuminate specific challenges or trends. Here, for instance, a demographer (Chamie) discusses population trends, an economist (Milanovic) the validity of indicators of global income inequality, and a sociologist (Sassen) the development of global cities. But other pairings appear more counterintuitive: a geographer (O'Brien) writes on global environmental change, an anthropologist (Gupta) on poverty, a geographer (Harvey) on the financial crisis, and a political scientist (Apter) on marginalization and violence. So this portrait of the world is also a mirror of the richness of the social sciences, and the fertility of their tools and perspectives when it comes to understanding today's developments in human societies.

But even this picture of global developments in specific social sciences does not tell us much about the different trends affecting the social sciences across the world, especially outside Europe and North America. This is the focus of the second section of the chapter. In it, councils for social science research that are members of the International Social Science Council portray the main challenges and trends affecting disciplines and institutions in their regions. They are the Arab Council for the Social Sciences (ACSS), the Latin American Council of Social Sciences (CLACSO), the Association of Asian Social Science Research Councils (AASSREC) and the Council for the Development of Social Science Research in Africa (CODESRIA). They bring to light how social, political, economic and environmental challenges frame and shape diverse research policies, agendas, and funding programmes. The contributions to the second section also underscore the areas of research and action on which the social sciences should focus, and where their contributions would be most urgently welcome.

1.1 Social sciences and global challenges

Introduction

To say that the social sciences face the world has a double meaning. It refers to the necessity for social scientists to confront and deal with the challenges and trends affecting human societies. And it also suggests their role in observing these phenomena. In the first meaning, the observers are mainly concerned with responding adequately to challenges and trends. In the second, the focus is rather on examining these challenges and their analytical outcomes. The contributors to this section target the two connotations: they try to grasp the quality of the challenges and trends, and they assess their implications for academic and research purposes.

The world depicted here is one of profound and menacing developments occurring at the global and local scales. Challenges such as environmental change, poverty, financial

crisis and inequality, as well as trends affecting human societies such as ageing, marginalization and the rise of cities as strategic economic spaces in the global economy are occurring everywhere but take on different forms according to local contexts. The authors discuss a wide array of challenges and trends, but other challenges such as gender issues, public health concerns, security, food crisis, migrations, diversity and integration, and burning issues and trends could also have found a place in this section. The present selection reflects the priorities identified in the foremost international conferences of recent years, such as the United Nations Millennium Summit in 2000 and the Copenhagen Conference on Sustainable Development in 2009.

The authors do not make any secret of the fact that today's challenges and trends in human societies are also challenges for their disciplines, and are forcing them to adjust. Developing the right instruments and categories of observation is a condition for the assessment of current developments and where they are leading us (Chamie). Results can be surprising, even daunting at times. Different characterizations of inequality, for instance, produce very different pictures of the extent and evolution of global inequality (Milanovic), but social science provides methods that are particularly appropriate for developing and debating the tools with which societies can observe and assess their development. The contributors to this section share the conviction that today's global challenges require revisiting former methodologies and approaches (Apter, Harvey), and even the development of new ones altogether (Sassen, O'Brien, Gupta). This is the most striking feature of the following contributions.

Innovation thus becomes a key word in this section, and the different contributors largely regard innovation in terms of interdisciplinarity. Each of them is a proud representative of core social science disciplines: O'Brien and Harvey are geographers, Gupta is an anthropologist, Sassen a sociologist, Apter a political scientist, Chamie a demographer and Milanovic an economist. Even if the traditional disciplinary boundaries remain in their contributions and the topics, vocabulary and literature are discipline-bound, the channels for innovation that they propose nonetheless confirm how blurred the frontiers between the respective social sciences have become. They agree on the necessity of collaboration between the social sciences, or interdisciplinarity. Some authors make concrete proposals for interdisciplinary collaborations (for example, O'Brien in this section, and see more on this in Chapter 6), and most of their analyses agree that burning issues require some degree of interdisciplinary analysis.

There is a growing conviction among social scientists today that more attention needs to be paid to the plurality of contexts. This red line runs through many of the chapters that follow, but is explicitly expanded in two directions in this section. One is the realization that cultural dimensions form these contexts. Worldviews, beliefs, institutions, culture and history shape the way different people perceive and react to a phenomenon. This may sound like a truism, but the implications of cultural differences appear with more clarity than ever in the face of the current global challenges. In the case of poverty, for instance, unitary definitions ('those who live on less than US$1/day') and solutions that were supposed to be valid everywhere have been revealed as ineffective when actions by the poor, and therefore the meaning of poverty for those who experience it, have not supported the proposed solutions (Gupta).

We also realize increasingly that no matter how central beliefs and worldviews are, culture itself does not furnish the last word on contexts. Rather, a local context is the sum of a realm of economic, social, gender, ethnic, institutional, political, technological, environmental and cultural dynamics. Understanding these dynamics, and developing methodologies to make them visible, are conditions for the development of adequate, locally embedded responses to major trends and developments (O'Brien, Milanovic). Even authors who plead for the production of new global theories insist that they pay close attention to the ways in which people interpret their realities (Apter). There are no context-free responses to global challenges that are applicable everywhere.

Where do these considerations bring us with respect to social sciences' contributions in the face of recent global developments in human societies? Do they imply that only context-specific theories and models are valid and pertinent? This requires careful thinking and debate.

Responding to the global environmental change: social sciences of the world unite!

Karen O'Brien

Global environmental change is a challenge to traditional disciplinary research practices. The scale, rate, magnitude and significance of changes to the global environment have made it clear that 'research as usual' will not suffice to help individuals and groups understand and respond to the multiple, interacting changes that are now occurring. The social sciences have an important role to play in providing the knowledge base and inspiration for new policies that promote resilience, sustainability and social change.

Global environmental change is a challenge to traditional disciplinary research practices. The scale, rate, magnitude and significance of changes to the global environment have made it clear that 'research as usual' will not suffice to help individuals and groups understand and respond to the multiple, interacting changes that are now occurring. 'Research as usual' is unlikely to mobilize societies to press for the changes that are necessary for a more sustainable future. The social sciences have an important role to play in providing the knowledge base and inspiration for new policies that promote resilience, sustainability and social change.

Global change research has shown that changes to the global climate system, the water system, biodiversity, land cover, marine ecosystems and ecosystem services in general are closely linked to human activities, and that these changes cannot be understood and addressed without closer attention to the interactions between human and physical systems. In recent years there has been an expansion of research on coupled social-ecological systems, as well as a growing emphasis on the human dimensions of global environmental change. But the full potential of social science contributions has yet to be realized. The integration of different types of knowledge, different perspectives on human–environment relationships, and different approaches to science can help global change research to foster the transformations that are needed to address such pressing challenges as climate change. For instance, the ways in which individual and collective beliefs, values and worldviews influence behaviours and systems have not been adequately integrated into global environmental change research. Nor has the relationship between cultural factors, human development, institutional changes and governance been adequately linked to the dynamic biophysical changes that are presently taking place. Anthropology, psychology, sociology, political science, economics, science and technology studies and of course geography are among the fields that can contribute to an integrated understanding of global environmental change. Yet the need for a greater contribution by the social sciences and humanities also calls for a change in research practices. In the following paragraphs, I identify three emerging directions for research, each of which can potentially assist society to deal with the challenges posed by global environmental change.

Greater attention to relationships and interactions across disciplinary boundaries

While disciplinary research in the social sciences has provided valuable insights into human culture, political systems, social organization and so on, global environmental change research requires that these insights be combined with 'outsights' from other disciplines to show how different factors interact and affect one another. The development of Earth Systems science within the natural and physical sciences shows the potential benefits and gains from interdisciplinary research. An interdisciplinary approach across the social sciences and humanities can similarly foster interactions and feedback that can be used to identify barriers and catalysts for change. Interdisciplinary social science research does not, however, have to replicate the systems approach of Earth Systems science. Instead it can be grounded in a framework that recognizes individuals' and groups' subjective dimensions, which influence human agency and hence behaviours and systems. An interdisciplinary approach to the social sciences can provide stronger input into existing understandings of coupled social-ecological systems.

Growing recognition that different worldviews and different types of knowledge can create different truths, as well as different ways of responding to environmental change

The social sciences integrate ontological and epistemological differences that lead to alternative understandings of physical and social processes. Understanding the relationship between rationalism, empiricism, constructivism and other approaches can provide insights into a range of possible actions and responses to global environmental change. Likewise, understanding the role of local knowledge, traditional ecological knowledge, religious and spiritual beliefs, and attitudes to technology can provide valuable insights into sustainable forms of social innovation and governance. A recognition that not all actors and cultures see the world in the same way also raises important ethical questions about global environmental change, including the question of whose views and whose values count, and about the rights and responsibilities of present generations when it comes to non-humans and future generations.

Acknowledgement that context plays a key role in understanding the drivers of and responses to global change

People- and place-based research can contribute to a greater understanding of the wide range of alternatives to current economic development models, models of governance, and social and environmental responses to global change. Social science research shows that it is seldom environmental change alone that challenges societies. Changes in the environment are closely linked to dynamic economic, social, cultural, ecological, institutional, technological and political contexts. These contexts often call for responses that address multiple stressors and respond to interlinked challenges. Consequently, there is a need to facilitate access to knowledge and technology that is relevant to the contexts in which people are living and experiencing environmental change. Separating issues of development, poverty reduction or gender rights from global environmental change and considering it as a separate 'box' that can be addressed through research and policies independent of other social processes will most probably lead to a dead end.

These three research directions are producing methodological innovations, including a greater role for action research, qualitative research and the co-production of knowledge. The decisions and actions taken by humans in the coming decades will have a critical effect on ecosystem health, biodiversity and human security. Most obviously, decisions about energy will profoundly affect the future trajectory of climate change. The biogeophysical sciences have greatly contributed to our understanding of global environmental change, including to the idea that we are now living in the Anthropocene Era, in which human influence on the environment is a decisive factor. It is now clear that human responses to global environmental changes will define the world's future. Human society must meet its responsibilities, and social science research must serve as a cornerstone both for our understanding and for the promotion of a new model of global change; a model in which concerns for ecosystem health and human well-being form a basis for much broader interpretations of human development and a far deeper commitment to sustainability. ◡

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The construction of the global poor: an anthropological critique

Akhil Gupta

The growing attention being paid to global poverty raises a number of analytical questions. What are the origins of this sudden interest in global poverty? How is it to be explained? Why did it arise at this particular historical juncture? And what are its effects on international institutions, nation states in the North and South, and most importantly, on the world's poor?

Since the late 1990s, poverty has once more become an important issue on the international agenda. However, what has emerged is not just poverty per se, but a certain discourse on 'global poverty'. If we chart, somewhat unscientifically, the number of publications in which the term 'global poverty' has been used, we notice a 500 per cent increase from 1999 to 2005. The new consensus on global poverty culminated in the UN Millennium Declaration (September 2000).

The growing attention being paid to global poverty is unquestionably a positive development. However, it does raise a number of analytical questions. What are the origins of this sudden interest in global poverty? How is it to be explained? Why did it arise at this particular historical juncture? And what are its effects on international institutions, nation states in the North and South, and most importantly, on the world's poor?

The poor on the policy agenda

In order to understand global poverty's centrality on the policy agenda, we must first rule out the convenient explanation that growing interest in the topic is due to a sharp increase in the number or proportion of people living in absolute poverty. The available data actually points to a steady decrease. The number of people living with less than US$1 a day fell from 1.47 billion in 1981 to 969 million in 2004. As a percentage of the world's population, the drop is even more significant, from 40 per cent in 1981 to only 18 per cent in 2004 (Chen and Ravallion, 2007, p. 21, Table 1).[1]

A series of other convergences may help to explain the growing interest in global poverty.[2] One set of explanations can be found in political and economic events (Noël, 2006, pp. 313, 318–19; Kanbur, 2001, p. 1083). These include:

- protests organized by 'global civil society'
- the rise of social democratic governments in the major European countries in the 1990s
- the East Asian crisis of 1997 which provoked a rethinking of the wisdom of implementing structural adjustment programmes in countries with large populations of poor people
- internal disagreements and differences between and within multilateral institutions.

The World Bank and the International Monetary Fund (IMF), allied to executive power in the United States of America, have been in support of the 'Washington consensus', while the United Nations agencies that deal with social issues, such as the United Nations Children's Fund (UNICEF), the UN Development Programme (UNDP), and the UN Research Institute for Social Development have not.

Another possible explanation for the newfound visibility of the poor may have to do with neoliberal globalization's effects in terms of wealth distribution. Neoliberalism has contributed to a massive upward redistribution of wealth (Harvey, 2005, pp. 9–19). We must also mention the tremendous influence of thinkers who have emerged as advocates for the poor: Jeffrey Sachs, Amartya Sen, Peter Singer and Paul Collier, to name just a few. However, no

1. We might see a reversal of this trend with the current global recession, and the food crisis that preceded it. The 2008 Millennium Development Goals report cautions that possibly 100 million more people will be in extreme poverty as a result of the food crisis.

2. The overall trend of a sharp downward spiral in the number of people in absolute poverty should not hide the fact that in some parts of Africa, sharp increases in the number of poor people have been recorded.

matter how insightful such thinkers have been, favourable conditions for the reception of their ideas have enabled them to have a substantial impact. I shall now argue that the timing and visibility of the discourse on global poverty is also related to recent transformations affecting neoliberalism.

Neoliberalism and global poverty

The chief institutional mechanism by which this renewed emphasis on poverty has been implemented is a 'new Washington consensus' forged in late 1999 by the World Bank and the IMF: the Poverty Reduction Strategy Papers (PRSPs).[3] The PRSPs are country-driven, result-oriented strategies that bring national development plans in line with neoliberal globalization by emphasizing growth, free markets and an open economy (Weber, 2004, p. 197; Craig and Porter, 2003, p. 53). However, they differ from structural adjustment programmes through their emphasis on the need for broad-based growth strategies, good governance, decentralization, empowerment, investments in health care, education and human capital, and social protection for those who are adversely affected by adjustment processes.

These papers can be interpreted as a 'Third Way' solution to harmonize economies in the global South to neoliberal globalization without completely disregarding the human costs that are associated with such 'adjustments'. In this view, the renewed interest in poverty expressed through the coordinated actions of the World Bank and the IMF on PRSPs is really about inventing a new form of governance to control developing countries and to prevent the rise of alternative social and political models (Weber, 2004). Craig and Porter (2003, p. 53) make a similar point: PRSPs, they argue, 'obscure power relations and restrict practical and political options, while exacting heavy establishment and compliance costs'. Taking a broader perspective, Sindzingre (2004, p. 176) argues that the extensive focus on poverty is politically regressive since it displaces concerns with global inequality and postpones a real discussion on development.

For Noël (2006, p. 322), the rhetoric of global poverty has been adopted cynically as a means of legitimizing neoliberal globalization. In this view, the importance that is given to global poverty in the written statements of multilateral organizations, G8 countries and other global economic elites serves to conceal the real agenda of structural change, giving it a more politically acceptable facade. Craig and Porter (2003, p. 54) argue, for instance, that the logic behind PRSPs is clear: 'global economic integration first, good governance second, poverty reduction following as a result, underpinned by limited safety nets and human capital development'. In this view, poverty reduction lies at the margins of a global agenda that is grounded in a particularly unequal vision of economic integration (Noël, 2006, p. 323).

Another sceptical view of the promotion of global poverty as the poster child for the current era is that poverty, vulnerability and risk help create a 'reserve army of the unemployed' for global capital. The argument is that nomadic capital can exploit relatively immobile labour through the implicit threat of downward mobility. It suggests that people tend to be more vulnerable and exposed to market risks from the moment that their livelihoods depend on aid and transfer payments. Paradoxically, the global poverty discourse draws attention to the disastrous circumstances that can befall any worker, thereby serving as a tool to discipline labour in the global economy.

I would like to add a few more critiques that bring into question the concept of global poverty. What does it mean to speak of global poverty? In what sense is poverty global and what implications does formulating poverty in these terms have for the kinds of solutions that are proposed to eradicate it?

Contextualized thinking about poverty

We could talk about poverty as being global in two ways. First, the term is used to designate a particular social group or category of individuals (for instance, those who live on less than US$1/day). Second, it serves to highlight the structural and institutional mechanisms that operate on a global scale and that produce poverty. According to this interpretation, global poverty points to the facet of poverty that can be traced to the actions of global institutions and global structures.

The first definition is the traditional way of defining global poverty. But it suggests, if only implicitly, that there is some reason to include all poor people in one category. Counting the poor is certainly an important reason for defining poverty in this way. This concept of global poverty favours a context-free, or at least contextually thin, understanding of poverty. It looks for unitary explanations and for uni-

3. I am contrasting this 'new Washington consensus' to the Reagan era when the previous 'Washington consensus' was forged. At that time, the World Bank and the IMF pushed relentlessly and dogmatically for structural adjustment and free markets.

versal solutions (more complete markets, empowerment, participation, transparency, decentralization and so on).[4] The goal is to find what works in a particular local setting, and then 'scale up' to other settings. This is a fundamental premise of major development institutions including the World Bank, national governments and transnational non-governmental organizations (NGOs).

From an anthropological viewpoint, we should press for a way of thinking about poverty that first considers the meaning of poverty for those who actually experience it before attempting to find solutions. Indeed the actions of the poor as social agents depend on their own understanding of poverty. We know from the study of famines that even when people are dying of starvation, they make culturally and socially significant distinctions in order to decide what kinds of food are edible, who gets to eat whatever little food is available, and in what order (Greenough, 1982; Sen, 1983). Even under extreme conditions, the assumption that certain goods are vital is faulty. Vigdis Broch-Due (1995, p. 4) argues that 'Poverty, like all images and concepts, is an unstable construction, changing with context, culture and social conflicts situated in history.'

We can broach the broader point about context dependency by highlighting three important points. First, we cannot have meaningful solutions to poverty unless we understand how the poor comprehend their own situations. Indices used to measure poverty, such as the US$1/day income measure, fail to question what those income measures might mean to the people who are so classified. Although people whose income is below US$1/day might be categorized as 'the poor', they may find that they have little in common with each other.

Second, in calling for a contextually specific understanding of poverty, I am not making a classical anthropological case for 'the local' and hence for smaller scale. I am arguing for a specific theory of the articulation of global, national and local structures. Even if global and national structures are identical, we may need different solutions for different regional and social contexts. I contend that 'solutions' to poverty will need to vary depending on geographical location, but also because of gender, caste, ethnicity, religion and other factors. My argument for complexity and non-reducibility is no doubt a frustrating conclusion to social engineers who wish to find 'ready-to-use' and 'broadly applicable' solutions. Nevertheless, it is the only logical outcome if we decide to consider seriously the mantras of decentralization, participation and empowerment.

Such contextually dependent understandings of poverty acknowledge the role of historically enmeshed inequalities in creating poverty for certain social groups in a particular region. A 'one size fits all' approach, scaled up from another setting, might actually increase inequality, or push more people into poverty, than an approach tailored for a specific place (Gupta, 1998).

The ideological shifts that made neoliberalism and market triumphalism possible also meant that the critique of global and national inequality could no longer be articulated with any conviction in the public sphere. Once the relation between poverty and inequality had been sundered, the only way to deal with the problem of poverty was through an ethical discourse grounded in human rights. In this sense, global poverty (as the term has been used here) could only emerge as a problem once the critique of capitalism as a generator of global inequality and extreme poverty was no longer tenable.

Poverty as a flow

In a forthcoming book, Anirudh Krishna formulates a critique of certain aspects of anti-poverty policies that are built on the premise that poverty is a stock rather than a flow. Policy 'solutions' are aimed at lifting those below the poverty line out of poverty, yet the success of these solutions would be far greater if they prevented people who are not poor from becoming poor. It is ironic that the search for invariant methods of poverty alleviation leads to a distancing from the very features that are most responsible for global poverty, namely historically grounded inequalities, asymmetries of power, and the inability of the poor to access global labour and commodity markets.

In focusing resolutely on national poverty eradication plans, the PRSPs do not address the fact that the elimination of global institutional and economic inequalities may be more effective than any action taken at a national or local level. The removal of agricultural subsidies for farmers in the USA and Europe (including the subsidies for irrigation), the internalization of pollution costs (caused by vehicle emissions and other factors that contribute

4. Discourses of empowerment, participation, transparency and decentralization have been used constructively by many different organizations in civil society. My critique of universal solutions is that they restrict and predetermine the range of possibilities. They force social agents and social groups that have a more complex understanding of local realities to fit their plans of action within these cookie-cutter formulas, but they do not always prevent them from using these categories to their own ends.

Teenager working, Pakistan
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to global warming), and the elimination of some of the restrictive aspects contained in the TRIPS Agreement[5] (which keep the price of medication prohibitively high) would contribute to changing the structural factors that lie at the root of poverty far more than the 'scaling up' of micro-credit.[6] Yet the focus of development institutions and expert knowledge continues to be on the latter type of solutions. If there are invariant conditions that contribute to global poverty, they are likely to be found in the structures of global institutional arrangements, such as agricultural subsidies, externalization of pollution costs, and restrictive trade regimes such as TRIPS. However, it is precisely these structures of inequality that go largely unaddressed in the current discourse on global poverty.

The paradox of global poverty is that it has drawn worldwide attention to a phenomenon that is in need of urgent action from a range of global players, yet by decontextualizing poverty, it invites 'solutions' that are largely ineffective. Raising the alarm about the extent of poverty is not sufficient to combat it effectively. Lack of attention to meaning, historical inequalities and structural conditions will inevitably slow down the process of poverty alleviation. The wrong strategy may actually reinforce ideas about the intractability of poverty whose ultimate effect is the normalization of human suffering.

5. Trade-Related Aspects of Intellectual Property Rights: intellectual property rights in the WTO.
6. My point here is not to downplay the importance and utility of micro-credit. I fully realize that it has played a very important role, particularly in the lives of poor women. However even this innovation, once scaled up, has made credit costlier and more difficult to obtain for the poor. My larger point is that other important structural changes have been ignored because they would compel changes in global power arrangements, and that development institutions could do more good by providing the intellectual arguments and institutional support for such changes than by interfering in micro-credit programmes and trying to scale them up.

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Measuring global income inequality

Branko Milanovic

Measurements of global inequality depend on the way income or consumption is defined, on the assumptions made regarding income-sharing within households, and on the conversion of local currency incomes into international dollars. Including data on the real income of individuals from household surveys, instead of using countries' mean income, is a definite improvement when measuring inequalities worldwide. However, much remains to be done to improve the quality and comparability of data.

Measuring inequalities and identifying whether they have increased or decreased, particularly through the effects of globalization, is an issue that has come to the forefront of debates between economists. For several years the international agenda focused on poverty and how to improve the material conditions of the poorest. Yet psychological studies have invariably shown that people care not only about their absolute income, but also about where they stand in the social pyramid, and whether they think their position is fair (Frank, 2005). Globalization has facilitated increased awareness of other people's incomes. Therefore, the perception of inequalities among both the poor and the rich can potentially lead to serious tensions within and between countries.

Measuring income inequality raises a number of complex methodological problems. While comparing mean income between countries is not new, the measurement of global inequality is a relatively recent topic. In the past, several economists have measured inter-country inequalities, comparing the per capita gross domestic income (GDI) between countries (Kuznets, 1965), but it was not until the mid-1990s that the first calculations of inequality between world citizens were made.

Different concepts of income inequality

It is important to keep in mind three main concepts of global income inequality. Concept 1 measures inequality between countries' mean incomes (inter-country inequality). Concept 2 measures inequality among countries' mean incomes, weighted by the countries' populations. Concept 3 (global inequality) deals with income inequality between world individuals.

The study of inter-country inequality, Concept 1, is concerned with the convergence or divergence of mean incomes among countries. This research has generated a huge literature but it tells us little about income inequality among world individuals.

Concept 2 inequality is a step forward because it takes into account countries' different population sizes. Weighting mean countries' incomes by population size is fairly accessible and low cost: data is needed on only two variables: GDI per capita and population. However, this method does not take into account inequality within countries, and implicitly assumes that each individual within a country has the same per capita income, which is obviously false. This last assumption has to be abandoned if we want to calculate 'true' global inequality. In order to do so, we must have access to national income distributions, which are only available from household surveys. Moreover, household surveys must be available from most countries around the world for the results to be globally representative. Such data only became available for China, the Soviet Union and its constituent republics, and large parts of Africa, from the early to mid-1980s. This is Concept 3.

Methodological issues in measuring global inequality

A series of methodological issues arise when calculating global income inequality.

First, what 'income' should be used in the comparisons? Normally, it should be the mean income from household surveys. However, the mean disposable income from these surveys is often lower than the GDI per capita, and in some cases substantially so. This is not a mistake, but a matter of definition. GDI includes components such as retained profits, build-up of stocks, and government spending on administration, education, health and defence, which are not part of household disposable income as estimated from household surveys. The gap between the two is particularly large in countries where the state spends a

significant amount on 'free' public education and public health. These are funded by direct taxes, which are not included in disposable household income.

Could we then combine the GDI per capita with distributional statistics derived from household surveys? This cure is worse than the disease. Scaling up survey income data by a given parameter (the ratio between the GDI per capita and mean income from household surveys) allocates the difference across the board, to both the poor and the rich. We know this to be inaccurate because retained profits and capital gains are received disproportionately by the rich, who also tend to benefit more on a per capita basis than the poor from publicly financed health and education. This 'solution' actually makes things worse, and is also internally inconsistent. It accepts the income distribution obtained from a survey, but does not trust the mean income calculated from it.

There was a quantum leap when more household surveys were made available. Increasingly standardized household surveys are also coming into use across countries. 'Income' could therefore be used to measure inequality in global studies, as it does in national studies. However, this does not solve the problem entirely. National definitions of survey income are not identical in every country. In poor countries, the valuation of home consumption and the income of the self-employed is a problem. In richer countries, the issue is how publicly funded health provision should be taken into account. In middle-income countries, the underestimation of very rich people's capital incomes is the greatest concern.

Second, there is disagreement over whether global inequality should be measured in income terms at all. Alternatives include consumption and expenditure measurements. It is often argued that these are better indicators of welfare and that they are capable of being measured more accurately, because households do not hide them as much as they do income. But there are advantages to using income too: it shows real economic potential. A millionaire who lives austerely is still an economically very powerful person.

Third, which exchange rates – market exchange rate or purchasing power parity (PPP) exchange rates – should be used to convert local into internationally comparable incomes? The use of market exchange rates clearly underestimates the welfare of people in poor countries, who face lower price levels than people in rich countries. If we want to compare individual welfare worldwide, the use of PPP exchange rates is a must. But our knowledge and understanding of PPP rates is still defective. The most recent, and largest ever, International Comparison Project came up with results that showed price levels in most of Asia to be much higher than had been estimated before on the basis of previous exercises. In particular, price levels in China and India were found to be more than 50 per cent higher, which led to dramatic reductions in their real (PPP-based) incomes and welfare, and hence to significant increases in calculated global poverty and global inequality.

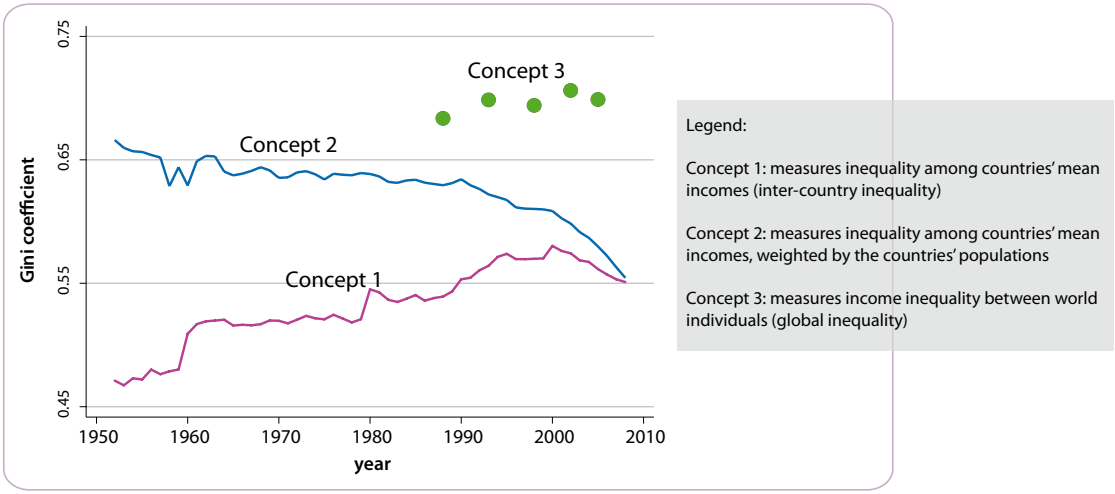
Fourth, should household incomes, which we normally obtain from surveys, be spread equally across all household members? Or should we allow for economies of scale? To reach the same level of welfare, two people living together need less than each of them would have spent separately, while children's consumption requirements are less costly than those of adults. This is important because household size differs systematically between countries. Since richer countries tend to have lower household sizes, the use of per capita measures underestimates welfare in poor countries and thus overestimates global inequality. The consensus so far has been that inter-country and global comparisons should be done on a per capita basis, partly to conserve comparability with national accounts that use GDI per capita.

How big is global inequality and how did it evolve?

The three approaches to measuring income inequality produce a wide variation of results, as shown in Figure 1.1. According to Concept 1, inter-country inequality increased steadily from 1980 until around 2000. This means that countries' mean incomes diverged. (Inequality is measured by the Gini coefficient on the vertical axis. Gini ranges from 0, perfect equality, to 1, maximum inequality.) According to Concept 2, inequality in the world has decreased during the past twenty-five years. This was largely because of high growth rates in China, and more recently in India. If China's and India's current growth rates continue for another decade or more, they will be a powerful twin duo for the reduction of global inequality.

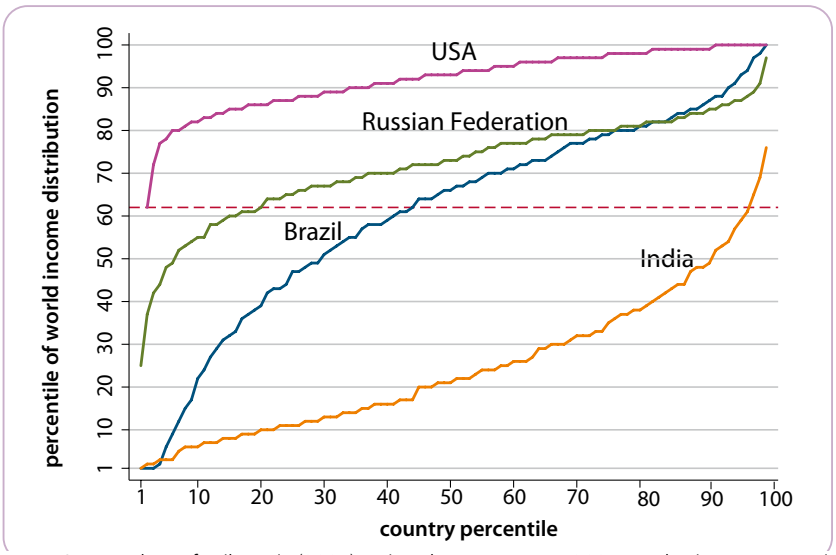
Using incomes from household surveys to compute Concept 3 global inequality (Milanovic, 2005) shows that the Gini coefficient fluctuated, increasing after the economic collapse of Eastern Europe and widening within-nation inequalities in most OECD countries, China and the Russian Federation, but decreasing with China's economic growth. While global inequality seems not to show a clear trend, it is clear that it is extremely high – Gini is around 0.7. This means that global inequality is significantly higher than the inequality found in any single country, including South Africa and Brazil, the most unequal countries in the world, whose Ginis are around 0.6.

Figure 1.1 — The mother of all inequality disputes: three ways of looking at global inequality, 1952–2007



Source: Own update of Milanovic (2005), using the most recent 2005 purchasing power parity.

Figure 1.2 — Position of different countries and their income classes in global income distribution



Source: Own update of Milanovic (2005), using the most recent 2005 purchasing power parity.

An important question is how much of global inequality is due to differences in mean incomes between countries and how much is due to income differences between individuals living in the same country. Unlike the situation that prevailed at the end of the nineteenth century, when most global inequality was due to within-nation income differences (we could call this 'class' differences), today more than 80 per cent of global inequality is explained by differences in countries' mean incomes. We can call this 'locational' income differences or the citizenship premium (see Milanovic, 2009).

Although they are less important, inequalities within countries are not negligible. The interaction of 'between' and 'within' inequalities is illustrated in Figure 1.2, which plots the position of each percentile (running from the lowest, 1st, to the richest, 100th) of different countries' income distributions in the global distribution. For example, the poorest percentile of Americans are better off than 62 per cent of the world population, but the poorest percentile of Russians are only better off than 25 per cent of the world population. Income distribution in the USA hardly intersects at all with Indian

income distribution. Only 3 per cent of the richest Indians are better off than the poorest Americans. Such examples can be multiplied. However, countries are not homogeneous entities composed only of either rich or poor people. Consider Brazil. Its population spans the entire spectrum – the poor being among the poorest in the world, and the richest belonging to the highest global income percentile.

Conclusion

Measurements of global inequality depend on the way income or consumption is defined, on the assumptions made regarding income sharing within households, and on the conversion of local currency incomes into international dollars. Including data on the real income of individuals from household surveys instead of using countries' mean income is a definite improvement when measuring inequalities worldwide. But much remains to be done to improve the quality and comparability of data, and it is to be hoped that in some not too distant future a fully-fledged global household survey, perhaps led by the United Nations, will be organized.

It is often implicitly assumed that the data on changes in global inequality can be interpreted as telling us whether globalization is globally equalizing or not. While in the most abstract way this is so, the causal link between globalization and global inequality is in fact very difficult to make. This is because globalization might affect the growth rates of poor and rich countries differently, might lead to either the widening or shrinking of national income distributions (which differ between poor and rich countries), and might tend to benefit either populous or small countries more. Depending on how these various channels of influence interact, and how strong each of them is, globalization's overall effect on global inequality could vary. Hence statements about the relationship between globalization and global inequality are highly time-specific and contingent on past income history, rather than general.ب

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A financial Katrina? Geographical aspects of the financial crisis

David Harvey

For a geographer, talking of a subprime crisis necessarily involves talking about the urban crisis that generally accompanies it, in which the most vulnerable are usually the first to suffer. Similar patterns of geographical concentration of foreclosures, and an overlap with social and racial origins, emerged in practically every major city in the USA. Regardless of the urban structure, patterns always signal neighbourhoods in which speculative housing development was seeking new markets.[1]

My interpretation of the present world financial crisis is very much shaped by my geographical background and my reading of Karl Marx's *Capital*. We have all heard about the financial aspects of this crisis, and the succession of financial events that it comprised. But considering that capitalism annihilates space to ensure its own reproduction, I wish to focus here on what happened on the ground, in the US cities that were the primary victims of the collapse in real estate that led to the financial crisis.

If we observe the geographical distribution of foreclosures in Cleveland, for instance, we notice that they are concentrated in certain specific areas of the city. Their distribution mirrors the geographical distribution of the subprime lending as well as that of the African-American population in the city (hence the title of my paper – a 'financial Katrina'). Every foreclosure represents a particular personal history and tragedy. For a geographer, talking of a subprime crisis necessarily involves talking about the urban crisis that generally accompanies it, in which the most vulnerable are usually the first to suffer. Similar patterns of the geographical concentration of foreclosures, and an overlap with social and racial origins, emerged in practically every major US city. Regardless of the urban structure, patterns always signal neighbourhoods in which speculative housing development was seeking new markets.

Let us now reflect on the particular case of Cleveland, the implications of the crisis in terms of urban change, and its consequences for the people who live and work in these urban settings. In such a context, municipal governments are getting to the point where they can no longer provide basic services to their constituents. They have to cut back for two reasons. First, their main source of income – the property tax – is in decline. Second, they are shut out of the credit markets and cannot borrow at any reasonable rate. So at the same time as this crisis is unfolding in various neighbourhoods and urban areas, it becomes increasingly difficult for municipal governments to respond in a creative and constructive way, since their assets are decreasing.

This raises another important question. If we look back in history, we find that there has been a series of financial crises over the past twenty to thirty years, most of which were triggered by the property market. In 1992, for example, the Swedish banking system essentially went 'belly up' as a result of excessive involvement in property speculation. The USA had its savings and loan crisis as well, costing approximately $200 billion to get out of. The crisis that unfolded in South-East Asia began in Thailand, and there again the property market was involved. The end of the Japanese boom in the late 1980s had a lot to do with excessive engagement in land and property markets as well as with excessive engagement on the stock exchange. In 1973 there was a huge property market crash – about six months before the oil price hike – which brought down numerous financial institutions.

If we go back in time, we notice earlier links between the expansion of property markets and the expansion of mortgages. The 1853–68 property boom in Second Empire Paris ended with the collapse of the financial institutions. In other words, there has been a long history of this sequence of events within capitalism. With the current crisis, history appears to be repeating itself, only this time on a different scale.

1. This paper is the abbreviated version of a presentation given at City University of New York Graduate Center, 29 October 2008; for more information see http://davidharvey.org/2008/12/a-financial-katrina-remarks-on-the-crisis

Why is there such a relationship? Part of the answer lies in the fact that throughout capitalism's history there has been a capital surplus disposal problem. Capitalism is always about producing a surplus in the form of a profit. This implies that there is always more at the end of the day than there was at the beginning. Part of that 'more' gets put into producing more 'more' the next day. As a consequence there is a perpetual process of compound growth. Historically the target, when capitalism is healthy, has generally been a compound growth rate of around 3 per cent. Even when there is a 'mad cow disease economy' (as we have right now) the target remains a rate that is above 0 per cent. There are therefore various historical periods in which there is an 'excess of liquidity': a tremendous amount of money in circulation that nobody knows exactly what to do with.

How will the 3 per cent growth rate be absorbed? One solution has been to expand geographically, for example from Europe to the USA or Argentina in the nineteenth century. In more recent times, people have been sending their surplus capital to China, thereby securing their compound rate of growth. The second possibility is to invest this excess liquidity in property. The interesting thing about property is that, particularly when people are building and financing it, a number of years go by before they actually realize they have over-produced, enabling them to absorb their surplus liquidity. Eventually, however, there is a crash of some sort. It sounds astonishing that only five years ago the head of the IMF stated that the world was awash with surplus liquidity. What the evidence is now showing is that political pressure was used to push this liquidity into new areas, particularly mortgage finance. In the USA, political pressure was placed on US federal mortgage and finance companies (Fannie Mae and Freddie Mac) in order to get them into the subprime business. This idea had been circulating ever since the Community Reinvestment Act of the late 1970s. For a certain segment of the working population, subprime mortgages had worked, at least until the recent push that was due to surplus liquidity. Surplus liquidity is the real heart of the current problem.

Every time property markets and financial institutions have picked up after a crisis, financial innovation has been required in order to do it. This was true in 1853 in Paris. It was also true in 1945. A large proportion of the surplus liquidity and productive capacity available after 1945 was indirectly absorbed through the process of suburbanization in the USA. However, that suburbanization required new financial configurations, new state policies (particularly the GI Bill of Rights) and new tax incentives, for instance tax breaks on mortgages. The entire structure of mortgage finance was revised to facilitate the suburbanization process. That process came to an end in the 1960s and 1970s. A different kind of dynamic then began to settle in. Financial innovation became crucial. The urbanization process needed to absorb the surplus had to go global (it went to China, it went to India …). A global reform of the financial structure was necessary. Mortgages were bundled up in specific ways, getting them into institutions that started to spin off other institutions. Financial innovation became a way of accommodating these new configurations. For example, the financial system came up with derivatives. The derivatives market is an astonishing affair. It now involves betting on the value of unusual underlying assets such as weather futures (whose market worth is US$4 billion) and pollution rights. Just a few years ago, while the global economy was worth US$40 trillion, an estimated US$286 trillion was circulating in the derivatives market, and in 2008 US$600 trillion circulated in this market. We like to think that there is a big crash going on in Wall Street. While admittedly some of the hedge funds have gone bankrupt, four hedge fund managers drew down personal incomes of over US$3 billion each out of these markets last year.

How is this possible? Why do states allow banks to innovate and behave as they please? Why do governments no longer concern themselves with the people? This reminds me of what took place in New York City (NYC) during the 1975 fiscal crisis. That fiscal crisis was part of a more general crisis in municipal finance across the USA. But it was deeper in NYC for some very particular reasons. This crisis of municipal finance followed on from the crisis of 1973, which started in property markets and spread over into financial institutions. During this crisis, investment bankers organized a financial coup against the elected government of NYC, essentially taking over its financial functions and mandating its policies. This period has taught me two basic principles for how to interpret the practices of neoliberalism, as opposed to its ideological mask. The first is to protect financial institutions at all costs. In other words, in the event of a conflict between the well-being of financial institutions and the well-being of the people, priority must be given to the former. The second principle is that governments are no longer to look after the well-being of a population, but rather to create a good business climate and therefore to encourage investments, whatever the cost. The theory behind that was of course that if investment is attracted, a rising tide will eventually 'trickle down' from the ceiling.

These two principles were for me what guided neoliberal politics from 1975 onwards. They became central to IMF practices and policies. When the IMF dealt with Mexico in 1982, it basically bailed the country out so that Mexico could

pay back investment bankers in NYC. It then proceeded to 'discipline' the country in order to ensure a 'good business climate'. This is where the neoliberal mask came in. It all has to be left to the market, it all has to be about individual responsibility – people cannot expect the nanny state to take care of them. In other words, the ideological mask was one thing and actual practices were another.

One visible outcome has been the biggest ever loss of assets for African-Americans (as the map of Cleveland indicates). My suggestion is that their losses represent the upper class's profit. Marxist geography invites us to analyse the connection between the map of Cleveland and what is going on in Wall Street.

Governments have of course taken equity stakes in order to avoid a new cycle. But this is not enough. We have to think about how to organize the banking system so that it can go into a place like Cleveland and stabilize the situation by rebuilding neighbourhoods and rebuilding lives. The banks on Wall Street will not do this by themselves. If this does not work, we need to create a new bank, a national reconstruction bank, and give it sufficient resources to go into places like Cleveland and work with the municipal government to reconstruct neighbourhoods. More generally, this new bank should contribute to the reconfiguration of the US urban system so that it becomes more energy-efficient and contributes to the creation of real employment opportunities. In other words, a national reconstruction programme is in order. One way of achieving this could be through the nationalization of one of the banks in order to make sure that its decisions are in line with the general interest.

What about the 3 per cent compound growth rate? In 1850, the global economy (counting both goods and services) was estimated at approximately US$135 billion. In 1950, it was valued at US$4 trillion at constant value and in 2000 at US$40 trillion. Today it is valued at around US$46–48 trillion. Imagine a 3 per cent compound rate of growth based on that starting point! Another way of imagining it would be this: a 3 per cent compound rate of growth on activities that are confined to a 50 mile radius around the city of Manchester and a few other hotspots is one thing. However, a 3 per cent compound growth rate on everything that is going on in China, Japan and South-East Asia, in Europe, in North America, in Latin America, and in the Gulf States is something altogether different. A rate of 3 per cent entails a doubling of economic activity every 15 years. And the ultimate result is the formation of fictitious bubbles where assets are pushed up very hard and then suddenly crash.

What we really have to do is to take hold of the surplus so that the people who produce it (that is, workers in the real economy) control the surplus and are able to dispose of it. They are the ones who should start thinking of the construction of a totally different world. Yet the folk on Wall Street are still making massive amounts of money. What we are seeing right now is that assets are not being consolidated for the benefit of the people, but are being reconstituted and reconstructed around a particular class configuration. In other words, we are witnessing a consolidation and centralization of class power into the hands of a few institutions that escape public control. Unless we fight this tendency, by the time we come out of this crisis we shall end up running straight into the next one.

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Foreseeing future population challenges

Joseph Chamie

The major population challenges that we will be faced with in the twenty-first century are becoming evident: population growth, urbanization, population ageing and international migration. These trends, and the accompanying critical demographic differentials, have significant social, economic, environmental and political consequences at the global, regional, national and subnational levels. Effectively dealing with the world of tomorrow requires us to understand, anticipate and address these global population trends.

The evolution and rapid growth of the world's population raises new and important challenges. Demography is vital to understanding and anticipating future changes in population that will shape the world through the twenty-first century.

Historical developments

For most of history, the world's population has grown at a very slow rate. In the very earliest period, small human populations were concentrated in eastern and southern areas of Africa. Some 60,000 years ago, these populations expanded not only along the coastal and inland areas of the tropics of Africa but also to the coasts of South Asia and Oceania. This migration continued so that 30,000 years ago, most of Eurasia as well as significant portions of the western hemisphere were settled.

Thousands of centuries were needed for the global human population to reach 300 million by the year AD 1 (Table 1.1). Towards the close of the fifteenth century, the world's population was approaching the half-billion mark, representing an increase of some 200 million over a period of 1,500 years. When Thomas Malthus wrote his famous essay on population at the end of the eighteenth century, the world's population had not yet reached 1 billion.

Despite the fact that human populations had already started to move to distant lands, some of the most important migration flows between continents began during the sixteenth century at a time of rapid European population growth, and spread westward. By the middle of the eighteenth century, less than 3 per cent of world's population (then approximately 800 million people) lived in the Americas. By the middle of the twentieth century, the proportion of the world's population living in the Americas had increased nearly sixfold to 14 per cent.

Before modern times, practically all of the world's population lived off the countryside. A thousand years ago, only a minute fraction of the world's population – less than 1 per cent – lived in towns or cities. By 1700 this proportion had hardly changed, and only five cities had more than 500,000 inhabitants: Istanbul, Tokyo, Peking, Paris and London. By 1800, approximately 3 per cent of the world's population lived in cities or urban centres. By 1900, this proportion had grown to around 15 per cent.

In striking contrast to earlier periods, the twentieth century was one of revolutionary demographic developments, unparalleled during all preceding centuries. The unprecedented growth in the world's population in the twentieth century dramatically impacted the course of life on this planet. The world's population practically quadrupled during the twentieth century, growing from 1.6 to 6.1 billion people. The twentieth century also ushered in radical changes in human survival and reproduction. Numerous vaccines for diseases such as smallpox or polio

Table 1.1 > World population milestones

Population	Year (AD)
0.3 billion	1
0.5 billion	1500
1 billion	1804
2 billion	1927
3 billion	1960
4 billion	1974
5 billion	1987
6 billion	1999
7 billion	2011
8 billion	2025
9 billion	2045

Source: United Nations Population Division.

Two generations, Pakistan
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were developed; average life expectancy at birth extended beyond 60 years, and at the global level, the average number of children per woman dropped by half. In addition, the world's population was increasingly concentrated in urban areas, with close to half of humanity living in towns and cities by the end of the twentieth century.

High levels of international migration were another significant demographic feature of the twentieth century. After slowing down in the wake of the First World War and during the Great Depression, there was a significant increase in migration during and after the Second World War. Decolonization also contributed to the growth in migration flows. By 1960, there were an estimated 77 million migrants in the world; fifty years later the number had almost tripled to 214 million.

Five upcoming trends

In the coming decades, major population challenges can be expected.

First, the planet will have to sustain a much larger population than today. With annual increases of 78 million, today's global population of 6.8 billion will almost certainly reach 7 billion by 2011 and most probably 8 billion by 2025. After that, things are far more uncertain. If fertility rates continue to decline and reach the projected replacement levels, the world's population could stabilize between 9 and 10 billion in the second half of the twenty-first century.

Second, practically all of the world's future population growth will occur in the world's less-developed regions. Africa's population is projected to double by 2050, reaching the 2 billion mark, and the populations of Asia and Latin America are also projected to increase markedly over the next 40 years (from 4.2 to 5.2 billion and from 589 to 729 million respectively). In contrast, a number of European countries, as well as Japan and the Republic of Korea, are entering a period of population decline. However, Australia, Canada, New Zealand and the USA are expected to continue growing, largely as a result of international migration.

Third, while population ageing was an important demographic development during the twentieth century, demographic ageing will become even more critical during the twenty-first century. The proportion of the world's population aged 65 or older is likely to double by the middle of the century. In a number of countries such as Italy, Japan and Spain, one in three people is expected to be 65 or older in 2050.

Population ageing raises serious issues such as increased immigration, the financial viability of pension systems, and the adequacy of existing health-care systems for the elderly. Today's social security, pensions and health-care budgets are in the black largely because of the favourable demographics of the past. A declining active population and a growing number of pensioners are expected to lead to what many label a 'red ink' society.

The ageing of the population presents even greater challenges for many less-developed countries, which are ill prepared to deal with the growing needs of their elderly populations. These countries already have low levels of economic development, and the ageing process there is occurring at a far quicker pace than occurred historically among developed nations. Consequently, most developing countries lack the necessary institutional mechanisms, such as pension or health-care systems, for the provision of even the most basic assistance and care for their ageing population.

Fourth, the majority of the world's projected population growth over the coming decades will take place in urban areas, where the majority of humanity now resides. Over the next three decades, urban areas in less-developed regions are expected to double in size, growing from about 2 billion people today to close to 4 billion by 2030. There will be a significant increase in the number of very large cities, or megacities, with populations of 10 million or more.

Fifth, international migration is expected to remain high throughout the twenty-first century. The more developed regions are expected to continue to be net receivers of international migrants, with an average gain of more than 2.5 million per year over the next 40 years. Today, many European countries already rely on international migration for their modest population growth, to replenish their shrinking labour forces and to support and care for their ageing populations. At the same time, the populations of most sending countries continue to grow relatively quickly, with many working-aged individuals having difficulties in finding steady employment and increasingly resorting to illegal immigration.

Conclusion

While the future remains uncertain, the major population challenges that we will be faced with in the twenty-first century are becoming evident: population growth, urbanization, population ageing and international migration. These trends, and the accompanying critical demographic differentials, have significant social, economic, environmental and political consequences at the global, regional, national and subnational levels. Effectively dealing with the world of tomorrow requires us to understand, anticipate and address these global population trends. Enhancing demographic research is an essential ingredient to meet these challenges. Demography provides both a powerful microscope with which to view the underlying dynamics of humanity's changes and a far-reaching telescope foreseeing the coming population challenges and their likely consequences for other vital issues such as climate change, energy consumption and natural resource depletion.

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Cities in today's global age

Saskia Sassen

Much is known about the wealth and power of global firms and financial exchanges. What is less clear is why cities should matter more in a globalized world than in the preceding Keynesian decades. Nor is it clear in what ways the financialization of a growing range of economic sectors affects cities. Major current structural trends are generating new types of social and spatial inequality that ultimately alter the meaning of the urban and the civic. This is especially evident in global cities.

As recently as the 1970s, many of our great cities were in physical decay and were losing people, firms, key roles in the national economy, and their share of national wealth. The leading cities of the three major economic powers – New York, Tokyo and London – were bankrupt. But as we moved into the 1990s and 2000s, a rapidly growing number of cities re-emerged as strategic places for a wide range of activities and dynamics. This has, at least in part, been due to the new economic role of cities in national economies and in an increasingly globalized world.

Much is known about the wealth and power of global firms and financial exchanges. Their ascendancy in a globalizing world is no longer surprising. New information and communication technologies are also generally recognized as the servants of economic globalization and as providing its tools and infrastructure. After 20 years of corporate economic globalization, we know that these firms and exchanges are highly susceptible to crisis. Since the 1980s, there have been five major global financial crises, in addition to adjustment crises in over 70 countries. Finally, the latest crisis has made the extreme levels of financialization visible across almost all economic sectors throughout most of the world.

What is less clear is why cities should matter more in a globalized world than in the preceding Keynesian decades. Nor is it clear in what ways the financialization of a growing range of economic sectors affects cities, especially global cities. Finally, while inequality has long been a feature of cities, major current structural trends are generating new types of social and spatial inequality that ultimately alter the meaning of the urban and the civic. This is especially evident in global cities, which become the sites of new kinds of political actors and practices.

From the Keynesian city to the global city

In their early histories, cities, were above all centres for administration, small-scale manufacturing and commerce. They were mostly the space for rather routinized endeavours. The strategic spaces in which major innovations were happening were government (the making of social contracts, such as the welfare state) and mass manufacturing, including the mass construction of suburban regions and national transport infrastructures.

The most common and easiest explanation of why cities became strategic in a global corporate economy is the continuing need for face-to-face communications and for creative classes and inputs. However, in my reading, these are surface conditions which cannot fully explain the new phase.

The rise of cities as strategic economic spaces is the consequence of a deeper structural transformation evident in all developed economies. This affects cities at multiple levels, from the provincial to the global. At the heart of this deep structural trend is the fact that firms in all economic sectors (from finance and insurance to mining, factories, transport systems and hospitals as well as governments at all levels) are today buying more services, such as insurance, accounting, legal, financial, consulting and software programming. Until recently, most firms, governments and households produced these services themselves. Now they are bought from a rapidly expanding specialized intermediate service sector. An increasing number of households are also buying these services, but this is part of final consumption rather than of the intermediate economy.

These kinds of intermediate services tend to be produced in cities, no matter how rural the location of the mine or steel plant that they service. So even an economy based

on manufacturing or mining will feed the urban corporate services economy. Firms operating in more routinized and subnational markets increasingly buy these service inputs from more local or regional cities. This explains why we see the growth of a professional class and its associated environment even in cities that are not global. Global cities differ because they are able to handle the more complex needs of firms and exchanges operating globally. It is only in its most extreme forms that this transformation feeds into the growth of global cities, cutting across the binary divide between the national and the global.

The outcomes of this structural condition become wired into urban space. The growth of a high-income professional class and high-profit corporate service firms becomes visible in urban space through the growing demand for state-of-the-art office buildings, and for luxury consumption and residential space. The growing demand for such buildings and spaces has led to massive and visible displacement of more modest-income households and modest profit-making firms, no matter how healthy these may be from the perspective of the economy and market demand. In this process, urban space itself is one of the actors producing the outcome.[1]

This partly explains why architecture, urban design and urban planning have played such critical roles. From the 1980s onwards we have seen the partial rebuilding of cities as platforms for a rapidly growing range of globalized activities and flows, from the economic to the cultural and political. This explains why global cities became also objects of, as well as for, investment when this global phase took off in the 1980s. It also explains why global cities expanded so rapidly as globalization proceeded. In turn, each of these new global cities became an object of investment – cities as diverse as Dublin and Buenos Aires in the 1990s, and Istanbul in the 2000s. Dozens of cities entered this pattern at one point or another in these two decades.

1. My most pessimistic scenario in my new project, *The New Wars and Cities: After Mumbai*, is that conflict is now wired into urban space itself. This is partly due to gentrification and displacement, and the resulting politics of competition for space. In some cities (for example, New York and Los Angeles) this has taken the form of massive direct and indirect eviction of lower-income people and enterprises from the gentrifying areas as well as the rise of gangs claiming and controlling neighbourhood space. In other cities (in Europe and Shanghai) it takes the form of new racisms that can lead to physical violence. In some cities (São Paulo and Rio de Janeiro), at its most extreme, it takes the form of partial sporadic urban warfare, including warfare in prisons. See http://www.opendemocracy.net/article/the-new-wars-and-cities-after-mumbai (Accessed 28 November 2008.). See also http://cgt.columbia.edu/events/cities_and_new_wars/

When I first developed the global city model in the 1980s, my starting points were the global networks of firm affiliates, global financial exchanges, global trade routes and global commodity chains. The emergent scholarship on globalization examining these global operations emphasized geographical dispersal, decentralization and deterritorialization, and rightly so. But I was interested in the territorial moment of these increasingly electronic and globally dispersed operations. At that time, I proposed to focus on New York and Los Angeles, which seemed to be major territorial nodes. However, my methodology – starting with firms' and exchanges' global operations, and tracking the sites where they went – forced me to recognize that during the 1980s, it was New York, London and Tokyo that stood out, with Los Angeles lower on the list.

Applying this methodology today leads us to a vastly expanded global geography of sites. There is more of everything – global cities, export processing zones, offshore banking centres, and massive warehouses that are just one stop on global trade routes.

The multiple circuits of the global economy

There is no such entity as 'the' global economy. There are global formations, such as electronic financial markets and firms that operate globally. But the current era's key feature is a vast number of highly particular global circuits – some specialized, others not – that criss-cross the world, connecting specific groups of cities. While many of these global circuits have long existed, what began to change in the 1980s were their proliferation and their increasingly complex organizational and financial frames. These emergent inter-city geographies have begun to function as an infrastructure for globalization. They also increasingly urbanize global networks.

Different circuits contain different groups of countries and cities. For instance, Mumbai is today part of a global circuit for real-estate development that includes investors from cities as diverse as London and Bogotá. While coffee is mostly produced in Brazil, Kenya and Indonesia, the main trading place for coffee futures is Wall Street – even though New York does not grow a single bean. Each of the specialized circuits in gold, coffee, oil and other commodities involves particular places, which will vary depending on whether it is a production, trading or financial circuit. And then there are the types of circuits that a firm such as Wal-Mart needs in order to outsource the production of vast amounts of goods, including manufacturing, trading, and financial/insurance service circuits. If we were to track the global circuits of gold

as a financial instrument, London, New York, Chicago and Zurich would dominate. However, the wholesale gold trade places São Paulo, Johannesburg and Sydney on this map, with Mumbai and Dubai added through the trade in gold for and in jewellery – much of it aimed at the retail trade. While New York and London are the world's biggest financial centres, they do not dominate all markets. Chicago is the leading financial centre for futures trading. In the 1990s, Frankfurt became the leading trader for British treasury bonds, of all things. These cities are all financial leaders in the global economy, but they lead in different sectors and they are different types of financial centres.

Global economic forces are not the only ones to feed the formation and development of this proliferation of circuits. These are also fed by migration, cultural work, and civil society struggles to preserve human rights, the environment and social justice. NGOs fighting for the protection of the rainforest function in circuits that include Brazil and Indonesia as homes of the major rainforests, the global media centres of New York and London, and the places where the key forestry companies that buy and sell wood are headquartered – Oslo, London and Tokyo. There are particular music circuits that connect specific areas of India with London, New York, Chicago and Johannesburg.

Adopting the perspective of one of these cities reveals the diversity and specificity of its location on some or many of these circuits. These emergent inter-city geographies begin to function as an infrastructure for multiple forms of globalization. The critical nodes in these inter-city geographies are the highly specialized capabilities present in each city, more so than the cities as a whole. These are strategic inter-city geographies, consisting of multiple and diverse circuits.

Another critical part of being a global firm or market is that it ultimately means entering the particularities of national economies. This explains why these global actors need more and more global cities as they expand their operations across the world. Handling these national factors is a far more complex process than simply imposing global standards.

This process is easier to understand if we consider consumer sectors other than the organizational and managerial ones addressed in this article. For example, a routinized operation such as McDonald's adjusts its products to the national cultures in which it operates, which might be in France, Japan or South Africa. The global city contains the resources and talents that are needed to bridge global actors and national specifics. This explains why cities' specialized differences are so critical now, more so than is usually recognized. In turn, this explains why the world's many and very diverse global cities do not just compete with each other. Collectively, they also form a globally networked platform for the operations of firms and markets as well as a variety of other actors, from NGOs to cultural organizations.

The network of global cities has expanded as more and more firms have gone global and entered a growing range of national economies. The management and servicing of much of the global economic system takes place in this growing network of global cities and city-regions. While this role only involves certain components of urban economies, it has contributed to the national and global repositioning of cities.

This repositioning, and the fact that cities do not simply compete with each other, takes on added importance at a time when cities are at the forefront of a range of governance challenges that are usually understood as being purely global. Many cities have had to develop the capabilities needed to handle these so-called global challenges long before national states signed international treaties or passed national laws. The air-quality crises in cities such as Tokyo and Los Angeles in the 1980s had to be dealt with (and were) as a matter of urgency, without waiting for national governments to pass car emissions laws.

Cities are forming new kinds of alliances to confront global firms and to address the new environmental challenges. These are only two of many possible types of engagement that cities might embark upon.

There is not one model global city

While there is competition between cities, there is far less of it than is usually assumed. A global firm does not want one global city but many. Given the level of specialization of globalized firms, the preferred cities vary from firm to firm.

The many different specializations of cities and urban regions in today's global economy arise from their specific deep economic history, which is of fundamental importance for the type of knowledge economy that a city or a city-region ends up developing. This goes against the common view that globalization homogenizes economies. The extent to which this deep economic history matters varies, and partly depends on the economic particulars of a city or region.

Globalization homogenizes standards – for managing, accounting, building state-of-the-art office districts, and so on. It does, however, need diverse and specialized economic capabilities. The capabilities to globally trade, finance, service and invest need to be developed; they are not simply a by-product of the power of multinational firms and telecommunications advances. Different cities have different resources and talents for producing particular types of capabilities. The global city is a platform for producing such global capabilities, even when this requires large numbers of foreign firms, as is the case in cities as diverse as Beijing and Santiago. The world has more than 70 major and minor global cities. Each contributes to the production of these capabilities in its home country, and thereby functions as a bridge between its national economy and the global economy.

A large 2008 study of seventy-five cities rated the top cities for worldwide commerce. Not one of them ranks at the top in all of the 60-plus variables, and not one gets the perfect score of 100.[2] The scores for the top two cities are 79 for London and 72 for New York; further down, the city ranked 10th, Amsterdam, scores 60, and Madrid 59. London and New York – the two leading global cities – rank low in several important aspects. Neither is in the top ten when it comes to starting or closing a business.

Perhaps most surprising is that London ranks 37th on contract enforcement and 21st on investor protection. Singapore ranks number 1 on both variables. Less surprising is that New York ranks 34th on liveability, defined in terms of health and safety. In the global South, cities such as Mumbai and São Paulo are in the top group for financial and economic services, but their overall score is decreased by their low rankings on ease of doing business and liveability, given their low levels of well-being for vast sectors of the population. Perhaps most surprising is the rise of small European cities such as Copenhagen and the fall of large US cities such as Los Angeles.

In the growing number of global cities and their differences, we witness the larger story of a shift to a multipolar world. The US cities' loss of position, compared with the 2006 survey, is part of this shift. It is not that the USA is suddenly less important. Instead other regions of the world are rising, and there are multiple forces feeding their multi-sited economic, political and cultural strengths.

2. The 2008 *Mastercard Worldwide Centres of Commerce Index* (Mastercard Worldwide, 2008), for which the author was a panel member, ranks 75 cities according to more than 60 variables that cover a wide range of conditions – from macro-level factors such as political and legal frameworks, to the particulars of how easy it is to execute an import or export operation, how many days it takes to open and to close a firm, liveability factors and a city's global recognition.

New types of informal economies and urban innovation

The new spatial and economic inequalities take specific concrete forms. One of these is the recent growth of informal economies in major global cities in North America, Western Europe and to a lesser extent Japan. Much of today's informalization is actually linked to key features of advanced urban capitalism. This explains the particularly strong growth and dynamism of these informal economies in global cities, including a mostly overlooked development: the proliferation of an informal economy of creative professional workers including artists, architects, designers and software developers.

The decline of the manufacturing-dominated industrial complex that characterized most of the twentieth century, and the rise of a new, service-dominated economic complex, provides the general context for informalization. Demand for informally produced and distributed products and services is encouraged by the growth of a high-income, high-profit urban sector. This generates a demand for craftwork, design and low-income, labour-intensive products and services, such as prepared food and a range of household services.

The new creative, professional informal economy is partly a function of an expanded supply of university graduates who find themselves in a shrinking labour market. More significant is the active demand for design inputs into a vastly expanded range of products, services and built environments. The migration of young, middle-class university graduates to cities, especially global cities, has stimulated a proliferation of informal studio work that may eventually become formalized. Starting informally is a means of exploring opportunities and options. Once such an informal creative economy exists, it greatly expands opportunities and networking potential for artists and professionals. Operating at least partly informally allows these professionals to function in the interstices of urban and organizational spaces which are often dominated by large corporate actors, and to escape the corporatization of creative work. In this process, they contribute two very specific features of the new urban economy: its innovativeness and its new frontier spirit. We can see this as a reinvention of Jane Jacobs' urban economic creativity.

These new types of work informalization match the formal deregulation of finance, telecommunications and most other advanced economic sectors pursued in the name of flexibility and innovation. But while formal deregulation was costly, and was paid for by tax revenues as well as private capital, informalization is low-cost and is largely the responsibility of workers and informal firms themselves. Conditions akin to those in the global cities of the North may produce a new type of low-income informal economy in cities of the global South, alongside the older, survival informal economies and the professional, creative informal economy.

Conclusion

This type of analysis has theoretical and political implications. The fact that global firms need cities – and indeed groups of cities – unsettles common notions of the mobility of capital and the capacity of electronic networks to escape territorial limitations, and hence the regulatory frameworks of territorial governments. Politically, this means that it should enable these cities' political, corporate and civic leaders to negotiate more benefits for their cities from global firms. This could lead to positive outcomes if the governing classes can see that these global economic functions will grow better in the context of a strong and prosperous middle class, rather than in the polar inequality that exists among a growing share of households. European global cities have done better than global cities in the USA precisely for this reason.

The trends in the new rising cities of the global South track the now-familiar trends of the global North: the growing numbers of the very rich and the very poor, along with increasingly impoverished traditional middle classes. In these cities, there will be fewer modest middle-class households and fewer modestly profitable economic sectors. These were once the major economic presence in these cities, and they are critical to the urban economy because their incomes are most likely to be fully spent there. Their presence provides built-in resistance to the spatial and social reshaping of cities along extreme, polar class lines.

We urgently need to innovate on the front of urban governance. The old bureaucratic ways will not do. Ours is a whole new urban era, with its share of positive potential as well as miseries. In cities, our governance challenges become concrete and urgent. National states can keep talking; urban leadership needs to act.

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Chicago, Illinois. A global city
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Marginalization, violence, and why we need new modernization theories

David E. Apter

The hypothesis is that insofar as development-cum-marginalization results in the individualization of risk, the more frequent will be efforts to collectivize it. Collectivization of risk takes many forms, including so-called fundamentalisms, 'tribalism' and extreme sectarianism. Each becomes useful in terms of transforming the risk-taker into the risk-maker, whether through confrontation, social movements, extra-institutional protest, terrorism or, more occasionally, revolution.

A better name for this paper would have been 'outline of a theory of practice', Pierre Bourdieu's title for his magisterial study uniting a structuralism of sorts with a phenomenology of sorts. Here, I want to present my own version of such an 'outline'; one that includes a structural argument about some of the social and political consequences of scientific innovation in a context of modern global development, as well as a logic of contradictions produced by the way the latter makes use of science and innovative knowledge. I want to connect this logic of contradiction to the political condition of negative pluralism, a condition that undermines the basic premises of democratic institutions embedded in positive pluralism. I will also attempt what might be called a palimpsest – an outline of a new kind of modernization theory. Like its earlier version, this theory will emphasize the structural, but in its newer version, emphasize more phenomenological themes.

In the more particular context of this Report, I shall also be concerned with some of the pitfalls arising from science itself, especially as applied instrumentally. As I see it, one of the presumed virtues of the social sciences is that by applying theories to facts, we can uncover what has hitherto been hidden from view, and by so doing redefine relevance, identify new problems and turn attention to what otherwise might have remained obscure. To put it differently, I see the task of the social sciences as the reasoned interpretation of experience through the discovery of valid generalizations and their application to particular events. We seek theoretical and useful knowledge to which both the unique and the familiar contribute. Within that frame, science, and particularly social science – despite profound differences with respect to the appropriate forms and fashions of the scientific enterprise – provide opportunities to enrich understanding, not only about how to 'do' social science, but also how to think about it, and how best to evaluate where it stands in the order of things, and in the process change the order itself. But what if that 'order' is conventionalized by the social sciences themselves, so that they become part of the problem rather than the solution? Hence, the political and theoretical argument I propose requires us to look at the wider effects of social science knowledge on the institutions and conditions in which it operates.

With this perspective in mind, I want to try my hand at 'revealing' what I think is a range of problems hidden beneath the kind of theory that purports to deal with the 'big' contemporary problems: war and peace, recession and prosperity, justice and violence. These consume our daily lives and impinge on us as citizens and scholars. My starting point is something we can designate as global developmental, whose social consequences are visible in the multiple crises we confront today and obscure others waiting down the road – some of them stemming from the very efforts to use science and information, knowledge and education to resolve them. In short, I intend to discuss some of the ways in which the spread of rational inquiry itself, not to speak of the institutions devoted to that end, can – in a context of modern global development – lead to serious perversities in social and political life. A bifurcation in public space and private roles, whose consequences will be touched on below, is not the least of these consequences.

Among those consequences are social differences that break down what in large measure constitutes common understanding. Indeed, even common-sense causes and effects become different from the prevailing norms for people most penalized by the process of development. These differences include what will be recognized as

applicable, valid rules of the game. It is not only in so-called 'failed states' that people marginalized by the development process live under conditions of great personal risk, and confronting a rogue environment, see threatening and random perversities around them. In short, I want to address some of the structural conditions that in effect privatize public institutions and, at worst, make democracy a form of paralysis, a kind of bad joke. Hence, in this essay, the concern is with the negative social and political effects of knowledge itself, and its consequences in the opportunity and meaning structures that affect people in their daily lives, including some of the social pathologies that knowledge exacerbates rather than ameliorates.

The structural argument

Among the consequences of global development are quantum leaps in scientific and technological knowledge. Applied as productive outputs, these have a continuous and creative impact on social life. The impacts are highly differentiated, depending on where we stand in the social system. If, for some, the effects include opening up opportunities and expanding choice, for others, these same factors prejudice rather than add to their prosperity. This results from a bifurcation between those whose roles are marginalized in the productive process and those whose roles (by becoming more and more functional) are elevated to the status of elites. This suggests a structural model with two opposite poles, a condition of extreme marginalization leading to a virtual condition of functional superfluousness, and a knowledge-producing class of ever greater functional significance. We might consider the 'pulls' between these tendencies as a kind of dialectic, not in terms of a proletariat as Marx would have it, but in ways of looking at the world as well as at life opportunities, conditions and circumstances. The marginalized are depatrimonialized, displaced and dispersed – and in both 'metropoles' and 'peripheries'. Social vulnerability goes with such displacement from normalcy (Wacquant, 2009).

I do not want to overstate the case. That there have been vast benefits from globalization cannot be denied. At its best, capitalism remains innovative, creative, entrepreneurial, stimulating and imaginative. But the point is that these very virtues have become part of the problem, a problem that is built into the industrial process itself, as the following explains:

1. Growth depends on increasing productivity.
2. Increased productivity depends on innovations in design and their application to product outputs.
3. Such output applications increasingly take the form of capital-intensive industry at the expense of labour-intensive industry.
4. This results in redundancies in the labour-intensive sector, especially among the unskilled and poorly educated.
5. Prolonged unemployment, especially among the least skilled and most poorly educated, turns an economic condition of unemployment into a social condition of marginality.
6. Marginality represents a sector of functionally superfluous people for whom no prospects for improvement are easily available.
7. Marginality individualizes risk.
8. Risk reduces the efficacy of programmes designed to help those displaced by institutional means, including schools and training programmes and the like, which validate failure more than realize success.
9. The more such social pathologies spread, the more difficult it is to eliminate the negative consequences of risk without vast state expenditure on compensatory and welfare programmes (which are almost invariably inefficient).
10. Increased state expenditure brings rising social overhead costs.
11. Such costs reduce the state's ability to mediate and balance appropriate principles of equity and growth.

At least two points should be noted about this line of argument. It is as much a sociological argument as an economic one, and a psychological argument as much as a sociological one. The first and second are structural, the third is psychological, and all three are ingredients of a political argument about negative rather than positive pluralism and growing political violence (despite vast expenditures on arms and military adventures). In short, the emphasis here is on social and political pathologies produced by global capitalism.[1]

1. No one-to-one correspondence between, say, workforce marginalization, social polarization and political violence is implied in these comments. Nor is marginality all of a piece. There is the marginalization of the downwardly mobile and the newly unemployed. There is the marginality of the urban ghetto and the rural township, the Paris banlieues and the slums of Nairobi and so on. And with them go vast differences in the terms of the social and cultural life in each. To some degree, these are dependent on where race, religion, ethnicity, clanship or combinations of these are predominant influences.

In this argument, risk plays a central role. The greater the degree of marginalization, the greater the likelihood that those functionally displaced in these terms will use alternative forms of identity. These alternative identities serve to mobilize, to establish mutual confidences, and above all, serve as ways to collectivize risk. My hypothesis is that insofar as development-cum-marginalization results in the individualization of risk, the more frequent will be efforts to collectivize it. Collectivization of risk takes many forms, including (especially in the absence of reasonable socialist alternatives) so-called fundamentalisms, 'tribalism' and extreme sectarianism. Each becomes useful in terms of transforming the risk-taker into the risk-maker, through confrontation, social movements, extra-institutional protest, terrorism or more occasionally revolution: in short, violence. These latter themes are of course as old as social science itself, and each has its own literature, which it would be pointless to recount or deal with here. However, many of these themes were perhaps intrinsic to the kind of 'systems theory' that characterized early modernization theories. It might make sense to say something about that original perspective before trying to turn it on its head in terms of truths and consequences.

Modernization theory as a theoretical point of departure

Among the many things that the 'old' modernization theorists ignored were the ever higher social overhead costs which, developmentally induced, forced themselves on us politically, while remaining unrecognized by still dominant political, economic and sociological models. Today, we see the fallout of such defaults. If my assumptions are correct, models are now needed that are better able to connect the structural conditions prevailing today – economic as well as social – to more interpretative modes of analysis. Indeed, a good many of the facts we are after lie in what people say about their circumstances, how they interpret their condition, and the narratives they form, from and out of which they construct a logic of action. When it comes to matters of protest, we particularly need to be able to read words and acts like a text (a social text, as Geertz would have it), and to see what such readings reveal politically in terms of compensatory principles.

In fact, as regards a more phenomenological turn, the old modernization theory was on the verge of exploring some of these issues when it came to an abrupt end. The categories – functionalities, development, structures, role differentiation, innovation and others which are equally emblematic – used in what was called systems theory were about to take a more phenomenological turn, especially in the last work of Talcott Parsons. Before that could really happen, however, modernization theory effectively disappeared. Ironically the phenomenological emphasis survived, but deriving as it did from such diverse sources as linguistic theory, analytical structuralism, interpretive sociology and even literary theory, it never attained more than dubious status as belonging to the corpus of social science *tout court*. Despite such status, I would argue that it essential to a revised and more relevant form of modernization theory that is relevant for current purposes.

Let me be clear. On the whole, the old modernization theory disappeared for good reasons. Moreover, even at its peak, it was influential but never dominant in the social sciences, and it was always the object of suspicion (which applies even more so to interpretive theory today). Among the many weaknesses of early modernization theory was that its categories ignored the important ways that people interpreted 'systemically defined' reality on the ground. There was much talk about norms and values, but in the abstract rather than concretely. On the whole, it ignored the events and actual circumstances of roles and the lives as lived within them. Missing was much sense of how interpretation acted to change that reality itself. As a result, a good number of the theory's more confident predications turned out to be, if not wrong, then not right enough – such as the rise of secularism at the expense of the sacred (Andrain, 2008), and the self-evident rationalities of choice and self-regulating markets. Missing from modernization theory was what later also came to be called cultural sociology – not only more phenomenological concerns, but politics as interpretation, as acting out, as performance, as symbolic behaviour. Even if we accept that the driving force of development was industrialization, and development was the driving force of modernization, over time it has become clear that universal functionality does not so easily ride roughshod over prevailing and more parochial particularisms such as race, ethnicity, religion, and differences of language and kinship.[2]

In this sense, modernization theory failed to see how industrialization, notwithstanding extraordinary increases in productivity, generates implacable social problems and

2. Anyone who today reads Kerr et al., *Industrialism and Industrial Man* (1960), or case studies of innovation, such as those by Burns and Stalker, *The Management of Innovation* (1961), can see how persuasive such ideas of modernization appeared to be and how beguiling as policy and practice.

political instability, and increases public and private risk.[3] In this regard, the radical and Marxist critiques that preceded and succeeded modernization theory were more prescient. Modernization theorists, for all their broad perspectives, never dreamed they would live to see the old metropoles peripheralized, with China, India, Brazil and other countries becoming the new engines of industrial growth at the expense of the old. Little attention was paid to some of the less benign and enduring legacies that served as the context for much of the world in which modernization was occurring, namely imperialism, whose aftermath included serious distortions in local social life, and what might be called pathologies of alien power and control. There was even less concern with the impact that imperialism had on the 'imperialists' themselves and with metropoles being treated as insular, self-sustaining sources of modernization, and not heir to its backlashes.

There were other early modernization theory failures too. Attacked by a barrage of critical theories – dependency, neo-Marxism, and their variants – a good many critiques were also a response to the ferment occurring on the ground in much of the developing world (not to mention its occurrence within the metropoles themselves). Beginning in the late 1950s there was a virtual explosion of local and international protests, solidarity movements, pan-Africanism, and developing-world expressions of socialism and nationalism, with radical socialist metropoles emerging in Accra, Conakry, Algiers, Cuba and Pyongyang, not to speak of such hot spots of visible imperialism as the Mau Mau rebellion in Kenya, Vietnam and the Algerian War – events to which most modernization theorists remained largely oblivious. It was not Parsons who addressed these issues but Fanon.

Structurally, then, modernization theory failed precisely in those aspects in which it should have succeeded. It argued that development and modernization would lead to benign effects, diversity, complexity, differentiation and pluralization. But all these turn ugly in the face of profound cleavages between citizens. Is there any point at all in going back to earlier forms of modernization theory? I think the answer is yes. I believe modernization theory had greater depth and theoretical power than its critics have given it credit for. Above all, it was about systemic change. Societies were its primary units of analysis. Its central problem was how to examine the possibilities of functional integration by societal systems and subsystems under conditions of rapid transformational innovative change. However, if it has any relevance today, it would be for examining the breakdown of functioning institutions and the ensuing disorder and violence.

New modernization theory and negative pluralism

I have suggested that if we start with the structural predicaments and the logic behind them, as described above, a new modernization theory can become useful for the recognition and the analysis of negative pluralism. It has been suggested that market-driven growth favours capital-intensive industry over labour-intensive industry at the expense of employment. This produces the need for people with high educational, training and technical attainments. Required too is an educational process that creates a divide between the technologically literate and the technologically disadvantaged. The resulting polarization goes well beyond theories of class division to cognitive differences, each with its own deployment of intelligence. This exacerbates differences in which cleavage politics takes the form of negative pluralism, i.e. one in which interests are raised to the level of principles. This highlights differences of religion, caste, race, language and other categorical affiliations, and turns them into often-profound convictions, exaggerating differences rather than minimizing them, and favouring the potential for conflict over mediation. In turn, this reinforces and perpetuates differences that threaten prevailing institutional frameworks, renders party politics a war by other means, and undermines the ideals of a democratic political system. By adding a more phenomenological understanding of how people read the logic of their situation and act on that, we can begin to understand how and why even the best-laid and most predictive structural understanding is so frequently up-ended in events. In fact, in these respects, none of the successors to modernization theory fared any better than the systems of which it was so critical. As a result, the social sciences are perpetually chasing after unanticipated events, especially those that not only redefine facts on the ground, but also the analytical space within which knowledge and understanding occur.

What can democracy mean under such circumstances? Virtually all liberal doctrines contain an assumption – explicit or implicit – that for the most part citizen choices are rational. Choosing is itself a function of the market-place, whether economic (goods and services) or political (votes and candidates, facts and values). Ends are open in both, but with rationality, the magic of the market is

3. Aside from my own work on nationalist movements and protest, very few modernization studies emphasized social movements. Among the exceptions were Neil Smelser (1963) and, much later and in a very different tradition, Alain Touraine (1984) and Anthony Giddens (1985).

to produce collective outcomes. Each is independently equilibrating, and in tandem, the two constitute a moving equilibrium. Democracy as a moving equilibrium works when the private economic market dilutes concentrations of power in the political market, while the latter reallocates wealth in the economic market according to preferred principles and preferences manifested in both markets. In effect, democracy is a model of mutually compensatory and distributive consequences. The better it works, the more integrative and stable the society and state become.

It is when democracy works in this fashion that we can speak of positive pluralism – the kind that concerned modernization theorists. Differences of principle are accommodated as interests, which, appropriately mediated according to appropriately weighted and allocated priorities based on fair rules of representation, allow for faith in the future. We can believe that if interests are not serviced politically or economically at one point, they will as a whole or in part be serviced at another point in time. Diversity, then, is a choice. The proliferation of difference enriches society rather than dividing it. But if the two markets reinforce each other by concentrating both wealth and power in the same hands, the opposite happens. With polarization reinforced by both the economic and the political markets, and when risk and uncertainty become the common condition of those marginalized or becoming marginalized, the likelihood grows that groups will form that favour their own ends at the expense of others.

In short, where positive pluralism begins with the assumption that where it counts, people are more alike than different, negative pluralism begins and ends with the assumption that the differences between human beings are more significant than the similarities. When group interest replaces individual choice as the basis of representation and accountability, and the compensatory propensities of the double market become sticky or fail, with insensitive leaders and parties failing to address perceived inequalities – especially in the economic sphere – the conditions for negative pluralism grow. Interests are elevated to the level of principles, which are difficult to negotiate. Under such circumstances, the mobilization of political groups, which is normally integral to the democratic process, produces instead the mobilization of difference. If the latter breaks out in confrontation and violence, the first casualty is a common understanding of the public sphere (Habermas to the contrary). Under such conditions, 'last shall be first' doctrines become acceptable and protest drives the equilibrating process, using extra-institutional forms of opposition. Negative pluralism is a function of prolonged insensitivity and non-responsive reciprocity between economic and political markets.

With negative pluralism, opportunities for political entrepreneurship multiply. Opportunities are opened for new forms of organization and power, and the formation of new criteria of membership, jurisdiction, obligation and even trust in a world without trust, often using 'tradition' as a mode of legitimization. Defined as the ability to sustain loyalty and punish betrayal, power is one of the important preconditions for anti-state movements that claim to act on behalf of victims. They encourage people to act in concert, provide the opportunity to transcend their individual limitations, and, even in the context of violent acts, create both symbolic and moral capital in the absence of other kinds. In these respects, 'negative pluralism' drives out tendencies towards the kind of tolerance and flexibility we associate with positive pluralism.

Where positive pluralism defines the terms and conditions of freedom and choice, negative pluralism defines the terms and conditions of identity and affiliation. Under marginalizing conditions, 'identity' is more important for the degree to which it allows less tolerance of others. The more 'choice' is limited to the functionally significant and 'identity' defines the functionally superfluous, the less likely will the first be to do their work properly, and the more state and society will be in conflict.

To summarize, a refigured modernization theory provides us with some of the analytical tools to confront how negative pluralism downgrades the similarities between human beings and elevates the differences, transforms interests into principles and claims into rights, and maximizes cleavage politics. It reinforces parochial communitarianism and collectivizes individualism. Difference becomes the priority basis of representation and accountability. Universal sectarianism thus poses the unanswerable question of how tolerant of the intolerant a democratic political system can be, especially when political parties and movements become locked into stalemates that thwart the institutional bases of accommodation, accountability and consent.

A new analytical framework for social sciences

It will be noted that this discussion has used functional theory of a kind embedded in early modernization theories, but transformed into opposite conclusions. For all that, however, a new modernization theory needs to recognize that modern global economies will continue to be market- and technology- driven, and that high capitalisms will

produce major economic, political and social crises. Nor is there much doubt that government and the state will favour enterprise over community and the functionally significant over the functionally superfluous, conditions that lead to chaos on the ground. So much so, that to force changes in policy outside the conventional institutional frameworks will always be difficult, regardless of swings in public mood and fortune. What is clear today is that in so many different circumstances, conditions and political settings, a growing proportion of citizens feel socially and politically abandoned.

These are conditions under which no democratic institutions can work well. They are conditions that effectively disenfranchise significant numbers of citizens whose governments refuse to listen. Hence, it is not so surprising that as those at the top, the functionally significant, gamble with money in the spirit of enterprise combined with organizational discipline, those at the bottom gamble with their lives and those of other people, with each activity producing its own social order and rules of order. Today's modernization theory needs to take into account the significance of risk and gambling, both of which are critical components of global capitalism. And this in turn will require redefining the rules of power and obligation, accountability and consent in terms of the functions, roles, institutions and structures of contemporary political systems.

To study modernization today, we need to bring institutions back in, as well as the role of networks and performance. This requires theoretical frameworks capable of comparing cases and situations in light of the hypotheses developed here, and in structural, normative and behavioural terms – what earlier modernization theorists meant by systems. The old modernization theory emphasized adaptation, mutual adjustment, and the boundary limitations of order. The radical critique emphasized the opposite – modernization as perpetually disequilibrating, disordering, making even the most secure institutions and polities precarious. Taking these together as a reconstituted modernization theory, we might hope to establish criteria for a new moral ontology, a normative standard for determining appropriate and compensatory strategies – those most likely to render technology and functionality more hospitable to social and political reform.

While there is little prospect of a capitalist dénouement in favour of realizable socialist alternatives, this does not mean that we must accept that the way today's world works is the way it has to work. Start with the principle of global capitalism as the moving finger of modernization, assume that it incurs increasingly high and unacceptable human costs, and the arguments made above become a fresh theoretical starting point. It allows us to anticipate some of the more critical and ongoing predicaments with which – whatever their form – governments, states, regimes and societies will have to contend, and to suggest strategies and politics, many of which are objects of suspicion, within more orthodox forms of contemporary political and social analysis.ب

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1.2 The view from the regions

Introduction

In the second section of this chapter, various social science research councils, member organizations of the International Social Science Council, introduce the trends affecting the developments of their disciplines in their region. The Arab Council for the Social Sciences (ACSS) does this for the Arab countries, the Latin American Council of Social Sciences (CLACSO) for Latin America and the Caribbean, the Association of Asian Social Science Research Councils (AASSREC) for Asia Pacific, and the Council for the Development of Social Science Research in Africa (CODESRIA) for Africa. The stress is on developments in regions that remain to various degrees at the periphery of the North American and European cores of social science production. Their goal is to describe these trends and to identify the challenges to social sciences in years to come.

This regional survey points to the strong focus of international social science research on precisely the global challenges and major trends in societies tackled in the first part of this chapter. It confirms the new and more global nature of these developments around the world.

However, there are also regional emphases in social science research, identifiable trends mirroring specific contexts. Discussions on issues arising from the region's political conflicts and from development agendas are central in the Arab region. Demographic and migration challenges form the core of numerous studies in Asia Pacific. Poverty and inequalities remain crucial in Latin American and Caribbean countries. And the processes of reconciliation and transitional justice are focal points for social scientists in African countries.

The various councils for social sciences research thus portray moving research landscapes in which new themes emerge, but which also remain intimately connected to their regions' recent history. They point to important ways in which socio-political processes have interacted with developments in social sciences in the different regions in recent decades.

The social sciences seem especially suited to tracking regional transformations in the context of global change. In the years of African decolonization, the numbers of departments and of social scientists in Africa grew noticeably, even if they remained relatively small for such a vast continent. A similar growth in the number of departments and an overall improvement in social science research capacity took place in Latin America and the Caribbean in the 1950s and 1960s, in keeping with the socio-political dynamics that transformed the region at the time. Social science research in the Arab countries took off in the 1970s, driven by attempts to develop new theories, models and topics suited to the analysis of changing Arab societies. Similar developments occurred in Asian countries, such as China, where economic and social transformation in the late 1970s led to an urgent need for social science analyses.

These regional surveys also depict what the regional councils see as the main challenges for the further development of social science research in their region, and here again, the context appears crucial. CLACSO underscores the risks of isolation, ACSS the incapacity of social scientists to participate in public debates in the Arab countries due to political conditions. AASSREC stresses the sharp contrasts in the research landscape across the region, and mentions the potentially dramatic effect of global warming in the major deltaic area and islands of the Asia Pacific region. CLACSO worries that poverty and inequality hamper the development of social sciences in Latin America and the Caribbean. And CODESRIA points to the lack of research infrastructures in many African countries. As different as these regional challenges are, the four councils agree on the need for social science research to focus on improving research networks and infrastructures for collaboration, and on supporting weaker countries.

Arab Council for the Social Sciences (ACSS)

www.arab-council.org

Seteney Shami and Moushira Elgeziri

In the Arab region, the social sciences are shaped by a context characterized by severe socio-political, economic and environmental challenges, instability, and by diverse and divergent research policies, agendas and funding programmes at national and regional levels. Three main fields of social inquiry can be identified: the challenges of the post-independence Arab state, issues arising from 'global' and developmental agendas, and fields emerging from interaction and opposition to Western scholarly agendas.

In the Arab region, the social sciences are shaped by a context characterized by severe socio-political, economic and environmental challenges, instability, and by diverse and divergent research policies, agendas and funding programmes at national and regional levels. At the risk of reductionism, we can identify three main fields of social inquiry. The first and most established is the literature on the challenges of the post-independence Arab state, including the quest for democracy, the elaboration of Arab identity and nationalism in the context of changing regional dynamics, and the Arab–Israeli conflict. The second are the issues arising from 'global' and development agendas, whose local contexts are addressed by NGO-based research. These issues are perhaps best summarized by the UNDP's *Arab Human Development Reports*, which pose the challenges of the region as a knowledge deficit, a freedom deficit, and a deficit in women's empowerment. To these challenges we should add research on economic development concerns such as trade, labour markets and poverty. Finally there are the themes and fields of research arising from interaction with, and sometimes opposition to, Western scholarly agendas. Among these, questions of gender, Islam, social history and comparative politics are predominant.

Within these regional agendas, we can also discern specifically national concerns, especially where there is a fairly robust research community, as in Lebanon, Egypt and Morocco. These concerns are shaped by particular questions regarding the relationship between the state and society, and issues related to social segmentation, urban life and the politics of culture.

In the 1960s important contributions arose such as Samir Amin's centre/periphery development theory, and critiques of Orientalism by Anouar Abdel-Malek and Abdullah Laroui. The 1970s and 1980s saw a proliferation of scholarly production and regional circulation, often fuelled by a drive towards the 'indigenization' of the social sciences. The present landscape is characterized by partial agendas, local concerns and the general alienation of Arab intellectuals who are reluctant to take, and discouraged from taking, part in public discourse. Both the state and religious authorities curtail academic freedom to a significant degree. So satellite television and blogging are more powerful as media of critical debate than scholarly production. To avoid confrontation with the Arab states and at the same time engage in high-quality products that ensure recognition on the international academic scene, many Arab scholars write in foreign languages for a mostly non-Arab readership. However, in recent years, some Arabic journals and books have drawn attention and triggered discussions, due to their theoretical rigour or the importance of the topics addressed.

Jemaa el-Fna Square, Marrakesh, Morocco
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These books and journals include:

- Al-Sourty, Y. I. 2009. *Authoritarianism in Arab Education,* Kuwait, Alam Al Ma'refa.
- *Idafat, the Arab Journal of Sociology,* issued in print and online by the Arab Association for Sociology with the Center for Arab Unity Studies.
- Lahsan, W. and Ashraf A. K. (eds). 2009. *Secularism: Confused Concepts*. Beirut, Ru'ya.
- Najjar, B. (2008). *The Refractory Democracy in the Arab Gulf*. Beirut, Dar-al-Saqi.
- Bahithat (in press). *Women and Money*. Beirut publisher.

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Association of Asian Social Science Research Councils (AASSREC)

www.aassrec.org

John Beaton

The broad themes that unite social science research in the Asia Pacific region are employment, social mobility and equity, security and safety, education, population, health, globalization, adaptation to climate change and the governance required to manage these matters. There is a divide in research capacity due to funding differences and other factors, particularly the isolation of scholars in developing countries.

Within the overarching themes, social scientists in the region often focus their research on practical issues that are pertinent to measuring individual and community well-being. This is particularly true of social scientists employed by government-supported agencies. It is increasingly recognized that although social scientists should be concerned with local issues, there are some universal themes (for example, poverty, equity, population and health). These themes transcend national boundaries and promote collaboration and a regional view.

In most Asia Pacific nations, intergenerational and geographical issues are of current importance. The young increasingly abandon rural life for the opportunities cities appear to hold. Skilled and unskilled workers move from homelands to distant or foreign soils to exploit economic opportunities. This topic links specialists in migration, labour, identity, citizenship, language, politics, law and perhaps even the full range of social science disciplines. Most Asia Pacific social scientists are deeply committed to understanding emerging patterns of multiculturalism and the conditions that can give rise to harmonious societies rather than dislocation, anomie, crime and wasted lives. Economic cycles can drive prosperity or poverty, and both outcomes have practical consequences in social upheaval and failures in social cohesion. In recent decades, the great economic success of Thailand, India, China, Viet Nam and elsewhere has produced over-populated cities, uncontrolled pollution and the loss of social infrastructure. Understanding how governance, institutions, trust and security can contribute to confident and hopeful lives is important for social scientists and their governments.

While some countries, notably the Democratic People's Republic of Korea and Myanmar, remain poorly integrated in the region, they are not unique in this respect. Nations with small populations are particularly susceptible to isolation through poor communications and economic barriers.

Social scientists recognize that factors such as rising sea levels and marine transgression in low-lying areas will affect nations differently, but rich peri-coastal agricultural lands and the peoples who subsist on them will be under the greatest threat. This suggests the need for social science knowledge to assist with coordinated multinational regional agreements regarding adaptation and security. Flooding in major deltaic areas such as the Ganges, Indus, Irrawaddy and Mekong sometimes provides stark but informative models for future social, economic and political issues that will accompany global warming in many areas of the world. Across the region there are highly variable political architectures and processes to address such issues, and each will need social science knowledge to address the problems arising from them.

'Clean' government is clearly present in a number of countries, but pockets of corruption and episodes of institutionalized mismanagement of public agencies persist everywhere. Political scientists keenly observe the current trends toward democratization and representational government, and are increasingly positioned to provide knowledge-based policy recommendations to enhance public well-being.

Thanks to information technology, young scholars in the Asia Pacific region are better connected to the world social science literature than ever before, and the diversity, overlap, commonalities and dilemmas of current social science themes and topics are no longer privileged information available only to the elites. Of equal importance to the next generation of scholars are the increasing opportunities for research travel, collaboration and employment in developed countries. Here synergies and collaborations provide Asia Pacific social scientists with enhanced opportunities to identify and frame thematic issues, and to understand trends in the context of the world social science environment.

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Latin American Council of Social Sciences (CLACSO)

www.clacso.org

Alberto D. Cimadamore

Substantial knowledge has been produced on crucial topics such as violence, social conflict, the role of the state, democracy, employment, education, indigenous peoples, religion, social justice, environment, integration, development, inequality and poverty, as a result of an evolving strategy of inter-institutional and international cooperation. In some of these topics (for example, economic and human development, democracy and education), Latin American scholars have made outstanding contributions to world social science.

Latin America and the Caribbean have been contributing in an original way to the social sciences since at least the mid-twentieth century, when their production acquired distinct traces within a more institutionalized academic environment (Segrera López, 2000). The development of this creative tradition of social research has been conditioned by the countries' political and economic evolution in recent decades. Some of the effects can be observed in the relatively low levels of financing and coordination within (and among) the national scientific systems. These are institutional limitations that impact individual and collective scientific outputs, as much as they do international academic cooperation at the regional level.

Several challenges emerge from the complex reality that the social sciences in the region face. The most important of these challenges is the need to sustain the production of high-quality and socially relevant research connected to and disseminated within the education system and the decision-making process. The important social problems shared by the countries in the region demand knowledge-based policies to overcome them while simultaneously posing a challenge to academic cooperation and calling for institutional support for independent and critical social science research. This is particularly relevant in times when the ideological premises of neoliberalism have been transformed into economic and social policies that weaken the state's capabilities to fulfil its basic functions, thus affecting the public education and research systems.

However, the lack of incentives for the development of critical social sciences has not been the only effect of the region's prevailing political economy during the past three decades. The negative impacts on most relevant social indicators are found in official reports, which show unacceptable levels of poverty, exclusion and inequality everywhere in the region in spite of renewed economic and human development.

In this context, where Latin America has the sad title of the most unequal region in the world, social science has a crucial role and mission. Such an enormous challenge calls for strong support for research environments that can produce superior scientific outputs, which are needed to inform policy for meaningful social change. In Latin America, the financing tools are mostly in the hands of international cooperation agencies and governments, and these tend to be reticent in supporting critical social knowledge. Who would like to be openly criticized by those they are supporting, for their performance on core social issues for which they are largely responsible? The answer to this question explains the fate of financial and structural support for critical social sciences in societies that desperately need meaningful social change.

Despite these restrictions, it is possible to identify niches where the region's social sciences community could make a difference with the tools at hand under current circumstances. These actions might not be ideal – a full solution would include stronger structural and institutional support for social sciences – but some would be achievable while members worked on obtaining more comprehensive support.

Substantial knowledge has been produced on crucial topics such as violence, social conflict, the role of the state, democracy, employment, education, indigenous peoples, religion, social justice, environment, integration, development, inequality and poverty, as a result of an evolving strategy of inter-institutional and international cooperation. In some of these topics (for example, economic

and human development, democracy and education), Latin American scholars have made outstanding contributions to world social science.

As well as being a resource-sharing strategy that can maximize the use of scarce funds, horizontal cooperation directed towards the creation and dissemination of critical social science research outputs is a practical and effective way of boosting research. Networking is an effective strategy to foster creativity and productivity in social science, especially in times of relatively low resources. It can also be a realistic and efficient strategy to improve the quality and impact of social science production and sharing.

The Latin American Council of Social Sciences (CLACSO), the most relevant social sciences network in the region, has selected networking as the option for improving the production and sharing of social science-relevant knowledge within the region.

Despite its financial limitations,[1] CLACSO has been able to systematically promote and support a critical social science agenda within its growing network of more than 250 research institutions. Since its inception at the end of the 1960s, CLASCO has been driven by an effort to maximize its impacts in the world of social science, and in the formulation of policies to overcome the most urgent social problems.

For historical reasons, the Council's objectives and strategy have mostly been centred on the region. The cooperation strategy now faces the challenge of creating and sustaining the production of meaningful knowledge with institutions outside the region, to deal with the growing list of global problems that affect all us.

An example is the joint endeavour between CLACSO and the Comparative Research Programme on Poverty (CROP) of the International Social Science Council. From the beginning of this decade, it has consistently supported a focus on social research on the causes and effects of, and solutions to, poverty from a relational perspective. This perspective's close connection with social inequality contributes to an explanatory and normative body of research. Other research that CLACSO supports covers a wide range of topics, via activities sponsored by other core academic initiatives such as the Working Group Program and the South–South Program.

These and other research and education initiatives link thousands of social scientists all over the region, and elsewhere, through platforms specially designed for collaborative academic work. These include the Electronic Academic Network (RAEC), the Social Sciences Virtual Library Network, the Virtual Campus and the Social Science Graduate Network.

Beyond these, there are still several important scientific challenges that need to be dealt with in the present and near future. These are the need to develop more and better theories, capable of guiding research that addresses the most prominent regional and social calamities; encouraging the use of comparative methodologies to assess and improve such theories in complex and heterogeneous historical contexts; and advancing the dissemination of research outputs in order to facilitate their use by both academic and decision-making bodies.

1. CLASCSO resources come mostly from international cooperation. Members of the network are university research centres (65.3 per cent), independent research centres (30.9 per cent), and governmental and regional organizations (3.8 per cent), in 25 countries.

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Council for the Development of Social Science Research in Africa (CODESRIA)

www.codesria.org

Ebrima Sall

Which idea of Africa does today's social science offer? The present paper provides an answer on the basis of the social science research made in Africa, and elswhere. The author shows that the conversations between the social sciences and the humanities, and between social sciences in Africa and in other parts of the global South, are becoming livelier and cover a growing number of themes.

In *The Idea of Africa*, Mudimbe (1994, p. 12) asks the following question: 'Which idea of Africa does today's social science offer?' In this paper, I try to answer that question by looking primarily at social science research within Africa that has for long been, and still is, faced with the question of autonomy. In the first section of this paper, I look at the reasons why autonomy became an issue, and how the African social science community has been trying to address it. In the second section, I examine some of the major issues and themes in social science research in Africa from the late 1990s to date.

The challenge of autonomy

Africa had some of the first institutions of higher learning in the world,[1] and many great intellectuals, such as Ibn Khaldoun and Ahmed Baba, some of whose works are considered great social science texts to this day. However, social sciences as we know them today came to Africa through encounters with the West, particularly during the colonial era.

Autonomy became an issue for the social sciences for at least two reasons. One is that in the immediate aftermath of the wave of decolonization that swept through the African continent in the late 1950s and early 1960s, the formation of epistemic communities was regarded as a condition for and a logical consequence of the struggle for political independence. Autonomy was perhaps as important for the social sciences in Africa as political independence was for the continent generally. The dominant epistemological order in Africa, as in the rest of the world, was that of the West, and the first and second generations of African scholars were trained in the West (Mkandawire, 1995, 1999). Many of the new universities established in Africa in the late 1950s and early 1960s were for a time affiliated with French and British universities. The heavy dependence on resources from the West, particularly in the 1980s and 1990s, made the autonomy of the social sciences in Africa a major issue of concern. Beyond the question of resources, the question posed was: who sets the research agenda?

In the five decades or so that have elapsed since the wave of decolonization swept through the continent, and fifteen years after the official abolition of apartheid, the institutional and demographic bases for social science research, teaching and related activities have undergone deep transformation. From a very small number at the end of the colonial era, African universities are now close to a thousand, and still growing at breakneck speed. Both governments and private providers are setting up new higher education institutions. Research centres, institutes, networks and NGOs are also mushrooming.

However: '… the Euro-American epistemological order remains central in the African Academy. Since the colonial encounter, the construction of scholarly knowledge about Africa has been internationalised both in the sense of being an activity involving scholars in various parts of the world and the inordinate influence of externally generated models on African scholarship' (Zeleza, 2007, p. 2).

The challenge of autonomy, and of developing interpretative frameworks that are both scientific and universal, and relevant – that is, 'suitable' for the study of Africa and of

1. Al-Azhar University in Cairo, founded in AD 970–72, is a good example. In the fifteenth century, the University of Sankoré in the town of Timbuktu, in present-day Mali, was a great institution. So were other institutions in present-day Morocco, Tunisia and other countries.

the world from the standpoint of Africans themselves – is still very real.

From the late 1950s to the early 1990s, the African social science community grew in size, but still remained relatively small. In most countries, the institutions of higher education and research were few in number, and often new and weak. The research environment was less than ideal, given the poor socio-economic and political conditions that prevailed. This led to poor funding for higher education and research, and to violations of academic freedom. The key concepts and theoretical frameworks with which most African scholars worked were 'made in the West'. Western interpreters, as well as African analysts, have been using categories and conceptual systems that depend on a Western epistemological order. Even the most explicitly 'Afrocentric' descriptions and models of analysis, explicitly or implicitly, knowingly or unknowingly, refer to the same order (Mudimbe, 1994).

The efforts of regional social science councils such as CODESRIA and OSSREA, and professional associations of sociologists, anthropologists, political scientists and the like, to address the problems of autonomy have therefore been geared towards building a networked, self-aware community of scholars. Some explicitly sought to participate in the building of what has been called an 'African library' to replace what Mudimbe called the 'colonial library'. The modern African library would of necessity be made up not only of written texts, but also of oral and visual 'texts'.

One of the major difficulties that the social sciences had, and still have, to face is fragmentation, as well as the fragmentation of the African community of scholars as a whole. This fragmentation was largely, but not exclusively, due to the colonial partitioning of Africa into more than 50 states, most of which are small and economically dependent. Outside North Africa, where Arabization has been a major development in recent years, social science research is mostly conducted in European languages, particularly English, French and Portuguese. The building of a 'networked community of scholars' therefore required efforts to transcend disciplinary, linguistic, gender, generational, regional and ideological divisions. Some regional councils (CODESRIA, for instance) have also tried to develop alternative mechanisms for the setting of standards in scholarship. These include the creation of forums such as the Africa Review of Books, and an Africa-based social science indexation system.

Another major challenge has been to bridge the gulf that separates 'modern' scholars from the extremely rich and vibrant intellectual traditions that Africa had in the past and from the non-Europhone intellectual traditions of today (Jeppie and Diagne, 2008; Kane, 2003). The rediscovery of old texts is one manifestation of a strong determination to reconnect with the works of great intellectuals such as Ibn Khaldoun (Alatas, 2006) and Ahmed Baba, and there have been moves to tap into the rich contemporary non-Europhone literature. The rediscovery of the Timbuktu archive (Jeppie and Diagne, 2008; Kane, 2003) has led some to argue that Africa, like Europe, had its own Age of Enlightenment (Kane, 2003; Amselle, 2008). This Enlightenment most certainly had its own downside, as did the European Enlightenment. It is, however, significant enough to cause us to view the history of the social sciences and humanities in Africa in a new light. What Mudimbe calls the 'colonial library' (Mudimbe, 1994) was not the only library that ever existed in Africa. There was a Muslim library, as well as a larger non-Europhone library (Kane, 2003; Amselle, 2008).

For much of the time, however, efforts geared towards building an African library have used borrowed concepts, theories and paradigms. The social dynamics of African societies was read by analogy, as was the interpretation of African experience. The challenge of autonomy, as Adesina (2006) has argued, still remains a major one for the social sciences in Africa.

Breaking away from, or going beyond, the 'statist' logic that has tended to dominate most interpretative frameworks in the social sciences has also not been easy. The statist approach has led to what has been called a kind of 'command science' (*La science du commandement*, Ouédraogo and Sall, in press), science in the service of the dominant powers and the dominant order. Their approach is to read society from an externalist point of view. Their main aim is to decipher, categorize, name, label or map social groups, phenomena or dynamics. The process is more or less part of a state project consisting of what James Scott calls 'making societies legible' (1997), in order to make them 'governable'. The alternative project is a fundamentally emancipatory one (Neocosmos, 2006). Colonial ethnography and ethnology have been closely associated with the colonial project that they are regarded as serving. Much of the recent literature on governance, whose main preoccupation has been how to make whole societies and certain social classes and groups 'governable', is informed by a statist philosophy that, these days, comes in many guises.

The major debates

The first issue to become the subject of very lively debates over a long period of time was the historicity of African societies. Colonialism meant the denial of a 'civilized' African past. The struggle of the African elite for a 'civilized' identity, as against being characterized as backward or inferior, made history the battleground for reclaiming a new, singular historical trajectory of glory for itself. 'African historians demonstrated that African societies had a glorious past' (Ouédraogo and Sall, in press).

For a time, state- and nation-building were perhaps the most important issues debated in the social sciences in Africa. This was understandable, given the newness of the many socio-political formations that emerged from decolonization processes. A number of studies focused on boundaries and cross-border networks and movements, on national integration processes, ethnicity and so forth. Studies on rural and agricultural development, and on strategies and prospects for industrialization, also proliferated.

The emphasis in these debates then gradually shifted towards issues related to the economic crisis and structural adjustment, poverty, the informal sector, social movements and democratization, human rights, land and agrarian issues, gender issues and urbanization. In the early 1990s the effects of economic and political liberalization – rising poverty levels, the spread of armed conflicts and associated phenomena such as refugees, displaced populations and child soldiers – were twin processes that were extensively researched and discussed in journals and other academic publications. The HIV/AIDS pandemic, climate change, transformative social policy, the pervasive marketization of higher education and of the social sciences themselves, and the political and economic integration of the continent, are among the issues that currently occupy many scholars. So are issues of corruption and political succession.

The mid-1990s were profoundly marked by the Rwandan genocide on the one hand, and on the other hand, the end of apartheid in South Africa. These contradictory developments gave rise to a number of studies on violent conflict, the processes of reconciliation and transition justice.

Mahmood Mamdani, following Samir Amin, Issa Shivji and Jimi Adesina and several other scholars, has argued that:

> *We are at the cusp of a third phase [in the recent intellectual history of the social sciences in Africa] which needs to be driven by multiple ideas. I suggest the following: (a) development in the post-neo-liberal era; (b) citizenship and rights in an era of state and civil crisis; and (c) re-thinking African history, philosophy and social thought in light of the Timbuktu archive, following the joint contributions of Ousmane Kane [2003], and Suleymane Bachir Diagne and Shamil Jeppie [2008]. The issue of re-thinking Pan-Africanism in light of contemporary challenges is important, but should form a sub-theme of the second big idea above (Citizenship and Rights …).*
>
> (Mamdani, 2009)

The search for ways of responding to and rolling back neoliberalism seems indeed to be one of the single most important issues and challenges for African social science research in the twenty-first century. The recent global financial crisis has led to a partial rehabilitation of neo-Keynesianism and new interest in developmental states and in social democracy (for instance, Mkandawire and Adesina's works on transformative social policy). However, in the social sciences themselves, neoliberalism has led to a high degree of marketization, which has resulted in

Internally displaced person awaits food ration, Sudan. How does he see the world?
© UN Photo/ T. McKulka

increased fragmentation, as Burawoy (2007) has argued, rather than in the 'opening' and greater unification that the Gulbenkian Commission report (1996) authored by Wallerstein and his team seemed to have observed. In the context of the African academy, the forms, manifestations and consequences of the marketization of the social sciences themselves are yet to be fully understood. We have spent much more time and effort studying the marketization of higher education (Mamdani's 2007 study on Makerere University is a recent example) than on the study of the marketization of the social sciences per se. Understanding the pervasive logic of neoliberalism in a whole range of domains, from trade to the environment, is also crucial.

In conclusion

The social sciences in Africa are still faced with challenges at the epistemological and the institutional levels. Overall, however, they have reached a fairly high level of development, with a growing number of seminal works, such as Mafeje's (1971) critique of the ideology of tribalism, Ifi Amadiume's (1987) work on gender relations, Mama, Imam and Sow's (1997) work on the engendering of social science itself, and also Mamdani's (1996) work on citizenship, Mkandawire's (1999) work on democratic developmental states, and transformative social policy, Moyo's (2006) work on land, and Amin's (2008) work on alternatives to neoliberal globalization (including his recent papers on the global financial crisis). The list is long.

The conversations between the social sciences and the humanities, and between those in Africa and the social sciences in other parts of the global South, are becoming livelier and cover a growing number of themes. The 'African library' is therefore taking shape, and the range of 'texts' in it is becoming broader.

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Is the Executive Secretary of CODESRIA. His most recent publications include *Frontières de la citoyenneté et violence politique en Côte d'Ivoire* [Citizenship and Political Violence in Côte d'Ivoire] (co-edited with Jean-Bernard Ouedraogo, 2008) and *Human Rights, Regionalism and the Dilemmas of Democracy in Africa* (co-edited with Lennart Wohlgemuth, 2006).

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Chapter 2
The institutional geography of social science

Bubel village in Orissa: map showing areas where 'scheduled' or lowest caste people live
© UNESCO/O. Brendan

The institutional geography of social science

Chapter presentation

The differences between regions and countries in the status of social science research could hardly be greater, yet the need for social science is the same throughout the world. Civil actors, citizens and policy-makers everywhere require the analyses of social scientists to make sense of global and local evolutions and challenges, and to move ahead with responses, adaptations and change. However, the diversity and the discrepancy between the size, the institutional structures and the overall condition of social science research systems around the world are astounding. Systems have expanded and continue to generate new knowledge in different regions of the world. The number of higher education social science students is increasing rapidly everywhere. But in many low-income countries, and in sub-Saharan African countries in particular, social science institutions are facing a critical situation: insufficient public subsidies, deterioration of the scientific profession, changes in the modes of knowledge production, a relative decline in the number of books and articles produced, and on top of everything else, the brain drain.

This chapter focuses on the institutional organization of social science research systems in different regions and countries, and highlights the institutions involved, the structures of agenda-setting, the financing mechanisms, the evaluation procedures, the status of research, relations with policy analysis and other issues. It provides a geographical outlook on these trends and practices, and shows their interconnections in different contexts.

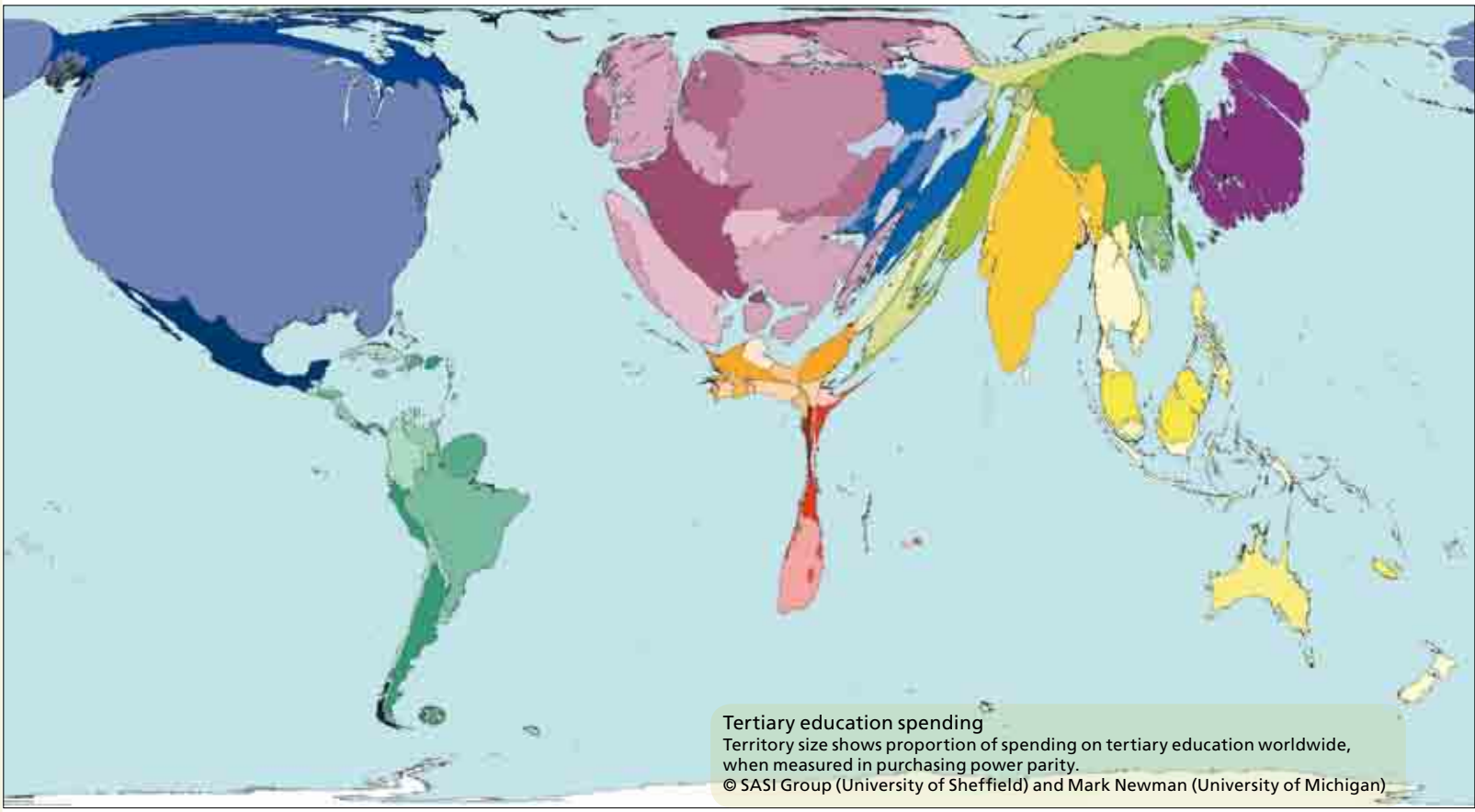
The authors of this chapter have used various methods to delineate and describe what they regard as the most striking issues in the evolution of social science research in their region and country: bibliometrics, local and regional databases, surveys, statistics, reviews of recent studies and consultations of networks of researchers. But more significantly, all of them draw on their experience as privileged observers of the social science in their region.

By discussing data such as the number of social scientists, their financial resources, their working conditions and their output (expressed for example by the number of students graduating in social sciences, the numbers of publications or the number of journals edited) the authors sketch formidable divides between and within regions and countries. In Latin America, 90 per cent of higher education institutions do not produce any research at all, while over two-thirds of all postgraduate programmes are offered by public universities in Brazil and Mexico, and this is where most research is taking place (Vessuri and Sonsiré López). In sub-Saharan Africa, 75 per cent of academic publications in the Web of Science database come from South African, Nigerian and Kenyan social scientists, and from only a few universities. Similar disparities in the knowledge production process and concentration in major universities and research centres can be found in other regions.

In most countries, research is predominantly conducted in universities or in research centres associated with them. In countries previously under Soviet influence, social science research continues to be carried out broadly in institutes and academies outside universities (Pipiya; Huang). Public research centres where academics can devote themselves entirely to research and do little or no teaching also exist in western and Central Europe. Those research academies, centres and institutes have long traditions of achievement and are not likely to disappear in the near future. Worldwide, however, the dominant tendency is to grant universities broader responsibilities for the organization of research, and to maintain links between research and teaching.

Many regions and countries have seen an increase of short-term applied research conducted outside universities by consultancy firms and non-governmental organizations (NGOs), at the request of international donors or private foundations. In low-income countries this trend follows the relative or absolute shrinking of public funds allocated to universities, for research in general and to social sciences in particular. The tendency is so strong that we can talk of a 'deinstitutionalization of research' (Mouton) in sub-Saharan Africa but also in South Asia. In such conditions, academics rarely have the chance of working on long-term projects involving strong theoretical considerations. In these regions and countries, short-term empirical research (Arvanitis, Waast and Al-Husban) dominates, and often it is conducted by poorly qualified consultants. In developed countries as well, more and more research is undertaken by NGOs and privately funded think-tanks outside universities.

Funding is almost everywhere an issue. This is obviously the case where state subsidies have become the exception rather than the rule. There social scientists and research centres have become completely dependent on external donor funding. But funding is also an issue in richer countries where fewer public resources are allocated



Tertiary education spending
Territory size shows proportion of spending on tertiary education worldwide, when measured in purchasing power parity.

directly to research institutions and universities, and where competitive allocation of funds and project funding has become predominant. In developed countries, mixed public and private funding of research institutions is already a growing phenomenon (Van Langenhove), and this is now expanding to many other regions and countries. The agencies in charge of distributing such funding have become major institutional players. The United States of America has no such reliance on one central public funder. The diversity of funding sources in that country has been a source of the vitality of its research in social sciences (Calhoun). Other countries can also count on a tradition of private or semi-private support, be it through foundations (for example, in western and Central Europe), liberal elites (Egypt, Lebanon), or influential families (the Gulf States) but not to the same extent as in the USA. The extent to which funding agencies at national or international level (for example, national agencies, foundations, multilateral and bilateral financing organizations) influence the research agenda and the conduct of the research itself raises concerns in many countries in the global North and South.

The status of social science research in society, and society's influence on public debates and policy, are addressed in several of the following articles. In some countries (for example, China and Brazil), social science research is considered essential to support the country's development, while in others natural science is given all the attention (Krishna and Krishna; Pipiya). In some regions or countries research is not well regarded, but because of their public presence as columnists, advisors or think-tankers, social scientists enjoy broad social recognition. Finally, while the issue of academic freedom in developed and democratic countries is mainly concerned with the choice of research topics and this is the subject of lively discussion and debate, the question in other regions concerns censorship and the different ways in which the state tries to control the content of research. This issue, and others only touched upon in the following articles, require greater attention.

Social sciences in North America

Craig Calhoun

In global terms, the most distinctive feature of North American social science, besides its size, is the extent of the investment made in time, facilities, training and incentives for research since the Second World War. In both the USA and Canada, social science research has grown substantially and very high educational standards have been achieved.

North American social science exerts a large global influence due to its scale, its research productivity and the number of international social scientists educated in its Ph.D. programmes. There are more than 100,000 social scientists engaged in academic research in the USA and Canada. Thousands more with an advanced education in social science work in government, private business and non-profit organizations. The influence of social science is also strong in a range of professional fields from management to public health, education and social work.

In global terms, the most distinctive feature of North American social science, besides its size, is the extent of the investment made in time, facilities, training, and incentives for research since the Second World War. In both the USA and Canada, social science research has grown substantially and very high educational standards have been achieved.

In both the USA and Canada, professors and students are drawn from a wide range of national backgrounds, and campuses are important sites of international exchange and connection. Social science departments have also been leaders in the pursuit of gender, ethnic and racial equity, although their success here varies. Most departments hire new staff from outside, and in most departments there is a great diversity of theories, methods, intellectual orientations, empirical foci and questions addressed.

Growth and differentiation

Social science has been a part of North American life since the colonial era. But until the late nineteenth century it was largely a non-academic enterprise. Social science flourished in the context of social reform movements, both religious and secular, and in the development of social welfare institutions. It was advanced by both middle-class advocates of moderate reform and more radical partisans of populism, agrarian reform and workers' movements. A strong engagement with evolutionary theory and ideas of progress linked reformers and academics, and both groups fed the academic establishment by pressing for the collection of detailed and robust social statistics. While social science in the USA retains connections to social movements and social reform, they have become attenuated since that era.

Between about 1870 and 1910, social science disciplines were consolidated by the founding of major departments, academic journals and professional societies. Social science disciplines took the lead when the USA adopted the Ph.D. degree as a standard and remodelled undergraduate curricula to emphasize disciplinary concentrations. At the same time, an effort was made to counterbalance disciplinary organization with interdisciplinary agenda-setting and improvements in research methods. These were among the central goals for the Social Science Research Council when it was founded in the USA in 1923.

After the Second World War, North American universities expanded dramatically. Social science courses were among the fastest growing, and this demand ensured employment for Ph.D. graduates. During this period, enduring institutional patterns were established. As well as disciplinary departments, universities created interdisciplinary programmes, centres and institutes. Among the most prominent foci for these were international area studies, urban studies and survey research. Later, race and ethnic studies, gender studies and environmental studies would be organized in similar ways. There was an expansion of government support for both pure and applied research, and especially in the USA, a major expansion of foundation funding, commonly focused on addressing social problems or supporting international development.

Social science attracted students engaged with social issues. During the student movements of the 1960s, it both informed radical thought and was attacked for not being radical enough. For most disciplines, rapid growth ended in the mid-1970s. Exceptions are economics, psychology and new fields such as communications. Professional schools grew rapidly and interdisciplinary fields expanded, such as international studies and gender studies. Enrolments in the remaining social science disciplines began to expand again in the 1990s and are generally robust today. In the USA, about 340,000 students receive Bachelor's degrees in social science fields annually – about 20 per cent of all graduates (NIES, 2008).

The major social science associations based in the USA all include substantial Canadian membership and recurrently hold their annual meetings in Canada. Their proportion of Canadian members varies from subject to subject, but they all consist mainly of researchers based in the USA, and this sometimes leads to the neglect of Canada's specificity. There are also Canadian associations in each field, with overlapping memberships. In general, Canadian social science disciplines are about 5 to 7 per cent of the size of their counterparts in the USA (CAUT, 2009).

While the disciplines are broadly similar, there are some national variations between the USA and Canada. The presence and prominence of First Nations has influenced both Canadian anthropology and political science, leading to further exploration of group rights and related issues. Likewise, Canada's multilingual and multicultural constitution and high rates of immigration have drawn the attention of many social scientists. Research on the environment and social service delivery also figures more prominently in Canada.

Table 2.1 > Membership of major North American disciplinary organizations, 2009

American Psychological Society	20,000
American Economic Association	18,000
American Political Science Association	15,000
American Historical Association	14,000
American Sociological Association	14,000
American Anthropological Association	10,000
Association of American Geographers	10,000

Source: Individual association self-reports, rounded down to the nearest thousand.

Note: The American Psychological Association is much larger – about 150,000 members – and includes a majority of practising psychologists who are not actively engaged in research. The American Psychological Society represents a partially overlapping constituency of mainly academic researchers. The discipline of history is larger than the number above would imply. Many historians belong to more specific associations such as the Organization of American Historians or other groups organized by period or region.

Funding and agenda-setting

North American social science is based overwhelmingly in universities, and researchers are also teachers, though in more elite institutions teaching demands are moderated to allow time for research. Canada is more egalitarian, and the system in the USA is more hierarchically differentiated. Inequality in the USA is tied to competition over relative standing, though neither the USA nor Canada use official national ranking systems to evaluate universities or departments. Research productivity and citation indices loom large in the variety of unofficial indicators to which administrators pay attention.

In Canada, funding for social science research comes centrally from the Social Science and Humanities Research Council (SSHRC). Formed in 1977 (consolidating earlier government funding offices), the SSHRC works mainly by providing grants for investigator-initiated projects. In recent years, the SSHRC has secured increased funds, partly by committing itself to thematic initiatives that can shape research agendas. Since receiving SSHRC grants is an important criterion of evaluation in many Canadian universities, there is anxiety over how open the process will be to different lines of research. Canadian social scientists also receive support for applied research from other government agencies at the federal and provincial levels.

In the USA, there is no primary, centralized government funder, and funding diversity is a major source of vitality for US social science. The National Science Foundation (NSF) is the most influential funder of basic research in the social sciences. Its Directorate for Social, Behavioral, and Economic Sciences primarily funds investigator-initiated projects through the peer review process. This is thematically open, though some researchers believe the process is biased in favour of certain research methods. The NSF does not fund applied research but does undertake initiatives to increase the scientific work done on certain themes.

Though the NSF is the main US Government funder of basic social science, the vast majority of government funding for social science research comes from other federal agencies ranging from the National Institutes of Health to the Departments of Education, State, Commerce, Agriculture, Transportation, and Housing and Urban Development. Funding from the Defense Department is particularly controversial, though recent programmes have increased the extent to which funding is available for basic social

science research not tied to military operations. Most states in the USA also fund social science research at some level.

If decentralization and plural objectives are the hallmarks of government funding in the USA, the pattern is only intensified by the large role of private foundations. Some major foundations like Carnegie and Rockefeller date from the early twentieth century, but foundation funding grew substantially after the Second World War. The Ford Foundation was a leader. New foundations continue to be established, reflecting the creation of large private fortunes. The biggest is now the Bill and Melinda Gates Foundation. Interest in health issues looms large at foundations in the USA, along with questions of global governance, new media, education, poverty reduction and security. USA-based foundations fund globally, though disproportionately in the USA. They have been funders of international social science, both in Europe – especially after the Second World War, when the Ford Foundation backed the creation of France's Maison des Sciences de l'Homme – and in developing countries.

Most foundations aim to improve the human condition, and have historically supported social science because they expect it to contribute to this mission. In recent years, however, many have become disillusioned, arguing that social science is too academic, too little concerned with informing public dialogue, and too focused on specialist agendas rather than large social issues. They have sometimes sought to stimulate agendas with new funding, but recently many have shifted funds away from social science and towards organizations oriented to direct practical action.

In addition to direct grants to individual scientists, foundations and government agencies fund various efforts to encourage new lines of research and increase the mobilization of existing social science knowledge to inform policy-makers and the public. The Social Science Research Council is a private 'operating foundation' founded for this purpose. It has been influential in the spread of quantitative methods, the establishment of area studies fields, and advancing research in fields from business cycles and economic growth to cities, migration and religion in public affairs. In addition to grants and fellowships, it works by establishing interdisciplinary committees and research groups. In recent years, this approach has also been adopted by the MacArthur Foundation, which has established networks supporting research on themes from adolescent development and juvenile justice to socio-economic status and health. The Russell Sage Foundation, the only major foundation in the USA focused entirely on social and behavioural sciences, has taken a similar approach, notably in shaping the emergence of behavioural economics and studies of trust.

Despite the large role of government and foundation funders, the primary support for social science research in the USA and Canada comes from employment as university faculty members. This provides time and facilities for research, though in unequal amounts depending on the university resources. In recent years, there have been fiscal strains, particularly in state-funded institutions, and the inequality between and within institutions has grown. At even the richest universities, social scientists are acutely conscious that funding has grown much faster in the natural sciences and at many professional schools. Social science and humanities departments are more dependent on funding streams associated with undergraduate teaching. Further institutional upheavals may lie ahead. A financial crisis at the University of California, for example, has resulted in cuts that fall heavily on the social sciences and humanities.

Institutional pressures as well as resources promote productivity, but also keep it channelled in a competition for standing within disciplines. This encourages many to stay focused on long-recognized themes at a time when there are major changes in the world that social scientists study. Despite this, there is a great deal of intellectual ferment and excitement, and growing talk – if not yet much reality – of breaking out of customary disciplinary and subdisciplinary boxes. Some of this is encouraged by new research techniques such as neural imaging, by new interdisciplinary relations (notably to the biomedical sciences) and by a focus on major public problems such as environmental degradation.

Public engagement

An important recent concern in North American social science has been that academic research has become too inward-looking, oriented to highly specialized intellectual subfields and not to broader public concerns. In fact, this concern is as old as the disciplines themselves. The idea of interdisciplinarity was introduced when the Social Science Research Council (SSRC) was founded in 1923. Interdisciplinarity was not then regarded as an end in itself. It was valued as the basis for bringing different sorts of knowledge to bear on public issues. The same agenda informed the creation of interdisciplinary centres at universities. But disciplinary departments have remained more powerful, especially with regard to employment decisions. They rely mainly on a reward system heavily focused on the discovery of new knowledge. This usually

means an emphasis on incremental improvements within established explanatory or descriptive agendas rather than synthesis for students or the public, or indeed broader efforts to reorient scientific inquiry.

The desire for more public engagement has been reflected in discipline-specific efforts to nurture 'public sociology', 'public anthropology' and so forth. Scale is an issue. With 10,000 anthropologists or 15,000 political scientists, it is possible to sustain highly specialized subfields and many media of inside communication. Indeed, the concern for public communication is accompanied by a desire for more communication across subfields, addressing important general questions within disciplines. This has informed the creation of new journals, such as *Perspectives in Politics* and the *Journal of Economic Perspectives*, that seek to fill a gap between the general press and highly specialized academic publications. Similar desires to inform public debate and to address issues that are under-represented in specialist publications also shape the use of new media, as social scientists create web-based publications, podcasts and blogs.

Disciplinary and subdisciplinary specialization, and the emphasis on internal academic communication, peaked in the late twentieth century. North American social science is increasingly oriented outward and focused on pressing public problems. To these, social scientists bring both substantial accumulated knowledge and an impressive array of analytical approaches.

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Institutional aspects of the social sciences in Latin America

Hebe Vessuri and María Sonsiré López

Some of the challenges to social science in Latin America are to build renewed theoretical approaches capable of guiding research and action. These approaches should also have the potential to overcome the most prominent social and natural problems, to address the networking of researchers, to improve output dissemination and use in academic and decision-making bodies, and to ensure the financial and institutional sustainability of scientific research committed to social advancement.

In the 1990s, an economic model of international competitiveness, following the so-called Washington consensus, was widely introduced in Latin America. This model replaced the previous development model based on the substitution of imports. The new model was based on the assumption that if the economy were allowed to grow unhindered, increased productivity and higher income would allow people to take care of their health, education and retirement needs with as little help from their governments as possible. This assumption has, however, been questioned. The gist of the debate is to explain a situation in which underdevelopment and democracy, inequality and 'good' governance, economic growth and lack of distributive justice may coexist in conditions where the state is efficient, the economy is competitive and large pockets of poverty are being reduced, but high levels of income inequality nevertheless persist.

In the Latin American region, major socio-economic changes – fast economic growth coexisting with major inequalities – raise a new set of social and economic issues of which the public were unaware just a few years ago. The social sciences can be crucial in providing understanding of the complexities and contrasts of this variegated social landscape. This paper presents the institutional aspects of the region's social sciences, trying to find some clues to their mixed results in terms of quality and relevance.

The changing institutional landscape of the social sciences

In Latin America, the implantation and early development of the social sciences assumed different forms in keeping with each country's political and cultural specificities. From the 1950s to the 1980s the complex political context, particularly in the Southern Cone countries (Argentina, Uruguay and Chile), forced many social science researchers into exile. Thus the institutionalization and professionalization process of many social science disciplines occurred in a framework of international exchanges. This framework expanded the field's orientation towards a regional Latin American perspective.

The main institutional actors have been universities, science councils, public and private social science research centres, NGOs, consultants and consultancy firms, and regional centres such as the Latin American Council of Social Sciences (CLACSO), the Latin American Social Sciences Faculty (FLACSO) and the United Nations Economic Commission for Latin America (ECLA). In the region, these agencies have had a strategic role in the definition of dominant research themes. Between 1950 and 1970, ECLA was among the key centres for the creation of knowledge and critical social thought about issues related to Latin American 'underdevelopment', such as state–society and centre–periphery interactions. This involvement resulted in an original contribution that inspired social and political reflection and action for decades. In the absence of national policies to set social science priorities, CLACSO became the regional body shaping the field's expansion.

Universities are crucial institutional actors. The evolution of the social sciences in Latin America can only be understood by taking into account the changing relationship between the public universities and the state, and the conflicts and social movements which have involved universities. They have led to the partial transformation of universities and to the creation of new institutions. The expansion of higher education in Latin America, especially since the 1970s, produced a substantial increase in the number of social

science and humanities students. This increase was related to the expansion of private-sector higher education, a phenomenon that varied between countries. In Argentina, 79 per cent of all higher education students are still in public institutions, while private enrolment far surpasses public enrolment in Mexico, Colombia, Costa Rica, Chile, the Dominican Republic, and above all Brazil. Brazil has one of the most privatized higher education systems in the world, comprising 72 per cent of students and 90 per cent of institutions (Días Sobrinho and Lemaitre, 2007). It is also worth mentioning that 90 per cent of higher education institutions in the region are only engaged in teaching activities. Most research is carried out at postgraduate level, where some public universities play a major role. In fact, more than two-thirds of all Latin American postgraduate programmes are offered by the public universities of Brazil and Mexico (Brunner, 2003).

In most countries a science council is the state agency that funds research, training researchers by granting scholarships and funding graduate programmes. Some councils, such as CONICET in Argentina, CNPq in Brazil, and CONACYT in Mexico, have their own institutes, often linked with universities. In some countries (Argentina, Brazil, Colombia, Chile, Mexico, Costa Rica and Venezuela), the science councils provide substantial funding. They have also contributed to the emergence of social science research communities, without interfering with their content and orientation. In general, social science research communities have developed their own agendas, policies and research approaches. But science councils have recently assumed a more active role in redefining research agendas by asking social science research to tackle certain social agenda issues. Poverty eradication has become a top priority of some governments in the region.

Independent social science research centres, NGOs and consultancy firms include a range of institutions of varying age and commitment. Research centres date back to the 1940s. They grew and acquired visibility as a response to the military regimes' closing down of the Southern Cone universities' social science institutes and programmes in the 1960s and early 1970s. In Brazil, CEBRAP was founded in 1969 by a group of university professors, some of whom had been expelled from their universities by the military dictatorship. To date, CEBRAP's main focus has been the analysis of Brazilian reality. Similarly, when the March 1976 military coup led to the disempowerment and impoverishment of Argentine universities, the social sciences came under direct attack and precarious independent academic centres like CEDES and CISEA were created (Trindade et al., 2007).

NGOs and consultancy firms comprise a very varied mix. They are more dependent on government and international funding and the sale of specialized services than are the independent institutions. Short-term consultancies, particularly in Central America and the Andean countries, prevail over more ambitious, high-quality research. The presence of international research funding also has an impact on research agendas throughout Latin America.

There is no reliable information about the distribution of social science researchers in different employment sectors, but it seems to be diverse. In 2007 in Argentina, for example, 41 per cent of full and part-time social science researchers worked for private universities, 24 per cent for public universities, 25 per cent for non-profit non-academic entities (NGOs and others), 7 per cent for public, non-academic organizations and 1 per cent for firms (MINCYT, 2008).[1] Costa Rica's situation is very different: in 2006–07, 86 per cent of social science researchers were in the academic sector (public and private), 12 per cent in the government sector, 2 per cent in non-profit units and 0.25 per cent in international agencies (MICIT, 2007).

The growing importance of social science training and research

Between 1970 and 2000, social science experienced much greater growth than any other knowledge field. In 2006, 57 per cent of university graduates in the region were in social sciences.

Postgraduate education grew particularly fast. Masters courses in social sciences have expanded rapidly. In 2006, they comprised 42 per cent of the total Masters degree market. The trend is different at the doctoral level. Here social science plays a relatively minor role in terms of student numbers, but has shown a considerable growth rate (14 per cent in 2006) (RICYT, 2008).

Brazil makes the greatest effort to train graduates by Ph.Ds and Masters degrees. Today it can produce 10,000 Masters graduates and a little over 2,500 Ph.Ds in the social sciences and humanities per year (CAPES, 2007). Government and the non-academic public sector seem to be absorbing considerable numbers of these social science graduates.

Brazil, Ecuador and Guatemala, together with Bolivia, Trinidad and Tobago, Uruguay, Argentina and Chile, form a

1. This appears to be a result of Argentine science policy in recent years, which has been characterized by the sustained growth of research funds allocated on a competitive basis to researchers in different centres, public or private, while the number of full-time lecturers in public universities has remained stagnant.

group of countries in which social science accounts for 10 to 20 per cent of all researchers. The other group comprises Colombia, Costa Rica, El Salvador, Paraguay and Venezuela. Here social science researchers represent 21 to 30 per cent of all researchers. Mexico constitutes a group of its own, with social science researchers representing 59 per cent of all Mexican researchers.

In 1999, local socio-institutional contexts for the development of research and the training of researchers showed important weaknesses due to unfavourable working conditions. Many Masters and Doctoral programmes did not even include research. Today, the larger countries (Brazil, Mexico and Argentina) are becoming centres of attraction for students and researchers from other countries and for international cooperation.

Trends in the funding and evaluation of research and researchers

The public-sector funding crisis has favoured the expansion of private universities and research centres. As a general trend, a deprofessionalization of the higher education teaching staff is noticeable, and the number of full-time researchers is declining. Funding for competitive projects has grown in importance, while the institutional funding allotted to universities has diminished. This has increased conflict between teachers and researchers, between institutions, and between institutions and ministries. In many cases, multilateral financing organizations such as the Inter-American Development Bank (IDB) have driven this tendency.

In parallel to this trend, some governments have established mechanisms to evaluate researchers' performance since the 1980s. Competition and excellence are emphasized by special programmes or agencies. In Argentina, Brazil, Colombia, Chile, Mexico, Venezuela, and more recently Uruguay, researchers' productivity determines their careers' permanence and progress. Productivity also facilitates access to funding. In these countries, governments have delegated assessment to the researchers themselves via the scientific community's own criteria, as determined by the National System of Researchers (SNI) in Mexico and the Program for the Promotion of Researchers in Venezuela (PPI).

As early as 1976, Brazil developed a system for evaluating postgraduate programmes coordinated by the Coordinating Agency for the Improvement of Higher Education (CAPES), a move unparalleled in Latin America. CAPES introduced clear rules and incentives, and provided important infrastructure inputs like broad, open access to international publications through a special CAPES subsidy. This led to a quantum jump in Brazilian participation in international publishing as well as in the country's ability to train researchers and professionals with advanced degrees (CAPES, 2007; Russell and Ainsworth, in this Report).

In other Latin American countries, however, the effects of incentive programmes have not necessarily been satisfactory. There is a good deal of criticism, even among more successful countries, of the rules and procedures that have to be navigated, although they may be a significant source of extra income and social status. The challenge faced by this type of programme is to elaborate a formula that guarantees quality, respects the autonomy and preferred work methods of researchers in different knowledge fields, and does not overburden them with repetitive bureaucratic paperwork.

Supplementary measures should be implemented which might increase the alternative funding sources available to the social sciences. Methods should be explored that foster collaboration and networking with larger research teams rather than focus on rewarding individuals, and which increase the quality and visibility of Latin American scientific publications.

International mobility

The emigration of scientists, engineers and social scientists has long been observed in the literature on development, politics, science and technology, and higher education. Particularly since the 1960s, it has been analysed as damaging to community-building efforts and therefore as an obstacle to development strategies. In the 1970s and 1980s, researchers left for political reasons. Later on, they did so because of economic and working conditions. While the majority emigrated to the northern hemisphere, which has often meant a loss of local research capacities, the circulation of researchers in the region has fostered an awareness of commonalities and shared culture, and the possibility of a new interplay between social actors in the construction of integrated intellectual projects (Didou Aupetit, in the Report).

The emerging agenda

Towards the end of the 1990s, social science in the region entered a period of self-evaluation. Many social science researchers spoke of a crisis in the field and of new challenges posed by twenty-first-century developments. Social science was said to have lost much of its critical edge in its contribution to the analysis of social and cultural phenomena. At best, it became more instrumental to social management, and at worst, a trivial practice of little social use. In the universities, a new mode of thinking

emerged, which was associated with the New Public Management approach which prevails in OECD countries. A new discourse on themes such as the market, marketing, productivity, competitiveness, rationalization, governance, procedures and management, grew popular in some areas, replacing the traditional debate on dependency theory that had been dominant in the 1970s.

Do these changes mean that the region's previous social science research agenda (sovereignty, legitimacy and power) has been forgotten? It does not seem so. By the middle of the first decade of the new century, when several centre-left and left-wing governments came to power in the region, the political landscape changed again. There has been a strong resurgence of concern with the very unequal distribution of power and resources in today's world. In addition, there have been movements towards regional integration in which social, economic and political thought have played a fundamental role, trying to fill Latin American social science's political theory gap.

Thus, in the 2000s we have seen a change in many of the programmes that ruled social science in the 1990s. We have witnessed a return to some of the ideas that guided regional social science in the 1960s and 1970s. Old theoretical perspectives have been vindicated, such as the subjectivities of indigenous and other marginalized social groups, contestations by feminism, cultural studies and science studies. Among the themes that are resurging or being reformulated are social movements, social participation, multiculturalism, endogenous development, Latin American identities, education and urban violence. At the same time, new topics have emerged, such as those related to the media, information and communications technologies, the deepening of democracy, sustainable development, and climate change (CLACSO's website).

Perspectives and challenges for the social sciences

Increasing and often contradictory demands put enormous pressure on public authorities. Even in the best circumstances, with good governments and economic growth, the daunting social problems facing Latin America in areas such as health, poverty, education, employment and living conditions will endure for decades to come. Nevertheless, they can be faced, reduced and better administered if proper policy decisions, based on appropriate information and research, are taken and if public authorities' administrative and managerial competencies improve.

In most Latin American countries, social conditions have improved slowly due to faster economic growth. But they remain far from satisfactory. Improvements have been too slow, the problems of an ageing population and urban decay bring new and very difficult challenges, and crucial social, economic and political problems are addressed with varying degrees of success. Nonetheless, there are many individual examples of good practice. In this new scenario, some of the challenges to social science are to build renewed theoretical approaches capable of guiding research and action. These approaches should also have the potential to overcome the most prominent social and natural problems, to address the networking of researchers and the integration of results in such a way as to constitute a renovated regional view, to improve output dissemination and use in academic and decision-making bodies, and to ensure the financial and institutional sustainability of scientific research committed to social advancement.

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The state of social science in sub-Saharan Africa

Johann Mouton

The social sciences in sub-Saharan Africa continue to operate under conditions that are seriously under-resourced. The fact that there is still sustained and vibrant social sciences research in countries which, with a few exceptions, have little government support, poor institutional facilities and many other challenges says a great deal about the resilience and resolve of the scholars concerned.

Introduction

In sub-Saharan Africa, social sciences and the humanities are predominantly practised within universities. A few countries have government-funded research institutes devoted to the social sciences (for example, the Human Sciences Research Council in South Africa). Independent social research institutes (for example, the Institute for Basic Research in Kampala, and again, many examples in South Africa) and research NGOs are more prevalent in many countries. An increasing number of these research institutes and centres are funded either through international agencies or by donor organizations with little if any government support. But it is not surprising that the history of social sciences in this region is intimately related to the history of African universities.

As Sall (2003) rightly observes, the independence, nation-building and development euphoria of the 1960s and 1970s; economic and social crises; the subsequent structural adjustment process, mainly induced by external actors; the crisis of the state; and the spread of armed conflict have all left their mark on the social sciences, on higher education and research institutions, and on researchers and research communities in Africa. More recently, democratization processes in increasing numbers of African states, the end of the Cold War, globalization, the general conversion to liberal economic doctrines, the information and communications technology revolution, and the popular and intellectual struggles that these processes have engendered, have all impacted on the social sciences in various ways.

Before independence, there were colleges, university colleges or fully developed universities in countries such as Sierra Leone, Ghana, Nigeria, Ethiopia, Uganda, Senegal, Rhodesia and Nyasaland, Egypt, Morocco, Algeria, Tunisia and South Africa. However, the development of social science research and the teaching of the social sciences are very much post-colonial phenomena. Even in South Africa, which has had universities for more than 150 years, university-based social science research only really developed and expanded in the era after the Second World War. In many African nations the post-colonial state built most of the research and training institutions (universities, institutes and centres) in the first few decades after independence, mainly since the 1960s.

Trends in research output

It is well known that Africa's share of world science as measured by papers published in ISI indexes has been declining steadily over the past decades.[1] Various studies by Gaillard, Waast and others have examined this issue (Gaillard, Krishna and Waast, 1997), but arguably the most comprehensive and up-to-date bibliometric analysis of this trend is captured in Robert Tijssen's 2007 article in *Scientometrics*.

In his analysis, Tijssen shows that sub-Saharan Africa has fallen dramatically behind in its share of world science production – from 1 per cent in 1987 to 0.7 per cent in 1996 – with no sign of recovery. This diminishing share of African science overall does not reflect a decrease in the absolute number of papers, but rather an increase in output below the global growth rate. Africa has lost 11 per cent of its share in global science since its peak in 1987; sub-Saharan science has lost almost a third (31 per cent). The countries of North Africa – Egypt and the Maghreb

1. We are aware that any exclusive focus on papers published in the more than 9,000 journals of theThomson ISI Web of Science ignores a significant body of scholarship published elsewhere: either in local journals or journals (very often francophone or lusophone) not included in the ISI indexes.

(Algeria, Mauritania, the Libyan Arab Jamahiriya, Morocco and Tunisia) – accounted for the modest growth in the African share of the worldwide output from 1998 to 2002.

Table 2.2 presents the breakdown of ISI papers for the social sciences and humanities (SSH) over the past 20 years by country. Only countries that produced more than 200 papers over this period are included. The table shows that over this time, output has increased steadily with an overall growth rate of 112 per cent. A number of countries that did not produce many papers in the ISI journals twenty years ago have recorded huge increases. The noticeable exception is Nigeria, with a negative growth rate (-27 per cent), presumably an indication of the impact of the high-level brain drain on that country. South Africa's domination in sub-Saharan Africa is evident; the country produces about half of all output in the social sciences and more than three times more than Nigeria, the second most productive country.

A breakdown of output by university reveals the domination of South Africa. Eight of the top ten and eleven of the thirty most productive universities are located there. However, the data also raises the question of whether a critical mass of universities exists in the region, which is able to maintain a steady annual output. Only the top seventeen universities are able to produce an average of twenty papers per year in ISI journals. Many traditionally strong universities in countries such as Nigeria, Kenya, the United Republic of Tanzania and Zimbabwe struggle to maintain even these levels of output.

In an attempt to address African journals' lack of presence in international indices such as ISI, the International Network for the Availability of Scientific Publications (INASP) launched a project in 1997 to give African journals greater exposure – African Journals Online (AJOL). According to the latest figures, more than 340 journals are currently indexed in AJOL, which is based in Grahamstown in South Africa and managed by the National Inquiry Service Centre. Of these 340 journals, approximately 100 are categorized as being in the social sciences or the humanities (SSH). This list does not represent all SSH journals published in Africa, but it does allow us to gain a sense of local social science scholarship. We counted the articles produced in the 78 AJOL journals during the period 1999–2007. In addition, we also counted the number of articles published in the 120 SSH journals published in South Africa during the period from 1990 to 2007.

When we look at articles published in AJOL as well as in South African social science and humanities journals, the overall scholarship picture changes considerably.

Table 2.2 > Social science and humanities output by country in sub-Saharan Africa according to ISI, 1987–2007

Year / Number of articles	87–89	90–92	93–95	96–98	99–01	02–04	05–07	1987–2007	% distribution	Overall growth rate 1987–2007
South Africa	975	1,089	1,196	1,462	1,482	1,906	2,785	10,895	50.7%	+185%
Nigeria	748	626	438	382	341	475	542	3,552	16.5%	-27%
Kenya	182	153	189	189	259	353	414	1,739	8.1%	+127%
Zimbabwe	106	145	127	168	122	154	163	985	4.6%	+54%
United Republic of Tanzania	71	63	99	106	111	130	238	818	3.8%	+235%
Ghana	50	87	88	96	124	101	137	683	3.2%	+174%
Botswana	41	42	71	119	117	137	133	660	3.1%	+224%
Ethiopia	42	57	42	56	65	108	147	517	2.4%	+250%
Uganda	16	24	46	60	79	103	159	487	2.3%	+890%
Cameroon	17	54	41	51	66	81	95	405	1.9%	+2,282%
Zambia	72	36	44	25	23	33	73	306	1.4%	+325%
Malawi	25	36	54	40	22	30	48	255	1.2%	+920%
Namibia	7	10	33	38	28	40	48	204	0.9%	+2,814%
Grand total	**2,352**	**2,422**	**2,468**	**2,792**	**2,839**	**3,651**	**4,982**	**21,506**	**100.0%**	**+112%**

Table 2.3 > SSH articles in sub-Saharan Africa by source, 1990–2007

Distribution of articles by index		1990–1992	1993–1995	1996–1998	1999–2001	2002–2004	2005–2007	1990–2007
SSH articles in ISI journals		2,422	2,468	2,792	2,839	3,651	4,982	19,154
SSH articles in non-ISI journals	Non-SA AJOL journals				1,136	1,565	2,247	4,948
	South African journals	4,877	5,252	5,058	4,840	4,746	5,900*	30,673
Total		**7,299**	**7,720**	**7,850**	**3,975**	**9,962**	**13,129**	**54,775**

Source: 1990–2007

Note : There are many South African journals in AJOL which in this table have been counted under South African journals

* Conservative estimate based on information in *SA Knowledgebase*.

First, we see that international publication in ISI journals (19,154 articles during the period 1990–2007) only constitutes about one-third of the total social science scholarship in the region. Given that these figures exclude significant francophone journals and journals not listed on AJOL, the ISI share is undoubtedly even smaller in practice than this figure suggests.

Second, leaving aside South Africa, a small number of countries again produce the biggest shares of the AJOL output: Nigeria (37), Ghana (7), Ethiopia (6), Senegal (5), the United Republic of Tanzania (4), Uganda (5) and Zimbabwe (4). However, of the total (78) number of non-SA AJOL journals on this list, 27 have not produced any articles since 2006. Finally, these figures show how invisible African scholarship in the social sciences and humanities is, and why initiatives to give these publications greater exposure by supporting journals, open access repositories and other measures are so important.

Research institutes, centres and networks

The lack of government support for social science research in sub-Saharan Africa translates into very little support for research institutes and centres dedicated to the social sciences and humanities, whether based at universities or effectively operating as NGOs. CREST compiled a list of research centres dedicated to the social sciences in twenty-five sub-Saharan countries excluding South Africa. Of these, only seventy-nine (or 53 per cent) had an active website at the time of writing this chapter. But even having an active website does not necessarily mean that the website has current contents: we assessed a website as 'current' if it contained news or listed events at the centre during the period from 2007 to 2009. According to our assessment, only 65 (43 per cent of the overall total) of these websites have contents that could (very charitably) be regarded as recent.

A noticeable exception to this trend is the state support for the Human Sciences Research Council (HSRC) in South Africa. The HSRC is a parastatal body, more correctly one of nine science councils, which receives core funding from the South African Government under the national science vote. Its mission is to conduct strategic and applied social science research in support of national developmental goals. In recent years, because of cuts to its parliamentary grant, it has been forced increasingly to compete with other South African research institutions including universities and NGOs for international and national contracts. But it remains a significant national asset with a research staff complement of nearly 165 social scientists working in areas such as democracy and society, education and science, HIV/AIDs and health systems, poverty and development, the world of work and others. More information can be obtained from its website: www.hsrc.ac.za.

The precarious state of many of the SSH research centres in the region is indicative of a more general trend in research and scholarship in many African countries – the deinstitutionalization of science. With the decline in the number of robust and vibrant university-based research centres, we are witnessing an increase in transnational and regional research networks. It could be argued that such networks are emerging as a direct result of globalization, greater international collaboration and increased access to the internet. At the same time, such networks are also filling the void left by the lack of strong national research centres. The vast majority of these networks focus on interdisciplinary and more applied fields of the social sciences. Examples are the SAHARA network for the social aspects of HIV and AIDS, and the African Labour Research Network. These networks are predominantly sustained by international agency funding. Most of them are engaged in a range of activities which include research but also capacity-building and training, networking through conferencing and other means, as well as advocacy and policy work.

Modes of knowledge production

What kind of social science is being practised in African countries? Here we discuss two 'types': academic science in universities, and consultancy science for international (overseas and locally based) organizations.

Academic science refers to science practised by individual scientists or groups within universities. Much of this research is underfunded and is published in local journals that are not internationally visible. This form of research is very often driven by the individual scholar's priorities and interests, and is ultimately aimed at advancing their career. Given Africa's lack of a research infrastructure (strong-research centres with a critical mass, sustained funding and institutional continuity), these scholars end up engaging in projects that do not translate into building institutional capacity.

This individualistic research does not have much influence on society and rarely carries much weight. Governments and decision-makers – but also university bureaucrats – are impressed and influenced by size (large centres, networks and think-tanks) and continuity in scholarship over time. Where social science scholarship is primarily individualistic, it is unlikely to be taken seriously or to influence policy. So its status will be low to negligible.

Perhaps even more serious are the intellectual consequences of this form of research. It leads to fragmentation of effort, lack of critical dialogue within a community of scholars and often a lack of methodological rigour. Discipline-based work will eventually decline and basic scholarship such as social theory will also suffer.

Individualistic research is one side of the coin, of which the other face is consultancy research. 'Consultancy' social science refers to the widespread practice of academics engaging in consultancy work – mostly for international agencies and governments – to augment their meagre academic salaries. It is most prevalent in specific disciplines such as the health sciences, business studies, ICT, and monitoring and evaluation work, but is still widespread and on the increase. In an attempt to quantify the extent of consultancy work in many African countries, and also to shed more light on the underlying reasons for its growth, CREST recently completed a study in the Southern African Development Community region which addressed a number of these issues.[2] The results show that more than two-thirds of all academics in the fourteen SADC countries regularly engage in consultancy.

What were the respondents' main reasons for engaging in consultancy? We distinguished between the responses of South African and other SADC-country scholars, but there was very little difference between these two regions in the answers to our first two questions. First, consultancy is undertaken because the respondent enjoys the variety in topics that this brings (87 per cent versus 82 per cent); second, consultancy is undertaken because of the demand in the market (32 per cent versus 38 per cent).

The other reasons provided, however, demonstrate large differences between the South African and other respondents:

- Inadequate salary (cited as a reason by significantly more SADC respondents): 54 per cent in South Africa and 69 per cent elsewhere in SADC.
- Consultancy advances my networks and my career: South Africa 39 per cent, SADC other 72 per cent.
- My research interests are not addressed by my own institution: South Africa 18 per cent, SADC other 47 per cent.
- Consultancy improves my knowledge and skills: South Africa 78 per cent, SADC other 92 per cent.

A further breakdown by scientific field revealed significant differences, mostly in an expected direction. Large percentages of respondents in the more applied scientific fields where there are close links with industry and also government, such as applied sciences and technologies, earth sciences, engineering and material sciences, engage in different forms of consultancy. Academics in the economic and social sciences also reported high levels of consultancy engagement. In both groups, the majority of respondents reported carrying out consultancy. Perhaps the most surprising result is that a majority of academics in the humanities (61 per cent) indicated that they do some form of consultancy work. The overall picture points to the wide prevalence of consultancy work across all scientific disciplines.

Funding of social science research

State funding of social science research in sub-Saharan Africa is the exception rather than the rule. The majority of social scientists in the region depend on international donors such as Sida/Sarec, NORAD, DANIDA, on the Netherlands, French and British governments in Europe, on various foundations in the USA (most notably Ford, Rockefeller, Mellon, Kresge, Kellogg, Atlantic Philanthropies and Carnegie) or on IDRC in Canada, for their research funding. A distinction should be made between those grants that support social science research more directly (as is the case with CODESRIA, and the Organization for Social Science Research in Eastern and Southern Africa (OSSREA), and more indirect institutional support aimed at strengthening scientific institutions, such as Sida's support of journals in Ethiopia and Carnegie's support of libraries and ICT networks in East and West Africa.

A recent study of the role of international funding in countries in Southern Africa confirms these trends, and perhaps for the first time, indicates how dependent academics in the region are on such donor funding. The study of the SADC countries evoked responses from more than 600 academics. The results showed that a very substantial 42 per cent of all respondents from SADC (South Africa excluded) indicated that they source between 70 per cent and 90 per cent of their research funding from overseas, compared with only 6 per cent of South African respondents. The responses show very clearly the dependence of SADC scientists on international funding, and conversely, how little domestic funding is available for research. The actual state of affairs is probably even worse than these figures suggest. The scientists in our sample were identified because they are the most active and productive researchers in their fields and countries.

2. Study conducted by the Centre for Research on Science and Technology at Stellenbosch University under commission for the Southern African Regional Universities Association (SARUA). Final report is available from the SARUA website: www.sarua.org

Themes in social science research

To what extent does science in the region (including both the social sciences and the humanities) address the most important development goals of the respective countries? Do scientists pursue research that is consistent with national priorities, or are these of secondary concern?

A breakdown of the SADC study by field of research shows that we always need to keep in mind differences between scientific areas. The results show that significant proportions of scholars in all fields either agreed or strongly agreed with the statement that their research agendas are consistent with their countries' development goals. For scholars in the arts and humanities, this percentage was 75 per cent, for the economic and management sciences 87 per cent, and for the social sciences 83 per cent. These proportions compare favourably with fields such as agriculture and health, which are traditionally regarded as the more applied sciences.

Another thematic area to which the social sciences are making an increasingly significant contribution is the burgeoning scholarship on HIV/AIDS in Africa. A bibliometric assessment of the number of HIV/AIDS-related articles with SADC institutional affiliation has shown a steady increase over the past 17 years, from 2,156 in 1990 to 3,305 in 2007, especially between 1999 and 2006. This trend is mainly due to an increased output in the medical and health sciences, but publications in the field of the social sciences and humanities have also increased since 2000 despite a small decline in 2007.

Major challenge for social sciences in sub-Saharan Africa

This review has demonstrated that the social sciences in sub-Saharan Africa continue to operate under conditions that are seriously under-resourced. The fact that there is still sustained and vibrant social sciences research in countries which (with a few exceptions) have little government support, poor institutional facilities and many other challenges says a great deal about the resilience and resolve of the scholars concerned. We should also add that most official science policy statements and national research plans make little mention of the social sciences. The emphasis is on the health sciences (especially HIV/AIDS, tuberculosis [TB] and malaria), popular priorities such as biotechnology and nanotechnology, and the more applied sciences. Where reference is made to the social sciences and humanities, they usually appear in an appendix, in support of the natural sciences. A noticeable recent exception is the latest strategic thrusts of the Department of Science and Technology in South Africa, where the humanities and social sciences are identified as one of five main priorities.

Building an individual and institutional research capacity remains the main priority for the social sciences in the region. And although there are many examples of research capacity-building initiatives sponsored and supported by various international agencies, donor organizations and foreign governments, there is still very little consensus about the most effective approach (Simon, 2000). Debates continue, for instance, on investing in individuals or institutions (Costello and Zumla, 2000; Nchinda, 2002), whether postgraduate training in the global North exacerbates the brain drain (Nchinda, 2002) and on southern African control of research budgets (Lansang and Dennis, 2004; Nchinda, 2002). The science institutions in many sub-Saharan countries have been systematically eroded and destroyed over the past three decades through international economic policies as well as by the devastating effects of domestic policies and events. The cumulative effect of these policies over time has been a decline (at least in relative terms) in scientific output, changes in modes of scientific work, the devaluing and degrading of the science profession, and of course, the brain drain.

Many commentators (Aina, Zeleza and Mkandawire to mention a few) have commented on the lack of indigenous African theories and conceptual models to address the region's social dynamics and challenges. This is not a new observation. It is clear, however, that this call for theoretical innovation and more sociological imagination is even more relevant in an age of globalization and internationalization, of the continuous decline of key scientific institutions including research centres, societies and journals, in many countries, and of the widespread lack of government support for social sciences research in sub-Saharan Africa.ب

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Social sciences in the Arab world

Rigas Arvanitis, Roland Waast and Abdel Hakim Al-Husban

The Arab world is home to a large number of talented students and academics, but the social embedding of science remains unsteady and research does not play a specific role. There are however significant differences between regions and countries: histories, social contexts, institutional arrangements, the role of the state, and past and present development models must all be taken into account.

The Arab world is home to a large number of talented students and academics. Paradoxically, no specific goal has been assigned for their research. As one of us observed:

> *the social understanding of science considers obtaining a PhD degree as the end of the reading and research process. The degree rather than the research record is what determines an individual's social status, both outside and inside the university.*
> (Al-Husban, 2008)

In other words, the social embedding of science remains unsteady and research does not play a specific role.

This general statement must be nuanced since there are significant differences between regions and countries: histories, social contexts, institutional arrangements, the role of the state and past and present development models must all be taken into account. By integrating these criteria, four different research and innovation models seem to emerge: the Gulf countries, the larger developmentalist states (Egypt, Iraq, the Syrian Arab Republic), the Maghreb, and the Middle East.

Four regional models

The Gulf countries

Having obtained their independence in the 1960s and 1970s, most of the Gulf countries have adopted an 'Anglo-Saxon' approach to research, leading to the creation of 'elite' universities specializing in the natural and exact sciences, and to the development of partnerships with foreign countries and institutions. The human and social sciences, on the other hand, are relatively closed to collaboration with foreign partners and priority is given to Arabic-speaking academics. A pragmatic approach to science has come into being, which largely draws on local issues. In the social sciences and humanities, an instrumental approach to research dominates: sociology effectively takes the shape of social engineering, economics is primarily business-oriented, and Islamic philosophy or law is dominant within the humanities. Research is mostly restricted to universities. It is sometimes funded by the state but more generally by foundations and is increasingly produced by an expanding number of foreign professors. In order to handle the 'post-oil' era, Gulf countries are allocating resources to manage the transition towards a knowledge economy. In order to do so, they import Western skills and expertise, through the creation of Gulf country campuses of internationally recognized universities (the Abu Dhabi chapter of the Sorbonne, for instance) (Romani, 2009).

The larger developmentalist states

From a very early stage, Egypt (as well as Iraq and to some degree the Syrian Arab Republic) established a mass education system – including universities – whose purpose was to train a technical workforce capable of implementing their development model of mass production geared to domestic markets. The so-called 'developmentalist state' (Amsden, 2001) played the main economic role. When it changed orientation, it also abandoned its monopoly over education. Private colleges and universities proliferated (doing little if any research) while the overall quality of public higher education diminished. It suffered from underfunding, leading to low staff incomes and status, and overcrowding. A number of academics and researchers have moved (at least temporarily) to the Gulf countries, where the increase in demand produces higher wages for foreign and Arabic-speaking academics. In Egypt, a substantial number of academics are drawn towards consultancy and expert positions. Support for research is mainly channelled through foreign – and more rarely local – funding agencies. Research no longer depends solely on state funding. These

new dynamics have significantly transformed academic hierarchies to the benefit of externally funded networks rather than state patronage.

The Maghreb countries

The Maghreb countries (Morocco, Tunisia and Algeria) have adopted an institutional and intellectual model that draws its inspiration from Europe (especially from France) with which they have important scientific relations. Following independence, they set up universities and prestigious polytechnic institutes, highly selective schools for high-ranking bureaucrats and business leaders. They also established national research centres that focused on a variety of different fields, including the social sciences. State oversight remains strong, and nationalist and secular governments are managed by technocratic elites. The entire education and research system functions without private-sector support, which (even lately) has been unable to carve out a significant share of the research activity. Scientific talents and vocations are abundant, and research is recognized and accepted as a career.

The Middle East

In stark contrast to the larger developmentalist states and the Maghreb countries, the smaller Middle Eastern countries (Jordan, Lebanon) have centred their social and economic models around commerce and international trade rather than on industrial mass production. In these countries, most universities are private and quite recent. Private institutions do little research, except for the two oldest and most prestigious ones: the American University of Beirut (AUB) and Saint Joseph, established in Beirut in 1863 and 1875 respectively. The Lebanese University, set up in 1953, is the only public university in Lebanon. It mainly focuses on teaching (concentrating half of the country's student population) rather than research. Two or three others can be cited in Jordan: Jordan University in Amman and Yarmuk University at Irbid (which include human and social sciences, while the very good JUST University at Irbid is only for S&T disciplines).

A number of commercial research centres, consultancy firms and NGOs have recently been created in the social sciences in response to demand for internationally funded field studies from foundations and universities.

The social grounding of the social sciences

As in other scientific disciplines, social sciences training and research in the Arab world are mostly performed by academics who work in public institutions. They generally equal or outperform other university sciences numerically. Students in the human and social sciences account for two-thirds to three-quarters of total enrolment figures, and faculty members for a third to a half of total staff (Table 2.4). The main difference between the social sciences and other disciplines is not so much the working conditions (professional status, wages, careers, funding) but the ways in which they affect and are received by society. The social sciences are intimately related to local problems and realities. Research results are often published in local languages for a local audience. They reflect local values and understandings. They are not only influenced by these values, but can also have an influence on them. The social sciences are sensitive to the social environment and to its support to them.

Social and political environment

Arab societies are generally governed by social communities, lineage relations and religious beliefs, which all tend to impinge on creativity. A highly critical report from the United Nations Development Programme, written by recognized regional experts, has highlighted inadequate relationships to knowledge as one of the three main handicaps hindering progress in the Arab states (UNDP and Regional Bureau for Arab States, 2002). The report criticized a trend at both the teaching and family education levels to hinder freedom of thought, leaving little room for creativity. In societies that are dominated by power, wealth and patriarchal values, knowledge has a relatively low social status. Furthermore, the state and the political sphere dominate all other activities. There is a trend within authoritarian regimes to exercise a heavy control over the social sciences, limiting freedom of thought and setting boundaries in terms of acceptable and unacceptable areas for research and teaching (Al-Taher, 2004).

Table 2.4 > Proportion of human and social sciences students and faculty members in the total number of students and faculty in selected Arab countries, circa 2004

	Morocco	Algeria	Tunisia	Jordan	Kuwait
Percentage students	78	49	62	61	65
Percentage faculty members	41	27	32	50	48

Source: ESTIME background reports (all countries except Kuwait) and UNESCO special initiative of the Global Forum on Higher Education and Research (Kuwait). Data refer to Morocco 2003/04; Algeria 2000/01; Tunisia 2004/05; Jordan 2003/04; Kuwait 2004.

Support for science through policy

Nevertheless, when we look at the overall figures, science is actually developing in the region (Arvanitis, 2007; Satti, 2005). Despite its reservations and doubts, the state has done a great deal for research through regulatory measures,

notably by linking academic careers to research activities. As a symbol of modernity (the Gulf), rationality (Tunisia), national unity (the Syrian Arab Republic), or the development model (Nasser in Egypt, but also Algeria), higher education, and to a certain degree research, has at one time or another benefited from the support of national governments. Despite a few exceptions in some specific periods in Egypt or Algeria, governments have not totally restricted academic freedom as happened in other parts of the world. Instead they have tied academia down to centrally controlled institutions (public services, research centres, polytechnics and even universities), preventing the emergence of autonomous scientific communities. In certain instances, modernist factions in power have developed strong alliances with the promoters of scientific activity in order to advance their own struggles in the political sphere. Algeria offers the clearest example of such a 'socio-cognitive bloc' (El Kenz, 1997), periodically uniting the research avant-garde with 'technocrats' in order to defeat the 'patrimonialists' (as the two opposed views of Algeria were labelled). This is a volatile and fragile form of support since it is conditioned by the regime, the factions in power, political alliances and personalities. In certain cases, policy changes reflect strong ideological oppositions over the role that scientific or religious knowledge should play in society (El Kenz, 1997; Waast, 2006).

Other non-state sources of support for science

Fortunately there are other sources of support for scientists who wish to devote more time to scholarly activities. International scientific collaborations help researchers to keep up to date and to gain access to funding. Over the past few years, the European Union has greatly influenced the research agenda in the region. Other countries such as Egypt or Jordan have privileged the development of ties with the USA (Pasimeni et al., 2006; Rodríguez Clemente and González Aranda, 2007).

Throughout these countries, a diversity of 'sociocognitive blocs' contribute to link scientific activities to specific communities or social groups, such as liberal elites in Egypt and Lebanon, influential families in the Gulf states, or the technocratic strata in Algeria. Despite its idiosyncratic nature, this feature is paramount in explaining the appearance and survival of research groups and agendas. This has also been the case in peripheral countries on other continents (Vessuri, 2006). The very content of research in social sciences reflects these alliances by promoting a role for social sciences that can be qualified as a support to development rather than a critical stance toward society.

Finally, the growth of science appears to stem from the professional norms that are internalized by a few individuals during their training, and by specific institutions (at least one or two per country) that compete for international recognition and which use research to demonstrate their value and status.

The multiple roles of scientists

The adverse features that have just been mentioned help us to understand the scientific community's tendency to hold a variety of different professional positions, which are not always linked to research. This is due not necessarily to financial pressure, but rather to the desire for status. It is also a response to social and family pressures. Close relatives and the people in an individual's direct social environment do not generally regard the job of 'researcher' as a proper professional activity. It does not have the same recognition as 'professor', 'doctor' or 'engineer,' for instance (Al-Husban, 2008).

Social scientists' participation in the public sphere has risen. It now involves writing in reputable news magazines and newspaper opinion columns, working for think-tanks, organizing symposiums, taking part in empowerment initiatives, holding other more 'reputable' professional jobs (lawyers, entrepreneurs, political party representatives or government officials), and getting involved in policy design and political activism. All these activities are time-consuming, and have consequences for the type of research that is being undertaken in terms of methodologies (often hyper-empirical and instrumental), topic choices (linked to development issues), and the targeted audiences (wider public rather than academia). As a result, researchers who work in this way can look more like consultants or political activists than scholars. Their reputation is more grounded on a personal basis than in their role in collective research activities, their contributions to a school of thought or their actions to advance academic institutions.

Increasing demands for the social sciences

Demands for the social sciences arise from a variety of sources: from local businesses, from specific groups seeking legitimization (factions or lineages looking for historiographers), from the general public (interested in law, for instance), from the state (social engineering) and from the media (news corporations and television channels interested in culture and current affairs).

There are also steadily more international demands for social science. They include foreign scholars seeking local

correspondents and partners (for example, in the political sciences or in archaeology), and more recently, international organizations (the United Nations Development Programme [UNDP], the United Nations Children's Fund [UNICEF], the UN Economic and Social Commission for Western Asia [ESCWA] and so on) seeking empirical studies and fieldwork on hot social topics. Foreign foundations (for example, the Ford Foundation, German foundations and large NGOs) have supported scholars in the region in their efforts to stimulate intellectual life there.

Various consequences of these changing priorities have been observed. The first is a change in the hierarchy of disciplines: those in poor demand (which curiously include economics) are pushed aside, whereas others that have a strong empirical and local orientation are promoted. These include anthropology, law and political science (Al-Husban, 2008; Kabbanji and Moussaoui, 2007). The second consequence is the emergence of new priorities in topic choice. Researchers subcontracted by foreign sponsors tend to uncritically adopt the 'global agenda' for their own business reasons. Others focus on conventional topics so as not to shock the local public. The third and most visible consequence relates to institutions. Growing international demand for the social sciences has led to a proliferation of private research centres in the Middle East. These are devoted to empirical studies and take part in empowerment activities. Such centres are generally set up and managed by young 'science entrepreneurs'. These are often talented scholars who keep one foot in the university system while simultaneously acting as a globalized elite mediating between local audiences and foreign sponsors (Hanafi and Tabar, 2005). These centres hire would-be academics on a contractual basis, introducing yet more diversity into their working conditions, and creating a proletariat of temporary investigators, transforming the structure of the research profession.

National or global social sciences?

In most countries, there are universities that adopt high standards for their academics and function as sanctuaries for research. In others, a few scholars stick to research, which they pursue in order to seek promotion and also by inclination. An inquiry into the research topics most favoured in the region shows that the chosen themes are influenced by national concerns. Literature, history and law are most active and valued, ahead of socio-anthropology and the political sciences. The research topics of local social scientists do not necessarily match those of foreign specialists working on these same countries (Rossi and Waast, 2003). Much engaging research goes unnoticed abroad, mainly because it is published in Arabic and rarely translated; and also because it is not necessarily connected to the global agenda. The bulk of the research output is centred on local issues (maybe too much), using hyper-empirical approaches rather than comparative analysis. Certain, generally young, scholars express a greater interest in international perspectives, notably when they join private research institutes to escape local mandarins and clichés. Yet even their research output goes generally unpublished, mainly because international funding bodies are more interested in 'edible' reports and practical research, rather than theoretical research.

The Arab world mostly has a common language and there is significant circulation of talent, which is principally drawn to the Gulf, with very limited movement between the Maghreb and the Mashreq. But intellectual cross-fertilization is confined to the subregions. Publishers and translators, as well as university syllabuses, are generally specific to their country of production (Mermier, 2005; Sghir Janjar, 2005). With some notable exceptions, the work of authors from other parts of the Arab world is neither well known nor sought after. Interest exists primarily in publications from Europe or North America. The academic scene is predominantly national in scope. When it does go beyond national borders, it tends to be globally rather than regionally oriented.

What role for research?

There is a wide variety of research-oriented bodies in the Arab world: real capacities, dedicated establishments, publishers, audiences, interested media, international funding bodies and governmental bodies. While social research is growing, it seems to lack a specific and socially acceptable role. In other disciplines (engineering, biomedical research and various natural sciences), research benefits from a relatively high degree of support, particularly in countries that are moving towards a knowledge economy in which innovation takes precedence over the exploitation of natural resources. But the usefulness of the social sciences is usually under debate. They tend to be regarded as a cultural activity, perhaps like a museum, or an ornament for their local sponsors. Alternatively they can be seen as a pragmatic social engineering activity with commercial opportunities, sponsored by foreign funding agencies. Rarely are they seen as a critical body of knowledge cultivated for its own sake.

This means that there is a growing imbalance between different types of research (public and private) depending on the approach taken to it, which may be reflexive or

instrumental. There has recently been an infatuation for products targeting non-academic audiences, either local or foreign. Instrumental studies, empirical field research and action research that seek to directly influence society are all promulgated. Academic essays, theorization, methodological progress and reflexive analysis appear to have progressively lost ground. Tensions between different types of activity are of course positive. However, in the Arab countries, these tensions are not regulated within scientific communities but rather externally via the state or the market.

What are the prospects? Predictions are always risky since much depends on the attitudes of the state and of scientific communities. In an uncertain political context, it is interesting to note that several governments have expressed a sudden interest in the social sciences, recruiting a number of young academics and launching evaluations. This proves their increased awareness and justifies substantial funding efforts. Morocco and Algeria are good examples of this; Jordan, Lebanon and Egypt are less determined. The Gulf countries, which some observers consider to be the source of a future 'Arab Renaissance', are paying increasing attention to the arts and humanities and to the social sciences as a component of the future knowledge society.

In order for these new forms of support to produce positive results, scientists must agree on more formal and collective forms of organization. These might include labelled and assessed research units or laboratories such as the ones established or planned in the Maghreb, common research projects – far-reaching and linked to additional funding, as in some private bodies – and a keen sense of professionalism and responsibility.

If the social sciences are to be recognized as sound sources of constructive critiques and suggestions, they will have to become less atomized and less dependent on external factors. They will need to reinforce and consolidate their own self-regulated scientific communities, watching over the ethos of the profession, restoring interest in theory and rigorous methodology, and above all organizing and adding flavour to a vivid public scientific debate.

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The status of the social sciences in China

Huang Ping

Some of the issues on which social scientists are currently focusing in China include rapid urbanization and massive rural–urban migration; pension system reform; health care; education for all; housing; and political issues such as the reform of the legal system and the rule of law. Other themes include governance and social justice in the information-age society, ageing, and achieving a more harmonious order in a large and multicultural society that is better integrated into the globalized world network.

Historical overview

In terms of what we see today, the status of the social sciences in China can be traced back to the late nineteenth and early twentieth centuries, when the first generation of Chinese students and scholars returned from Western countries, mostly the UK and the USA, after completing their degrees or their research.

After the Second World War and since the founding of the People's Republic of China in 1949, social sciences in China have developed along three traditions: Chinese scholarly academia, especially Confucianism, Daoism and Buddhism; focusing on economics in line with Soviet influences and Marxist studies; and later, Western approaches.

During the Cultural Revolution (1966–76), social sciences almost disappeared and were hardly taught. After the opening-up process initiated in 1978, social sciences, along with science and research in general, were resumed and given a mandate to support the reform process. The Soviet influence gradually disappeared, and Western, especially US, social science approaches became the most influential. Sociology, for example, had been banned since 1952 and was reintroduced in 1979. During the past decade, traditional Chinese academic traditions have been reintroduced in universities and have caught the interest of an increasing number of students.

Institutional landscape: actors in social science research

The key executive institution in the field of science, technology and innovation is the Ministry of Science and Technology (MOST) under the State Council. MOST is responsible for formulating the national medium- and long-term development plans, and for formulating and implementing policy guidelines in the field of science and technology.

Another key institution is the Ministry of Education (MoE), which also falls under the State Council. Amongst its various important tasks, it is responsible for managing higher education and postgraduate education. Furthermore, it is responsible for planning and directing higher education institutions' research work in all sciences, including social sciences and the humanities. It also manages educational funds, and formulates guidelines and policies regarding fundraising and financial allocations.

The key actor and scientific institution for social sciences and humanities research is the Chinese Academy of Social Sciences (CASS), which again falls under the State Council. CASS used to be part of the Chinese Academy of Sciences (CAS) until 1977, when Deng Xiaoping was about to launch reform and open up China to the outside world. He regarded CASS as the government's top think-tank, as well as the National Centre for Social Sciences and Humanities Research.

The following points need to be highlighted regarding the institutional landscape:

- Members of academe are traditionally gathered in the Shuyuan (House of Scholars and Learners). Shuyuan is an element of, and maintained, by CASS as the top national research institution, and its remit includes the humanities. CASS was established in 1977, growing from the Chinese Academy of Science's Department of Philosophy and Social Sciences. The Department of Philosophy and Social Sciences, called Xuebu, had a staff of 2,200 in fourteen institutes (for instance, Economics, Archaeology, History and Law institutes) in 1976. Today, CASS has thirty-seven research institutes and more than 150 research centres, carrying out research activities covering about 260 subdisciplines of different levels of importance, as well as a graduate school. It employs more than 3,500 research

staff of whom 50 per cent hold higher degrees (M.A. or Ph.D.). CASS's mission is to promote the development of social sciences and raise the level of social sciences and the humanities to support China's reform and opening-up process. CASS applies the policy of 'making the past serve the present and foreign things serve China'.

- When China began to introduce Western social sciences in the late nineteenth century, universities became the largest bodies for these subjects in terms of both teaching and research. After the communist revolution in 1949, higher education and research were functionally separated according to the Soviet model. Research was concentrated in CASS and government research institutes, while the universities focused almost exclusively on teaching. After the initiation of the reform process, universities were given the means to rebuild their research capacities. Today, there are social sciences faculties in almost all universities, and the number of professors, the courses they teach, as well as their publications in economics, sociology, political sciences and legal studies, are all increasing.
- A number of elite universities have re-emerged for social science research, mainly Tsinghua and Beijing universities as well as Fudan University in Shanghai. These institutions have developed significant research and teaching activities in the social sciences. Moreover, they offer conditions that attract top social scientists.
- Some research institutes focusing on research and development (R&D), policy analysis and support have developed in government agencies, particularly since the 1980s. A number are well known, such as the Research Centre for Development Studies under the State Council. Others may be smaller but are nonetheless quite active.
- Resources for social science research are allocated to researchers at universities and to research institutes through the National Social Science Foundation, which was established in 1978. This used to be managed by CASS, but in 1990 became an independent agency under the State Council. In addition to this research council, CASS funds research in its own institutes.
- Finally, in the past 20 years, non-governmental research centres and institutes have emerged. They focus on hot social issues and are funded from all over the world.

University spending mostly goes on the natural sciences and engineering. According to China's science and technology indicators (2004), only 5 per cent of universities' R&D expenditure is on social science and humanities. Thus, CASS remains the main actor in social science research, and only elite universities can attract social scientists from CASS.

Over the past decades, the mechanisms that these agencies use to allocate resources to the social sciences have undergone regular revision and fine-tuning, as discussed in Wei's papers in the present report.

Policy on social science research

Social science policy in China is largely influenced by science policy overall. In the past few decades, the general direction of the science system has been towards the marketization and downscaling of the dominant institutions to modernize them and make them more productive. With this objective in mind, China has moved from block to project funding, as have many other countries.

Since 1978, social sciences have been assigned three functions: training high-quality personnel, supporting policy-making and long-term plans, and being a channel for learning from abroad. More specifically:

- The universities have all re-established or empowered departments of economics, political science, sociology, anthropology and law. As a result, capacity-building in the social sciences has improved remarkably in both the universities and the national research institutions. In 2005, there were more than 1,300 Ph.D. graduates in the social sciences, and the country had 53,880 full-time social science researchers. The budget for the social sciences and the humanities, including teaching and research, has been increasing by about 15 to 20 per cent every year since 2003. Young students who want to become researchers in social sciences have to finish their graduate studies and obtain a postgraduate degree from one of the best universities, including a Ph.D. from a world-class university such as Oxford or Harvard.
- Supporting policy-making: social science research has developed in both quantity and quality. Starting with the rural reform of the early 1980s, economists, but also sociologists and legal experts, were asked to support the country's social transformation. This help was later expanded to cover all the issues that face the whole of society. Never before have social sciences had such an impact on China's social policy and social change.
- International collaboration and learning from abroad: China has a long history of international collaboration. CASS is the key institution engaged in such collaboration, participating in conferences, cooperating with foreign

academic organizations and universities, inviting foreign SSH academics to China and cooperating with funding organizations.

The Chinese Government has also sent a large number of postgraduate students to study social sciences in the USA, Europe, and Japan. After completing their doctorates they are encouraged to return to China to teach and do research by being guaranteed good positions once they come back. Some are offered scholarships to study abroad on the condition that they return. The Chinese Government is also maintaining relations with Chinese scholars who live abroad, encouraging them to return for short periods to collaborate with local research teams or to engage in activities that can support China and its research.

In the twenty-first century, social sciences in China are becoming even more significant. Following an assessment by the Chinese Government, social sciences are considered as important as natural sciences for educating the younger generations and for promoting the country's economic, social, legal, political, cultural and technological progress.

As in all other sciences, pressure has been applied to social scientists to publish in international journals. Incentives have been put in place to encourage them to do so. This has resulted in a growing number of Chinese articles in international social science journals. But the relative growth in the number of Chinese papers in the Social Sciences Citation Index is considerably lower than the growth in natural science publications included in the SCI-E, the expanded Science Citation Index (see statistics in the Annex to the present report).

Competition has increased and a new evaluation system has been introduced with a view to improving the performance of public research organizations and guaranteeing the efficient use of public resources (see Wei's article in the present report). There are many – perhaps too many – national and local exams for younger or even middle-aged researchers who want to continue with an academic career or who wish to be promoted. This results in quite a significant time input and intellectual effort on the one hand, and high competition for short-term outcomes on the other.

Status of researchers

There was a time in China when the social sciences were considered less important than natural sciences and when social scientists had fewer opportunities for research, benefited less from funding and enjoyed less public recognition. When China became engaged in its deep social transformation, which involves economic reform, urbanization, political change and state-building, the social sciences, such as economics, sociology and political sciences, became key to supporting and monitoring change. Now the social sciences are the basis for policy-making alongside the natural sciences and humanities.

Social scientists now enjoy much greater prestige than many other professionals and more than their counterparts in other countries, including many developed countries, even if they still earn far less.

Social sciences and policy-making

The role of social sciences in China today is illustrated by their impact on policy-making. In the past, social sciences were essentially academic disciplines, taught at universities to educate the younger generation and practised in research institutions to develop new ideas on the way society should evolve. Today, while maintaining these functions, social sciences have become progressively more engaged in supporting policy-making at different levels – central, provincial, and local – and in organizing social interaction between the public and policy-makers. One way they do this is by conducting public opinion surveys. Social science researchers have become more deeply involved in social change by providing their insights and 'solutions', and by studying social issues with which both the public and policy-makers are concerned. Today social scientists have become interpreters and even 'legislators' of social change in China, though not necessarily in policy-making bodies or official agencies.

Major issues and priorities

The eleventh five-year plan, which runs from 2006 to 2010, identified three areas of major challenge for China:

- growth, competitiveness, employment and sustainability in a knowledge-based society
- societal trends in China and its citizens
- China in the world: understanding change in the interactions and interdependencies between world regions and China.

Some of the issues on which social scientists are currently focusing include rapid urbanization and massive rural–urban migration; related to this are social issues such as social welfare and social security, which includes pension system

reform; health care; education for all; housing; and political issues such as the reform of the legal system and the rule of law. Other themes include governance and social justice in the information-age society, ageing, and achieving a more harmonious order in a large and multicultural society that is better integrated into the globalized world network.

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Social sciences in South Asia

Venni V. Krishna and Usha Krishna

The focus of this article is to map out major trends, issues and problems confronting the growth of social sciences in the region. It analyses the changing trends in social science research, and focuses on the gradual shift taking place in each country's mode of knowledge production in social sciences.

The six decades of the post-war era have witnessed an impressive growth in the number of universities, specialized research institutions, private corporate bodies, international agencies, and governmental organizations and NGOs conducting social science research in South Asia. The expansion of the social sciences in the region's various countries has followed several different trajectories. There are sharp differences between countries in their institutional structures for social science and the pace at which they have grown. This variation is due to factors ranging from the size of the country to the historical context of the colonial and postcolonial era that shaped the emergence and development of these countries, the nature of the political regime, and differences in social, economic, religious and cultural factors. The focus of this article is to map out major trends, issues and problems confronting the growth of social sciences in the region[1]. It analyses the changing trends in social science research and focuses on the gradual shift taking place in each country's mode of knowledge production in social sciences.

In 1947 there were only twenty universities in South Asia, of which India had eighteen. Initially these universities carried out a large part of the professional research in social sciences, enjoying a near monopoly of knowledge production. However, this situation is undergoing fundamental change, and universities are losing their monopoly. Moving away from Mode 1 knowledge production (in the style of Gibbons et al., 1994) to Mode 2 has led to the development of new knowledge production structures and funding arrangements in the South Asian region as a whole. This is the result of diminishing public support for academic research combined with the emergence of new actors undertaking research.

1. These include disciplines such as economics, sociology, political science, history, geography and psychology.

India dominates the social sciences in South Asia, overshadowing its neighbours such as Pakistan, Bangladesh and Sri Lanka. Partly this is because it is the largest country. In addition, it is the only country in the region where the relevance of social sciences for policy-oriented research and as an academic discipline has long been recognized and institutionalized. The article analyses the situation in India before briefly reviewing the social sciences in other countries.

India

Actors and agencies in social science research

In general, four types of institution conduct social science research in India:

- educational institutions comprising social science departments at universities and postgraduate colleges under universities
- research institutes set up by government departments
- government-funded, but legally autonomous, specialized research institutes
- research units and programmes set up or funded by private agencies, foundations and NGOs.

In India, universities and publicly funded research organizations are still the main actors in knowledge production. The University Grants Commission (UGC), the main body administering universities, has played a crucial role in promoting social science research in India. There are currently 400 universities of which about 80 (with about 350 departments) are engaged in teaching social sciences and doing research. The UGC has initiated a programme to fund Centres of Advanced Studies at university departments with outstanding faculty members. In addition, different government departments have set up

a number of specialized institutes[2] to conduct research on specific social science topics.

The Indian Council of Social Science Research (ICSSR), which is the second most important funding agency, was established in 1969. Its main objective was to nurture academic social science research by establishing autonomous research institutes in different parts of the country. So far, twenty-seven such institutions have been set up with funding from central and state government. Besides these, two other autonomous government-funded organizations have boosted the study of history and philosophy.

In the post-liberalization and globalization period of the past fifteen years, a number of non-governmental research institutes and private consultancy firms have been founded to carry out specific goal-oriented research. Public universities and research institutes continue to be the main academic research actors, but they find it increasingly difficult to sustain themselves on public funds alone. They have to attract private and international funding, and to combine sponsored and consultancy research with academic research.

Until the 1980s, the ICSSR, UGC, government departments and the Planning Commission were among the important funding sources. Since the beginning of the 1990s, various private foundations and trusts have begun funding social science research projects and programmes. Besides agencies such as the Tata and Birla Trusts and the Ford Foundation, which have been funding social science research for decades, corporate firms supporting social science research have established a number of new foundations. Furthermore, there has been an increase in international funding. India, like the whole of South Asia, has witnessed an increased flow of funds from multinational agencies such as the World Bank, the Asian Development Bank, the European Union and other agencies. Consequently the funding of Indian social science research is quite substantial, although no estimates are available of its total magnitude (ICSSR, 2007).

Like its funding patterns, India's research culture is gradually changing. Instead of pure academic research being carried out, there has been a spurt in the number of applied projects and policy-oriented research programmes. The Indian social science community is concerned about this trend (ICSSR, 2007). But in India, unlike its neighbouring countries, the problem of international funding agencies governing the research agenda is not acute. Most social science research remains publicly funded.

Social science research output in India

In 2005–06, 45.13 per cent of the 11.028 million students in India enrolled in institutions of higher learning were studying the arts and social sciences. If we add commerce and education, the percentage increases to 64.60 per cent. The total faculty strength at this time was 4.88 million at 400 universities and 18,000 affiliated colleges. Approximately half this number were employed in arts and social science faculties. A somewhat similar ratio applies to social science doctorates, which accounted for 42 per cent of the 17,989 new Ph.Ds in all fields in 2005–06. Again, if we add commerce and education, the percentage increases to 50 per cent.[3]

According to the Scopus database, India is the only visible South Asian country in terms of research publications at the international level. It ranks thirteenth in terms of the top twenty-six social science producing countries, which are led by the USA and the UK. India has a world share of 1 per cent with its 13,596 publications from 1996 to 2007 (Gupta, Dhawan and Ugrasen, 2009). On looking deeper into the trend during this period, it becomes clear that Indian social sciences witnessed either a relative stagnation, or a declining trend compared to China. The latter published 606 papers in 1996 compared with India's 706, but by 2007 China outpaced India twofold. The available data also reveals that only nineteen institutions of higher learning, including universities, published fifty or more papers. They accounted for 28.39 per cent of the total publications during the 1996–2007 period (Gupta et al., 2009).

It is surprising that despite such a large base of students, faculty and institutions in the social sciences, only a small number of institutions could make their presence felt at the international level through their research publications.[4] This

2. These are, for example, the Indian Council of Agricultural Research, the Indian Council of Medical Research, the Institute of Applied Manpower Research, the National Institute of Educational Planning and Administration, the National Institute of Health Administration, the National Centre for Agricultural Economics, the Indian Institute of Public Administration, and the National Institute of Science, Technology and Development Studies.

3. In India, business management and commerce are not included in the arts and social sciences, although psychology is. The data is from University Grants Commission, India, *Annual Report 2005–06*, http://www.ugc.ac.in/pub/index.html#annual (Accessed 12 May 2009.)

4. The quantum of research conducted in languages other than English is not much and there is very little published work available in other languages, as there are hardly any journals of repute in languages other than English.

quantitative insight into the status of social science research can be interpreted in various ways, but it seems to suggest that social sciences in India are characterized by a 'sea of mediocrity with islands of excellence and visibility'. There is, in fact, a double-bind institutional and intellectual crisis in social sciences. As the ICSSR Report (2007, p. 20) observes:

> *while the scale and range of social science research in the country have been expanding, the nature, scope and quality of research output, as well as its contribution to a better understanding of socio-economic processes and shaping public policy is widely perceived to have fallen short of expectations and also not commensurate with the resources spent on them.*[5]

A crisis in Indian social science?

According to Guha (2008, p. 35), 'the term [crisis] is well merited, for the crisis of Indian social science'. Leading scholars agree on at least three problematic features of the growth of Indian social sciences, which have also been underscored by two review committee reports.[6] These are:

1. There has been no significant growth in the number of public research institutions. Since the 1969 founding of the Indian Council of Social Science Research (ICSSR), which houses twenty-seven research institutes, there has been no major expansion of public research institutions. Many of these institutions have recently come under critical public scrutiny and evaluation. As Partha Chatterjee (2008, p. 39) notes, 'only half dozen or so ICSSR institutes are today genuinely viable as research and training institutions in the advanced academic disciplines of the social sciences'. Of the 400 national universities, only a small proportion, 15 to 20 per cent, are teaching and research-based universities, while 80 per cent can be regarded as teaching universities only.[7] Unlike what can be seen in science and technology, the relative stagnation of research universities has severely constrained the prospect of social science research growth.[8] As a part of its tenth five-year plan, the UGC has created a window of competitive funding for infrastructure and centres of advanced studies in social sciences. But the amount of funding available has remained quite limited and it is mostly confined to urban-based universities. Social sciences accounted for a mere 8 per cent of India's national science and technology research budget in 2005–06. The current eleventh five-year plan has, however, planned a substantial increase in budgetary allocations for higher education and research. Its impact will only be visible in future.
2. The second issue relates to the emergence of the rapidly growing private and business enterprise sectors, creating a new demand for social science research for business management, commerce, marketing, media and other fields. This has had a negative impact on the conventional social science fields. New actors such as corporations, industrial associations, NGOs, and private trusts entering the research field to conduct specific goal- and mission-oriented research attract the 'cream' in social sciences and contribute to an 'internal brain drain'. These new actors and networks, emerging at both the local and global level, complement the research carried out by universities but also provide social scientists with better opportunities and wean them away from the university system. The external brain drain problem, once restricted to the sciences and engineering, now also concerns the social sciences and humanities (Guha, 2008, p. 35).
3. The third issue is autonomy from political interference. Objectivity is problematic in social science research, and ideological rivalries are not necessarily based on intellectual and methodological quarrels. Major research projects on, and funding for, politically loaded subjects such as religion, caste and ethnicity both become subject to political steering. Scholars generally agree on the need to delink the ICSSR in particular, and social science research in general, from political interference.

Status of researchers

Barring some centres of excellence in India, social sciences as a whole are accorded low priority in the whole South Asian region. This leads to social scientists having a low status and limited career opportunities. Social sciences by and large – whether in research or in government – are not perceived to be very lucrative compared with business and management subjects. A general apathy on the part of social scientists, and their lack of interest and expertise, accentuate the prevalent notion that the social sciences are irrelevant, with the exception of economics. Economics is generally regarded as the most prestigious and lucrative

5. The role of economists is an exception to this general view.
6. These are the ICSSR Review Committee Report (2007) and the Social Science Research Council Report (2002), prepared by Partha Chatterjee et al. for the New-York-based Social Science Research Council.
7. This is our assessment, which some educationists in Delhi endorse.
8. Research universities undertake both teaching and research, striving to uphold the Humbodtian ideals of teaching and research excellence. They draw relatively more funding than teaching universities, which also undertake research, but only to a very marginal extent.

discipline, providing the best career opportunities.[9] Conversely, limited career opportunities have led to a recent decline in students studying disciplines such as history, geography and political science at a higher education level in the region. Sociology, a relatively new discipline compared with others, offers better opportunities due to the NGO sector's rapid growth.

On the whole, social science researchers' career opportunities are very limited and social scientists form a substantial part of the unemployed educated population. This is particularly true in underdeveloped and backward areas of the region where university education standards are low and research quality is substandard.

Pakistan

Social science research in Pakistan was a low priority for the state until the early 1980s, and the relevance of social science subjects was not recognized (Inayatullah and Tahir, 2005). Unlike engineering, medicine and other natural sciences, they did not offer direct solutions to the problems confronting the society. There were, however, specialized research institutions, such as the Applied Economics Research Centre (AERC) established at the University of Karachi in 1973. In the 1980s and 1990s, AERC was recognized as one of the country's leading research institutions. New and vibrant institutions have since emerged, but they operate more on a consultancy basis.[10] Despite quantitative expansion, little research work has emerged from the universities and social science departments of Pakistan.

The state's neglect of social sciences has meant that no strong, rational social science tradition could be established. Consequently the research carried out at both the theoretical and empirical levels is inadequate and of poor quality. A number of scholars, including Inayatullah and Tahir (2005) and Ul Haque (2007), lament this state of affairs. Unlike in India, Pakistan's Council of Social Sciences took a long time to emerge. Only in 1983 did the University Grants Commission establish the Centre of Social Sciences and Humanities (COSH). It was aimed at promoting and improving education and research in social sciences in higher education institutions, and introduced the concept of the social sciences into Pakistani academic discourse for the first time. But at a practical level, COSH did not have much impact on the development of these subjects. Eminent scholars made various attempts (in 1993, 1998 and 1999) to set up a council of social sciences, but failed on the issue of autonomy, as they did not support a council located in the state sector. Finally, a group of social scientists succeeded in registering the Council of Social Sciences (COSS) as an autonomous organization in 2000. This is an important milestone in the development of social science research in Pakistan. Since its emergence, COSS has produced a number of publications highlighting the relevance of social science research to a better understanding of Pakistani society's social fabric and its implications for the development process.

Sri Lanka

In Sri Lanka too, the government has not prioritized social science research. The Grants Commission, the main body of the university system, was established in 1978. Its primary function is to plan and coordinate university education and allocate funds to higher education institutions. These are primarily teaching universities and their research output is very limited in quantity and quality. Many are state universities and are unable to attract highly qualified staff.

Besides universities, some government agencies are engaged in generating and interpreting data in specific sectors with a view to implementing the ministries' development agenda. One of the autonomous institutions engaged in social science research is the Institute of Policy Studies (IPS) funded by the Netherlands Government and the Government of Sri Lanka. This is a policy think-tank engaged in research on various socio-economic issues. The past few decades have witnessed a significant growth in the NGO sector conducting social science research. However, no data is available on the number of agencies and social scientists engaged in this sector.

Bangladesh

In recognition of the importance of social science research for a poor and developing country, the Bangladesh Social Science Research Council (BSSRC) was founded in 1976. It is the main body responsible for the promotion and development of social science research in the country. It is also responsible for coordinating the activities and programmes of organizations engaged in social science research. Other faculties and departments are also recognized for the quality and range of their research. There are also a few independent, non-profit, non-government institutes. However, social science research has been a low priority for the Bangladesh Government. The BSSRC has not really impacted the promotion of research significantly, nor are working conditions for social scientists generally

9. In India but also in Pakistan and Bangladesh.
10. All these are research institutes and attract funding from international sources and, to a lesser extent, from government sources.

effective.[11] Currently Bangladesh has some 950 social scientists, mainly at three universities and four specialized research institutes. Like other countries in the region, Bangladesh is witnessing an extraordinary growth in social science research catering to the NGO sector.

Conclusion and prospects

There seems to be consensus among social scientists that, with a few exceptions, the quality of both teaching and research in social sciences is declining in South Asia. The accountability factor is virtually absent and peer evaluation systems are weak in publicly funded research institutions and universities. Social scientists and eminent scholars are seriously concerned, and via various forums, they have actively tried to draw policy-makers' and the academic community's attention to this neglect.

Compared with science and technology, the funding of social science research is marginal in the region as a whole. Within the region, India has the longest and strongest tradition of public funding for social science research. Nevertheless, even this has not been as high as desired in recent years. In the absence of adequate governmental support for social science research in Pakistan, Bangladesh, Sri Lanka and to a lesser extent India, foreign agencies are increasingly playing a crucial role in funding, but also in determining the content and direction of research. The donor-driven shift towards Mode 2 knowledge production is causing social scientists in the region considerable concern. This calls for a serious commitment to increased public funding to encourage independent, objective research that could contribute to a better understanding of socio-economic and political trends in the region.

The declining status of research, poor funding and poor career options have combined to produce brain drain problems in the region. Economics is the most affected discipline, as some of the most talented Indian and Pakistani economists work in foreign countries. Serious policy attention is needed to arrest the brain drain and attract the best students to social sciences.

Knowledge production is very unevenly distributed in the region. There is a wide knowledge gap between India and the smaller countries. Unlike these countries, India, with its large pool of intellectual capital, its institutional structures and its government support for social sciences, has been able to produce a mass of empirical knowledge, which has contributed to a better understanding of its society and culture. To some extent this knowledge has also been used by policy-makers for developmental purposes and to create a more just and participatory society. In comparison, social science research in Pakistan, Bangladesh and Sri Lanka is still trying to establish a professional footprint. The bulk of research relating to these countries' societal issues is undertaken by foreigners or by local scholars who have settled in the West. Thus, the nodal points from which knowledge is produced are located outside the countries, research is externally sponsored and the research agendas are imposed from abroad. This raises the issue of how far knowledge produced in this way can cater for local needs.

Governments in the region are slowly recognizing the importance of the social sciences in dealing with a multitude of socio-economic problems. They are taking measures that include increasing budgetary allocations for higher education, particularly in India. Creating an infrastructure and a research climate will require a massive effort and an infusion of adequate funding in social science institutions. India could play a significant role in promoting social science research in the South Asian region. The South Asian Association for Regional Cooperation in Social Sciences should be activated as a platform for catalysing regional cooperation and development in the social sciences.

11. Although its website mentions that there would be a national register of social scientists by 2004, there was no further information on this in 2009.

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The status of social sciences in Europe

Luk van Langenhove

Over the past twenty years, the organization of social sciences research in Europe has undergone serious reforms. Perhaps one of the unique features of social sciences in Europe today is that they are organized at both the level of individual states and at the European supranational level. Another major change is the increasing role that funding mechanisms play in steering research.

Europe can be regarded as the cradle of the social sciences. The concept itself first emerged in the French language in the 1790s, while the origin of social sciences can be traced back to a number of European developments such as the French Revolution, the rise of capitalism and the emergence of the modern sovereign states (Van Langenhove, 2007). Today, social sciences in Europe are firmly institutionalized in universities along the disciplinary model. Here we cover western and Central Europe, while the situation in The Russian Federation is described in another article.[1]

Over the past twenty years, the organization of social sciences research in Europe has undergone serious reforms. Perhaps one of the unique features of social sciences in Europe today is that they are organized at both the level of individual states and the European supranational level. Another major change is the increasing role that funding mechanisms play in steering research. Funding agencies have been set up in parallel to research organizations, and allocate funds on the basis of projects at the national as well as regional European level. Besides different national funding schemes, Europe counts a growing number of regional (supranational) funding schemes, which also define priority themes to be studied. Amongst them are the programmes of the European Research Council (CERC), the COST Programme[2] and the Framework Programmes of the European Commission. As a result, the social science research agenda in Europe (or at least the EU-27) is driven by both national and EU concerns.

In general, one can say that the current organization of social sciences and humanities research in Europe is gradually turning away from their previous models of organization. These had numerous differences but shared certain common features such as:

- relatively stable research careers
- the hegemony of tenured positions (in public or private universities as well as in state research organizations)
- a concentration of research within publicly funded universities, academies and research centres
- a frequent overlap between teaching and research
- the relative autonomy of academia
- the organization of research along strict disciplinary lines.

The European Commission's approach to research involves defining thematic priorities and emphasizing interdisciplinary work. In response, research systems in Europe are slowly moving towards a model in which research is project-driven, reactive to external incentives and characterized by the growing role of external and mixed-mode funding, which involves public, private and charitable funding. It is more interdisciplinary and involves more public–private initiatives, more cross-sectoral collaboration, more reference to users,

1. This article borrows heavily from chapter 1 of the report 'Emerging Trends in Socio-economic Sciences and Humanities in Europe', delivered in 2009 by an expert group set up by the European Commission and chaired by Poul Holm (Metris Report, 2009). Members of this group were Poul Holm (chair), Nicolas Guilhot (rapporteur), Dalina Dumitrescu, Gabriele Griffin, Arne Jarrick, Istvan Rév, Gulnara Roll, Daniel Smilov, Piotr Sztompka, Françoise Thys-Clement, Panos Tsakloglou, Luk Van Langenhove and Gerhard Wolf. The full report can be downloaded at http://ec.europa.eu/research/social-sciences/pdf/metris-report_en.pdf (Accessed 4 March 2010.)

2. COST: European Cooperation in Science and Technology.

stakeholders and research beneficiaries, and increasing internationalization.

When these changes were implemented at the policy level, they were in part meant to remedy the shortcomings of a previous system characterized by low levels of accountability and innovation.

This article will explore the changes in the institutional structure of social science research in Europe and the possible tension between national and supranational organizations.

The weight of social sciences and humanities in European research

There are major national variations in the importance of the social sciences and humanities across Europe. During the late 1990s, the share of the social sciences and humanities of overall spending on R&D across all sectors (including government, higher education, non-profit and corporate) varied from around 4 per cent to as much as 25 per cent in some exceptional cases. In Germany, for instance, it was around 8 per cent of total R&D spending. For most European countries, the figure would have been somewhere below 15 per cent. Germany and the UK together accounted for half of the public European funding for the social sciences.

In terms of output, according to Scopus and SSCI publication data, the EU-27 Member States, together with the USA, are the world's largest social science producers (2007 statistics in Annex I to this Report).

Funding and agenda-setting

In terms of both R&D expenditure and the number of researchers, the social sciences and humanities in the EU-27 are mostly located within the higher education system. Universities remain of great importance for the training, career progression, housing and proper functioning of research communities. Some countries nevertheless have important public research administrations and centres that are separate from universities.

Each European country has its own organizational structure for setting priorities and distributing public funds. In most cases, there is a social science research council, or a social science division within a broader, integrated research council, that acts as the major agenda-setting body.

Since 2007, there has also been a European Research Council focused solely on fundamental research. But this is a funding body, not an agenda-setting body. As was mentioned above, a major change is the increased role played by funding agencies, which may possibly influence the research agenda. Most European countries now have established agencies that fund external research. Only a few, such as Italy, Spain and Greece, do not yet have such steering institutions. The importance of these institutions, and particularly their possible influence on the research agenda, should be assessed. The separation which they bring about between research-performing institutions and research-funding agencies introduces a certain distance between research practice and research steering. How this distance affects the research process is a question that is still in need of thorough answers. A crucial issue of control over the research agenda is whether funding agencies operate in a responsive mode, where they react to proposals from the scientific community, or in a programme mode, which allows them to define the broad orientation of national research efforts themselves.

Another striking aspect of knowledge institutions' evolution over the past decades has been the increasing role of mixed-mode funding. This role is unevenly developed across the various European countries. Its development relates to the different ways in which new forms of university governance have taken hold, involving other public-sector, industry and private-sector stakeholders, and increasing accountability requirements in the public research sector.

Unlike in the USA, private donations play a relatively minor role in research funding in Europe. But with public research funding in relative decline, research institutions and researchers across Europe are increasingly encouraged or obliged to seek external funding or *Drittmittel* (third-party funding) to secure their research, and in many instances their jobs. This has the effect of linking education and research more closely to the labour market and research to the demands of industry and the charitable sector.

As mixed-mode funding becomes more common in European social sciences and humanities research, foundations play a growing role in the organization and funding of research, as well as in scientific agenda-setting. Existing foundations like the Volkswagen Stiftung in Germany, and Leverhulme and Rowntree in the UK, continue to support research projects that dovetail with their funding priorities. These foundations wish to loosen the legal framework in which they operate.

There has also been a proliferation of entities funded for research purposes. At the national level, funders now support

projects, centres of excellence, research clusters, private–public collaborations and so on. At the European Commission level, funding has moved from the support of relatively small research teams to investment in research groupings of varying and increasingly large size, including integrated projects, networks of excellence and other structures.

Non-university research sectors have increased their share of social sciences and humanities research, more in the social sciences than in the humanities. Non-academic organizations and consultancies such as SMEs and NGOs are becoming increasingly important actors, bringing a wide range of social interests to bear upon the research agenda. All of this adds complexity to the ecologies of knowledge production.

An important research-funding player is the European Commission, which provides a range of supranational funding schemes. The most important one is the Framework Programme (FP), a multi-annual set of priorities and objectives for R&D funding. The Seventh Framework Programme (FP7) is running from 2007 to 2013. However, only a small percentage of the available money is spent on the social sciences and humanities (see Table 2.5). There are also the Marie Curie grants. Some of the technological programmes have been supporting social sciences research. Finally, the ERC supports social sciences and humanities research.

Table 2.5 > European Union. Social Sciences and Humanities Framework Programmes (FP) budgets 1998–2013 (in € million)

Programme	Overall budget	SSH budget	SSH budget share, percent
FP7 2007–2013	50.521	623	1.23
FP6 2002–2006	17.883	270	1.51
FP5 1998–2002	14.960	155	1.03

FP: Framework Programme of the European Community for research, technological development and demonstration activities

EU research programmes are not the only transnational social sciences and humanities initiatives in Europe. Other, smaller initiatives exist as well. One is NORFACE,[3] a network founded in 2004 to foster transnational cooperation between twelve Nordic and UK research social sciences councils.

3. New Opportunities for Research Funding Agency Cooperation in Europe.

Together this results in a very diverse and layered research funding landscape for the social sciences and humanities in Europe.

Some consequences of the funding reform

The reform of research funding in different European countries led to tension between traditional academic research, based on a long-term vision, secured status and relative autonomy, and the project-based and output-driven model characterized by short-term objectives and more external constraints, including reporting requirements and the proprietary status of results. This form of organization is also held responsible for the casualization of academic work. Here, significant intra-European differences can be observed in the two models' respective importance. In countries with strong academic institutions, the two logics coexist, but resources that went directly to academic institutions are increasingly shifted to funding agencies. An example is the newly created Agence Nationale de la Recherche in France. In eastern Europe, on the other hand, the situation is less favourable. Universities are characterized by a shortage of resources, hierarchism, poor pay and difficult working conditions. So externally funded institutions and think-tanks capable of mobilizing important resources have generated an internal as well as an external brain drain. Many English-speaking academics found new professional outlets in the non-academic research sector or abroad. These created a challenge to traditional institutions, such as the old academies of science which held sway prior to 1989 and continue to be influential to varying degrees.

Funding agencies' overall impact on research performance, on scientific quality, and on the wider ecology of knowledge in social sciences and humanities, is a question that still requires extensive and comparative research.

Career prospects are fundamental for the maintenance of healthy research communities. The pressures of just-in-time research, the need for flexibility in academic recruitment and the changing economics of university management have contributed to a significant transformation of the academic labour market. One of the most striking aspects of this transformation is the relative decline of tenured positions for academic staff, combined with the exponential growth of contingent academic labour, while the total number of academic or research staff is increasing. In the UK, for instance, 44.8 per cent of university contracts were fixed-term in 2003, as opposed to 39 per cent in 1994. In France, contingent personnel in the higher education and

research sectors have increased at a rate of 2.76 per cent per year since 1999. While these figures cover all subjects, the same tendencies certainly apply to the social sciences. These developments contribute to the general deregulation of academic work, as contingent employment is generally dependent on local rules. The multiplication of ill-defined and precarious positions that take up an increasing – if invisible – share of academic work bears witness to this transformation.

While these transformations are mostly justified because they make knowledge production more flexible, their real effects on the quality of research are not well known and should be scrutinized. The increase in contract-based research performed by a contingent workforce and the concomitant reduction in tenured positions do not only change the status of the researcher, they also alter the time-frame of research, the constraints – financial and otherwise – under which it is conducted, the capacity for independent inquiry and the diffusion of the results.

New accountability requirements in higher education and research have resulted in an output-driven culture, dominated by performance evaluations in increasingly quantifiable terms. These favour results-driven research, whereas project-based research tends to be ad hoc, limited in time to specific 'deliverables' stipulated in advance. Resources of personnel, instrumentation, funds and so on are aggregated to pursue these objectives, increasing the importance of entrepreneurial skills in the research environment.

The ascendancy of the project as a dominant form of social science research organization, and of output-driven research more generally, is an aspect of the tendency towards ever-greater degrees of responsiveness, flexibility and external mobilization of research capacities. This has important consequences for the nature of scientific inquiry and for the general production of knowledge. As flexible knowledge production becomes a significant model for academic work, the cycle of research results tends to be shorter. The shift towards project-based research tends to generate greater discontinuity in the research process, since some questions or new perspectives that emerge in the course of research are not explored beyond the terms and timeframe of the initial project. The trend towards 'problem-driven' or 'output-driven' research is not only a question of format and organization, as it affects the nature of the questions that can be addressed. The organization of research into 'projects' prioritizes certain types of inquiry over others, thus transforming the overall ecology of knowledge production.

Trends in research evaluation

The audit and accounting culture, which has come to dominate publicly funded research in many European countries, has fostered the development of new evaluation practices. In a more flexible research environment where access to funding is key and where prior achievements (and the social networks they produce) are constantly mobilized to secure funding, evaluation has become a key mechanism for selecting research proposals, channelling funds and adjudicating scientific authority. This has resulted in a significant increase in the research environment's competitive nature. The implicit rationale is that competition will deliver excellence and better research. Whether it does this remains to be demonstrated.

The pervasiveness of evaluation practices in European countries and at the EU level is matched by their diversification in terms of benchmarking practices, bibliometrics, assessment standards, rankings, impact factors and citation indices. Although they are sometimes contested, these evaluation criteria are now important to hiring decisions, the choice of publication outlets, remuneration, funding and career advancement. Perhaps the main challenge for the social sciences in Europe will be how to combine the disciplinary approach, which is used to evaluate researchers, with the multidisciplinary approach of many fields prioritized for EU funding. There seems to be a growing distance between disciplinary paradigms and multidisciplinary projects in the social sciences in Europe.

Conclusions

These trends in the organization and funding of the social sciences in Europe will undoubtedly continue to influence both agenda-setting in these disciplines and their wider impact. Meanwhile, there are ongoing changes in what policy-makers and social scientists regard as important topics for study. In 2009, the European Commission set up a High-Level Expert Group to review emerging trends in society and their implications (Chapter 2 of the Metris Report). The experts pointed out that European societies are currently being redefined by changes in their demography, the evolution of their systems of governance, technological advances, and new approaches to their self-understanding, all of which translate into changes experienced in everyday life. The experts used conceptual mapping to identify a number of priority themes that call for coordinated European funding. They are welfare, migration, innovation, the post-carbon society, the crises of value and valuation, space and landscape, time and memory, the technologization of the social sciences, the

iconosphere, governance and regulation and, finally, the future of democracy in a globalized world.

The expert group's overall conclusion was that today, the role of the social sciences and humanities has moved from the old agenda of social engineering and national identity-building to a wider set of contributions to society. But, as noted by Pohoryles and Schadauer (2009), the challenge is to find ways of integrating the available existing knowledge, which is often generated in isolated ways, into an overarching framework that fosters our understanding of society and contributes to its transformation.

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Flash
Direction for European social science – the need for a strategy

There is an urgent need for European institutions to work together to develop a strategy with ambitious goals for social science and to invest in the means – particularly the training of future generations of scholars and computing infrastructure – to deliver those goals.

European social science is a product of its history and of the heterogeneity of Europe. It is also adapting to the new reality of Europe and the questions to which that gives rise. The diversity of Europe makes it a splendid laboratory for the social sciences, and there are encouraging signs, within individual countries and in the European Union, of social science's impact on policy formation. Demand from students for courses in social science is strong and growing. But there is need for even more fundamental and 'joined-up' thought about the needs of societies coping with information technology, climate change and the democratic deficit afflicting many European nations.

In contrast with the field in the USA, European social sciences are strongly rooted in the humanities, and emphasize the historical roots of economic and social development. There are more social scientists at work in universities in Europe than in the USA, and their record in research and publication is strong. National schools exist in a number of disciplines. There are particular strengths in social and political theory and in historical approaches to subjects such as sociology. Marxism as a political ideology has been widely rejected, but the influence of its emphasis on class and power relationships within society lives on. European scholars have been particularly influential in measuring income and wealth inequality, and in exploring the consequences of inequality on health and other social outcomes. Quantitative approaches have gained ground, but their value is still sometimes questioned and training in such methods still lags. However, Europe has been particularly successful in developing survey methodologies – exemplified by the European Social Survey – and in the collection and analysis of longitudinal data sets.

Nationally through research councils, and through the Framework Programmes of the European Union, increasing emphasis has been placed on social science as an aid to the solution of political and economic problems. While this realization of the potential of social science is a welcome change from the earlier emphasis on technological solutions, basic research – and in particular interdisciplinary inquiry drawing on recent advances in other fields such as biology and neuroscience, or research in social and political theory – may not receive sufficient attention. It is, however, appreciated that the European Union's investment in social science research is increasing and that three social science projects are being proposed as components of the overall European Strategy Forum on Research Infrastructures (ESFRI). CESSDA (www.nsd.uib.no/cessda) links together the social science data archives of Europe, the European Social Survey (ESS – www.europeansocialsurvey.org) ensures that we have comparable data on social and political attitudes across Europe, while SHARE (www.share-project.org) provides valuable data on health, ageing and retirement. But their full potential will only be developed through rigorous training of the next generation of scholars.

The US National Science Foundation has recently set out an ambitious research programme in brain function, complexity science and the genetic and environmental factors shaping identity and diversity, which are all seen as the domain of social science. This will require large investment in infrastructure to enable social and natural scientists, working together, to 'link cells to society'. Although individual European scholars are expert in such fields, and psychology in particular is strong in Europe, no equivalent programme is currently envisaged and the mechanisms to develop one are lacking. There is an urgent need for institutions such as the

European Science Foundation, national research councils, the European Research Council and the European Union to work together to develop a strategy with ambitious goals for social science and to invest in the means – particularly the training of future generations of scholars and computing infrastructure – to deliver those goals.

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The status of social sciences in the Russian Federation

Liudmila Pipiya

The revival of the domestic social sciences and humanities will, to a large extent, depend on human resources and an appropriate government science policy. There is currently a need for wider understanding of their position as one of the main intellectual resources needed to help solve the state and society's problems. The government still underestimates the role of the social sciences and the humanities, while official science and technology policy does not assign any special importance to them in terms of state programmes and support mechanisms.

This paper presents a brief overview of the current status of the social sciences and humanities in the Russian Federation. It sheds some light on Russian capacity in the social sciences and humanities, and outlines the most challenging issues for these disciplines in the Russian Federation.

After the collapse of the Soviet Union, the Russian Federation inherited a large scientific and technological potential as well as an advanced position in basic science and in a number of priority areas for applied research and development. The Russian Federation is also traditionally strong in the humanities, but for a long time social studies were only interpreted from the point of view of Marxist ideology. Consequently the development of social studies diverged from that in the countries of Western Europe. Since the collapse of the USSR, a great number of unresolved problems demanding urgent solutions have accumulated in the Russian science and technology system during the years of reform.

The social sciences showed the first signs of transformation almost twenty-five years ago, during the perestroika period. This was a liberalization of the dominating Marxist–Leninist system rather than a radical change, but sociology was finally acknowledged then as a separate field of science. This liberalization, which allowed access to the diversity of world social science theories and concepts, laid the foundation for the 1992 transformations after the historical disintegration of the Soviet State.

In the 1980s, the social sciences in the Russian Federation included psychology, economics, education, sociology, legal studies and political sciences. In the mid-1990s, social geography and information sciences were added to this list. The humanities comprised basically the same subjects as before. But it must be emphasized that the social sciences and humanities have experienced a dramatic transformation in their disciplinary structure. Disciplines such as scientific communism and scientific atheism disappeared completely, reappearing as political science and religious studies. Historical materialism and Marxist–Leninist dialectics changed from dominant ideological frameworks to mere philosophical concepts.

The institutional landscape of Russian social sciences and humanities

Although there is no special policy for the social sciences and humanities, the following organizations and bodies, which tend to influence overall science and technology

policy, are common to both the social sciences and humanities and the natural sciences (Zavarukhin and Pipiya, 2007):

- Ministries, agencies and bodies defining and coordinating state policy. These include the President's Council on Science, Technology and Education; the Ministry for Education and Science of the Russian Federation; the Ministry of Economic Development and Trade of the Russian Federation; various Russian state academies of sciences, of which the Russian Academy of Sciences (RAS) is the most important; and various interagency and government commissions and working groups.
- Funding agencies. Most government support for Russian science and technology is directly allocated to public research organizations in the form of subsidies to cover basic capital and recurrent expenditures. The rest of the state R&D budget is assigned to research organizations on a competitive basis through agencies such as the Russian Federal Agency on Science and Innovation, the Russian Agency for Education, the Russian Foundation for Basic Research (RFBR), the Russian Foundation for Humanities (RFH), and other federal and regional bodies.[1]
- Regulatory agencies. The Federal Supervision Service in Education and Science regulates and develops the legislative base that applies to sciences and education.

The Russian Federation still benefits from a substantial science base and a well-developed education system. Overall, the Russian science system remains relatively strong despite the ageing of its researchers and the brain drain, which was particularly severe during the 1990s.[2] According to state statistical data, 3,957 organizations were involved in research and development in 2007. Of these, 53 per cent were public-sector organizations and include state higher education institutions.[3] The latter constitute 29 per cent of all public organizations undertaking R&D (ISS RAS, 2009a; 2009b). No data is available on the number of government research organizations, particularly institutions of higher learning, involved in the social sciences and humanities. But of the 471 institutes of the Russian Academy of Science (RAS), 95 were engaged in research on social sciences in 2007. They employed 25.4 per cent of all social science researchers (ISS RAS, 2009a). The other three-quarters were mainly employed in the higher education sector.

There were 1,108 higher education institutions in the Russian Federation in 2007, 658 state and 450 private ones (ROSSTAT, 2009);[4] 64 per cent of the students in public institutions specialized in the social sciences and humanities, and almost 98 per cent of students at private higher education institutions were studying social science and humanities disciplines (Pipiya, 2007).

NGOs engaged in social science and humanities research are a new phenomenon in the post-Soviet era. Data on them are contradictory. On the one hand, there has been a blossoming of centres engaged in a number of sociohumanitarian disciplines, mostly in economics and political science. According to Yurevich (2004), more than 100 sociological centres and more than 300 political science research centres have emerged in recent years. On the other hand, standard statistics reveal a negligible number of NGOs undertaking R&D. NGOs tend to be small, flexible organizations, which respond quickly to market demand for research, but they do not – and are hardly able to – undertake in-depth research that thoroughly analyses trends and developments in modern societies. On average they employ five to ten people, compared with several hundred in a typical public research organization. Although they have limited research capacities, they do develop new forms and methods of research management and contribute to research diversity in the social sciences and humanities.

R&D personnel

The Russian Federation had some 23,200 social science and humanities researchers in 2007: 13,740 (59 per cent) in the social sciences and 9,489 (41 per cent) in the humanities (Table 2.6). Women constituted about half of these. Economists made up half of the social science community. In recent years, there has been an increase in the number of researchers in pedagogy, a trend stimulated by the presidential initiative that turned education into a national

1. As a result of changes in governmental structure in March 2010, competitive funding functions were handed over to the Ministry for Education and Science.
2. The Russian Federation has suffered a reduction in its number of R&D personnel. In 2007, the number of researchers was half of what it had been in the early 1990s. Usually, analysts mean the emigration of professionals to other countries when they use the term 'brain drain'. However, science and technology suffered their most dramatic losses by researchers and technicians leaving for other economic sectors. Between 1991 and 1999, the number of researchers decreased by 458,500, and technicians by 128,200, of whom only 18,200 emigrated.
3. Here, the public sector means the government sector and state higher education institutions (mainly universities) undertaking R&D.
4. However, a considerable part of teaching staff in private HE institutions (31.1 per cent) comprises individuals with multiple contracts who do their main work at state universities.

priority in 2006.[5] With this project, the government invested considerable funds to improve the overall situation in primary and secondary education. The enhanced prestige of teachers and the wage-push in education have had a positive impact on research on education.

The number of political scientists doubled from 1999 to 2007, but this cannot be attributed to government policy. It is more the result of a greater demand for political science research.

An issue of particular concern is the ageing of the R&D personnel, a phenomenon that poses the danger of losing continuity in science. This is probably due to the difficulties of attracting young talent. This issue deserves continuing attention.

Table 2.6 > Researchers by SSH field, Russian Federation, headcounts

	1999	2003	2007
Social sciences – total	13,534	12,565	13,740
of which:			
Economics	7,818	7,282	6,843
Law	506	475	702
Education	1,670	1,573	2,454
Psychology	701	667	951
Sociology	805	1,087	917
Political science	149	181	338
Other social sciences	1,885	1,300	1,535
Humanities – total	7,884	8,187	9,489

Source: ISS RAS S&T database.

The state of social science research in the Russian Federation

Russian social science communities are dynamic, but are not as well developed as their Western counterparts. They are often driven to produce superficial analyses under pressure for quick results. Those who pay the costs of research often control the research agenda. On the whole, there is a lack of well-grounded and argued research and reflections on society's most acute problems. These include regional disparities, the increasing gap between the rich minority and the poor majority, migration and migrant assimilation, the marginalization of and extremism among youngsters, and crime and drug addiction. A lack of independent funding sources not connected to the establishment hinders the emergence of diverse concepts, models, and logical frameworks that could provide the scientific underpinnings to address topical problems.

When the Iron Curtain fell at the beginning of the 1990s, Russian social scientists were exposed to the social science research experience accumulated in Western countries by the translation of many influential books banned during the Soviet period. Foreign foundations that established offices in post-Soviet Russia and offered their programmes to Russian researchers also contributed to enlarging the scope of Russian social science. Knowledge developed in the West and applied to Russian social practice in turn led to a reformulation of the original Western theories and hypotheses.

During the 1990s, the Russian Federation was largely a supplier of scientific raw material (survey data, the results of expeditions, new archival materials and so on), while the scientific end product was produced in the USA or Western Europe. Even now, Russian participation in international projects in the social sciences and humanities has not reached a level that would allow it to be said that Russian social sciences have been successfully integrated into the international research community.

The social science community's secondary role can be explained partly by a severe shortage of domestic funds for these subjects, but also by the dramatic loss of prestige suffered in Russian society by both research and researchers. The financial shortage in the social sciences and humanities is no longer as acute as it was ten years ago, but there are very few signs of a recovery and an increase in social scientists' status. Other factors, including the lack of English among many social scientists, the ageing of research personnel, and the weak institutional support for networking, also hamper the integration of Russian social science and humanities into the international system. A task-oriented and long-term policy for these areas is therefore needed to change the situation.

On a more positive note, Russian social sciences and humanities have kept their originality, which is based on the nuances of the Russian people's national social features and mentality. With the exception of political economy, most social science disciplines appeared in the Russian Federation much later than in most European countries. The most topical social and humanistic problems of eighteenth- and nineteenth- century society appeared in Russian novels and stories long before Russian scientists studied them. These features are specifically reflected in the approaches

5. There are four national priority projects: Health Care, Education, Habitation, and Development of the Agricultural Sector. They are aimed at the solution of socio-economic problems in the socially most important sectors of the economy. They started in 2005, but the main activities within the projects began in 2006.

used by Russian social sciences and humanities, in their subjects, and in their basic theories and methodologies.

Resources and funding for science research

The Russian Federation spends more on knowledge creation processes than most countries with similar levels of gross domestic product (GDP) per capita. Total R&D spending is approximately 1.1 per cent of GDP. About 62 per cent of Russian R&D is financed by the state (ISS RAS, 2009b).

Two budgetary foundations run the main competitive grant systems for R&D projects: the Russian Foundation for Basic Research (RFBR) and the Russian Foundation for Humanities (RFH). Initially the RFH was a subdivision of the RFBR responsible for supporting social sciences and humanities. Some of the RFBR grants – normally for hard sciences – were also distributed to interdisciplinary projects, which could include social sciences and the humanities. Since 1994, the RFH has operated as an independent foundation on the same principles as the RFBR. Its budget is 1 per cent of the federal budget appropriations for civil R&D. The RFH faces the same problems as the RFBR: a small budget spread over too many projects. The result of grant distribution per region shows that the main scientific centres (the Moscow and St Petersburg regions) receive the greatest number of grants and projects.

More competitive allocation of funds and project funding should help increase the quality and relevance of research. This would, however, require a more diversified institutional network to distribute funds, as well as clearly established procedures. Nevertheless, practice is changing slowly. Both foundations face the challenge of improving the transparency and openness of competition. There is a great deal of variety in the evaluation methods used, the criteria for selecting experts, and the financial decision-making systems.

However, it should be stressed that with the establishment of these foundations, a new culture has started to develop in the Russian research community. Like similar agencies in Western countries, their distinctive features are open competition for funds, a bottom-up approach to establishing research projects, and accountability. These features are not always applicable to other funding instruments.

As we mentioned above, the Russian Federation has received an essential share of its financial and organizational support for the social sciences and humanities from abroad. Foreign foundations and organizations were extremely important in the 1990s and at the beginning of the 2000s. Western approaches to scientific systems and to capacity evaluation also became known in the Russian Federation in the 1990s, for example through the activities of the International Science Foundation (ISF), also known as the Soros Foundation. This has had a long-term impact on Russian science.

There is currently uncertainty in Russian science and technology policy about which approach would work best. The government should undertake targeted and weighted interventions with regular and rigorous evaluations and reviews, dropping initiatives that fail to produce results. This initiative should cover all federal programmes, which comprise a large part of Russian R&D, and should use independent expertise when evaluating the efficiency of programmes. At the moment, the evaluation of government initiatives, which involve considerable financial resources, remains the prerogative of state officials, and is not delegated to independent expert groups.

At least two federal target programmes should be mentioned with respect to the social sciences and humanities. They are: 'R&D in Priorities for the Russian S&T Complex in 2007–2012' and 'Research and Education Personnel in Innovative Russia in 2009–2013'. Other government initiatives relate to the development of the federal universities and the national research universities framework. The development of federal and national research universities will stimulate the integration of science and education in different forms (research universities, base faculties, joint laboratories, science and education complexes and so on). This development aims at improving the quality and efficiency of research and teaching as professional occupations, and enhancing their prestige to attract bright youngsters to these professions. When scientific organizations and institutions of higher learning are integrated, it is easier for them to attract talented youth, to solve their social problems, and to develop programmes for financial support.

Social science production and outputs

Monographs, books of collected articles and papers in scientific journals dominate the presentation and dissemination of research results in the social sciences and humanities. According to the available statistics, the overall published output in 2003 included 8,221 monographs, 9,154 books of collected articles, 24,538 textbooks and 29,1087 scientific papers (Mindeli and Kasantsev, 2005, p. 207). These statistics show that the Russian social science and humanities community has shown a strong ability to self-organize over the past two decades.

Hundreds of projects on different scales, ranging from the creation of students' discussion clubs to massive scientific and educational programmes, have been undertaken and completed, with support from international and Russian funds and from regional sources. A number of electronic networks and professional associations have been established, for example the Russian Philosophy Society, the Russian Society of Sociologists and the Russian Association of Political Science.

There is a need for a system that could objectively evaluate the results of scientific activities in order to make effective administrative decisions regarding Russian science and education. It might involve a citation index based on Russian scientific journals rather than on the ISI Science Citation Index, which is widely applied in the anglophone world. Some steps have been taken in this direction, but much remains to be done. Many Russian journals, including reviews, which are well known in the Russian scientific community, are not included in the Social Sciences Citation Index (SSCI). The SSCI is basically oriented to English-speaking journals, or at least journals providing a bibliography and summaries in English. Language is the main barrier that still isolates the Russian social science and humanities community from the rest of the world. To acquaint researchers in other countries with Russian research will require considerable effort, and focused shifts in Russian science policy. However, this does not seem to be the priority of Russian policy-makers for the near future.

The current reform of Russian science is basically aimed at increasing the efficiency of science, technology and innovation, emphasizing developments that could have a positive economic effect in the long term. The social sciences and humanities are not priorities and it seems that they are not in line with the government's focus on innovation and economic achievement.

Conclusion

Under the totalitarian Soviet regime, the social sciences and the humanities suffered more than the hard and natural sciences. The revival of the domestic social sciences and humanities will, to a large extent, depend on human resources and an appropriate government science policy. There is currently a need for wider understanding of their position as one of the main intellectual resources needed to help solve the state and society's problems. The government still underestimates the role of the social sciences and the humanities, while official science and technology policy does not assign any special importance to them in terms of state programmes and support mechanisms.

There is an invisible border that isolates the social science and humanities community from the government, policy-makers and other political elites in this country. This does not mean that top Russian decision- and policy-makers do not need advice and advisers on a variety of societal issues. The reality is, however, that they prefer to recruit their advisers from people who are politically or economically influential or have a certain reputation, without considering their professional background. The only explanation for this situation is that the social science and humanities community does not currently have a strong voice. Furthermore, the 'great expertise' of the past, represented by the inherited scientific establishment such as the Russian Academy of Sciences, has lost its influence. The domination of the individuals concerned faded because of their advisory positions during the communist era and because of the failure of the economic reforms of the late 1980s.

It should be recognized that at the beginning of the twenty-first century, Russian society appears unable to formulate answers that adequately encompass the scale of the problems it faces: creating an economy capable of producing all that is necessary for a 'big society'; forming a political system adequate for an effective economy; and developing the required critical mass of an elite with high intellectual and moral qualities. This is a task of enormous proportions for any society.

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Social sciences in Aotearoa/New Zealand and the Pacific region

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This report, focused on change in the last decade, is structured in relation to four emergent trends: new epistemological and methodological perspectives and practices from indigenous Māori, Pasifika, New Settler and new policy scholarship; improvements to research infrastructure; greater international visibility and dissemination; and increased interdisciplinary and intersectoral collaboration.

Introduction

Social scientists in Aotearoa/New Zealand and the Pacific region are working on researcher-initiated and policy-relevant research via a wide range of agencies. Consolidation in the sector through new initiatives and funding reflects the emergence of new leadership within the social science community and increased cooperation between academic and policy interests. In Aotearoa/New Zealand, funding for social science research emanates from a variety of sources, directly through and within the eight universities, and from other sources such as Crown Research Institutes, government departments, the Health Research Council and the Ministry of Research, Science and Technology (MoRST).

Perspectives and practices

Aotearoa/New Zealand is one of the larger island groups in the Pacific and was colonized by the UK through a Treaty negotiation with indigenous Māori in 1840.[2] It is now also home to large numbers of newer Pacific migrants who began arriving in significant numbers from the 1950s, largely in response to demands for labour and to subsequent family reunifications.[3] *Te tino rangatiratanga* (Māori self-determination or sovereignty), supported by the Treaty of Waitangi, has created ontological spaces within which Māori knowledge and research practices are influentially articulated (Durie, 2003; Smith, 2005). These spaces have been paralleled by the development of Pasifika research perspectives that reflect culturally informed rather than Western knowledge models (Smith, 2004). *Kaupapa* Māori research (research by and for Māori using Māori worldviews) challenges conventional epistemologies through its emphasis on synthesis, the interweaving of multiple strands, and differently conceived relationships between people and their environments (Durie, 2004).

Māori and Pasifika research praxis is now more widespread both in Aotearoa/New Zealand and in Pacific-based institutions than in the previous decade. Indigenous ethical perspectives have emerged in government-sponsored guidelines (Ministry of Social Development, 2008) and the Tofamamao Statement from UNESCO (2007). Applied work in public policy and public health is evident in the growing numbers of publicly funded Māori and Pasifika graduate students in expanding Māori and Pacific health and education research programmes. At least six content themes are emerging:

- youth voice and connectedness
- the practices and meanings of culture
- domestic violence and child abuse
- migration and urbanization
- gender issues
- the social, cultural, economic, political and demographic significance of these populations in Aotearoa/New Zealand.

1. With substantive input from Peggy Fairbairn-Dunlop, Tim McCreanor, Helen Moewaka Barnes, Cluny Macpherson, Charles Crothers, David Thorns and Richard Bedford.
2. The original Treaty, signed on 6 February 1840, between the British Crown and about 540 Māori *rangatira* (chiefs), continues to influence government decision-making, but lacking constitutional ratification, government positioning in relation to the treaty is ambiguous and poorly defined. See Humpage and Fleras (2001).
3. The six largest groups of Pacific peoples in New Zealand are Samoan, Cook Island, Tongan, Niuean, Fijian and Tokelauan, but there are also settlers from at least twenty-two other Pacific nations. See Macpherson (2008); also Bedford (2007).

In Aotearoa/New Zealand social science, the most frequently used methods and techniques are face-to-face surveys and interviews, the analysis of secondary sources, statistical analysis, textual analysis, and analysis of official statistics. But there is evidence of other, less familiar methods being explored and developed alongside *kaupapa* Māori approaches. These include Talanoa, Q methodology, visual methodologies, qualitative syntheses, and developmental evaluation approaches.

Enabling infrastructure

New institutional actors in social science research are shaping research funding and inter-university collaborations. Ngā Pae o te Māramatanga is one of Aotearoa/New Zealand's seven officially recognized Centres of Research Excellence. It has established support and made advances in research excellence, generating benefits for the Māori and society at large. Māori universities, Te Wānanga o Raukawa, Te Wānanga o Awanuiārangi and Te Wānanga o Aotearoa, a number of university-based Māori studies departments, *iwi* (tribal) authorities' research units and numerous private Māori research providers have been established. The Māori Association of Social Scientists (MASS) has been created to foster and develop Māori social science research capability and capacity.

A national project for building e-research communities has been established and a government-funded initiative, Building Research Capability in the Social Sciences (BRCSS), provides a platform for inter-university collaboration via advanced audiovisual communications. A New Settler forum, a Māori network and an Emerging Researchers Network operate via this system and actively engage postgraduates. In the period from 2000 to 2009, while increased numbers of Pacific students resident in New Zealand have been gaining qualifications in the social sciences, greater numbers of Pacific students have also been trained in social sciences in the University of the South Pacific, the University of Papua New Guinea, the National University of Samoa and the University of Hawaii.

The quality of research data in New Zealand has been considerably strengthened in the 2000s, with enhanced collections and greater access to official statistics. New, more systematic collections of official Pacific information – documents, policy information, census data and other statistical information – have also enhanced Pacific research capability.

International dissemination

The Social Sciences Citation Index shows a 50 per cent increase in publications relating to or about Australia, New Zealand or the Pacific, much of which is produced by local authors. Three new journals have been established – *AlterNative* out of Ngā Pae o te Māramatanga, *Te Kaharoa* focused on indigenous and Pacific issues, and *Kōtuitui*, a social science publication. The website Kiwi Research Information Service provides international access to a wide range of academic research. The international reach of journals, blogs and portals is facilitated by government commitment to encourage high-speed internet connectivity.

Interdisciplinary and intersectoral collaboration

A survey of New Zealand social sciences in 2006 showed that 63 per cent of respondents were engaged in interdisciplinary research while 28 per cent were in transdisciplinary research. A quarter of the respondents indicated that their key research was policy-relevant in the areas of education and training, social development and policy, health and disability, or people, family and society. Other significant sectors were business and trade, arts, culture and history, Māori, employment, environment and conservation, Pacific peoples, and government and international relations (Witten et al., 2006). Funding that privileges team-based research has increased the trend toward collaboration across sectors and disciplines. But maintaining robust and well-funded research streams for complex, interdisciplinary programmes addressing the social impacts of cultural, economic and environmental change continues to be challenging.

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Chapter 3
Unequal capacities

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Unequal capacities

Chapter presentation

Several papers in Chapter 2 referred to a decline in the quality of teaching and research in social sciences that has occurred in some countries in recent years; several also mentioned that there are large inequalities between countries and between institutions in the nature and quality of the social science research they carry out and the knowledge they produce. Knowledge production as measured by the number of publications in peer-reviewed journals is also very unevenly distributed across countries and regions (Chapter 4). Disparities in the volume, quality and visibility of social science research, and the continued supremacy of American–European social sciences, result in large part from disparities in research capacities. But how can capacities in social sciences be developed and improved? Governments, regional organizations and international agencies, UNESCO included, have been engaging with this issue for years. Strategies have been developed and attempts made to redress the divides, with varying degrees of success. Chapter 3 comes back to these issues, assesses some of these experiences, and addresses the challenges raised by the divide in social science research capacities.

Section 3.1 examines the social science research capacities at three levels – the individual, the organizational and the system levels – and argues that overcoming the limitations of research capacities calls for coordinated action at each of these levels. Section 3.2 examines the dramatic impact in some countries of consulting firms, private research institutes and non-governmental organizations (NGOs) on research capacity in social sciences. Section 3.3 discusses the effects of brain flows on these capacities. The last section reviews the experiences of countries that have improved their research capacities, and examines promising practices such as networks in social sciences.

Drivers such as differing levels of capacity, the privatization of research, brain flows and national strategies for the improvement of research are not specific to social sciences, and they are not limited to the global South. One problem facing anyone working on these issues, as the following articles repeatedly show, is the scarcity of data needed for the comparison of research capacities and for the assessment of strategies in different parts of the world, especially in the social sciences. There is an urgent need for data-gathering to support these comparisons and analyses.

3.1 Dimensions of capacities in social sciences

Introduction

Understanding what research capacities in social sciences are, and what limits them, is crucial for the development of an appropriate strategy for their improvement. Governments often equate building research capacities with training. To improve research capacities in social sciences, they establish graduate and postgraduate courses in social sciences, send students abroad, and in some cases facilitate international exchanges, through twinning programmes with first-rank international universities. These efforts focus on reinforcing the methodological and theoretical skills of individual social scientists, and providing better access to international research. But training large numbers of social scientists does not in itself suffice to improve research capacities at the national level. The production of knowledge supposes adequate institutional infrastructures, access to funding, and integration into scientific communities. This points to the existence of three levels of capacity: the individual level, the organization level and the overall system level. The degree of coordination between these three dimensions of research capacity determines the scope for capacity improvement of social science research systems.

Identifying and addressing knowledge deficits in social sciences research capacity is a priority for regional social science associations and councils, such as the Arab Council

for the Social Sciences (ACSS), the Latin American Council of Social Sciences (CLACSO), the Association of Asian Social Science Research Councils (AASSREC), and the Council for the Development of Social Science Research in Africa (CODESRIA). Within each region there are broad disparities in countries' research capacities, according to their size, funding capacity, institutional infrastructure and access to national, regional and international research communities. Larger countries tend to have bigger research communities and generally better infrastructures (AASSREC). Yet shortcomings in social science training, lack of finance and infrastructure, and low access to information tend to reduce the ability of social sciences to inform society and policy in many countries. In some countries researchers are subject to political manipulation, leading to low-quality social science research (ACSS).

With some variations, all the social science associations and councils are developing strategies to combat disparities in research capacity. They emphasize the training of individual researchers, provide refresher training in different research methods, facilitate contacts and exchanges with peers within the region, convene biennial conferences (AASSREC), produce refereed journals (CODESRIA) or develop regional research databases (CLACSO)

Kenya is a good illustration of the effect of lack of capacities at the three levels. Kenya is home to one of the oldest universities in Africa and one of its biggest producers of social science publications. Yet the effect of individual training on the country's research capacity in social science remains partial, because limitations at the institutional and system levels are not addressed. Consequently social scientists in that country face serious difficulties in carrying out their work and in the end do not publish in international peer-reviewed journals (Mweru).ب

Assessing research capacity in social sciences: a template

What are the main components of research capacity? How can it be strengthened? What are the main challenges that will become priorities for action? This template was sent to ISSC partners as a background document for their own assessment of existing research capacity in their region.

International development agencies such as the United Nations Development Programme (UNDP), the Organisation for Economic Co-operation and Development (OECD) and the World Bank have long been concerned with the development of country capacities, without which sustainable development cannot take place. They analyse the problem at three levels: the individual, the organizational and the system level. This distinction applies as well to the issue of research capacities. When assessing national or regional capacities to conduct social science research, it may be useful to separate the three levels.

The individual level

Have enough researchers the necessary education and professional skills to conduct research, using quantitative or qualitative research methods? Do they have the ability to identify research themes that are relevant to society, and to develop research questions? Increasingly also, researchers are requested to develop research proposals: do the researchers have the necessary skills to do this? Can they lead research teams, and can they communicate research results to improve public understanding, inform debate and advise policy?

An assessment of capacity development challenges at this level would look at the number of researchers, how they have been trained, their roles and the quality of the research they produce, the definition of which depends on the type of research promoted.

The organizational level

Well-trained researchers cannot do research unless there is demand for their skills, and unless they work in reasonably resourced organizations. Are there enough

research positions available to form a critical mass or a community of researchers in one or more institutions? How many and which institutions are sufficiently well funded to offer adequate infrastructure and an enriching research environment? The infrastructure necessary to do research in the social sciences is not as elaborate or as expensive as in the natural sciences but it includes computers, internet access, library and access to databases, journals and books. Is funding sufficient to allow fieldwork, recruitment of assistants, attendance at conferences and workshops, spending time abroad, and publishing?

The assessment of challenges at this level would look at issues like the type of research organizations (universities versus research centres and institutes), their status (are they centres of excellence, are they considered world-class or not?), their track record in terms of managing research programmes and publishing, their staff (are they stable, committed and available in sufficient numbers?), the quality of the infrastructure, the way they are financed, and last but not least, the opportunities they provide to publish and to collaborate and exchange information with other researchers at national, regional or international level.

Funding is a central issue, and needs to be considered from several angles. Do researchers bid for grants from national funding agencies? How dependent are they on funds from international agencies? How accessible are such funds? Is the level of financing sufficiently stable to allow research projects to be carried out over several years? What mechanisms of peer review and accountability are employed, and how does this impinge on capacity development?

The research system level and the overall national and regional contexts

Of concern here are the broader policy framework and socio-political context within which social science research operates. An assessment of capacity development problems and challenges at this level would need to consider four specific elements.

The first element concerns research policy. Is there a national policy that defines priority areas? Are there any indications of genuine interest in research on the part of the authorities or wider society?

The second element concerns the working conditions of researchers and their salary levels. The latter are generally linked to the salaries of the overall civil service, and cannot be modified by a single organization or even ministry. Do researchers have sufficient incentives to continue carrying out research rather than joining the private sector, or leaving their country? These include monetary incentives but not only. Are salaries sufficient for people to work full-time instead of looking for consultancies, moonlighting and working in other institutions, or leaving research to join the private sector or go abroad? Another series of questions relates to the incentives that may exist to encourage researchers to publish.

The third element concerns the country's overall level of stability and security.

The fourth element concerns the degree of academic freedom: freedom to teach, freedom to publish and freedom of the press. What tradition of academic freedom does the country have, if any?

Unsatisfactory conditions in any of these areas may reduce the scientific production, and may tempt academics to leave the country. When designing strategies to build capacity, certain negative conditions are easier to overcome than others. It is easier to train individuals than it is to retain them, and easier to create an institution than to create a community of researchers, or to maintain an enabling environment. But for success, all the elements have to be addressed.ب

Capacity development challenges in the Arab states

Seteney Shami and Moushira Elgeziri for the Arab Council for the Social Sciences (ACSS) www.arab-council.org

Current challenges in the Arab region require a concerted and wide mobilization of resources as well as the thoughtful identification of capacity-building modalities to respond to various needs. Major capacity-building targets ought to include the enabling of learning and the exchange of experiences within the region and the coordination of scientific and research policy across the region, as well as focused interventions for specific needs in different localities.

The *Arab Human Development Report* (UNDP, 2009) describes the Arab region as suffering from a 'knowledge deficit'. This is true but is also too broad a criticism, subsuming a number of complex deficiencies at the individual, institutional and systemic levels. The challenges are too big for small and fragmented regional research programmes to redress. They require a concerted and wide mobilization of resources as well as the thoughtful identification of capacity-building modalities to respond to various needs. Addressing the development of capacity regionwide means taking into account the huge disparities between the size and quality of the social science communities of the countries in the Arab region. It must also heed disparities in financial resources and allocations to social science education and research. Major capacity-building targets ought to include the enabling of learning and the exchange of experiences within the region and the coordination of scientific and research policy across the region, as well as focused interventions for specific needs in different localities.

Existing interventions have oscillated between capacity building for individual disadvantaged but promising researchers, and enhancing the capacities of highly specialized centres. This has been done by promoting new mechanisms for training and career opportunities, and by providing incentives for further education, field research and publication. A few endeavours have also targeted advanced graduate students to help them with dissertation writing and completion. On the other hand, little has been done in the past decade to either enhance existing institutions' capacity, or to create new ones specifically geared towards excellence in the social sciences or one of its branches. There are, however, an increasing number of networks that bring researchers together as individuals on a regional Arab level across the Mediterranean or in the Euro–Arab space, and globally to address specific, usually developmental, issues.

Despite the diversity of the region, Arab countries generally share certain common features. These include:

- Poor quality of education, particularly in the social sciences. Governments have given priority over the years to educational quantity at the expense of quality.
- Limited attention to, and marginalization of, the social science disciplines, while giving priority to natural, professional, and business and management studies, which are identified with modernity and development. Private higher education institutions barely pay attention to the social sciences.
- As a result of these factors, social sciences have a diminishing role in response to societal problems and public interest, and only a modest role in informing policies and effecting social change.

These three features are a consistent challenge to the development of the social sciences, whether in countries with established educational traditions but modest resources or in wealthy countries with a limited history of higher education. It is along these main axes that the newly established Arab Council for the Social Sciences seeks to make itself visible and effective.

At the individual level, much needs to be done to redress the shortcomings in social sciences training. This means addressing 'pipeline' issues (ensuring the supply of talented students into the social sciences) and curriculum and pedagogy weaknesses at university departments, especially given the increasing difficulties in accessing graduate training outside the region. Second, there

is a need to bolster scholars' sense of themselves as a research community by promoting collaborative research and scholarly exchanges. This community encompasses researchers within the region, but extends too to scholars in the diaspora, who contribute invaluable expertise and resources and wish to reconnect to their homeland and re-engage with its problems.

Arab researchers undoubtedly recognize the main challenges facing Arab societies, but are hampered by serious deficiencies in methodological training and by isolation from international debates and knowledge production. This applies most notably to the younger generation, who have suffered most from the deterioration in education. To redress these problems, it will be necessary to work on several fronts at the same time: training to increase skills, research and publications to produce knowledge, and networking to enhance the visibility and empower the voice of the region. The challenge is to carry out these tasks while not losing sight of, and promoting, established centres of social science teaching and research.

On the institutional level, we should recognize the diversity of institutions engaged in social sciences, including universities, research centres and research-oriented NGOs. These have differing research capacities and access to resources. Furthermore, the obstacles they face may not only be financial, but also infrastructural and related to building a beneficial research environment. NGOs tend to receive much of the international funding for research, but given the pace and burdens of contract research, issues such as research ethics, methodology, critical discussion and publication are neglected. Finally, the research community across the region suffers from a lack of access to information, including both official information, such as statistical surveys, archival materials and documentation, and 'private' information and grey literature collected by consulting firms and contract research organizations. Researchers abroad often have better access to such sources than researchers within the region.

Finally, Arab elites and states generally share a distrust of research and a desire to manipulate it. An important challenge is to build trust with policy-makers, especially those who might positively influence research policy and resources for higher education, while at the same time maintaining the independence and integrity of research and freeing researchers from the control of Arab governments. It is also crucial for the public to understand the social sciences' role in analysing their problems and improving their lives. If they fail to identify themselves with the public interest and public good, the social sciences in the Arab region risk reinforcing the image of research as an unnecessary luxury.

Seteney Shami and Moushira Elgeziri

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Social science research capacity in Asia

John Beaton for the Association of Asian Social Science Research Councils (AASSREC) www.aassrec.org

The Association of Asian Social Science Research Councils (AASSREC) comprises fifteen member nations that enjoy differing degrees of social science research capacity. Some rapidly developing countries such as India and China have very large and well-funded social science resources, while others are developing capacity as their circumstances allow. Besides grossly inadequate funding, their comparative isolation from regional peers and wider-world associations also impedes the progress of some Asian nations in the social sciences.

For the purposes of this discussion, AASSREC and other Asia Pacific nations' social science research capacity (which includes its impact capacity) can be regarded as the sum of the following elements:

- Human capital: the numbers of educated, trained and employed social scientists plus the postgraduate and undergraduate social science student population who will provide a sustained national research effort.
- Infrastructure and research funding: the buildings, facilities, archives and libraries, support staff and information technology that provide researchers with space and facilities. Here infrastructure includes direct or indirect financial support from governmental or other agencies.
- Connectivity: social science research is an important part of enhancing the public good, and research results must be made public through dissemination in publications or by other means. Connectivity also includes direct and unimpeded access to collaboration with government agencies, public institutions, industry, private individuals and organizations, international peers and professional bodies for the purpose of sharing ideas and information.

The research capacity divide in Asia

By the research capacity divide, we mean the distance between the aspirations of social science practitioners and administrators, and the actual conditions under which they attempt to contribute to the national good. It can be thought of as the degree of disjuncture in the three points above, particularly how infrastructure and connectivity consistently lag behind human capital irrespective of the degree of national economic development. Asian nations vary widely in this regard. Some enjoy relatively large and well-developed support for social science research capacity from government, industry and an international network of collaborators. These tend to be large nations with strong economies. Others have very limited resources. But in all cases, the infrastructure and other support available to social science researchers are a fraction of those provided to scientific and technological researchers in spite of the various and very evident human and social problems facing these governments. While the research capacity of the combined AASSREC nations is marked, their governments' grasp of emerging issues is not. Social scientists in developed and developing nations are equally frustrated that their knowledge is not quickly translated into improved well-being for their people. Social scientists in small, less developed nations may struggle to have any effect at all.

Challenges in developing research capacity in Asia

The nature of the research capacity divide in the various Asia Pacific nations is varied, complex, and in some cases currently difficult to deal with. Considering the three general elements contributing to overall capacity – human, infrastructure and funding, and connectivity – it should be possible to conceive a simple but informative matrix for the AASSREC nations. Such a matrix would convey a capacity assessment of each country at the individual, organizational and research system levels. Some nations have exceptional scholars who suffer from pitiable infrastructure support and little connectivity. Other nations may have numerous researchers and sufficient infrastructure support, but lack the connectivity to remain informed about sophisticated research methodologies and advances in their international colleagues' thinking. India, China, New Zealand, Australia and Japan have well-developed social science linkages with Europe and the Americas. Yet social scientists in most other AASSREC nations mostly have impermanent individual relationships

or weak institutional arrangements overseas. A couple of AASSREC nations have almost no connections beyond their own borders.

The individual level

Higher education must provide young minds with informed and stimulating mentoring. There is a threshold size for a viable research community, whose members can only be provided by higher education institutions, or by government research units. Opportunities for employment and promotion in Asia correlate with a nation's population size and research infrastructure investment, thus disadvantaging smaller nations.

The organizational level

Organizations must provide social scientists with infrastructure and also with opportunities to make their contribution to the national interest. Research systems in Asia are improving the connectivity that researchers require to engage internally and internationally with others, through information technology but also by face-to-face meetings at which efficient and meaningful understanding is achieved. A rare good news story is that thanks to the information revolution, researchers will now have the opportunity to leapfrog the previous infrastructural limitations. This will particularly benefit those in small countries who have suffered a lack of research support materials. Ready electronic access to research communications, including current debates, publication opportunities and research findings, will be a watershed in capacity development. This advantage will greatly enhance opportunities for all social scientists in AASSREC nations and others, especially the previously disadvantaged smaller countries

The research system level

It is in the interests of regions, as well as countries, to support a well-networked system of collaborating scholars and practitioners in the social sciences. Economic, political, ethnic and other social issues are rarely, if ever, unique to a single country. In a globalizing world, issues and potential difficulties can spread across national boundaries with exceptional ease and speed. To some degree, all social scientists in Asian nations suffer from an inability to share, compare and analyse their data, experiences and thoughts with their peers. Connecting organizations, such as AASSREC, provide nations with developing social science research capacity with the best opportunity to engage with their regional colleagues.

The challenge of understanding the bewildering complexity and interaction of social, economic and political systems in an ever-changing world has inspired social scientists in Asia and elsewhere to embrace the promising, but challenging, guiding principle that large-scale problems demand multi- and cross-disciplinary social science approaches. Furthermore, these problems require approaches that cross sectoral boundaries to the natural and physical sciences, engineering and the humanities.

India and China invest very significantly in publicly funded social research, while most other developing Asia Pacific nations are slowly improving their research capacities and are not well connected to international trends and developments in social science disciplines. Census and other macro-scale data is not generally well-supported and researchers may have limited access to data banks. This means that inter-regional comparative analyses suffer. Collaborative approaches by social scientists need greater and stronger opportunities to provide the knowledge that institutions and governments can use to help resolve difficult issues.

Most, but not all, Asia Pacific nations have peak associations for individual social science disciplines and collective organizations, such as social science research councils. Learned academies or discipline-based societies are numerous but not universal. A persistent problem in the region is the lack of meeting opportunities. The fifteen-member AASSREC convenes biennial conferences to promote mutuality and information exchange. These conferences reveal a commonality of social science issues, many of which focus on building harmonious societies characterized by equity, trust in institutions, meaningful employment, educational opportunities and access to health and social services. These issues are universal and there are opportunities for collaboration between Asia Pacific researchers and the developed social science institutions of Europe, the Americas and elsewhere.

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Social science capacity-building in Latin America

Alberto D. Cimadamore for the Latin American Council of Social Sciences (CLACSO) www.clacso.org

Promoting a way of thinking that is capable of relating social sciences to urgent social problems in Latin America requires an appropriate regional institutional environment. This goal has been one of the greatest challenges over the past forty years. One of CLACSO's central priorities is to empower centres from relatively less developed countries and areas by ensuring their social scientists' participation in the network, which itself contributes to capacity development.

Building capacity in social science can be an extended process. It involves the establishment, expansion and strengthening of institutional, operational and organizational resources capable of generating relevant knowledge for society at the local, national, regional and international level. This process tends to produce a greater understanding of the main problems that society or groups within it face by developing actions or policies to address them.

One of today's greatest challenges is to link social sciences and action. This need was explicitly acknowledged by UNESCO at its 2006 International Forum on the Social Science–Policy Nexus, which scientists and policy-makers from more than eighty countries attended. One of the main outcomes of the so-called Buenos Aires Forum was a call for the redefinition of the relationship ('nexus') between social science and action, which could be considered the primary goal of evaluating Latin American social sciences' capacity development. The question, still current, is: how is that goal to be achieved?

CLACSO was an active participant at the Forum. In striving to answer the question above, CLASCO aims at a redefinition of research design in social sciences. One aim of such a redefinition is to permit translatable results to be turned into policies serving the needs of progress and social change. In this regard, CLACSO's unchanging critical thought can be considered a crucial tool in the capacity-building process. This type of scientific thinking, which to some extent applies the critical theory approach, is intended partly to help understand or explain social reality, but also to identify the areas for improvement and the means to achieve it.

Promoting a way of thinking which is capable of relating social sciences to urgent social problems in Latin America requires an appropriate regional institutional environment. This goal has been one of the greatest challenges taken up by CLACSO over the period since 1970. It has done so by forming the largest network of social science research institutes in the region. This network brings together 259 research and higher education centres from 25 countries, including the largest and best-known regional state universities and NGOs devoted to social science research. These knowledge production and dissemination centres operate in historically and geographically heterogeneous environments which shape their actions. So one of the network's central priorities is to empower centres from relatively less-developed countries and areas by ensuring their social scientists' participation in the network, which itself contributes to capacity development.

The capacity-building core includes a group of interrelated activities geared towards:

- financing social science research with a critical thinking approach
- linking such research to postgraduate education at the regional level
- facilitating information and scientific research availability and dissemination by means of new technologies
- promoting actions targeted at relatively less-developed social sciences areas in order to ensure full participation in the network of regional scientists.

These actions focus on social, economic and political interest issues. They address the major problems facing Latin American societies, such as inequality, poverty, education, culture, democracy, environment, social movements, labour, social conflict, development and regional integration. Specifically, a regional programme of

poverty and inequality research studies addresses the most important social, economic, political and ethical problems afflicting Latin American and the Caribbean countries. While it is true that this is a regional programme, it focuses on relatively less-developed countries and offers research funding for these issues by organizing international seminars and postgraduate courses, both face-to-face and by distance teaching, in which the participation of young scholars, social representatives and decision-makers is promoted.

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Why Kenyan academics do not publish in international refereed journals

Maureen Mweru

An examination of most of the highly ranked journals reveals that few, if any, articles are published by academics from sub-Saharan African universities. This is the case even when the article's main topic directly relates to issues relevant to sub-Saharan Africa. The study outlined here aimed at explaining why African, and specifically Kenyan, academics do not publish in international refereed journals, and at taking into account academics' own viewpoints on how to increase their number of publications in such journals.

Although publishing in international peer-reviewed journals can be viewed as a source of credibility and authority in an area of specialization, an examination of most of the highly ranked journals reveals that few, if any, articles are published by academics from sub-Saharan African universities. This is the case even when the article's main topic directly relates to issues relevant to sub-Saharan Africa. So it seemed appropriate to investigate this matter. Kenya was chosen as the country for our investigation. The study aimed at explaining why Kenyan academics do not publish in international refereed journals, taking into account academics' own viewpoints on how to increase their number of publications in international refereed journals.

The study site was one of Kenya's main public universities, located in Nairobi. In-depth interviews and focus group discussions were organized to collect data from faculty members who had not yet published a journal article or who had only published one article in the past three years. There were five focus group discussions which brought together twenty-five faculty members teaching in five different university departments. Each focus group discussion consisted of five individuals, ranging in rank from tutorial fellow to professor. Interviews were also conducted with the five chairpersons of the five university departments. The notes made during the interviews were transcribed and transferred on to a document summary sheet. This information was then analysed according to themes.

Factors involved in limited publications

The following factors stand out in the data:

- lack of time and low salaries
- difficulties in obtaining recent and relevant books and journal articles
- negative reviews of submissions to journals
- the attitude of the university's administrative services
- the attitude of faculty.

Participants noted that the lack of time was a major contributing factor to the limited number of publications. Overcrowded lecture halls, an excessive number of exams to grade, numerous university meetings, and serving on various university committees were all cited as taking up any extra time that could otherwise have been used to write journal articles. Furthermore, senior faculty members complained about having to supervise up to twenty Masters' and doctoral students' projects and theses. Little time was left for research and publishing. In addition, those interviewed stated that if they did find some extra time, it was spent on teaching extra classes in private universities or colleges to supplement their incomes. Low faculty wages were therefore seen as a major hindrance to research and publication.

Low salaries were also mentioned in connection with research and fieldwork. In the absence of research funding and grants, academics use their own personal resources, which often results in less research time and thus fewer research findings to publish. Low salaries also mean that academics cannot afford journal access fees. They accused some journals of charging such exorbitant publishing fees – including for online access – that they could not keep up to date with current literature and research findings. A number of academics were unsure whether their research areas had already been covered, or of the latest research findings in their field.

In addition, the interviewed academics related the discouraging comments that they received from journal reviewers. In certain cases, reviewers suggested such major changes on the submitted articles that their authors simply did not take the trouble to resubmit them. Reviewers also called on the authors to read further and include more current literature, and as we have just seen, limited resources made it particularly difficult to do so. Certain participants also felt that the underlying reasons behind these reviews lay in a negative attitude towards sub-

Saharan-based scholars and their research, and a disregard for the issues that were addressed in the articles that were submitted. This is particularly interesting in view of the supposedly anonymous nature of articles when they are presented to reviewers.

University administrative services were accused of not doing enough to encourage publishing by faculty members. Academics who published in international journals, for instance, were not rewarded. Academics also felt that the administration did not place enough emphasis on the importance of publishing. Individuals needed to have published only three articles within a space of three years to be eligible for promotion from lecturer to senior lecturer. Many faculty members did not feel the need to do the extra work involved in publishing, and therefore stopped writing articles from the moment that they had published the necessary number of articles for promotion. A few of them argued that they were content and were not really interested in promotion, since the university employed them on a permanent basis. This air of resignation or fatalism could also be witnessed among junior faculty members, who pointed out that they had never been taught or guided on how to write journal articles.

How to increase the number of publications

A number of those interviewed felt that the university administration could support the effort needed for publishing by moderating class sizes as well as teaching and non-teaching assignments. Two suggestions were made in order to increase the quality and quantity of output: greater recognition for prolific academics, and a requirement that all faculty members publish at least one journal article per academic year.

Salary increases and the provision of research funds were regarded as potentially positive measures. They would mean that academics would no longer have to teach extra classes to increase their income. They could then spend a greater amount of time on research and publication. In addition, higher salaries would allow them to afford the publication fees demanded by certain journals. Differentiated journal access fees were also mentioned as a way of supporting and encouraging African and developing-country scholars, improving their access to current literature and existing research. Junior faculty members who gained greater access to peer-reviewed articles would get a clearer picture of what a 'well-written' journal article looks like. Junior faculty members also pointed out that they needed better guidance from their superiors on how to write for scientific journals, notably by getting them involved in research projects and writing up research findings.

Concluding remarks

Several measures need to be taken in order for the number of publications to increase. The creation of a positive climate for research (as mentioned by Proctor, 1996) is one of them. Research has to be valued, and greater time and effort must be devoted to it. Universities in sub-Saharan Africa, including Kenya, ought to provide greater support to their faculty staff. Although many universities in resource-poor countries such as Kenya might not possess the necessary funds to subscribe to international journals, they could support their faculty by identifying and subscribing to a few key journals.

Research funding also represents a critical factor. It has been widely acknowledged that without funding, research cannot proceed adequately (Proctor, 1996). However, in the current context of global recession, academics in developing countries are not always able to rely on developed countries in order to gain access to the funds they need. Perhaps it is time for sub-Saharan-based scholars to seek alternative sources of funding for their research. Faculty members also need to take steps to help themselves and each other, for instance through self-help groups in which they can exchange advice and guidance, including feedback on drafts of articles. This could also reduce the number of harsh reports they receive from reviewers. Self-help groups have been found to increase scholarly outputs in countries such as the USA (Pottick, Adams and Faulkner, 1986).

If Kenya, and sub-Saharan Africa more generally, are to become active members of the global intellectual or scholarly community, they will have to take note of the findings reported here. I would therefore insist on the need to encourage more research and publications by academics from developing countries by outlining the positive and lasting impacts their research findings could have on society. Senior faculty members must fulfil their responsibilities as role models to their junior colleagues and students. In other words, they have to produce quality research and publish their findings in international, peer-reviewed journals.

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3.2 Marketization of research

Introduction

The case of Kenya presented above highlighted how low incomes induce scholars to combine teaching at university and 'moonlighting', thus drastically diminishing their time for academic research and endangering the quality of their teaching. Funding scarcities in Africa and elsewhere often lead scholars to work as consultants and to stockpile short-term research contracts. Social sciences have gained visibility and some popular legitimacy as a result of these developments. But consultant-led research can nevertheless be problematic in problem-rich and resource-poor environments. Traditional university and institution-led research has various mechanisms in place to check the quality of the work produced. In contrast, consultancies are mainly responsive to the market and a specific client base. Quality control is often absent. Financial incentives encourage researchers to shift rapidly from one topic to another, a practice which increases the atomization of knowledge rather than thorough understanding of entire problematics (Richter and de Kadt).

In some regions, donor agencies have become the main source of research funding, with decisive outcomes for the kind of research undertaken. In the Arab East, for example, agencies finance research centres outside universities (such as NGOs and consultancy firms), in conformity with conceptions stressing the need to develop and empower civil society (Hanafi; Shami and Elgeziri). This has led to the formation of new elites, NGO leaders enjoying easier access to funding agencies. Again in line with international priorities, new research themes, such as gender, poverty, democracy and governance, have mobilized researchers. The research financed by agencies favours the collection of large data sets, privileging the production of quantitative indicators over qualitative and critical analyses, and over any understanding of the root causes of poverty (Hanafi).

The mushrooming of consultancy firms and NGOs drawing on a large number of social scientists amounts to an internal brain drain, which is no less problematic than the external brain drain, even if it is less talked about. How widespread these practices are, and how they impact on research, needs further attention. The first, paradoxical indications we have, however, suggest that the growth of these bodies does not result in as big an improvement of knowledge as might be expected. Instead of boosting research capacity and orienting quality knowledge production toward relevant policy issues, funding practices by agencies deplete them, by privileging short-term studies which do not facilitate the accumulation of knowledge and theorization.

The development of consultancies in South Africa

Linda Richter and Julia de Kadt

Although attractive because of its immediate relevance to real-world challenges, problem-oriented research has raised concerns about the empirical validity, conceptual strength and political susceptibility of its findings. Governments, intergovernmental organizations, aid agencies and donor groups insist increasingly on its use in shaping and evaluating development practice and policy. These growing demands for research are more and more often being met by independent consultants.

Social science has witnessed a surge in problem-oriented, context-specific and transdisciplinary research. Although this form of research is attractive because of its immediate relevance to real-world challenges and complex contemporary social problems, concerns have been raised about the empirical validity, conceptual strength and political susceptibility of its findings. Nonetheless, the popularization of this form of knowledge production has encouraged governments, intergovernmental organizations, aid agencies and donor groups, among others, to insist increasingly on its use in shaping and evaluating development practice and policy. These growing demands for research are increasingly being met by independent consultants.

Particularly during the 1990s, reductions in public funding for research in Africa crippled the capacity of academic institutions, rendering them incapable of responding to growing research demands. Instead academics, programme officers from aid and development agencies, and recent graduates were drawn by financial incentives to migrate increasingly towards problem-oriented research and to respond to requests for technical assistance by working on their own instead of via established institutions. Many of these individuals had relevant practical experience, but limited and fairly narrow research expertise (Waast, 2002). From the requisitioning agencies' point of view, stand-alone professionals can take on commissions at much lower prices than institutions with overhead costs, training commitments and the like. The resulting growing reliance on consultant-led research in the social sciences in Africa is now evident in professional associations and networks, particularly regarding monitoring and evaluation, and in the growing roles played by market research companies in the social policy and development domains.

Social science has certainly gained enormous visibility and popular legitimacy as a result of these developments, making findings more acceptable and the field more attractive to graduates. But the growing role of consultants creates problems at the same time, particularly regarding quality control and the development of a reliable body of knowledge. In order to become influential in universities and research institutions, researchers need doctoral degrees and multiple, peer-reviewed publications, criteria that help build skills and ensure quality. In contrast consultants, particularly in the African context, are not necessarily equipped with the training or inclination to review existing literature thoroughly and build on existing work. Peer review is not required, and consultants frequently move between topics, resulting in the atomization of knowledge. Finally, the growth of consultancy is primarily constrained by market responsiveness. If a consultant's work is valued by a client, additional and increasingly well-paid assignments are likely to follow. These incentives differ significantly from those that promote excellence in a traditional academic environment.

The combination of the practices and pressures shaping consultant-led research, its high visibility and its public legitimacy, all mean that it is particularly vulnerable to the generation and repetition of ill-formed and even incorrect ideas, often with substantial implications for policy and practice. This has been particularly well illustrated by the emergence and concentration of global attention on the 'AIDS orphan crisis'.

Paediatric HIV cases were documented in the earliest days of the epidemic, although it was only in the late 1980s that the care needs of children infected with or affected by the virus began to receive serious attention (Gurdin and

Anderson, 1987; Beer, Rose and Touk, 1988). The focus shifted in 1997, when estimates suggested that there were millions of AIDS orphans (Hunter and Williamson, 1997; UNAIDS, UNICEF and USAID, 2002). As ideas evolved through the grey literature, such as meeting reports and consultancy reviews, the discussion of the impact of HIV and AIDS on children narrowed to an almost exclusive focus on orphans, understood as children who had lost their parents and were dependent on a charitable world for assistance. The interventions envisaged in response were mostly limited to the provision of psychosocial support for the affected children.

In retrospect, it is perplexing that a complex, long-term and global phenomenon, with multiple ramifications for children and families, could be reduced to such simplistic ideas. Children will obviously be affected by adult illness in the home long before the death of their parents, and by asset loss and destitution after it. Children are also affected by ambient conditions, such as poverty, dislocation and conflict. However, these complexities were lost in the sheer size of the projected orphan numbers. Data were recycled through reports, primarily produced by consultants, and concerns about child-headed households and skip-generation families flourished. These developments occurred within a context of dramatically increased financial resources. International funding for HIV/AIDS, excluding increasing resources specifically for research, shot up from US$1.2 billion in 2002 to US$7.7 billion in 2008, a great deal of it directed to the worst-affected countries in southern Africa (Kates and Lief, 2009). The very success of the AIDS orphan image in fundraising and advocacy, together with the near absence of stringent, discipline-informed research, resulted in increasingly rigid perceptions and practices. The idea of AIDS orphans as the primary face of the epidemic's impact on children, shaping the use of so much of this funding, became increasingly difficult to challenge.

It took nearly twenty years for these simplistic ideas to be questioned by systematic reviews of academic work (for example, Bray, 2003), critical appraisal of predicted outcomes (for instance, Meintjes and Giese, 2006), and careful re-examination of oft-quoted data (for example, Richter, 2008). This re-evaluation originated in academic contexts, and guided substantial revisions of the ideas that had long shaped policy, programmes and research on children affected by HIV and AIDS. It is now clear that children are affected in multiple ways by their experiences of HIV/AIDS, and by the impoverishing effects of the epidemic on their families and communities. We have also learned that children who lose parents are unlikely to become unsocialized threats to society. Furthermore, the vast majority of so-called AIDS orphans actually have a surviving parent. Therefore, to be effective, assistance needs to reach not only orphans, but many other affected children. Interventions need to target vulnerable families and address the poverty that lies at the heart of the deprivation associated with HIV and AIDS.

While the work of consultants helped bring children and AIDS into the public view, generating widespread interest and support, it also led to the acceptance of underdeveloped ideas and data, and caused resistance to change in response to new evidence.ب

Linda Richter and Julia de Kadt

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Consultancies and NGO-based research in the Arab East: challenges arising from the new donor agendas

Sari Hanafi

Since the Washington consensus in 1989 and its recommendations for the support of civil society, the international community has contributed to the creation and subsidizing of research in centres outside national universities. The production of social-scientific knowledge in the Arab East (Egypt, Jordan, Lebanon, the Palestinian territory and the Syrian Arab Republic) cannot be understood without reference to the genesis of social sciences in this region since the colonial era and the political economy of the aid system.

The growth of the number of research centres in the Arab East is related to the proliferation of NGOs. Within this area, almost 122 centres involved in research activities emerged in the context of the political transition in the Palestinian territory and Lebanon and the economic transition of Egypt and Jordan. This abundance of NGOs is not specific to this region, but is also found in any developing country where the international community provides aid for promoting local civil society.

This contribution focuses on the region's research structure and production. I raise the following questions: Why have consultancies and NGO-based research developed? What impact do they have on the quality of the produced research and knowledge?

Aid system and the emerging NGO research centres

In the region, research centres off university campuses – whether private profit-making consultancy firms or NGOs – are flourishing. There are two specific reasons for this: the promotion and implementation of the peace processes in Lebanon (after the 1989 Taif Agreement) and the Palestinian territory (after the 1993 Oslo Accords), and the advocating and monitoring of economic liberalization in Jordan and Egypt. The donor community's keyword in these processes was the 'empowerment' of civil society.

This transformation of the donor agenda was linked to three complex processes. First, since the early 1990s, a fundamental shift in favour of NGOs has occurred in the political economy of aid. Internationally, this moment coincided with a change in the sources of aid to NGOs. global Northern and Southern NGOs' mutual, solidarity-based support withered. This support was replaced by bilateral and multilateral relations between global Southern NGOs and governmental and development agencies. Regionally, this period coincided with the 1991 Gulf War and the onset of the Madrid peace talks, which reconfigured Palestine's geopolitical status and recast the West Bank and Gaza Strip as sites of 'peace-making'.

Second, the new political economy of aid in favour of NGOs created new internal forms of social and political capital in the region. This led to the nurturing and founding of research centres at the expense of aid to universities, which were perceived as public institutions rather than as part of civil society. Although the international actors recognized the institutional pitfalls of moving research outside universities, they highlighted the benefits of supporting research within small-scale units which were unhampered by university bureaucracy and therefore more flexible and efficient. In respect of the Palestinian territory, they argued that these units could also sustain research when universities closed down as a result of internal political conflicts and curfews imposed by the Israeli occupation forces.

Third, local NGOs' entry into the aid channels led to the formation of a new elite. These were NGO leaders who positioned themselves locally within development channels and networked globally to become what Hanafi and Tabar (2005) call a 'globalized elite' who are familiar with the world of aid agencies. Intellectual entrepreneurs, expert sociologists and consultants emerged, becoming part of the donor agencies' networks and familiar with the cognitive code of donor agencies in the research field (Kabanji, 2005). Their actions were essentially based on debates, development paradigms and international standards not bound to their local context.

This new situation was marked by changes in aid policy, the emergence of NGO-funded research centres, and a three-dimensional crisis for national research systems

(financial, institutional and one of self-confidence) (Waast, 1996). New forms of knowledge production emerged. The consultancy firms and NGO research centres cherished by donors readily accepted the transfer of new activities and methodologies. They were supported by project funding, rather than by the long-term funding of coherent research programmes. This trend had serious negative consequences for the accumulation of knowledge and specialization, which is necessary to ensure good research.

New methods and areas of research

Since the 1990s, gender has become an important lens through which societies are studied in the Arab East, as in the rest of the world. Funding supports specifically favoured themes related to gender, such as the democratization of the Arab world, school curricula, the oral history of women's experience, and, more abstractly, patriarchal and semi-patriarchal domination. However, most of this research was not developed by undertaking a 'mainstream gender analysis', which is typical of research in the North and some parts of the South. Hence it remained somewhat superficial.

Funding organizations favoured fact-finding research projects based on unambiguous quantitative indicators. This 'fetishism of the quantitative' has been devoid of critical analysis and interpretation.

Eight research centres in the Palestinian territory and five in Jordan, for example, have been asked to centre their activities on the production of opinion polls on political issues and sample surveys on social issues. This is linked to the new notion of satisfying differentiated 'publics'. Citizens need to be satisfied with the government's actions and with donor interventions in the social and political spheres. Surveys and polls are used as scientific tools to measure and monitor the introduction of systems defined on the basis of preconceived models which are, in turn, based on experiences tested elsewhere, as well as to legitimize interventions (Bocco et al., 2006). NGOs' research centres in the region claim that the new citizens accept these monitoring, assessment and evaluation methods, thereby indicating the superiority of their analysis over universities' in-depth comparative analysis.

The study of poverty is another example. Poverty studies conducted in the Palestinian territory and Egypt have been directed towards surveying the 'poor', identifying where they live, so-called 'poverty mapping', and suggesting different measures of 'poverty alleviation'. Having discovered that the poor occupy certain neighbourhoods, specific interventions were proposed without examining why the poor live in these neighbourhoods or assessing the root causes of poverty, such as the role of the state in the distribution of resources and the negative impact of structural adjustment policies. Many of these studies have been carried out, sponsored and published by UN agencies, leading to action research and interventions that NGOs later implement. The sponsoring organizations often emphasize the collection of demographic data. The surveys that they sponsor are therefore descriptive in nature, based on assessing consumption and income levels, life expectancy, child mortality and literacy levels. A thorough analysis of this raw data and its interpretation on the basis of broader sociological, anthropological and historical studies is usually not on the agenda.

Conclusion

This paper has attempted to discuss the problematic development of research in the social sciences in the Arab East as carried out with external funding in research centres outside universities. It is argued that even though social research has recently flourished in the region, the studies tend to lack critical depth. This kind of donor-driven research (in the sense of Bourdieu) is developed and carried out by competing research entrepreneurs seeking contracts, rather than being structured by researchers reflecting different sensibilities in terms of historical analysis, social class or ideology. Many such projects are nothing but a succession of one-year initiatives meant to produce policy research. These research projects lead to too much quantitative research, including opinion polls, and aimed at identifying research questions that are often conceived without theories to support them. Such research does not enable its readers, and other citizens, to be critical of their society.

The most salient issue in the changes discussed above is the kind of funding available to research. The scarcity of public funds, the lack of financial support from the (sometimes) wealthy local community and the exclusive reliance on foreign funding hinder the research centres' ability to accomplish long-term planning and to hire suitable personnel. The atomization of research sites makes them vulnerable to attacks by political and security authorities as well as by different political and religious groups.

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3.3 Brain drain or brain circulation?

Introduction

Brain drain is the term for the long-lasting migration of highly skilled people from a less to a more developed country. More than 5 million people cross a border every year to come and live in a more developed country (UNDP, 2009); what share of this number is made up of social scientists looking for better research capacities and incomes is unknown. Many smaller and poorer countries, although the phenomenon is not limited to them, express deep concern that their investments in educating and training social scientists benefit other countries instead. Africa is particularly concerned, as a high proportion of well-trained African scholars, including many of the best-known, have left their country (Olukoshi). Brain drain, like any migration, occurs mainly for economic and political reasons. It is exacerbated by students completing graduate and postgraduate degrees abroad, and integrating into research institutions there rather than returning home. How serious is the phenomenon as far as social scientists are concerned? Is the effect of brain drain essentially negative or can it have some positive effects?

The phenomenon of brain drain can be analysed from a historical point of view. European brain drains contributed largely to reshaping the social sciences in the USA and granting them a definite pre-eminence over other academic disciplines (Jeanpierre); a similar process occurred, though to a smaller extent, in Latin America (Didou Aupetit). It was again troubled political situations – dictatorships in the Southern Cone – that later led to the migration of Latin American social scientists (Vessuri and Sonsiré López in Chapter 2).

The migration of scientists can be analysed from the perspective of the receiving countries (brain gain) or of the sending countries (brain drain). Large numbers of researchers are still leaving their country every year, attracted by better working opportunities, income and research conditions. On the other side, competition exists to attract students and researchers from neighbouring or developing countries. Beside the USA – the largest receiving country today – and Europe, other poles of attraction have developed, and have resulted in new North/North, or South/South movements, as well as in circular flows (Jeanpierre).

Measuring brain drain and brain circulation is complex. Are social scientists migrating more or less than natural scientists? According to the UNESCO Institute for Statistics (UIS), students in social sciences are less mobile than students in other disciplines, and tend to return home in larger numbers (Jeanpierre). On the other hand, there are students who move out of social sciences to study business or management studies because they expect to increase their chances of finding a position abroad (Khadria).

Several countries are trying to reduce the negative impacts of brain drain, and put in place incentives to stimulate graduates to come back after they receive their degree in a foreign university. Such incentives can include the guarantee of a position (for example, China, Mexico), or the establishment of international networks and collaborations with national researchers working abroad (Argentina, Colombia, China, the Philippines). But the efficiency of these measures remains limited as long as working conditions do not improve significantly in the sending countries (Didou Aupetit).

The discussion over brain drains and their effects has shifted recently, from a perspective stressing their negative impacts for sending countries to one identifying positive outcomes. An increasing number of researchers and agencies speak of brain gain and brain circulation to underscore the positive outcomes of brain migrations for sending countries. The Philippines is one country that has known constant migration flows of professionals and scholars since the mid-1960s, but the effect of this migration is not considered negative. The diaspora is central in building cooperation with scholars in their country of origin, thus helping their integration into international research networks (Miralao). Brain circulation is in fact a component of the broader circulation of ideas (Didou Aupetit).

The following papers all stress either explicitly or implicitly how thin the databases are that could allow international comparisons of professional migrations in social sciences, and their outcomes in different countries. International data on brain drain and brain circulation in social sciences need further development.

The international migration of social scientists

Laurent Jeanpierre

This paper describes recent efforts by national administrations, NGOs and international organizations to capture accurately the international mobility of students, scientists, engineers and highly skilled workers, and shows that the data vary considerably between regions and are not in an appropriate format for social science researchers. It also looks at some policies and initiatives developed to overcome the negative outcomes of brain drain.

It is estimated that between the 1960s and the 1990s, around 1 million scholars and students moved from developing countries to Western centres (Kallen, 1994). Global flows of scientists and highly skilled workers have since increased. In 2001, nearly one in ten tertiary educated adults in the developing world lived permanently in North America, Western Europe or Australia (Lowell, Findlay and Stewart, 2004). The figure is several times higher for some countries in Latin America, Africa and the Caribbean, as well as for the developing world's population of people trained in science and technology: 30 to 50 per cent of them live in the West (Meyer and Brown, 1999; Barré, 2003). In 2007, there were approximately 2.8 million international students studying abroad and, in principle, intending to return to their country of origin after completing their degrees. All these international migrations of highly skilled workers, researchers and students play an important role in the distribution of national research capacity. Under specific social conditions, they may also contribute to the internationalization of scientific disciplines. Nevertheless, given the current lack of consistent and comparable national and international data, it is impossible to weigh these two types of consequences and describe the overall flows of social scientists around the world.

A few national administrations (for instance, the US National Science Foundation), NGOs (for instance, the Institute of International Education) and international organizations (such as OECD, UNESCO, the International Organization for Migration [IOM] and the European Commission) have recently made efforts to accurately capture the international mobility of students, scientists, engineers and highly skilled workers, but these efforts do not offer a breakdown by field of study. The data also vary considerably between regions, and are not in an appropriate format for social science researchers.

Reasons for migrating are diverse. Scientists may flee political upheavals and wars in their home countries, or may be part of voluntary migration flows. Most of the scientific literature on the topic of scientific migration flows is concentrated on these human capital push and pull factors, and on their consequences for 'receiving' and 'sending' countries. This literature often offers more policy-oriented and normative, rather than descriptive, information, since keeping and attracting researchers and skilled workers have become an essential element of national economic policies.

Two patterns of migrations within a highly asymmetrical global structure

The history of the social sciences, however, gives us some indication of the international migration patterns of social scientists (Heilbron, Guilhot and Jeanpierre, 2008). Two directions are apparent in these transnational flows. Social scientists migrate from the main academic centres to the periphery in order to teach, export their skills, or do research and gather data. Franz Boas, who had left Germany for the USA in 1899, contributed to creating the first institutions of anthropological research in Mexico. French social scientists, like the historian Fernand Braudel, had some impact on the development of the social sciences in Brazil through their positions at the University of São Paulo during the interwar years. Favouring the entrance of foreign academics after 1954 helped Germany reintegrate with the international scientific community and become an important source of international co-authorship for the USA (Jöns, 2009).

In the opposite direction, talented young social scientists tend to leave a peripheral position for academic centres in order to be trained or work with the most eminent scholars. In anthropology, Bronislaw Malinowski left Poland for London in 1910, and in 1938 left the London School of

Economics for Yale University. In the past, imperial and colonial political structures provided a highly asymmetrical framework for such voluntary migrations, reinforcing the scientific creativity and productivity of the centre at the expense of the periphery (Brisson, 2008). Yet these migrations are not always voluntary. They may also depend on the social and economic conditions of researchers, on the status of academic and research positions, and on political constraints on scientists' freedom of speech. After the 1960s, intellectual migrations of social scientists to the USA had more critical consequences. The new legitimacy of cultural studies, the renewed development of area studies, and current interest in transnational topics are doubtless an effect of some transnational trajectories of prominent intellectual exiles in the USA (such as Arjun Appadurai, Homi Bhabha and Edward Said).

Some academic centres in the social sciences also attract scholars on a regional scale, as is often the case with the most prestigious South African, Indian, Japanese and Mexican universities today. There is an important intraregional migration of the highly skilled in Europe, the Americas and Asia. However, transnational disciplinary spaces of exchange show a highly asymmetrical structure, where Western countries, primarily the USA, generally hold a hegemonic position.

The scientific hierarchy of academic centres and national traditions is not the only explanation for the direction of transnational migration. During the twentieth century, most of the migration flows of scholars from Europe to North America reflected the US job market's relative openness to productive foreign social scientists.

Since it often resulted in a long-lasting integration abroad, forced migration contributed more than the voluntary form to the world geography of social science research capacities in the twentieth century. The most important of these migrations took place after 1933, with the exile of professors and researchers – a majority of them Jewish – from Germany and occupied countries in Europe. Several hundred scholars who already were or eventually became professional social scientists emigrated from Europe to the USA between 1933 and 1942. Their intellectual impact has profoundly reshaped and 'denationalized' North American social science, and was an important factor in consolidating its long-lasting global supremacy in the twentieth century (Fleck, 2007).

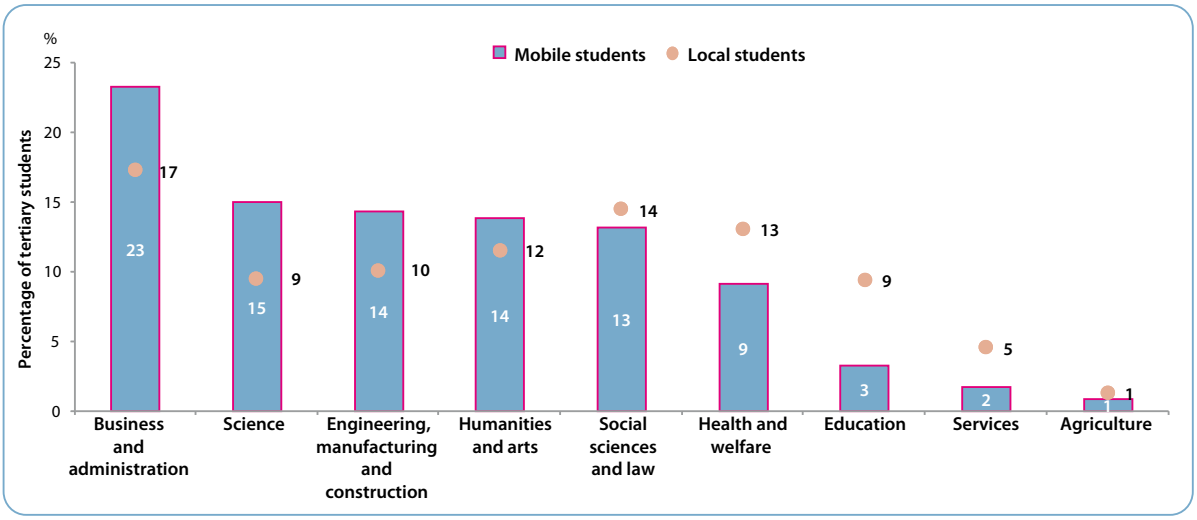
The expression 'brain drain', that is, the long-lasting migration of highly trained people from some countries to wealthier ones, was coined in the early 1960s to describe the rapidly increasing numbers of scientists emigrating from Europe and from developing or 'emerging' countries to the USA. It has increased significantly over the past two or three decades (World Bank, 2006), and the differences between voluntary migrations and forced migrations are sometimes blurred. In Turkey, Morocco, Central America, a number of African countries and the Caribbean, one-third to two-thirds of university-educated citizens have left their home countries. More African scientists and engineers work in the USA than in their home continent. The leading countries of the so-called global knowledge society draw on human resources worldwide. This is, however, no longer a North/South phenomenon; it also alters North/North and South/South relations.

The contemporary migration of students

The international migration of students is one of the most important issues in the current international competition for human capital. The number of international students has doubled in the past twenty years and is still increasing rapidly. Their international migration is partly due to wider access to higher education worldwide but also to a voluntary policy of international exchanges, especially in Europe. It is related to bad or worsening working conditions for scholars and students in their home countries, a lack of university places, and their perceptions of better career opportunities. With 595,900 overseas students, 25 per cent of them from China and India (in 2005), the USA is the largest recipient country. The UK, Germany, France and Australia are the next most attractive countries for foreign students. It should be noted that countries in which English is not spoken but which still offer low tuition fees continue to play an important role as recipient countries. China, India, the Republic of Korea and Germany are the most important sending countries. The main destinations of Chinese overseas students are the UK, the USA, Australia, Germany, Canada, France, Japan and the Russian Federation. Asian students represent 45 per cent of the overseas students in OECD countries. Intra-European flows of students are the second largest in the world after the flows from Asia to the USA.

Host countries benefit from these inflows as stay rates are often high. In 2003, more than half of the temporary visa holders who had received science and engineering (S&E) doctorates from US universities in 1998 were still working in the USA (Finn, 2005). Stay rates depend on country of origin. Between 1990 and 1999, the average stay rates of foreign S&E Ph.D. graduates in the USA were high among students from China (87 per cent), India (82 per cent) and the UK (79 per cent) (OECD, 2002). European Ph.Ds have a much higher stay rate than their counterparts from the

Figure 3.1 — Distribution of tertiary enrolment by field of education and origin of students, 2007



Note : The graph illustrates: 1. mobile students in a given field of study as a share of all mobile students; 2. local students in a given field of study as a share of all local students. Local students are defined as students who are residents or citizens of the country in which they study.
Source: UNESCO-UIS/OECD/Eurostat (UOE) and World Education Indicators Database (UNESCO Institute for Statistics, 2009: 45).

Republic of Korea and Japan. According to China's Ministry of Education, 24.7 per cent of the 700,000 students and scholars who left the country between 1978 and 2003 returned. Within this general picture, stay rates in any country are generally lower for graduates in economics and other social sciences than in any other disciplines.

It also appears that social sciences are not the most attractive disciplines for mobile students (see Figure 3.1).

Less numerous among the mobile students, future social science degree holders are also more numerous among those returning to their home country. The use of natural instead of formal languages in the social sciences may partly explain the lower rate of international migration in these fields. In any case, it is fair to assume that the brain drain is less important in social sciences than it is in physical and life sciences, business and engineering. A closer analysis of the case of the USA seems to support this result.

The case of the USA

The USA is the first country of destination for mobile students and scholars, but is also the country whose researchers and students are the least mobile internationally. It is the only country with a positive (temporary and permanent), migration balance with all other countries. For all these reasons, it is the centre of today's world system of scientific migration. It is thus interesting to focus more specifically on its foreign social scientists, since there are specific data on this knowledge domain.

Of the immigrant scientists and engineers in the USA, 14.2 per cent arrive with their highest degree in the social and related sciences, compared with 21.6 per cent from the engineering sciences (Johnson and Regets, 1998). Between 1993 and 1999, the most important sending countries for students graduating in the USA with a highest degree in the social sciences were India (with almost 27,000 graduates), Germany, Canada, the UK, China, Mexico, the Republic of Korea and Japan (with a little more than 12,000 graduates). Table 3.1 shows that foreign-born social science Ph.Ds from US universities are also less numerous than those from other fields.

Table 3.1 > USA: share of foreign-born doctorate holders in the national labour force by selected field, 2003 (per cent)

Field	%
All fields	34.6
Social sciences	16.9
Economics	31.5
Political science	24.2
Psychology	9.8
Sociology/anthropology	13.6

Note: These figures are underestimates.

Source: National Science Foundation, Division of Science Resource Statistics, Scientists and Engineers Statistical Data System (SESTAT), (2003). The data presented in this section came from NSF's SESTAT Integrated File database, which contains the results of three surveys conducted among people with college or graduate degrees living as permanent residents in the USA. http://www.nsf.gov/statistics/seind06/c5/c5s2.htm

Among them, holders of doctorates in economics and political science are more often foreign than those from other social science disciplines.

Overcoming the brain drain: some policy responses

Despite this general structure of scientific migration flows, all is not lost for origin countries; in some cases, there are positive side-effects of the brain drain (Gaillard and Gaillard, 1997; Meyer, Kaplan and Charum, 2001; Barré, 2003). Scientific socialization in one of the world centres has sometimes contributed to the reinforcement of national scholarship in the migrant's country of origin. For example, Florian Znaniecki was one of the pioneers of academic sociology in the USA but also one of the founders of sociology in his home country, Poland. The emigration of the highly skilled may also create an incentive for education in the sending country, and it may enhance international scientific collaboration. There is a positive correlation between the presence of foreign-born US Ph.Ds in the USA and the level of internationally co-authored articles with the USA (Regets, 2007). Indian diasporic scholars in the humanities and the social sciences have played an important role in the development of postcolonial studies, with positive effects for the humanities and the social sciences in their home country (Assayag and Bénéï, 2004). In the case of the Republic of Korea, the brain drain has been transformed into a 'brain gain'. In contrast, in countries where education policies favour techno-scientific knowledge over social-scientific knowledge, return rates are low among social science researchers.

In a number of countries, policies have been designed to improve the return rates of students and scientists (such as Austria, China, Germany, Finland, Canada, India, Japan and Singapore), or to promote immigrant and diasporic networks (for instance, in Colombia and South Africa). Policies have also been formulated to foster information flows between host and donor countries, and to build transnational intellectual networks. In 1999, 41 knowledge expatriate networks were identified (Meyer and Brown, 1999), their sizes varying from a few hundred to 2,000 members. NGOs and international organizations are also involved in similar initiatives (for example, the RQAN programme developed by the IOM to help African professionals to return to their home countries).

Whether these policies and initiatives will have the desired effect on the asymmetrical structure of national research capacities, and transform the directions and the importance of the flows of researchers and students in the social sciences, remains an open question.

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Passenger plane leaving Beirut
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From brain drain to the attraction of knowledge in Latin American social sciences

Sylvie Didou Aupetit

The heterogeneity of qualitative analyses of the brain drain from Latin America suggests that coherent information on this subject is hard to find. There is no consensus when it comes to defining the phenomenon: should it include graduates who have jobs in a different country from their place of origin? Should it only concern those who have a Ph.D? In this paper, we consider the latter. We shall try to demonstrate that, in the case of the Latin American scientific elites, the move abroad is just one aspect of a much larger phenomenon of international mobility.

Latin American and Caribbean academics in the United States of America: the invisible migration

Even though the flows of qualified migrants have diversified in terms of their actors and destinations, in Latin America they remain primarily oriented towards the USA. The USA offers numerous job opportunities, competitive wages, a high-quality research system and a good work environment. The existence of close-knit communities facilitates the integration of first-time arrivals. At the regional level, the USA is the most attractive centre for higher learning and graduation. In 2007, a total of 229 Mexicans, 180 Brazilians, 141 Argentinians and 121 Colombians obtained their Ph.D. in the USA.

The data also indicates that apart from Brazil, the doctoral apprenticeships of Latin American elites continue to be characterized by a high degree of international and bilateral dependence, in spite of the consolidation of national opportunities. This situation is particularly irritating for the countries of origin, because learning opportunities abroad tend to facilitate professional integration in the country of arrival. In addition, a number of those who work abroad have pursued their entire education in their country of origin. Governments in the global South increasingly feel that investment in the higher education system has been partially ineffective. This feeling is exacerbated by the fact that immigration rules are less restrictive for qualified individuals who wish to work in the most developed economies.

In 2003, naturalized and non-resident individuals constituted 19 per cent of the doctors and engineers employed in the USA and 16.7 per cent of those in the social sciences (Tsapogas, 2006). In the USA in 2001, 494,000 scientists and engineers of Latin American origin represented 15 per cent of the foreigners employed in the science and technology sector, including the social sciences. But among qualified migrants, proportionally more Latin Americans hold a Ph.D. or occupy research positions in the social sciences than is the case for international migrants as a whole. In the USA the social sciences, as a space of learning and professionalization, attract more Latin Americans than other nationals even though in certain disciplines, the USA competes with other developed countries (with France in sociology, for instance).

In the absence of more detailed data, it is difficult to answer two crucial questions regarding social legitimization and academic evaluation in the social sciences: have they a strong international component or do they continue to be closely anchored in their local territory? And has the brain drain altered their structures and agendas by encouraging deterritorialized research and foreign collaborations?

The internationalization of the social sciences in Latin America: from politicization to professionalization

In the twentieth century, Latin American universities attracted political refugees: Spanish Republicans, Jews from Germany and Eastern Europe, anti-Nazis, American victims of McCarthyism, and refugees fleeing military dictatorships in the Southern Cone. These new arrivals have contributed to the exchange of ideas and the advancement of knowledge. Today, these universities depend on the permanent or temporary return of researchers who have gone abroad, and on the transfer of knowledge through structured or informal networks. If we take into account the wider context (insecurity, violence, poverty) as well as the low university wages, poor working conditions and

heavy bureaucracy, it is no wonder that few people (in either the research community or government) believe in their capacities of attracting 'grey matter' into the region, especially in a context of increasing global competition (OECD, 2008).

In the 1990s, programmes aimed at encouraging the return of competencies were developed and strengthened through a series of complementary and targeted actions.[1] Systematic evaluations of the costs and benefits of these measures by country and by discipline are necessary. These evaluations will probably only produce significant changes if they are accompanied by a re-evaluation of research positions and better working conditions. This can be obtained through bilateral policies of research and staff capacity reinforcement, and by the simplification of project funding, management and evaluation procedures. The risk, if nothing is done, is of seeing the brain drain process continuing and getting worse.

Elite researchers in the social sciences in Mexico: from political exile to professionalization strategies

We do not know how many Latin American social science researchers are currently working abroad. In Mexico, the National Council for Science and Technology (CONACYT) has estimated that between 1980 and 1991, approximately 12 per cent of students with diplomas in the social sciences and humanities and 5 per cent of those benefiting from a Master's or doctoral fellowship were studying abroad. These tentative statistics, however, have not been updated since (Remedi, 2009).

However, CONACYT's National System of Research (SNI) database makes it possible to measure the number of diplomas that have been obtained overseas in the overall current structure of academic elites. For 2009, for instance, the data shows that there was a double dynamic of mobility, which echoes past policies at the intra-regional and extra-regional levels. Mexico has had a long tradition of open doors to political refugees at the regional level. It has also had a policy of sending students abroad with fairly long-term scholarships, to countries such as the USA, the UK, Spain, France and Germany. In the social sciences, 41.2 per cent of Mexican or foreign members of the SNI obtained their most advanced diplomas abroad (the system-wide average is 36 per cent). The choice of universities or research institutes often reflects historic trends. For example, a large proportion of social science professors at the Autonomous Metropolitan University traditionally attend the Ecole des Hautes Etudes en Sciences Sociales (EHESS) in Paris.

We also notice that while only 35.7 per cent of researchers obtained their higher-level degrees abroad in the lowest category of the SNI, the proportion reaches 57.5 per cent in the highest category. When it comes to the internationalization of elite learning in the South, a similar tendency can be observed both in terms of destinations and of the similarities between research areas (Didou Aupetit and Gérard, 2009).

Conclusions

While Mexico is not representative of Latin America, an analysis of models of academic mobility there points to a growth in the number of short- and long-term multidirectional movements in the social sciences, and in other domains as well. The social sciences do not have irreducible particularities. As in other research areas, brain drain in the social sciences is just one aspect of a wider process that is characterized by a generalization of exchanges both physical and virtual. In order to understand this process, more multidisciplinary comparative and qualitative research will be necessary at the continental level.

1. Guatemala, Jamaica, Mexico, Panama and Peru among others have set up repatriation and reintegration programmes for qualified individuals. Argentina, Colombia, Mexico, Uruguay and Venezuela have developed networks for talented individuals.

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Brain drain and brain circulation in South Asia

Binod Khadria

Neither the debate nor the literature on brain drain and brain circulation has paid much attention to the question of how the shift from source-country determinants of migration to destination-country determinants impacts on social science research capability in South Asian countries. There is not enough data available. However, one significant point worth considering is how the shifts in the global labour market have distorted the educational and career choices of tertiary-level students in South Asian countries.

A little over forty years ago, the *International Encyclopaedia of Social Sciences* (1968) carried an entry on 'migration' by Brinley Thomas. He wrote, 'The political, economic, and racial configuration of the US today is very much the outcome of three transoceanic migrations – the Pilgrim Fathers and their successors, the slaves from Africa, and European masses in the twentieth century.' Immediately thereafter, following the 1968 implementation of the landmark 1965 Amendments to the US Immigration and Nationality Act, a fourth wave of developing-country-born 'knowledge workers' began, which was the brain drain of the late twentieth century.

India, the largest country of the Indian subcontinent, which comprises the whole of South Asia, has contributed noticeably to the migration of social scientists – supposedly led by economists – to the USA. The following passage by Bryant Robey, cited in the *Immigration and Naturalization Service Yearbook 1990*, bears testimony to this:

America's immigrants… are not what they used to be.
The farmers and laborers from Ireland and Italy
who flocked to the shores
early in the century have grown old.
In their wake are physicians from the Philippines,
economists from India,
and entrepreneurs from Korea.

By the end of the twentieth century even this picture became passé. These immigrants were replaced by a fifth wave of migrants from India: the IT professionals endowed with generic information technology skills. The high-skill exodus from India and also from Pakistan, Bangladesh and Sri Lanka (the other major South Asian source countries) to the OECD countries is undergoing a silent change. Although 80 per cent of highly qualified migrants from India have continued to choose the USA as their ultimate destination for more than a decade – as have most migrants from Pakistan, Bangladesh and Sri Lanka – Canada is the second choice in North America and a route to the USA. The post-9/11 restrictions on immigration to the USA have made a few EU countries preferred destinations, with the UK regaining some of its lost ground. Australia and New Zealand attract South Asians to the Pacific region.

At the turn of the twenty-first century, hordes of Indian IT professionals returned home when the IT bubble burst in the wake of the American recession. They were eventually absorbed by the emergence of business process outsourcing (BPO), which triggered a wave of return migration. However, unexpected events such as the present global meltdown, which caused a panic of layoffs in the BPO sector in India, bring into question the sustainability of return migration to India. The financial crisis of 2008 onwards could even trigger aspirations that might drive fresh waves of emigration from South Asia.

Underlying these transitions and counter-transitions, there has been a consistent shift from source-country determinants of migration to destination-country determinants. In the twenty-first century, migration flows could become compellingly demand-driven and worker-seeking due to the OECD's requirement for workers. This contrasts with South Asia's oversupply of workers during most of the twentieth century, which made its migration supply-driven and work-seeking. As a result, the migration of the highly skilled from these South Asian countries tends to be thought of as a one-sided game of loss or gain. It is seen as an exodus in the twentieth century which is later transformed into brain circulation when the migrants return

temporarily and then re-migrate, or a brain gain when they return permanently and stay in the home country in the twenty-first century.

Neither the debate nor the literature has paid much attention to the question of how these shifts impact on social science research capability in South Asian countries. There is simply not enough data available. However, one significant point worth considering is how the shifts in the global labour market have distorted the educational and career choices of tertiary-level students in South Asian countries. There is a visible move away from the social sciences (and to a lesser extent even from natural sciences) towards commerce, computer science and management-related studies beyond school level. This shift has been visible in the enrolment of school-leaving students, who, at the college level, have to choose one of three streams: arts, science or commerce. Colleges advertise the number of vacant places that remain unfilled in sciences and social sciences after certain cut-off dates.

The collective ranking of choices has also altered in line with this trend. Foreign universities hold regular education fairs to enrol potential students, while multinational firms fund placement cells and carry out campus visits to recruit trainees and entry-level managers. These attract students with the high salaries available on the global labour market. This gives rise to a silent brain drain of potential social scientists. It involves the diversion of individuals to alternative education specializations even before they arrive at university, thus eroding the social science research capacity of these countries of origin.

At the macro level, the push and the pull factor stereotypes have not necessarily been the true drivers of the transitions and counter-transitions between brain drain and brain gain in South Asian countries. Instead, the main factors steering highly skilled people's future migration need to be identified. Furthermore, these factors need to be grouped in a generic classification based on what I would like to call an 'economics of strategic interests', which replaces the traditional 'economics of cost–benefit analysis'. I have grouped the strategic variables into three generic types: Age, Wage and Vintage.

The first, Age, involves neutralizing changes in age structure. This is being achieved in destination countries by attracting younger cohorts of temporary migrants, who replace the older cohorts that are sent back home.

Wage refers to the comparative advantage gained or lost by the country of destination or origin through the younger migrants being more cost-effective as they receive lower wages, perks and pensions, while the older returnees add to the cost of production.

Vintage implies the accumulation or loss of state-of-the-art know-how and skills occurring in the countries of destination or origin respectively. These skills are embodied in the younger generations of tertiary-level student migrants with their access to the latest curricula.

Given these emerging scenarios, there could be an interesting array of social science research in South Asia on the subject. Surveys on various Indian Institutes of Technology suggest that the opportunity of jobs or study abroad influences the kind of studies that people undertake at the undergraduate level. This may affect social science research in South Asia up to the doctoral level, given that 65 per cent of the costs of tertiary education abroad that families bear need to be recouped once the students enter the labour market after their graduation.

Practically speaking, innovations in South–South co-operation can also further the overall social science research capacity of South Asian countries. Intra-South Asian cooperation in social science research can be fostered by migration and dual citizenship for South Asians in other Southern countries such as Brazil, China and South Africa. One prerequisite for such innovation would be for the countries to abandon their 'stereotype cocoons of sovereignty' and think about alternative forms of transnationality. The outcome of the 2009 G-20 summit at Pittsburgh could be indicative of progress in this area.

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Rethinking the brain drain in the Philippines

Virginia A. Miralao

It was in the mid-1960s that brain drain came to be regarded as costly for the Philippines. It was seen to be draining human resources at a critical stage in the country's development, and wasting precious public investment in education and in citizens' skills formation. But evidence on the brain drain shows that it was less important, and for the social sciences in particular, than the public's perception of the phenomenon might suggest.

Concerns about the brain drain in the Philippines grew from the mid-1960s under the joint impact of new immigration policies in countries such as the USA, Canada and Australia, which opened their doors to highly skilled immigrants, and the imposition of martial law in the Philippines in 1972. The term 'Philippine diaspora' is used to describe the resulting outflow, estimated to stand presently at 8 to 9 million workers (or some 10 percent of the overall population) spread across more than 190 countries on all the continents.

Early concerns over brain drain

It was in the mid-1960s that brain drain came to be regarded as costly for the Philippines. It was seen to be draining human resources at a critical stage in the country's development, and wasting precious public investment in education and in citizens' skills formation. But evidence on the brain drain in the 1960s and in the next two or three decades shows that the brain drain was less important for the country as a whole, and for the Philippine social sciences in particular, than the public's perception of the phenomenon might suggest. Data is scarce on the number of experts living abroad. A 1967 study by the Institute of Philippine Culture concluded that the brain drain represented less than 18 percent of college graduates who went abroad to study, and was not causing a 'critical loss of personnel'. There are reasons to believe that at that time, the brain drain in the social sciences may have been even lower than these overall national estimates.

A 1987 paper by the Research Institute for Mindanao Culture identified the main constraints on the development of the social sciences as lying in insufficient capacity, low salaries, and inadequate libraries and research facilities, particularly in universities outside Metro Manila.

In the following decades, the shift in global labour market demand towards higher skilled and talented workers meant an increase in what is conventionally thought of as the brain drain, including in the social sciences. Although the statistics maintained by various government agencies do not provide sufficient information on the qualifications of migrants and do not allow good estimates of recent brain flows, many developments in the country's migration environment tend to negate the basic assumptions and interpretations of the brain drain.

Reinterpretation of brain drain in the 1990s

The first such development is the temporary nature of much contemporary migration. Most foreign fellowship programmes employ moral persuasion, or require a return-service contract, which helps ensure that foreign study fellowships lead to a 'brain gain'. A second development has to do with the responsiveness of Philippine colleges and universities to the demands of the global labour market. They are skilled at producing precisely the graduates whom other countries need. The brain drain assumption that outflows of skills and expertise create persistent local labour shortages seems even less true today than before. A third, related development has been the absence of a large domestic employment demand for the country's university graduates, and the role of the state in brokering their hiring and employment in countries where the demand for professional labour is high. Critics of government may find the state policy tantamount to encouraging a brain drain, but other groups may regard it as sound in terms of higher remittances and the possible transfers of knowledge via Filipinos returning from abroad. A fourth development has to do with the late return of known scholars who were studying abroad during the declaration of martial

law or left because of it. A fifth development concerns the growing number of Filipino professionals who divide their professional time and practice between their country of destination and the Philippines. And finally, we cannot ignore the role of associations such as the Philippine–American Academy of Science and Engineering (PAASE) and the International Conference on Philippine Studies (ICOPHIL) in developing exchanges. Quite a number of these exchanges result in collaborative research or projects between expatriate academics and their colleagues in the homeland. All these developments demonstrate how cross-border movements can potentially translate into a brain gain for the Philippines.

To conclude: contrary to the earlier talk of the Philippines' brain drain losses due to emigration, there is increasing reference today to the country's 'diasporic dividends', from remittances as well as from brain drain and gains. However, attempts to analyse and understand the evolving nature and consequences of Philippine social scientists' overseas migration are hampered by a lack of data. Filipino social scientists can lend their expertise to efforts to improve the country's migration databases and to research the many different impacts that the migration of highly skilled scientists, and specifically social scientists, have on research and development.

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3.4 Overcoming the capacity divide

Introduction

This section analyses strategies developed to overcome the capacity divide in large as well as in smaller countries. Different countries have used different strategies to build research capacity. Some common features include sending students abroad while capacity is built locally in selected universities, and providing support for institutions and researchers through a range of different networks.

If growing numbers of departments, Ph.D. graduates and publications are meaningful indicators of research capacity, Brazil and China are two cases of large countries that have succeeded in bolstering research capacity in social sciences. A comprehensive and well-resourced long-term policy, involving the implementation of postgraduate degrees in top-level universities, scholarships for studying abroad, programmes aiming at repatriating students with a degree from a foreign university, international fellowships allowing professors to spend sabbatical leave in foreign universities, as well as incentives to publish in international peer-reviewed journals, has been crucial in achieving this success in Brazil (Gusmão). In China a comparable voluntaristic policy was associated with a late 1970s change in economic policy in response to the social challenges then developing.

But small countries can also develop and sustain research capacity. Palestinian capacity in social science was built by training students abroad in some of the best universities and maintaining a vibrant community of researchers around the world. The diasporas and the internationalization of social science production explain the quality of Palestinian universities and research centres.

Other strategies, which are not referred to in the following papers, have to do with the new forms of distance education, such as e-learning and collaborative tools in digital social sciences. One such initiative built on new web technologies is provided by New Zealand's Building Research Capability in the Social Sciences (BRCSS) project, which is designed to increase inter-university collaboration by the use of audio-visual technologies (Peace, in Chapter 2).

Networking is another crucial component in developing capacity in social sciences. Several regional networks aim at promoting research and disseminating knowledge, drawing on some regional traditions of scholarship (Olukoshi; see also Shami and Elgeziri; Cimadamore; Beaton). Different networks of this kind exist in Africa, supported by international agencies. Regional initiatives aimed at improving research capacities in social sciences range from training and mentoring programmes to the production of joint teaching materials, enhancing connectivity and collaborations involving diaspora and local social scientists. Networks in the European Union play a similar role in enhancing collaboration between social scientists from Europe and other regions. National, regional or international disciplinary associations contribute similarly to the circulation of ideas and knowledge.

As Olukoshi makes clear, such networks and initiatives can only be successful if universities are strengthened.

Development of research capacities in the social sciences in Brazil

Regina Gusmão

The number of students in Masters and doctoral programmes at Brazilian universities has increased more than tenfold and the number of Masters and doctoral degrees granted per year nearly tripled in the past 10 years. Whereas the number of doctorates conferred in Brazil in the late 1980s had only been 3 per cent of those conferred in the USA, in 2005 Brazil was among the top ten countries in the world with regard to the number of Ph.Ds conferred.

The current structure of the Brazilian science, technology and innovation (ST&I) system is relatively new. Most of the higher education and research institutes now in existence, as well as most of the funding agencies, have emerged since the 1950s. Only in the mid-1980s did a complex, multi-institutional, consolidated structure begin to take shape; one capable of performing the tasks of coordinating, implementing and promoting government activities in the sphere of ST&I.

The systematic financing of ST&I dates back to 1951 and the creation of two federal agencies: the National Council for Scientific and Technological Development (CNPq) and the Ministry of Education's executive agency for higher education training (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior, CAPES) dedicated respectively to fostering scientific and technological research and to preparing human resources to undertake such research. In 1967, the National ST&I System was consolidated into the National Innovation Agency (FINEP), which stimulates innovation in both the academic and the productive sector and currently serves as the executive organ of the National Fund for Scientific & Technological Development (FNDCT).

In Brazil, the public sector has historically been the primary source of financing for ST&I. Since their foundation, CNPq, CAPES and FINEP have played key roles in creating and maintaining the country's research infrastructure. All three federal agencies work in close cooperation with the Ministry of Science and Technology (MCT), which is responsible for defining national policy in conjunction with other ministries. These federal efforts are complemented by state efforts, especially in the more developed regions of South-east and southern Brazil, which have come to assume an increasingly important role in financing the sector (Landi and Gusmão, 2005).

Within this context over the past two decades, the stock of human ST&I resources has risen dramatically. The number of students in Masters and doctoral programmes at Brazilian universities has increased more than tenfold and the number of Masters and doctoral degrees granted per year nearly tripled in the past ten years, with a total of 33,360 M.As and 10,711 Ph.Ds conferred in all disciplines in 2008. Whereas the number of doctorates conferred in Brazil in the late 1980s had only been 3 per cent of those conferred in the USA – the world leader in this respect – this figure had risen to 21 per cent in 2005. In that year Brazil was among the ten top countries in the world with regard to the number of Ph.Ds conferred (Viotti, 2008).

The social sciences[1] currently account for 33 per cent of students working towards their Master's degrees and 26 per cent of those studying for doctoral degrees. The number of doctorates granted in these areas had climbed to 2,730 by 2008; this is more than three times the 1998 figure. Among the social science disciplines, education stands out (with about 660 Ph.Ds, or 24 per cent of the total), distantly followed by history, psychology, sociology and law (approximately 270 doctorates each). In the same period, the number of university professors at the postgraduate level in Brazil nearly doubled, reaching

1. In accordance with the source consulted, the social sciences are taken to include the so-called applied social sciences (administration, architecture and urbanism, urban planning, information sciences, communications, law, demography, economics, social services and tourism) and the humanities (anthropology, archaeology, political science, education, philosophy, geography, history, psychology, sociology and theology). Note that languages, literature and the arts are not included in the universe covered by the analysis (CAPES, Higher Education Information System. See: http://www.capes.gov.br/estatisticas).

47,500[2] in 2008; of these, 25 per cent (approximately 12,000) were in the social sciences.

In sum, thanks to the government having strengthened its efforts and investments in human resource development, the number of researchers in the social sciences nearly tripled in the 2000s. They now represent approximately 32 per cent of the researchers engaged in the national higher education and research system, or 37,500 from a total of 118,000.[3]

Evolution of Brazilian policy for the training of human resources and the enhancement of research capacity in the social sciences

The nationalistic ideal of turning Brazil into a world power – widely supported at the height of the military regime in the early 1970s – led the government to align its efforts with those of the scientific community to modernize the Brazilian university system and the national scientific and technological sector. The result was the definition of policies that had transformational effects. The large volume of resources made available through the new government funding agencies (CAPES, CNPq and FINEP) made it possible to professionalize the university system by allowing the full-time, exclusive dedication of teaching staff, as well as the implementation of a consistent postgraduate policy. The evolution of this policy is directly associated with the development of the National Postgraduate Programmes (PNPG) adopted in 1974 (Hostins, 2006).[4]

The objective of the First PNPG (for the period 1975–1979), which was linked to the First National Development Plan, was to structure the national postgraduate system and institutionalize it within the sphere of the university system, thus guaranteeing stable financing. Its outstanding features included the training of university professors, and an increase in the number of Masters and doctoral programmes and in the number of places on these programmes. In the Second PNPG (1982–1985), the emphasis was on the quality of higher education. The expansionist goals of the first plan gave way to the institutionalization of the system, which provided a framework for monitoring and evaluating programmes. Only in the Third PNPG (1986–1989) were postgraduate programmes first considered as being integrally linked to academic research activities. The Third PNPG therefore contained measures aimed at strengthening the ties between the academic community, the national ST&I system and the productive sector. During the preparation of the Fourth PNPG, which for various reasons was never published (Hostins, 2006), discussion was focused on the need to diversify the model and incorporate professional training courses. Finally, the Fifth PNPG (2005–2010) proposes expansion of the system along four lines:

- the training of teachers for all educational levels, including basic education
- the training of staff and specialized professionals for non-academic markets
- networking to offset regional disequilibria in the supply of postgraduate courses and to meet the demands of new areas of knowledge
- stimulating universities to cooperate at the international level, including capturing resources from international agencies (CAPES, 2004).

In brief, the Brazilian postgraduate policy was from the outset based on an effective medium and long-term policy and planning guided by a strategic perspective and maintained by different governments. This approach appears to have been fruitful, as indicated by the results presented in the sections that follow.

Creation and expansion of postgraduate programmes

Whereas there were only 57 doctoral programmes in Brazil in 1970, there were more than 300 in 1985, in addition to approximately 800 at the Masters level. By 2008, the total number of Masters and doctoral programmes had risen to 2,568,[5] of which 54 per cent were federal, 26 per cent were state or municipal and 20 per cent were private. In social science, the number of postgraduate programmes has risen to 692, a figure 2.4 times higher than in 1998. However, 70 per cent are still offered at universities in the south and south-east of the country. At the doctoral level, this regional concentration is even more evident, with 53 per cent of the current 295 programmes in social science offered at universities located in only three of the 27 Brazilian states, all of which are in the south-east: São Paulo, Rio de Janeiro and Minas Gerais.

Recently, efforts have been made to decentralize postgraduate education in the direction of the less-favoured regions of the country. These efforts have proven effective:

2. Including permanent, visiting and contributing professors.
3. Data from CNPQ, Diretório Grupos de Pesquisa-Censo 2008 (see http://dgp.CNPQ.br/censos).
4. Hostins (2006) presents an interesting and complete analysis of the various plans formulated since the mid-1970s, as well as of their impact on the Brazilian postgraduate system.
5. This figure includes Masters, professional Masters and doctoral programmes in all disciplines. Data from CAPES, GeoCapes Portal (see http://www.capes.gov.br/estatisticas).

whereas more than 90 per cent of the Ph.Ds were granted in the south-east in 1998, the figure, though still high, had dropped to 69 per cent by 2008.

In Brazil, as in most Latin American countries, the postgraduate system remains essentially public. However, the number of programmes at private universities (mainly at the Masters level) has risen sharply in recent years. In the social sciences, these institutions now grant 35 per cent of all the Masters and doctoral degrees, with a significant concentration in three areas: administration, law and education.

Since the 1980s, Brazil has systematically evaluated the postgraduate programmes offered in the country. This has significantly contributed to raising the quality of the courses offered and strengthening the institutions involved. In addition, this evaluation has provided inputs for the selection of candidates and the distribution of postgraduate grants. Programme evaluations – rated on a scale from 1 to 7 – are conducted every three years according to the system set up and operated by CAPES. Furthermore, the evaluations are based primarily on the scientific output of the programmes' teaching staff, researchers and students. Programmes assigned ratings of 6 or 7 offer doctorates of excellent quality, equal to the degrees conferred by the most important centres of learning and research in the world, and are characterized by high levels of insertion into the international community. Conversely, programmes attributed ratings of 1 or 2 perform poorly, failing to meet the minimum standards required.[6] Under the terms of the legislation now in effect, programmes assigned ratings of 3 or higher will continue to be officially recognized by the National Council of Education for the next three-year period, but those receiving lower ratings will not.

In 2008, 17 per cent of the doctoral programmes in the social sciences received ratings of 6 or higher, and 58 per cent received ratings of 5 or higher. At the other end of the scale, only 2 per cent were assigned ratings of 3 or lower, whereas 10 per cent had been assigned such ratings in 1998.

The outcomes of a bold grant policy

The social sciences have traditionally received less funding from the federal agencies than other subjects. However, the situation regarding postgraduate grants, which are offered directly to the approved candidates, began to change in the late 1970s and was wholly revised in the years that followed.

Of the grants for postgraduate studies offered by CNPQ in 1980, the social sciences received only 11 per cent for Masters studies and 13 per cent for doctoral studies. By 1991, the corresponding figures had risen to 34 and 25 per cent respectively. The other agency, CAPES, already directed 39 per cent of its grants for Masters studies and 32 per cent for doctoral studies to social science in the period 1980 to 1984 (Velho, 1997).

From 1998 to 2008, the number of grants offered by the two agencies for Masters, doctoral and postdoctoral studies in all areas increased by an average of 82 per cent (from approximately 33,000 to around 60,000 per year).[7] With respect to the social sciences, the number rose by 40 per cent over the brief period 2003 to 2008 to approximately 13,000 per year, 22 per cent of the total for all areas.

Sending students and professors abroad

The Brazilian policy on funding for research capacity development does not limit training to domestic programmes. Since the 1980s, major efforts have been made to send students abroad to study at different academic levels and in numerous fields of knowledge. During the 2000s, the number of grants the two agencies offer for postgraduate studies abroad rose by 75 per cent, from 2,100 in 1998 to 3,700 in 2008, with increasing emphasis on the postdoctoral level in recent years. In 2008 alone, 1,100 grants were granted to study social sciences abroad, mainly in France, the USA, Spain and the UK.

In the late 1990s, the scholarship grants for doctoral studies abroad also took the form of a sandwich programme, which allowed Brazilian Ph.D. students to take advantage of a more comprehensive cross-fertilization. These grants lasted from four to twelve months, with mandatory periods in Brazil before and after the period abroad, hence the 'sandwich'. The grantees have the status of visiting research scholars under the supervision of local researchers. Since 2005, the number of grants offered in sandwich programmes is higher than the number of full Ph.D. grants, and the gap is widening. Opportunities for sabbatical leave abroad for professors supported financially by the government were also developed.

6. Programmes rated 5 have a 'high level of performance', which is the highest rating for programmes that offer only Masters degrees. A rating of 4 indicates that the programme has a 'good performance', while a rating of 3 means it has an 'average performance', or meets the minimum standards required.

7. Data from Ministry of Science and Technology (MCT), Indicadores Nacionais de Ciência e Tecnologia (see http://www.mct.gov.br).

Impact of the new policy on the organization and productivity of research in the social sciences

This growing investment in research infrastructure and research-oriented human resources in various fields of knowledge has had a strong impact on the organization, development and dissemination of research in the country. According to the biannual survey conducted by CNPq, the number of active research groups in Brazil has increased fivefold over the fifteen years to 2008.[8] Between 2000 and 2008, the number in the social sciences alone rose from 2,600 to nearly 7,000, which is 31 per cent of the total. Of all the social sciences, education, with its 1,710 research groups – more than twice the number surveyed in any of the other areas – has the leading position.

The expansion and diversification of the active research groups, as well as the incentives associated with a good rating, are among the factors that have contributed to the progressive rise in Brazilian researchers' productivity. Within a ten-year period, Brazil has become one of the countries in the world with the most scientific publications. According to the Thomson ISI database, the country moved from twenty-third position in 1999 to fifteenth in 2008. This is an increase of 8 per cent per year (Bound, 2008).

The Brazilian publications in the World of Science database are concentrated in the areas of agriculture, biology, Earth sciences and space sciences. In contrast, articles concerning the social sciences represented only 3 per cent of the national output between 1997 and 2006. Since approximately 32 per cent of the researchers in the country are in the social sciences, it can be concluded (as have various authors) that unlike their counterparts in the hard sciences, Brazilian social scientists have yet to follow the world trend of publishing articles in English in internationally indexed periodicals. They continue to disseminate the greater part of their works in the form of theses or books written in Portuguese, which are not included in the ISI database. Indeed according to national databases (CNPq, 2008), social sciences articles represented 27 per cent of all the articles published in national specialized periodicals in 2008, but only 4 per cent of those published in periodicals with an international circulation. Social sciences did, however, account for 49 per cent of the academic books and 41 per cent of the book chapters produced in Brazil. In absolute terms, social sciences output has evolved quite positively, and articles in both national and international periodicals increased more than fourfold between 2000 and 2008.

New context, new challenges

Brazilian postgraduate policy has successfully contributed to the formation of a great number of well-qualified professionals in a wider range of fields than before. However, this expansion was not guided by a real appreciation of the labour market's demands – in terms of neither specialization nor the academic level demanded. In the past, the postgraduate programmes themselves absorbed almost all of the newly formed professionals, but this is no longer true.

A full understanding is yet to be gained of the employability of those who hold an M.A. or Ph.D. A recent pioneering study charts the key employment characteristics of those who received Ph.Ds in Brazil between 1996 and 2003 (Viotti, 2008). It shows on a preliminary basis that in 2004, 66 per cent of those who received Ph.Ds were employed at educational institutions, while another 18 per cent were in public administration, national defence or social security. Only 1.2 per cent were employed by the manufacturing industries. The study shows that holders of doctorates in the so-called 'applied social sciences' had higher rates of formal employment, as well as higher average wages than the others. According to Viotti (2008), this may indicate that the labour market most values individuals with doctorates in law, administration and economics. These are among the fields in which postgraduate programmes in Brazil, especially in private universities, have expanded most rapidly in recent years.

The target of the National Postgraduate Plan 2005–2010 (CAPES, 2004) is to award 16,000 Ph.Ds in 2010. However, for this goal to be achieved and to have truly positive and lasting effects, in-depth knowledge of job characteristics and of the sectoral demand for doctorates would be useful.

8. This figure excludes active research groups in private enterprises (from CNPq, Diretório Grupos de Pesquisa-Censo 2008, http://dgp.CNPq.br/censos).

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Flash
Building sociology in China

The introduction of sociological studies in China in the late nineteenth century stimulated thinkers in this country to explore groups and society in new terms and with methodologies previously unknown to them. Significant studies were made, but the many wars in the following decades hampered the development of sociology. Then the reorganization of disciplines and faculties three years after the 1949 revolution abolished sociology, deemed 'erroneous science'. From then until 1978, when the policy of economic reforms led to its reintroduction, research and teaching in sociology vanished from universities.

After that date, however, the chairman of the Communist Party of China, Deng Xiaoping, underscored the necessity to train sociologists again. The new challenges facing Chinese society, such as modernization, rural development, worker migrations and the relations between cities and rural regions, had given rise to a need for studies in social sciences. The rapid creation of the Chinese Association of Sociological Research and of the Institute of Sociology, both headed by senior sociologist Fei Xiaotong, allowed the organization of workshops in sociology. The first three gathered a total of about 100 participants who attended lectures by scholars from the USA and Hong Kong. The new, voluntaristic, policy toward social sciences in the early 1980s also led to the opening of departments of sociology in universities (eleven would be opened by the end of the decade), and some graduate programmes.

Research produced during this phase focused on the challenges facing Chinese society, but suffered from theoretical and scientific deficiencies. These gaps were filled progressively, and sociology in China improved remarkably from the 1990s onward, fostered by international exchanges, the sending abroad of promising graduate students and participation in international scientific dialogue. China's research capacity in social sciences was expanded to the point that the country counted 159 departments of sociology in higher learning institutions in 2007, with close to 2 million students. Today Chinese sociology enjoys an international reputation of its own. (Peilin, Yuhua, and Shiding, 2008; Roulleau-Berger, 2008)

Flash
Developing social science capacity in Palestine

The first research on Palestine was conducted by Palestinian agencies located outside the Palestinian territory. Generally associated with the Palestine Liberation Organization (PLO), these research centres began operating in the 1960s from Jordan, Lebanon and New York. They were mostly staffed by Palestinian refugees from the diaspora who had no physical access to Palestine. In 1967, the Israeli invasion of the West Bank and the Gaza Strip triggered the foundation of local Palestinian universities in both these territories. Since Palestinian youths could not travel to other Arab universities or have access to Israeli universities, six Palestinian universities were set up in the Occupied Territories in the 1970s.

The first Palestinian social scientists had generally received their secondary education in English during the British Mandate. Their command of English – as well as their relative wealth – enabled them to join US universities in the post-1948 period after the creation of Israel. A number of them were the first to staff social science departments in the newly founded Palestinian universities in the West Bank and Gaza. Subsequent generations of Palestinian social scientists received their secondary education in the Occupied Territories before going on to graduate from foreign, mostly Western, universities. Since none of the Palestinian universities had, and they still do not have, a Ph.D. programme in the social sciences, and since a Ph.D. is mandatory in order to hold a professorship, there has been a noticeable internationalization of Palestinian social scientists.

Ten social science departments or faculties, and numerous other research centres, currently operate within the Occupied Territories. In 2007, they employed 68 Ph.Ds in sociology, political science and anthropology. Of these, 60 hold a Ph.D. from a Western university and only 8 from other Arab countries. These figures point towards an early and resilient dynamic of internationalization within the social sciences thanks to associations with eminent international scientific institutions which have allowed local coercion to be bypassed.

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The contribution of social science networks to capacity development in Africa

Adebayo Olukoshi

The all-round expansion that characterized African higher education in general, and the social sciences in particular, during the 1960s was interrupted at the end of the 1970s as African countries began to slide into a prolonged economic crisis. This crisis, and the responses fashioned to deal with it, led to an unrelenting decline for the higher education system of most African countries which persisted for nearly thirty years. In the face of the multiple problems thus created for the social sciences, the role of social science networks became critical.

Historical retrospective

The first decade of African independence witnessed a massive public resource investment in the development of a higher education system which incorporated universities, polytechnics, and an assortment of specialized research and training institutions. But the pattern of rapid growth and all-round expansion that characterized African higher education in general, and the social sciences in particular, during the 1960s and most of the 1970s was interrupted at the end of the 1970s and in the early 1980s as African countries began to slide into a prolonged economic crisis. This crisis, and the responses fashioned to deal with it, led to an unrelenting decline for the higher education system of most African countries which persisted for nearly thirty years. These decades spanned the years from the early 1980s to date.

Any hope that the cuts which African governments introduced in higher education funding as part of their homegrown economic crisis management strategy would be short-lived was dashed by the International Monetary Fund (IMF) and the World Bank's introduction of stabilization and structural adjustment programmes. The thrust of these programmes was essentially deflationary, which meant that public expenditure continued to be squeezed and the higher education system was to be the worse for it. This was all the more so as the Bank encouraged a policy preference for basic education in Africa. Matters were not helped by acute shortages of foreign exchange, which saw imports of books and equipment virtually dry up. An inflationary spiral also took hold and real incomes collapsed as prices were decontrolled, national currencies were submitted to repeated rounds of devaluation, subsidies were removed and public-sector wages were frozen.

The decline of the African higher education systems

The collapse of African libraries and laboratories threatened the infrastructure of the higher education community, and led to the decay of the environment for learning and research. The decline in the quality of instruction was compounded by the collapse of the tutorial system which, in turn, was a fallout from the collapse of many universities' internal academic staff development programmes. Student unrest became frequent and increasingly violent. Many universities experienced 'blank years' during the course of the 1980s and 1990s, shutting down for prolonged periods, which resulted in the cancellation of entire academic sessions. Associational life on most university campuses and in most countries also suffered a sharp decline when disciplinary networks for staff and students could no longer be sustained. Likewise, local scholarly journals and other scientific outlets fell on bad times. The stage was set for an exodus of qualified personnel from the higher education system. This exodus was further spurred by concurrent outbreaks of political repression and civil war in many African countries at different times between the 1980s and the first few years of the new millennium.

Brain drain hits Africa severely

The brain drain from the African higher education system occurred in waves and consisted of different elements. In the first instance, there was an exodus of senior and mid-career nationals who, unable to cope with the unending crises in the national economy and the higher education system, or the outbreak of political violence and civil war in some countries, exercised a variety of options. A number of them simply left the system in order to enter the local private sector where they felt they could both exercise

their talents and earn a better income. Many went into the financial services sector, which was experiencing a mini-bubble on the back of the privatization and liberalization measures that governments had introduced as part of the IMF or World Bank market reform programmes. Others opted to remain in the public sector, but left the university system to take up senior political or administrative posts in government, especially against the backdrop of civil service reforms that were being carried out and the restoration of multi-party politics that was underway.

A further component of the brain drain from the higher education system, and perhaps the most serious aspect, comprised the senior and mid-career scholars who left to pursue their careers outside Africa. They took up positions in the USA, Europe, and even the Middle East and Australia. Estimates from a variety of sources have suggested that an average of 20,000 highly qualified professionals left Africa annually from 1990 onwards as part of the brain drain. Nigerian academics working at universities and colleges in the USA alone numbered about 10,000 at the dawn of the new millennium. During the course of the 1990s, it was estimated that 35 out of every 100 Africans sent to study abroad did not return to the continent, and the number was rising (IOM, 2005; Mutume, 2003; UN, 2002; Teferra, 2000).

The difficult conditions with which the academics who remained on the continent – either by deliberate choice or otherwise – had to grapple meant that they had no option but to augment their incomes from outside sources. Such strategies continue to be practised, but they are not always conducive to the pursuit of academic excellence or the development of a longitudinal research interest. Moonlighting and consultancy activities disconnected from scientific endeavour may have provided an income supplement, but they were also energy-sapping and distracting. The licensing of private universities, which had begun in earnest in the 1990s and which expanded massively in the new millennium, gave scholars opportunities to be mobile and even to advance their careers. However, these private universities resorted to offering permanent employees of public universities part-time contracts to act as the bulk of their teaching staff. This raised concerns that fee-charging institutions were continuing the erosion of higher education, as they did not seem prepared to invest in their own staff development.

The brain drain from the African higher education system affected all disciplines. But it is also arguable that the social sciences were particularly badly hit, for a variety of reasons. Among these was an incentives system which encouraged universities to generate income through consultancy services and executive degree programmes that did not favour the social sciences and the humanities. In turn, this resulted in higher education administrators deciding to rationalize courses. This saw the closure of some academic departments and the merger of others. Disciplines such as history, archaeology, philosophy, linguistics and classics were endangered in many countries. It was and still is not uncommon to find universities where social science and humanities departments have no professorial-level staff and are led by junior researchers, who sometimes only hold a Masters degree or have just obtained a doctorate.

The role of social science research networks

In the face of the multiple problems created for the social sciences by the brain drain in the higher education system, the role of social science networks became critical. This was especially true of those operating on a pan-African scale. The most prominent of these networks are CODESRIA in Dakar, the African Association of Universities (AAU) in Accra, the Organization for Social Science Research in Eastern and Southern Africa (OSSREA) in Addis Ababa, and, to a lesser degree, the Kampala-based Centre for Basic Research (CBR), and the Africa–Arab Research Centre in Cairo. The African Association of Political Science (AAPS) in Harare and Pretoria and the Southern Africa Political Economy Series (SAPES) Trust, which were active through the 1980s into the 1990s before they experienced a decline, must be added to these. Most of these networks were established to serve as sites and fora for the production and dissemination of advanced research knowledge, drawing on the best traditions of scholarship available on the African continent.

The regional social science networks also felt the effects of the discipline crises and the dearth of experienced scholars as the brain drain took its toll. The vitality of the regional networks and the kinds of activities they felt they could perform reflected the disciplines' state of health and the quality and experience of the researchers at the national and campus levels. In the 1980s, with senior and experienced staff leaving the higher education system in increasing numbers and the quality of instruction and training declining, it became clear that these regional networks could not presume that those who participated in their programmes were sufficiently drilled in the basic rules of scholarship to contribute effectively to their missions. This necessitated a revamping of the

programmes and activities of these networks to take cognizance of the changed context of research and training in African higher education.

The reform of these regional social science networks was designed to achieve a multiplicity of objectives. These centred on the upgrading of the skills of a new and inexperienced generation of scholars graduating from African universities and taking up positions, and were intended to keep the system running against a variety of odds. Embracing this new generation called for new approaches to research networking and knowledge production which took full cognizance of the conditions under which they had been trained and the circumstances in which they tried to work. It was a redefinition of strategy that focused on training in research skills, the creation of networking opportunities, the building of longitudinal research cultures, and the facilitation of interaction within and across various boundaries, whether national, disciplinary, gender, generational or linguistic. These were roles that the social science research networks assumed on an increasing scale from the mid-1980s onwards.

Key roles in capacity development and enhancement which the regional social science research networks have promoted since the mid-1980s have included:

- supporting the mobility of African scholars within and outside their countries and campuses in a period of crisis
- the promotion of multidisciplinary networking among African scholars
- the provision of refresher training, particularly in quantitative, qualitative and comparative research methods and scholarly writing and publishing skills
- the production of refereed journals that offer credible outlets for the publication of research findings
- the financing of senior scholars to produce textbooks that could be used in teaching across the continent
- the organization of a range of mentorship programmes targeted at younger scholars with an interest in remaining in the university system
- the facilitation of scholar exchange programmes and individual fellowships whose recipients could spend dedicated time undertaking research projects or as understudies to an outstanding scholar
- the organization of summer schools on social research themes that cover a range of conceptual and empirical concerns
- the funding of field research and thesis writing for advanced postgraduates in African universities
- the mobilization of diaspora African social scientists in local and regional initiatives designed to mentor and support junior scholars, rebuild library collections, teach core courses in visitors' programmes, and network senior scholars internationally.

These regional social science networks are critical for the generation of African researchers born and nurtured in the years of economic crisis and decay in the higher education system. And yet, the networks also understand that their role can only be a supportive one, complementing what must remain the duty of the quintessential university: offering high-quality instruction in a stimulating environment that enables students and staff to build and renew and enhance their capacities. This means that the struggle for the restoration of the African universities must continue. They are the essential element in long-term capacity development. It is in the strength and vitality of the universities that the social science networks will ultimately find the energy to make a decisive and targeted difference.

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Chapter 4
Uneven internationalization

Books displayed at Frankfurt bookfair
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Uneven internationalization

Chapter presentation

Although social sciences were first institutionalized as academic disciplines in Europe and North America, they are no longer only a Northern project. They have become increasingly global and, some say, more diverse. Social scientists are also more numerous and mobile than in the past. They share their knowledge and research more readily, more rapidly and more frequently through new communication channels such as the web and the internet, and collaborate more with foreign colleagues. Many social scientists assume that their disciplines have become increasingly international in recent decades and that this trend will develop further in future. It is hoped that this internationalization process will reduce the knowledge divides in social sciences between different regions of the world without destroying diversity. This chapter's goal is to evaluate whether these assumptions are correct by mapping global production and international collaboration in the social sciences.

There are many ways of assessing the current level of social sciences' internationalization. One is to determine where social science journals and papers are produced and whether this production is equally spread across the world. Another is to measure the share of papers co-authored by social scientists from different regions and countries, and a third is to measure whether citations in social science papers are more international today than they used to be. The papers in this chapter use all these indicators, and others, to draw maps of the sites of social science production and the flows of international scientific collaborations and exchanges through citations. They rely on various databases of social science journals, publications and articles (Thomson's Social Sciences Citation Index [SSCI], Ulrich, Elsevier's Scopus, *International Bibliography of the Social Sciences* [IBSS]), although the authors are well aware of their limitations. Journals from developing countries are still poorly represented in international databases. Social science publications in the developing world are often in keeping with local interests and remain invisible with the existing tools (Russell and Ainsworth). This means that no exhaustive view of international social sciences is possible. But the papers in this chapter agree on the main trends in the production and exchange of social science.

This chapter starts off by showing that the perception that there has been an internationalization of the social sciences in the past two decades is no illusion. The fall of the Soviet Union, the European Union's research policy, and other changes in the political context have doubtless played an important role in this slow internationalization process. All regions show a decline in the share of self-citations. Asia, Africa and Latin America are becoming slightly more international in terms of the citations used in social science articles (Gingras and Mosbah-Natanson). Their scholars also participate in international collaborative articles more often.

The USA is still the primary country for social science collaborations with other regions of the world, followed by the UK, Canada and Australia (Frenken, Hoekman and Hardeman). Yet North America's share of international collaborative social science research has declined slightly in the past decade, while that of Western Europe has increased. Nevertheless, central regions for the production of the social sciences are also the ones where collaborations with other regions of the world are the least likely to take place. The more peripheral a region or country, the higher its share of international collaboration in its total number of publications.

The internationalization of social science research in developing countries mainly takes the form of a growing dependence on citations of papers produced in Europe and North America, and can be measured by the geographical origins of the references in social science journals (Gingras and Mosbah-Natanson). Internationalization thus tends to reinforce the centrality of the West over the rest of the world. Another sign of this dependence is linguistic (Ammon). More than 80 per cent of the academic and refereed journals in the social sciences are edited in English. Also, more than 75 per cent of the publications in the *International Bibliography of the Social Sciences* are in English.

The hegemony of the North in the social science production is not only obvious from a linguistic standpoint. Four countries – the USA, the UK, the Netherlands and Germany – produce two-thirds of the social science journals registered in the most encompassing of the social science journals' databases. North America alone produced in the last ten years more than half of the social science articles registered in the Thomson SSCI database. Europe is the second producer, and published almost 40 per cent of the world's social science articles in the past decade.

Nevertheless, the contribution of other regions is growing. Oceania, Latin America and Africa each contribute less than 5 per cent to the world production of articles. But the Asian share of world social science published papers has increased, particularly in the past decade. It represents almost 9 per cent of the world production. Chinese and Japanese are respectively the fifth and sixth languages used in social science journals. China's growth is in good part due to the production of researchers with Chinese surnames outside of mainland China, and visible especially in some subfields such as management science (Jonkers). The Russian Federation is the principal country whose social science output is failing to increase.

Social science production and collaboration retain a very strong core–periphery pattern and have a highly asymmetrical structure of exchange. But there are signs of gradual change (Frenken et al.). What will locally produced knowledge become in the light of this uneven process of internationalization? Answering this question will require careful study of the gradual changes in the social sciences' world structure, and there need to be more regional and discipline-specific studies (Russell and Ainsworth).

The globalization of research collaboration

Koen Frenken, Jarno Hoekman and Sjoerd Hardeman

Despite the globalization of research in general, and of research collaboration in particular, peripheral regions have not become better integrated into the world social science system over the past two decades. This means that the Western dominance of social science remains a pertinent issue. Social science dominated by just a few regions runs the risk of diminishing intellectual novelty and excluding less favoured researchers from agenda-setting discourses on 'issues of global relevance'.

Introduction

Scientific research involves worldwide communication, collaboration and competition. With the advent of the internet, English as the dominant academic language, and cheap air travel, these processes are becoming ever more global. Globalization provides once-peripheral research communities with opportunities to make contact with the communities that have dominated social science knowledge production. But despite pervasive trends towards globalization, high-income countries still dominate social science knowledge production (Gingras, 2002). This pattern is similar to the geography of natural science knowledge production (May, 1997; King, 2004; Frenken, Hardeman and Hoekman, 2009).

The benefits associated with the internationalization of research collaboration are said to be considerable (Katz and Martin, 1997). They stem from the sharing of knowledge, expertise and research infrastructures; the production of scientific knowledge with more diverse intellectual inputs; and the opportunity to solve issues of global relevance such as inequality, epidemic diseases, and global warming.

We study the globalization of the social science system by analysing research collaboration between nine global geographical regions over the past two decades. We use publications listed in the Web of Science (WoS) database with multiple addresses and track the changes that occur over time in these regions' shares in the collaborative production of mainstream social science research.

Data

The data for this study are extracted from research articles published in social science journals listed in the Social Science Citation Index (SSCI) and the Arts and

Humanities Citation Index (A&HCI) of WoS (Thomson Corporation, 2009). We have not included other forms of publication such as letters, notes and reviews. WoS indexes approximately 9,000 peer-reviewed journals worldwide and is considered to be among the most comprehensive article databases across countries and disciplines. Since a journal is only included in the WoS database after a quality assessment by WoS's publisher, the articles satisfy a certain minimum level of scientific quality.

Our database is constructed along three dimensions: disciplines, regions and time periods. WoS classifies journals into specific disciplines based on citation links between the citing and cited articles in scientific journals. We extracted all the publications that WoS listed under anthropology, area studies, economics, environmental studies, geography, history, international relations, political sciences and sociology (see Annex 1). Following Wallerstein et al. (1996, p. 14), our list thus includes the core social science disciplines (anthropology, economics, history, political science, sociology) as well as another four major social science disciplines.

Since we are interested in international research collaboration, we used the affiliation addresses given in the publications to determine which countries collaborated in the research project that led to a joint publication. All institutional addresses in research articles are uniquely indexed, and the country names are assigned to one of nine regions: Arab States, North America, Western Europe, Southern, Central and Eastern Europe and CIS, East Asia and the Pacific, South Asia, sub-Saharan Africa, Latin America and the Caribbean, and Oceania (see Annex 2). Data were collected for the period 1989 to 2008 and aggregated to four time periods to ensure a reasonable number of collaborations per discipline and time period. The time periods are 1989–1993, 1994–1998, 1999–2003 and 2004–2008.

We defined a case of research collaboration as any paper with a pair of institutional addresses from more than one of these geographical regions. We aggregated all of these inter-regional collaborations into a region-by-region matrix, counting the number of research collaborations between any two regions in a particular discipline and particular time period. This procedure means that a single article may be linked to more than one unique regional pair. For example, a publication involving an Egyptian, Indian and US organization will be counted as collaboration between Arab States and South Asia, between Arab States and North America, and between South Asia and North America. However, a publication with multiple addresses does not necessarily involve multiple authors. Individual authors may have multiple affiliations and may create collaborative links between countries.

Although it is well known that scientific research results are mostly made available to the scientific community by publishing them in WoS journals, the propensity to do so varies between regions. Only certain countries have long social science traditions and well-established norms for communicating findings in this way. Furthermore, WoS is known to be biased towards English-language journals. WoS mainly lists findings in journal articles (thus excluding scientific reports, working papers and books) that have been published in journals edited and published in a select group of mainly Anglo-Saxon countries, and which have been written in one of a few favoured languages, mainly English and, to a lesser extent Spanish, German and French.

Table 4.1 > Number of co-publications and ranks of regions per discipline, 2004–2008

Region	Total	Anthro-pology	Area studies	Economics	Environ-mental studies	Geo-graphy	History	Inter-national relations	Political science	Sociology
North America	11,359 (1)	1,567 (1)	275 (1)	5,797 (1)	1,260 (1)	544 (2)	50 (1)	459 (1)	781 (1)	626 (1)
Western Europe	10,168 (2)	1,372 (2)	202 (2)	5,121 (2)	1,242 (2)	606 (1)	49 (2)	389 (2)	678 (2)	509 (2)
East Asia and the Pacific	3,206 (3)	315 (4)	117 (3)	1,665 (3)	491 (3)	187 (3)	2 (7)	155 (3)	112 (5)	162 (3)
Southern, Central and Eastern Europe and CIS	2,337 (4)	372 (3)	74 (4)	1,126 (4)	173 (7)	102 (5)	7 (5)	101 (4)	226 (3)	156 (5)
Oceania	2,270 (5)	220 (7)	34 (7)	1,093 (5)	335 (4)	187 (3)	14 (3)	96 (5)	132 (4)	159 (4)
Latin America and the Caribbean	1,348 (6)	295 (6)	45 (6)	498 (6)	242 (5)	80 (6)	8 (4)	42 (6)	68 (6)	70 (6)
sub-Saharan Africa	1,051 (7)	313 (5)	57 (5)	302 (7)	194 (6)	68 (7)	5 (6)	25 (7)	24 (7)	63 (7)
South Asia	570 (8)	88 (8)	14 (9)	229 (8)	142 (8)	30 (8)	1 (8)	14 (9)	23 (8)	29 (8)
Arab States	245 (9)	52 (9)	18 (8)	85 (9)	43 (9)	4 (9)	0 (9)	15 (8)	12 (9)	16 (9)

This means that as a bibliometric tool, WoS is only suitable for evaluating each region's contribution to mainstream social science, and not for drawing conclusions about the total world production of social scientific research. Peripheral countries' scientific knowledge production will be more applied and less oriented towards the global publication system represented by WoS (Sancho, 1992). This under-representation is caused by the lack of financial and intellectual support, language barriers, and fewer career incentives to publish, among other factors. This under-representation limits the value of WoS-based studies for informing statements about 'Western-dominated' mainstream science. Nevertheless, what is considered mainstream science also changes over time. The number of journals with a particular (regional) focus either decreases or increases over time. In our analysis, this dynamic is simply another representation of what is considered mainstream science.

Results

Table 4.1 shows the number of co-publications each region was involved in during the period 2004–2008, per discipline and as a whole. Inter-regional research collaboration in general is dominated by North America and Western Europe, while there is little co-publication by the Arab States, South Asia, and sub-Saharan Africa. These results suggest a strong core–periphery structure in collaborative social science research.

In some disciplines, the regional rankings deviate from this general picture. Sub-Saharan Africa ranks relatively high in terms of the total number of co-publications in area studies and in anthropology. The Southern, Central and Eastern Europe and CIS region ranks relatively low (7) in environmental studies compared with its overall ranking (4). East Asia and the Pacific ranks relatively low

Figure 4.1 — Top ten of the strongest inter-regional links in collaborative world social science, 2003–2008

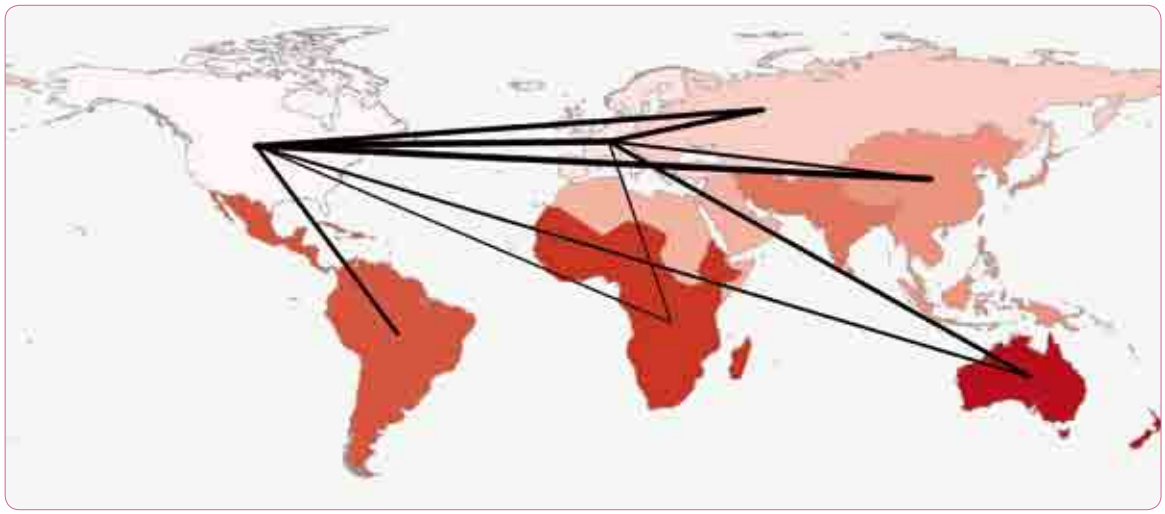


Figure 4.2 — Bottom ten of the weakest inter-regional links in collaborative world social science, 2003–2008

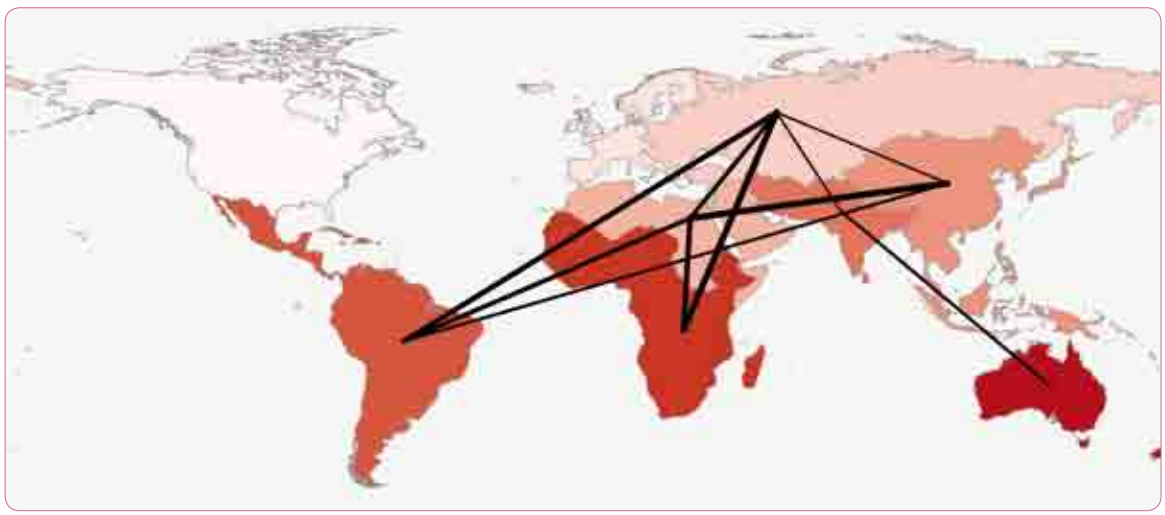


Figure 4.3 — Share of regions in total collaborative world social science, 1989–2008

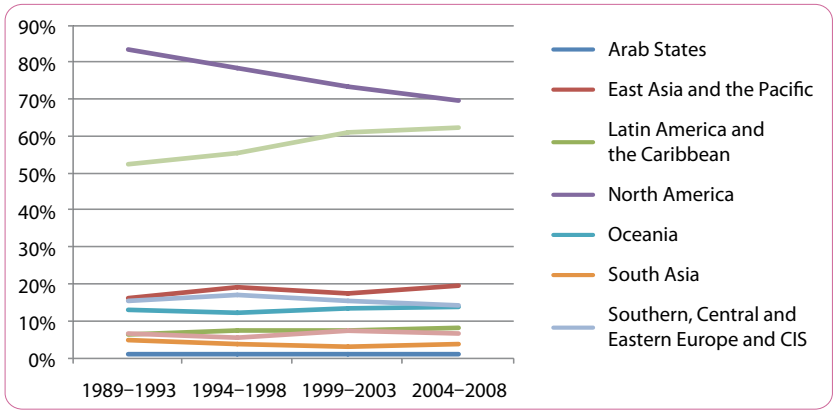
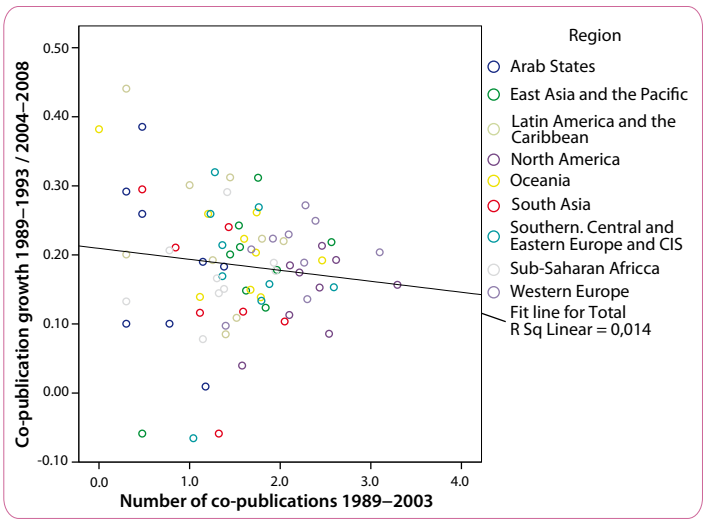


Figure 4.4 — Convergence across regions in the number of co-publications over time



in history (7) in relation to its overall ranking (3). There are tentative explanations for these marked deviations. Sub-Saharan Africa is an important study object; there is a lack of political interest in environmental matters in Eastern Europe; and the language barrier is significant in East Asia and the Pacific. But further research is needed to understand these patterns.

Obviously the number of co-publications between any two regions is significantly affected by differences in their total number of publications. We therefore measure the strength of inter-regional collaboration links by using the Salton index[1] to control for regions with a high total number of co-publications automatically having stronger links with other regions. Figure 4.1 shows the ten strongest links according to the Salton index. The figure shows that even after controlling for the total number of co-publications, the same core–periphery structure appears as is found in Table 4.1, with North America and Western Europe featuring in the ten strongest links. Figure 4.2, which shows the ten weakest links, reinforces this conclusion. The ten weakest links never feature North America or Western Europe.

The changing spatial structure of collaborative world social science research

Although the current state of collaborative social science research has a clear core–periphery structure, a dynamic analysis is needed to understand whether this structure is weakening or strengthening as a result of globalization. Figure 4.3 shows that North America's share of the total number of collaborations has decreased considerably. However, North America's decline cannot be contributed to the peripheral regions' share increasing. Instead, the

1. The Salton index (Salton and McGill, 1983) is constructed as follows: $I_{ij} = \frac{Copub_{ij}}{\sqrt{Copub_i * Copub_j}}$ where $0 \leq I_{ij} \leq 1$, $Copub_{ij}$ is the total number of co-publications of region i with region j, $Copub_i$ is the total number of co-publications for which region i is involved and $Copub_j$ is the total number of co-publications for which region j is involved.

decrease in North America's share has gone hand in hand with an increase in Western Europe's share.

Table A4.6 in Annex 3 shows the evolution of the Salton index for each pair of regions. Some major shifts have clearly taken place. The most important changes were the marked increase in collaboration between Western Europe and Southern, Central, Eastern Europe and CIS, particularly after 1993. In addition, there was a significant rise in collaboration between Western Europe and East Asia and the Pacific, particularly after 1998. These two trends probably reflect the effects of political change (the end of communism, and China's reform respectively), which greatly facilitated interaction between researchers.

Another way to analyse the evolution of collaboration is to plot the growth of inter-regional research collaboration in each of the disciplines (on the Y axis) against the number of inter-regional research collaborations in the first period, 1989–1993 (on the X axis), as in Figure 4.4. This shows clearly that most regions experienced a rapid growth in their number of co-publications. Only a few regions experienced negative growth. Furthermore, Figure 4.4 shows a negative relationship between the growth in inter-regional research collaborations and the number of inter-regional research collaborations in the first period, 1989–1993. This means that regions with a lower number of collaborations in the first period increased their collaborations faster than regions with a higher number to begin with, indicating a process of convergence. This process was particularly rapid in environmental studies, which are not shown here. But in general, we observe only a weak relationship between growth and initial state, which is not statistically significant. Thus we can conclude that the distribution of the number of co-publications over regions has remained fairly stable over the past two decades.

Conclusion

Research collaboration in the social sciences is dominated by North America and Western Europe. Although the role of Western Europe has become somewhat more prominent at the expense of North America, the core–periphery structure for Western countries and the rest of the world has endured for the past two decades. Collaboration, as represented by joint publications and as indexed in WoS, continues to be dominated by Western social scientists.

Despite the globalization of research in general and research collaboration in particular, peripheral regions have not become better integrated into the world social science system over the past two decades. This means that the Western dominance of social science remains a pertinent issue. As argued by Yeung (2001), among others, social science dominated by just a few regions runs the risk of diminishing intellectual novelty and excluding less favoured researchers from agenda-setting discourses on 'issues of global relevance'.

Further quantitative analyses of the global science system, making use of WoS as well as other databases (for example, Google, Scopus), would support a better understanding of the core–periphery structure's persistence. A number of spatial scientometrics methodologies are now available to study the spatial structure and dynamics of the global science system in detail. These include the determinants of research collaboration, citations and mobility (Frenken et al., 2009). Analyses can include the classical determinants of geographical distance and national borders, but also language, quality and social networking effects. Consequently, scientometricians can make an important contribution to our critical understanding of the geography of social science knowledge production.

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Where are social sciences produced?

Yves Gingras and Sébastien Mosbah-Natanson

Beyond a general growth in the number of papers and journals in the social sciences around the world, the globalization and internationalization of research have essentially favoured Europe and North America, the regions which were already dominant. Furthermore, the autonomy of the other regions has diminished and their dependence on central actors has increased over the past twenty years. Also, Europe has increased its centrality and is now comparable to North America.

During the past decade, internationalization and globalization have emerged as a central focus for the social sciences. The effects of these new, or at least accelerated, trends on cultures, economies and other aspects of social life since the 1980s have been widely studied by social scientists from many disciplines, particularly economics and sociology. But we can also be reflexive and address the question to the social sciences themselves: are they becoming more international or even global?

The objects of the natural sciences (particles, atoms, cells and galaxies) are universal. So these subjects lend themselves to international collaboration, which has grown rapidly in these disciplines. However, the social sciences' usual objects are more locally embedded, which has made internationalization less obvious and rapid (Gingras, 2002; Gingras and Heilbron, 2009). It is thus worth looking in more detail at the geographical distribution of social science journals, at the evolution of production by region of social science papers over the period from 1990, and, finally, at the flux of inter-citations between regions.[1] These indicators can shed light on changes in the relations between regions. Does increased internationalization favour the emergence of a delocalized discourse, using all contributions from different countries equally? Or does it accentuate peripheral countries' dependency on the already dominant scientific regions of Europe and North America?

In order to measure such changes, we could analyse the changing topics that social scientists study and ascertain whether they are becoming less local and more internationally distributed. We would certainly find an increase in the use of key words and terms such as 'international', 'transnational' and 'comparative studies'. But behind the verbal unification of topics, are there more exchanges between countries, or simply different local uses of the same expressions or buzzwords? Are contributions from peripheral countries now more visible in Europe and North America than in the past?

Methodology

Our analysis of global trends in knowledge production in the social sciences is based on two databases. The first is the SSCI of the WoS, which covers articles[2] on social sciences disciplines published in about 1,200 journals and includes all authors' addresses as well as each paper's list of references. The second is the Ulrich database, which identifies existing journals in all fields as well as their country of publication, the languages used in the journal, the country in which the editor is domiciled, and among other information, whether the articles in the journal are peer-reviewed or not.[3]

Given the limitations of these databases, this study cannot pretend to provide an exhaustive view of the world distribution of social sciences.[4] Nonetheless these sources, used with caution, can provide a good understanding of change and evolution over time on a scale that cannot be observed without their use.

In order to analyse the relations between social scientists from different countries globally, we divided the world

1. We focus on social science journals and articles. For an analysis of the world production of social science monographs, see Kishida and Matsui (1997). For the case of Europe, see Sapiro (2008).
2. We take 'article' to mean three types of papers: articles, notes and reviews.
3. We used the 2004 Ulrich CD-Rom.
4. For more details on the limits of these databases, see Archambault et al. (2006) and their contribution to the present book.

into seven regions: Europe,[5] North America (the USA and Canada), Latin America (including Mexico and the Caribbean countries), Africa, Asia (including the Middle Eastern countries), Oceania (Australia, New Zealand and the surrounding islands) and the Commonwealth of Independent States (CIS). Finally, since the definition of social sciences is far from universal, we adopt the one used by the National Science Foundation in its reports on Science and Engineering indicators.[6]

The world distribution of social science journals

Social science journals can serve as the point of entry for an analysis of the world distribution of social science knowledge production. The Ulrich database gathers far more scientific journals than the Thomson WoS: we identified a total of 6,640 academic journals, a number that drops to 3,046 if we consider only peer-reviewed journals. We also compared the results with SSCI (which covers 1,162 journals) and focused our analysis on two variables: the geographical origins of the journals (by region), and the language used in each journal.

As Table 4.2 shows, the picture varies according to the database used, but remains coherent on a global level: Europe and North America far outweigh the rest of the world in academic publications. Using Ulrich or the SSCI shows that Europe accounts for about 45 per cent of world journal production. North America is behind with 37 per cent of refereed journals in the Ulrich database but equal at 46 per cent according to the SSCI. All the other regions are well behind, with less than 10 per cent of refereed journals or publications each (for social science journals from central and peripheral countries, see Narvaez-Berthelemot and Russell, 2001). Significantly, journals from these regions are more visible in the Ulrich database than in the SSCI, which is more selective in its choice and more focused on English-language journals from the UK and North America. In terms of papers, however, Thomson data shows that Europe produces only 38 per cent of papers, while North America accounts for 52 per cent of papers in SSCI.

Table 4.2 > Social sciences journals and articles by region and database

Region	% All Ulrich academic journals in 2004 (N = 6,640)	% Ulrich refereed journals in 2004 (N = 3,046)	% Thomson SSCI journals 1980–2007 (N = 1,162)	% Thomson SSCI articles 1998–2007 (N = 226,940)
Europe	47.8	43.8	46.1	38.0
North America	29.4	37.0	46.5	52.2
Asia	11.2	8.6	3.7	8.9
Latin America	5.2	4.7	1.3	1.7
Oceania	3.9	4.2	1.9	4.7
Africa	2.2	1.8	0.4	1.6
CIS	0.6	0.2	0.1	1.2

These results remind us that data from Thomson WoS tends to underestimate the presence of non-central social sciences journals. That said, we will see that in terms of citations, the central actors in the field also tend to concentrate their citations on the central journals and countries, and themselves neglect contributions from outside Europe and North America.

If we examine the specific countries where refereed social science journals are edited, we observe that among the top twenty, nine are European,[7] four Asian (India, Japan, China and Singapore),[8] two Latin American (Brazil and Mexico), two Oceanian (Australia and New Zealand), two North American (USA and Canada) and one from Africa (South Africa). By publishing more than 1,000 refereed social sciences journals, the USA is the first country (with a quarter of the social science journals), followed by the UK, the Netherlands and Germany. Together these four countries publish two-thirds of all social science journals.[9]

These results confirm the centrality of two major producers of social sciences, Europe and North America. These two regions account for about three-quarters of the world's

5. Europe is defined as the 27 members of the European Union, plus Switzerland, Norway, Iceland, Albania and the ex-Yugoslavian countries.
6. When we use the Thomson database, only the following disciplines are included in our definition of 'social sciences': area studies, anthropology and archaeology, criminology, demography, economics, science studies, geography, planning and urban studies, international relations, political science and public administration, miscellaneous social sciences, general social sciences and sociology. Since the Ulrich database is based on a different classification, we consider the following sections: social sciences, anthropology, archaeology, sociology, political science, geography, criminology and business and economics (the former section does not distinguish between economics and business, so there is an over-evaluation of this section as the SSCI separates economics and business).
7. These countries are: the UK, Germany, the Netherlands, France, Poland, Italy, Austria, Switzerland and Belgium.
8. Although China is only ninth in terms of academic and refereed journals (and the third Asian country), it becomes fifth in the world and top in Asia if we extend our corpus and look at academic journals in general.
9. The position of the Netherlands can largely be explained by the large number of international journals edited in the country. These journals contain contributions from many countries, not only or even mainly from the Netherlands. As we shall see, this can be corrected by examining the papers' country of origin.

social science journals. If we compare these results with those obtained using the SSCI data, the concentration is even stronger; the two regions produced more than 90 per cent of the social science journals from 1998 to 2007. The difference between these results can largely be explained by the SSCI only covering 'core' journals on the social sciences disciplines.

The dominant languages of the social sciences

The domination of European and North American social sciences has an obvious effect on the languages used for the diffusion of research results in these fields. Using the Ulrich and SSCI data, we assessed the relative weight of each language by considering its presence in social science journals.[10]

Table 4.3 shows that the first five languages are Western ones. English is by far the most used language in social science journals: 85.3 per cent of the refereed journals covered in Ulrich are edited totally or partially in English. French, German, Spanish and Portuguese follow. Chinese is the most-used non-European language, accounting for 1.5 per cent of the academic social science journals in Ulrich. This result is an indication of China's new role in the social sciences (Ping Zhou, Thijs and Glänzel, 2009). The second non-European language is Japanese. It is worth noting that if we consider the larger set of academic journals more generally by including non-refereed journals, the proportion of English-language journals falls to 69.6 per cent. This indicates the stronger concentration of English in scientific communities as opposed to the larger intellectual communities, which are naturally more attached to their local languages. If we use the SSCI to consider the languages in which the articles are written (and not those of the journals), English articles account for around 94 per cent (in the period 1998–2007) of the total. This larger proportion illustrates the Thomson WoS database's English-speaking bias. Nonetheless, it does not differ much from Ulrich, making strong domination of English in the social sciences field a fait accompli.

Table 4.3 > The ten prevalent languages in social science journals

Language	% Ulrich refereed journals in 2004 (N = 3,046)	% Thomson SSCI articles 1998–2007 (N = 226,984)
English	85.3	94.45
French	5.9	1.25
German	5.4	2.14
Spanish	4.0	0.40
Portuguese	1.7	0.08
Chinese	1.5	0.00
Dutch	1.5	0.01
Japanese	1.0	0.06
Polish	0.9	0.00
Italian	0.6	0.01

10. If journals are plurilingual, they are counted as a separate unit in each language.

Global trends in the production of scientific papers

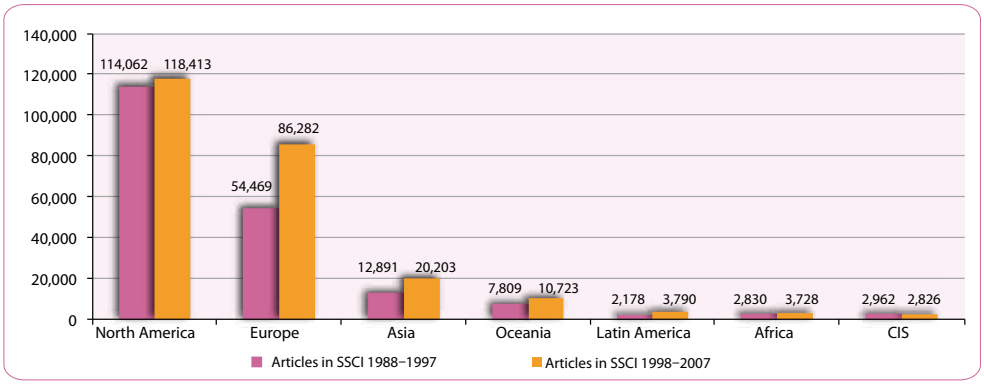
We can take a first glance at the global evolution of the social sciences in recent decades by examining the number of research articles written by authors from each region during the two decades 1988–1997 and 1998–2007. SSCI data[11] shows a substantial overall rise of about 21 per cent in the numbers of social science articles between the two periods: from 187,109 published between 1988 and 1997, to 226,940 published between 1998 and 2007.

As shown in Figure 4.5, the growth varies greatly from region to region, with the largest in Latin America (an increase of 74 per cent), Europe (increasing by 58.4 per cent) and Asia (a rise of 56.7 per cent). For Africa and Oceania the growth is only about 30 per cent, while the CIS is the only group of countries facing a decline in its production of social science papers (-4.6 per cent). This reflects the disorganization that followed the fall of the USSR (Wilson and Markusova, 2004). Part of the overall growth is also the result of the SSCI database's changing content: over the years it has covered more European journals. The relative stability of North American growth (of only 3.8 per cent) suggests that its system has attained a plateau, whereas a region like Asia is still building its social science research system.

Nonetheless, North America is the largest producer of papers in the social sciences, with more than half of the total number of articles, and is the only region publishing an average of more than 10,000 articles per year. With other countries' growing contributions, the North American share of the total is bound to diminish over time: from 61 per cent of the total of social science articles over the period 1988–1997, this percentage drops to 52.2 per cent over the next ten-year period (1998–2007). Europe is the second most important actor in social sciences and its share grew substantially, from 29.1 per cent during 1988–1997 to 38 per cent during 1998–2007.

11. We only considered articles with at least one address, and attributed the paper to the country mentioned in that address. In the case of multi-authored papers, we attributed one paper to each country mentioned in the addresses. Consequently, the totals for countries can add up to more than 100 per cent.

Figure 4.5 — Production in the social sciences by region



Asian countries hold the third place in the hierarchy, producing 8.9 per cent of the social science articles during 1998–2007, or 20,203 articles. Asia is followed by Oceania, which produced almost 5 per cent of the articles in that decade. The other three regions, Latin America, Africa and CIS, produced less than 2 per cent of the social science articles, and less than 4,000 articles per decade.

In summary, Europe and North America maintain their largely dominant position, although North America has seen its relative share decline over time. The other regions clearly play a peripheral role, even though their share of world production has increased over the past twenty years (for a more detailed account by discipline and by country, see Glänzel, 1996).

Citations in social sciences: autonomy or dependence?

One of the main questions for contemporary social sciences is the peripheral regions' degree of autonomy from or dependence on the two main social sciences producers, Europe and North America. While the centrality of these two regions is confirmed by international collaborations analysis (see the contribution by Frenken et al. in this Report), we can also obtain a complementary measure by looking at the origins of citations in the articles produced by social scientists from the different regions. Using the SSCI database, we examine the geographic origins of references to different countries' social science journals during two periods of three years, 1993–1995 and 2003–2005, in each region, based on the 200 most-cited journals.[12]

As might be expected, Table 4.4 shows that in respect of all regions and in the two relevant periods, the two most-cited regions are Europe and North America. Citations

12. Limiting the analysis to the 200 most-cited journals probably underestimates the total proportion of citations of peripheral journals, as these are probably concentrated in the tail of the Lotka-type distribution in which the majority of the citations are attributed to a small number of dominant journals. Using, say, the first 500 journals would increase the capture rate of total citations. But it would necessitate a great deal of work to identify marginal journals and would not significantly affect Europe and North America's central place.

Table 4.4 > Origins of citations by region for the 200 most-cited journals

Citing regions	Africa		Latin America		Asia		CIS		Europe		Oceania		North America	
Cited regions	% 1993–1995	% 2003–2005	% 1993–1995	% 2003–2005	% 1993–1995	% 2003–2005	% 1993–1995	% 2003–2005	% 1993–1995	% 2003–2005	% 1993–1995	% 2003–2005	% 1993–1995	% 2003–2005
Africa	22	11.7	0	0.4	0	0.2	0.2	0	0	0	0	0	0	0
Asia	0.4	0.8	0.5	0.3	6.8	1.6	1.2	1	0.3	0.2	0	0.2	0	0
CIS	0	0	0	0	0	0	36.7	15.3	0	0	0	0	0	0
Europe	45.4	53.4	32.1	33.9	31.2	41.8	30.9	31.9	51.1	50.3	35.9	42.7	17.6	20.4
International	5.2	3.1	3.7	2.3	3.6	2.3	0.3	0.2	1.7	1.3	2.4	1.7	1.6	1.4
Latin America	0	0	11.7	6.9	0.2	0	0	0	0	0	0	0	0	0.2
Oceania	0.3	0.2	0.4	0	0	0	0	0	0.5	0.3	12.9	7.2	0	0
North America	26.7	30.9	51.6	56.2	58.2	54.1	30.8	51.5	46.3	47.9	48.8	48.1	80.8	78.1
Capture rate	48.3	50.7	47.8	43.9	45.9	45.5	55.1	48.1	41.1	41.9	40.1	39.1	45.8	45.5

Notes:
1. This table should be read as follows: for example (top left), restricted to the 200 most-cited journals in African social sciences articles, 22 per cent of the references in the period 1993–1995 come from African social sciences journals.
2. The 'capture rate' measures the percentage of the total number of references in the 200 most-cited journals.

of European and North American journals vary between 61.7 per cent (CIS, 1993–1995) and 98.5 per cent (North America, 2003–2005) of the 200 most-cited journals' overall citations. We can distinguish European-dependent countries and North-American-dependent countries in terms of citations. Hence, Africa is largely a European-dependent region, with more than half of its references being to European journals in 2003–2005. By contrast, Latin America and Asia are North American-dependent regions, with more than half of their references being to North American journals in the two periods. Oceania is an intermediary case while the CIS, having been comparatively autonomous in 1993–1995, became more dependent on North America ten years later. North America is largely autonomous in terms of citations (around 80 per cent are 'self-citations'; that is, citations of papers originating from the USA or Canada), while European citations are almost equally divided, with intra-European citations having a slight advantage above inter-citations.

Following this first observation, the question is whether important changes occurred between 1993–1995 and 2003–2005. A first noticeable trend in all the regions (albeit at different levels) is the decline of self-citations, by which we mean citations of papers from an author's own region. The rate of self-citation was halved in peripheral regions like Africa, Latin America, Oceania and the CIS. In the period 1993–1995, 22 per cent of the references in African papers were to African social science journals. Ten years later, this proportion had fallen to only 11.7 per cent. The decline is even stronger in Asia.[13] For the two major social science producers, Europe and North America, a slight decline can also be observed, indicating better recognition of foreign contributions. We can also observe an increase in the proportion of citations of European and North American journals in most regions. This rise can be relatively small and insignificant (for example, 1 per cent more European citations in the case of the CIS between the two periods) or much bigger (10.6 per cent more European citations from Latin America).

Conclusion

From all these data on publication and citation practices, we can conclude that beyond a general growth in the number of papers and journals in the social sciences around the world, the globalization and internationalization of research have essentially favoured Europe and North America, the regions that were already dominant. Furthermore, the autonomy of the other regions has diminished and their dependence on central actors, as measured by citations, has increased over the past twenty years. Finally, Europe has increased its centrality and is now comparable to North America.

Although the tendency to interpret any rise in internationalization as a sign of openness is a strong one, we should not ignore the fact that there is tension between autonomy and dependence. It is not impossible that the increase in exchanges (through collaboration or citation practices) with central countries could lead to increased dependence instead of greater autonomy, as the inter-citation analysis has shown. At the same time, we should not underestimate the possibility that by having access to central journals and collaborators, researchers from peripheral countries can improve the visibility of their work in North America and Europe. Finally, given that the objects of the social sciences are more local than those of the natural sciences, it is clear that these local realities are better studied by local social scientists using local resources, even if their visibility on the international scene remains low. We could even predict that too much internationalization could induce a tendency to study more 'central' problems at the expense of socially important local ones.

13. This stronger decline can be partially explained by our analysis being limited to the 200 most-cited journals. If a country cites more North American or European journals, the local journals may thus fall under the threshold of 200 and they will not be captured. Therefore this approach underestimates the total proportion of local citations but reveals the increase of central countries' attraction.

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The hegemony of English

Ulrich Ammon

English is an asymmetric global language whose benefits are unequally distributed. Native speakers are the gatekeepers to funding and publishing. There is also an anglophone-centred flow of information and an anglophone perception of scientific achievement. The anglophones' linguistic advantage contributes to the enhancement of their countries' competitive advantage in science, and in related businesses such as publishing, as well as to the attractiveness of their universities.

English is the global language of social science, and is used extensively – both passively and actively – by non-anglophone academics (Ammon, 2001; Carli and Calaresu, 2003). The preference for English is less pronounced in the social than in the natural sciences, but more so than in the humanities (Ammon, 1998, pp. 137–79).

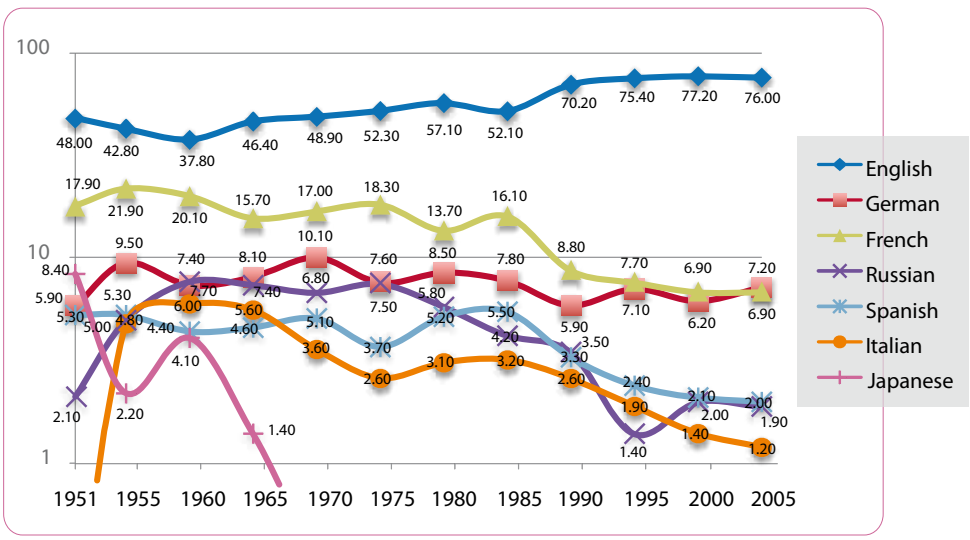
Gingras and Mosbah-Natanson in this Report illustrate the dominance of English using the Ulrich and WoS databases. Figure 4.6 offers another overview of the proportions of major languages in social science publications, even if this figure (based on the *International Bibliography of the Social Sciences* [IBSS] and the library collection of the London School of Economics) is somewhat biased.

There are noticeable differences both between and within disciplines. Certain disciplines such as economics are more likely to be anglophone than others such as law. Likewise, international law is more likely to be anglophone than national law. Representative data on this is missing, however.

Causes of the hegemony of English

Despite the English language's privileged position, built notably through colonialism and economic power, English, French and German were of broadly similar importance for the social sciences in the early twentieth century. The First World War, the Second World War and the fall of the Soviet bloc all helped to accelerate the expansion of English. The USA became a global centre for science. Its language supremacy was enhanced by a combination of factors. These included superior resources for research and for the development of bibliographical databases and citation indices; the abolition of foreign language requirements in US universities (forcing others to use English); and halo effects such as the extension of academic prestige to the English language (Ammon, 1998, pp. 179–204).

Figure 4.6 — Percentage shares of major languages in social science publications worldwide (rank order following 2005; all other languages < 1 per cent)



Consequences of the language hegemony

To call English the lingua franca of science masks existing language divides. English is not a lingua franca in the sense of being a non-native language for all its users – as, for instance, was medieval Latin. It is an asymmetric global language whose benefits are unequally distributed. The fact that virtually everyone uses English for global interactions contributes to the spread of innovation and boosts the advancement of science. But non-native speakers of English have to devote greater efforts than native speakers to the language because they are obliged to learn it, and therefore contribute more heavily to the creation of the public good of a common language (Van Parijs, 2008). They also continue to be weighed down by poorer skills, which often exclude them from conferences and publication opportunities (Ammon, 1990). Native speakers are the gatekeepers to funding and publishing (Burrough-Boenisch, 2006; Flowerdew, 2008). There is also an anglophone-centred flow of information and an anglophone perception of scientific achievement (Durand, 2001). While both anglophones and non-anglophones read and publish in English, the latter also publish in their own native languages. The anglophones' linguistic advantage contributes to the enhancement of their countries' competitive advantage in science, and in related businesses such as publishing, as well as to the attractiveness of their universities.

Difficulties in communication can arise from any non-anglophone setting, especially from different text conventions whose transference can appear awkward (Clyne, 1987). One source of confusion is terminology, since English can be more – but also less – refined than other languages. The English term *social class,* for instance, can either relate to the German *soziale Klasse* (antagonistic and in the Marxist tradition) or *Sozialschicht* (non-antagonistic). The notion of *identity* has three possible translations in Japanese: 主体性 *shutaisei*, 独自性 *dokujisei* or 自己認識 *jiko-ninshiki*, each word having a slightly different meaning.

This goes to suggest that a single global language not only contributes to the advancement of science through wider communication, but also hampers its progress by disregarding the cognitive potential of other languages. This concern, based on the Humboldt and Sapir–Whorf hypothesis, seems applicable to the social sciences, since cultural differences are intrinsically present within the semantic structure of a given language. It also implies that multilingualism gives non-anglophones a cognitive advantage, although this needs corroboration and certainly does not fully make up for their difficulties in communicating.

Is greater 'linguistic equity' possible?

Attempts to promote linguistic equity should also heed efficiency in scientific communication. While all non-native speakers of English are affected by its dominance, it impacts two groups disproportionately:

- Those whose language has recently lost in international prominence (for instance, French or German) or who have recently become involved in global communication (for instance, Russians).
- Those whose language is at a considerable structural distance from English and who find English especially difficult to learn well (for example, Chinese, Japanese). While the problems of the first group will decline, those of the latter will persist.

Solutions and guidance on these issues could be encouraged by awareness-raising campaigns (like La Madeleine, 2007; Ammon and Carli, 2008). Scientific organizations could establish special committees to deal with the problems raised by the dominance of English and to develop proposals for improvements. There is a need for greater university training on writing scientific papers in English (Swales and Feak, 2000) and for greater editorial support for publishing (Burrough-Boenisch, 2006; Flowerdew, 2008), ideally with professional as well as linguistic help (Benfield and Feak 2006, p. 1). This could be financially supported by leading publishers. The same applies to oral presentations at conferences. In the long run, automatic translation and interpretation may bridge the language divide, or English-language skills may become so ubiquitous that anglophones will lose their advantage, although this would produce more obstacles for other languages. Non-native-speakers, the vast majority of the total, may even gain normative control over the global language, thereby leading, at least in the case of scientific communication, to the predominance of non-native strains of English (Ammon, 2003, p. 33; 2006).

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Social science research in the Latin American and the Caribbean regions in comparison with China and India

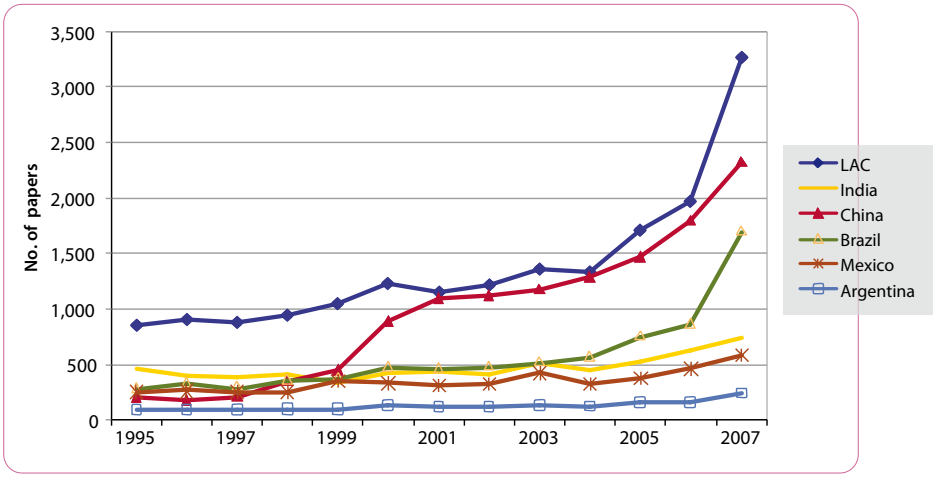
Jane M. Russell and Shirley Ainsworth

In this contribution, we focus on the overall production, international collaboration patterns, and the main subject areas and thrusts of research in the Latin American and Caribbean countries (LAC). We specifically emphasize Brazil, Mexico and Argentina, the major players in LAC science, comparing their performance with that of India and China, the other emerging economies.

In developing countries, social science research is considered to be primarily of local relevance and to impact only its immediate surroundings, making publication in national books and journals the main communication outlets. Nonetheless, a growing presence in the highly visible mainstream journals published predominantly in English indicates an increasing awareness that much of this research also has implications for the global scientific community. In this short contribution, we focus on the overall production, international collaboration patterns, and the main subject areas and thrusts of research in the Latin American and Caribbean countries (LAC). We specifically emphasize Brazil, Mexico and Argentina, the major players in LAC science, comparing their performance with that of India and China, the other emerging economies.

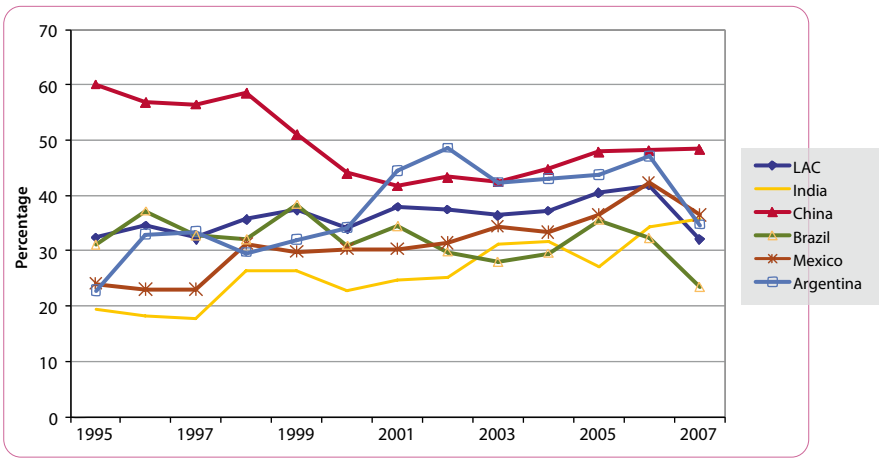
The SSCI, which brings together the world's most-cited social science journals and which covers 50 disciplines, reported a fourfold increase from 852 in 1995 to 3,269 in 2007 in research papers (articles, conference papers, reviews, letters and notes) from the LAC region. Brazil showed an increase from 274 items in 1995 to 1,690 in 2007, Mexico from 248 to 581, and Argentina from 92 to 239. When we compare these three countries with India and China, and with LAC as a whole, all six show significant increases (Figure 4.7). China shows the most marked growth over the period, moving from being fourth of the five individual countries in 1995 to a predominant first position in 2007. India shows the smallest increase and drops from the first position of the individual countries in 1995 to third, behind China and Brazil, at the end of the period. In 2008, Brazil was the fifth most populous country in the world; nevertheless, with approximately 195 million inhabitants, it was considerably smaller than China and India with their 1,325 million and 1,149 million inhabitants respectively. The populations of Mexico and Argentina were 108 million and 40 million respectively in 2008 (Population Reference Bureau, 2008). These figures suggest that these

Figure 4.7 — Total annual production of research papers in Latin America, China and India, 1995–2007



Note: LAC = total Latin America and the Caribbean

Figure 4.8 — Annual percentages of research papers produced through international collaboration in Latin America, China and India, 1995–2007



Note: LAC = total Latin America and the Caribbean

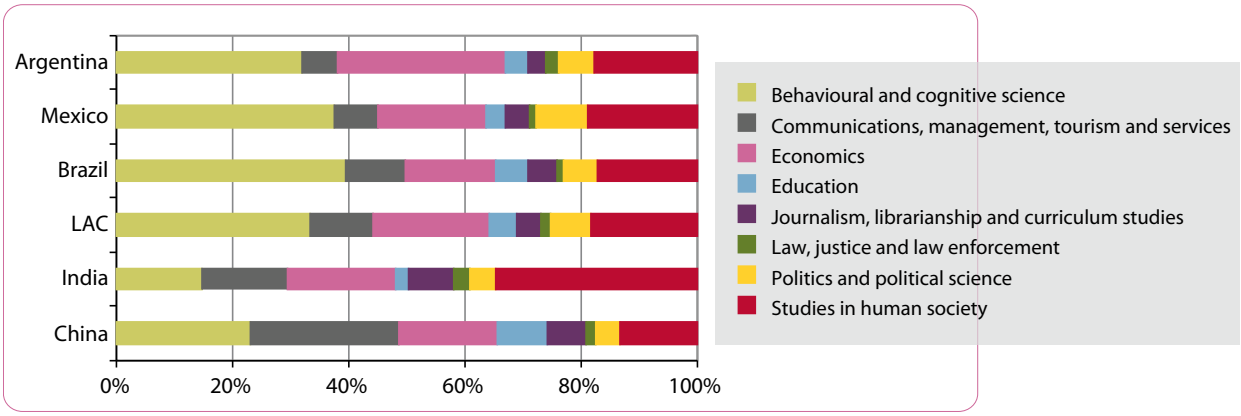
three LAC countries have a notable presence in the SSCI in terms of their population when compared to the two populous Asian countries.

Another parameter with which to measure a scientific system's degree of internationalization is the percentage of papers co-authored with scientists from other countries. With 46.9 per cent, China showed the greatest overall percentage of internationally co-authored papers in the thirteen-year period from 1995 to 2007. The LAC countries had 36.2 per cent overall; individually, Brazil had 30.4 per cent, Mexico 32.4 per cent, and Argentina 38.3 per cent. India had 27.2 per cent (Figure 4.8). Mexico, Argentina and India showed an increasing percentage of internationally collaborative papers, with Brazil and China showing lower percentages at the end of the period than at the beginning. LAC showed a small but steady rise before 2007, when its percentage dropped to the 1995 level.

Scientifically speaking, small countries tend to have a high percentage of internationally collaborative papers. In small Latin American countries such as Bolivia, Ecuador, Guatemala, Nicaragua and Panama, between 74 per cent and 86 per cent of publications are co-authorships with at least one other country. Conversely, only around 30 to 38 per cent of papers published in scientifically more developed countries such as Brazil, Mexico and Argentina are co-authored (Sancho et al., 2006).

In the mid-1990s, international co-publications accounted for about 60 per cent of China's total publication output in the SSCI. At the beginning of the twenty-first century, this had dropped to between 40 and 50 per cent. But in 1995, the total number of Chinese papers was small (at 198) compared with its 2007 total of 2,324. This suggests that China increased both its overall international visibility and its number of internationally co-authored papers. The

Figure 4.9 — Distribution of research papers in respect of the main social science disciplines in Latin America, China and India, 1995–2007



Note: Disciplines based on the RFCD classification scheme (Butler, Henadeera and Biglia, 2006).
Papers can be assigned to more than one subject category.
LAC = total Latin America and the Caribbean.

discipline the SSCI most frequently assigns to papers from LAC is medical and health sciences (38 per cent), including 41 per cent of papers from Mexico and 44 per cent from Brazil assigned to this discipline. This is also true for Argentina, India and China but to a far lesser extent (23 per cent, 23 per cent and 18 per cent, respectively).

When we group the disciplines into science and social science and the humanities, only China, India and Argentina have more papers assigned to the latter categories. The three citation indexes include both duplicate records and indeed duplicate journals, and these have humanities and science subject categories assigned to them, as well as their own social science subject categories. From Figure 4.9, it is apparent that behavioural and cognitive sciences is the main LAC social science discipline, while for India it is studies in human society (including sociology and anthropology). Economics is an important field for Argentina, while commerce, management, tourism and services are priority disciplines for China. Surprisingly, very few papers from all of these countries are within the education field.

Of all the subject categories, public, environmental and occupational health are the topic on which most LAC research focuses, followed by psychiatry (with the

Table 4.5 > Most prolific subject categories in Latin America, China and India, 1995–2007

Brazil		Mexico	
Public, environmental and occupational health	2,078	Public, environmental and occupational health	1,098
Psychiatry	1,037	Psychiatry	712
Neurosciences	444	Economics	401
Economics	432	Psychology, multidisciplinary	387
Behavioural sciences	345	Behavioural sciences	153
Nursing	327	Political science	151
Social sciences, interdisciplinary	292	Neurosciences	141
Psychology, multidisciplinary	288	Anthropology	134
Environmental studies	242	Environmental studies	128
Psychology	232	Psychology, biological	127
Psychology, biological	199	Psychology	125
Argentina		**LAC**	
Economics	342	Public, environmental and occupational health	3,852
Neurosciences	130	Psychiatry	2,120
Anthropology	127	Economics	1,764
Public, environmental and occupational health	123	Psychology, multidisciplinary	1,019
Psychology, multidisciplinary	121	Neurosciences	805
Psychiatry	116	Anthropology	689
Behavioural sciences	104	Behavioural sciences	643
Psychology	98	Environmental studies	631
Clinical neurology	73	Psychology	536
Political science	52	Social sciences, interdisciplinary	529
Urban studies	48	Management	473
India		**China**	
Psychiatry	699	Economics	1,512
Economics	685	Management	1,192
Anthropology	517	Business	717
Public, environmental and occupational health	396	Psychiatry	712
Management	383	Public, environmental and occupational health	687
Social work	335	Operations research and management science	669
Environmental studies	318	Education and educational research	602
Planning and development	293	Environmental studies	562
Information science and library science	282	Information science and library science	464
Operations research and management science	266	Psychology, multidisciplinary	438
Environmental sciences	199	Business, finance	435

exception of Argentina). Psychiatry is also important for China and India (Table 4.5).

Economics is a relevant field for LAC (particularly Argentina), and also for China and India. Management and business-related fields are particularly important for China as well as India.

It should be kept in mind that an analysis of international databases, and particularly of multidisciplinary citation indexes, does not provide an indication of the investigated countries' total production, but only of that published in globally visible scholarly journals. Production data depend on the particular journal set covered by the database during any specific period (Collazo-Reyes et al., 2008). This is an important consideration for developing countries, whose journals are poorly represented in international databases. A previous study by Narvaez-Berthelemot and Russell (2001) demonstrated the particularly poor representation of Chinese and Indian social science journals in the SSCI when compared with those in the Dare/UNESCO database.[1] In spite of these limitations, the SSCI is an important source. It covers research that is highly visible to the international scientific community and which is therefore readily available for comment, feedback and utilization. Furthermore, in the past two years the SSCI has greatly increased the number of journals it covers from non-English-speaking countries. In the present study, we found that 35.4 per cent, 39.4 per cent and 12.8 per cent of all research papers from Brazil, Mexico and Argentina respectively appeared in national journals indexed by the SSCI. The vast majority of these papers were published in Spanish or Portuguese. The corresponding numbers were 18.6 per cent for India, a reduction from 31.8 per cent in 1995, and 1 per cent for China, almost all of which were in English.

While all these countries, and the LAC region as a whole, increased their overall production in the thirteen-year span that we studied, China and Brazil made the biggest gains by far. These two countries were also the only ones to show a smaller percentage of international collaboration at the end of the period than at the beginning, perhaps suggesting growing independence for their research efforts. Indian publication patterns are more in keeping than China's with the less productive LAC countries of Mexico and Argentina. Nevertheless, India and China are more similar to one another than to the LAC nations in their publishing patterns.

1. The Dare/UNESCO database is a legacy directory of institutions and journals published worldwide in the social sciences. It was last updated in June 2004, but is still available: http://databases.unesco.org/dare/form.shtml

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Scientific mobility and the internationalization of social science research: the case of mainland China

Koen Jonkers

This paper discusses the internationalization of the Chinese social science research system, with a specific focus on the impact of scientific mobility on this process. The greater international visibility of Chinese social science researchers, and the consistently increasing share of international co-publications in China's social science output, which is itself growing fast, are indicators of the increasing internationalization of Chinese social science.

This paper briefly discusses the increasing internationalization of the Chinese social science research system, with a specific focus on the impact of scientific mobility on this process. In this paper, 'internationalization' refers to the processes of increasing international visibility and openness to the international scientific community through international collaboration and other ties. The paper is primarily based on simple bibliometric indicators of international visibility, complemented by a discussion of other changes in the Chinese research system related to its internationalization.

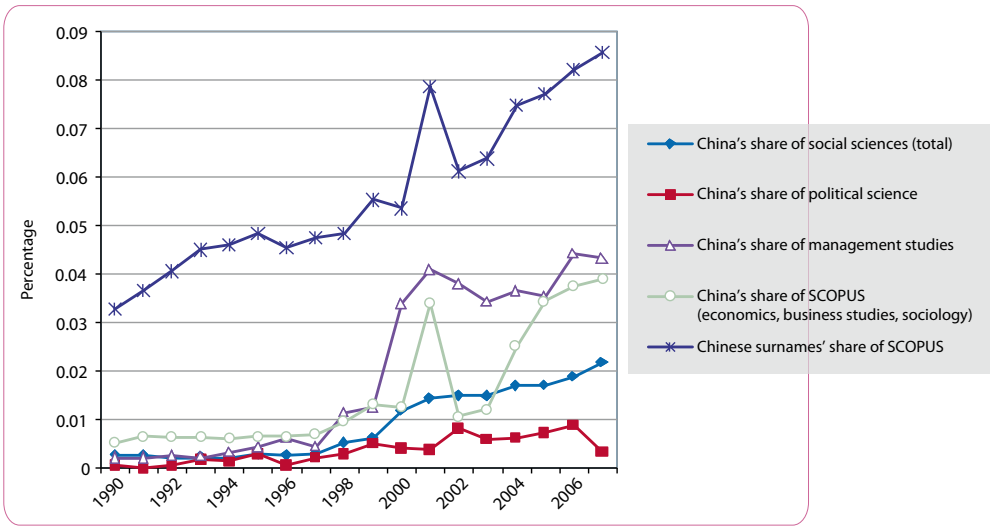
Several studies have addressed the Chinese research system's increasing presence in the global science system. Figure 4.10 shows the increasing share of Chinese social science publications[1] in the bibliometric databases of Thomson Reuters SSCI and Elsevier's Scopus. As discussed at length in other sections of this Report, there are limits to the use of bibliometrics, especially as a source of productivity and quality indicators in the social sciences (Archambault and Larivière, in this Report). This is especially important when considering China, which has a vibrant domestic-language scientific press (Su, Han and Han, 2001). However, the simple output data derived from these databases can be used as an (imperfect) indicator of the international visibility of the Chinese research system.

As Figure 4.10 shows, China's world share of social science papers is higher in the Scopus database[2] than it is in the SSCI database. There are considerable differences in China's international visibility in the various social science fields. For example, management science reached almost 4 per cent of the total global share of 'international visibility' in 2007, whereas political science lagged behind the social science average, with a share of 0.3 per cent in 2007. Management science's special position can be explained in part by the fact that in contrast to most Chinese social science research (Wei Lili, in this Report), it receives funding from the Natural Science Foundation of China.[3]

An important element in the internationalization of the Chinese research system is the inward and outward flow of students and researchers (Jonkers, 2010a). According to China's Ministry of Education, 47.5 per cent of overseas Chinese students were pursuing social science majors in 2006 (Xinhua News Agency, 2007). There are no exact statistics on the size of overseas Chinese social scientific communities around the world. The final line of Figure 4.10 shows an indirect indicator of their visibility, which is based on publications by researchers with a Chinese heritage surname (Webster, 2004; Jonkers, 2010b). The figure thus shows that in addition to their mainland peers, the overseas Chinese social science community is involved in publishing an increasing share of the global social science output. Researchers with Chinese heritage surnames published well over 8 per cent of the total Scopus social science output in 2007, of which less than half originated from mainland China. Furthermore, the Chinese Government is actively promoting the return of its students from abroad (MOE, 2004). These returned social scientists are helping to increase the Chinese social science research system's international visibility. They are also said to play important roles in the financial and insurance sector, as well as in think-tanks (see among others, Li, 2006).

1. Publications refer to these document types: articles, letters, notes and reviews.
2. No good explanation was found for the sudden peak in China's share of SCOPUS papers in 2001.
3. As a reviewer indicated, the NSFC also sponsors social science projects in areas which would in some countries fall under other social science disciplines. It has a special division for management science, but not for other social science fields.

Figure 4.10 — China's increasing share of international social science publications, 1990–2006



Note: China's share of global SSCI publications is measured relative to the production of the 47 countries with the highest GDP. This may have led to some overestimation of its share of the world SSCI publications. See Ping Zhou, Thijs and Glänzel (2009) for a recent bibliometric study which found lower percentages.

The share of international co-publications in China's total SSCI output is relatively high and remained fairly stable over the period 1994–2007. In 2007, international co-publications with North America and the EU-15 accounted for around 39 per cent of China's SSCI publications. The share of international co-publications in the total Scopus output is consistently lower, and fluctuates between 5 per cent and 20 per cent for the period 1990–2007. In recent years, Western European research funding agencies have witnessed stronger interest from their Chinese counterparts in joint funding for social science projects. This has led to a greater number of joint projects in this field.[4]

Another interesting aspect of the internationalization of the Chinese research system is the establishment of joint laboratories, centres and institutes by foreign research organizations on Chinese soil (Jonkers, 2010). An example is the Joint Institute of Michigan University (USA) and Beijing University. Again, however, the social sciences are under-represented by comparison with the natural sciences in this trend. Other examples of the internationalization of the Chinese social sciences include the hiring of part-time and full-time foreign professors for Tsinghua University's School of Economics and Management, for example, and a number of twinning agreements with European universities.

The bulk of Chinese social science research is performed by Chinese researchers at universities and at institutes of social science academies. Both of the examples in the previous paragraph – the increasing international visibility of the Chinese social science research system, and the consistently high share of international co-publications in China's growing social science output – are indicators of the increasing internationalization of the Chinese social science research system.

4. COREACH secretariat personal communication. (For information on COREACH, see: http://www.co-reach.org. Accessed November 2009.)

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Women at work, India
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Chapter 5
Homogenizing or pluralizing social sciences?

Periods from Haitian history, National Office of Ethnology, Port-au-Prince, Haiti
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5 Homogenizing or pluralizing social sciences?

Chapter presentation

The previous chapters have demonstrated the growing internationalization of the production of social science knowledge. What are the consequences of the ever-increasing circulation of people and ideas for knowledge production: not only for what is produced but also for how it is produced?

The first hypothesis is that internationalization leads to homogenization, through the progressive harmonization of knowledge production norms. However, this can only happen in the context of the dominance of Western research systems, as was shown in Chapter 4. The West, with the USA in the lead, is the main contributor to world social science production and publishing. This leading position gives the West a major role in defining which research outcomes deserve to be published. Which issues are of interest? Which research methodology produces robust knowledge? Which theoretical concepts should be referred to? The global North quantitative domination of social science production could cause the global South to respond by internalizing Western knowledge production norms in order to be visible on the international scientific scene. This is particularly true in the present competitive context, in which ranking enjoys so much attention. Ranking requires common evaluation criteria and comparison tools, which we know are mainly formulated in the West (Chapter 7).

But research internationalization also facilitates the advent of divergent voices on the international scientific scene, and stimulates a fruitful and productive meeting between heterogeneous ideas and methods. The emergence and affirmation of research from regions outside the European cradle of social sciences may challenge and question the Western standards for social science which have dominated the scene to date. This may contribute to a reconsideration and renewal of the research interests, methodologies and theoretical concepts of the global social sciences.

But, this is the second hypothesis, does research internationalization reinforce the historical Western hegemony inherited from social sciences' European origins (see Wagner in this volume), or does it open them to a renewed and higher plurality?

This chapter aims to refine these hypotheses and explore the interrelations between contradictory trends. It draws on both theoretical contributions and national case studies. The first section deals with theoretical contributions on the multiple faces of Western scientific hegemony, its effects, and counter-hegemonic currents. These contributions all challenge the central idea of the universality of science. The second section goes into greater detail in expressing this tension between universal and local knowledge by offering empirical studies of the research interests and approaches in three countries.

5.1 Hegemonies and counter-hegemonies

Introduction

In her contribution, Wiebke Keim uses sociology as an example that illuminates Western hegemony in social sciences. For her, the European origin of academic disciplines within specialized institutions, and their later extension into the rest of the world, has led to the marginalization of the global South's social experiences and social-scientific production. The global South's sociology, in particular, still suffers from its intellectual dependency on Western production and from an unequal division of labour. Researchers from the global South are often more devoted to empirical studies and data collection, whereas the theoretical implications of these works are discussed in studies by researchers in North-Western countries. But this exclusion process goes hand in hand with an inclusion process. Indeed, Western science has the ambition to be universal. General social theory is regarded as universally valid, and social realities from all over the world are analysed with its tools, which are essentially produced in the North. Consequently it is argued that Western social science produces a 'distorted form of universality'.

Several counter-hegemonic currents have emerged since the 1960s. They aim both to challenge North Atlantic domination and to offer social sciences that are socially relevant for realities which mainstream research has not fully taken into account. These currents seem to be enjoying a revival in the present context of internationalization. Keim notes that there is absolutely no paradox in this, as the increase in international communication networks is likely to intensify the tensions between local and general sociologies, and to stimulate specific claims for the recognition of local social realities and forms of knowledge.

For Syed Farid Alatas, mainstream social science research is often irrelevant for the South. Many research projects following methodologies, theories or empirical approaches pervaded by the norms and discourses of mainstream research have proved either inadequate or inapplicable to the diversity of local contexts. The author lists a series of research projects in Asia which are presented as alternative in that they suggest a different methodological or topical approach (see other examples of the changes introduced by the integration of indigenous standpoints in New Zealand by Peace in Chapter 2). From these, he proposes a typology of alternatives in social sciences, and calls for the improvement of the relevance of research projects that go further in their degree of alternativeness in order to improve the relevance of global social sciences.

The universality and the value-neutral objectivity of science have also been deeply questioned within Western countries, particularly by feminist studies, which were the first to maintain that knowledge production was dominated by a male and white supremacy. This movement has led to the notion of 'standpoint research', which stresses that all knowledge is situated knowledge, and that the best way of increasing the robustness of knowledge is to multiply the diversity of the experiences of those producing scientific knowledge (Harding). This opens onto the diversification of the researchers' origins and to participatory methodologies.

These contributions as a whole suggest that different currents, originating in both the South and the North, converge on common concerns regarding the expression of cultural and social diversity in social science knowledge production. As with the relative feminization of the academic world, 'peripheral' researchers' gradual accession to 'central' fora may provoke improved consideration of the plurality of local social experiences and theoretical production.

The internationalization of social sciences: distortions, dominations and prospects

Wiebke Keim

The present double movement, in which the scholarly community becomes more internationalized while specific local claims also gain in status, is not as paradoxical as it might appear. On the contrary, it seems that this recent development has its foundations in the very history of the social sciences, in the realities of its worldwide spread, and in the forms of its international constitution. Tensions between local and general sociologies could be regarded as a direct consequence of growing international communication.

There is no doubt that scholars' scope for international communication, including the global interconnectedness of social scientists, has increased considerably in recent decades. This interconnectedness, combined with social-scientific interest in globalization, has led to the current debates on the internationalization of the social sciences. Optimistic voices, for example within the International Sociological Association, talk confidently about the internationalization of their discipline, currently a favourite topic at world congresses. However, these developments have also led to fierce contest and to resistance to the idea of a single, unified and 'truly global' sociology. Arguments against the vision of a globalized discipline have in turn provoked fears of the fragmentation of the discipline into localized, nationalized or indigenized sociologies.

This implies that the connection between the commonly accepted and shared idea of the discipline – in this case sociology – and its local realization is becoming increasingly problematic (Berthelot, 1998). I argue that it is not paradoxical that the call for more local sociologies, often emerging from the global South, appears at exactly the time of ever-increasing globalization. We need to take the dissident voices' backgrounds into account in order to understand that they come as no surprise. They are specific challenges to a North Atlantic domination that has to be resisted in order to develop an independent scholarly tradition, one that speaks from the context of origin.

Although social thinking has been present in all societies at all times, the social sciences as academic disciplines within specialized institutions are of European origin. In many cases, they expanded into other continents through colonialism and imperialism. This transfer of knowledge and its associated scholarly practices has led to problems of academic underdevelopment, intellectual dependency, unequal international division of labour, and the international marginalization of the social experience and social scientific production of the global South (see other contributions to this volume for empirical evidence). It is this North Atlantic domination that is the target of the challenges to a globalized sociology.

Besides political challenges and resistance to North Atlantic domination, there is a fundamental epistemological problem. General social theory in itself pretends to produce universal statements, concepts and theories. But this does not happen unless these statements have been adequately tested against empirical realities outside Europe and North America. This has hardly ever been done. The North Atlantic domination therefore leads to a strongly distorted form of universality. It is distorted because to date, this claim of universality relies on both 'radical exclusion' and 'radical inclusion'. These supposedly general theories do not take into account the experience of the majority of humanity, those living in the global South. Nor do they recognize the social theories produced in the South. I call this 'radical exclusion'. In turn, 'radical inclusion' means that despite these radical exclusions, general social theory is regarded as universally valid. The social realities in the southern hemisphere are thus subsumed, without further thought, under the claims produced in the North. This tendency, which has largely not been reflected on, blurs the distinction between the universal and the particular, and the North Atlantic particular is thought to have universal validity. This is a fundamental epistemological problem for social science: that is, for disciplines aiming at the formulation of generally valid claims about society.

In recent years, several attacks have been launched against the North Atlantic domination of the social sciences. These have included critiques of Eurocentrism (Amin, 1988), the

deconstruction of Orientalism (Said, 1978), attacks on anthropology and area studies (Mafeje, 1997), and critiques of the coloniality of knowledge and epistemic hegemony (Lander, 2003). At the same time, the constructive approach of the indigenization project attempts to develop sociological concepts from knowledge contained in oral poetry (see the debate involving Akiwowo, Makinde and Lawuyi/Taiwo in Albrow and King, 1990; Adésínà, 2002).

There are also the detailed analyses of Alatas (2006), who has been working on Eurocentrism within Asian social science and proposes alternatives for research and teaching. In addition, Alatas has conceptualized how far imported approaches may be irrelevant to the analysis of local societies, and proposes a set of criteria to render Southern sociologies more relevant to their own contexts. Connell (2007) considers three current, general sociological theorists, and points out in greater detail how far their approaches show the tendencies of inclusion and exclusion outlined above. Lander (2003) takes a more historical and philosophical perspective on the coloniality of knowledge in Latin America. Keim (2008) analyses North Atlantic domination's empirical factors and effects as well as the emergence of counter-hegemonic currents in Africa and Latin America. (See also S.F. Alatas in the next section.)

I understand 'counter-hegemonic currents' more as implicit challenges to the North Atlantic domination. They include socially relevant social science research and teaching, which has the potential to develop into theoretically relevant fields of knowledge production over time in the countries of the global South. A historical example is the emancipation of an entire continental community, Latin America, from the international mainstream through dependency theory, introducing a paradigm shift away from the then dominant, rather Eurocentric, modernization theory. Another example is the development of South African labour studies into an autonomous scholarly community, which has recently produced publications relevant to the field of labour studies, as well as to general sociological theory-building (Sitas, 2004).

It appears that the present double movement, in which the scholarly community becomes more internationalized while specific local claims also gain in status, is not as paradoxical as it might appear. On the contrary, it seems that this recent development has its foundations in the very history of the discipline, in the realities of its worldwide spread, and in the forms of its international constitution. Tensions between local and general sociologies could be regarded as a direct consequence of growing international communication. Increased international exchange and the gradual accession of 'peripheral' sociologists to 'central' fora confront scholars, who have to date regarded themselves as practising universally valid theory, with the problem of North Atlantic domination. However, the expected internationalization of the disciplines cannot be achieved on a more equal footing between North and South as long as this problem is not recognized and adequately discussed. Taking the social experience and theoretical production emerging from the global South seriously will enrich the disciplines and enable scholars to reflect upon the possibilities of generalizing their claims beyond the local context to a broader empirical basis. This remains the major task for the current and future generations of social scientists. And so, onwards towards a truly global sociology?ب

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The call for alternative discourses in Asian social sciences

Syed Farid Alatas

The call for alternative discourses in Asian social sciences suggests that the social sciences take place in a social and historical context, and must be relevant in this context. One way to achieve relevance is to develop original concepts and theories on the bases of the philosophical traditions and popular discourses of these societies. Any claim to universality must respect the extent of the differences between Asian and non-Asian societies, and admit that in some instances distinct theoretical backgrounds are required.

Groups of scholars and activists from various disciplines in the developing world have been influential in raising the issue of the state of the social sciences in their countries. However varied they are – we cannot speak of a unified intellectual movement – their calls for endogenous intellectual creativity (S.H. Alatas, 1981), an autonomous social science tradition (Alatas, 2003), decolonization, globalization, sacralization, nationalization, or for the indigenization of social sciences share similar concerns. These include Orientalism, Eurocentrism, the irrelevance of mainstream discourses, and the construction of alternative traditions. In today's social sciences, Orientalism and Eurocentrism no longer involve blatantly racist or prejudicial statements, based on simplistic dichotomies between Orient and Occident, progressive and backward, or civilized and barbaric. Instead they take the form of a marginalization of non-Western thinkers and concepts, and the desire for analytical constructions resulting from the imposition of European concepts and theories (Alatas, 2006: ch. 6).

Defining alternative discourses

'Alternative' discourses set themselves in contrast to, or even oppose, what they consider to be mainstream, Euro-American 'universal' discourses. The aims and objectives of alternative discourses are not merely negative. They do not simply break with metropolitan, neocolonialist influences and hegemony. The defenders of alternative discourses do not reject Western knowledge in toto. More positively, they are genuine non-Western systems of thoughts, theories and ideas, based on non-Western cultures and practices. They can be defined as discourses which are informed by indigenous historical experiences, philosophies and cultural practices which can be used as sources for alternative theories and concepts in social sciences. Alternative discourses are relevant to their surroundings, creative, non-imitative and original, non-essentialist, counter-Eurocentric, and autonomous from the state and other national or transnational groupings.

While there may be general agreement on the need for alternative discourses among social scientists in Asian countries, actual proposals remain scarce. Let us for this reason consider some models of alternative theories and concepts in social sciences which have been developed in the Asian context.

Five forms of alternatives

Alternative discourses are attempts at correcting what is perceived as the irrelevance of mainstream, Euro-American theories and models for the analysis of non-Western societies. Irrelevance can be of different types, including unoriginality, redundancy, disaccord, inapplicability, mystification, mediocrity and alienation. These types of irrelevance impinge on all facets of social science knowledge, including its meta-analyses, methodologies, theories, and empirical and applied studies. Alternative discourses can be developed for each of them. The following examples of alternative discourses in Asian social sciences focus on the methodological and theoretical dimensions. The degree to which alternative discourses contest the validity of Euro-American social sciences for the study of non-Western societies varies. It ranges from cautious and creative use of Western theories – for instance Karl Wittfogel's work *Oriental Despotism* (1957) in which he creatively builds on Marx's Asiatic mode of production – to the shaping of local theories induced from local contexts.

Development of local theories adapted to the study of one region

To explain the prevalence of selfishness among peasants in pre-revolutionary China, Fe Hsiao-t'ung developed the notion of the 'gradated network' (Lee, 1992, p. 84). This

concept is a response to the irrelevance of the dichotomy between tradition and modernity which forms the basis of Western social theories for the study of China. Using this 'local' concept adapted to the study of a local reality, Fe Hsiao-t'ung argues that the individual enterprises found in millions of villages are China's industrial bases, and that industrial development in China should keep its rural anchorage instead of leading to concentration in urban centres (Gan, 1994).

Mixing of local and Western theories adapted to the study of one region

In a previous work on Ibn Khaldun (Alatas,1993), I proposed to enlighten aspects of Iranian history by mixing a Western theory of production with Ibn Khaldun's theory of state formation. Safavid Iran's economic system was described with reference to the Marxist notion of the tributary mode of production, but the rise and the dynamics of evolution of the Safavid world empire were depicted in the framework of Ibn Khaldun's theory of state formation.

Mix of non-Western and Western theories adapted to the study of different regions

Local theories can also become the foundations of broader, non-Western theories. Ibn Khaldun offers again a good case in point. His theory of the dynamics of state formation and decline does not apply only to Arab, North African and West Asian societies, but can become a theory of historical timeframes which is useful for the study of these regions but which can also be applied to China and Central Asia (Turchin, 2003: ch. 7; Turchin and Hall, 2003). The core of Ibn Khaldun's cycles is a secular wave 'that tends to affect societies with elites drawn from adjacent nomadic groups' and which operates on a timescale of about four generations, or a century (Turchin and Hall, 2003, p. 53).

Development of non-Western theories adapted to the study of different regions

In some other cases, concepts developed for the study of one non-Western society are used for the study of another. In response to the stereotypical opposition between Indian and Chinese religions, Indian sociologist Benoy Kumar Sarkar had highlighted the commonalities between Asiatic religions. In his *Chinese Religion through Hindu Eyes* (Sarkar, 1916/1988, p. 304), Sarkar looked at the history of Asiatic sociology and compared Sino-Japanese Buddhism and modern Hinduism. He argued that Buddhism in China and Japan had its origin in Tantric and Pauranic Hinduism. The Hindu or nationalist bias is hard to avoid in this example, but more important for our purpose is the attempt at developing non-Western theories to study local realities.

Development of a universal theory on the basis of the study of one region

This is the most radical form of alternative discourse. It concerns the universalization of theories developed for the study of a local reality. Such locally generated universal theories, intended for the study of local or broader realities, can be mixed with non-Western and Western theories. Here again Ibn Khaldun's theories are good cases in point, although from an East Asian perspective, they may be regarded as combinations of non-Western and Western theories. Another example of locally generated universalizable theory is the nineteenth-century Filipino thinker José Rizal's theory of indolence (Rizal, 1963; Alatas, 2009). Rizal's theorization of social and political developments is original and different from any comparable attempts in the West.

Conclusion

The call for alternative discourses in Asian social sciences does not imply any cultural homogeneity in Asia, or that there is anything like an Asian branch of social sciences. It does suggest, however, that the social sciences, like any form of knowledge, take place in a social and historical context, and must be relevant in this context. In Asia, social sciences must be relevant for the study of Asian societies (Lee, 1992). One way to achieve relevance is to develop original concepts and theories on the bases of the philosophical traditions and popular discourses of these societies. To achieve such relevance is but one aspect of broader efforts to free social sciences from cultural dependency and ethnocentrism, and to achieve genuine universalism. The goal is not to substitute Eurocentrism with another ethnocentrism. But any claim to universality must respect the extent of the differences between Asian and non-Asian societies, and admit that in some instances distinct theoretical backgrounds are required.

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Standpoint methodologies and epistemologies: a logic of scientific inquiry for people

Sandra Harding

Standpoint epistemologies, methodologies and philosophies of science emerged in feminist social sciences, biology, and philosophy in the 1970s and 1980s, but remain controversial for many researchers since they challenge the adequacy of conventional Enlightenment ideals of science. This paper focuses on central standpoint themes and provides examples of such research, taking up criticisms en route.

Standpoint epistemologies, methodologies and philosophies of science emerged in feminist social sciences, biology and philosophy in the 1970s and 1980s. They were not the only such efforts. Others squeezed feminist needs into familiar empiricist and ethnographic methodologies and epistemologies. But these were more innovative; they require effort to resist the tendency to incorporate them into empiricist or ethnographic frameworks. They have since spread widely throughout the social sciences and into such natural science fields as health, medical, environmental and technological research. Moreover, their 'logic of research' has appeared independently in just about every liberatory social movement of at least the past half-century. In this sense they are 'for people' rather than for the interests of dominant institutions and groups.

This logic originated in Marxian claims about the epistemic value of the standpoint of the proletariat. However, feminisms and other social justice movements have radically transformed the Marxian account to make these research strategies and explanations relevant to contemporary political and intellectual contexts. Standpoint research remains controversial to many researchers since it challenges the adequacy of conventional Enlightenment ideals of science: value-neutral objectivity, instrumental rationality, and a narrowly conceived 'good method'. Yet at the same time it reshapes such ideals to serve the empirical, theoretical and political needs of social justice movements. It also redirects the gaze of ethnographic accounts back onto the dominant institutions and groups in society. In these innovations, standpoint projects have opened up space for productive new debates about the actual and desirable relations of experience to the production of knowledge (see Jameson, in Harding, 2004). This paper focuses on central standpoint themes and provides examples of such research, taking up criticisms en route.

All human knowledge is 'situated knowledge' (Haraway, in Harding, 2004). How we interact with people and the world around us both enables and limits our knowledge of nature and social relations. In hierarchically organized societies, the daily activities and experiences of oppressed groups, which are usually ignored and disregarded by dominant groups, enable insights about how both the natural order and society function. Such insights are not available – or at least are not easily available – from the perspective of dominant group activity. Thus people who do the 'domestic labour' of the world – in their homes, other people's houses, restaurants, offices and hospitals – have distinctive experiences. These experiences help them to understand the material world, human bodies and social relations in ways that are unavailable to most of the university professors (mainly men) who produce epistemology, social theory and the conceptual frameworks of research disciplines. What appears to them as strictly physical labour is perceived as a natural activity for the less talented. Thus, conventional epistemologies tend to naturalize social power. Women intellectuals and especially women of colour tend to have a 'bifurcated consciousness', acting as 'outsiders within', since their daily lives occur on both sides of the divides that separate the 'ruling' and the 'ruled'. (See essays by Collins, Smith and others, in Harding, 2004.)

Does this mean that only those who are exploited in such ways and have such experiences can understand what standpoint epistemologies and methodologies reveal? Of course not. The people who come from such exploited groups speak, protest, write and now serve on advisory panels, tenure committees and editorial boards. To be sure, they will tend to understand subtleties of discrimination which are not at first visible to people from dominant groups. But those from privileged groups can also learn

to see those features of society. To be sure, such a brief formulation fails to acknowledge both the plurality of forms of domination (gender, class, race) and the diverse forms of upward mobility. Yet the point here is that people with privileged lives, and who often make policies that direct everyone's lives, frequently misperceive the facts about their own and less privileged lives. But they can, with effort, learn to see the world more accurately.

The conceptual frameworks of research disciplines, like those of dominant social institutions more generally, have been organized in ways that satisfy the groups that support and fund them. They therefore tend to serve the interests and desires of those groups (Hartsock and Smith, in Harding, 2004). In order to get a critical perspective on such conceptual frameworks, research must begin from the 'outside'. (Of course we cannot entirely escape the dominant frameworks, but just a little 'outside' will help.) Standpoint projects do this by starting research from the daily lives of social groups that are not well served by dominant institutions. Cheryl Doss, for instance, looks at the problems for women caused by the introduction of 'improved' agricultural technologies in Africa. Stephanie Seguino analyses the problems with the way the World Bank conceptualizes the bargaining power of women in labour disputes (both in Kuiper and Barker, 2006). The very concept of 'Third World' development and how women were being harmed by it has been increasingly challenged by feminist critics over the past two decades (see Tinker, Young, Braidotti et al., all in Visvanathan et al., 1997). It is important to note that the aim of such studies is not to undertake an ethnography of women's lives but rather to examine critically the dominant institutions and their policies, cultures and practices that affect women's lives (for more examples of such work, see Kuiper and Barker, 2006; Visvanathan et al., 1997).

A standpoint is not an easily accessible 'perspective'. It is rather, as Nancy Hartsock has pointed out, an achievement that requires both science and politics (in Harding, 2004): science in order to see beneath the hegemonic ideologies within which everyone must live; and politics because to engage in such science requires material resources and access to dominant institutions to observe how they function. Moreover, a standpoint is a collective achievement, not an individual attribute. It requires critical discussion among the people whose positions it represents. Thus standpoints are politically engaged epistemic and methodological research strategies. They intend to produce the kinds of knowledge that oppressed people need and want in order to flourish, or even just to live another day. After all, our dominant knowledge systems are now solidly positioned within the perceived needs of nationalists and state administrators, military leaders and corporate profiteers. Politics is already present in the research agendas induced by such a configuration. Feminists or other social justice researchers try to create intellectual and political spaces where knowledge can be produced for their constituents.

A good example of the transformation of a regulative ideal for research is the notion of 'strong objectivity'. Some social interests or values are shared by an entire research community. Both male and white supremacy and heteronormativity have been accepted for much of the history of Western social science. Traditional ways of 'operationalizing' the value-neutral objectivity of research have lacked the resources to detect how such commitments were implicitly embedded in disciplinary theories, methodologies and institutional cultures. It was with the emergence of social movements representing those who were disadvantaged by such disciplinary features that everyone else (not just the disadvantaged) became able to see the ways in which discriminatory social values had profoundly fashioned social research. The work of feminist, labour and postcolonial movements informs Lourdes Benaria's criticisms of how international agencies fail to perceive women's work accurately (Visvanathan et al., 1997). Feminist and other global activist groups' activities on reproductive issues contribute to shaping Betsy Hartmann's criticisms of the US Agency for International Development (USAID)'s sexist and racist assumptions, and their effects on the agency's population control policies (Visvanathan et al., 1997).

In addition to the misunderstandings and criticisms addressed above, feminist standpoint theory has been accused of essentializing the concept of 'women'. To be sure, some feminist writers have inappropriately generalized from their own situation. Yet the logic of standpoint theory should work against such tendencies, directing every inquiry to start off in the actual lives of a particular group of women or other people as they understand their lives (see examples cited above). Standpoint theory has been charged with Eurocentrism, in that it focuses on problems such as positivism that are not of major importance to women in other cultural settings. Moreover, the re-evaluation of women's experiences does not have the political edge in societies such as India that supposedly already value women's traditional experience, yet in practice still discriminate deeply against women (see Narayan, in Harding, 2004). Such criticisms draw attention to the constant need to articulate research projects on the basis of concrete local experience.

The standpoint logics of research should be controversial. They produce and attempt to rectify some of the most troubling challenges to today's widely noted 'epistemological crisis of the West', which also appears to be a global epistemological crisis of masculinity.ب

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5.2 Tensions between global and local knowledge in practice

Introduction

The following contributions elaborate the tension between global and local knowledge through the study of research topics in a range of countries outside Europe and North America: the three Maghreb countries, Japan and China. The authors' approaches differ: Deng Zhenglai adopts a qualitative approach, whereas Brisson and Tachikawa as well as Waast and colleagues rely on statistics of keywords in bibliographical databases. But even then, the authors of these papers do not examine the international databases usually used in bibliometrics. Instead they study the Japanese national database and the catalogue of a research library in Morocco. Through their methodological choice, they point out that research internationalization and its measuring devices tend to make regional productions invisible if they are empirical research projects with a low level of generalization, or if they have been published in a language other than English or French.

All the papers in this section insist that research developed in response to global agendas can coexist with research encouraged by local contexts and needs. Japan, the most rapidly ageing society in the world, had to tackle the issue of ageing from the 1990s onwards, long before other countries (Brisson and Tachikawa). Conversely, the shift from women's studies to gender studies in Japan is probably more related to epistemological changes in US and European universities, and to contacts and collaborations with them, than to changes in Japanese society or particular trends in local research.The propensity to tackle either 'external' or 'internal' topics – that is, topics on the mainstream agenda or of local concern – varies according to the discipline in question. The choice of topics also goes hand in hand with the publication language: external topics are more likely to be published in a language used broadly in academia (Waast et al.).

The pitfall of the first type of research is its irrelevance to local specificities, including the application of a non-relevant framework of analysis, a distorted understanding of the local situation and the omission of important local issues. The pitfalls of the second are a tendency to hyper-empiricism, a lack of comparative studies, and being thematically self-centred and with little scope for generalization. The challenge now is to construct interpretative frameworks and outcomes 'that are both scientific, therefore universal, and relevant, that is, suitable for the study of the [local] context and the world from the [local] standpoints' (see Sall in Chapter 1). This requires a balance between in-depth research drawn from local contexts and dialogue with global social sciences.

Deng Zhenglai, who analyses the various steps of social science development in China since 1978, calls for a progressive self-organization of the Chinese social sciences in the present period. He takes this to mean both an increased intellectual independence and a move towards the world; a duality that will allow for an 'authentic contribution to the intellectual debates and academic exchanges with social scientists from around the world'. His ambition meets up with regional associations' call for greater autonomy and influence for the research produced in their region (see Sall in this volume for Africa; Cimadamore in this volume for

Latin America and the Caribbean). This strengthening of national and regional social sciences is not only an aspiration but also a reality in a number of countries including China, India and Brazil. It contributes to the development of the global social sciences, gradually reshaping them into a multipolar scientific world.

What do social sciences in North African countries focus on?

Roland Waast, Rigas Arvanitis, Claire Richard-Waast and Pier L. Rossi
in collaboration with the King Abdulaziz Foundation Library

What are the main objects of social science research in the Maghreb? In the Maghreb there is prolific scientific activity, and the factors affecting the choice of research topics spur specific controversies. As a contribution to these debates we present the main results of a comprehensive study of publications in the human and social sciences in Algeria, Morocco and Tunisia.

This article presents the main results of a comprehensive study of publications in the human and social sciences in Algeria, Morocco and Tunisia.

A study based on a library's multidisciplinary catalogue

This study was based on the analysis of a large library catalogue. Following an important selection, coding and 'cleaning' effort, our research provides data covering approximately 100,000 academic publications over twenty-five years (1980–2004).

Unlike similar studies, we chose to examine a large library catalogue rather than international databases such as IBSS, SSCI or Francis. This choice was due to a series of considerations, some technical and some to do with social science publication practices. There is a tendency within the social sciences to publish more books than journal articles, unlike in the natural and exact sciences. In the Maghreb we also found a large number of academic publications that were unregistered in the international or even the national reference systems. Moreover, journals that are present in the large bibliographical databases have strong biases against non-English languages and particularly Arabic, which in our case represents two-thirds of the output.

Three criteria guided our choice of libraries:

- an exhaustive publications register, meaning a library that has an active document-seeking strategy and adequate management tools and know-how
- a relevant index with a bibliographical note established for all the collected documents
- a computerized file that could be used for data-mining purposes.

There was only one library in the Arab countries (including the Gulf countries) that met these criteria, the King Abdulaziz Foundation library in Casablanca, Morocco. Since 1980, this library has been committed to gathering all publications originating from the Maghreb or dealing with it in the human and social sciences, whether published within or outside the Maghreb, and whether written by regional or foreign authors. It brings together the different publications through international but also local markets and publishers, and has an active policy of seeking information instead of waiting for publishers to deposit books and articles. All publications (articles, books and book chapters) are indexed through a thesaurus. Authors are described in a note that includes their citizenship and standardized name in Arabic and Latin letters, probably a unique feature worldwide. This extensive computerized database comprises topics, keywords and authors' names, which are in one-to-one mapping with numbers so that the

Figure 5.1 — Growth in number of Maghrebi social science publications compared with that of faculty members, 1980–2004

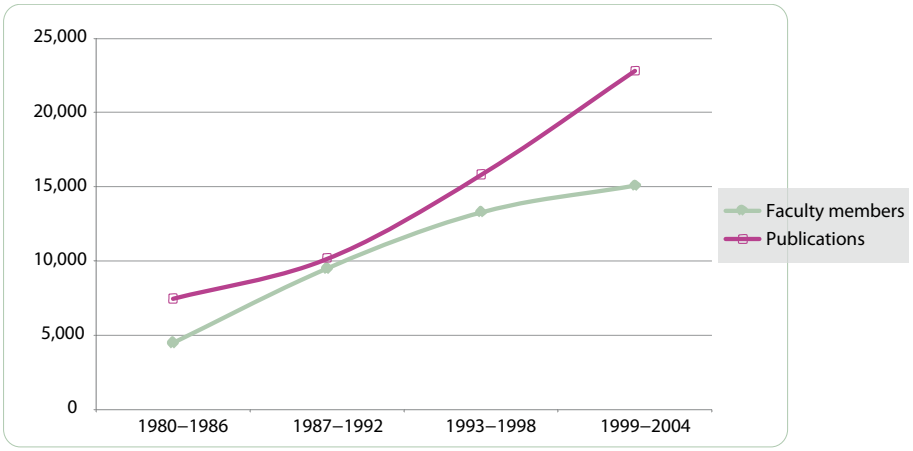


Table 5.1 > Evolution of the production in social sciences in Maghreb countries (percentage of total for the main disciplines)

Years	History	Literature and language studies	Law	Sociology	Economics	Political sciences	Islamic studies
1980	19	18	10	15	15	9	9
2004	12	25	17	14	8	14	7

information can immediately be translated into Arabic or a European language. The complete work of a given author (or on a specific subject) is therefore accessible regardless of its original language and without duplication.

We undertook the statistical analysis of this data file after having selected what we have labelled academic publications: that is, excluding mainly poetry and fiction, but including all other fields of interest such as recognized academic disciplinary work (economics, sociology, law, anthropology, psychology, literature studies, religious sciences and the like). We limited our study to the three most productive Maghreb countries (Algeria, Morocco and Tunisia).

Growing production, changes in disciplines

A breakdown of the texts according to their date of publication indicates a rapid increase over the twenty years from 1985 to 2005, from 2,000 in 1985 to over 6,000 new documents per year in 2005. Output has grown in close relation to the number of university faculty members but at an accelerated pace, so that there has been an overall growth in productivity (see Figure 5.1). The average yearly output by author is similar in the three countries and is approximately one article every three years, steadily growing in recent years.

This production is divided into three roughly equal categories: books, chapters in books, and articles. About one-third of the references (34,000) dealing with the Maghreb are written by authors who do not originate from the region, and the rest are by Maghrebi authors. There was only a slight rise in the proportion of Arabic-language publications, from 50 per cent in 1980 to 60 per cent in 2004. The second most important language in 2004 was French (33 per cent).

Table 5.1 shows the distribution of this material according to the main disciplines in the corpus and its evolution over time. Over the 25 years from 1980, law and literature have been gaining ground, while history and economics have declined. These changes do not mirror global trends, nor do they indicate a change in student or academic staff numbers. The underlying explanation seems to be linked to a shift in readership interests.

A changing set of publication themes

Disciplines as they are assigned by librarians are not the only way of classifying output. A more dynamic method would be to reflect the semantic proximity of various keywords that are assigned to the documents. We therefore created coherent packages of documents[1] and called these clusters of documents 'scientific themes' (Figure 5.2). As

1. Through a statistical procedure known as K-means non-hierarchical classification of associated keywords. Claire Richard-Waast carried out this analysis.

Figure 5.2 — Main themes in Maghrebi social sciences, 1985–2004

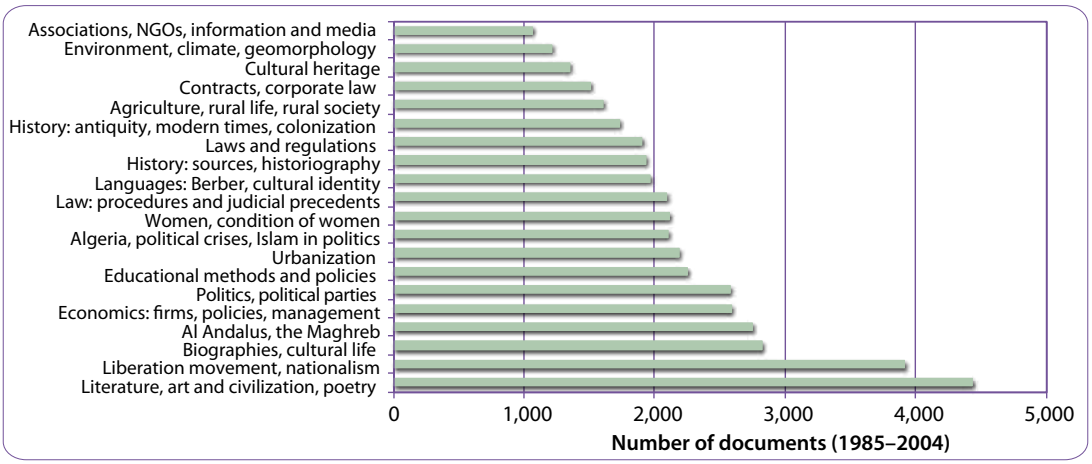
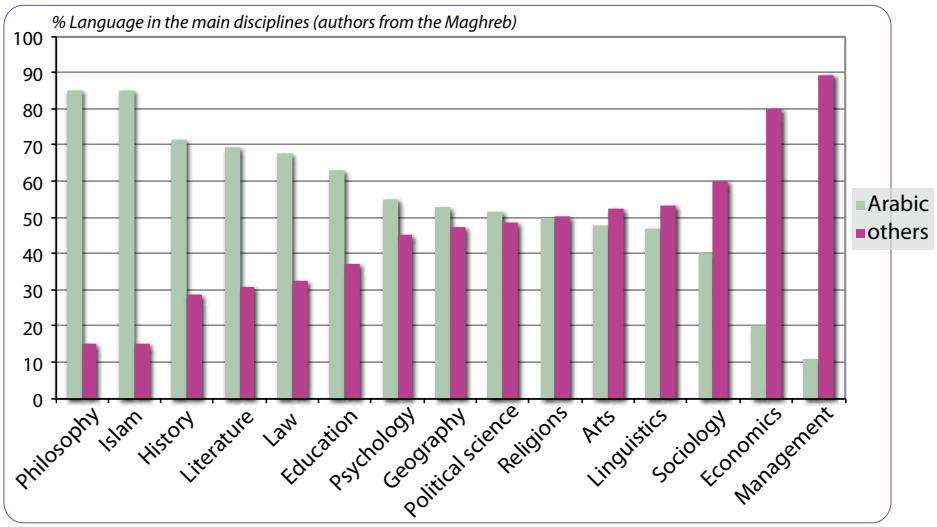


Figure 5.3 — Disciplines and language for authors originating from the Maghreb, 1985–2004



can be seen, civilization, historical and cultural themes are dominant. They are closely followed by themes relating to policy and politics.[2]

Over time, several empirical fields have appeared successively: agriculture and rural studies in the early 1980s; urban studies (at their peak by 1985–1990); and gender studies during the 1990–1995 period (Table A5.2 in Annex 3). Since 2000, new themes have been emerging, such as cultural heritage, identity, law, political life and civilization, including arts, literature and language studies.

Publication language and thematic interests go hand in hand

European languages (English and French mainly) tend to dominate the current global research agenda, for example publications on women, the environment, and globalization and its economic consequences, as well as the research areas that are of particular concern for decision-makers (such as urbanization, natural risks, economics, policy, enterprise and management). By contrast, material connected to law, cultural life, education and local history is generally written in Arabic (Figure 5.3, see also Figure A5.4 in Annex 3). The choice of language also tends to be linked to epistemological issues: disciplines that try to find scientific laws must compare their findings with others and thus use a global language, whereas locally guided disciplines tend to favour local languages (Figure 5.3).

A number of concerns are common to all three countries (for example, literary studies, democracy, law, economic themes, studies on women and environmental concerns). But the intensity of concern and the approach to the topic may differ between the three. Islam, cultural identity and liberation movements, for instance, have been strong areas

2. For the purpose of the presentation, themes are grouped into larger ensembles. For details refer to our publication available at www.estime.ird.fr

of interest in Morocco, less so in Tunisia; but rural studies or ancient and early modern history have attracted greater interest in Tunisia than in Morocco. Finally we should stress that North African authors (we have a database permitting us to identify them) do not always share the same themes as European authors. The former seem more interested in education, law, political studies of local life, agriculture and rural studies, ancient and modern history, women's studies, urbanization, language and cultural activities, whereas the latter are more interested in pre-independence history (Al Andalus and later periods), arts and political Islam. Some themes overlap for both Maghrebi and non-Maghrebi authors; for example, economic policy and enterprise, literary studies and the socio-political analysis of liberation movements.

A subtle dynamic of themes and words

While we cannot go into much detail here, we argue that even within a single thematic cluster, 'migrations' occur. These migrations can be analysed by the changing set of keywords that are associated in a cluster. Some of these changes take the abrupt form of ruptures rather than continuous evolution. More often, a theme and its keywords are stable over a long period of time, around thirty years. Migrations are usually more subtle and difficult to observe at the disciplinary level or even at a broad level of general interest than within a single theme. For example, in sociology we can track how women's studies emerged from studies on the family and then were separated from them; or how 'cultural identity' became a major theme, into which several other themes are now merging: Islam, emigration, education, Berber studies, linguistics, modernity and Arabization.

A local agenda and a definite empirical stance

On the whole, research in the social sciences tends to focus on issues of national interest; moreover, most research is mainly empirical investigation in the sense of involving the field gathering of data. Some of the themes we find on the global agenda are of course represented (for instance, women, migration and poverty). Additionally, there is a high level of cooperation with European countries, in particular France and to a lesser extent Spain. But as we have mentioned, interests are different on the North and South shores of the Mediterranean: rural sociology, for instance, has held a dominant position in Morocco, in sharp contrast to European research, and its own praxis in this field. Industrial and labour sociology in Algeria during the 1980s is another relevant example. In no way have we witnessed a tendency to adopt the global agenda en bloc. We also witness a clear tendency for hyper-empiricism, a lack of comparative studies, a number of self-centred themes and very little generalization or theorization.

We found a skewed distribution of authorship: a small number of authors, usually well known and rather older, are responsible for the vast majority of the research output, leaving little room for younger scholars. Finally, brain drain constitutes the greatest threat, sometimes at a dramatic level, as has been seen in Algeria for well-known political reasons. The main threat has been not so much a massive brain drain as the departure of a small number of well-known academics. All these tendencies probably reflect the lack of government policies in favour of the social sciences and some lack of interest of broad sectors of society in the social sciences and their virtues.

Roland Waast, Rigas Arvanitis, Claire Richard-Waast and Pier Luigi Rossi in collaboration with the King Abdulaziz Foundation Library

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Pier Luigi Rossi is an engineer at the Institut de Recherche pour le Développement (IRD).

Claire Richard-Waast is a statistician. She has held managerial responsibilities in R&D at IBM and now works at Electricité de France.

This study was completed thanks to the support and collaboration of the King Abdulaziz Foundation Library in Casablanca, Morocco. The Foundation Library holds more than 600,000 documents, all of them catalogued in a computerized index system. One of its missions is to gather all human and social science publications originating from and dealing with the Maghreb.

Current topics of social science research in Japan

Thomas Brisson and Koichi Tachikawa

Japanese social science production reflects both Japan's long social science tradition and current social, economic and political change. The high number of Japanese social science publications shows the vitality of Japanese social sciences, but may also hide deep changes and theoretical shifts in disciplines such as economics, political science, history and sociology.

Recent trends in Japanese social science production need to be understood in terms of Japan's long and continuous history of study of the social sciences and of current social, economic and political change. The number of Japanese social science publications has remained high, with 16,652 books and articles published in 2006. This is far more than in other disciplines such as technology, the natural sciences, literature and philosophy.[1] These figures clearly indicate the vitality of Japanese social sciences, but may also hide deep changes and theoretical shifts in disciplines such as economics, political science, history and sociology. These changes and shifts are the focus of this paper.

The field of economics may be the most representative example of these recent changes. The debate on Japanese capitalism was launched after the introduction of European theories at the beginning of the twentieth century, giving it a long and important tradition of critical analysis. Nevertheless, Japanese economics has tended to be increasingly and exclusively concerned with modelling data at the expense of a focus on more critical, classical economic history. This shift is reflected in the shrinking number of academic positions with a focus on these latter issues. Despite the absence of specific data, we can obtain an idea of the importance of this shift by recalling Marxism's huge impact in Japan, and the impact of other more or less critical trends up to the 1970s. The privatization of universities, which reinforced their dependency on the economic powers, US universities' growing role in the formation of Japanese economics, and the pressure to publish in English, may account for these changes, albeit only partially.

1. In view of space restrictions, references, figures and methodological discussion are given in the online version of this paper.

Generational changes have also played a crucial role in the evolution of research topics. The case of Japanese political sciences illustrates this tendency. Even though political sciences have a long tradition spanning the whole of the twentieth century, they have recently witnessed the effects of what Masaki Taniguchi describes as a 'generation gap'. The divide, he argues, is between scholars who experienced the country's defeat in 1945 or the political movements of the 1960s on the one hand, and the younger generations who grew up in the post-economic growth era on the other. The former generation tends to focus on specific subjects such as the history of European political thought, the history of Japanese politics, political philosophy and ethics, and the history of Japanese political thought; the latter generation focuses on topics such as political process, local government and administration, and electoral studies and voting behaviour. There is a clear shift from theoretically oriented political sciences to more empirical ones. Various factors may explain these generational differences. The first is the theoretical changes that occurred at the end of the 1980s, intended to promote a vision of political sciences freed from the imposing heritage of European – especially German – theories. This trend was reinforced by the growth in academic positions in political sciences at the time, which allowed young scholars to develop new approaches. Further, this empirical focus is due to the growing internationalization of the discipline. Since Japanese political scientists are now involved in regional and international comparative programmes, more attention has to be paid to factual data and empirical research topics. Similar conclusions on the need to find alternatives to the European scientific legacy can be drawn from the analysis of a field which is partially autonomous from the social sciences but which is nevertheless closely linked to them, namely history.

Entrance to a Shinto shrine, Japan
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The introduction of European epistemologies at the turn of the twentieth century left an indelible mark on Japanese historiography, which had previously developed autonomously. This influence is manifest in terms of research topics (with many Japanese scholars specializing in European history) as well as methodical devices (for example, the Ecole des Annales, the most influential). However, the European frame has been largely reworked, sometimes in paradoxical ways. One striking example is in the development of the so-called *Nihonjinron*, a literature with strong historical (as well as ethnological) ties to the question of Japanese cultural and national identities. The latter issue is extremely sensitive in Japan, prompting debates between historians and leading to scientific (and partially political) divisions. The internationalization of the discipline and international exchanges have received much attention here too. With a growing number of Japanese historians trained at US universities, the traditional European–Japanese connections have weakened, prompting a change in research topics and methodologies. Nevertheless, European connections have remained significant enough to maintain strong scientific exchanges with Japanese historians. The result of these various processes leads us to describe the Japanese historical field as being structured by a set of oppositions between Japan-centred and internationally oriented scholars. But each of these groups is heterogeneous in terms of its methods and influences.

Japanese sociology, to which a longer analysis is devoted in the online version of this paper, exemplifies another pattern of change regarding research topics and current trends in social science. The most recent changes can be summarized roughly as the consequences of two distinct processes. The first is that in the past few years, several subjects have gained sociological recognition because they have tackled issues considered to be important for Japan as a whole. Ageing, a highly sensitive issue in Japan, is a striking example. Almost absent from the sociological surveys of the 1980s, it is currently one of the most discussed problems. Other topics such as 'youth' and 'gender' have followed a similar pattern in that they have lately received a great deal of political and social attention. A second process is more specifically linked to sociology's international dimension, because Japan is a global country and because its sociology is historically related to European theories. New research topics have therefore been tackled (see the online version of this paper), but the European founding fathers of the discipline have remained important. The international dimension of Japanese sociology thus appears to be a product of specific transformations and of its own historical development.

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Westernization of the Chinese social sciences: the case of legal science (1978–2008)

Deng Zhenglai

This paper examines the Westernization of Chinese social sciences on the basis of an overview of its historical development over the thirty years to 2010, with particular reference to legal science in China. It argues that Chinese social sciences must establish academic standards based on China's local knowledge to achieve a knowledge transition towards the world, contrary to the tendency of unreflective Westernization.

This paper aims to explain the tendency towards the Westernization of Chinese social sciences on the basis of an overview of its historical development over the thirty years to 2010, with particular reference to legal science in China. The reform policy of the late 1970s opened China up again to the outside world, which transformed not only the economy and politics of China, but also its intellectual terrain. With an unstoppable zeal to catch up with the West, China embarked upon a journey to absorb from the developed nations not only technology and capital, but also ideas and theories. It will be argued that Chinese social sciences must establish academic standards 'based on China's local knowledge' and thus achieve a knowledge transition 'toward the world', contrary to this tendency of unreflective Westernization.

China's reform and opening in 1978 ushered in a new era for Chinese social sciences, whose development over the thirty years since 1978 can be divided into three stages. The first is the introduction to China of the latest Western social science theories, research methods and disciplinary and academic systems, which has continued and will continue in the future. The second is the assimilation of the theoretical framework of Western social science from the 1990s onwards, using Western social science knowledge and methods to explain Chinese issues, particularly in the areas of economics. Finally comes the stage of 'integration into the world', with the adoption of international academic norms, methodologies, and disciplinary and academic systems, particularly through the academic standardization movement from the mid- to late 1990s.

The consequence of these three stages of development was the establishment of comprehensive disciplinary systems based on Western theoretical frameworks and academic standards for social science (Deng, 2008; Liu Dachun, 2008). But we have come to realize that Chinese social sciences, even after this thirty-year development, are still inadequate to the tasks of our times. The Westernization of the social sciences has resulted in some serious consequences. Chinese scholars have accepted Western concepts and theoretical frameworks without critical scrutiny and creative thinking, and have adopted them as academic standards in the assessment of Chinese social sciences and Chinese development. They have largely modelled their study of Chinese issues upon Western concepts and theoretical frameworks while neglecting in-depth research and theoretical innovation (Deng, 2007; Wang Hui, 2008).

Let us use China's legal science as a case to illustrate this problem. As is well known, the mainstream Chinese conception of human rights puts emphasis on the 'right of existence', or the right to maintain and develop human existence. What supports this conception is what could be called 'the justice of a generation': that is to say, the legitimacy of our generation's life is based on whether or not we can exist and develop in the world. But in the area of environmental protection, Chinese scholars have adopted the Western concept of environmental rights, behind which is what could be called 'the justice of generations'. According to this concept of rights, the legitimacy of one generation's life should be judged by the common quality of human life for the present and further generations.

Chinese scholars have, however, neglected the fact that the Western approach bases its legitimacy on the natural, chronological sequence of life events, while the Chinese process and its legitimacy are synchronic. That is, the Chinese people face the problems of existence, development and environment simultaneously. There therefore exists a tension or conflict between these two

conceptions of rights. This means that we have to make a choice in political philosophy or legal philosophy between these two contradictory conceptions of right or justice. If we do not address this conflict, an overwhelming majority of the Chinese population, the poor peasants in China, would not be able to tackle the dilemma of existence and environment simultaneously and reasonably (Deng Zhenglai, 2006).

Another example is the Consumer Rights Protection Act. Through an examination of essays on consumer protection published in legal science core journals (CSSCI) from 1994 to 2004, we find that only thirty-five essays were about consumer rights protection. These essays uncritically applied Western concepts and theories to the analysis of Chinese problems. They portrayed a Chinese society which is as homogeneous as the industrialized West, and overlooked the dual urban and rural structure of China as well as its disparity between rich and poor. This meant disregarding the differences between developed urban areas and underdeveloped rural areas in China with regard to the protection of consumer rights. In this dual structure, it can reasonably be expected that a highly urbanized Consumer Rights Protection Act that mainly targets the relatively well-off and developed part of China may be ineffective when applied to the underdeveloped rural areas. This means that the Consumer Rights Protection Act, which was modelled on its US and German counterparts, is faced with a fundamental dilemma of the duality of Chinese social structure (Deng, 2008, ch. 3).

I therefore suggest that Westernization has not only subjugated Chinese social sciences to Western cultural hegemony, but has also served to reduce the academic autonomy of Chinese social sciences. As is shown in my work, *Where is China's Legal Science Headed* (Deng, 2006), China's legal science development, despite great achievements over the past thirty years, is subjugated to the Western modernization paradigm which not only provides Chinese writers with an ideal picture of a social order and system based on Western experience, but also prevents them from recognizing the distortions in the picture they present of China itself. In this Westernized ideal picture, China is presented as an 'Oriental' special case of the universal experience of Western modernization.

To establish the academic autonomy of Chinese social sciences, we must move towards the world and achieve a 'knowledge transition'. This means that we must move to a new stage beyond the previous stages of introduction, assimilation and integration into the world. Moving towards the world involves more than integration into the world. It suggests authentic participation in intellectual discourse, and academic exchange with social scientists from elsewhere (Deng, 2007; Yu Jianxing and Jiang Hua, 2006).

In my view, this new historical stage is not simply a natural continuation of the previous three stages, but instead demands a higher level of engagement from Chinese social scientists. They must establish academic standards which make it possible to conduct in-depth research on general theoretical questions and Chinese issues in particular, and so engage actively in substantive discourse with Western social scientists on our own terms. This will lead to an enrichment of Chinese social sciences, but will also impact on the intellectual development of the world's social sciences in the light of Chinese knowledge and experience (Deng, 2008; Huang, 2005; Yu Wujin, 2007). The example above about different concepts of right or justice illustrates this point. Incorporating the multilayered social structure of developing countries, including China, into social sciences research is another promising means for us to understand modernity, modernization and development better (Cao Jingqing, 2000). To take another example, the Chinese traditional philosophy of peaceful coexistence, not only between humankind and nature, but also between ethnicities, ideologies and ways of life, can offer resources for us to rethink some of the global issues facing humanity nowadays. It is in this way that traditional resources from other countries, places and nations will lead us to a better vision of the future world and its order, in which social sciences based on local knowledge with an international outlook will play an indispensable part.

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Chapter 6
Disciplinary territories

Organizing knowledge. Association of women teachers, Mali
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Disciplinary territories

Chapter presentation

It is usually said that it was in nineteenth-century Europe that social science emerged as a specialized activity distinct from religion and politics, and developed into the disciplines we recognize today. These disciplines, in the social as in the natural sciences, can be regarded as social structures for teaching and research, represented by professional associations and departments within universities. But they also represent cognitive frameworks determining legitimate sets of problems for scientific research and the methods, concepts and traditions used to solve them. Disciplines are thus a constraint for professors, scientists and students as well as being a guide for learning and research. They have been separated from one another and have more or less rigid borders and gatekeepers. Disciplines are to the scientific sphere what nation-states are to the global political sphere.

This means that knowledge divides in the social sciences are not only divides between national traditions and research systems, they also take the form of divisions between and within disciplines, and this leads to the formation of specialisms and subdisciplines. And there are divisions between the social sciences and other forms of disciplinary knowledge such as the natural sciences and the humanities.

For some observers, recent trends show that social science will soon enter a post-disciplinary age. Depending on the authors, this change may be a trigger for a new integration of the social sciences and the hard sciences, or may mean that knowledge will be oriented increasingly towards local, context-dependent problem-solving, integrated into 'epistemic communities' with actors originating from different social activities outside science. This report does not take sides in this debate. This chapter deals solely with some of the contemporary social science issues raised by current disciplinary divides.

Mapping the disciplines and describing the current ecology of social scientific knowledge is not sufficient to deal with these issues. Disciplines are not naturally differentiated once and for all: new ones may appear while others disappear. In order to understand disciplinary divides, the dynamics of the disciplines must be taken into account. The power and exchange relations between disciplines are as complex as the international circulation of science described in the previous chapters (see especially Chapter 4). Disciplinary divides may well be sites of conflict, but they have also offered opportunities for connection. Are these complex and contradictory processes moving us towards a more unified or a more differentiated social science? What are the opportunities and the risks of the unification or the fragmentation of social science? These are the questions that disciplinary divides and their history are now raising (Section 6.1).

Wherever divides exist between disciplines, bridges are built to cross at least some of them. These research-crossing disciplines and specialties occur not only within the social sciences, but also between them and other sciences and forms of knowledge. They are currently driven by external forces, as new policy agendas, both local and global, enhance new research agendas. What are the intellectual or institutional strengths and limits of this trend for going beyond disciplinary divides and pushing the boundaries of social science? Is the social science perimeter about to change? Do interdisciplinary, cross-disciplinary, multidisciplinary and transdisciplinary networks impose themselves on top of existing disciplines, or between or below them? Will disciplines last as the dominant way of organizing social-scientific knowledge? These questions remain open, but they need to be dealt with. Contributors to this Report find their clues in the history of specific disciplines and from current practices in social science. Within this general picture, contemporary climate change research and psychology are dealt with more extensively. Both are close to experimental research and are situated at the crossroads of the social and natural sciences. Other choices could have been made, and the questions raised here will need to be pursued in the future (Section 6.2).

Mapping the disciplinary territories requires attention to local contexts. Regional variations are very important, and the same discipline is considered and practised differently in various locations. Two authors accepted the challenge of capturing the trends of social sciences in their regions, North America and India, to help us better understand the dynamics of disciplines (Section 6.3).

The history of science shows that radical innovations and new disciplines often stem from connections between previously existing disciplines. As long as they are laboured on and worked through, disciplinary divides might be fruitful under certain conditions. In this chapter we examine recent social science trends which challenge existing disciplines and displace their boundaries to illustrate this point. Some of these trends are disciplinary, while others

are interdisciplinary or transdisciplinary. All of them challenge current disciplinary divides.

All these innovations are simultaneously intellectual, technical and institutional. Using recent encyclopaedias of the social sciences, eight new trends have been selected to reflect the variety of social science innovation and to give a taste of a few ongoing debates among social scientists. Some of these trends are more or less recent: their newness itself depends on the position and situation of the researchers in the international and disciplinary distribution of knowledge. But our selection does not pretend to be exhaustive. Other fields of inquiry have been developing quickly in the past two decades. Among the more prominent are gender, health, security, migration and urban studies. Yet the trends we have picked play an important role in today's social sciences and bring together specialists from various social science disciplines. The use of objective tools to assess innovation in social science is a research task that should be developed in the future.

6.1 Disciplines and their divides

Introduction

We live in an age in which disciplines are important institutions of knowledge production in the social sciences. But can we account for the evolution in the number and the size of the social science disciplines? What are the mechanisms that explain how disciplines behave and change? Can we predict how disciplines will develop in future, and whether they will remain the main social organizations for social scientists' teaching and research? All these questions usually bring a variety of answers. This section only deals with a few of them. Its main goal is to better understand the present and future of the divides between and within the social sciences.

The first group of papers focuses on the dynamics of these divides. Two general approaches are contrasted, historical and formal.

The history of the social sciences over the past 200 years tends to show that the disciplines are becoming destructured more or less rapidly. This evolution supposedly goes hand in hand with 'plural regionalization' and a decline in the neutrality and universality of social-scientific knowledge. In this scenario, the age of disciplines may not yet have reached its end, but other ways of organizing knowledge are set to emerge on a local level, and sometimes a regional and supranational level. New forms of cooperation between scientists from various disciplines and other types of social actors might be produced in these new settings (Wagner).

But the formal approach to the internal logic of knowledge changes does not necessarily lead to the same diagnosis of the evolution of the social science disciplines. Some of these theories of science have even argued that divides and splits are natural and necessary mechanisms in the evolution of any form of knowledge. According to these analytical frameworks, there will always be disciplinary and subdisciplinary divides in the social sciences even if there are changes in their location and their rigidity. Such divides are essential for the renewal of knowledge and for the creativity of scientists.

The second group of papers provides some examples of contemporary relations between social science disciplines. In principle each discipline's status is the same, and we could maintain that social science disciplines are intellectually equal. But in reality, disciplines do not have the same weight in the overall visible production of knowledge (Jonkers). Some observers of science have claimed that their relations can more often be analysed as relations of power and competition than as relations of cooperation and exchange. In past decades, the relationship between sociology and economics has been an interesting case of the complex interactions that occur at the divides between the social sciences. Sociology, like many social sciences, is more embedded in national contexts than is economics. Today it is also more oriented towards universities and academic circles and is less related to public policy-making than economics, and provides a less legitimate discourse in most political and international institutions than economics does. Nevertheless, and despite their important differences and their often conflicting interests, sociology and economics have slowly multiplied their intellectual and methodological relationships in recent years (Lebaron). The socially accepted hierarchies between the social science disciplines are not perpetual, and nor is the rigidity of their borders and divides. Nonetheless, interdisciplinarity does

not take place with scientists from various disciplines on an equal footing.

Despite the increasing specialization of social-scientific knowledge, the perspective of an integrated social science is a recurrent one which has raised numerous epistemological debates. The arguments for integration often hide the imperialism of some disciplines, whether of their paradigms or their methods. Here one of the most acute observers of the evolution of the social sciences, Jon Elster, gives his view on the current state of the debate on the potential unification of the social sciences. He also develops an original take on the question of whether there is progress and cumulativeness in social-scientific knowledge. His answer may not be as optimistic as that of most others in the heyday of the development of social sciences as disciplines, but it is certainly not pessimistic either.

Rethinking the history of the social sciences and humanities[1]

Peter Wagner

The importance of history is widely recognized in many fields of social science knowledge production. As other histories, history of social science cannot be conceived either in terms of steady progress, or as a period of decline from a Golden Age. An alternative view needs to pay more attention to a detailed reconstruction of the history of scholarship in the social sciences and humanities. This paper also suggests concepts for interpreting the recent past of these disciplines.

The social sciences and humanities are disciplines in which the present cannot simply be regarded as superseding and erasing the past. The importance of an interest in history is widely recognized in these fields of knowledge production. Nevertheless, it has been notoriously difficult to escape the dichotomy of two standard ways of conceiving this history.

An evolutionary perspective on the steady, but perhaps slow, progress of knowledge undoubtedly remains widespread, despite recent strong and compelling criticism of such a view in the sociology of scientific knowledge and in the historiography of the humanities. Drawing playfully on Isaac Newton, Robert Merton (1993) emphasized that sociologists in the present always stand on the shoulders of the giants of the past. He meant to acknowledge a debt, but also to suggest that we contemporaries see farther than our predecessors. Since it is difficult to believe that what we do today could be less insightful or nuanced than the knowledge we possessed previously, we are inclined to believe that we do see farther. So we conceive those giants of the past as being both large and immobile, like the sculptures of US presidents on Mount Rushmore. However, it is more appropriate to assume that those giants are capable of sudden movements, and that many a dwarf has already fallen, and will still fall, from their shoulders.

The alternative view regards the recent history of the social sciences and humanities as a period of decline from an earlier Golden Age. This age was supposedly one in which scholarly autonomy prevailed and research agendas were determined by nothing but the insights of the leading scholars in each field. Conversely today, numerous 'outside' interests intervene in those agendas, and deteriorating working conditions disturb the calm pursuit of the truth. Most recently, the first chapter of the Metris Report on *Emerging Trends in Socio-Economic Sciences and Humanities in Europe* (European Commission, 2009) paints just such a picture. But while the Report justifiably describes certain ongoing trends in institutional

1. This article is an abbreviated version of a presentation given at the conference 'Social sciences and humanities: emerging trends and future prospects. Europe in global context', SCAS, Uppsala, 24–25 April 2009; for more information see http://www.globalsocialscience.org

arrangements, funding modes, evaluative practices and research careers, it fails to show when exactly the era of 'autonomy of the scientific field' existed, in contrast to which this picture of the present is painted.

Here, we want to suggest that both of these perspectives are untenable. Furthermore, an alternative view needs to pay more attention to the details when the history of scholarship in the social sciences and humanities is reconstructed. The remainder of the paper briefly proposes some concepts for such a detailed investigation, and then applies them in the form of hypotheses for interpreting the recent past.

The first group of these concepts encompasses the disciplines, institutions, associations, journals, funding mechanisms and forms of evaluation that guide research orientation and have a grip on scholarship. They both enable and constrain research activity. They give research practices structure, so we could apply the term 'structuredness' to the shape and size of the influence of these phenomena on practice.

Next, such structures have dimensions in space, so we use the term 'spatiality' for the global distribution of knowledge forms and the relations between them.

Finally, scientific knowledge production has often been defined by the distance between the knowledge seeker and the object of knowledge. This is a distance that, in the 'spectator theory of knowledge' (criticized by John Dewey among others), was seen as the very precondition for truth. On closer inspection, however, knowledge production in the social sciences and humanities was often marked by a struggle for the appropriate relation between 'distance and involvement' (Elias, 2007).

We shall briefly try to put these concepts to use by considering recent transformations in the conditions of knowledge production.

Over the thirty years since 1980, we have witnessed a move from a highly structured mode of knowledge production, centred on nation-states and associated national fields of scholarly work, towards rapid and sometimes radical destructuring. The social sciences and humanities provided the intellectual underpinning for the earlier structures; this is why they are centrally at stake in the current destructuring.

The modern polity is built on broad ideas of individual freedom and popular sovereignty, or on individual and collective self-determination, to use less historical terms. But once this double commitment reigned in the realm of political thought – roughly from the late eighteenth century onwards – it was increasingly regarded as risky. It appeared to provide a rather empty shell that could not sustain a polity alone. The idea of collective self-determination introduced dangerous arbitrariness, as it gave no indication of the membership of the self-determining collectivity. On the other hand, the notion of individual freedom appeared to reduce the social bonds that prevailed in the 'old regime' or in 'traditional society', depending on the viewpoint. The humanities addressed the first problem by investigating culture, language and interpretation, suggesting that an answer to the 'national question' arose from such interrogations. The social sciences addressed the second problem by observing and conceptualizing new forms of social bonds related to interest, status and class, suggesting that an answer to the 'social question' arose from the antagonisms or solidarities that such bonds created throughout society.

In Europe, at least, these two responses strongly shaped polity formation for better or worse. The European nation-state was the institutional solidification of these answers, and the national university systems were the structures in which the underlying knowledge forms could develop.

Much of the spatial history of the social sciences and humanities can be captured by dividing it into three epochs: one of their European origins; one of a first globalization with the emergence of US hegemony, particularly for the social sciences but less so for the humanities; and a third epoch of more truly plural regionalization which is currently at its beginning.

Each of these assertions can be and has been contested. But if they are phrased without conceptual excess, there can be little doubt about their adequacy. The claim for the European origins of these disciplines is sometimes seen as evidence of a narrow Eurocentric view. Indeed, nobody can deny the existence of systematic social knowledge before and in parallel with the rise of the European social sciences and humanities. But as a combined result of colonization and the radical way in which problems of human social life were expressed in European social thought, many conceptual claims of European origin have become inescapable worldwide (Chakrabarty, 2000).

In turn, the claim of subsequent US hegemony is sometimes regarded as the nostalgic and ideological view of Europeans who cannot accept their loss of centrality. Again, however, a combination of politico-economic power and intellectual perspective has been at work since the middle of the

twentieth century. The hegemony of this combination is difficult to overlook, and its emergence clearly took place in the USA. In their various guises, individualism, rationalism and quantitative methodology have found very fertile ground in North America and have spread from there, precisely because the destructuring of knowledge contexts elsewhere seems to make every alternative less viable (Wagner, 2008, ch. 11).

Finally, we may doubt the existence of true pluralization in the face of the persistent and crushing dominance of US universities in all global rankings and of US-based scholars in global evaluation indicators such as citation indexes. Pointing to biases in these measurements is valid and necessary, but the imbalance would not disappear entirely even were other measures to hand. US universities are the basis on which scholars all over the world work, but they often do work that cannot be regarded as falling under US hegemony. More recently, there have been steps towards actively rebuilding 'research areas', to use the current European term. The aim is not merely to 'catch up' with the USA, but also to sustain innovative intellectual work on European terms. These two observations may not seem to suffice for contesting US hegemony. After all, the global attractiveness of leading US universities is nothing but a sign of hegemony, while the building of other regional research settings is, at best, in its beginnings and has as yet borne little fruit. Nevertheless, we dare say that some erosion of US intellectual and institutional hegemony is visible. Whether this process will continue is more difficult to predict. It will ultimately depend on the capacity of scholars all over the world, including in the USA, to pluralize their intellectual endeavour beyond the approaches mentioned above. Furthermore, research policy-makers will have to design viable tools for building research areas that provide effective communication structures without setting boundaries for those on the outside. The creation of the European Research Council may be the foremost example of the design of such a tool.

The social sciences and humanities have always been diverse in their views on the required distance from their 'objects'. This has led to highly abstract reasoning and claims to universal knowledge, or alternatively, to claims of the need for hermeneutic involvement, leading in turn to more contextual and particularistic knowledge. Positions here are partially characteristic of disciplines, but there is often diversity within them. Economics has often been the most 'distance-minded' of the social sciences, but has also experienced the most clear-cut emergence and persistence of explicit heterodoxy. In turn, the humanities are often seen as the most context-bound and 'interpretation-minded'. However, they too have experienced their own universalizing movements. There have been times when the claim that only distant knowledge is good and certain knowledge has appeared convincing. But these periods have mostly been short and counter-claims have been quick to re-emerge in various guises (Santos, 2007). By now, the persistence of this issue seems to be widely acknowledged. The problem, though, is that 'science' seems to be easier to define by distance-taking than by anything else, and alternative formulations are either too problematic or too subtle to become widely influential.

If the general contours of the above ultra-brief history of the social sciences and humanities are acceptable, then some conclusions for research policy follow. First, it should not merely accept the recent destructuring and assume that novel structures will just emerge as the aggregate of numerous individual decisions, or through the imposition of some ill-conceived 'best practice' or measure of 'excellence'. Rather, research policy should involve conscious efforts to restructure the research landscape in these fields of knowledge production. Given destructuring, the role of the nation-state as both the funder and 'problem provider' of the humanities and social sciences has declined. But the key problems of human social life have not disappeared. They have been transformed, and need to be reconceptualized and researched in their transformed state. Restructuring along regional lines, supported by a plurality of national, local and private funding agencies, seems to be the most promising bet for the near future. The regional perspective offers opportunities to operate effectively in the competitive global knowledge community, and to keep open the innovation-rich dialogue on the adequacy of more distant or more involved forms of social and human knowledge.

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The share of major social science disciplines in bibliometric databases

Koen Jonkers

Analysts and commentators make general statements about the decline in disciplines like sociology or anthropology and the growth in economics and psychology, but these assessments tend not to rely on international quantitative data. This paper discusses the weight of the disciplinary fields in the Thomson Reuters Social Sciences Citation Index (SSCI), measured in terms of publications, and stresses some of the limitations inherent to this sort of analysis.

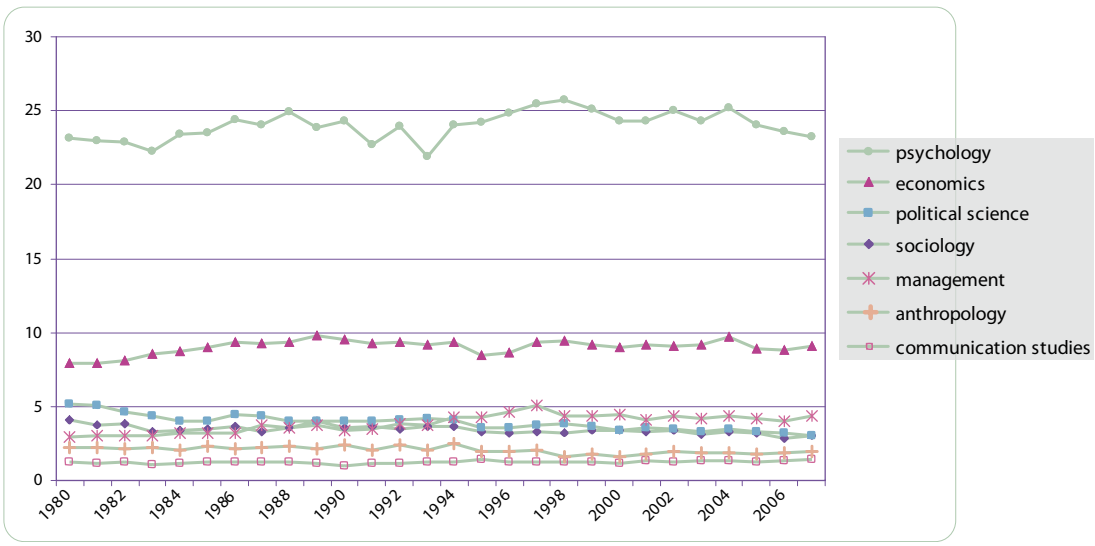
The limited availability of statistical data on social science researchers, and the different definitions of social science disciplines used in different countries (Kahn, in Annex 1 to this Report), make it difficult to embark on an international study of the relative distribution of material and human resources in specific social science fields. But it is interesting to have some idea of the relative production of the different social science disciplines and how it has changed over time.

Such a study would face all the limitations inherent in the analysis of social science bibliographical databases such as Thomson Reuters Social Sciences Citation Index (SSCI). These include restricted coverage, geographical and linguistic bias, the variation in publication practices between fields, and their omission of material published in books (Archambault, in this Report). Consequently, this paper only discusses the weight of the disciplinary fields in the SSCI database, rather than the weight of the fields in the global science system or within specific research systems. The weight of the different fields is measured in terms of publications rather than in terms of the number of social scientists. The fact that some fields have a large number of practitioners who apply their knowledge in government or elsewhere and do not actively publish journal articles is not addressed in this analysis either.

Between 1980 and 2007, the annual number of articles contained in the SSCI grew from around 55,000 to almost 93,000.[1] This growth indicates that the database is dynamic – new journals have been added over time, while others have been removed (Thomson Reuters, 2009). The weight of each field is measured by dividing the total number of

1. Throughout this paper, the publications of the forty-seven countries with highest gross domestic products are considered as a proxy for the world total. This is because of the technical limitations of the SSCI's online version.

Figure 6.1 — Weight of the disciplines in SSCI output



Source: Thomson Reuters Social Science Citation Index online version (accessed 22 September 2009).

publications (articles, notes, letters and reviews) in each field by the total number of such publications included in the SSCI per year. The share of each field is measured relative to the total SSCI database. The shares should not be added to each other as the SSCI may assign a journal to more than one subject category.

The definition of disciplinary subject categories used here follows that of the Thomson Scientific Journal Citation Reports (JCR), meaning that the subject categories are journal-based. The definitions of these fields can be contested, but since they are the standard used in most bibliometric studies, this paper follows them. The fields studied include sociology, political science, anthropology, economics, management studies, communication studies and psychology as a whole. Psychology is a very large and diverse field consisting of eleven JCR subject categories ranging from clinical, developmental, educational, biological, multidisciplinary and mathematical psychology to psychoanalysis. Other fields could have been included in the analysis. The decision was taken to focus on these seven as they represent some of the major social science fields as well as some fields that are thought to have grown considerably in importance in recent decades.

As Figure 6.1 shows, the combined psychology fields and economics form the largest share of the output captured in the SSCI. Over the period 1990 to 2007, the relative share of some fields, such as economics and management science, increased while that of other fields such as political science decreased. Overall, however, the relative share of these seven major social science fields in the SSCI has remained relatively stable during that period, while the number of journals included in the database increased substantially.

Other data sources would be needed to make more accurate and complete assessments of the relative research efforts in the various social science disciplines. In the absence of such data, this paper provides a first, limited indicator of such developments by showing the relative distribution of publications contained in the SSCI database by social science field and their evolution over time.

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Law and social science

The current integration of law and social science involves the renewal of a long-standing idea. Affinities between law and social theory are old – some even consider law to be the 'oldest social science' – and so are attempts at integrating them. The idea of a connection between law and a science of society can be found in the works of Montesquieu and Bentham. In the context of the social movements of the 1960s, research programmes in law and social science were developed in US and UK universities. Their prestige faded in the 1980s, but they have found new popularity in recent years. Today, the integration of law and social science is more internationally widespread, and is attempted by social scientists from many disciplines. History of law and comparative law are more open to other social sciences such as anthropology and sociology. Legal activity is studied by political theorists and by political scientists working on policy-making, state formation or social movements. Legal professions and the process of law-making are more often studied by sociologists. Scholars from the humanities are interested in the relationships between law and literature, or law and drama, at various moments of history. Law and economics is another distinct approach for legal studies: it includes the use of economics to explain the effects of laws, to assess which legal rules are efficient, and to predict which ones should be promulgated. Psychologists contribute to the practice of legal judgment. Courts and dispute resolution are other topics in which disciplinary crossings between law and social science are common. Recent scholarship focuses on articulating a plurality of legal orders rooted in the community, the region and the state, and on the complexity produced by globalization or postcoloniality.

This new cycle of integration between law and social science has been important in the USA under the label 'Law and society,' and has now spread to Europe, Latin America, India and Japan. Since the 1990s, institutions such as the World Bank have been interested in the relations between law and development. This approach analyses law as an instrument to promote economic development, democracy and human rights. All these trends tend to push law to the centre of policy-making and social science.

Communication studies

Communication studies is a relatively new field of research. It has some of the traits of a cross-disciplinary and interdisciplinary field, yet it has recently acquired many of the institutional and professional trappings of an academic discipline, including increasing offers of college courses resulting in a higher number of hired scholars, departments at universities, and new professional associations and conferences. 'Communication' is now identified as a separate category in social science bibliographical databases such as Thomson Reuters SSCI, and the number of papers published under this category shows an upward trend. Even this may not reflect the even greater number of textbooks published annually in this field.

Despite this rapid change, communication studies remains radically heterogeneous as an intellectual field (Craig, 2003). Defined as the 'study of the verbal and non-verbal exchange of ideas and information', it covers a broad range of topics such as 'communication theory, practice and policy, media studies (journalism, broadcasting, advertising and so on), mass communication, public opinion, speech, business and technical writing as well as public relations'; this is the definition of the Institute for Scientific Information (ISI) subject category 'Communication'. From these topics, Rogers (1999) distinguishes two major and coexisting research interests: mass communication (mainly investigated by political scientists) and interpersonal communication (investigated by sociopsychologists).

Communication studies is not only diverse in research interests. Craig (1999) maintains that it has multidisciplinary roots, as this field has historically been created by scholars from a wide variety of disciplines such as political science, sociology, psychology and mathematics. He distinguishes different traditions in current research, each of them reflecting a different accepted meaning of communication. They include rhetoric (the study of the practical art of discourse), semiotics (the study of intersubjective mediation by signs), phenomenology, cybernetics (the study of the circulation of information in communication systems), the sociopsychological tradition (the study of the psychological aspects of communication), the sociocultural tradition (the study of the transmission of sociocultural patterns) and the critical tradition (the study of the principles of communicative rationality).

Some scholars paradoxically note the lack of communication between these different schools of thought (Craig, 1999), and call for a productive dialogue to enhance the scientific consistency and fruitfulness of the discipline. This lack of communication can be verified empirically in terms of the lack of cross-citation between the set of journals identified as dealing with communication (Leydesdorff and Probst, 2009). The rapid institutionalization of communication owes much to the economic importance of communication skills and occupations, but the scientific construction of the discipline is still in progress.

Economics and sociology in the context of globalization

Frédéric Lebaron

Heightened interest in the cultural, institutional and historical dimensions of globalization could mean that asymmetries between economics and sociology could gradually disappear, giving rise to more balanced exchanges. In recent years, scientific developments within each disciplinary field indicate an increase in the number of intellectual links between them.

Two institutional contexts

The relations between economics and sociology are far from equal and symmetrical, especially in the present era of globalization. The primary difference is cultural and is related to the norms of evaluation.

Economics is characterized by its generalized use of English in scientific communication. Sociology, on the other hand, is largely embedded in national contexts and a significant part of its scientific production is published in national languages. The importance of English is evident in the various professional sectors that are linked to economics, such as banking and finance. Sociology has close affinities with sectors that are established in historically specific national institutions, such as those relating to social policy, education and health.

Economics is often described as an avant-garde discipline, especially in its scientific evaluation and management. It has contributed to the creation of standards for the classification of scientific content and of journals, based on 'scientometrics'. The 'productivity' of researchers, laboratories and institutions is evaluated quantitatively. A system of scientific awards has been set up, of which the Prize in Economic Sciences in Memory of Alfred Nobel is the most prestigious. These awards help to uphold internal hierarchies within the research field. The adoption of a normative system by most countries has contributed to homogenizing the discipline (Coats, 1997).

Sociology, on the other hand, still tends to be shaped by national and cultural forces (Berthelot, 2000). Nonetheless, Anglo-American sociology in particular has taken on a number of criteria and norms that can be found in economics and in the natural sciences, and similar forms of evaluation also influence the humanities. This became clear in France during the debates on journal classification in 2009. The adoption of these norms in the humanities and the social sciences was interpreted as the transposition of criteria that already exist in economics.

Two social 'subsystems'

A second aspect of the current relationship between economics and sociology relates to their contrasting configurations as social 'subsystems' – or fields, as Bourdieu (1988) would call them. Both economics and sociology are considered to be scientific disciplines. However, they diverge in their approaches to and relations with social and institutional structures, including their relations to non-academic sectors, their insertion in institutional social networks, and their contribution to public policy debates and practices.

Market mechanisms play a stronger role in economics than for the social sciences, especially after the implementation of institutional reforms which have created new evaluation processes affecting the careers and incomes of individuals. This is particularly visible in France with the 'Toulouse School of Economics' and the 'Paris School of Economics', two higher education and research institutions which are experimenting with new incentives and income models, each based on economic theory.

The key social differences between economics and sociology are related to the fact that they imply participation in extremely different networks of social actors, and in different sectors of public action. For a long time, economics has had privileged contacts with public policy actors and institutions (Coats, 1997). This is particularly visible at the national level in statistical institutes, finance ministries and central banks. The high concentration of economists within international and regional

organizations[1] has reinforced this presence at the national level. Additionally, many participants in local government have a background in economics. In other words, the non-academic facet of economics tends to overshadow the academic one.

Economics contributes directly to the existence of 'epistemic communities', professional or social groups that share a set of beliefs and cultural aspirations. Their members favour economic reform in various spaces, from central banks and international organizations to national or more localized circles. These often involve associations and lobbies devoted to 'structural reform', meaning liberalization and the implementation of market mechanisms. By contrast, sociology is still mainly an academic discipline, related to specific national cultural, intellectual or political contexts. Sociology is also often associated, especially in Western Europe and the Nordic countries, with the support and promotion of specific social institutions, leading to the creation of new opportunities for sociology students. Social workers, for instance, often have backgrounds in sociology.

Changing intellectual relationships

Emerging subfields such as economic sociology, socio-economics and international political economy have contributed to the formation of a large scientific space at the crossroads of these two disciplines. '(Neo-) institutionalism' can refer to the extension of economics into the relationships between markets and organizations. For many neo-institutionalists, economic rationality remains a central assumption. However, it does not necessarily imply a complete denial of the constraining institutional conditions of economic action, already emphasized by sociologists including Emile Durkheim (Campbell and Pedersen, 2001). These exchanges can also, especially in political science, refer to a 'political economy' which places the emphasis on power relations and the institutional condition of economic activity, and in particular, on present-day capitalism's shifting patterns.

The recent development of 'economic sociology', grounded on broad social and intellectual dynamics within the field of sociology, is also related to the re-emergence of questions that have been imported from economics and are studied from an empirical sociological viewpoint (Swedberg, 2003). The pursuit of sound empirical foundations to explain economic behaviour has also led to the re-evaluation of classical and recent sociological analyses on the subject. Experimental economics research tends to show that restrictive hypotheses on rationality should provide greater space for more integrative approaches.

The interdisciplinary success of the notion of 'social capital' has revived debate in such domains as growth theory, institutional change and international comparisons. Its importance in international organizations such as the World Bank and the OECD has helped to legitimize cross-fertilization between different disciplinary traditions, especially in sociology, economics and political science (Svendsen and Svendsen, 2009).

The use of common statistical methodologies has also partially loosened the boundaries between economics and sociology. A newfound interest in such statistical traditions as data analysis (especially correspondence analysis) has contributed to the development of joint methodological and empirical issues that integrate the multifaceted character of social and economic life. This trend also challenges the domination of abstract statistical modelling in favour of a more empirically based, descriptive and inductive approach (Le Roux and Rouanet, 2004).

Will these changing intellectual relations produce institutional or political outcomes? One important issue could have to do with the current discussions on the measurement of well-being and the quest for better indicators that do not solely rely on dominant economic indicators such as gross domestic product (GDP) (Gadrey and Jany-Catrice, 2007). While it is dominated by economists, the 'Stiglitz Commission' appointed by the French Government highlights the need for plural as well as multidisciplinary approaches to socio-economic well-being. We can hope that the new intellectual conditions described above will lead to the renewal of various public policy issues.

1. International Monetary Fund, World Bank, Organisation for Economic Co-operation and Development, World Trade Organization, European Commission, European Central Bank and so on.

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One social science or many?

Jon Elster

I want to start by saying that the social sciences are cumulative, in the sense of acquiring more and more mechanisms. Each new mechanism is added to the toolbox or repertoire of the social scientist. This progress is irreversible, since mechanisms identified by Aristotle, Montaigne and Tocqueville are still with us today. I can now begin to answer the question in the title. My answer is that there is only one social science, but that it is not unified.

When I accepted the invitation to give the talk on which this paper is based, in the autumn of 2007, I did not expect that the social sciences, notably economics, were about to be forced into a deep self-examination triggered by a world financial crisis. It seems as if the Hollywood slogan about the prospects of a newly released movie, 'Nobody knows anything', was suddenly applied to basic issues of economics and finance. The status of macroeconomics as a science now seems less compelling than before, to put it mildly. As for microeconomics, its status as a science has become increasingly fragile over the thirty years or so since 1980. The other social sciences, notably sociology, had less to lose, as their reputation was not that high in the first place.

In my understanding, the goal of social science is to uncover proximate causes of behaviour. According to this definition, the historical sciences are part of the social sciences, since they also are concerned with the causes of behaviour. Although we might try to draw a distinction between historians as consumers of mechanisms and social scientists as producers of mechanisms, this attempt would be quite misleading. Tocqueville's study of the *ancien régime* and Paul Veyne's study of civic giving – evergetism – in classical antiquity both contain more fertile mechanisms than almost any work in social science I can think of (Elster, 1979, 1993). Conversely, most economists, sociologists and political scientists are tool-users rather than tool-makers.

By proximate causes, I mean mental phenomena such as beliefs, desires, perceptions and emotions. As this shows, I am firmly committed to the principle of methodological individualism. All social phenomena should be and in principle can be explained by independent variables at the level of the individual. In practice, individual-level explanations may be intractable and may require data that do not exist. My point is that the use of aggregates as the unit of analysis is always a second-best option, and that there is never any reason to choose it for its own sake.

Before I try to answer the question in my title, I need to explain the 'science' part of 'social science'. The aim of science is to offer verified – or not yet falsified – explanations of observed phenomena. This is why some alleged social sciences do not count as science. Large chunks of anthropology, for instance, are closer to literary interpretation than to causal analysis. In addition, functional explanations of social phenomena in terms of their consequences rather than their causes do not count as science. An example is the explanation of vendettas as a 'device' for keeping a population within sustainable limits. Maybe vendettas do have that effect, but this cannot be cited as an explanation for them unless we also demonstrate the existence of some kind of homeostatic feedback loop. To my knowledge, nobody has even tried to do that. In a broad perspective, the work of Foucault and Bourdieu has been especially important in licensing claims of this sort (Elster, 1983). As I know from my own exposure to current French social science, their influence is persistent.

I also stipulate that science is cumulative, a claim that can be taken in one of three senses. First, scientists explain more and more facts over time. Better telescopes permit the exploration of deeper parts of space. Second, new scientific theories build on previous ones, generalize their results and, when necessary, explain their failures. The relations between Newton and Einstein, or between Condorcet and Kenneth Arrow, illustrate this idea. In this sense, cumulativity also implies irreversibility. There are no neo-Newtonians in physics, in the way there are neo-Marxists, post-Keynesians or neo-Austrians in economics. These are marginal sects. Yet the current revival of

Keynes in mainstream economics shows that even here, in the allegedly most scientific part of the social sciences, cumulativity and irreversibility are lacking.

I do not believe there is cumulative theory-building in the social sciences, since I do not think there are any successful theories in the social sciences. By a theory, I mean a set of interconnected universal propositions from which, given the initial conditions, unique predictions can be derived. Although the social sciences do contain would-be theories in this sense, none of them are successful in the sense of their predictions being routinely verified to a reasonable degree of precision. The main candidate for a social science theory is rational choice theory, including game theory. In contemporary social science, it is the dominant paradigm in economics and to a lesser degree in political science. I shall have more to say about rational choice theory later. For now, let me only note that the field of sociology, which has a proud tradition of theory-building, seems to have lost its self-confidence. Unlike rational choice theory, network theory and agent-based modelling do not pretend to yield strong predictions across large varieties of behaviour.

Let me now state the third sense in which the social sciences can be cumulative. This relies on the idea that the basic units of social science are mechanisms rather than theories. By mechanisms, I mean frequently occurring and easily recognizable causal patterns that are triggered under generally unknown conditions or with indeterminate consequences. Since this bare statement may be close to unintelligible, let me offer two examples inspired by Tocqueville's writings.

If a king offers tax exemptions to the nobility but not to the bourgeoisie, the latter might react with either envy towards their rivals or anger towards the king. Even if we cannot predict which of these two reactions will occur, whichever of them does occur can be explained by the king's behaviour.

If a king enacts repressive measures, his action can make his subjects less likely to rebel, because the measures heighten their fear, but also more likely to rebel, because the measures increase their hatred. Generally, the net effect is unpredictable, but if in a given case we observe that repression causes rebellion, we can conclude that the second effect dominated the first.

I can now begin to answer the question in the title. In his massive treatise *Foundations of Social Theory* (1990), James Coleman argued that rational choice theory could be a unified and unifying theory of all of social science. Yet in many well-documented cases, agents fail to live up to the prescriptions and predictions of rational choice theory. They behave irrationally. In a general way, this is not exactly news. The Allais paradox and the Ellsberg paradox, stated in 1953 and 1961 respectively, showed that most people violate a standard version of rational choice theory. For a long time, these and other anomalies, such as the gambler's fallacy, were not taken very seriously, as nobody could propose an alternative theory to account for them. Since you cannot beat something with nothing, and since rational choice theory definitely was something, with many achievements to its credit, it remained in place as the dominant paradigm. Although irrational behaviour was recognized, it was only viewed as a residual category. There was no positive account of irrational behaviour. At the same time, rational choice theory had – and still has – undisputed success in many policy areas. The assumption that economic agents respond to incentives has been shown to be valid in numerous instances.

This situation changed in the mid-1970s. In 1974, Daniel Kahneman and Amos Tversky published the first of their major papers on decision-making under uncertainty, in which they introduced the heuristics of availability and representativeness that I mentioned earlier. In 1975, George Ainslie resurrected the theory of hyperbolic time discounting proposed by R. H. Strotz in 1955, and showed that it could account for many puzzling inconsistencies in behaviour. A later landmark was the 1979 paper by Kahneman and Tversky on prospect theory, one of the most influential papers in the history of economics and the one for which Kahneman, after the death of Tversky, received the Alfred Nobel Memorial Prize in Economics.

In the years that followed, the research programme of behavioural economics has unearthed a vast number of positive mechanisms that generate irrational behaviour. Although it would be impossible to attempt a complete statement of these irrationality-generating mechanisms, I shall try to produce a representative shortlist. If we go by the literature, the two most important ones are probably loss aversion, an aspect of prospect theory, and hyperbolic discounting. In my view emotions are at least equally important, although for reasons I shall explain, they have proved less tractable for experimental purposes. Among other mechanisms, the following may be cited:[1]

1. Since there is no full-scale comprehensive treatment of behaviour economics, the reader is referred to the following edited volumes: Kahneman, Slovic and Tversky, 1982; Loewenstein and Elster, 1992; Kahneman and Tversky, 2000; Connolly, Arkes and Hammond, 2000; Gilovich, Griffin and Kahneman, 2002; Camerer, Loewenstein and Rabin, 2004.

- the sunk-cost fallacy and the planning fallacy (especially deadly when used in conjunction)
- the tendency of unusual events to trigger stronger emotional reactions (an implication of 'norm theory')
- the cold–hot and hot–cold empathy gaps
- trade-off aversion and ambiguity aversion
- anchoring in the elicitation of beliefs and preferences
- the representativeness and availability heuristics
- the conjunction and disjunction fallacies
- the certainty effect and the pseudo-certainty effect
- choice bracketing, framing, and mental accounting
- cases when 'less is more' and 'more is less'
- sensitiveness to changes from a reference point rather than to absolute levels
- status quo bias and the salience of default options
- meliorizing rather than maximizing
- motivated reasoning and self-serving biases in judgment
- flaws of expert judgments and of expert predictions
- self-signalling and magical thinking
- non-consequentialism and reason-based choice
- overconfidence and the illusion of control
- spurious pattern-finding.

I present this list mainly to underline the fact that unlike rational choice economics, behavioural economics is not based on a unified theory. Rather, it consists of a bunch of theories or mechanisms that are not mutually deductively linked. Nevertheless, there is only one social science, because all practitioners can use the same toolbox. There is no reason why an economist should refrain from using a mechanism developed by a historian of classical antiquity.

From this perspective, human behaviour seems to be guided by a number of unrelated quirks rather than by the consistent maximization of utility. In fact, there are so many quirks that we might suspect there would be a quirk to fit any observed behaviour. Many mainstream economists seem to shy away from behavioural economics because they think it invites ad hoc and ex post explanations.

Another problem is the plethora of motivations invoked by writers within behavioural economics. As we all know, *homo economicus* is supposed not only to be rational, but also to be consistently self-interested. This second feature of his make-up is less central than the first. Gary Becker, a staunch defender of the rationality assumption, has done much to further the study of altruism in economics. Yet many economists assume self-interested motivations for theoretical simplicity and parsimony. Paraphrasing Tolstoy, every selfish person is alike, but all unselfish persons are unselfish in their own way. Behavioural economists have come up with an amazing range of unselfish motivations, including altruism, envy, resentment, inequality aversion, fairness and many others. Once again, there is a suspicion that for any observed behaviour, we can find an unselfish motivation that would fit. And once again, the risk of ad hoc and ex post explanations seems very real.

However, I want to distinguish sharply between ex post and ad hoc. Of course ad hoc explanations should be avoided. A genuine explanation has to do more than merely provide a hypothesis from which the phenomenon to be explained can be deduced. Given any social event or fact, any social scientist worth their salt should be able to come up with half a dozen possible accounts that could explain it. But additional steps are needed to argue that one of them in fact does explain it. Plausible rival accounts have to be set up and then shot down, and the favoured account's additional, testable implications have to be derived and verified. If these are novel facts not previously observed, they lend even more strength to the explanation.

In contrast, there is nothing wrong with ex post explanations provided they follow the procedure I just stated. Let me take a trivial but typical puzzle based on my own experience: why are there so many more standing ovations on Broadway today than twenty years ago? The playwright Arthur Miller proposed this explanation: 'I guess the audience just feels that having paid $75 to sit down, it's their time to stand up. I don't mean to be a cynic but it probably all changed when the price went up.' When people have to pay $75 or more for a seat, many cannot admit to themselves that the show was poor or mediocre, and that they have wasted their money. To confirm to themselves that they had a good time, they applaud wildly. So far, this is no more than a 'just so' story, one possible account among many. It would gain in strength if it could be shown that there are fewer standing ovations when large numbers of tickets to a show are sold to firms and then given to their employees. This would count as a novel fact. Even if these tickets are expensive, the spectators have not paid for them out of their own pocket, and hence do not need to tell themselves that they are getting their money's worth.

In my vision of the social sciences, both microeconomics, updated as behavioural economics, and social psychology have a privileged role. They illuminate the individual choices and actions that are the building blocks of more complicated phenomena. Nevertheless, they face the challenge of how we link behaviour observed in the laboratory to spontaneous behaviour outside it. Many critics deny that findings from an artificial experimental setting can be generalized to other contexts. To address that issue, psychologists and behavioural economists

should go outside the laboratory. The great psychologist Leon Festinger can serve as an example. In the process of arriving at the theory of cognitive dissonance, he was influenced by a puzzling finding by an Indian psychologist, Prasad, who reported that the vast majority of the rumours following the great Indian earthquake of 1934 predicted even worse disasters to come. Here is the puzzle and Festinger's solution.

Certainly the belief that horrible disasters are about to occur is not a very pleasant belief, and we may ask why rumours that were 'anxiety-provoking' arose and were so widely accepted. Finally a possible answer to this question occurred to us – an answer that held promise of having rather general application. Perhaps these rumours predicting even worse disasters to come were not 'anxiety-provoking' at all but were rather 'anxiety-justifying' (Festinger, 1957, p. vi).

Although the theory of cognitive dissonance arose in response to a real-world puzzle, Festinger went on to derive and test additional implications in the laboratory. At the same time, he carried out fieldwork to confirm and develop the theory. He infiltrated a group of people who believed the world was about to end on a specific date and who had taken decisive action based on that belief, in order to observe what they would do when the prophecy failed. If you do not know what they did, I shall not tell you. The book he wrote about it, *When Prophecy Fails*, is a wonderful read, and I recommend that you find out for yourself (Festinger, 1956). I mention the study here only because of the exemplary methodology it embodies, combining theory, experiments and fieldwork.

Amos Tversky once told me about a meeting he had attended with the foremost psychological scholars in the USA, including Festinger. At one point they were all asked to identify what they saw as the most important current problem in psychology. Festinger's answer was 'excessive ambitions'. The social sciences more generally have also been suffering from excessive ambitions. The aspiration of rational choice theory to become the master theory of human behaviour offers one example. Another is provided by the strong claims often made for statistical models. As was emphasized by the late David Freedman, data analysis often aspires to do more than it can deliver. In one of his comments on the use of regression models in the social sciences, he asserted that in his view the truth of the matter was somewhere between the following: 'regression sometimes works in the hands of skilful practitioners, but it isn't suitable for routine use' and 'regression might work, but it hasn't yet' (Freedman, 1991).

If social sciences have to lower their aim, what should they do? Two proposals are implicit in my argument: we should keep accumulating mechanisms, and use them to carry out fine-grained case studies. Needless to say, simplicity and robustness are not enough: good ideas are also needed. To this end, I recommend that all social scientists spend a large part of their time immersing themselves in the classic writings of history, which can provide them with both the 'telling detail' and the 'provocative anomaly'. Thomas Schelling once told me that before writing *The Strategy of Conflict*, he read widely and randomly on military history. This is not the preparation that current social science departments give their students. Within economics, economic history is almost at the bottom of the prestige hierarchy, just a notch above the history of economic thought. Within political science, students do read the history of political thought, but virtually no political history. In sociology, they may read Marx, Weber and Durkheim, but to the best of my knowledge, little social history. Perhaps the best way of creating a unitary social science with a common language would be for all social scientists to have a grounding in history.

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Global history

Universal, world, and more recently global and 'new' global histories are new fields of study. They share a common object: to narrate past events using a perspective that transcends national and regional boundaries. On closer scrutiny, each has its own distinctive attributes. With the growth of global exchanges, global history and 'new' global history represent more recent attempts at narrating the world's past. 'New' global history has a specific focus on present-day globalization. A key feature of global history – as opposed to universal and world history – is its aspiration to break away from a Eurocentric approach. For advocates of global history, Western-produced metanarratives lure us away from the true explanations of the changes taking place. The solution to this problem consists of breaking away from previous approaches, which are based on paradigms that divide the world into the West and the rest, core and periphery, and into national histories.

While there is agreement on global history's main subject of study – globalization – and on the need to integrate non-Western approaches, there are divergences in terms of the meanings that are to be attached to the 'globalization' concept and the historical moment in which it came about. Globalization is associated with a variety of innovations and developments in a broad set of fields: communication, trade (with the emergence of multinational corporations), the globalizing political system, the globalization of culture and the spread of human rights as a global standard of behaviour. As a result of this, certain academics point to the emergence of a 'global consciousness'. While global exchanges have existed for a long time, contemporary globalization has expanded our consciousness of space and time, producing new approaches to globality. In other words globalization allows humans to analyse the world from a new global perspective.

This approach accentuates the break with past historical approaches, producing demands for a new history of globality. This history acknowledges the multiplicity of the world's pasts and the fact that all these pasts are simultaneously present, colliding, interacting and intermixing (Geyer and Bright, 1995). Acknowledging the multiplicity and nonlinearity of local histories, global history seeks to understand the collage of present histories. The question becomes one of knowing when and how the world's history became autonomous from the many histories of the world's pasts and set itself on a separate course. A core source of debate among global historians relates to whether accelerated integration (the universalizing tendency) and proliferating difference (the particularizing tendency) took place simultaneously or not.

Spatial analysis

Space has returned in recent years to centre stage in a number of research programmes and disciplines. Some scholars now speak of a 'spatial turn' in the humanities and social science, because of the increasing use of spatial metaphors and because space and location are more often used as variables that help explain the structuring of people and societies. There is an increasing interest in several disciplines in the incorporation of spatial effects, as in spatial economics and spatial ecology. In psychology, orientation and space construction has been an active field of research since Piaget's studies. Area studies, developed during the Cold War, have found a second life in the past decade thanks to the new global geopolitical situation after the fall of the former European communist regimes. Political science is also reflecting upon global governance and the new spatial organization of sovereignty. Many disciplines now acknowledge that the structures and behaviours of individuals, societies and cultures change from place to place. In other words space and location are now accepted variables of social science analyses.

Obviously space has always been a central concern for at least one of the social sciences, geography. Yet the regional focus which was dominant in that discipline has been declining for many decades now, despite its partial renewal since 1990. Cultural geography or social theories of space have developed, as did more formal and quantitative analyses in 'spatial science'. In this latter area of research, the diffusion of geographical information systems has transformed the use of data and the tools of representation. The treatment of geographic information through information technology will continue to grow in the future. Thus geography is constructing new objects of inquiry and new methodologies in the search for spatial orders stemming from behaviours or from the environment. Different techniques of spatial inquiry, mapping and the building of networks will become widespread in disciplines and fields of inquiry that attempt to analyse individual and social phenomena.

6.2 Crossing disciplinary borders

Introduction

Even though academic disciplines have been effective in organizing knowledge production on a large scale, every generation of researchers contains at least some who wish to overcome what they believe to be the potentially harmful consequences of the divides between and within disciplines. When scientists from various disciplines gather to deal with a problem, the talk is of multidisciplinarity and interdisciplinarity. When scientists coming from various disciplines gather to deal with a problem and take into account each other's constraints, the talk is of transdisciplinarity. Contrarily to interdisciplinarity, trandisciplinarity is said to be more integrative and seeks to go beyond disciplinary knowledge.

Interdisciplinary, multidisciplinary and transdisciplinary tendencies have existed ever since disciplines themselves emerged. They have sometimes been the origin of new disciplines, including some that did not crystallize and which finally disappeared. This dynamic of cross-fertilization between disciplines does not only exist between the social sciences, it is also an element of the interactions between social sciences and other fields of knowledge, especially the humanities and the natural sciences.

Academic knowledge has also been structured by epistemic cultures encompassing many disciplines. Physical or natural sciences on the one side, and arts and humanities on the other, can be considered the two oldest of these cultures. Social science is the third and youngest one. This section deals with some of the most recent questions raised by the existence of intellectual and institutional divides between these three cultures, and the crossing of the disciplines that they call for.

For various reasons, the divides between social sciences and other forms of knowledge are currently being challenged, or should be. Transdisciplinarity or multidisciplinarity is sought for in order to deal with complex phenomena. The reasons can be social and political, for example when social movements and policy issues such as climate change or poverty exert pressure on knowledge producers to change their habits and institutional settings and to deal with topics of general interest. Globalization also offers new opportunities for collaboration between scholars and professionals from various disciplines and epistemic cultures. New scientific fields of studies (including cognitive science, new evolutionary theory, bioethics, environmental studies, law and literature) involve people who are crossing the boundaries of epistemic cultures (Wittrock).

Crossing disciplines remains a difficult task. Roberta Balstad draws from her experience as the former director of the Division of Social and Economic Science at the US National Science Foundation in order to list the obstacles that have to be overcome for multidisciplinarity to develop within climate change research (see also Piot, in Chapter 9). Balstad's opinion is that new global challenges will require more funding for the social sciences, but will also call for changes in the habits of social scientists. Interdisciplinary research should become more institutionalized, interdisciplinary researchers should be hired, and interdisciplinary departments should be created. Yet disciplines and epistemic cultures should also remain strong in this process. How can interdisciplinary training be enhanced while the disciplines are strengthened? This may be tomorrow's practical question for social science research.

Among the social sciences, psychology is a discipline that has been stimulated by its position as part of the social and biological sciences. Owing to its internal diversity and large size, it provides many examples of interdisciplinarity, and of contacts with and collaborations between various forms of knowledge. Psychology's recent creativity and its permanent position as a site of disciplinary crossings can be observed in social change research (Silbereisen, Ritchie and Overmier). This case provides interesting clues about the articulation between experimental research and other ways of practising social science. Applications of such new interdisciplinary research can be imagined when investigating immunization behaviours as well as the complex processes of decision-making. Others are currently interested in the sources of sustainable behaviours (Corral-Verdugo). Human well-being is another fast-growing concern for social scientists ready to work with researchers from other disciplines.

Shifting involvements: rethinking the social, the human and the natural

Björn Wittrock

The social sciences are more urgently needed than ever before. Their potential societal relevance is higher, and they are more crucial to humankind's possibilities of coming to terms with its global interconnectedness in economic, cultural and resource terms than in the past. Without their contribution, the new global context cannot be made intelligible. But intellectual and institutional constraints hamper social sciences from contributing to the understanding of current global transformations, and from innovating as much as they should.

The current context for the social sciences offers possibilities for conceptual innovation and for empirical testing on a previously unheard-of scale. The fulfilment of this potential will call for institutional initiatives on a transnational scale. There is an urgent need for new research capacities and environments in social sciences to help humankind grasp and master current global transformations. While new economic, cultural and scientific centres are emerging, the landscape is still one in which deep knowledge divides persist.

Intellectual and institutional constraints hamper social sciences from contributing to the understanding of current global transformations, and from innovating as much as they should. One such dilemma concerns shifts in their epistemic ordering and in their relationships to other forms of knowledge, in the public sphere, in the humanities, and in the natural sciences.

From their inception as distinctive forms of knowledge, the social sciences have distinguished themselves from alternative, and sometimes competing, disciplines. Philosophical, historical, judicial and literary discourses, but also fields such as medicine, biology, genetics, neuroscience and even physics, have at times exerted a profound influence on the social sciences. In a historical perspective, the social sciences emerged largely from pre-disciplinary forms of what nineteenth-century Europe thought of as the humanities. This is particularly true of the relationship between the political, sociological and economic sciences and eighteenth-century moral and political philosophy. Many of the demarcations that became accepted and entrenched in the late nineteenth and early twentieth centuries are currently being reopened to questioning and critique.

The triple legacy of the humanities

With some simplification, we can suggest that the humanities have developed in the course of the past 200 years in response to three broad types of engagement.

First was a persistent effort in Europe to articulate the heritage of Greek and Roman antiquity in linguistic, historical and philosophical terms. Ever since the neo-humanists of the fifteenth and sixteenth centuries, this heritage has been interpreted in universalistic terms. Developments in the late eighteenth and early nineteenth centuries involved the rebirth of the idea of the university in the German countries under the influence of idealistic philosophy, and the reaffirmation of the universalism of the classical heritage.

At roughly the same time, similar rearticulations of learned traditions occurred in other parts of the world. This is true, for instance, of the flowering of Sanskrit knowledge between the sixteenth and eighteenth centuries. By and large, however, these traditions remained closer to pre-eighteenth-century European conceptions than to the disciplinary and university-based humanistic scholarship that subsequently evolved in the region.

Second, the building of different national traditions in linguistic, ethnic and historical terms was a key process shaping the humanities in nineteenth and early twentieth-century Europe. The evolution of the humanistic disciplines in their modern form is intimately linked to these developments and to the various European nation-state projects. This is true of their role in institutions of higher education, in the construction of national museums, in the preservation of folklore, and in the quest for archaeological and ethnographic traces of national pasts.

Third, encounters between European and extra-European nations, ethnic groups and spaces exerted an important influence on the humanities in the nineteenth and early twentieth centuries. This was most clearly the case for anthropological and ethnographic research, but also for the study of languages and cultures.

Throughout the late nineteenth and early twentieth centuries, these different strands of inspiration developed in mutual interaction, and often led to unresolved tensions for the humanities. The traumatic events of the mid-twentieth century forced a reappraisal in most European countries, with various outcomes. This was clearly the case in Germany, where the historical, literary and philosophical sciences had been intimately linked to the project of constituting identity and nation, and had conflated with the practices of Nazi Germany. A profound rethinking was unavoidable. In most other countries, the humanities could point to a more mixed record. They had helped to raise a spirit of resistance and national independence ahead of occupation and war, but had been also involved in defining exclusionary national traditions, and had been associated with colonial practices that were to become challenged in the post-1945 era.

This post-war period involved a weakening of the humanities in all European countries relative to the technical, natural and medical sciences, but also in the face of the emergence of the social sciences as autonomous disciplines. In this era the social sciences prevailed over the humanities for several decades. But recent mass migration, increased global economic interaction and renewed religious fervours have put social scientists' claims of the advent of purely secular societies into question. These phenomena confirmed how crucial the humanities were for understanding the world, and called for renewed collaborative relationships between the social and the human sciences. Nevertheless, policies regarding the humanities tend to be cast either in technocratic terms, calling for them to respond to concerns for immediate usability, or as appeals for a revival of past times when the humanities underpinned national cultures and canons.

Rethinking the relationships between the social and the natural sciences

The social sciences and the humanities emerged in the late eighteenth and early twentieth centuries, not only out of moral and political philosophy but also through interactions with botany, medicine and agriculture, and in the context of reflections about the divide between the human and the non-human. This period of 'Inventing Human Science', as the title of a famous book (Fox, Porter and Wokler, 1995) has it, drew a very thin line, if any, between the social and the natural sciences. Hence, the clear-cut distinction that we know between the cultural and the natural sciences has existed only for 150 years or so. It is also a demarcation that has rarely been fully accepted.

Biological and evolutionary thought continued to influence the social and human sciences during their disciplinary consolidation in the late nineteenth century. The frequent use of evolutionary metaphors in the analysis of the history of human societies and states shows this influence. The elaboration of public policies for the genetic 'improvement' of populations was another, pervasive influence, propagated by scholars from the entire political spectrum, and particularly significant for disciplines such as statistics, demography, criminology and sociology.

The horrendous experiences of the 1930s and 1940s, and the realization that European colonies and settler societies often violated indigenous populations' rights, dominated most interactions between social and natural sciences for a few decades. Today these boundaries are being assailed from different sides again, and many cutting-edge research projects are based on collaboration between social and natural or medical scientists. They include:

- Studies of the long-term development of languages and linguistic families are jointly led by linguists, historians, archaeologists and geneticists.
- Studies of the human mind, of the philosophy of mind, and of consciousness rely increasingly on collaborations between philosophers, psychologists, neurologists, brain researchers, and specialists in cognitive science and artificial intelligence.
- Long-term collaborations between mathematicians, logicians and computer scientists are now extended to historians and biologists. They constitute a field in which aspects of classical humanistic scholarship meet with application-oriented engineering.
- The ancient problem of the distinction between humans and nonhumans is reopened by medical and genetic engineering today, as shown by the growth of bioethics.
- Virtually all policy-oriented studies now require collaborations between social, human and natural scientists. This is evident in studies on environmental change, but also in cases where public policy requires human–machine interactions, where the social embeddedness of technologies is at stake, or where innovation challenges previous beliefs and practices.

- Dramatic advances in evolutionary biology inspire the study of human societies.
- Military and security concerns have instigated new methods of surveying and tracking the movements of individuals and populations.

In other words, there is a need for close collaboration between the cultural and the natural sciences. That being said, the autonomy of the social and human sciences also needs to be protected. The paradoxical combination of the small material demands of the social and human sciences and their great potential contribution makes it all the more important that a strong element of critical and historical self-reflection be preserved in the major research institutions, such as universities, institutes for advanced study and centres of excellence. One of the great challenges of the period concerns the support and development of centres and institutes which are open to cooperation between the cultural and the natural sciences, but which maintain scepticism about proposals that the social and human sciences break with their own theoretical traditions.

Rethinking knowledge divides: centres and peripheries

Human activities are characterized by varying degrees of inequality and asymmetry. Some individuals and populations have greater access to resources, lower transaction costs, better social reputation or more political influence than others. Concentrations and movements of people, capital and other resources occur in centres and peripheries.

Geographers have long since developed concepts in time–space geography to capture the formation of and movements between centres and peripheries. Historical sociologists depict long-term developments in similar terms of relationships between the centre and periphery in particular epochs, or they combine macrosociology with the analysis of networks and with interactions between individuals and groups of thinkers. World systems theories have served as a backdrop for global histories of the social sciences.

At any point in time, some centres concentrate people, capital and other resources. In terms of scientific and scholarly interactions, we may envisage networks based on an analysis of references, acquaintances or even spatial movements. On a global scale, such analyses undoubtedly yield interesting and important insights.

Torsten Hägerstrand, a pioneer of time–space geography, was interested in analysing phenomena of innovation and diffusion, and argued that research became innovative when it brought together strands of research which had hitherto developed separately within a new conceptual framework. It is, he writes, as if a window suddenly opened and allowed us to see the world in a new light, to scrutinize new empirical relationships. This window metaphor belongs to a specific tradition of knowledge, but more significantly it calls our attention to some determinant aspects of social and human sciences.

First, the social and human sciences do not merely describe, retell and count the already familiar; they provide new conceptual tools and expressions to let us learn about the world.

Second, no public policy can be developed, no market interaction can occur, and no statement in the public sphere can be made, that does not refer explicitly or implicitly to the findings and concepts of the social and human sciences.

Third, modern research depends upon public support and the willingness of governments and peoples to guarantee the resources they require. In the case of large surveys of the population, these can be significant, but most social and human science projects need comparatively few resources. The most important may well be intellectual openness and the toleration of thoughts with potentially far-reaching effects.

In other words, the history of the social and human sciences in modernity can be analysed in terms of intellectual, institutional and political centres and peripheries. At any point in time there is one or a number of such centres. They are surrounded, not by an undifferentiated periphery but rather by potential alternative centres, challenging their power.

As has been pointed out by the historical sociologist S.N. Eisenstadt, these dynamics between the centre and peripheries have important implications for the understanding of what he terms the 'age of multiple modernities and globalization'. Even though most states still uphold their monopoly of the use of violence, none of them, not even the superpowers, uphold a monopoly of interpreting realities or of assigning value to their policies. The social and human sciences provide interpretive tools which enable contenders and critics to question the interpretations of societal reality, the legitimacy of policies, and the terms used by the centres themselves. Many of

the scholarly and political debates of recent decades share precisely such critical features, and in this respect, the social and human sciences are indeed a very important element of modern tensions and antinomies.

In institutional terms there can be no doubt that various countries, universities and disciplines have served as models to be emulated. More often than not, such emulation has amounted to creative misunderstanding, for instance when leading US academics attempted to reproduce German scientific institutes and universities between the 1870s and the 1920s. In fact they developed a system that today's academic leaders, Europe and China, are trying to replicate themselves, although with much more limited resources.

The transformative force of the social and human sciences may never have been greater than today, as are their intellectual vigour and innovative capacities. Consequently, there is a greater need than ever for intellectual sites where these potentials can come to fruition and where independent and innovative theoretical work is encouraged on the same level as large-scale empirical and policy-oriented studies.

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Body

The human body is far from an obvious object for the social sciences. Its study has for long mostly been the territory of medicine and biology. Yet since the 1990s, the body has been an interdisciplinary meeting point for various social sciences and for some of the natural sciences. It has also compelled the social sciences to contemplate their epistemic assumptions more deeply.

This process of ennoblement of the human body within the social sciences took almost a century. Until the first part of the twentieth century, the human body did not have the dignity of an object in these disciplines. Then anthropology, history and psychoanalysis started questioning the body and its functions. Its role in the construction of selfhood and personality was the main focus of these first studies. The human body's expressive qualities, its movements and its gestures were later topics of interest, covering such areas as nonverbal communication, bodily styles, and cultural variation in bodily behaviour. This work generally tended towards a critique of the biological essentialism that usually dominates common-sense approaches to the body. Later on, changes in the body through time, sports and their evolution, and medical technologies and the ways they construct an imaginary body became the focus of interest. And since the 1970s, the human body is no longer an immutable substrate of human nature for the social sciences. Rather, it is a historically variable entity, which can be transformed by technologies, discourses and situations. The self-control of bodies, as illustrated in modern etiquette and in professional sports, is a good example of the effects of long-run historical processes on bodies.

In the 1990s, political science also started to pay greater attention to the ways in which governments regulated populations and all aspects of human life and bodies through 'biopower'. The field of politics and the life sciences has been growing since.

For some feminist and postmodern theoreticians, the body is just the effect of discourse rather than a stable site of experience. At the same time, the human body is at the core of many debates in cognitive sciences and biomedicine. Those approaches are not contradictory, since contemporary technologies also create new bodily abilities and functions, and transform our senses and our body images. Thus, the human body is currently a cross-disciplinary object par excellence.

Environmental and ecological economics

Environmental and ecological economics are good examples of new scientific specialties emerging at the boundaries of other specialties or disciplines, and crossing the borders of social science to reach out towards the natural sciences. But whereas environmental economics remains in the realm of economics, ecological economics aims at creating a new and distinct field of studies with its own basic assumptions and paradigm.

Neoclassical economics describes people's behaviour regardless of the environmental systems that sustain their existence. However, since 1970, there has been a growing realization among ecologists and economists that this approach can lead to serious mistakes, as the market does not allocate scarce natural resources to generate the greatest social welfare. Since the late 1970s, the field of environmental economics has developed to understand and correct market failure in the environmental domain, as well as to assess the costs and benefits of alternative policies (meaning policies that are alternatives to the free market) (Smith, 2001). One of the early challenges of environmental economics was to internalize environmental externalities in order to make ecological realities (which might be either pollution and destruction of the environment, or conversely, ecological restoration) visible in macroeconomic accounting. This involves assigning money values to environmental services and losses. Many authors also assign specific economic characteristics to environmental amenities, such as fish stocks or air quality. Nonexcludable is the term used for goods whose access cannot be limited; nonrival is used for goods whose consumption by one person does not reduce the amount available to others. These characteristics define an 'international public good', and can have an impact on the way these goods are managed. Nonexcludability favours 'free-riding' behaviours in that others can 'free ride' on one agent's effort to improve a good. In the case of carbon emission reduction, for instance, national incentives would only be effective if they were coordinated with other countries. The development of studies in this field responds to a strong demand from decision-makers for simple tools with which to assess and compare the efficiency and relevance of different environmental policies (see, for example the *Report on the Economics of Ecosystems and Biodiversity*, which was commissioned by the European Commission in 2007; and the *Stern Review on the Economics of Climate Change* for the UK government, released in 2006, which assesses the costs of failing to act in the face of climate change).

A more recent development has gone further in integrating environmental and economic issues: this trend is embodied by the International Society for Ecological Economics launched in 1987. Mainly founded by ecologists trained in economics and vice versa, ecological economics considers the economy as a subsystem of a larger, finite global ecosystem (Martinez-Alier, 2001). This transdisciplinary perspective questions the sustainability of economies based on infinite growth and with both strong environmental impacts and high material and energy needs. Hence ecological economists are very interested in developing physical indicators and indexes of sustainability. Their view also includes issues such as property rights and rules of access to environmental resources and services, the social distribution of power and income (including gender and caste issues), irreversibility, risk assessment, the diversity of environmental value systems, and their weak comparability in the frame of economic models. Ecological economists distance themselves from environmental economics by claiming that cultural, ethical or enjoyment value, which is often associated with the preservation of nature, has little commensurability with money and cannot be reduced to a price. They propose alternative methods such as multicriteria evaluation to capture the value of environmental services and losses. These research interests definitely make ecological economics a transdisciplinary field, which bonds with political ecology, geography, anthropology, philosophy and other subjects in response to worldwide concern about the ecological, social, economic and political dimensions of sustainability.

The interdisciplinary challenges of climate change research

Roberta Balstad

There is a widely acknowledged need for social science contributions to climate and environment research. Meeting the challenges posed by these expectations involves understanding the barriers and hindrances to the social sciences assuming their central role in climate change research. It also involves understanding the consequences of a commitment to developing the social science of climate and the environment as it will affect research, education, and research support in these fields.

Climate scientists from many disciplines recognize the value and potential contributions of the social sciences to their work. Moreover, with the disappearance of any credible objections to the existence of climate change and the growing emphasis on climate adaptation and mitigation policies, policy-makers recognize the need for social scientists to contribute to climate change research. This growing emphasis on the role of the social sciences in climate change research stems in part from the assumption that the study of climate-related policies naturally falls into the social science sphere. However, it also reflects a growing recognition that neither physical and biogeochemical processes, nor their rates of change, can be understood fully apart from their anthropogenic impacts and origins. In short, there is a widely acknowledged need for social science contributions to what was initially conceived as a purely physical and biogeochemical research agenda.

The challenge is whether the social sciences are capable of meeting this need. Despite a sustained emphasis on climate and environmental research within the social science community over a number of years, and the involvement of excellent social scientists in this research, social science contributions to climate change have been less than many had expected. To date, climate change research remains a small specialty within the social sciences, and potential contributions by social scientists continue to outstrip their actual contributions.

There are well-known barriers to climate research across the social/physical divide:

- Social scientists are wordier than physical scientists.
- Some social scientists believe in the social construction of scientific knowledge, a belief that can undercut collaboration with physical scientists.
- Social scientists often employ a wide range of theoretical approaches.
- Social scientists are particularly sensitive to small differences of time, space and culture.
- Disciplinary loyalties in the social sciences often interfere with multidisciplinary collaboration.

But we also recognize that these are not insurmountable barriers; they are intellectual and stylistic differences between scientific fields that can eventually enrich multidisciplinary research.[1]

However, other types of barriers have been more difficult to overcome. The social science community has been ambivalent about climate research. Although some social scientists initially participated enthusiastically in this research, others objected to joining what were predefined projects in which their role was subordinated to that of the climate or biogeochemical sciences. They argued that climate scientists had initially defined the role of social science too narrowly, and that what they actually needed was not new research but a basic understanding of what was already known in the social sciences. The perception that the social science research challenges in interdisciplinary projects were too limited led some social scientists to avoid collaborative projects with natural and physical scientists.

Another barrier was the high entry threshold for conducting research in the climate and environmental fields. Graduate training, and indeed most research in the social sciences, is focused on social, behavioural, economic and institutional interactions between human beings.

1. I am indebted to Professor Ortwin Renn for contributing to this list.

The nineteenth-century focus on the social implications of the physical environment had faded by the 1950s and 1960s, a formative period in which the social sciences expanded rapidly. With the advent of climate and Earth systems science research in the late 1980s and early 1990s, few social scientists had the necessary physical science background to exchange ideas with climate scientists or identify the flaws in their ways of conceptualizing either the human contributions to, or the impacts of, climate change.

Still a third barrier was the discomfort that some social scientists felt with the idea of social engineering, that the social sciences should provide the social equivalent of engineering applications for climate change policy. Climate scientists often suggested that the social science contribution to their work should be in the definition and implementation of government policies for climate change adaptation and mitigation. This reliance on the social sciences to stimulate specific types of behaviour is contrary to major currents in the social sciences in the twentieth century.

For many social scientists, the history of their disciplines since the early 1960s has involved a movement away from politically oriented social engineering towards a more basic, and by implication more scientific, form of social research. The social sciences were often harmed by their forays into policy, including the close association of anthropology with colonialism in the early twentieth century, the US Defense Department's use of research funding in Latin America in the 1960s as an instrument of foreign policy in Project Camelot, and the justification of apartheid in South Africa on a 'scientific' basis by so-called social engineers. In short, the misappropriation of their research in public policy has led some social scientists to embrace a pure rather than an applied approach to research, an approach that is distinctly at odds with the expectations of many physical scientists.

One consequence of the early barriers we have discussed here was that social scientists who were drawn to climate change research often attempted to create a purely social science research agenda for climate and environmental change that was scientifically divorced from the research of climate scientists – just as the climate scientists had conducted their research for decades without mapping the underlying anthropogenic influences on physical processes. For some research topics, this social science-centric approach was obviously legitimate and valuable. But by itself, it was insufficient to meet the growing scientific needs of the field of climate change. Such disciplinary segregation ignores the fact that climate change is a multifaceted interdisciplinary problem that requires an understanding of the full range of interactions between the Earth and its inhabitants.

This brings us to a fourth, very serious barrier, which has nothing to do with ambivalence or misunderstanding but which is almost certainly the major reason for the limited involvement of the social sciences in climate research. Social scientists have never had access to the same level of research funding as their climate science counterparts. Apart from a few notable exceptions such as Norway, social scientists have mostly had to make do with existing and often inadequate research funds. In the USA, it has been estimated that as much as 98 per cent of all climate research funding goes to the physical and biogeochemical sciences. The remaining 2 per cent has to cover all social science research in a set of disciplines that are increasingly considered as crucial to understanding the social impacts and causes of climate change.[2]

Having said this, the major challenge that confronts us does not relate to the capacity of the social sciences to contribute to climate change research, but rather to their ability to fill their rightful place as full participants and even leaders of interdisciplinary research planning for climate change science. The physical and biogeochemical sciences have done a great deal to identify, clarify, and map out climate-related problems and processes. Yet the social science contribution is equally essential if we are to understand the critical problems we now face, including the role of human action in climate change over time and space, and the short-term and long-term impacts of climate change on individuals, economies and societies.

Assuming a more active role in the climate research enterprise will not be easy for the social sciences. Although the current climate research leadership believes in the importance of interdisciplinary research, and specifically in the need for the social sciences to contribute to the climate research agenda, few social scientists have experience of planning for multidisciplinary climate research. If social scientists are to assume a greater role in research planning, we will need a series of changes in the social, physical and biogeochemical climate sciences, as well as in the funding structure for climate research.

This will involve social scientists changing some of their attitudes about the dominance of traditional disciplinary departments and disciplinary research. Disciplinary

2. For a discussion of the role of inadequate funding for social science research on climate change, see *Restructuring Federal Climate Research to Meet the Challenges of Climate Change*. National Research Council, 2009.

institutions will remain important as the source of graduate and undergraduate training, focused research projects, and new scientific hypotheses. In the future, however, the traditional disciplines will compete against interdisciplinary research and education projects. If social scientists are to advance scientific knowledge on climate change, they will need to strengthen their disciplinary bases at the same time as they open their disciplines to greater interdisciplinary training and education. This is a very difficult balance. Most human dimensions specialists receive their initial training in specific social science disciplines. In the future, however, they will probably spend shorter periods in these fields. More people are already being trained in one discipline and working in another. The traditional disciplines need to build upon their strengths and encourage the growth of new, collaborative fields of research rather than competing with them.

Social scientists also need to engage in a major new educational effort which involves both educating physical scientists in the social sciences and educating social scientists in climate science. This will require that the foundations of graduate and undergraduate education in the climate sciences be rethought. Social science knowledge cannot be limited to social scientists. Basic undergraduate social science courses, including economics, demography and social statistics, and possibly cognitive psychology and decision-making, are needed for all climate scientists. Similarly, social scientists need to learn more about the basic elements of the physical and biogeochemical sciences.

There must be new career paths for social scientists who are active in interdisciplinary climate research. Students are attracted to courses and research on anthropogenic influences on the climate and to the study of the role of policy, economics, governance and communication in dealing with climate change. But there is also a need for research scientists who combine the human, physical and biogeochemical sciences to address these issues. In order to produce this new generation of academics, there must be many more interdisciplinary fellowships and postdoctoral positions that are open to social scientists.

Once this new cohort of interdisciplinary research scientists has emerged, an institutional reward structure will be needed that is comparable to the rewards structure for more traditional research. This is particularly important in the social sciences since there is no established career path for the human dimensions of climate science. If support for the hiring and promotion of interdisciplinary social scientists is not provided within the traditional disciplines, new interdisciplinary departments will form and draw scarce resources from the traditional disciplines. In this situation, the contributions of the traditional disciplines to climate science could be weakened and their role in the university diminished.

Solving the problem of underfunding for social science research on climate change is critical to meeting the scientific challenge it poses. If the social sciences are to respond to the scientific challenge, it is essential to persuade those who provide research funding to increase support for human dimensions research. Equally important, financial support for data collection on human behaviour and climate impacts must be increased. Social scientists should enlist their colleagues in the physical and biogeochemical climate research communities to join in calling for increased funding for social science research on climate, even if, as is likely, some of those funds will come from the same pot as their own research funding.

Meeting the challenge of climate change will not be easy. Social scientists have strong incentives to do so, and bring valuable assets to the task. Many excellent and experienced social scientists are already working in the field. But there is a great deal more that must be done. Some of it involves conducting research that crosses new scientific frontiers, which is exciting, and some of it involves slogging through the difficult institutional, educational and research policy changes required to support integrated, interdisciplinary research. Some of it requires changes in the organization of the social science community, and some of it requires changes in the traditional climate science community. The first phase, getting social science research on the climate change agenda, has been completed. Dedicated individuals have successfully shown the value of social science for the broader climate science enterprise. In the next phase of climate change research, social scientists must consolidate these gains, find ways to obtain the necessary fiscal and institutional support for integrated, interdisciplinary research, and take their rightful place among the broad leadership of the climate change research community.

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Psychology at the vortex of convergence and divergence: the case of social change

Rainer K. Silbereisen, Pierre Ritchie and Bruce Overmier

Accelerated social change in many societies has brought macro contexts and their cascading effects on individuals' adaptation to the attention of psychologists. In recent decades, psychological knowledge of the vast effects of broader contexts on behaviour has grown, particularly concerning phenomena such as how people deal with economic hardships and other manifestations of social change.

Psychological science has always been informed by, and is part of, the biological and social sciences. While the biological connection has recently become prominent again, the social science dimension too has gained in importance. This can be attributed to the pressure of accelerated social change. Globalization, migration, demographic shifts and political transition illustrate the increasingly normative instability of societal conditions, even within the span of a single generation (Hofäcker, Buchholz and Blossfeld, 2010).

The concept of psychology as focusing on the individual (for example, as an actor in society, as an agent in economics or as a role player in institutions) is increasingly recognized from different perspectives and by research bodies in various disciplines. Hence it is important to consider the relationship between psychology and the social sciences in general, and between psychology and other fields of study such as economics and sociology. There are many ways to illustrate the relationship between psychology and social science. All human beings live in societies, both influenced by social structures and shaping them. Likewise, we are influenced by and shape our biology. Such observations are explained by the 'epigenetic systems' view advanced by Gottlieb's (1991) theory of human development. It posits a bidirectional interchange between heredity and the environment.

In this paper social change is the vehicle for discussing psychological science as a source of convergence and divergence in its relationship to the social sciences. It is accompanied by two boxes, one drawing more on cognitive dimensions and the other on psychology as a health science.

Social change research

Research on the role of social change in family and individual development exemplifies the fruitful collaboration between psychology and sociology. Bronfenbrenner (1979) alerted developmentalists to their subject's social context. He distinguished between micro, meso, exo and macro contexts. Briefly, the main micro context is the family; the meso context is constituted by interactions between micro contexts (for instance, family and work); the exo context is represented by neighbourhoods and community institutions; while the macro context addresses societal structures and belief systems. These contexts are not constant but change as a function of both life stage and social change. Furthermore, these contexts are thought to have a cascading influence on behaviour through their effect on 'proximal processes'. Such processes promote development through individuals' active participation in progressively more complex and reciprocal interactions with persons, objects and symbols over extended periods of time. An example of research focusing on these contexts is disorganization within a poverty-stricken neighbourhood characterized by an absence of social cohesion and control, thus increasing the risk of delinquency in adolescents via a lack of positive, caring role models. This could reduce the proximal processes' quality of developmental instigation (Sampson, 1993).

An emerging sociological research tradition founded by Elder (1974) endeavoured to explain the consequences of the Great Depression of the 1930s – a cataclysmic period of economic and social upheaval which was of renewed interest in the 1970s – for families and individuals. Interestingly, the data were originally collected by psychologists. Compared with past research on contexts of development, the progress made with assessing proximal processes was evident. This research tradition successfully addressed various crises at the macro level. It also provided the blueprint for research on the consequences of political transitions and transformations after the break-up of

the Soviet political system in the late 1990s. Research on the unification experience in Germany illustrates how the approach identifies and assesses new micro-level demands on families and individuals created by political change. The processes generating the demands, such as the need for individual responsibility in adapting to a profoundly changed work environment, created distinct challenges. For example, a mismatch developed between the society's ideological basis and the behaviour of its institutions, resulting in responses that undermined the system's legitimacy. Typically, we would expect a change in the learning environment at the micro and meso levels, influenced by changes at the exo and macro levels.

China provides an example of research on the effects of large-scale economic reforms on human development. Parental goals and teacher behaviours in favour of the traditional 'shy-withdrawn' pattern of child behaviour changed (Chen and Chen, 2010) in response to the economic reforms that required behaviour favouring individual responsibility, proactive social relationships and motivation for excellence. These changes in care-taker goals and behaviours were rooted in changing contexts at higher levels: from the ideological basis of the society, which valued new forms of enterprise and related work requirements, to the composition of social networks.

Social scientists refer to structural uncertainty when describing political transformation and the effects of globalization in countries such as Germany and China. For instance, rapid technological development and the global dissemination of communications technology dislocate labour markets. Given the current financial and economic crises, employers tend to reduce their uncertainty about profitability by transferring the risk to workers, who then face precarious employment. Those most affected are also those who are the least protected by qualifications or seniority (Hofäcker et al., 2010). Such social science analyses, based on data from many countries, allow psychology to map the dimensions and levels of the new demands confronting people in their daily lives. This requires systematic endeavour, resulting in psychologists developing instruments to assess uncertainties experienced in domains such as work and family (Tomasik and Silbereisen, 2009). An example is the perception that people have, which grows over time, that their employment is at risk because their expectations exceed their qualifications.

The division of labour between sociology and psychology is reversed when conceptualizing individual-level response to challenges and demands. Whereas Elder and others used topic-specific and data-driven categories of economic pressure, recent research has moved away from intuitive categories of action. It has turned instead to established psychological models of motivated behaviour to consider how people respond to challenging situations. Heckhausen's model of developmental regulation is of particular relevance for psychosocial development. It distinguishes two dimensions of action. The first is primary (outwardly directed) versus secondary (inwardly directed) control, while the second is selection (choosing from alternative goals) versus compensation (changing goals or means when confronted with failure).

This results in the classification of four generic types of regulation (Heckhausen and Schulz, 1995). Thus, actively pursuing a particular goal and staying on target by strengthening motivation are a combination of primary and secondary selection, such as looking for a job whatever it takes. Primary compensation refers to situations in which extra efforts and new means are required, such as improving one's qualifications or changing direction. These three goal engagement strategies are beneficial for well-being and other psychosocial outcomes, even when structural opportunities are unfavourable (Haase, Heckhausen and Köller, 2008). If obstacles to goal pursuit persist despite all efforts, people may need to turn to disengagement strategies, such as finding excuses or giving up entirely, saving energy for new attempts in different fields and thereby preserving their well-being. Thus, whether goal engagement or goal disengagement is adaptive depends on the context.

The developmental regulation model has features in common with other psychological approaches which have more or less explicit conceptual relationships with psychosocial development. Recent German social change research – prompted by the breakdown of the Soviet socialist order – demonstrated that people who maintain primary selective behaviours in pursuing new claims are better adjusted in terms of well-being. This was confirmed in the work and family domains (Pinquart, Silbereisen and Körner, 2009). Similarly, studies on the demographic shift toward an ageing population – characteristic of many Western societies – refer to the increased need for lifelong learning and for staying productive even after the traditional retirement age.

The nature of research at the nexus of the social sciences and psychology

Following Coleman (1990), the analysis of change in social structures is undertaken in a three-step procedure. Change at the macro level results in particular demands with which individuals deal in specific ways; the outcome

of these activities potentially leads back to the societal level, thereby influencing the social structure. For Hedström and Swedberg (1996), the three steps represent the following kinds of causal 'mechanisms', by which they mean small-range theories that explain the bidirectional flow of effects between levels of society and the individual. The three are situational, individual action and transformational.

The modes of developmental regulation distinguished by Heckhausen and Schulz (1995) can be conceived as an example of individual action mechanisms. As psychologists, we are not only interested in the situational emergence of behaviours, but also in their role as proximal processes that promote psychosocial development. Heckhausen and Schulz's model is attractive because it addresses the relationship between pursuing age-typical goals and life-course achievements. For example, how young people dealt with the demands of finding a job after graduation determined their actual occupational success and their well-being more broadly.

For social scientists such as Elster (2007), mechanisms at the individual level are at the core of their discipline and are indispensable in explanations of societal phenomena. Interestingly enough, this view omits the two other mechanisms (noted above) distinguished by Hedström and Swedberg (1996), which psychologists regard as integral to social science. Clearly, there are many more individual action mechanisms studied by the cognitive psychology tradition than have been used in research on social change. Researchers such as Kahneman (2003) have shown that individuals often do not act according to rational choice; rather, their behaviour is characterized by various biases. One example is 'hyperbolic discounting'; that is, people prefer smaller, more immediate pay-offs to larger, later pay-offs. This tendency may be triggered by contextual conditions. In the case of the German unification, the East's aspirations for improvement were high as a result of the West's higher prosperity. An unintended consequence was that communities accepted higher debts to satisfy expectations quickly. In times of financial crisis, this became a severe liability (Sackmann, 2010).

Psychological research has utilized only a few of the mechanisms that could explain how people deal with the demands of social change. Nonetheless, psychologists interested in families and children are motivated to go beyond the situational emergence of behaviour. Instead, they study ontogenetic implications, in particular, the advantage of mechanisms such as those spelled out in Heckhausen and Schulz's (1995) model.

The nonexperimental nature of most research on social change probably accounts for much of the divergence between psychology and other social sciences. The result is a discrepancy between the numerous potential mechanisms known from psychological research and the few mechanisms utilized in naturalistic studies on large-scale social change. In contrast, research on decision-making in complex and nontransparent situations often uses abstract scenarios, with experimental manipulation of the conditions. This allows causal interpretations, but is associated with problems of validity and generalization to real behaviour under conditions of social change.

There are few experimental studies that are as explicitly focused on social change as discussed here. One example is randomized control trials to improve parenting and child adjustment by providing employment and income to families suffering from economic hardship, regarded here as a prototypical manifestation of social change's negative effects. Houston (2005) reported that increased income, but not employment by itself, had an impact on children's adjustment, measured by factors such as school achievement. The pathways through which the effects were channelled seem different from those examined in previous research. Rather than improved parenting, it was qualitatively better childcare and opportunities for out-of-school experiences, received after the intervention that generated improvements. Such research yields further insight into the processes by which a variety of contextual conditions influence the development of children and adolescents.

Interdisciplinary research on social change in general, and on political transformation in particular, has high relevance for social policy formation. Examples include comparisons of cohorts that indicate different stages in the social change process within a society (Schoon, 2006), comparisons between countries representing different levels of change in political conditions (Kohn, 2010), and longitudinal studies following economic change within a society as it evolves (Chen and Chen, 2010). There are also quasi-experimental comparisons, such as studies on comparisons between East and West Germany (Silbereisen and Youniss, 2001). Together these approaches provide policy indices by identifying social groups that require extra support to cope with the challenges of political transition and globalization.

Prospects for constructive convergence and divergence

Attractive prospects for collaboration between psychologists and social scientists include integrated

research endeavours utilizing a combination of correlational surveys and longitudinal studies, experimental modelling and randomized field trials, all with an explicit policy perspective. Psychologists are receptive to learning more about situational mechanisms at, and transformational mechanisms from, the individual action level. By studying the effects of social change on individual adaptation and development, psychologists address the limited scope of actual social mechanisms studied thus far (Mayntz, 2004). The consequences of individual adaptation to change in societal structures are rarely addressed, except by some community and social psychology research. Wright (2002) found that people are driven to collective action by the perception of disadvantages for their own group and of the weakness of their opponent. Some social institutions' inherent flexibility may also contribute to their malleability (Macmillan and Biaocchi, 2010).

Beyond a certain universality which is often emphasized in experimental psychology and cognitive science, collaboration with social science will strengthen the understanding of how psychological phenomena are influenced by societal forces, especially during accelerated social change. Kohn (2010) found that changes due to political transformation in people's position on a social stratification ladder influenced aspects of personality that are often conceived as stable during adulthood, such as intellectual flexibility. A knowledge-based society needs to promote such change. But we know that in one extreme case, the collapse of the Soviet Union and its allies, there was clear continuity across historical time. Those higher up in the social stratification were more intellectually flexible because they enjoyed more complex working conditions, which promoted intellectual development.

The reality that human development is shaped by changing societal constraints requires more interdisciplinary research with the social and also the biological sciences. Broader interdisciplinary collaboration helps by capturing 'bio-psycho-social' functioning (Caspi et al., 2003). Champagne and Mashoodh (2009) showed that people sharing a particular allele tolerate life event stress better at the physiological level. This has consequences for outcomes such as depression. Such research marks the beginning of interdisciplinary endeavours to study social change, reminiscent of Gottlieb's (1991) epigenetic systems view.

Accelerated social change in many societies has brought macro contexts and their cascading effects on individuals' adaptation to the attention of psychologists. In recent decades, psychological knowledge of the vast effects of broader contexts on behaviour has grown, particularly concerning phenomena such as how people deal with economic hardships and other manifestations of social change (McLoyd, 1998). Nevertheless, a new effort at orchestrating resources to explain pertinent phenomena and inform policy decisions that can facilitate positive adaptation to change is both timely and promising.

Obstacles to cooperative efforts remain. One is compartmentalized funding of research strategies, which offers little encouragement for collaboration across disciplines. Another is the training of the next generation of scientists. Although there have been modest efforts to look beyond disciplinary boundaries, much remains to be done to promote interdisciplinary concepts and methodologies that address social change. The international 'Pathways to Adulthood' collaboration (2009) is an exception. This initiative brings together various sociological and psychological research groups, fosters comparative secondary analysis that addresses social change and psychosocial development, and offers postdoctoral fellowships. It is a beacon of hope for a new generation of policy-relevant research that constructively struggles with issues of convergence and divergence (www.pathwaystoadulthood.org).

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Applications of psychology to human health and well-being

Health and well-being are integral components of public policy in most countries. While anchored in values that approach universal acceptance, they also reflect enlightened self-interest. Economists recognize that they are central to economic performance in industrial and knowledge-based economies. Those experiencing social change, for example those who operate in economies in transition, or who experience institutional instability or migration, may be doubly challenged to manage the effects that generate poorer health outcomes.

To advance the World Health Organization (WHO's) objective of 'achieving health for all', the International Union of Psychological Science (IUPsyS) established official relations with WHO to bring science-informed psychological knowledge to targeted WHO programmes and policy development. In the context of health and well-being, social change is a particular concern for established societies undergoing rapid transition as well as those striving for rapid development, including the countries and regions cited in the article above. Drawn from the IUPsyS–WHO collaboration, the challenges of adherence to health interventions generally (WHO, 2003) and of achieving immunization in particular (Carr et al., 2000), illustrate how psychological research supports health and well-being in the midst of social change.

Adherence to treatment is essential for the efficacy of any health intervention. Since 1960 there has been a dramatic increase in new treatments for chronic and acute health problems. Notwithstanding these science-based breakthroughs, a major contemporary challenge is increasing effectiveness by creating conditions that enable people to derive maximum benefits from available treatments. Adherence early in the treatment process enhances long-term maintenance. Psychological science and practice concerning adherence looks at contributing factors which may be systemic, biological, social, cognitive, behavioural or emotional.

Contrary to some popular beliefs, the greatest challenge to achieving immunization today is behavioural – in terms of the initial immunization and the follow-up often required for effective immunization. To address this challenge, IUPsyS collaborated with WHO to produce a behavioural science learning module on immunization (Carr et al., 2000). Saxena (2000) noted that immunization is one of the most cost-effective methods of decreasing mortality, morbidity, disability and the overall burden of disease, making it a public health priority. Drawing on a wide range of psychological and other research focused on changing health behaviour and communication, the module identified factors that determine the effectiveness or failure of immunization interventions. These factors included knowledge (including perceptions and misperceptions), religious and philosophical concerns, socio-economic status, birth order and family size, family mobility, and social and political instability. It is evident that the frameworks for analysis of behaviour mentioned in the accompanying paper by Silbereisen et al. are especially pertinent, especially those of Bronfenbrenner, Elster and Heckhausen. Policy-makers may question the value of such theories or of related psychological and social science research, but when their pertinence is directly applicable to such basic components of health and well-being as immunization, the relevance is immediately obvious. (**Rainer K. Silbereisen, Pierre Ritchie and Bruce Overmier)**

Psychology applications to human challenges

As the science of the motivation, thinking, and behaviour of individuals or groups, psychology contributes to the resolution of many challenges that humans face in their daily lives. Here we hint at a few such challenges.

The 2008–2009 worldwide economic crisis sprang, inter alia, from badly managed personal economics regarding home-buying, savings and retirement planning. This means that a better understanding of human decision-making in the economic arena is important. From research initiated by the psychologists Kahneman, Slovic and Tversky (1982), we have a better understanding of how people make choices and how heuristics and biases determine them. Their work suggests that classical economics' description of how people make economic decisions is unnatural for humans and at best incomplete. People are not usually rational in their decisions and choices, as their actions are influenced by a wide variety of 'default shortcuts' that are intuitive, automatic, unconscious and associationistic, reflecting impulsivity and discounting future values. Even analytical and conscious human decisions are distorted by a variety of biases, such as risk aversion, loss aversion, status quo preferences, self-esteem needs and altruism (Kahneman, 2003). In cognitive neuroscience (such as Smith et al., 2002), psychologists are actually mapping the operation of these mental biases in the brain using brain imaging.

Modern knowledge of human decision processes can guide public policies on default conditions that favour societal goals, while allowing the individual free choice. Default examples are found on a driver's licence for organ donation, and on contributing to retirement savings plans (allowing opt out in both cases). This approach, rather than the more common one of the default requiring no contribution but allowing opt in, saves lives and makes them more secure, consistent with contemporary social values in the societies that have adopted them (Johnson and Goldstein, 2003; Madrian and Shea, 2001).

Furthermore, knowing how humans perceive, learn and think can contribute to safety and justice. Attention is one of the issues that cognitive psychology has studied intensively. When attention is focused on some goal object or transactional partner, all other issues are unlikely to be seen or heard. This 'inattention blindness' reflects the limitations of human information processing. In many situations, inattention blindness is a hazard. One example of critical importance is for driving behaviour in ever more urban environments. Cell phone use by both drivers and pedestrians has been of special interest. Psychologists have provided the data that has led governments to ban the use of cell phones, even hands-free ones, while driving because it impairs driving, perhaps as much as being intoxicated (Strayer and Drews, 2007).

Cognitive psychologists are also interested in the teaching and learning of skills. The methods that are best for different forms of learning and for maximizing job transferability and usefulness (Healy and Bourne, 1995) are especially relevant when job training is increasingly carried out in simulators or in virtual reality environments for cost reasons.

Another contemporary area of relevance, especially in respect of justice, is the new understanding of the accuracy of memory and of eyewitness reports of events. Both have been shown to be subject to error. Errors arise from bias and even from information received after the event in question. Indeed, it is possible for clever questioners to create circumstances in which eyewitness memories, descriptions and testimony are proven unintentionally false (Loftus, 2005). Psychologists are developing ways to query eyewitnesses and to conduct eyewitness identifications that minimize such errors (for instance, Wells and Quinlivan, 2009). (**Rainer K. Silbereisen, Pierre Ritchie and Bruce Overmier)**

Flash
The psychology of sustainability

Consumerism, the depredation of natural resources, overpopulation, social inequity and pollution form important human sources of environmental degradation. While seeking solutions to the current environmental dilemma, we must consider variations in human behaviour. In so doing, we can hope to ensure that human lifestyles not only meet the needs of present and future generations but also contribute to the protection of the environment.

Environmental psychology is the branch of science that deals with the study of interactions between human behaviour and the environment, including those whose objective is to preserve our planet's natural and social resources. It studies the psychological dimensions of sustainability. Research in this field since the late 1960s has provided us with valuable information on the underlying reasons explaining individual support for sustainability, and their wider repercussions. Environmental psychology has demonstrated that sustainable behaviour finds its origins in pro-environmental psychological antecedents, and produces positive psychological consequences.

Sustainable behaviour comprises a series of actions: pro-ecological, altruistic, frugal, equitable … All these forms of behaviour seek to strike a balance between human needs and environmental protection. The psychological antecedents of sustainable behaviour encompass a variety of tendencies or mental states: favourable attitudes; affinity towards social and biological diversity; environmental emotions; pro-ecological beliefs, motives, norms and values; and behavioural capacities such as environmental knowledge, pro-ecological skills and competencies. Physical contexts (weather, access to natural resources, access to technology and so on) as well as normative ones (laws, customs, religion and so on) also play an important role and can be powerful stimulators for sustainable lifestyles. What is more, research in environmental psychology has demonstrated that contacts with nature help in the recovery of exhausted mental capacities, and that the perception of the restorative properties of natural environments determines a significant part of people's pro-ecological behaviour variance. The promise of a better natural environment is a good incentive for sustainable behaviour.

Sustainable behaviour has a distinctive purpose: achieving people's well-being in the various spheres of human existence. These spheres include the enjoyment of a healthy and meaningful life and subjective well-being. In other words, 'happiness' forms a visible psychological outcome of a sustainable lifestyle. One of the challenges for environmental psychology is to enhance our understanding of the causal relations between pro-ecological behaviours such as frugality, fairness and altruism, and well-being.

The expanding field of environmental psychology will continue to provide valuable information on ways of achieving more sustainable lifestyles, as well as on the benefits that are associated with such a transition.

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6.3. Regional variations

Introduction

Trends and innovations across the social science disciplines should also be considered regionally, since research agendas may vary from one area to the other. Craig Calhoun, a privileged observer of social science in North America for many years, gives his view of the recent social science trends in his region. Since it is the most productive in the world and because many observers believe its research agendas have tended to be hegemonic since 1960, this overview might also suggest some elements of the immediate future for the social sciences. U. Kalpagam provides us with a trend report on current social science research in India, a fast-growing producer of social science knowledge. Like Calhoun's, her insight is individual. But it is informed by years of observation and practice in both anthropology and development economics.

As readers will see, these two views, one from the North and the other from the South, are different and contrasted. Other cases could have been selected (for Japan, see Brisson and Tachikawa in Chapter 5) and should be studied in the future. Obviously, social science research agendas and innovations are not alike everywhere (see also Chapter 2). Recognizing and encouraging their diversity should be an important element of future science policy-making.

North American social science: trends in and beyond disciplines

Craig Calhoun

Summarizing intellectual trends in North American social science is a challenge. All the disciplines are large and internally heterogeneous. All are methodologically diverse. All include sharp critics of the dominant tendencies. Moreover, there are major interdisciplinary fields that both have their own character and shape the participating disciplines. Not least, there has been a major growth in advanced professional training in fields related to social science, and these too exert an influence.

Only a few emerging patterns cut across the various fields, and most involve research methods or analytic strategies. One is increasing formalization and quantification. This is contested and far from universal, but undoubtedly significant. It is partially counterbalanced by strong qualitative research traditions, some of which have become more explicit about methodological issues. Another general pattern is a resurgence of experimental research, not only in psychology – where it has long been central – but in economics and to a lesser extent other disciplines. Closer ties to biomedical science have reshaped parts of a range of disciplines, from neuroeconomics to medical sociology and physical anthropology. Network analysis and the use of techniques drawn from complexity theory have been influential in several fields. Historical social science grew dramatically in and after the 1970s; its growth slowed in the 1990s but seems renewed. Interdisciplinary political economy is enjoying a resurgence boosted by analyses of the current economic crisis.

North American social science is highly international. Researchers from many different countries work at North American universities, and with US and Canadian researchers, study other parts of the world and transnational

or global phenomena. The extent to which internationally oriented researchers from different disciplines are connected through area studies has declined since the early 1990s, though there are some indications of renewal. Increased attention to India and China reflects both their growing global prominence and substantially increased academic linkages to the USA. At the same time, international studies has itself become a substantial interdisciplinary field with global-scale issues enjoying increased attention. Security is perhaps the most prominent.

Some substantive issues have attracted major attention across the disciplines. Health and health care have surged as themes for North American social science, partly reflecting the availability of funding, partly the problems of the US health care system, and partly the global prominence of issues such as AIDS and other infectious diseases. Life course research is prominent, for example on childhood and ageing. Environmental issues are equally prominent, and the attention paid to them is growing rapidly, though the social science engagement in environmental research is smaller than the public prominence of the issues would suggest. Migration research has seen rapid growth since the early 1990s, influenced both by immigration into the USA and by more global patterns. While this sustains interest in ethnicity and diversity, engagement in 'multiculturalism' and 'identity politics' has declined from a late-twentieth-century peak. Urban issues command increasing attention as the proportion of the world's population living in cities expands. There has recently been a significant increase in research on religion and related themes like secularism.

Some trends are new enough that we cannot confidently predict they will take root. Two seem significant enough to mention. Social science is beginning to connect more and more to the field of design, which has grown rapidly in recent years and itself connects architects, product designers, graphic designers and a range of others. The connections are perhaps strongest in anthropology, but also include sociology and other fields. Studies of technological innovation seem to be gaining attention not only in science and technology studies, which has been a relatively compartmentalized and separate field from the main social science disciplines, but also in economics, sociology, anthropology and other fields.

Anthropology

US anthropology has long been shaped by its four major subfields: cultural anthropology, linguistic anthropology, physical anthropology and archaeology. This has been the source of division, not least because some physical anthropology programmes have shifted to biomedical sciences. It has also been the basis for a greater engagement in environmental research than has applied to most other social sciences.

While many anthropologists continue to study small-scale or low-technology societies, the discipline has increased its attention to state-level organization, to smaller populations in large, complex societies (whether classrooms, gangs or clinics), and to questions about postcolonial and global relations, including human rights, cultural survival and media. Particularly active fields include medical anthropology (together with studies of the body, suffering, political economy and the cultural contexts of specific diseases such as AIDS), urban anthropology, with its close links to migration and transnational research, and environmental research, in which archaeologists as well as physical and cultural anthropologists are active. Studies of religion have enjoyed a recent renewal, and studies of science and various other fields of expert practice have become more prominent.

One of the most striking developments is in the ethnography of design. There is a growing demand from the design industry for anthropologists to study the ways in which people use consumer products and inhabit larger-scale designs such as buildings or even bureaucratic systems. Numerous anthropologists are now employed in design; academic research and training are following this trend.

Communication

The field of communication has grown dramatically in recent years. It has incorporated research from several distinct traditions: rhetoric and speech, small-group and interpersonal communication, performance studies, film studies, public relations, political communication, mass media, journalism, and now new media and information technology (IT). It has also overlapped and contributed to the growth of interdisciplinary cultural studies and critical theory.

Journalism remains for the most part a separate professional field, though connections are growing, not least due to new media's impact on traditional print and broadcast journalism. More generally, communication studies have grown partly because of high student demand and the need to instil the professional skills required by various media industries. There is no single, dominant model for how this emerging field should be organized, so there are examples of communication as a department of social sciences and others of it as a professional school.

Among the big questions in communication research today is the fate of the 'legacy media' such as newspapers.

The issues include business models, intellectual property regimes, shifting text-based technologies, and the rise of visual media and with them, visual rhetoric. More generally, the field of rhetoric is making a comeback, not just as the pursuit of persuasion but also as the study of situated reason (important in political theory too). Related to each, there is considerable engagement with questions about the organization and vitality of the public sphere, both in democratic societies and on a global scale.

Economics

Economics has perhaps the greatest internal agreement about the standing of different sorts of work, and yet researchers differ on theories, empirical methods, and analyses of major events such as the current economic crisis. There are differences within the dominant disciplinary mainstream, and between it and self-identified 'heterodox' economists. There is a resurgence of Keynesian analyses in the wake of the financial crisis, and there are those who think this is folly.

Since the late 1970s, American economics has grown larger and somewhat apart from the other social sciences. A basic intellectual theme was rethinking the structure of economic analysis from the 'micro' upwards, relying on models of strategic action, rational choice, game theory and individual decision-making. Microfoundations were the key to major advances in mathematical models and formal theory, and came to exert a dominant influence. Macroeconomics languished. While much of disciplinary economics focused on explanatory models grounded in accounts of representative (that is abstract) economic actors, finance grew as a field largely based in business schools rather than in arts and sciences and economics departments. Its focus was partly on the development of predictive models, and also on 'financial engineering' or the development of instruments and operations (for example pricing algorithms) to accomplish various kinds of transaction.

Since the 1990s, there has been a growing trend towards empirical studies of economic behaviour. Many of these have focused on limits to the assumptions underpinning formal models. Behavioural economics has addressed the limits of rationality, decision-making with imperfect information, and the role of culture and emotion in economic decisions. There has also been some renewal of institutional economics, with more activity in the wake of the massive market crisis of 2008. This has been linked to increased attention to social and cultural issues. Not least, there is resurgent interest in political economy, growth and development, with economic history informing approaches to each – and possibly some renewal of connections to other social science disciplines.

Geography

Satellite-based global information systems are producing a host of new data about the spatial organization of human life. Changing patterns of urbanization and migration are calling attention to the rescaling of social and political life. Climate change is just one of the factors demanding more studies on human–environment interaction. Shifting patterns of globalization call for the renewal of place-specific accounts of resources, shortages and transnational relationships. Prominent issues and new tools are thus converging to bring geography more centre stage than has been typical in the past.

Geography in the USA got its start mainly as physical geography. Cultural and human geography lagged (though less so in Canada). The discipline has long been divided between more 'scientific-technical' geographers and those with social science and humanities leanings. Some of the new trends may be reducing that division. In any case, they are bringing geographers into renewed interaction with anthropologists, sociologists and other social scientists. Perhaps the single most active shared endeavour is grasping the implications of massive urbanization, with its juxtapositions of highly planned and professionally designed developments and the 'spontaneous' (that is, locally and often illegally planned) slum settlements. Almost as active are closely related questions about multiple and overlapping agencies of power, and the ways in which government and political economy are being rescaled (not so much reduced, as ideology would have it) in the context of neoliberalism.

History

Long organized overwhelmingly in terms of period and place, history has in recent years engaged more with cross-cutting thematic issues. These include the impacts of colonialism and the challenges facing postcolonial societies, questions about women's history, gender construction and sexuality, and the analysis of different cultural forms. Examples range from popular entertainment to elite political culture, and from religion and religious dissent to cultural influences on economic life and constructions of ideas such as nature.

History is linked to all the other social sciences, particularly through the historical subfields that exist in all disciplines. The Social Science History Association is a particular hub for these connections. From the 1960s through to the 1980s, questions of class, state and political economy informed

perhaps the strongest links, along with gender, family and demography. The links to sociology, politics and economics were especially close. While these remain important, connections to anthropology and literary studies have grown stronger. Historians have recently asserted their identity as humanists more than as social scientists, though the field encompasses both.

The teaching of history remains largely organized in national terms, but this approach is increasingly complemented by other viewpoints. World history has become a rapidly growing focus, both through new research on transnational and global patterns and by changes in the syntheses of history for teaching and broader audiences.

Likewise, although the teaching of history in both the USA and Canada has long focused disproportionately on Europe and North America, attention on other parts of the world has expanded in recent years, and historians are even more central to area studies than before. The history of Europe has been rethought as simply one part of a broader world history. Even approaches to national history have become increasingly transnational. US history now puts more emphasis on migration, shifting international contexts, and ideas from abroad.

Political science

Political science is organized into four main subfields only loosely integrated with one another. The largest in the USA is American politics. Canadian politics is correspondingly the major field in Canadian political science. In both, case studies of elections, campaigns, political organizations and legislative processes loom large. The academic research emphasis is on the analysis of underlying causal relationships rather than immediate events.

Political theory is largely focused on normative theory, and on the history of political thought. After many debates over the relevant merits of liberal and communitarian perspectives, attention has shifted to questions of rights, including issues of migration, multiculturalism and cosmopolitanism. Democratic theory is enduringly important. Recent years have seen substantial work in the neo-Kantian tradition, renewed engagement with Hannah Arendt, and greater attention to poststructuralist theory. Recently, religion in the public sphere and questions about secularism have also become prominent.

One of the biggest changes in the discipline in recent years has been an analytic turn in comparative politics. This has sharply reduced the participation of political scientists in area studies research and has emphasized formal analytic methods, including game theory and rational choice theory. At the same time, there have been significant debates over the role of culture in politics. Transitions to democracy have been a central focus, but often redefined with attention paid to the efficacy of democratic institutions. An emerging trend is to pay more attention to institutional structures that enable democratic governments to be effective.

International relations is both a subfield of political science and a quasi-autonomous discipline. For many years it has been informed by the dominance of a 'realist' perspective that emphasizes the extent to which state interests govern international relations. This has been both contested and complemented, notably by 'constructivist' arguments, which emphasize the extent to which state interests are neither purely instrumental nor fixed. Increasingly, simple argument has given way to incorporating both perspectives. The field is engaged with the transformations of international politics post-1989, post-2001 and post-2008. Perhaps the most distinctive trend is an effort to understand the role of religion in international politics. This is a challenge because the field was founded on the idea that, since the 1648 Peace of Westphalia, religion has been a domestic matter and international relations are secular.

Psychology

New trends in psychology have pulled academic research increasingly into the domain of natural science. While social and developmental psychology remain active, they are less closely connected to other social sciences. Leading trends in the field (including cognitive studies) have linked to computer models of the mind and to empirical biological studies of the brain as well as to behavioural experiments, psychopharmacology and related studies of the psychological impact of physiological and metabolic factors, and evolutionary research.

Psychology is distinctive partly because experimental research is a dominant methodology. Few other social sciences work largely through experiments, though their role is growing in economics. More formal decision theory and more empirical studies of economic behaviour have built links between economics and psychology. These extend to studies of cognitive and neural processes, which in psychology are pursued using a wide range of non-economic questions.

This academic research trend towards natural science is paralleled by the engagement of many professional psychologists in practical work linked to hospitals and biomedically oriented social service agencies, and by the rise of drug therapies in clinical practice. At the same time,

many psychologists continue to work in education and testing, in clinical and counselling practices not primarily oriented to psychopharmacology, and in fields such as industrial psychology and human resources management. Many research psychologists continue to focus on issues related to these varied contexts as well as on issues like the impact of poverty on children. The very scale of the field allows for enormous internal diversity. Non-academic employment has contributed dramatically to the growth of the discipline. Academic programmes exist to train clinicians, counsellors and other practitioners, and these fields also produce research, some of it more closely related to other social sciences.

Sociology

Sociology is among the most internally diverse of the social sciences. In recent years, it has been marked by such contrasting trends as a renewal of ethnographic research and increasing emphasis on complex quantitative methods. It is a sign of the field's diversity that the American Sociological Association is not organized into a handful of divisions but into some 45 sections with anywhere from less than 300 to more than 1,000 members. Among the largest are crime, law, and deviance, medical sociology, and the sociology of culture, although the size of the subfields does not strongly correlate with their prominence.

Sociology has long been pulled towards both science and professionalization, and towards informing public discussion and direct engagement with social problems. A renewal of 'public sociology' has been prominent in recent years, and appears in the emphasis on teaching, reaching broader audiences and informing policy. It is also reflected in the choice of research problems. Many US sociologists have taken up such issues as incarceration, inequality, and sexuality, which are at the root of major social controversies in the USA. Canadian sociologists have historically had strong engagement with social problems and the state delivery of social services. The sociology of health and health care is particularly strong in Canada. Other major issues are clearly of interest in both countries, from migration to the intersection of race, class, and gender, ageing, shifting patterns of urbanization and the impacts of globalization.

Areas of sociology that have been especially active in the recent past include network analysis and formal techniques for the study of social structure, economic sociology (which combines cultural and organizational research in an approach to economic institutions), and, after some years of relative stagnation, political economy. Sociologists are making more links to natural sciences, with research on health and a growing engagement with cognitive science and genetics. Interest in culture remains high, and overlaps the growing interest in religion and in studies of science, knowledge and technology. Happily, research combining quantitative and qualitative methods is also becoming more common.

Interdisciplinary fields and connections

Exciting new work flourishes at the intersections of disciplines – as psychology informed the development of behavioural economics and anthropology informed cultural history, work on religion is now informing international politics. Most of these intersections do not become new fields. However, like historical work in social science, some do achieve enduring intellectual connections supported by publications and associations, albeit without establishing bases in specific university centres.

The most enduringly important interdisciplinary fields in North American social science have addressed area studies. These flourished especially in the post-war era until the 1980s, but then lost some support – ironically amid enthusiasm for globalization after 1989. A renewal seems underway, this time with an emphasis on different definitions of areas, and on issues that connect or cut across areas. The renewal is guided partly by recognition of the complexities of globalization, and the understanding that context-specific knowledge is both more accurate and more practically useful. It is also informed by the decline of US hegemony, the emergence of a new set of global powers with different regional zones of influence, and the question of how multipolar or multilateral relations might develop.

A number of other interdisciplinary fields have also become more important. Among them are demography and population research; studies of gender, race and sexuality (which are disciplinarily cross-cutting); cultural studies (which link the humanities and social sciences), and cognitive science (which links psychologists and other social scientists to neurologists, physiologists, computer scientists and philosophers). Studies of new media, though still underdeveloped, are also growing, and link researchers in anthropology, sociology and communication to those in engineering and computer science.

Professional schools

Social scientists are also active in interdisciplinary research and teaching focused on fields of professional practice taught in professional schools, such as business, law, education, social work and different health fields.

Professional schools have accounted for most of the recent growth in US academia. This has changed the circumstances of US social science. Business schools, for example, employ

economists (focused especially on finance), psychologists, sociologists (focused especially on organizational behaviour) and historians (focused especially on business history) in an interdisciplinary milieu – alongside other fields that draw on social science, including operations research and marketing. Medical anthropology and health economics are prominent in schools of public health; sociology and psychology are important in the training of nurses and teachers; and research on law and economics has become prominent in many leading American law faculties, often supplanting previous links to political science through constitutional law.

Professional schools provide jobs for new Ph.Ds from the social sciences. Likewise, links to professional fields are a source of vitality, new questions and access to new data. But professional fields are organized differently and often draw social scientists into different publishing, research and teaching agendas. This means that intellectual links are weaker than might be wished. Historically, social scientists often kept professional, applied work at arm's length because they regarded 'pure science' as more prestigious. Now professional schools are often moving to develop their own Ph.D. programmes, many of which are substantively focused on social science but are in competition with disciplinary departments.

While this trend is true of both Canada and the USA, it is much sharper in the USA – not least because inequalities among US universities (and among faculties or schools within the same universities) are more pronounced.

Background resources

Annual Reviews: these are published for most disciplines by Annual Reviews, a non-profit scientific publisher, and provide bibliographical resources for recent trends.

Many disciplines publish relatively general, non-specialist journals; see for example:

- *American Psychologist*
- *Canadian Psychologist*
- *Contexts* (sociology)
- *Perspectives in Economics*
- *Perspectives in Politics*
- *American Anthropologist* (less clearly non-specialist).

Craig Calhoun

Has served as the President of the Social Science Research Council (SSRC) since 1999. He also holds the title of University Professor of the Social Sciences at New York University (NYU), and is the Founding Director of NYU's Institute for Public Knowledge. He has written on culture and communication, technology and social change, social theory and politics, and on the social sciences themselves.

Image

Images are a new concern for social science, despite the fact that they have been studied for centuries in the humanities. Triggered by the new status of the image in contemporary societies, a whole project of cross-disciplinary studies, sometimes called visual studies, has developed since the late 1980s. Images are both an object and a method of inquiry in this new field of research. Its growth started when art historians and media theorists extended the boundaries of their specialties in order to analyse today's massive production and circulation of images on television, in the entertainment industry and on the internet. Much has yet to be done in this latter subfield. Using semiology, iconology and other techniques and theories, researchers look for analogies and hidden subtexts in the images. The relative concentration or scarcity of the images shown to audiences on the mass media is also a topic of inquiry. Sociologists, psychologists and anthropologists are interested in the ways individuals build their self-images and use images and visual signs to draw social boundaries between themselves and others. Iconoclasm and iconophilia as well as the strategic uses of symbols and images in politics and social movements are among the other emerging topics related to this new interest in the image. Computer games and a whole range of amateur productions of images are also being studied. However, ways of looking critically at images are not taught in most schools and universities.

Instruments of visualization are also becoming direct elements in the process of knowledge production and diffusion, and not merely tools of representation. The visualization techniques of the sciences and the social sciences are being researched more intensively. This raises new epistemological questions. It also implies new questions about cognition and its visual dimension. Brain research is thus part of social science's 'iconic turn'. Brain imagery has long been a major tool in the development of the neurosciences. However, only recently have research programmes like neuroaesthetics, which looks for the invariable criteria for beauty or aesthetic pleasure in the human brain, developed at the borders between these sciences and the social sciences.

Research on the image is thus another example of the diminishing divides between the social and natural sciences. Studying images requires both types of sciences to be more aware of their cognitive procedures. Images could thus become interesting loci of self-reflection for the social sciences.

International databases and data archives

International databases and data archives are essential tools for overcoming knowledge divides between different areas of the world, and for opening up the possibilities of international and interdisciplinary research. The collection and the circulation of these data have seen considerable changes since the 1990s. At first, social science data were local or were organized at a national level through censuses and sample surveys of various kinds. The development of international databases and data archives started with economists and political scientists in the 1950s. They developed data on national incomes, the stability of nations and political cultures. The early programmes to create international comparative databases were often supported by international organizations such as the United Nations and the Organisation for Economic Co-operation and Development (OECD). Other examples of such databases were National Election Studies, General Social Surveys, Eurobarometers and Latinobarometros, and the International Social Survey Programme. An International Federation of Data Organizations was created in 1977. The International Association for Social Science Information Service and Technology represents the new professions of data archivist and data librarian.

In the past decades, data with different statistical and technological formats have been made more interoperable. Access has been extended, thanks to the internet. Technological changes have also enabled some researchers to tabulate their data online. The development of global research programmes on the environment and its interactions with demographic, socioeconomic and behavioural changes triggered growth in the number and quality of international social science databases. Data from satellites and geographic information systems have become more widespread and more important for social and natural scientists.

These developments have numerous scientific consequences. Many researchers agree that the recent accumulation and standardization of data are a precondition for developing new and more robust theories in the social sciences in the coming decades. Moreover, globalization requires the development of large-scale and global studies and inquiries. The growth of, and wider access to, international databases and data archives have raised expectations. However, this growth is not going as fast as it should to deal with many complex topics.

Trends in social science research in India in recent times

Umamaheswaran Kalpagam

The post-liberalization period in India (generally noted as the period since 1991) has seen marked shifts in the focus of the country's social science research. This inference and the following analysis are based on a study of India's leading social science journals and books of recent times, as well as on the debates between social scientists in the weekly journal *Economic and Political Weekly*, which is widely considered a leading national social science journal.

The Indian Council of Social Science Research (ICSSR) undertook a review of social science in the country in 2007. My analysis was informed by this review, along with another evaluation of the state of social science in India, this time conducted by a team headed by Partha Chatterjee for the Social Science Research Council (SSRC) (New York) in 2002. The review of the trends that follow is, nevertheless, largely the perspective of an individual who has formed her opinions and views through active engagement in the years she has been a member of the Indian social science community.

Social scientists have reconfigured their domains and objects of analysis, which has led to certain issues moving into the foreground while others seem to have receded. The newly emerged disciplines of development studies, gender studies and urban studies gained vitality even as they became more interdisciplinary, while transdisciplinary awareness grew with the emergence of new fields like social studies of science, human development, and the cognitive and behavioural sciences.

Development economics constitutes a substantial part of development studies, encompassing areas such as development planning and policy, labour economics, environmental economics, rural development and urban economics. Empirical and policy-oriented studies on liberalization and the reform process have moved to centre stage, displacing the earlier focus on planning studies (Nayyar, 2008). This work focuses on regulatory frameworks, macroeconomics, sectoral analysis within a global open-economy framework, and cross-border causes and effects. Management studies have grown in an unprecedented manner, and business economics grapples with the impact of globalization on Indian business. Labour economics has concentrated on informal-sector workers, who account for 93 per cent of the workforce, from a largely policy perspective given the International Labour Organization (ILO) thrust on 'decent work' and 'social protection' (Oberai and Chadha, 2001). An awareness of the increased vulnerabilities of informal-sector workers due to globalization and the liberalization process has led to informal-sector studies focusing on issues of livelihood security and social protection. Further labour studies have focused on the workers in the new global economy, such as those in the IT sector (Jhabvala, Sudarshan and Unni, 2003).

Environmental economics has received some thrust, with more attention being paid to links between poverty and the environment and to the degradation of common property resources – especially water, land and forests – as well as to appropriate institutional mechanisms to prevent such degradation. The economics of climate change is only now gaining attention.

Perhaps the most remarkable shift in development studies is the focus on social sector development, especially education and health (Dreze and Sen, 2005). Such studies have highlighted the problems of public service delivery by state agents, calling attention to the issues of development governance (Rustagi, 2009). The possibility of public–private stakeholders in the social and physical infrastructure has also received attention. The impetus for studies on social sector development is unarguably the attainment of the UN Millennium Development Goals (MDGs). Inspired by the work of Amartya Sen, food security, nutrition and employment security studies have brought governance, accountability and participation issues to the fore, and development studies are increasingly grappling with issues of rights-based development. Decentralization, democracy and governance issues, which have been highlighted by

civil society organizations in recent years, have undoubtedly found their rightful place in the social science agenda. Simultaneously, democratic grass-roots governance and women's representation have gained constitutional legitimacy. The politics of modernization has gripped India's social movements as a result of displacement and marginalization through industrialization, urbanization and dam construction, and social scientists have also paid attention to these concerns (Baviskar, 2004). Studies on rural development have examined the present agrarian crisis, rural women's development and empowerment strategies through micro-credit, property rights, grass-roots leadership and entrepreneurship. Furthermore, these studies have investigated how practices like supply chain management and futures trading in commodities could transform the rural economy, since agriculture is being drawn into global trade (Kalpagam and Arunachalam, 2008).

While there has been greater gender sensitivity in development studies in recent years, gender studies have moved away from their earlier link to development studies, which was all too evident in the earlier phase. In recent years, gender studies have encompassed a broad range of issues that include development, but also law, culture, sexuality, violence, science, politics and media. As a discipline, it has confidently positioned itself to handle challenges in the domains of policy, movement and activism as well as epistemology. Urban studies have focused on urban governance issues, the economic and cultural impacts of globalization, and the role of the media (Vasudevan, 2001).

Studies in sociology have examined the effects of globalization on kinship and marriage, embodiment and identity, youth, caste and communal violence, as well as minorities, the nation-state and violence (Thapan, 2009; Chatterjee, 1993). Analyses of caste, which have been a staple of Indian sociology, have gained new dimensions with the resurgence of the politics of caste identity, while breaking free from the older paradigm. This resurgence was due to protective discrimination policies and caste-based mobilization in electoral politics (Gupta, 2004). A remarkable development was the increase in cultural studies of *Dalit* (the Untouchable and other low castes), which coincided with the national emergence of *Dalit* political power. While there have been some initiatives to study Indic religions, they have lagged behind the extent of India's religious resurgence, probably because social science in India carries a secular image, thus inhibiting social scientists. Cultural anthropology has made great progress in studying marginalized communities, highlighting human development and cultural issues. Anthropology lags, however, in analysing the cultural dimensions of global change.

Historical studies have been popular as well, with subaltern studies gaining international repute. In recent years, scholars of historical studies have creatively amalgamated subaltern studies with *Dalit* and cultural studies. Power, hegemony, dominance and resistance remain popular and useful frameworks of analysis in both historical and contemporary social analysis, overshadowing the earlier emphasis on class to some extent.

Research on the nation-state has gained momentum and an analytical focus, perhaps due to the influence of postcolonial studies. This research has highlighted the crisis of secular nationalism; the state's inclusive and exclusive practices; the attenuated rights of citizens, refugees and those living at the margins; and democracy and elections (Bhargava and Reifeld, 2005; Guha, 2007). While elsewhere in the world, political violence, terrorism and the role of religion in politics have caught the attention of social scientists, especially after 9/11, this is not so in India, although security issues in South Asia have received some attention. Given the frequency of terrorist attacks and the increase in political violence, it is expected that social scientists will soon be compelled to direct their attention to these issues.

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Girl from the Rayerbazar slums of Dhaka, Bangladesh, wins race
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Chapter 7
Competing in the knowledge society

Traditional Ainu dance
© UNESCO/Ainu Association of Hokkaido

7 Competing in the knowledge society

Chapter presentation

Over the past decades, the growing importance of higher education and research as drivers of economic growth has led to an increase in international competition between countries, institutions and researchers. This chapter deals with the ranking of universities, the assessment of research and its role in project funding, the various ways in which different interest groups have responded to these, and generally, how international competition takes shape. Of particular interest is the divide between those countries, organizations and researchers that can compete at a global level and those that either do not have the abilities and resources to do so, or whose mission is more oriented to the local level.

The chapter begins by discussing the relatively recent phenomenon of the international ranking of universities, its problems, effects and likely future development. Besides cross-national rankings, various national governments and continental bodies have also set up more multifaceted research assessments and other approaches to the evaluation of research in the social sciences. Rankings and other assessment exercises are associated with efforts to improve research performance and quality as well as to guide the allocation of resources. In part because of the latter function, they have both proponents and opponents among scientists and representatives of academic institutions. An assessment that does justice to all universities would probably take into account the social and educational conditions in which these organizations operate and the diversity of missions that universities have. Research councils can adopt various approaches to the allocation of funding in the social sciences. Examples of the evaluation mechanisms used in these allocations, their benefits and limitations are discussed. The final section of this chapter consists of four papers dealing with the agenda-setting strategies of national funding agencies. Funding is central to intellectual advancement both in terms of individual careers and for the furthering of social scientific knowledge. It is therefore no small matter how research funding is allocated.

Rankings, research assessment exercises, resource allocation mechanisms and the other elements of the research system in which evaluation plays a role are based on two methodological approaches. The first consists of various forms of peer review, the appraisal of proposals, outcomes and organizations by other experts. The second involves metrics-based evaluations to which exercises using international bibliometric databases are central. Both types of evaluation have important limitations, some of which are specific to the social sciences; this is highlighted in various contributions. Rather than using one of these approaches in isolation, the best strategy seems to be for qualified experts to use a combination of both types; that is, both the quantitative type of evaluation and the more qualitative, peer-review process.

7.1 Global rankings

Introduction

In recent years, international rankings of universities have become a prominent feature of competition between research systems and research organizations. The first of these rankings was originally commissioned by the Chinese Government as a way to benchmark its own research universities in order to pursue its aim of developing 'world-class universities'. The publication of the Shanghai Jiao Tong University Rankings (SJTUIHE), however, had a worldwide impact, and other rankings followed (Erkkilä and Kauppi, Sanz-Menéndez and de Moya-Anegón).

The methodologies adopted to arrive at these rankings are controversial, to say the least, as all the authors in this section highlight. In spite of the many conceptual, methodological and technical problems with the ranking of universities, they have become popular and thus deserve to be taken seriously. Examining the problems, as the authors in this section do, is therefore crucial for both refining the rankings, and ongoing attempts to attain excellence in diverse settings and with unequal resources.

The ranking of measurable research performance, and thus the number of publications and citations, forms a large, or in some cases the exclusive, element of these approaches to university ranking. This approach has several important advantages. The indicators it generates are quantifiable and verifiable, which gives them some claim to objectivity. Furthermore they draw indirectly on the professional opinion that members of the global scientific community have of the knowledge claims published by researchers in each organization. However, the focus on international peer-reviewed journal articles rather than on other scientific output such as monographs tends towards an underestimation of university performance in the social sciences in comparison with the natural and medical sciences (van Raan and Erkkilä and Kauppi). To some extent, this problem can be addressed by ranking universities by scientific field: all three rankings mentioned in the articles now have a separate ranking for social sciences, which differ by the indicators used. Significant weight is attached to the number of researchers having received a Nobel Prize in economics in the Shanghai Jiao Tong ranking, high importance is attached to opinion polls ('peer review') in the *Times Higher Education Supplement* ranking, and publication and citation data are the sole indicators used in the Scimago ranking (Sanz-Menéndez and de Moya-Anegón). None of these address the non-inclusion of non-journal outputs in the analysis.

Another point of criticism concerns the reduction of a university's many complex functions into a single, measurable indicator. Such a single indicator increases the rankings' attractiveness to students, policy-makers and the media, but does not do justice to the complex and diverse nature of universities. In this respect it is interesting to refer to Japan, which has a long tradition of ranking its universities across a wide variety of indicators (Kodama and Yonezawa, 2009). In Europe the CHE Excellence Ranking compares the master's and doctoral programmes of a selected group of European universities across various indicators for several subjects including political science, psychology and economics. Such multi-faceted approaches may be less controversial than the search for a simple one-dimensional indicator of quality.

The existing rankings can have several potentially adverse consequences for social sciences and humanities research. One is to put pressure on universities to resemble the model of research universities at the expense of other functions, such as teaching, which universities also do and in which some are more specialized than others. Further, the attraction of highly ranked universities for students and teachers, as well as policy-makers' concentration of resources on a few elite universities that can compete in these rankings, may lead to an erosion of the higher education and research landscape. Nor does everyone agree that an over-emphasis on publications in international peer-reviewed journals included in the major citation indices, at the expense of other journals, monographs, doctoral theses and multi-authored books, is good for social sciences and humanities research.

Especially in developing countries, but also in Europe, most universities cannot hope to compete on the measures involved in these international rankings. Saleem Badat argues that they should not try to. This does not mean that the evaluation of university performance is of little value, because evaluations and benchmarking can be a central part of a strategy to improve quality. It is important, however, to adopt conceptual, methodological and technical tools and approaches which are suitable for the social sciences and humanities and the varied and different functions of universities.

However, the international ranking of universities is a reality which is likely to remain and multiply, and students, academics, university administrators and policy-makers do react to it. Considering the importance attached to rankings, several new actors are considering entering this market with alternative indicators for particular sets of disciplines, for teaching and learning and for third-mission activities. This includes university groups and newspapers, but also actors such as the European Commission. The authors in this section emphasize the prominence of world rankings, but also suggest ways of improving on them. This is crucial because the global hierarchies and norms established through them bring about significant shifts in national policies and the higher education landscape generally.

The social sciences and the ranking of universities

Anthony F. J. van Raan

During the last few years, rankings of universities, though controversial, have become increasingly popular. The rankings published by Jiao Tong University in Shanghai and those published by the *Times Higher Education Supplement* have attracted the attention of policy-makers, the scientific world and the public media. In these rankings, the emphasis is largely or even wholly on research performance. Consequently, the number of publications and other bibliometric elements, such as citations, play an important or even decisive role.

The number of social science publications in international journals is much lower than those for the natural sciences and medicine. Thus, the natural sciences and the medical fields dominate university rankings, while the strength of universities' social sciences scarcely contributes to their ranking position. Smaller universities, particularly those with an emphasis on social sciences, will have a better position as a result of the *Times Higher Education Supplement* (THES) ranking's peer-review element than in the more bibliometrically oriented and size-dependent Shanghai ranking. A striking example is the difference in the London School of Economics' position: a top position in the THES ranking and a low position in the Shanghai ranking.

Generally, social science research has a strong international orientation, but national orientation may play a more important role than it does in the medical and natural science fields (Kyvik and Larsen, 1994; Moed, 2005). There are considerable differences in the research and communication cultures between the medical and natural science fields, on the one hand, and the social sciences on the other. An exception is psychology, in which communication practices are similar to those in the exact sciences. In the social sciences, there is often less consensus on what constitutes successful scientific approaches. This may be an important conceptual issue: in the social sciences, the meaning of citations may differ from that in the medical and natural science fields. Publication practices in the social sciences are less standardized than those in the medical and natural science fields. International peer-reviewed journals are less important than in the exact sciences; the written scholarly communication system's structure often does not show a clear core–periphery structure; and English is not always a dominant language. Journals may even be multilingual.

What are the consequences of the ranking of universities for the social sciences (and for the engineering fields and the humanities)? Van Raan (2005) provides a comprehensive discussion of the conceptual, methodological and technical problems with the ranking of universities. The main points are that in the social sciences, the number of citations is generally an order of magnitude lower than in the medical and natural science fields, which complicates the statistical problems. And most social sciences need a considerably longer citation window (for example, counting citations up to five or six years after publication) than the natural sciences and medical fields (mostly four years).

Monographs, doctoral theses and multi-authored books are undoubtedly important sources of written communication in many fields of the social sciences. They should not be omitted from any assessment of social science research performance (Moed, 2005). However, bibliometric analyses usually only take citations from publications in journals covered by the Web of Science (WoS) or Scopus's citation index into account. Nevertheless, non-WoS or non-Scopus publications can be cited quite widely in articles in WoS- or Scopus-covered journals. Moreover, it is possible to determine the citation impact of non-WoS or non-Scopus publications, specifically books and book chapters, with appropriate analytical algorithms. Furthermore, comparison with a European benchmark is an effective means of coping with a possible US bias in the WoS or Scopus.

Besides WoS and Scopus, Google Scholar is becoming increasingly important as a source of citation data. Field-specific databases, such as ECONLIT, Psychological Abstracts and Sociological Abstracts, can also be used for output analyses. However, these databases have several properties that make them less suitable for calculating bibliometric indicators:

- None of the major field-specific databases systematically include cited references.
- The criteria for selecting sources may be unclear.
- The databases may have strong national or geographical biases.
- A considerable percentage of the processed documents do not mention the authors' institutional affiliations.
- The database producers may not include addresses in the database even if they are mentioned.
- Important data elements – even journal titles and country names – may not be standardized.
- Many databases are only available through host computers that offer only limited counting and statistical facilities.
- The use of these databases may be expensive.

A new and important development is the creation of national or university research databases in which publications in all fields of sciences, including the social sciences, are covered on the basis of field-specific quality criteria, regardless of whether a publication is covered by WoS or Scopus, and regardless of the document type. An important example of this development is FRIDA, a comprehensive bibliographical database for all scientific publications by Norwegian research institutions (FRIDA, 2008).ب

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Alternatives to existing international rankings

Tero Erkkilä and Niilo Kauppi

Ranking lists have turned into customary policy instruments for global governance in higher education. Despite their limitations, they serve as a basis for a number of significant higher education reforms. The European Commission's plan to challenge existing league lists by creating an alternative, multidimensional tool for the evaluation of world universities is an attempt to introduce new assessment criteria into this high-stakes global competition.

In the field of higher education, single league tables provide their users (administrators, students, politicians, journalists) with objectified information in a rapidly growing international student market. Existing ranking systems represent key tools for higher education reform.[1] For administrators and politicians, the quantitative social scientific information provided by these lists has become an indispensable part of policy planning (see for instance Harvey, 2008). As tools of symbolic power, ranking lists reinforce preconceived ideas for some users, while for others, they present a certain state of affairs as being inevitable, shaping reality in the field of higher education.

Two major university rankings (see Table 7.1) are published by the Shanghai Jiao Tong University Institute of Higher Education (SJTUIHE) and in a British magazine, *Times Higher Education* (*THE*) (formerly a newspaper, the *Times Higher Education Supplement*, *THES*). Jiao Tong has been producing an institutional ranking on a yearly basis since 2003. In February 2007 it published a ranking that covered five disciplinary fields. This ranking focuses on 'measurable research performance' (Liu and Cheng, 2005, p. 133). It is particularly favourable to universities in English-speaking countries: they represented 71 per cent of the world's top 100 universities in 2006. US-based institutions alone occupy seventeen of the world's twenty top-ranking universities.

The first *THES* ranking entitled *World University Rankings* was published in 2004. One of the driving forces behind

1. In the USA, evaluations of graduate programmes started already in the 1920s and a ranking of US colleges was published from 1983. The university rankings made their way to the UK in the 1990s. The rankings became internationally policy relevant in the 2000s, due to the marketization of higher education and increased mobility of students (Harvey, 2008: 187–88).

Table 7.1 > The assessment criteria used in the Shanghai Jiao Tong University Ranking and the *Times Higher Education Supplement Ranking*, 2007

Shanghai Jiao Tong University ranking (2007)[1]		
Criteria	**Indicator**	**Weight**
Quality of education	Number of alumni having won Nobel Prizes and Fields Medals	10%
Quality of faculty	Number of staff having won Nobel Prizes and Fields Medals	20%
	Highly cited researchers[2]	20%
Research output	Articles published in *Nature* and *Science*	20%
	Articles in Science Citation Index-Expanded and Social Science Citation Index	20%
Academic performance	Academic performance with respect to the size of an institution[3]	10%

Times Higher Education Supplement ranking (2007)[4]		
Criteria	**Indicator**	**Weight**
Research quality	Academic opinion: peer review[5]	40%
	Publications and citations per research staff	20%
Graduate employability	Recruiter review: employers' opinion[6]	10%
International outlook	Percentage of international staff	5%
	Percentage of international students	5%
Teaching quality	Faculty staff: student ratio	20%

Notes: 1. Academic Ranking of World Universities, Graduate School of Education, Shanghai Jiao Tong University (http://www.arwu.org). 2. Assessed in twenty-one subject categories. 3. Academic performance is composed of the sum of the weighted scores of the other five indicators (quality of education, quality of faculty and research output) divided by the number of full-time equivalent academic staff (see Saisana and D'Hombres, 2008: 20). 4. *Times Higher Education* (http://www.timeshighereducation.co.uk). 5. Sample of 5,101 respondents (2007). 6. Sample of 1,471 respondents (2007).
Source: Saisana and D'Hombres (2008, pp. 19–21).

the establishment of the league table was a perceived rising demand, in the UK and globally, for advice on higher education (Jobbins, 2005, p. 137). In contrast with the Shanghai ranking, the *THE* composite index partly rests on present reputation, thereby reproducing established global reputational hierarchies (Marginson, 2009b). Both the Shanghai and *THE* lists create a similar global order, in which US universities tend to do well. In the *THE* ranking, UK and Australian universities fare better than in the Shanghai ranking. Continental European universities are badly positioned in both university league tables.

These ranking lists, reproduced by a variety of think-tanks, present similar recipes for success in higher education: 'autonomization' of universities, concentration of resources through the creation of poles of excellence, and greater funding for certain types of research through R&D investment. This recipe has been extensively integrated into reforms of higher education. The single league table presents a clear, 'objective' order, a goal to emulate, and the means to attain this goal – all in the same package.

Problems and limitations of existing rankings

THE and Shanghai rank the top-rated universities consistently, but their overall correlation is only moderate ($r \leq 0.58$) (Saisana and D'Hombres, 2008, p. 11). Several scholars have criticized their dependence on bibliometric methods (for example van Raan, 2005). Rankings do not assess the research that is done in research institutes; they fail to appreciate, for instance, top research in such centres in Germany and France. Furthermore, they do not take into account the resources and institutional designs that are available for successful organizations. Rather, they impose the norms of leading research universities on the rest (Kivinen and Hedman, 2008). Counting the Nobel Prizes awarded to an institution (as in the Shanghai index) is also problematic since Nobel Prize laureates continue to influence their university's results even after their retirement. A large share of the *THE* ranking rests on an opinion-based peer review, lacking thorough assessment.[2] Although a major user group of the *THE* ranking system is students seeking a place to study, it offers very little information on the quality of teaching.

The ranking lists present a number of additional problems. One central shortcoming is their institutional approach: they measure universities without taking into account the variations between disciplines, let alone assessing the research by discipline. Furthermore, the information is presented as a fact and not as the result of a choice in terms of what to measure and how (Marginson, 2007, p. 139). Last but not least, the academic community have been passive in observing their profession's assessment, leading to calls for greater involvement on their behalf (Usher and Savino, 2007).

Despite these shortcomings, university rankings have become part of the global higher education landscape. The figures have contributed to the creation of a new 'status economy', which sets policies in higher education and innovation (Marginson, 2009a). Global hierarchies and norms are now reproduced, fought over and legitimized by a variety of research institutions specializing in the production of information on these hierarchies, and funded by nation-states or media corporations. Due to their global coverage and high visibility, these lists are causing significant shifts in national policies following a similar policy script. Sharing key causal beliefs and normative views, these symbolic power tools portray the world in a uniform manner. In so doing, their political nature is hidden. The figures produced and the perceptions of competition that they communicate tend to lock policy actors in an iron cage, leaving little room for policy alternatives (Erkkilä and Piironen, 2009).

The European Commission and the higher education rankings

In 2008, the European Commission declared that it would create an alternative European ranking list of world universities that would 'do justice'[3] to European universities. As a political actor with considerable organizational resources when compared with universities or specialized publications, the Commission entered the field of global higher education by attempting to transform its structure and criteria. This move can be understood in a context of escalating global competition in higher education, a competition over prestige that has a considerable impact on future economic development.

The Commission's strategy reveals the dualistic nature of struggles over classification. An internal competition occurs between figures and what they are supposed to reflect. Since European universities rank relatively poorly in all existing rankings, proposing minor changes to existing ranking lists was not an option for the European Commission. A second, far more radical solution was to introduce a new global assessment of higher education.

2. The notion of peer review is therefore downright misleading. Instead of a thorough investigation into the quality of research and teaching of a single institution, an opinion suffices to evaluate quality.

3. According to the Director General of Education in the European Commission, Odile Quintin (quoted in Dubouloz, 2008, p. 1).

This strategy will be successful only if the European Commission can succeed in delegitimizing existing ranking lists by producing credible alternative information.

The European Commission plans to create a new type of knowledge construct, a 'mapping' of certain key qualities in higher education that would include teaching and research, as well as elite and mass-commercial institutions (European Commission, 2008). Following the conclusions of the Berlin Principles on Ranking of Higher Education Institutions (produced by a group of mainly US and European experts in 2004), the aim was to produce a new 'fairer' ranking system to replace the existing league tables.[4] The winning bid for the European Commission's open call for tender for the creation of a multidimensional global university ranking came from the CHERPA-Network consortium, a consortium which is headed by the Centre for Higher Education Policy Studies of Twente University (Netherlands) and the German Zentrum für Hochschulentwicklung (Centre for Higher Education Development).[5] The basic framework should be operational in the course of 2010. During the pilot phase it will cover two disciplines (business studies and engineering) with a sample of some 150 (both European and non-European) universities, before being expanded to the social sciences as well.

In 2009, at least three overlapping Commission initiatives could be identified in the domain of higher education rankings, indicating the issue's growing politicization.[6]

4. Berlin Principles on Ranking of Higher Education Institutions (http://www.che.de/downloads/Berlin_Principles_IREG_534.pdf).
5. CHE (http://www.che.de).
6. In June 2008, the European Commission appointed an Expert Group on Assessment of University Based Research. Later the same year, during the rotating French presidency of the European Union, a project on design and testing of the feasibility of a Multi-dimensional Global University Ranking was launched. Along with these initiatives, there is ongoing work for profiling and classifying institutions of higher education.

The Commission also participates in the OECD's AHELO initiative, whose purpose is to assess higher education learning outcomes.[7] What is remarkable about these different initiatives is a constant opposition to an accumulated figure, a single ranking number, such as the existing university rankings produce.[8] Ironically, however, in order for the criticism to gain in credibility, the Commission and other actors had to engage in the same venture of creating numerical information on university education and research. In so doing, they stepped into a trap typical of most struggles with classification, that of reducing a highly complex and contentious policy field (higher education) into a data set, albeit a more sophisticated one.

Conclusions

Public policy instruments such as ranking lists have the power to create reality. The global higher education map is different today from its shape prior to the creation of the 2003 Shanghai ranking of world universities. This global map has become more structured and ranking lists have turned into customary policy instruments for global governance in higher education. Despite their limitations, they have served and continue to serve as a basis for a number of significant higher education reforms. The European Commission's plan to challenge existing league lists by creating an alternative, multidimensional tool for the evaluation of world universities is an attempt to introduce new assessment criteria into this high-stakes global competition. It remains to be seen how successful this new ranking instrument will be. What is certain is that the actors involved in higher education assessment are gripped by a specific logic of knowledge production: numbers can only be challenged by more numbers produced by social science specialists.

7. OECD, AHELO (http://www.oecd.org/edu/ahelo).
8. In particular, the OECD's AHELO is explicitly critical of the rankings in higher education.

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A new industry: university rankings in the social sciences

Luis Sanz-Menéndez and Felix de Moya-Anegón

Despite objections and limitations, rankings – once disseminated – become taken for granted, and transform the environments of institutions by influencing their reputations. While rankings are no substitute for peer review or other types of assessments, they have become signals of quality in a global environment, and universities themselves are interested in being well ranked.

This paper discusses the impact of global rankings and compares two of these rankings – *Time Higher Education*'s (*THE*) *QS World University Rankings 2008* and the Scimago Institutional Ranking (SIR) in social science.

While rankings are popular with governments and the media, they are regarded as poor performance measures by most university administrators. Despite objections and limitations, rankings – once disseminated – become taken for granted, and transform the environments of institutions by influencing their reputations. While rankings are no substitute for peer review or other types of assessments, they have become signals of quality in a global environment, and universities themselves are interested in being well ranked.

Before the proliferation of rankings, institutions of tertiary education followed different procedures to position themselves in national and international markets and status systems. Institutional reputation depended on the opinions of professionals and recognized academics; status systems were based on a non-systematic aggregation of reputation and credit.

Status is a positional good that is necessarily comparative, relative and reciprocal. Comparisons build a status system that has symbolic value for organizations. In higher education and research, quality comparisons are a central measurement criterion, as information about reputation, productivity and performance is difficult to observe, measure and interpret in these contexts (Sauder and Espeland, 2009).

Rankings make status explicit and have several effects. First, they create a formal hierarchy. Second, by making status judgements public, rankings have caused institutions to become sensitive about their positions. Third, by imposing a shared metric, rankings help create or unify the organizational field (either in higher education or research) and produce isomorphic pressures. Finally, rankings also have the effect of creating 'good' and 'bad' reputation labels. This limits universities' and institutions' ability to build a reputation based on values or criteria other than those used to construct rankings. This is because assessment by third parties is more credible than self-assessment. There is evidence (Sauder and Lancaster, 2006) that the introduction of institutional rankings alters the structure of a status system and even the system's values and measures.

All measurement systems have problems and advantages. We next compare two different approaches to university rankings in the social sciences.

THE presents a 'multi-faceted' view of the relative strengths of the world's leading universities on its ranking list. It compares universities relatively by using a formula that combines six primary measurements of university quality:

- academic peer review (40 per cent)
- employer review (10 per cent)
- faculty/student ratio (20 per cent)
- citations per faculty (20 per cent)
- international faculty (5 per cent)
- international students (5 per cent).

THE has been criticized for its failure to take into account many of the attributes that constitute a university's quality and for the quality of its data collection. Additionally, the ranking's instability results from the effects of weightings and normalization, and especially from the peer-review survey.

THE includes 300 universities active in social sciences worldwide. The single classification criterion seems to be

'academic peer review'; the 'popularity' results are derived from a survey of 6,000 'experts'. Experts declare subject categories and specific subject competences for the survey.

The Scimago research group has produced an Institutional Ranking (SIR) using Scopus[1] publication data from 2003 to 2007. These data can be ordered by total output as well as by citations and citations per paper, and can be applied to the world as well as to regions and countries. A total of 2,000 institutions have been ranked, of which more than 1,800 are active in the social and economic sciences.

Owing to the journal coverage in the databases, general methodological problems arise such as biases towards countries, institutions and disciplines. There are a US bias in citation data, lower representation of languages other than English (van Raan, 2005), and limits to the use of bibliometric indicators in the social sciences (for example, Archambault and Larivière, in this Report; Clemens et al., 1995; Hicks, 1999; Nederhof, 2006).

While bibliometric methods lead to some problems and their use for research quality evaluation has been criticized (especially if they are decoupled from traditional peer review), they have, in comparison with a survey-based approach, the advantage of managing very large numbers and events (of publications and citations) to allow the visibility of small institutions.

Bibliometric rankings involve problems of production and usage. Responsible production entails solving technical problems such as matching citations with publications, normalizing institutions or affiliation-related problems. But 'popularity' rankings, especially in disciplines that still

Table 7.2 > *THE-QS World University Ranking 2008* (social sciences) SIR – Scimago Institutions Ranking 2003–2007 (social sciences)

THE rank	Institution	SIRR rank	Institution
1	Harvard University	1	Harvard University
2	University of California, Berkeley	2	University of California, Berkeley
3	Stanford University	3	University of Pennsylvania
4	London School of Economics and Political Sciences (LSE)	4	University of California, Los Angeles (UCLA)
5	University of Cambridge	5	University of London (includes LSE)
6	University of Oxford	6	University of Illinois, Urbana-Champaign
7	Yale University	7	University of Michigan, Ann Arbor
8	University of Chicago	8	New York University
9	Princeton University	9	University of Washington
10	Massachusetts Institute of Technology (MIT)	10	University of British Columbia
11	Columbia University	11	University of North Carolina, Chapel Hill
12	University of British Columbia	12	University of Toronto
13	University of California, Los Angeles (UCLA)	13	University of Maryland, College Park
14	McGill University	14	University of Wisconsin, Madison
15	Australian National University	15	University of Minnesota
16	University of Toronto	16	University of Oxford
17	Cornell University	17	University of Chicago
18	National University of Singapore (NUS)	18	Cornell University
19	University of Melbourne	19	University of Manchester
20	University of Michigan	20	Universiteit van Amsterdam

Source: QS Quacquarelli Symonds Copyright © 2004-2008 QS Quacquarelli Symonds Ltd. http://www.topuniversities.com.dev.quaqs.com/worlduniversityrankings/results/2008/subject_rankings/social_sciences

Source: Scimago Research Group, Copyright 2009. Data Source: Scopus® http://www.scimagoir.com

have a relevant local context, need clearer definitions of the respondents' universe, improved sampling procedures and specific data-collection exercises.

There is a significant difference between SIR's emphasis on scientific outputs and *THE*'s emphasis on 'popularity' within the academic community. Despite these diverse methodologies, however, some institutions appear among the top twenty in both rankings.

Both rankings show an overwhelming presence of Anglo-Saxon institutions. Communication in English as the lingua franca provides an advantage in terms of international visibility. But there are differences in the geographical breakdown of institutions: while *THE* has mostly US, Canadian and Australian institutions at the top, SIR has more North American and European ones.

Additionally, SIR offers quality indicators (such as citations per paper) to complement the output indicator. In this case, the universities of Michigan, Harvard and UCLA appear at the top, alongside Stanford and Columbia, which did not appear among the top twenty for total volume.

Combining the methods used by both rankings – for example, surveying the world's top researchers according to publications and citations – will probably improve the reputation of the measures' quality, even though they will continue to have serious limits as globally valid measures.

For the time being, a proper combination of scientific output and quality indicators – which SIR allows the user to do – can be a provisional solution to difficulties with representing institutions' research capacities. This provides the possibility of analysing better the positions of universities in different world regions in different status systems. Of course, caveats to the intelligent use of these rankings still apply (Weingart, 2005), especially regarding the social sciences, although the availability of data to compare performance has already changed status systems and the ways in which institutions see themselves.

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The world-class university and the global South

Saleem Badat

The global ranking of universities has come into prominence in the past few years. This paper analyses their value and what is at stake. It is argued that such rankings generate false perceptions and prejudice the global South, and that they should be replaced by alternative instruments that better serve educational and social purposes.

Global rankings

The Shanghai Jiao Tong University Institute of Higher Education (SJTUIHE) ranking has its genesis in the Chinese Government's quest to create 'world-class universities' as catalysts of development. The SJTUIHE ranking gives priority to six indicators for which data were available (Mohamedbhai, 2009).

The purpose of the *Times Higher Education*-Quacquarelli Symonds (*THE*-QS) ranking is 'to recognize universities as the multi-faceted organizations that they are, [and] to provide a global comparison of their success against the notional mission of remaining or becoming world-class' (*Times Higher Education*, 2007). It considers a mere six criteria to be pivotal for judging world-class (see Erkkilä and Kauppi in this Report).

Rankings: what value?

In order to establish their validity, university rankings need to be subjected to critical analysis in terms of their purposes, methodologies, and value to universities and society. I shall briefly address each in turn.

Regarding purposes, the SJTUIHE originated as an attempt to benchmark Chinese universities as a means of charting a trajectory for their development. However, SJTUIHE has become a global ranking of universities, despite being based on a narrow range of indicators which are wholly inadequate for measuring performance and quality in relation to diverse social and educational purposes, or a particular university's goals.

The *THE*'s precise purpose for generating a global league table of universities is opaque. Its discourse, however, is one of 'world esteem', with the world-class university representing the gold standard to which all universities should ostensibly aspire and according to which they should be measured. In the *THE* 'universe, higher education is primarily about reputation for its own sake, about the aristocratic prestige and power of the universities as an end in itself' (Marginson, 2007, pp. 138–39). The internationalization of the student body is valued less for enriching a university; instead, international students are a 'prized quarry' as 'universities are free to charge them whatever the market will bear' (*Times Higher Education*, 2007). Thus, 'it is not about teaching and only marginally about research'. Although it claims 'to recognise universities as multi-faceted organisations', the *THE*'s criteria are dubious as proxies for teaching and learning quality.

Methodologically, global rankings suffer from 'weaknesses in data collection and computation; the arbitrary criteria used in ranking; and the arbitrary weightings and standardization procedures used in combining different data sets into composite indexes' (Marginson, 2008a, p. 7). Such indexes 'undermine validity [as] it is dubious to combine different purposes and the corresponding data using arbitrary weightings. Links between purposes and data are lost' (Marginson, 2007, p. 139).

The indicators and their weighting privilege specific university activities, domains of knowledge production, research types, languages and university types. Thus, the natural and medical sciences are privileged over the arts, humanities and social sciences; articles published in English are favoured over those in other languages; journal articles are favoured over book chapters, policy reports and other studies. Furthermore, 'comprehensive' universities and generally larger institutions with a wide range of disciplines and larger numbers of academics – especially researchers – are privileged over others (Charon and Wauters, 2007). The rankings therefore enable the self-selection of universities

whose missions and academic offerings strongly match the rankings' performance measures.

What is at stake?

In terms of their methodologies, the SJTUIHE and *THE* rankings have little intrinsic value and serve no meaningful educational or social purpose. On the contrary, if they are not challenged, rankings and the assumed notion of the 'world-class university' as gold standard can have perverse and dangerous effects on universities in underdeveloped societies in the global South.

Modernization theory singled out Western capitalist societies as the apex of modernity and made 'catching up' with the West an ultimate development goal. With it came the view that underdeveloped societies' path to development lay in faithful adherence to the prescriptions of Western governments and Western-dominated multinational institutions, including the World Bank and the International Monetary Fund. Later on globalization and its supposed development benefits became the new goal.

If modernization theory depicts Western capitalist societies as the apex of modernity, global university rankings present the world-class university – essentially North American and European institutions – as the pinnacle and goal of all higher education development.

The value of uncritical mimicry of and 'catching up' with the so-called world-class university in order to further socio-economic development is questionable. It also cannot be assumed that creating world-class universities will in itself result in investment or development. Outstanding universities may be a necessary condition, but are not a sufficient condition of development. Many societies in the global South need to create favourable national environments for university work and for universities to contribute to society.

The SJTUIHE and *THE* rankings 'inculcate the idealized model of institution as a norm to be achieved and generalize the failure to achieve it' (Marginson, 2009b, pp. 13–14). The world- class university has until recently existed neither as a concept, nor as an empirical reality. Its status as the gold standard is the normative social construct of the rankers themselves.

The specific national conditions, realities and development challenges of societies in the global South, and the diversity of social and educational purposes and goals that universities in these societies must serve, require national higher education systems characterized by differentiated and diverse institutions. Institutional differentiation and diversity are to be valued over homogeneity and isomorphism. It makes little sense for all universities to aspire to a common 'gold standard' irrespective of socio-economic needs, missions, goals, capacities and capabilities. Graham has argued that universities should avoid aspiring to 'ideal[s] which they cannot attain' (Graham, 2005, p. 157). Otherwise, 'no sense of worth will be forthcoming' and they can have no 'proper self-confidence' (p. 157). There are many conceptions and models of the university, and these have changed over time. Furthermore, according to Graham, the 'name "university" now applies to institutions with widely different functions and characters' (2005, p. 157), and this means that the 'ideals each can aspire to' will be different (p. 258).

Instead of valuing a horizontal continuum that recognizes the need for universities to have different and diverse missions, and which makes provision for universities that pursue various missions, the idea of the world-class university as 'the idealized model of institution' has the perverse effect of privileging a vertical hierarchy. Universities that do not feature in the top 500 of the SJTUIHE ranking or the top 200 of the *THE*-QS ranking are devalued and are – by implication – poor-quality, second rate or failures. In the face of continuing global North–South inequalities, the burden of such characterizations weighs disproportionately on universities in the global South.

The rankings criteria favour publishing in English-language journals, and in effect privilege the English language. Especially in the arts, humanities and social sciences, prioritizing research and publishing in order to improve ranking can seriously undermine universities with important social, intellectual and cultural roles related to their local, regional and national societies.

Today, the competition for, and concentration on, economic advantage means that certain kinds of knowledge and research – especially those generated by the natural, medical and business sciences and engineering – are privileged. However, as Makwandire argues, 'attempts to improve Africa's prospects by focusing on scientific advances and the benefits accruing from them have all too often overlooked the important perspectives which the humanities and social sciences afford' (2009, ch. 7), and 'it is vital that the social sciences and humanities are granted their rightful place … if Africa's development challenges are to be fully and properly addressed'.

Rankings compromise the value and promise of universities as they 'divert attention from some central purposes of higher education' (Marginson, 2007, p. 139), and 'to accept these ranking systems is to acquiesce at these definitions of higher education and its purposes' (p. 139).

As important as new knowledge production and the scholarship of discovery are (Boyer, 1990), the foundation for the production of high-quality graduates who can advance development in the underdeveloped global South is high-quality learning and teaching. Moreover, community engagement and service learning are also vital functions of universities in the global South. Both are a 'means for connecting universities and communities with development needs' (Stanton, 2008, p. 3), and 'for higher education staff and students to partner with communities to address development aims and goals' (ibid., p. 2). However, the global rankings are only marginally concerned with learning and teaching, and overlook or omit the value of community engagement.

The extent to which the global rankings are embraced by numerous universities and higher education agencies must be considered a matter of great concern. The validation of rankings as knowledge of universities ultimately corrodes knowledge and science.

Conclusion

Global university rankings fail to capture either the meaning or diverse qualities of a university, or the characteristics of universities, in a way that values and respects their educational and social purposes, missions and goals. At present, these rankings are of dubious value, are underpinned by questionable social science, arbitrarily privilege particular indicators, and use shallow proxies as correlates of quality.

Universities in the global South must refuse to play the game as formulated by the SJTUIHE and *THE*, even if others collude with rankings for the sake of self-aggrandisement. Rather than permitting these rankings to prescribe a 'gold standard' and impose narrow definitions of quality, quality should be regarded as historically specific and related to institutional missions and goals as well as to educational and social purposes.

My critique of global university rankings is not a refusal of critical public scrutiny of universities or of universities in the global South. Besides rankings, there is much value in performance indicators and benchmarks if they are carefully conceptualized and designed with clarity of purpose, and are respectful of institutional missions and policy goals. Performance indicators have an important role in institutional development and, through these, the achievement of national socio-economic development priorities. Clearly, effective monitoring, evaluation and critical reviews of universities, including their goals, strategies, academic programmes, administration, governance and financial management, also have key roles in university development.

The challenge for universities in the global South is to effectively replace global rankings with alternative instruments that genuinely serve educational and social purposes, contribute to innovation and development in universities, enhance transparency in and critical public scrutiny of universities, and facilitate informed choices and judgements on the basis of robust social science and appropriate methodologies.

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7.2 Assessment and evaluation of research

Introduction

Alongside cross-national or worldwide comparisons, national governments and agencies have stepped up efforts aimed at the evaluation of the quality of research, the identification of productive individual researchers and the performance of departments on various criteria. These exercises are undertaken both to boost research performance and to optimize resource allocation. It is nonetheless clear from the contributors to this section that all this is not as easily done as said.

The UK's Research Assessment Exercise (RAE) is probably the best-known of the various assessment exercises carried out in countries such as New Zealand, Australia, the Netherlands, Romania, Germany and South Africa. In this RAE, panels of experts evaluate information on inputs and outputs provided by university departments. Even if they tend to be better regarded than simplistic international rankings, these assessment exercises have received considerable criticism of, and resistance to, the methodologies they adopt. They are also criticized for the perceived negative effects they have on the social sciences. Large-scale research assessment exercises such as the RAE involve considerable costs in terms of money, human resources and time. In combination with the level of bureaucracy they involve, these costs have led some national agencies to consider a more metrics-based approach, which has advantages in terms of cost savings and a supposedly higher objectivity.

However, the use of bibliometrics in the evaluation of social science and humanities faces considerable problems (Archambault and Larivière). The dominant bibliographical databases used for these analyses have a strong linguistic and geographical bias. This, many would argue, makes them less suitable for the evaluation of research outside the Anglo-Saxon world. The use of bibliometric indicators in the social sciences and humanities is also problematic for other reasons. Publications other than journal articles, such as books, reports and even non-academic outlets are considerably more important here than in the natural sciences. These other publication formats, as well as a large number of less prominent journals, are not included in the international citation indices and are therefore invisible to evaluations which rely on them. Another potentially problematic point is that much social sciences and humanities research aims for local rather than international relevance and may not be noted in the international literature. The Thomson Reuters Social Science Citation Index (SSCI) and its recently established competitor, Elsevier's Scopus, do engage in efforts to broaden the inclusion of non-English journals, which may alleviate some of the linguistic and geographical bias even if the intensity of citation traffic is likely to continue to favour the Anglo-Saxon world. Weingart and Schwechheimer highlight the specific limitations of the exclusive use of bibliometric tools in the evaluation of research performance in countries where only a small number of articles are published in international peer-reviewed journals. Other, qualitative, approaches may be more fruitful in such cases. While the use of bibliometrics for the evaluation of social science research is problematic in isolation, it can help support qualitative reviews (Weingart and Schwechheimer; Hazelkorn).

Research assessment exercises should combine indicator-based quantitative data with qualitative information, recognize the differences between research disciplines, include assessments of impacts and benefits, and therefore include indicators that are capable of capturing all of this (Hazelkorn). The review of the UK Research Assessment Exercise, however, highlights the complexity of designing a national assessment system that is both fair and effective (Oancea).

In Spain, bibliometric indicators are used for the evaluation of individual researchers (Cruz-Castro and Giménez-Toledo). Researchers' output in journals included in international as well as Spanish-language bibliographical databases is presented to national evaluation agencies. These and other outputs are used to support individuals' peer review evaluations when they apply for accreditation and salary bonuses. Taking into account quality Spanish-language journals as well as discipline-specific factors in the evaluation procedure may help overcome some of the previously noted limitations of bibliometric assessments.

Conceptualizing and measuring excellence in the social sciences and humanities

Peter Weingart and Holger Schwechheimer

Bibliometric analysis is a means to identify prominent researchers, important research results, and institutions that foster good research. The data banks are used as a tool for the evaluation of research as it is reflected in publications and for studies of communication patterns. For this purpose so-called bibliometric indicators have been constructed.

The easiest way to identify prominent researchers, important research results and institutions fostering good research is by way of bibliometric analysis. The principal sources of information for bibliometric analyses in social sciences and humanities are the SSCI and the Arts and Humanities Citation Index (A&HCI). These data banks provide a combination of information about the authors of a given article, their institutional address(es), and the article's citations of other papers. This means that searches can be made targeting authors, their institutions or the number of citations received by an article. These data banks have also been used as a tool for the evaluation of research as it is reflected in publications and for studies of communication patterns, in other words of social structures in science generally. For this purpose so-called bibliometric indicators have been constructed. The most important bibliometric indicators for activity (publications) and impact (citations) are:

- P: number of publications (indicating the activity in formal communication)
- C: number of received citations (indicating the visibility or impact of research but usually being taken as an indicator of the quality of research)
- CPP: citations per publication
- CPP/FCSm: normalized citation rate (against Field Citation Score mean).

To normalize citation rates per publication, which differ widely between disciplines, the absolute citation count is divided by the average citation rate of all publications of the same discipline or journal from the same year of publication. If computed for a sufficient number of publications, this indicator is widely accepted as a reliable measure for visibility in most areas of the natural sciences.

However, in the social sciences and more so in the humanities, this form of application is highly problematic, because of the inadequate coverage of books in the citation indices. In the social sciences and humanities, we cannot rely on the reliability and validity of these indicators in the same way as in the natural sciences because of the non-paradigmatic nature of most fields in the social sciences and humanities, the heterogeneity of publication behaviours between fields in the social sciences and humanities, and the insufficient coverage of the principal sources of information for bibliometric analyses in the SSCI and A&HCI. The latter is changing, at least for the social sciences, as a result of an increasing internationalization due to incentives for non-English-speaking authors to publish in English. This is particularly true for the European countries, where funding programmes promote publication in English in order to achieve the integration of European research.

To illustrate the problem, consider publications from the countries of the Commonwealth of Independent States and listed in the SSCI and the A&HCI. They show that in all these countries except the Russian Federation and Ukraine, the number of publications is in the tens or single digits. This means, in effect, that we cannot speak of social sciences and humanities communities in these nations, but at best of individual scholars who work more or less in isolation. The numbers themselves do not reveal any trend, whether towards higher or lower numbers of papers, with the exception of the Russian Federation and the Ukraine where the absolute numbers of articles published and

included in the two indices show a downward trend. The actual number of scholars and their output remains unknown because we cannot control for the percentage of coverage of CIS articles in the SSCI and A&HCI. Under such circumstances the application of bibliometric techniques is out of the question.

While in cases such as these, bibliometric indicators are insufficient by themselves to provide reliable assessments, they may be used in conjunction with other indicators and descriptions. For example, visibility in international peer-reviewed journals whose quality standards are established is one indicator of good international standing. However, the results must be controlled for the size of the national social sciences and humanities communities, as it may be the case that only a small number of individuals appear in these journals, representing a very small fraction of the particular national community. Such a lack of visibility may have different reasons: for example, politically motivated limitations to access, or resentment of international cooperation. Thus, publications in international journals, like cooperative authorships with international scholars, should not be taken as definitive indicators of quality of research, but rather as relative, and above all merely as descriptors. They do not reflect the potential quality of work done in the national context and hidden from international view.

As to qualitative assessments of the health and quality of social sciences and humanities research, we suggest two sets of criteria: organizational and intellectual.

Organizational criteria are about both conditions for research and expressions of research culture. A healthy-social sciences and humanities culture should have sufficient size to allow for a plurality of approaches and methods. Crucial questions are whether the social sciences and humanities have normal department status, where their students find employment after their studies (for example, in academia, as teachers, in industry, public administration or in the media), and whether the social sciences and humanities are represented in national scholarly associations and professional societies.

Intellectual criteria are at the core of any assessment of the health and quality of a discipline or research field. Social sciences and humanities do not have to be integrated into an international scholarly discourse to the same degree as the natural sciences in order to be qualitatively of a high standard. Those research activities that are more narrowly focused on national and culturally specific subject matters and topics must be judged on their own merits. They must, above all, exhibit originality in their theories and methodologies. Indications of this are lively intellectual debates among the relevant scholarly communities, a recognizable progress of research over time, and in the ideal case, an impact on public debates.

An important prerequisite is the existence of independent peer-reviewed scholarly journals and, especially in the case of the humanities, of more popular journals or print media catering to the intellectual elite of the country. Social sciences and humanities that are entirely dependent on a few external sponsors or are only small inbred circles can hardly prove their value to civil society. Nor will they be open to intellectual stimuli from outside.

Peter Weingart and Holger Schwechheimer

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The limits of bibliometrics for the analysis of the social sciences and humanities literature

Éric Archambault and Vincent Larivière

There are several limits to the use of bibliometric analysis of scholarly communication in the social sciences and humanities. This paper reviews three of those limits: the lower proportion of social science and humanities journal articles; social sciences and humanities literature's ageing rate, and conversely its post-publication citation rate; and the local relevance of social sciences and humanities knowledge. It also discusses the choice of bibliometric databases when measuring social sciences and humanities research.

While the use of bibliometrics for policy purposes has mostly been limited to the natural and medical sciences, this emphasis is now changing. However, the extension of bibliometrics as an evaluation approach to the social sciences and humanities (SSH) may be a cause for concern unless due care is taken. There are several limits to the use of bibliometric analysis of scholarly communication in the social sciences and humanities (for instance, Glänzel and Schoepflin, 1999; Hicks, 2004; Larivière et al., 2006). Drawing on previously published data and original data, this paper reviews these limits.

Three issues are presented: the lower proportion of SSH journal articles; social sciences and humanities literature's ageing rate, and conversely its post-publication citation rate; and the local relevance of social sciences and humanities knowledge. The choice of bibliometric databases when measuring social sciences and humanities research is also discussed.

The importance of books and serials in social sciences and humanities knowledge diffusion

The importance of adjusting and clearly stating the limits of bibliometric methods becomes apparent when we consider the importance of books and other documents in the process of scholarly communication in various domains. Hicks (2004) argues that books form a sizeable part of publications in some social sciences and humanities disciplines, that they are also cited more often than other forms of publication, and that this impact cannot be extrapolated from that of journal articles. Thus, the validity of evaluations using bibliometric methods can only be assessed properly if the share of the various types of documents used in scholarly communication is known.

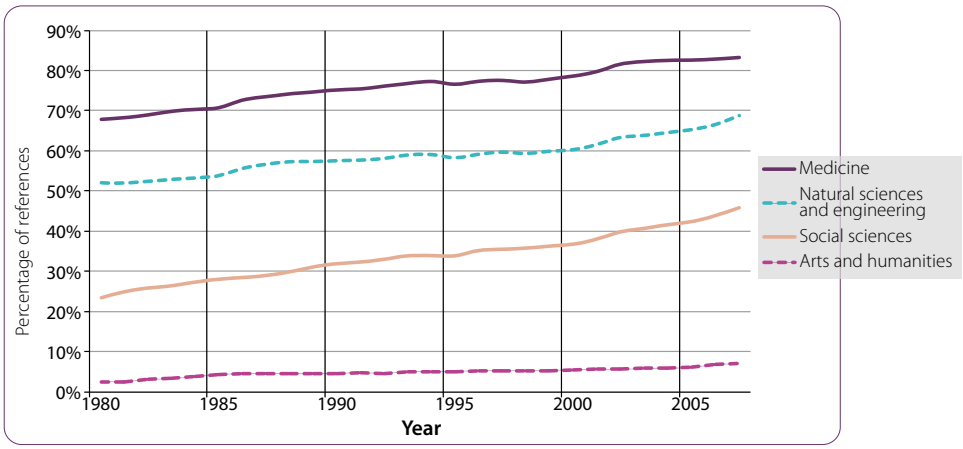
Numerous studies provide data on the relative proportion of journal to non-journal forms of publishing. In their analysis of social science co-citation clusters, Small and Crane (1979) found that 39 per cent of items cited in sociology and 24.5 per cent in economics were books, compared with only 0.9 per cent in high-energy physics. Based on these results, Hicks (1999) estimated that between 40 and 60 per cent of the literature in the social sciences is composed of books. In addition, Leydesdorff (2003) found that whereas 79 per cent of citations in articles covered by the Science Citation Index (SCI) were citations of other articles in the database, this percentage was only 45 per cent for the SSCI (a database produced by Thomson Reuters together with the SCI and the A&HCI). Glänzel and Schoepflin (1999) found that the percentage of references to serials varied between 35 per cent in history, philosophy of science and the social sciences and 94 per cent in immunology.

Building on a method presented at length in Larivière et al. (2006), Figure 7.1 presents the percentage of references made to papers indexed in the Thomson Reuters WoS by field (using articles, notes and reviews). The proportion of references made to WoS-indexed papers varies significantly across fields, with medical papers (MED) citing more than ten times the number of WoS-indexed papers or articles in the arts and humanities (A&H). In the natural sciences and engineering (NSE), slightly less than 70 per cent of the references are to WoS-indexed material, whereas this percentage is just under 50 per cent in the social sciences. These data suggest that A&H, including fields such as literature and philosophy, would be best examined using instruments that also consider other types of publications, such as books. The social sciences and the arts and humanities differ significantly from each other in terms of how frequently they refer to papers.

Rates of literature ageing and citation

The rate at which scientific literature ages and the rapidity with which it is cited have important implications for the way in which scientific impact must be measured in different academic fields. These patterns are particularly important in determining the length of the citation windows used for citation counts. To measure the NSE paper citation rate, a short window (typically two or three years) is frequently used, as knowledge is rapidly diffused and cited. As can be seen in Figure 7.2, in A&H references

Figure 7.1 — Share of references made to journal articles indexed in the WoS, by field, 1980–2007



Source: Saisan and D'Hombres, 2008, pp. 19-21

Figure 7.2 — Median age of cited literature by field (100-year citation window), 1980–2005

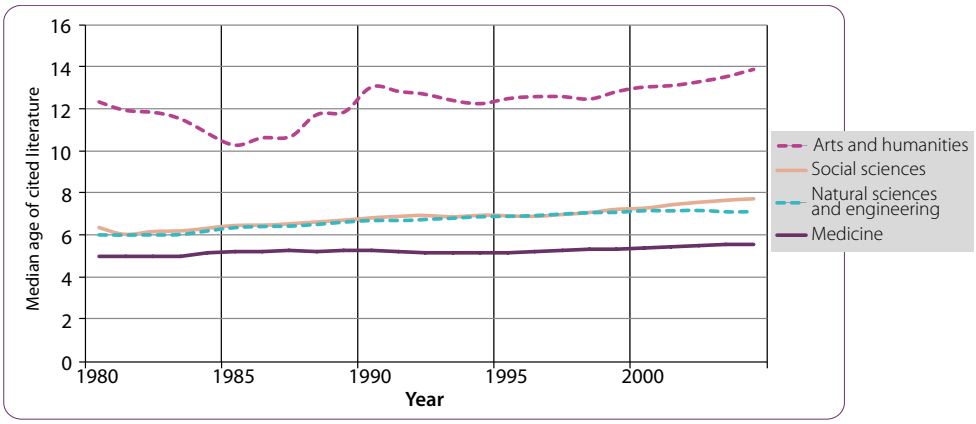


Figure 7.3 — Citations of papers per year following publication

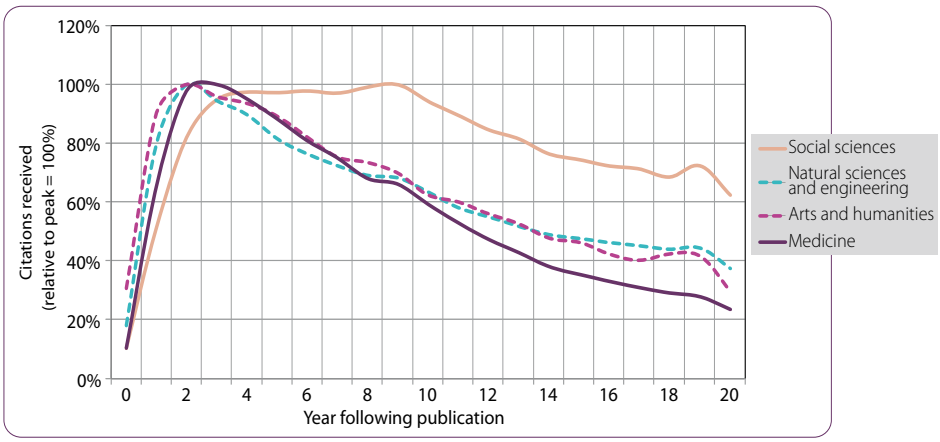


Table 7.3 > Coverage by Scopus and WoS of a sample of Canadian social science and humanities papers, 2009

Language of paper	Scopus		WoS		Scopus & WoS		Sample
	Coverage	(n)	Coverage	(n)	Coverage	(n)	(n)
English	53%	120	43%	97	58%	132	226
French	16%	10	7%	4	20%	12	61
Coverage Canadian sample	45%	130	35%	101	50%	145	289
English as multiple of French coverage	3.2		6.5		3.0		

Source: Compiled by Science-Metrix using Scopus and the Web of Science (WoS) (online versions, week of 23 March 2009).

are made to documents that have a median age twice that observed in other scholarly domains. The useful life of knowledge produced in A&H is longer than in other fields. This suggests that a longer citation window should be used when measuring impact in those fields. In social sciences, the age of what is cited differs from A&H and is highly similar to NSE.

Whereas Figures 7.1 and 7.2 examine how papers refer to the past in their references, Figure 7.3 shows the pattern of citations of papers after their publication. Papers in MED, NSE and – surprisingly – A&H are cited rapidly after publication, but the citation rate drops fairly quickly. Papers in the social sciences are less readily cited and only reach their citation peak some ten years after publication. The implication is that we should allow for longer citation windows when examining the impact of research in the social sciences than for NSE and MED. A window of approximately five years might be the minimum required to determine the effect of a social sciences and humanities publication on the community.

The local relevance of social science and humanities knowledge

Another aspect requiring careful consideration when performing bibliometric analyses of the social sciences and humanities is the relatively local orientation of social science and humanities research. Whereas the problems identified in the NSE tend to be universal by nature, social science and humanities research topics are sometimes more local in orientation. The target readership may be limited to a country or region (Glänzel, 1996; Hicks, 1999, 2004; Ingwersen, 1997; Nederhof et al., 1989; Nederhof and Zwaan, 1991; Webster, 1998; Winclawska, 1996). In many cases, the concepts and subjects covered in social sciences and humanities can be expressed and understood only in the culture that shapes them. Social science and humanities scholars reportedly publish more often in their mother tongue, and in journals with a limited distribution (Gingras, 1984; Line, 1999).

To assess the coverage of national literature by Thomson Scientific, Archambault et al. (2006) compared the journals list covered by its citation indexes with a comprehensive source of scientific journals from all over the world – the Ulrich directory. This showed that journals with UK editors were heavily over-represented in the Thomson Reuters database, especially in the social sciences and humanities. According to Ulrich, 18 per cent of journals have a UK-based editor. The Thomson Scientific figure is 27 per cent – an over-representation factor of 55 per cent. Social science and humanities journals with editors located in the Russian Federation, the USA, Switzerland, and the Netherlands are also over-represented, whereas virtually all other countries are under-represented. Archambault et al. (2006) also considered the actual language of journals. This revealed a clear selection bias in favour of journals in which the articles were written in English. Whereas 75 per cent of peer-reviewed journals indexed in Ulrich are in English, the Thomson Scientific figure is 90 per cent – an over-selection rate of about 20 per cent.[1] This evidence shows that in respect of the combined SSCI and AHCI coverage, there is a 20 to 25 per cent bias in favour of English-language scientific output in the SSH. Furthermore, French, German and Spanish journals are under-represented by 28, 50 and 69 per cent respectively.

Choice of bibliometric databases and indicators

Traditionally, most bibliometric studies have been based on the Thomson Reuters WoS, but Elsevier's Scopus database is becoming a legitimate alternative. Although there is evidence that WoS and Scopus are by and large congruent in their global content and in the NSE (Archambault et al., 2009), the social sciences and humanities coverage evidence is unclear. Examining the extent of WoS and Scopus's coverage in the context of Canadian social science and humanities research diffusion is therefore relevant. Canada, having both English-speaking and French-speaking scholars, is an interesting case. A random sample of 300 papers was drawn from the annual reports of researchers supported by the Social Sciences and Humanities Research

1. Gingras and Mosbah-Natanson (in this Report) give different estimates for the difference in English-language social science and humanities journals included in the WoS and the Ulrich directory. Their assessment refers to 'academic and refereed journals' whereas this paper states 'peer-reviewed journals'. Because the second is a subset of the first, both statements seem consistent with each other.

Council (SSHRC). Following the exclusion of a few anomalies, and with a resulting sample of 289 Canadian scholarly papers, the Scopus coverage was determined at 45 per cent and the WoS coverage at 35 per cent. Combining the two databases would not necessarily lead to a cost-effective solution, as the combined total coverage was 50 per cent – that is, five percentage points more than Scopus alone. Importantly, papers written in English are 3.2 times more likely to be covered by Scopus, which covered 16 per cent of French-language papers, whereas English-language papers were 6.5 times more likely to be covered by WoS. Based on this evidence, Scopus is slightly better overall, and much better at covering French-language research diffusion. In addition, Scopus is set to further expand its coverage of humanities journals. A sizeable number of Canadian journals will soon be added, thus increasing the gap between the two databases.

Overall, these data show that we cannot effectively compare the scholarly output of French-speaking and English-speaking Canadian scholars using these databases. By extension, it would be misleading to use these databases to compare the social sciences and humanities production of Canada's different provinces.

The data presented here show that social sciences and humanities knowledge production can be observed using bibliometric methods only when the greatest care is taken. The existing peer-reviewed journal databases are incomplete and do not satisfactorily cover languages other than English. This means that whenever language issues influence output in one way or another, it is impossible to perform robust comparisons, let alone rankings. This is not to say that questions cannot be studied using bibliometric methods; it simply means that we must be careful when drawing normative conclusions, especially if the questions examined are likely to be shaped by linguistic and geographic variables. In particular, developing countries are certainly under-represented, especially those that are not English-speaking. Moreover, as always, it is perilous to compare fields (such as the social sciences and the humanities) if the morphology of scholarly communication in each area is not taken into account. It is, for instance, important to bear in mind that books are the preferred mode of knowledge dissemination in the humanities. Furthermore, the current databases are not reliable enough to allow for the computing of statistics on book-based diffusion and the associated impact as measured in respect of books.

The development of a robust bibliographical book database comprising complete references as well as more universal coverage of social sciences and humanities journals would expand our capacity to understand social sciences and humanities knowledge diffusion and use. As long as our tools remain non-existent or limited, the bibliometric analysis of the social sciences and humanities will be less comprehensive than that of the natural sciences. Perhaps too much effort has been spent discussing what is good and what is not, and hence on what should be included in and excluded from databases. With the rapid development of electronic data interchange, inclusiveness and extensiveness should be the goal. Knowing that the supposedly best journals are included in the Thomson Reuters database is of no use when we want to understand how, for example, research on education has evolved in African countries over the past ten years. There are many relevant questions that bibliometric methods can help answer; however, for the time being, the most important question overall is how long we have to wait until this can be done.

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Pros and cons of research assessment

Ellen Hazelkorn

Rankings and research assessment have become an integral part of higher education and publicly funded research. Research assessment is a means, at both the national and institutional level, for boosting research performance and quality, and optimizing resource allocation. International evidence shows, however, that ranking and assessment processes can have perverse effects, especially when indicators are considered in isolation and simple correlations are made.

Why assess research?

Rankings and research assessment now form a permanent and necessary part of higher education and publicly funded research. Research assessment is an important mechanism, at both the national and institutional level, for boosting research performance and quality, optimizing resource allocation, differentiating missions and institutional profiles, facilitating international benchmarking, and identifying peers for networking and strategic alliances. It also serves as a tool to increase public awareness and understanding and hence participation in broader discussions about higher education (IHEP, 2009, pp. 1–2). Because research assessment requires improved data collection, it can be beneficial for strategic planning and management, and institutional autonomy.

International evidence shows that ranking and assessment processes can have perverse effects, especially when indicators are considered in isolation and simple correlations are made. The evidence also shows that a number of governments, higher education institutions (HEIs) and researchers are making decisions and realigning their priorities in order to match indicators. This includes over-concentrating research in a few elite HEIs, focusing on particular disciplines (primarily the sciences), and neglecting local or regional issues in order to publish in high-impact international journals. Throughout the world, governments and HEIs have rewritten strategies and priorities, and have made significant changes at both the system and institutional level in order to improve their position in global rankings (Hazelkorn, 2008).

As indicators are not value-free, the chosen methodology and the interpretation of the results can have considerable implications and carry numerous risks. Throughout this section, we discuss the limitations of some frequently used indicators, and offer some possible alternatives for a 'good practice' model.

Limitations and unintended consequences

Research assessment and ranking can share a number of characteristics. They both seek to benchmark higher education performance on the basis of selected, and sometimes weighted, indicators. Rankings rely heavily on traditional research outputs captured in international bibliometric and citation databases, such as Thomson Reuters WoS and Elsevier's Scopus. The scores are aggregated into a final descending rank. Rankings are essentially one-dimensional, since each indicator is considered as independent from the others. Their popularity is largely related to their simplicity; as with restaurants, televisions or hotels, rankings of universities provide an easy guide to quality, at least at first glance.

In contrast, research assessment is often a multifaceted review of performance, conducted by public agencies, using qualitative and quantitative indicators. The UK's Research Assessment Exercise (RAE) is a good example of this. Organized every four years since 1986, it is based on institutional submissions in subject areas or units of assessment, which are ranked by a panel of subject specialist peer reviewers. The results determine the level of resource allocation. This is in sharp contrast to other systems that focus mainly on quality assurance, such as in the Netherlands. In recent years, concern about the financial cost, the human resources and time needed, the level of bureaucracy and allegations of 'gaming' have led to the adoption of a more metrics- or indicator-based system. Like the UK, Australia has abandoned its Research Quality Framework (RQF) in favour of the Excellence in Research for Australia Initiative (ERA).

The results of research assessment are rarely ordered in a hierarchical manner, but the publication of their results by the media or other organizations has often led to the production of a 'league table' of HEIs. This practice has facilitated the restructuring of the higher education system, and has arguably led to a growing convergence between assessment and rankings.

Bibliometric and citation databases seek to identify the core literature by selecting journals that publish the overwhelming majority of peer-reviewed articles (around 9,000 in WoS and 18,000 in Scopus). While there are efforts to extend coverage to arts, humanities and social science journals, the main beneficiaries of this methodology have been the physical, life and medical sciences. This is because these disciplines publish frequently with multiple authors. In contrast, the social sciences and humanities are likely to have single authors and to publish in a wide range of formats (monographs, policy reports, translations and so on), whereas the arts produce major art works, compositions and media productions, and engineering focuses on conference proceedings and prototypes.

Since, as Thomson Reuters say, 'English is the universal language of science at this time in history', international databases have tended to favour English-language publications. This disadvantages the social sciences and humanities, which often consider issues that are primarily of national relevance, and publish them in the national language. It can also benefit countries where English is the native language, and countries that publish the largest number of English-language journals.

This disparity is further reflected in citation practices. Citations aim to measure the impact of research on academic knowledge. The system, however, has natural limitations and is open to gaming. Authors are most likely to reference other authors whom they know. Given an intrinsic tendency to reference national colleagues or English-language publications, the reputational or halo factor implies that certain authors are more likely to be quoted than others. This may occur because of the significance of their work, or because of informal networks. Self-citation, by which authors reference their own work, can also have a knock-on positive affect.

Bibliometric and citation databases capture past performance, which is usually interpreted as an indicator of future potential. As a result, new research fields and interdisciplinary research can be neglected. It is sometimes hard to get papers that challenge orthodoxy published, or they are less likely to be published in high-impact journals. There is an underlying assumption that journal quality is a proxy for article quality.

> *Because articles published in new journals remain invisible to most citation indices, they also remain invisible to almost all ranking systems. Such invisibility dramatically skews scholarship … implicitly encourag[ing] conservatism …*
>
> (Adler and Harzing, 2009, p. 78)

By measuring impact in terms of papers cited by academic peers, citation and bibliometric indices can ignore research that affects policy, legislation or regulatory regimes, technological or social interventions, business creation and employment, and other non-scholarly forms of impact. This is a key omission – not just because it advantages certain disciplines over others, but because it projects a narrow image of research.

Research has traditionally been divided into two categories: basic and applied. Over time, these boundaries have tended to blur as research and researchers engage in all aspects of the knowledge triangle. Knowledge has also become more democratized as an increasing number of people become aware of the issues and contribute to the application of knowledge. Yet collaborative research and its social impact or economic benefits do not usually form a central feature of assessment. Admittedly, social impact or economic benefits can be difficult to measure, but its value, to paraphrase Einstein, derives from the ability to measure what counts rather than what can easily be measured.

Peer review represents a cornerstone for research assessment. Assessing research quality requires a detailed understanding of the field and its contribution to knowledge. But peer review also has its limitations. Evaluators often assess research in terms of what they know; novel and challenging ideas can be marginalized, as noted above. Marginson notes, 'Not all path-breaking innovations gain early peer recognition and some are sidelined precisely because they challenge established ideas' (2008b, p. 17). Peers often conform to conventionally accepted patterns of belief, and may be influenced by a researcher's reputation rather than their actual contribution to knowledge.

Finally, the results of the research assessment process are usually publicized as institutional results. Because research is increasingly conducted by teams, individual performance data is aggregated using the research field, discipline or department as the unit of assessment. (Individual

performance usually serves for promotional or award purposes.) While this method offers the best opportunities for comparison, both within and between HEIs, comparisons at the department level can be problematic, because departments are often historical constructs. Nevertheless, it is best to assess research at the subinstitutional level in order to overcome the natural distortions that arise when results are aggregated to the institutional level. This is because large HEIs, especially those with medical schools, do best in systems that simply quantify total output, such as global rankings. Most HEIs are excellent in certain domains and in need of improvement in others. Whole-institution comparisons brand everything according to the majority. Differences in disciplinary practice, or new or emerging fields of investigation, can be undermined by this method.

Research assessment 'good practice'

In order to overcome many of these limitations, careful attention must be paid to the purpose of research assessment. Its purpose depends on the end user: for example, policy-makers and government agencies, HEIs, public or private research organizations, potential researchers or graduate research students, employers, civil society and the media. Each group uses information differently to satisfy a diverse and often conflicting set of objectives. The experience of rankings suggests that the number of users and uses is increasing, and that it is not possible to control the ways in which people use or interpret the data once it has been published.

The choice of indicators is therefore vital. The results can impact on individual, institutional and national reputation and status, students' choices and opportunities, and our own understanding of knowledge and knowledge production (Hazelkorn, 2009). Thus, indicators should be appropriate and verifiable, and the process must be transparent and replicable. It should enable decision-making by internal and external users, and facilitate comparisons over time and across different types of HEIs. Indicators should not be affected by any bias, and they should instil trust. In other words, those being assessed must believe in the indicators' appropriateness and truthfulness. Having too few indicators can lead to distortion. Too many can make the exercise complicated and costly. Ultimately, the choice and weight of indicators should seek to strike a balance between fairness and feasibility (European Commission, 2006; Cañibano et al., 2002). 'Good practice' suggests that research assessment should:

- Combine indicator-based quantitative data with qualitative information, for example, information based on expert peer or end-user assessment. This enables the quantitative information to be tested and validated within the context and purpose of the assessment.
- Recognize important differences between research disciplines. Peer-reviewed journal articles are the primary publication channel for practically all academic disciplines. However, the complexity of knowledge has led to a diverse set of output formats: audiovisual recordings, computer software and databases, technical drawings, designs or working models, major works in production or exhibition, award-winning designs, patents or plant breeding rights, major art works, policy documents or briefs, research or technical reports, legal cases, maps, translations or editing of major works within academic standards, and others.
- Include impact and benefit assessment. Assessment should include indicators capable of capturing and recognizing the fact that research does not exist in isolation. This may differ along disciplinary lines. It may include indicators such as graduate employment, the number of companies established and employees hired, changes to policy, legislation and regulatory regimes, waste and pollution reductions or improvements in health care (see Australian Government, 2006). Stakeholder esteem indicators point to how research is viewed by the wider community. Among such indicators, we find keynote addresses; prestigious national and international awards and prizes; international visiting research appointments; and appointments to advisory committees in national or international organizations. The involvement of stakeholders or users in the process could be considered.
- Involve self-evaluation as a means of proactively including the research community in the assessment of its own contribution. It also represents a way of placing the research process – which includes the organization, management, and developments over time – in context and ensuring that it stays in line with the institution's mission (Spaapen, Dijstelbloem and Wamelink, 2007).

Conclusion

The European Council's 2006 communication, *Delivering on the modernisation agenda for universities: education, research and innovation*, illustrates the ways in which the legacy of rankings has become embedded in higher education policy:

> *Universities should be funded more for what they do than for what they are, by focusing funding on relevant outputs rather than inputs. … Competitive funding should be based on institutional evaluation systems and on diversified performance indicators*

with clearly defined targets and indicators supported by international benchmarking.

This has implications not only for research assessment processes but for academic behaviour as well. There has been a clear shift from self-declaration to external verification of quality. Greater attention is being given to the issue of knowledge access. Open science, open source and institutional repositories are just some of the many existing alternatives that are being explored and adopted. In some cases, national agencies are pressing for these changes in order to maximize the visibility, accessibility and scientific impact of knowledge for society and the economy.

An important obstruction to a more inclusive research assessment process lies within academia itself. Because research has the 'capacity to shape academic careers at the point of hiring and promotion' (Marginson, 2008, p. 17), it has become vital to identify indicators and methodologies that measure, assess and reward the full spectrum of research activity – across all disciplines, including interdisciplinary work, and all discipline outlets. This will help to incentivize academia, increase investor confidence and inform the public. It is also vital because a major handicap for researchers engaging in new forms of knowledge production is that recruitment, tenure, promotion and prestige still reward traditional, disciplinary Mode 1 outputs.

While governments and national agencies may wish to set up simple processes, there is no single set of value-free indicators. Thus, the choice of indicators, the methodology used and the weightings assigned to them are vital. Greater attention needs to be given to all these factors in order to ensure that the process is fit for purpose and avoids producing unintended consequences.

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Research assessment in the United Kingdom

Alis Oancea

The UK has been assessing higher education research at the national level since the mid-1980s via the Research Assessment Exercise (RAE). Every four years, departments have collected information on staffing, research income, research students, publication outputs, indicators of esteem and research environments. The submissions have then been peer-reviewed and graded. The resulting ratings of research quality have been used by national higher education public funding bodies in their funding and policy decisions.

Background

The assessment of higher education research at the national level in the UK has been carried out since the mid-1980s via the Research Assessment Exercise (RAE). Every four years (on average), departments have collected information on staffing, research income, research students, publication outputs, indicators of esteem, and research environments. The submissions have then been peer-reviewed and graded (from 1 to 4 in 2008) by subject panels and subpanels, consisting of a mix of academics and users relevant to each field, who had agreed on subject-specific criteria in light of generic guidance. The resulting ratings of research quality were used by national higher education public funding bodies in their funding and policy decisions. Up to 2008, only those departments that had scored highly in the RAE were subsequently funded. In 2008/09 funding was spread more thinly, not on the grounds of overall grades, but on the basis of departmental 'quality profiles'.

The RAE initially met with widespread support as a potential solution to problems generated by the expansion of higher education. The 1992 Further and Higher Education Acts had almost doubled the number of UK universities by granting university status to institutions formerly known as polytechnics. The argument was that the expansion had made block-funding for research, with low accountability levels, unsustainable.

The benefits of the exercise for the social sciences, aside from arguably putting research more firmly on the public agenda, included:

- development of research cultures in post-1992 universities
- enhanced management practices and structures in research units
- increased attention to human resources in research
- improved completion and publication of research
- better overall quality and international standing of research (Harley, 2002; Elton, 2000; McNay, 1997).

Initial support soon became concern. Assessment and funding, although separate processes, were inextricably linked in how most people saw the exercise and in institutions' strategic decisions, particularly as the exact amount of funding was only made known after the end of the assessment process.

Common concerns about the RAE

Research governance and administration

The exercise was accused of promoting an excessive concentration of funding (AUT, 2002) and of weakening the UK's 'dual support' system for research funding, which allocates block grants for research infrastructure separately from competitive grants for individual projects and programmes. Others, on the other hand, worried that the RAE had spread existing resources too thinly, particularly following the expansion of the university sector in the early 1990s (Elton, 2000), and after RAE 2008.

Managing the RAE created a considerable administrative burden at all levels of the system, seen by many as an excessive and stressful bureaucracy (AUT, 2002). For some, the RAE increased managerial control over research, to the detriment of professional autonomy (Harley, 2002). Further department-level impacts of the RAE included a perceived shift in the role of research directors from developer to fund-raiser (Dadds and Kynch, 2003), and resource transfers from teaching to research (McNay, 1997).

Research quality and diversity

It has been argued that RAE was aimed at eliminating wasteful funding, rather than rewarding excellence (Gillies,

2007). Less conventional, though arguably important, research and researchers may have fallen victim to the rigours of assessment and reward. In addition, the RAE was accused of making research more 'short-termist', due to pressures to publish, and the encouragement of bad practices (split papers, duplicate publication, mushrooming of new journals and so on).

Recent proposals to use bibliometric indicators in future research assessments seemed partly intended to redress such negative impacts by giving greater weight to quality-reviewed publications. These proposals, however, have led to further concerns about biasing assessments towards refereed journals (for example, those included in indexes such as ISI and Scopus), to the detriment of professional publications, monographs and edited books.

In addition, RAE has often been accused of failing to recognize and support diversity in research. For example, it was accused of discouraging innovative, applied and interdisciplinary research, while tilting professionally related subjects towards theoretical work (Elton, 2000; McNay, 1997); favouring policy-related research; or endangering pedagogic research. In addition, RAE-informed concentration of funding may have resulted in reduced regional research capacity (Deem, Mok and Lucas, 2008).

Many have argued that the RAE has been successful when it came to screening out poor-quality research through peer review, but that its financial outcomes threatened 'emerging' research cultures and 'pockets of expertise' in various subfields of social research (Dadds and Kynch, 2003). The 2008 exercise offered an interesting 'natural experiment' in this respect. In 2008, there only needed to be one individual with excellent outputs in order for their institution to benefit from some level of funding. Although the principle underpinning the new formula was sound, a fresh wave of concern emerged regarding its 'redistributive' effects: gains in funding throughout the system were offset by considerable losses by the top-rated institutions, particularly in fields outside science, technology, engineering and mathematics.

Human resources and work climate

Further concerns were expressed regarding the detrimental impact for individual staff members of not being submitted to the RAE as 'research active' and about the imposition of the role of 'active researcher', above that of 'teacher' or 'scholar', as the standard in academic careers (AUT, 2002; Elton, 2000; Hare, 2003). According to Harley (2002), although the RAE and the principle of research selectivity it embodied had been largely accepted within university management circles, mid- and early-career academics reported feeling under pressure to perform and to adapt to what they perceived as inappropriate criteria. Mills et al. (2006) also pointed to the negative influences of 'local interpretations' of the 'RAE culture' on the careers of young researchers; for example, the expectation, based on anticipated funding outcomes, that they produce four publications of 'RAE standard', despite the provision for special circumstances in RAE guidelines (Mills et al., pp. 13, 91). The RAE was also blamed for contributing to increased reliance on short or fixed-term employment contracts in social science research (Mills et al., 2006).

In addition, many commented on the role of the RAE in creating a 'transfer market' of researchers towards 'elite' institutions. Harley's (2002) respondents spoke of 'head-hunting and touting', and of 'RAE appointees', that is, 'academics … appointed to senior posts specifically to boost RAE ratings' (pp. 193, 199). Such transfers were reported to have occurred prior to each exercise in a bid to increase the chances of a good grade, but also following the publication of the funding outcome, due to the increased capacity of top-rated institutions to recruit and sustain larger numbers of staff. The financial outcomes of the RAE 2008, however, meant that in certain disciplines the top-rated institutions lost some of their financial power to further recruit, while departments with lower overall RAE rankings were sometimes able, through their pockets of excellence, to advertise new positions.

Finally, some argued that the exercise stimulated a climate of divisiveness, unfairness and demoralization among researchers (AUT, 2002; Harley, 2002), as well as a narrowly 'competitive, adversarial and punitive spirit in the profession' and a skewed hierarchy of values, which emphasized research over teaching (Elton, 2000, p. 279; AUT, 2002). These changes challenged academics' 'epistemic' identity, which relied on collegiate peer review, disciplinary recognition, and a balance between teaching and research (Harley, 2002).

Technical and procedural concerns

The RAEs have been criticized for their summative character, for parochialism, for unclear criteria, and for their tendency towards bias. Sources of bias, in the preparation of submissions and in their assessment, included gender effects, 'halo' effects in relation to the reputation of institutions, journals or individuals, and 'game-playing'. Peer review quality was also occasionally criticized.

Concluding comments

Some of these concerns arose early in the RAE process and began to be addressed as early as 1997, when the Dearing Report recommended that institutions should be able to choose between the RAE and a lower level of non-competitive funding. The 2003 Roberts review then proposed an overhaul of the RAE system. Further consultation in 2006–2007 concentrated on the idea of replacing the RAE with a metrics-based exercise (Oancea, 2007). At the time of writing, this idea has been considerably toned down, following strong reactions from within academic circles. The next exercise, dubbed Research Excellence Framework, will still have peer review at its core, although in some disciplines bibliometrics would also play a role.

Although the emphasis of this paper has been on the RAE's shortcomings (perceived or proven), the paper does not argue that the exercise was flawed to the extent that any change would be good change. Many of the effects attributed to the RAE cannot be traced directly to the exercise. Rather, they were responses of the higher education system to wider trends in the UK environment for research policy and public service governance.

The responses to the RAE summarized in this paper highlight the complexity of any attempt to rank research, and the difficulty of designing a national assessment system that is fair and effective. A recent in-depth review of the impacts of RAE 2008 teased out some of these complexities (Oancea, Furlong and Bridges, 2010). The review revealed a mixed perception of impact. Recent proposals for reform have answered some of the reservations about the RAE described above, but leave most of the objections of principle unaddressed. For example, the presuppositions that underpinned different rounds of the exercise and which were open to challenge included expectations of:

- the value of creating quasi-markets in state-funded research through competition and selectivity
- the importance of high-stakes assessment as driver of quality
- the meaningfulness of aggregates of quality at institution level
- the commensurability of research quality across subfields, types of institutions, research cultures, and communities
- the direct connection between research concentration and research excellence.

Reforms must begin by reassessing such basic principles rather than placing too much hope in the search for generic techniques to fill substantively different holes in the system.

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Flash
The assessment of social scientists in Spain

Unlike many other evaluation systems, the Spanish research evaluation system tends to focus on individual researchers rather than on research organizations (Cruz-Castro and Sanz-Menéndez, 2007). The system acts as a provider of individual rewards (grants, salary bonuses, reputation and so on) rather than as a means of steering and managing research institutions. In such a system, peer review forms a core pillar for the evaluation of individual research outputs. Curricula vitae (CVs) are partly assessed in terms of publications, and the quality of the journals in which a researcher's papers appear. Peer commissions in evaluation agencies have used a diverse set of criteria to assess local social science journals in which researchers have published articles. These are complementary to the traditional bibliometric approaches (Giménez-Toledo, Román-Román and Alcain-Partearroyo, 2007).

Two of the three main evaluation bodies are the Agencia Nacional de Evaluación de la Calidad y Acreditación (ANECA, the National Agency for Evaluation, Quality and Accreditation), and the Comisión Nacional Evaluadora de la Actividad Investigadora (CNEAI, the National Commission for the Evaluation of Research Activities). The first agency provides accreditation in order for academics to access

certain university positions. The second evaluates the scientific output of tenured researchers on a six-year basis. Each successful evaluation leads to a salary bonus. They operate through subject area, academic commissions and a peer-review system. The scientific community is their key source of governance.

The main criteria used by these commissions to evaluate social scientists are available in various public documents.[1] We have analysed them in order to evaluate the extent to which the processes rely on bibliometric indicators when compared with other fields. ANECA strongly values publishing in indexed journals. However, this agency also makes certain distinctions. In the hard sciences such publications form a 'fundamental element' in any evaluation process, but in the social sciences they form an 'important element' together with books and book chapters. CNEAI, on the other hand, requires that in order to obtain a positive evaluation, social scientists must have at least two ISI articles in referenced journals out of the five required contributions. This forms a standard (with a few small variations) for most other research areas as well – mathematics and chemistry require three ISI publications. Looking at the evolutions in the CNEAI criteria over time, it could be argued that behind this standardization of ISI publication requirements was an attempt to develop the internationalization of the Spanish social sciences (Jiménez-Contreras, de Moya-Anegón and Delgado López-Cozar, 2003). Certain disciplinary specificities are noticeable. In the economic and business sciences, for instance, only articles published in journals that are highly ranked in the Journal Citation Reports[2] are taken into consideration. In other social sciences, an article is positively considered by the commissions if the journal is covered by the Indexes, regardless of its position in the Report.

Institutions and researchers have observed how certain well-known publications in their fields were not taken into consideration on the grounds that they were not present in the traditional databases. In order to deal with this problem, new tools and sources of information on the quality of the social science publications have been developed. The evaluation committees now also assess whether journals are well positioned or valued in other publication evaluation systems such as ERIH (European categorization of journals), Latindex, DICE,[3] In Recs[4] and RESH.[5]

To conclude, peer evaluations of Spanish social scientists regularly use data on publication quality. They do not limit themselves to traditional bibliometric indicators but also use complementary evaluations of local journals in which academics have published their research.

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1. http://ciencia.micinn.fecyt.es/ciencia and http://www.aneca.es
2. The Journal Citation Reports is a Thomson Reuters product related to the SSCI and SCI. It includes a selection of journals covered in these databases and provides among other things their impact factor. See more information at http://thomsonreuters.com/products_services/science/science_products/scholarly_research_analysis/research_evaluation/journal_citation_reports
3. DICE is a tool built from RESH, but it does not include the two most controversial indicators in RESH: assessment of specialists and mean impact index. DICE does not allow for ranking publications. http://dice.cindoc.csic.es
4. In Recs bases its evaluation on the calculation of a 'Spanish' impact factor, as well as other bibliometric indicators. The aim is to compensate for the lack of coverage of Spanish journals by international citation indexes and, above all, to try to discover the real influence of national journals in the Spanish scientific community. It is developed for social sciences and law. http://ec3.ugr.es/in-recs
5. RESH provides seven different quality indicators to assess publications: permanence, compliance with publication frequency, external peer review, value given by Spanish specialists to each journal, number of Latindex criteria fulfilled, databases which systematically include the publication and mean impact index (a sort of impact factor calculated for Spanish journals with a five-year citation window). The final score allows for a ranking of journals by area. http://resh.cindoc.csic.es

7.3 Project funding and agenda-setting

Introduction

The way in which resources are allocated is central to the organization of national research systems, and the fine-tuning of these mechanisms may offer ways to improve the effectiveness and international competitiveness of these systems. A problem with the analysis of funding systems is that it is often unclear how much of the block grant funding to institutions is allocated to research, infrastructure and salaries. As discussed in Chapter 2, one of the major trends in the public funding of research in most regions of the world is a move away from block funding and towards competitively allocated project funding. This section is mainly restricted to a discussion of the allocation of funding to social scientists in public sector research organizations in OECD countries and China.

An important element of the research assessment exercises discussed in the previous section is peer review. Peer review is also used in the evaluation of research proposals and the allocation of funding. The use of proposal peer review implies certain trade-offs, and the system is facing several challenges at present (Hackett). As was discussed in various contributions to Chapter 2 of the Report, the peer-review process can also have its limitations. Favouritism and a lack of transparency can hamper the openness and fairness which should be basic principles of the review process. In small and developing research systems there may simply be insufficient peers to anonymously evaluate proposals on a variety of specialist topics. In these cases, drawing on the international scientific community or expatriate scientists may offer a solution. For some purposes, the use of carefully devised formulae to allocate resources may be preferred to the peer review process. Arriving at good metric-based formulae would however be difficult, especially in the social sciences. For the top segment of good proposals, neither proposal peer-review nor the bibliometric quality profiles of applicants explains the eventual funding decisions of several European funding agencies (van den Besselaar). Apart from these measures of quality or excellence, these research councils appear to consider other factors in their eventual evaluation decisions, and this is not necessarily a bad thing.

The description of the evolution of the Chinese social science funding allocation system offers an interesting glimpse of how this system currently shares many features of the European and North American funding systems (Wei). Bibliometric indicators are used to inform proposal peer review, but these assessments are based in part on recently compiled Chinese-language bibliographical databases. This again helps overcome some of the limitations of bibliometric evaluations mentioned earlier.

Changes in funding policy and programmes in Canada have allowed an increasingly strong focus on efforts to make social science research more visible to a diversity of publics apart from other social scientists (Provençal). This also has an impact on the evaluation of proposals and research, since other impact indicators than journal citations are required. The experience of the Dutch research council (Nijkamp) suggests that social scientists are responsive to societal needs, even when applying to open calls for fundamental research proposals. Even if it remains important to set thematic priorities as well, in this national case, the questions originating from the scientific community are considered an appropriate guide for research policy in the social sciences.

The contributors to the previous section generally agreed on the need to combine metrics-based quantitative indicators with qualitative reviews. As this section showed, peer review – in some countries supported by metrics-based evaluations – is central to the allocation of resources to researchers and research proposals. It has its limitations and implies certain trade-offs, but it is likely to remain a central feature of both evaluation and resource allocation mechanisms in most research systems in future. This does not mean that the allocation of funding is not subject to constant reappraisal and change. Some types of innovative, multidisciplinary or application-oriented research may be more amenable to other evaluation mechanisms or a combination of different types of evaluation.

Peer review and social science research funding

Edward J. Hackett

Peer review in the social sciences is facing the same choices and challenges as scientific peer review in general. However, the dangers are amplified by the shorter intellectual and institutional histories, and researchers' perpetual obligation to justify and enhance their status within intellectual and policy circles. There are alternatives to peer review for the allocation of research support, but these bring grave technical and institutional liabilities, including lower legitimacy and greater vulnerability to political distortion.

Intellectual advances in the social sciences depend on funding from national research agencies to support data acquisition, analysis, student training and the development of new technologies. Peer review (or, equally, merit review) is the established method for evaluating research and allocating resources. This has led to discussions within the social science community about the merits of peer review.

An appraisal of the peer review system should begin by recognizing that its use in the allocation of research funds is a choice, not a requirement. If peers do not allocate resources for science, then who might do so? There are several alternatives, including legislators, research managers and formulas. When legislators allocate funds the practice is formally known as direct appropriation (and informally as earmarking or pork-barrelling). In the 2008 fiscal year, the US Congress earmarked about $2.25 billion for projects in 920 colleges and universities, continuing a steep upward trend that began in 1996 (Brainerd and Hermes, 2008).

Critics of earmarking complain that it circumvents substantive expertise by ignoring the scientific community's collective wisdom. Earmarking corrodes the meritocratic values of science, stigmatizing recipients and frustrating reviewers, especially when competitive research funding is scarce and sensitivities are high. Supporters argue in response that earmarking enacts principles of representative decision-making (because legislators are elected officials) and distributional or geographic fairness (because legislators are drawn from across the nation). In this view, earmarking offsets the oversights and elitism of meritocratic decision-making.

Alternatively, 'strong managers' might allocate research funds according to their best expert judgement, as is done in the Defense Advanced Research Projects Agency (DARPA). In effect, this represents peer review by a single peer. The manager must be the intellectual and reputational equal of those applying for support. The person must understand the field, including its epistemic culture and membership, and hold clear and widely shared views of its prospects, in order to ensure that decisions and allocations are made in a wise, legitimate and effective manner.

The strong manager is oriented toward and accountable for attaining clearly defined performance outcomes, because in this system procedural accountability is low. This model's effectiveness stems from its ability to support research projects whose objectives are clear, attainable and defined by the funding agency. In contrast, however, much science funding supports research programmes whose purpose is to advance knowledge by selecting between investigator-initiated, opportunistic and open-ended proposals. Strong manager funding can welcome risk but is particularly averse to and impatient with failure, cutting its losses when a promising idea falls short, whereas programme funding would tolerate a revision of scope or purpose.

A third research funding mechanism consists in using formulas to allocate research resources on the basis of seemingly objective criteria: for instance, to states, universities or institutes, and then to centres, teams or individuals within them. Formulas integrate a variety of criteria, including the number of publications, the number of faculty employed, graduate students enrolled or degrees granted, the regional or state population, the level and type of economic activity, or other indicators of past performance, current needs or potential payoff. Nonetheless, fair and effective formulas are difficult to devise, and the relative merits of alternatives are subject to passionate debates:

- How would newcomers fare in such a system?
- How can older researchers who are less productive be eased out, while retaining those who are performing well?
- Would scientists persevere in a recalcitrant line of inquiry, or would they recurrently change course in order to meet performance standards?
- Who would develop and administer the formula, preserving it from efforts to 'game' the system by doing the things that are rewarded, even if they are not most beneficial to science or engineering?

Finally we come to peer review, an institution imbued with practical and symbolic meaning that spans the worlds of science and policy, academia and government, and varied scientific disciplines, and that extends from research into domains of professional practice (in education, engineering and medicine, for example; Chubin and Hackett, 1990). Calling peer review a boundary process highlights the mix of communities, purposes, evidential standards, argumentative procedures, ethical precepts, theoretical frameworks, epistemic cultures, principles of fairness and the like that mingle and collide in the review process (in a way that resembles 'boundary objects' as discussed by Star and Griesemer, 1989). For example, where government might demand accountability, due process and prudence, science might require freedom, agility and boldness.

Positioned across the border between government and academia, proposal peer review is asked to negotiate among competing purposes, doing things that are not always consistent with each other. Among these are evaluating research ideas, providing expert advice (to proposal writers and funding agencies), imparting momentum to a promising line of research, initiating communication among researchers working at the frontiers of knowledge, asserting the professional autonomy of scientists (in relation to other professions), imposing accountability and interposing social considerations into meritocratic evaluations (Hackett and Chubin, 2003). Spanning the border between academe and government, peer review acts as a transducer, changing the form of energy represented by scientific ideas and effort into the form represented by money, reputation and legitimacy. Peer review in the social sciences may entail explicit valuation of the moral qualities of the proposer such as intellectual boldness and perseverance (Lamont, 2009).

The peer review system juggles trade-offs between desirable qualities or values, and changes in external circumstances may shift the balance of emphasis between competing values. The presence and dynamics of competing values in science and other forms of social organization were initially presented in Robert Merton's studies of ambivalence (for example, Merton, 1973 [1963], pp. 383–412) and Thomas Kuhn's (1977 [1957]) 'essential tension' between originality and tradition in science. For Kuhn, research is performed in dynamic tension between inconsistent demands, on the one hand to say something new, and on the other to build upon the existing literature. It is in the nature of science to seek originality while at the same time challenging it, for example through organized scepticism exercised by individual self-criticism and collective peer-review. The nature and implications of value tensions in science, and particularly in the peer review system, have been extensively presented in a series of papers (for example, Hackett and Chubin, 2003; Hackett 1990, 2005).

The following value poles pose particular difficulties for peer reviewers:

- Originality–Continuity: support for new ideas, approaches, and topics while maintaining the scientific field's research traditions and trajectories.
- Selectivity–Sensitivity: exclude unsound ideas, weak designs, fishing expeditions, flyers and fads while remaining receptive to imaginative ideas, novel approaches, and challenges to received knowledge.
- Responsiveness–Rigour: address urgent, emerging research issues while advancing fundamental knowledge and retaining methodological rigour.
- Effectiveness–Efficiency: provide thorough and expert reviews identifying the best research for support while doing so at the lowest cost and least burden to the review community.
- Validity–Reliability: adequately evaluate all aspects of a proposal (which may require a variety of forms of expertise) while achieving a high degree of consensus among reviewers in order for the process to appear reasonable, sound and legitimate.

Three challenges are likely to shift the peer-review system along the value dimensions described above. The first challenge, posed by the US National Science Board (which oversees the National Science Foundation), calls for increased support for research that has the potential to fundamentally transform understanding (National Science Board, 2007). Through this report, the National Science Board echoes longstanding criticisms of the risk-averse character of peer-review (Chubin and Hackett, 1990; Kolata,

2009). In response, the NSF has shifted its peer review system toward a strong manager approach, increasing programme officers' levels of responsibility and discretion. This is accomplished through two substantially new programmes in the USA: EAGER (EArly-concept Grants for Exploratory Research) and Rapid (a programme that supports urgent research), awarding sums of up to $300,000 for periods of up to two years on the recommendation of a programme officer, itself usually based upon internal reviews. In terms of the value poles described above, the tendency is towards originality, sensitivity and responsiveness.

The second challenge arises from the increasingly interdisciplinary, international and socially engaged nature of scientific research. Since 2000, interdisciplinarity has been on the rise, and it is now accompanied by other forms of hybridization that broaden the scope of research to include diverse nations, cultures, purposes and publics. The crisp lines that separated researchers from their research subjects and from the users of their research have been replaced by collaborations, partnerships and hybrid identities. This emerging mix challenges the peer-review system. Those engaged in processes that transcend boundaries often experience difficulty in achieving mutual understanding, and a variety of linguistic and operational accommodations may be required (Galison, 1997). In analytical terms, the system is shifting towards greater responsiveness, greater concern for efficiency (since available resources to conduct reviews are not increasing proportionately with the complications of doing reviews) and lessened reliability. Reviews will be written from an increasingly varied set of standpoints, with a decrease in agreement between reviewers.

The third challenge that faces peer review is the increasing exhaustion of reviewers. The growing numbers of proposals and manuscripts has increased the number of reviews required to inform decisions, overburdening reviewers and lowering their completion rates. Since reviewers are asked to read a greater number and variety of proposals, completed reviews are shorter, less extensive and perhaps less expert (because the interdisciplinary and intersectoral nature of the proposals draws reviewers into unfamiliar intellectual territory). Accompanying these unfortunate outcomes are increased reviewer curtness, crankiness and willingness to refuse review requests, which, in the terms presented above, contributes to the overall system's lower effectiveness, reliability and validity, and perhaps legitimacy.

Peer review in the social sciences is facing the same choices and challenges as scientific peer review in general. However, the dangers are amplified by the shorter intellectual and institutional histories of the social sciences, as well as their perpetual obligation to justify and enhance their status within intellectual and policy circles. There are alternatives to peer review for the allocation of research support, but these bring grave technical and institutional liabilities, including lower legitimacy and greater vulnerability to political distortion. Emerging challenges – identification and support for transformative research; the increasingly interdisciplinary, international and engaged character of research; and the exhaustion of reviewers in a time of increasing volume, scale and complexity of research – all demand immediate attention. For the social and behavioural sciences, this is both a historical opportunity and a threat that will test available reserves of energy, ingenuity and commitment.

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Research funding as selection

Peter van den Besselaar

Do peer-review scores pertaining to scientific quality and bibliometric performance indicators actually guide funding decisions? One would expect at least a moderate positive association. This, however, hardly occurs. Those selected from the large set of good applications cannot be classified as 'excellent' or the 'best'. What does this imply for research funding systems when there is not enough money to fund all good research?

Research councils are 'in search of scientific excellence'. Although other criteria are important too, such as the societal relevance of research, research councils define their main role as selecting the best proposals and the best researchers through different forms of peer review, past performance assessment and panel reviews. In a case study (van den Besselaar and Leydesdorff, 2007, 2009) we examined the extent to which a social science research council succeeds in selecting the best researchers (for career grants) and research proposals (in an open competition grants scheme). Mission-oriented and thematic programmes were not included. We focused on fundamental research programmes only. Do peer-review scores pertaining to scientific quality and bibliometric performance indicators as defined by this council actually guide funding decisions? We would expect at least a moderate positive association; however, this hardly occurs. Those selected from the large set of good applications cannot be classified as 'excellent' or the 'best'. What does this imply for research funding systems when there is not enough money to fund all good research?

Our study showed that research funding can be considered as a two-step selection mechanism. The research council operates reasonably well at the first step by identifying and discarding the tail-end of the distribution. Researchers with weak past performance[1] and proposals with low referee scores are generally rejected. However at the second step, which involves selection from the top half of the distribution (the group of the good researchers), review scores and past performance measures did not correlate positively with the council's decisions. The successful applicants had a lower average past performance than the equally large group of best unsuccessful applicants. If the past performance indicators and referee scores are combined, there is no difference between the successful and the best unsuccessful applicants. If we accept these quality criteria, it is clear that the council under study does not select the most excellent.

Does this imply that the wrong researchers are funded? That could be too abrupt a conclusion. Since past performances and referee scores do not correlate in this top 50 per cent of applicants, scholarly quality ('excellence') obviously has more dimensions. In other words, it is impossible to create a quality ranking order to select the most excellent from the set of good researchers. As criteria never lead unambiguously to decisions, the council has great autonomy in prioritizing the large set of good applications. Although it is generally claimed that research quality is the dominant factor, it is clearly not enough, and the council's decisions are probably based on other criteria. These can be thematic: what is the research about and how relevant is it for possible applications in economy and society? Criteria relating to academic careers, for example policies to encourage female researchers or researchers from ethnic minorities, can also play a role. In addition, someone's position in the old boys' network may influence decisions. In other words, the selection and funding of research is a multicriteria evaluation procedure, and the idea of selecting 'the best' researchers and proposals is only meaningful if it is interpreted as drawing a line between a large set of good proposals and the rest. Within the group of good researchers and research proposals, talking about 'the best' or 'the excellent' may not be fruitful.

It could, of course, be argued that these findings are specific to the case under study. However, other studies in other countries and fields show comparable results (Bornmann

1. We controlled for age, discipline and type of funding scheme. This does not change the findings.

and Daniel, 2008; Hornborstel et al., 2009; Melin and Danell, 2006), as did a recent study in which we compared the social science council with a life sciences council (Bornmann, Leydesdorff and van den Besselaar, 2010). Consequently, the conclusions may be more generally valid.

Implications

The main issue lies at the systems level. Grant allocations should help the science system work properly despite uncertainties. Trying to improve procedures and statistical indicators for selecting 'the best' individual projects seems a blind alley. This has an important consequence, as project-funding success increasingly influences researchers' careers. If the probability of success is small, we should be aware that rejection does not imply that a researcher and a proposal are not good. Furthermore, while rejection may harm individual researchers, if talent is wasted, the entire research system suffers.

From a science policy perspective, the role of a research council is to improve scientific research more generally. This means:

- supporting talented and innovative researchers
- maximizing the probability of scientific breakthroughs (this is excellent research – but only with hindsight)
- supporting a balanced set of research and programmes – from the fundamental to the application-oriented and from astronomy to philosophy, that is, portfolio management.

Procedures for allocating funds should be discussed in terms of the effectiveness and efficiency of fulfilling these functions at a systems level, by stimulating variation and through properly functioning selection procedures. Does the funding system support the required variation through a variety of funding institutions? Is the best set selected?

One issue needs special attention. If a variety of selection criteria are used, the question of whether these are applied properly and transparently becomes relevant. Even if the procedures support good mainstream research, they do not necessarily support innovation. The complexity of decision-making may shut the system down, preventing new paradigms and new researchers from entering. This suggests the need to assess regularly the potential bias that may have crept into procedures. It may also be useful to introduce competition between funding agencies. This may help avoid nepotism and keep the science system open for a variety of innovative ideas.

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Funding and assessment of humanities and social science research in China

Wei Lili

China has directed increasing attention and funds to humanities and social sciences research since the beginning of the reform and opening-up period in 1978. Management, funding and evaluation systems have consequently been updated, innovated and improved continuously, reflecting the requirements of research development.

In China, the state has attached increasing importance to humanities and social sciences research since the beginning of the reform and opening-up period in 1978. This has led the state to make more money per year available for research. Consequently, the management, funding and evaluation systems have been updated, innovated and improved continuously, reflecting the requirements of research development.

The humanities and social science research project funding system in China

Since the reform and opening-up period, China has had a human and social science research and teaching system comprised of five types of institutions. These institutions are universities, social science academies, government research departments, public administration schools and military research institutions. Four of the five types of institutions are found at national and provincial or local levels; the exception is military research institutions. Nearly 400,000 people are employed in humanities and social science teaching and research nationwide; 30,000 of these are full-time researchers (Chen Kuiyuan, 2009).

The Chinese research funding system mainly comprises projects that fall under the National Social Science Foundation of China, the Humanities and Social Science Research Foundation under the Ministry of Education, and the research projects system of the Chinese Academy of Social Sciences (CASS). These are also the major national institutions engaged in the funding and evaluation of research. The National Social Science Foundation is open to all five types of research institutions. The Humanities and Social Science Research Foundation under the Ministry of Education, also called the Humanities and Social Science Research Project, provides research funding for teachers and researchers in the university system. The CASS research projects system offers funding for thirty-six of its research institutes (or centres) and researchers.[1] The three major Chinese national social science funding agencies follow the principle of assigning equal priority to the humanities and social sciences, and to basic and applied research. In addition, local governments and enterprises fund policy-oriented research, emphasizing local and applied research.

Over the past thirty years, the funding of humanities and social sciences in China has gradually evolved from a single research project funding system to a diversified one. Funding may target research projects, research institutions, discipline development, research teams and individuals, and sometimes publications and journals. The funding and evaluation of research projects is the oldest and most comprehensive instrument.[2]

The project execution management is divided into initiation, interim and concluding stages. Initiation management includes project planning, application, and examination and review by experts as well as examination

1. The National Social Science Foundation of China, the Humanities and Social Science Research Foundation under the Ministry of Education and the CASS research projects system are similar to the National Natural Science Foundation S&T Research Projects under the Ministry of Education and the Project System at the Academy of Sciences.
2. In 2009, the National Social Science Foundation funded 1,720 projects, of which 37 were key projects, 1,006 general projects and 677 young scholar projects. Under general projects, the Humanities and Social Science Research Foundation of the Ministry of Education funds 40 major projects annually, 900 planning projects and 400 young scholar projects. It also funds two projects for each of the 135 key research bases. In addition, it funds 60 completed major projects, key projects and general projects. In the past five years, CASS has annually funded about 30 major projects, 100 key projects, 100 young scholar projects, as well as 100 key research disciplines and 70 academic journals at the CASS level.

of the budget and project approval. The interim stage mainly covers an annual scrutiny, budget management and monitoring. The concluding stage mainly covers the evaluation, the final scrutiny, which includes the holding of seminars, peer reviews (by means of panel meetings or through correspondence), publishing the review results and assigning the predetermined budget in keeping with the grading that the project receives.

Research proposals or results are assessed through peer reviews by experts in the same fields of learning. The assessment can be carried out by means of correspondence or through a panel meeting. In both forms, the review can be carried out anonymously or openly.

The review of a research proposal generally requires four criteria to be met:

- Academic and social value, which includes the originality and social impact of the research.
- The proposal must clearly state and elaborate the methodology, research direction and targeted results.
- The chairperson's prior research results and the potential will be reviewed, as will the research team's knowledge composition. Furthermore, the existence of previous research and results is important, as is the preparation of the materials and other requirements, such as the timeframe.
- The proposal must also include a budget and the schedule should be well planned.

The evaluation of research results has two aspects. The first aspect comprises common quality criteria found in the research community and accepted by scholars in the same field. They include the degree of innovation, maturity and difficulty, the academic values conveyed, and the expected social impacts. The second aspect comprises the targets of the research results and the accepted proposal's expectations as agreed in the contract with the users.

The main characteristics of the system for funding and evaluating humanities and social science research in China are that:

- The determination of research topics is a combination of guided and optional selections. The National Social Science Foundation and the Humanities and Social Science Research Foundation under the Ministry of Education operate as funding agencies to support research, while CASS is a research institution which funds and manages its own research projects. These institutions' research topics largely fall into the two categories of guided and self-initiated research topics. Annually, funding agencies call for research proposals to be submitted, publish research guidelines and allocate project quotas. Following the various research area guidelines, researchers design and propose projects in their fields of expertise. At the same time, self-initiated research topics, which fall beyond the framework of guidelines, are also proposed and reviewed.
- Research proposals and evaluations in the humanities and social sciences are based on a peer-review system. Expert committees or peer-review panels are involved in each step of a research project. The acceptance and conclusion of a research project do not usually depend on the funding agency and management department's evaluation, but on the opinions of experts, expert groups or committees of experts.
- The research project system[3] is the basic way of organizing and managing research in China. The system follows the principle of fair competition to fund good research. Under a given topic, a research team is established as a basic unit to organize and manage the research activities. The chairperson is responsible for the project and has the autonomy to invite researchers to participate, including those beyond their own organization, organize the research, determine the project's pace, ensure the validity of the research arguments and allocate funds.
- The review procedures and administrative regulations are standardized and systematized. This is important, as projects are managed at different levels, depending on the institution that initially established them. The supervising agency, which examines the approval, evaluation and management procedures, applies standardized and systematized rules. These are also applicable to the supervising agency's criteria and management responsibilities and to the research teams' responsibilities, rights and obligations. The regulations and rules are communicated to researchers in the form of a document, which is available online as well as in newspapers.

3. Research project cycles differ for disciplines and project size. Generally, a social science project lasts two years, whereas one for the humanities three to five years. Contracts for financing research disciplines, institutions, scholars and journals usually run for three or five years.

New trends in the funding and evaluation of humanities and social science research projects in China

The debate on how to ensure fair and scientific peer reviews focuses on two questions. The first is how to determine rational and scientific evaluation criteria and indicators. The second concerns the peer-review system's credibility and fairness.

Since the l980s, peer review has been gradually and widely applied in humanities and social science planning, funding, assessment, project conclusions, awards for research results and publication in journals and elsewhere. Since the 1990s, however, the limits of peer review have come to light. Peer reviews' lack of generally accepted criteria and other scientific and non-scientific factors, such as reviewers' expertise, viewpoints, personal preferences and research ethics, have influenced and unsettled the evaluation process. Some peer reviews still exist in their original form, which calls their scientific nature and fairness into question.

With the development of the funding and evaluation of the humanities and social sciences in the twenty-first century, research communities and funding agencies have been contemplating these issues, suggesting new methods of evaluation.

Peer review has established its authority to assess research, and remains the main form and method of assessment in China, even though the practice needs to be improved. Since 2000, the National Social Science Foundation, the Ministry of Education and CASS have adopted a number of measures to improve the system and solve these problems. Thus more experts are now included in the pool of referees. Selection has become more standardized and evaluation is done anonymously. Regulations have been put into place to supervise panel meetings, challenge the system and make the project approval system as well as the evaluation system accountable. In respect of interdisciplinary and multidisciplinary projects, experimental projects or controversial projects on which experts are divided, proposals can be submitted to a special panel of experts in different research fields. Some of the proposals may then be re-examined. These projects' final evaluations may undergo a similar procedure.

A combined qualitative and quantitative evaluation has become the basic mode for assessing research. The introduction of quantitative indicators to the traditional qualitative peer-review process in the late 1990s was a major change in the humanities and social science evaluation. Research communities and their management find this mode more acceptable. To summarize the development of peer review in China, the application of qualitative and quantitative evaluation has experienced three phases. Qualitative evaluation was the only method of peer review before the 1990s. A combined method using different quantitative analyses was adopted in the mid- and late-1990s,[4] and since 2000 the role of peer experts in assessing research has been further strengthened with the introduction and use of new quantitative methods. The roles of the two methods have become clearer, as has the interplay between them. Although the qualitative evaluation of a peer expert is the main method used to assess research, some quantitative indicators are used to supplement this process.

In quantitative evaluation, bibliometric methods are increasingly applied to assess social science research, and were first used in China in the late 1990s. Most Chinese social science journals are not, however, included in the SSCI, because of language and other barriers. In the mid-1990s, a computer-aided bibliometric method was introduced to establish a Chinese social science citation database. The two major databases in China are the Chinese Humanities and Social Sciences Citation Database (CHSSCD), established by CASS's Centre for Documentation and Information, and Nanjing University's Chinese Social Sciences Citation Index (CSSCI). Both are important data sources for the quantitative assessment of humanities and social sciences research (Ji Liang, 2005). They play a crucial role in the bibliometric research of literature, the evaluation of journals, project evaluations, research result awards, the selection of talented researchers, and performance evaluations at research institutions and universities.

4. In view of peer review's problems and flaws, the research community started studying quantitative indicators in the hope of improving qualitative evaluation some years ago. CASS initiated a key project, 'The study and design of indicator systems to evaluate social science research findings', in 1994. Two separate research teams were organized at the Institute of Journalism and the Bureau of Scientific Research Management to study and design indicator-based evaluation systems from different perspectives. In 1998, two evaluation system designs were used to evaluate research results and select CASS's best research results. Since 1999, the National Social Science Foundation has used the evaluation system designed by CASS's Bureau of Scientific Research Management to evaluate its research projects and select excellent research findings. Consequently, when assessing a research project or a research result, peer reviewers must submit their written opinions as well as evaluate the research findings in terms of the evaluation system's indicators. The combination of the two systems provides a final evaluation.

To encourage dedicated and solid research and generate good results, the National Social Science Foundation, the Ministry of Education and CASS have, since 2004, been exploring new measures and patterns to fund research once it is largely or fully completed. This is done to encourage researchers to greater efforts in their scientific and scholarly activities, rather than merely writing proposals for possible funds. The procedures for assessing these projects and approving their funding are similar to those for research proposals.

Currently, the development of humanities and social science research faces a number of new challenges and issues.

The transition from funding single research projects to a more diversified, more transdisciplinary project funding system is continuing. The number of funding types and the forms of research results continue to grow, which calls for a better classification of the funding, evaluation and management systems. We must explore new funding and evaluation methods for different types of project and research results (multidisciplinary projects, or special projects in the same discipline) and gradually establish commonly accepted and type-specific evaluation criteria.

While bibliometric analysis is increasingly applied to assess humanities and social science research, it is sometimes used over-simplistically. Those who oppose bibliometric evaluation question the data sources, analytical methodologies, standardization of citations, coverage of core journals and the role of peer experts, arguing that metrological methods should have a limited role in evaluation. Those in favour are confident that it works well, and encourage its increasing extensive and intensive use in assessing research, although they are also aware of its immaturity.

With international academic cooperation deepening, Chinese scholars and research institutions have developed bilateral and international exchanges and cooperation with other countries and international organizations.[5] With the internationalization of funding and evaluation, there has been a convergence and standardization of evaluation criteria and procedures. However in China, international exchanges and cooperation regarding project management and research evaluation are still in an early stage. We need to explore these issues with colleagues abroad in future.

With the help of computers and the use of information technology, project management comprises no longer merely project registration, recording, analysis and the comprehensive use of research information, but also follow-up management and the integration and reuse of project information and data. Reviewers can be selected from a wider range of experts nationwide, or from a specific region, to avoid internal evaluation and conflicts of interest.

Good academic discipline and ethics have important implications for the quality of research and evaluation. This question involves the researcher as well as the reviewer. During the process of obtaining research funding and assessment, it involves the reviewer especially. Although government departments, educational institutions and research institutions have already put policies and regulations into place to prevent unethical behaviour and to punish it, more scientific, stringent and operational methods for supervising reviewers should be established and continuously improved. In doing so, we can strengthen the ethics of all those concerned.

5. The National Social Science Foundation and the Humanities and Social Science Foundation under the Ministry of Education, for example, encourage Chinese scholars to include foreign scholars in their research projects. CASS also attaches importance to international cooperation. CASS took part in the EU Seventh Framework Programme (FP7) and CO-REACH-SSR, recently launched by China and Europe. The project 'The Study of Sino-Japanese History' sponsored by China and Japan is another example of international cooperation.

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Flash
An overview of Canadian social sciences research and funding

In Canada as elsewhere, increasing attention has been given to how the reach and benefits of social sciences research can be extended beyond academe to more diverse arenas, in the interest of better addressing the problems of complex and changing societies. Consequently, and in keeping with the current climate of accountability for governments and research funding bodies, 'knowledge mobilization' has gained currency and been made a priority. This has been a cause for concern in the social science research community because it raises questions about the role and work of social science scholars and researchers. Furthermore, it can also be interpreted as suggesting a reductive conceptualization of knowledge; it presents uncertainties about how knowledge is 'mobilized', and it raises questions about arbitrary and inaccurate 'impact' measures. These are all justifiable concerns, certainly, and critical engagement with such issues is vital to both the advancement of social science research and sustained academic freedom. The purpose of this short discussion is therefore to provide a context for such a critical engagement. It does so by highlighting the extended reach of social science research as a priority in the policy and programmes of Canada's key funding body for social sciences research, SSHRC, both at present and since SSHRC was established by Act of Parliament in 1977.

From early on, SSHRC identified collaboration and 'knowledge delivery' as key priorities. In its *Proposed Five-Year Plan for the Social Sciences and Humanities Research Council* (SSHRC, 1979), SSHRC identified the limited 'visibility' of social science research results as an 'urgent' problem that needed to be addressed (p. 11). In *Taking the Pulse: Human Sciences Research for the Third Millennium* (SSHRC, 1989), social science research was described as 'invisible' work (p. 4), and there was an identified need for 'knowledge transfer' (p. 2). In *Striking the Balance: A Five-Year Strategy for the Social Sciences and Humanities Research Council of Canada: 1996–2001* (SSHRC, 1996), knowledge transfer between the research community and Canadians was described as a 'particular concern' (p. 16).

In recent years, SSHRC has released key policy documents focusing on the need for 'knowledge mobilization' of social sciences research. These documents include: *From Granting Council to Knowledge Council: Renewing the Social Sciences and Humanities in Canada* (SSHRC, 2004); *Knowledge Council: SSHRC, 2006–2011* (SSHRC, 2005); and *Framing Our Direction* (SSHRC, 2008). In these, SSHRC identifies itself as part of a 'larger system' within a 'new world' with 'new needs' (SSHRC, 2004, p. 7), and describes how its transformation will be one of 'reaching beyond', through 'interactive engagement' across the disciplines and across stakeholder communities in Canada and internationally, as well as through 'maximum knowledge impact'. The latter would be made possible through building a 'greater capacity for understanding research and its applicability' (SSHRC, 2004, p. 10). The need for transformation, SSHRC claims, emanates from the social sciences being caught in 'a paradox of ubiquity and invisibility: present everywhere, but for all intents and purposes, visible almost nowhere' (SSHRC, 2004, p. 12). The strategic plan, *Knowledge Council: SSHRC, 2006–2011*, opens with a section entitled 'Future Knowledge: We know how to shape our future, so what's stopping us?' (SSHRC, 2005, p. 2) and calls for 'systematic interaction between the research community and the rest of society' (SSHRC, 2005, p. 10). In *Framing Our Direction*, SSHRC claims that to meet such challenges, there is a need to move 'beyond the familiar counting of journal articles and books or indicators such as citations' (SSHRC, 2008, p. 12) to an investment in 'knowledge mobilization efforts that realize the potential of social sciences and humanities research for considerable impact beyond the campus' (SSHRC, 2008, p. 13).

Some of SSHRC's current funding programme envelopes are considerable investments in extending the reach and benefits of research beyond academe. Although there are relatively few of such programmes, they are some of the largest in terms of funds. Most notable are the Major Collaborative Research Initiative programme (maximum C$2.5 million per project), which promotes 'the development of active partnership' within and beyond academe to reach 'both traditional and new audiences' (SSHRC, 2009a), and the Community-University Research Alliances programme (maximum C$200,000 annually for up to five years), which describes 'postsecondary institutions and community organizations' as 'equal partners' (SSHRC, 2009b). It is also noteworthy that community organizations are eligible to apply to several funding programmes, and partnership with such organizations is increasingly encouraged in the SSHRC programme descriptions. Further, in 2009, SSHRC began to review its programme architecture, with early, circulated documents suggesting that partnerships both within and beyond academic communities would be more strongly encouraged and supported. Through changes in Canadian funding policy and programmes, there is an increasing and clear focus on efforts to make social science research more visible to a diversity of publics in order to extend the reach of research as a public good.

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Flash
Research policy in a small open economy: the case of the Dutch Research Council

Science plays a major role in our society. Scientific research is also vital to ensure our current and future well-being. We must therefore continue to invest in outstanding talent, expand our knowledge horizons and serve society by producing new insights in order to guarantee the Netherlands a leading position in the global knowledge economy. The Netherlands Organization for Scientific Research (NOSR) aims to achieve this exciting task in partnership with other agencies in the country and around the world.

Netherlands social science research has acquired a prominent international position despite the country's relatively small size. This is the consequence of numerous factors, including strict quality control, dedicated efforts of social scientists and public support.

With a budget of over €500 million, the Netherlands Organization for Scientific Research (NWO) promotes research excellence through highly competitive grants, and takes part in international collaborative projects. Excellence and innovation in research form the main anchor points of NWO's policies for the future of science in the Netherlands. Its mission is to develop and fund world-class research, through partnerships with individual scholars, universities and research institutes, complementary national and international science and research organizations, and society. Universities receive a base funding (first-stream funding), and compete for second-stream funding (competitive project-based public research) through applications via NWO. Although there has been a shift from first- to second-stream research funds, a majority of the funding still goes to universities. University budgets are not always transparent and it is difficult to offer precise data on the levels of research spending. In the social sciences, the distribution between first- and second-stream funding is likely to be in the region of three to one.

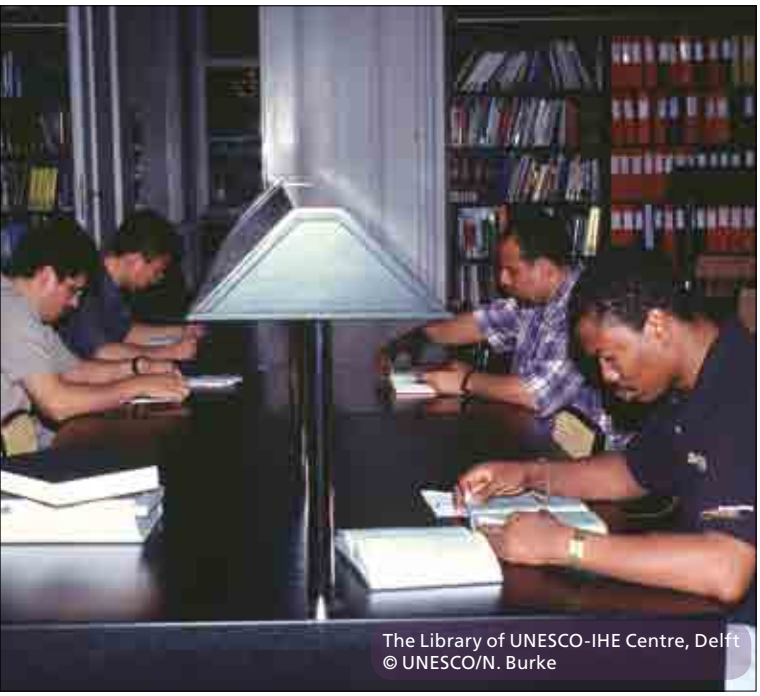
The social science research agenda – including behavioural sciences – is not only a reaction to societal challenges and issues. It also stimulates partial or structural changes in modern societies. Education, learning, knowledge acquisition and use and socio-economic embeddedness are all important parts of an advanced and open knowledge society, in which blue sky, fundamental research is a critical factor for success. There is certainly both the need and the scope for broader social science research funding mechanisms. However, in all cases, independent peer-review systems will be decisive.

The social sciences have certainly gained a respectable position in NWO's funding policy. This is also reflected in the share of funding for social science research proposals, which is above the European average. The percentage of NWO's funding that goes towards the social sciences (excluding the humanities) is 8 to 10 per cent. While data on Europe show significant differences, the Netherlands is above average. The Netherlands' strategic view of social science research funding is centred around three anchor points:

- Sufficient scope for basic research and a high level of freedom for individual scientists, where the only criteria are scholarly excellence and the quality of the proposal. This is a highly competitive scheme, offering a variety of opportunities for both young postdocs and established researchers. The funding goes directly to the researcher, thereby not taking into account the 'fair' allocation of resources between universities. It is clear that any distribution of funds between different fields involves different arbitrary aspects. However, if the percentage scores for researchers are fairly similar over the various domains, there is no reason to worry. This funding scheme existed before the emergence of the European Research Council (ERC).[1] Its subsequent adoption by the ERC may explain (partly at least) the high performance rate of Dutch researchers during the first ERC rounds.
- Critical mass for research initiatives that need a scale that goes beyond the individual scholarly level. This includes dedicated programmes as well as funding opportunities for research infrastructure such as large databases. Here too, each funding is based on quality judgement on a competitive basis. This funding scheme is gaining importance, as social science research is increasingly dependent on costly digital databases.
- Thematic research proposals that seek to address societal challenges. Such thematic approaches are the result of a bottom-up process, characterized by an increase in the interactions with important stakeholders such as ministries. The selection and prioritization of such thematic programmes is based on strict rules of quality, societal needs, international cooperation and scientific potential. The number of selected themes is limited. The final decision is based on both a sense of the urgency of the issues, and the potential outcome of possible investment in a given thematic field.

The success rate for funding applications ranges from 10 to 30 per cent, depending on the type of grant. It is noteworthy

1. The European Research Council (ERC), launched in 2007, is the first European funding body set up to support investigator-driven frontier research. For further information on the ERC, see: http://erc.europa.eu/index.cfm



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that over the years, the allocation of funds for fundamental social science research by domains, resulting from approved proposals, matched reasonably well the ex ante allocation of funds by thematic programmes. This result suggests that prior and posterior priorities do not show a great divergence in the social sciences. This is of critical importance in any demand to policy-makers for extra funding in the social science domain. The articulation of research priorities is certainly necessary, especially in new and emerging fields of research. However, the research community already appears to be responsive to the new challenges that face our contemporary societies: climate change, sustainable development, security, poverty and so on. Science-driven research emerges as a wise anchor point for research policy and by no means leads to esoteric research orientations in the social science field.

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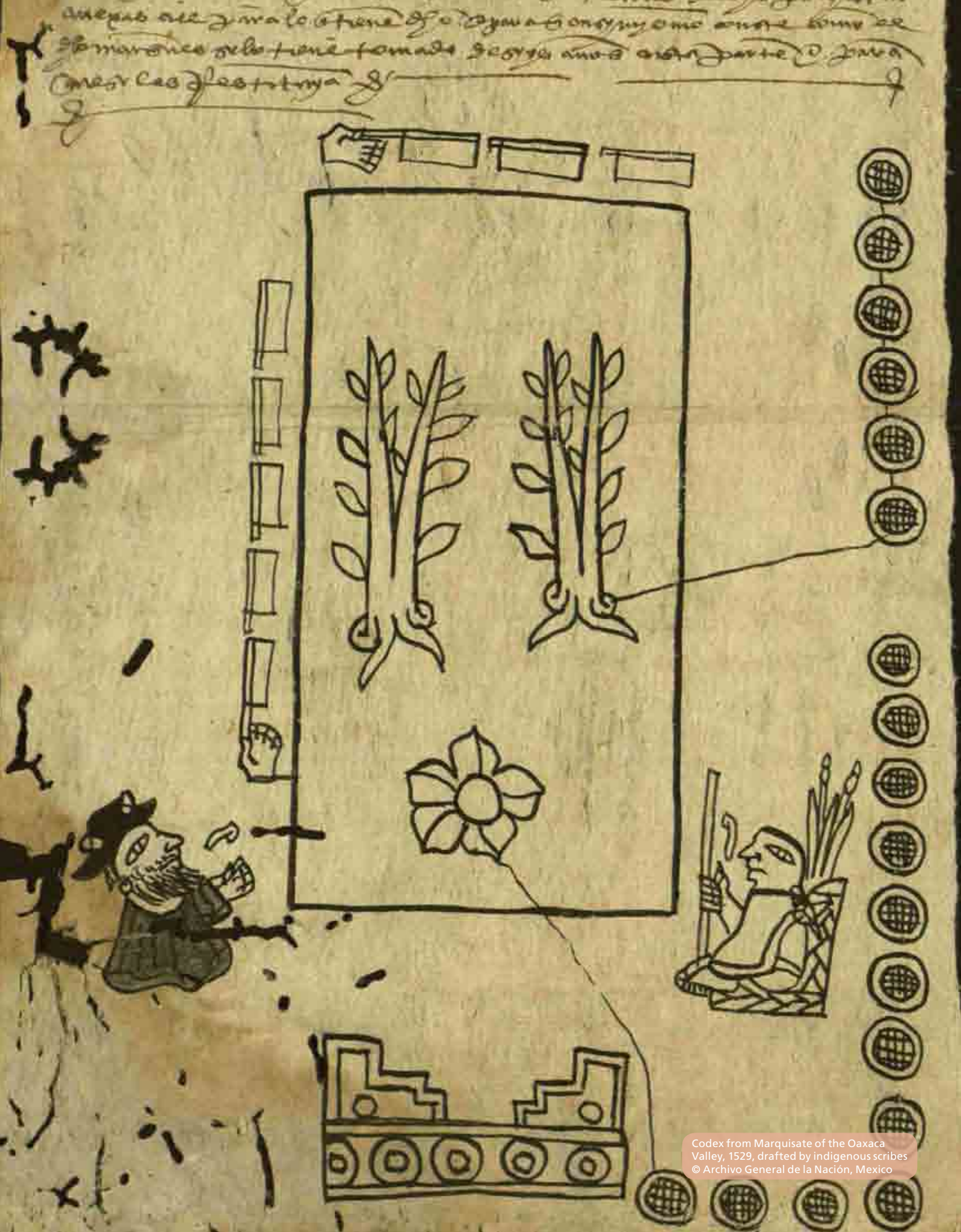

Codex from Marquisate of the Oaxaca Valley, 1529, drafted by indigenous scribes

Chapter 8
Disseminating social sciences

Cutting paper for printing. Anuradapura District. Sri Lanka
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8 Disseminating social sciences

Chapter presentation

The social sciences are present everywhere but visible nowhere. This is the image used by the Canadian Social Sciences and Humanities Research Council in a recent document on the social sciences in society, and it is valid in much of the world.

Nobody doubts the importance of the social sciences. Social scientists are active in different ways in universities, non-governmental organizations (NGOs), political parties, trade unions, firms, government and the media around the world. The demand for social science knowledge is growing. It is used to analyse social change, to feed public debate, to develop responses to specific social issues, and to assist private and public policy-making. Many social science books have led to major debate among intellectuals and opinion leaders.

But despite their key role, doubts are sometimes expressed about the willingness of social scientists to engage in issues of public concern. They are regularly accused of being more interested in conceptual and methodological detail, and of refusing to engage in issues of public interest.

Many professional social scientists are indeed focused on descriptive, explanatory, theoretical, conceptual and methodological tasks. They may have trouble communicating with the larger public. But others disseminate their knowledge actively. They teach to large groups of students, publish the results of their work, and try to spread their ideas through traditional or new media. Some, especially but not exclusively, economists, political scientists and psychologists, act as experts in public debates and on commissions set up by governments. Many engage as critical thinkers in public debates, and this sometimes involves tension with political leaders. The expansion of web technologies has improved the ability of social scientists to make their work and ideas known in wider circles, and many are using these modes abundantly.

In other words, and despite some tendency to believe the opposite, social scientists in many countries do contribute to public debate. As we have seen elsewhere in this volume, an increasing proportion of social science research is conducted outside academic institutions: in consultancy firms, think-tanks, government administration and private research institutes including polling organizations. Many of these institutions aim to influence policy and decision-making and will be discussed in Chapter 9. This chapter targets the links between social sciences and society and the dissemination activities used by social scientists. It analyses the capacity of social science to educate, engage with public issues, and inform public debates.

The chapter first addresses the different public functions of social scientists, prioritizing questions about the transmission of knowledge to the general public and the debates surrounding them (Section 8.1). It reviews the functions that social science Ph.Ds occupy in society, and the extent to which they find positions as professors and researchers, or work as professionals and experts in agencies, administrations and public institutions. In short, it asks to what extent the social sciences are embedded in society and are active in the 'corridors of power'.

Section 8.2 discusses current developments in the diffusion of and access to social science knowledge. The authors discuss the state of the publishing industry, and the increasing role of new technologies. They discuss the growing importance of the web, and the demarcation between those social scientists who have access to the web and those without, and between articles that are openly accessible and those that are not.

8.1 Social sciences, education and society

Introduction

Social scientists have a complex relation with societies. On the one hand, they belong to their societies and are influenced by their evolution. On the other, they observe social developments and contribute to shaping them. These strong multidirectional influences determine the key positions from which social scientists participate in society and in debate: as transmitters of knowledge, as experts, as observers of social phenomena and as critical thinkers (Martinelli).

Educating students is one of the main channels through which social scientists disseminate their ideas and concepts, and imprint their influence on society. In many countries, social sciences are first taught in high schools, as history, geography, civics and social studies. They form part of the education of future and committed citizens, even though paradoxically they are given less importance at school level than the humanities.

At university level, social science splits into autonomous disciplines which attract on average about a third of all higher education students. In other words, large numbers of academics, experts, managers, professionals and leaders have benefited from an education in social sciences, and apply their knowledge and skills in their professional life. The elites that run countries have often been educated in specific departments of social science, and the much larger number of students who have been trained in social sciences can also exert an 'alumni power' (Tarschys and Lachapelle).

The expectations of students in social sciences differ greatly between those who are interested in acquiring professional skills and in understanding the motivations of human behaviour from a social engineering perspective, and those who are eager to acquire methodological and conceptual skills for the analysis of social facts. The range of students' expectations toward the social sciences influences the evolution of different disciplines and gives more weight to some than to others.

Apart from postgraduates, very few students read an author's text in full. Most students read only excerpts reproduced in textbooks or available on the web. A look at textbooks provides a good perspective on the broad social expectations of the social sciences. Their importance in teaching social sciences and in legitimizing specific authors and topics is unquestionable, but we know on the whole relatively little about their conditions of production, their content, their influence and their economic weight. These aspects should be the object of further study.

But are the expectations of social science students met? To a large extent it seems that they are, at least for Ph.D. holders in Organisation for Economic Co-operation and Development (OECD) countries. According to a recent survey of social science Ph.D. holders in twenty-five OECD countries, a sizable proportion of them end up doing research and teaching; and a significant number act as experts in government administrations and agencies, or in businesses in some countries (Auriol). Similar studies conducted in other regions also show that an increasing number of social scientists work outside academic institutions (see for example Gusmão in Chapter 3). In OECD countries a large number of social scientists obtain their Ph.D. later than their colleagues in natural sciences, but their level of unemployment is not higher than that among scientists of all fields. And again, their strong presence in ministries and public administration gives graduate and postgraduate social scientists an extraordinary opportunity to influence public policy (Tarschys and Lachapelle). However it is not possible to say whether the large number of social scientists in 'the corridors of power' actually influences the quality of the decisions made there.

Social science in the public space

Alberto Martinelli

This paper discusses the different primary roles that social scientists play in the public sphere, including the media, universities, lecture halls, coffee houses, and increasingly the internet. Here public opinion is formed and politics is shaped according to the rules of democratic public discourse, through which all views are subjected to others' critical reasoning. To play these roles in a socially responsible way, social scientists must fiercely defend the values and institutions of free science, the critical mind and the open society.

Most social science takes place in the public sphere, and can significantly contribute to public discourse. A possible exception is the kind of social science that adopts idiosyncratic language for an intellectual discussion limited to narrowly defined circles of hyper-specialized insiders, thus limiting its relevance.

Social science can be relevant, and social scientists can play a significant role in the public sphere provided that they:

- produce scientific results by applying a rigorous methodology and developing logically consistent and empirically valid theories
- orm vibrant, sustainable research communities that guard their autonomous judgement and keep themselves at a critical distance from the social issues being studied
- consider social science (like any other science) and political practice as two distinct forms of action.

All social sciences contribute to the public sphere, but since the debate on the meaning of scientific work (knowledge for what and for whom?) is more enduring and lively among sociologists, I concentrate here on sociology, with some reference to international relations. But the issues discussed are relevant for all social sciences.

Debates on the relationships between social research, political practice and public policy, as well as between positive theory and normative theory, have developed throughout the history of sociology, from the forerunners like Saint Simon and Comte, to Weber and Durkheim, from Lynd's *Knowledge for What?* to Lazarsfeld's *The Uses of Sociology*, and to the recent debate opened by Burawoy (2005) in which Calhoun (2005), Wieviorka (2008) and Martinelli (2008), among others, participated.

Burawoy argues that sociologists' public role should be focused on the advocacy of collective movements and on making public sociologists the heroes of a romanticized civil society permanently battling the evils of states and markets. This position – and the example of some scholars' attempts to consider themselves the 'fellow travellers' of a political movement – is unnecessarily restrictive. Social science, like any other science, is not a form of political activism, but a scientific craft constructing a type of knowledge that is simultaneously empirical and critical. Advocacy of collective movements is just one of the different ways in which social science can play a relevant role in the public sphere; I shall address several other roles here.

Educating students

The first relevant role for social science in the public sphere is educating students to develop the knowledge and skills required to become public researchers, experts, officers, managers, professionals, but above all, responsible citizens of open democratic societies, aware of their rights and obligations. This is a major task and is often underestimated in discussions of social science's role in the public sphere. The primary way in which most social scientists can play a key public role is by educating future citizens and future leaders. It is crucial that today's youngsters develop critical faculties, that they learn how to select from and assess the validity of the growing mass of information available, especially on the World Wide Web, and that they acquire the methodological and theoretical skills necessary to interpret and analyse social processes as well as to attribute sense and evaluate individual and collective action. While youngsters comprise the primary audience for the educating endeavour, adults are increasingly included by way of many lifelong education and training programmes.

Constructing key concepts and analytical models, and producing reliable knowledge

A second relevant role for social science is the articulation of key concepts and analytical models for constructing social reality, and for producing the empirically tested findings and cumulating knowledge needed to describe, interpret and develop analyses of social phenomena and combat prejudices. In countries where there are established social science communities, the innovation of sociological concepts and the broadening of sociological knowledge have raised the levels of public debate, decision-making and policy-making on key local, national and global issues. These issues include migration, multiculturalism, global governance, sustainable development, climate change, welfare, security and crime control. Good research undertaken according to high methodological and theoretical standards is required in order to persuade audiences on the basis of scientifically sound arguments and supporting evidence. In this way, social science can provide legitimacy and expertise in the various roles it plays in the public sphere.

Assessing priority issues on the public agenda

Social science's third major contribution to public discourse is to influence which issues are on the public agenda and their priority. The issues to which social scientists draw attention often differ from those regarded as central by decision-makers and the mass media. In non-democratic contexts, scientific opinions can more easily be disregarded or silenced. But even in democratic, advanced industrial societies, the form and content of public life and discourse are increasingly determined by the mass media and politicians. Social scientists who do enter into public debate are less and less capable of controlling how their opinions are transmitted and received.

The format and timing of television programmes, as well as the obsession with advertising, often present the public appearances of so-called experts as caricatures of critical thinking. The public sphere is increasingly insulated from external influences, and is becoming more socially homogeneous and ideologically unified. Politicians and journalists feed off each other, reacting to public issues they themselves have constructed, often through opinion polling (Champagne, 1990). New opportunities are, however, appearing for social scientists to play a more autonomous role in mass communication due to digital media and the growth of virtual communities – communities that are less controlled and more interactive. Social scientists must learn to communicate with larger audiences and with the media, reducing complexities without losing theoretical depth or empirical robustness in order to assist the assessment of issues on the public agenda.

Truth in the face of power

A fourth role for social science is to speak the truth in the face of power. This involves shaping public opinion in democratic polities by clarifying complex issues and their implications for the broader public, unmasking the power relations that underlie and shape social life (Bourdieu and Wacquant, 1992), and critically assessing the policies and ideologies of those in power. Social scientists often produce truths that are inconvenient for those in power, who in turn attempt to suppress research results and silence science. In extreme cases they prosecute, imprison or exile social scientists. In some political contexts, some social scientists practise self-censorship, and certain topics have become taboo: this again threatens freedom of inquiry. International scientific associations must defend the freedom of science and freedom of expression.

Speaking the truth in the face of power and participating in the articulation of the public agenda can serve as a corrective force to the market and the state. The market has come to dominate the institutions and practices of public communication through the commodification of information, opinion and advertising. On the other hand, the state has become increasingly economically interventionist and manipulative of public opinion. Hence the need to restore a democratically legitimate public sphere (Habermas, 1989). Epistemic communities, as key actors of civil society, can develop the public sphere, thus enhancing democratic legitimacy in modern society, at the national and global level (Martinelli, 2003).

Contributing as experts to policy-making and to the governance of complex problems

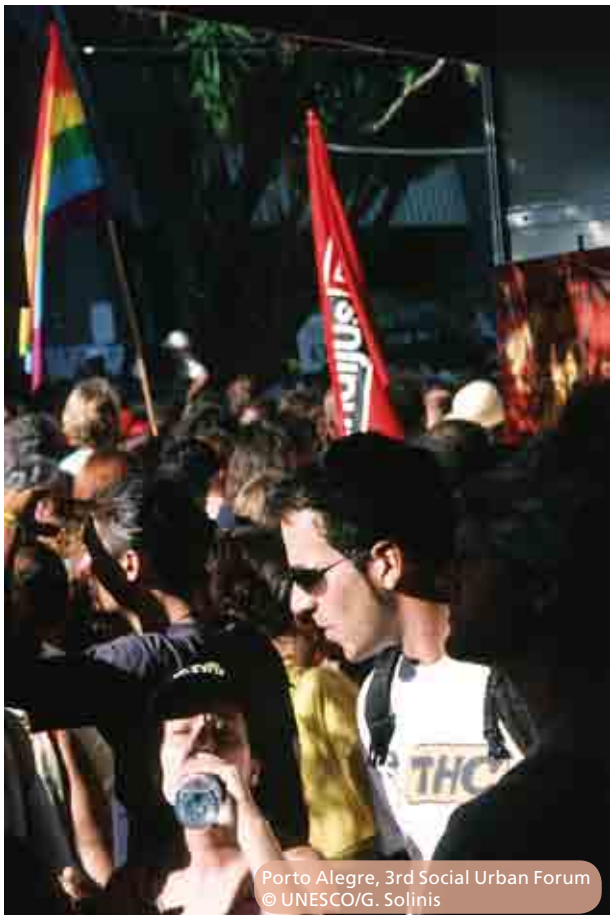
A fifth major role for social scientists is to participate as experts and as members of government, administrations and the media to improve the governance of complex social problems. Here the contribution that sociologists and members of similar epistemic communities can make is particularly relevant. They can do so through independent research institutes, international organizations, NGOs and think-tanks, alongside other civil society actors. Social scientists who do this risk being co-opted onto the state's policy conveyor belt (Smith, 1997) and providing an intellectual after-the-fact justification for government decisions. But social scientists must respond to the need for

evidence-based policy and should be involved in shaping agendas, defining issues, identifying options and choices of action as well as in monitoring impacts and outcomes. However, this should be done from the perspective of semi-detachment and relative disengagement (Wallace, 1996).

Contextualization of social science

The way in which these roles can be successfully performed depends on the way social science knowledge is produced (the concrete, disparate and connected configurations of the division of scientific labour) and on the way in which global social processes are felt within different countries. In other words, we should not discuss these issues in general, abstract terms; the issues and social science too require contextualization. In respect of scientific production, material and symbolic resources as well as superior working conditions (including adequate research funds, tenure, generous sabbaticals that allow for comparative research and contextualization) result in significant differences. Autonomy for academic institutions and guaranteed freedom of scientific investigation, thought and speech are also relevant to the success of social science. They depend on the existence of democratic institutions and a democratic political culture.

Research on the impact of global processes depends upon the country in question's international power and labour positions as well as the coalition of interests in its domestic polity. These affect the choice of research topics, paradigms, concepts and hypotheses. An interesting case in this respect is the legitimizing role that mainstream economics played in constructing the cognitive framework that contributed to the present global financial crisis. At the core of this cognitive framework lies the notion of the self-regulating market, according to which markets are always capable of restoring their equilibrium whenever rigorously exogenous factors or statistically unlikely events create imbalances. This notion – developed in prestigious universities in the USA and elsewhere – provided the intellectual legitimation for deregulation policies, which in turn were fostered by lobbying from a robust coalition of interest groups. The present financial crisis has invalidated the theory of self-regulating global financial markets, which for decades seemed incontestable. This crisis has affected the image of various scientific disciplines and academic institutions concerned in the public sphere.



Porto Alegre, 3rd Social Urban Forum
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In an increasingly complex global public sphere, social scientists continue to play important roles in the analysis of key global agenda issues, and in defining the policy options to deal with them. But to play these roles in a socially responsible way, social scientists must fiercely defend the values and institutions of free science, the critical mind and the open society.

Alberto Martinelli

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Social science studies in secondary and higher education

There are very few studies on the extent to which social sciences are taught at the secondary or higher education level outside traditional social science faculties. The boundaries of social sciences taught at different levels, and the disciplines included, also vary.

Social sciences studies at the secondary level

Social science disciplines formally appear in the school curriculum at the secondary level. In practically all OECD countries, social sciences are part of the core curriculum at the lower secondary level. Here they are taught as one integrated subject – such as social studies or social sciences – or are divided into history, geography and civics, or citizenship education. According to an international study that reviewed 200 curricula (Benavot, 2006), social sciences represent an average of 13.3 per cent of the time dedicated to instruction at the lower secondary level. Teaching social sciences at that level usually serves nation-building purposes and fosters citizenship. In the best cases it could also help develop critical thinking, the ability to search for facts and proofs, and the capacity to distinguish the truth and to recognize chronological relationships and patterns.

At the upper secondary level, there is no core curriculum and the topics taught vary with countries, streams, school types (academic, comprehensive, commercial or technical) and, in some cases, between programmes within the same school. In some school systems, such as those in France and francophone African countries, there is a socio-economic stream in addition to the usual humanities, science and technical and vocational streams. Students acquire a basic knowledge of concepts from a variety of social sciences, as well as tools to examine contemporary social, economic and political issues and global challenges with a critical mind. An increasing number of countries offer a variety of options within broadly defined streams, among which are history, geography, social studies, economics, civil rights, business, accountancy and entrepreneurial studies. No study has analysed the objectives and contents of different social science courses. Even within a country many curricula and social science courses coexist, with different objectives, teaching methods and groups of students. Some aim to prepare students to take part in the democratic process and to critically appraise social and economic trends, while others prepare students for problem-solving tasks.

Social sciences at higher education level

At the higher education level, social sciences are taught separately by disciplines. The definition of the disciplines and the boundaries of social sciences vary from one country to another. The only comparable data at international level gives statistics on the number of students in social science, business and law (SSBL), humanities and arts, and education separately. SSBL studies captivate many students. Depending on the country, SSBL students represent between 25 per cent and 50 per cent of the total, with a median proportion of 36 per cent (see Kahn and the statistics in Annex 1 to this Report). This proportion has increased in several countries, including a majority of eastern European countries and China, and has decreased in others (for example, Chile, Brazil, Japan and half of the Western European countries).[1] Several factors may influence these trends:

- students' interest
- easier access to universities
- lower fees
- state priorities reflected in the number of scholarships
- job opportunities
- employers' opinions of SSBL students.

In Kenya, the proportion of students in social sciences and the humanities has increased, mainly because social science departments are less selective than schools of

1. Statistics on the individual disciplines are only available at a national level.

natural sciences, medicine and engineering, and their fees are also lower (Charton and Owuor, 2008). The capacity for social sciences to ensure a smooth transition from school to work seems to have had little impact on the choices made by students and their families in that country. But this is not necessarily true everywhere. Several authors in Chapters 2 and 3 stress the great popularity of economics and business studies, which are considered to lead to more lucrative careers (for instance, in the Arab states and in South Asia). Students attracted by the prospect of a higher salary in their country or abroad enrol in great numbers on business, management, economics and law courses. In China the number of graduates in management studies, law and economics more than doubled between 2002 and 2005 (Pipiya, 2007). The number of history graduates during the same period remained stable at a much lower level. African universities have closed humanities and history departments because of low enrolment levels. This phenomenon can be attributed to slim employment prospects, including low opportunities for consultancy work (see Olukoshi in this Report).

The countries with the largest numbers of SSBL students are the USA, India, China, Japan, Mexico, Brazil and Turkey. The large and increasing number of students in SSBL fuels the demand for doctoral graduates to teach at higher education level.

Social sciences are sometimes taught at the higher education level outside SSBL departments and schools. Medical schools often include social science courses as a means to initiate and prepare students for humane and ethical approaches to their profession (for example, in France and Canada). The status and impact of courses in social sciences outside SSBL departments and schools are difficult to assess. It is increasingly common to argue in favour of more interdisciplinary teaching (for example, Balstad and Piot in this Report), but people in favour of strong disciplinary anchorage are also not rare.

Social sciences in the education of the elite

Law, economics and political science are often part of preparatory courses for future national elites. Social sciences help them understand the tensions and conflicts between groups, and to identify solutions to specific problems in specific contexts. An empirical study of the career trajectories of top executives, politicians, high-ranking civil servants and judges in Germany, France, the UK and the USA shows a significant share of them having a background in social sciences, although in many countries the institution delivering the diploma appears more important than the discipline in which it was achieved (Hartmann, 2006). In the USA, many elite members have studied law or economics, but their status derives from the reputation of the top university they have graduated from. In France, elites are by and large graduates from a Grande Ecole in public administration, business, science or engineering. In the UK, elites are usually graduates from top universities, but perhaps a greater determinant is whether they attended a highly ranked 'public school' (that is, one where fees are paid and which is outside the state system) at the secondary level. Germany, on the contrary, is a country where the title of doctor is of greater importance in determining a status as a member of an elite than the actual discipline or the university where the Ph.D. was obtained. In all the countries studied, the majority of elite positions are held by people from the upper middle class (Hartmann, 2006).

In summary, different conceptions of social science's roles and functions coexist. They are seen as promoting:

- the transmission of a cultural, academic and historical heritage with a view to nation-building, as well as contributing to citizenship (essentially at the secondary level)
- the understanding of social and economic trends, and of their consequences for the well-being of citizens; the understanding of the role of knowledge in the world (at the secondary and higher levels)
- social engineering; in other words providing the necessary skills to perform tasks, and contribute to solving specific social and natural problems
- school to work transition, and providing skills and knowledge that are useful in the labour market
- critical analyses of the functioning of societies, identifying new social phenomena, and contributing to the understanding of individual and group motivations and behaviours
- critical analyses of public policies and government actions.

The attention paid to each of these trends and expectations has been the object of much debate and concern in the past, and will continue to influence the evolution of disciplines (Lussault, 2008).

Social science textbooks in higher education

Studies of social science handbooks and textbooks are relatively rare and tend to be written by historians or education specialists. International studies are often limited to a comparison of the way that conflicts or other cultures are depicted in different countries.

Textbooks and handbooks are important means of legitimizing and transmitting knowledge to new generations of students in the social sciences, and they foster interest in these disciplines in society at large. Textbooks and handbooks are used everywhere, but there are great variations in their symbolic function (Kumar, 1986). In some countries, private publishers release them, while in others only the government publishes them. Many countries import them. In some places, the state recommends some titles; in others it prescribes them. Despite their strategic role in the crystallization of knowledge and in revealing methods, problems, objects, results and schools of thought, contributions to handbooks and textbooks are usually not regarded as genuine contributions to scholarship.

There are very few studies of social science textbooks. Most of the literature on textbooks focuses on primary and secondary education, levels where social sciences are not strongly present. Most existing studies of social science handbooks and textbooks come from historians and education specialists, and are rooted in national and disciplinary outlooks. International comparisons usually limit themselves to considering how conflicts or other cultures are depicted in different countries. Very little is known about textbooks in law, management and most applied social sciences. Conversely, psychology, sociology and economics have international journals in which teaching and education issues, and specifically textbooks at times, are the objects of sustained interest and consideration.

Most of the scientific literature on textbooks is concerned with a critique of their implicit or hidden ideology. Some scholars have looked at the way in which national histories are constructed in history textbooks; others have concerned themselves with the description of sexual behaviours and family relations in psychology and sociology handbooks; yet others have scrutinized representations of poverty (such as Hall, 2000; Clawson, 2002), and of minorities in history, sociology and psychology handbooks. Scholars have looked at the influence of censorship and the political context for the production of social science textbooks and their contents. In sum, the few scholars interested in textbooks and handbooks in social sciences have focused on their own different biases.

Some studies have looked at the emergence of new topics of interest within social science disciplines (such as Winston and Blais, 1996), and have raised concerns about the capacity of handbooks and textbooks to synthesize the identity features of these disciplines. Since social sciences are essentially plural in their approaches and since they provide scope for conflicts between epistemologies and schools of thought, it is important for textbooks to reflect this diversity. That is done at the expense of a clear sense of a discipline's own characteristics. In the case of psychology and economics, their growth and the multiplication of their subfields have weakened their identity (for example, Smyth, 2001 for the epistemological identity of US psychology). Authors have expressed doubts about the capacity of introductory textbooks to agree on a core of common concepts in sociology (Keith and Ender, 2004).

If there are some studies on the reception of textbooks by students, the conditions of their production are not known and research is required. We know little about the condition of the publishing industry for these handbooks and textbooks. Ward in this chapter talks of the growing concentration of educational publishers. But all the processes involved in the production of textbooks, including the selection of authors, the issuing of contracts,

and their writing and evaluation, should be the topic of focused research. The format for disseminating research should also be looked at. For example, are encyclopaedias, thematic dictionaries and companion books by 'star' authors becoming a more widespread editorial form for the diffusion of social science knowledge?

The geography and political economy of the international circulation of social science handbooks, textbooks and other publications should also be considered more carefully. Circulation along former colonial lines or within linguistically homogeneous areas probably reinforces knowledge dependency.

Social scientists in the corridors of power

Daniel Tarschys and Guy Lachapelle

Social scientists have come to influence political and administrative decision-making both as participants and as providers of information. They inform the policy process through educational activities, in which metaphors, concepts and models are passed down. Finally, they influence society through 'alumni power', the application of theoretical fragments and other residues of academic learning to the professional practice of politicians and administrators.

In C. P. Snow's classic novel *Corridors of Power* (1954), a small band of eminent natural scientists close to Whitehall and Westminster is depicted as having a considerable impact on UK government policy on nuclear weapons. What is the role of social scientists in the corridors of power nowadays? Are they similarly influential, and if so, how do they leave their imprint on public decisions?

In order to answer such questions, we must disentangle several threads in the complex relationship between power and knowledge. Social scientists participate in policy-making in a wide range of capacities: as educators, theorists, analysts, journalists, advisers, government officials, ministers, legislators, implementers, evaluators, critics – the list goes on. They deal with both empirical and normative issues, and play a vital role in many of the epistemic communities that shape public policy and assess its results.

In two famous lectures, Max Weber (1919) compared 'the vocation of the politician' to 'the vocation of the scholar'. Aaron Wildavsky (1987) examined the thankless task of academics who were 'speaking truth to power'. In *Three Intellectuals in Politics* (1960), James Joll analysed the difficulties and frustrations confronting 'a man of theory in the world of practice'. Many others have dealt with the divergent demands placed on researchers and politicians, as well as the many adjustments and adaptations required of those seeking to cultivate the borderland between these two domains.

There is an extensive historical and biographical literature on the different relationships between learning and political action at the individual level. Considerable attention has also been paid to the ways in which evolving theoretical paradigms have left their mark on significant turns in public policy. Roosevelt's New Deal, the Beveridge Report, the Woodrow Wilson agenda, the Coleman Report on Education, the War on Poverty and numerous other reforms in welfare provision illustrate this phenomenon.

While some significant cases of policy innovation may be linked to towering individuals or groups of scholars, many trends and waves of reform owe more to the wider expansion of social science education and research in recent decades. The small trickle of social scientists emerging from higher education institutions in the early post-war period has been replaced by large cohorts of university

graduates who now provide the labour market with a broad source of academic expertise. The commanding heights of politics, and various segments of public administration, have been thoroughly affected by this academization of our economies, providing the social sciences with a number of new routes to influence. Successive waves of social science graduates are transforming society by 'the long road through the institutions'. Many are also active in think-tanks, civil society organizations and lobbying organizations.

Despite incessant calls for evidence-based policy-making, most policies continue to be the product of improvisation, intuitive incrementalism, successive modification following unexpected results, and other forms of trial and error. Conscious social experimentation contributes to this process. However, most new initiatives stem from efforts to understand the conditions of policy success and failure in other countries and jurisdictions, and to adapt the lessons learnt to new contexts. Social scientists are heavily involved in this learning process, and have come to influence political and administrative decision-making both as active participants and as providers of reliable information.

Social scientists also inform the policy process through educational activities, in which metaphors, concepts and models are conveyed to new generations of actors. An important channel through which the social sciences influence society is 'alumni power', the application of theoretical fragments and other residues of academic learning to the professional practice of politicians, administrators and others.

Daniel Tarschys and Guy Lachapelle

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Guy Lachapelle is Professor of Political Science at Concordia University in Montréal and the Secretary General of IPSA. His works focus on public policy and comparative policy analysis. He edited with Stéphane Paquin *Mastering Globalization – New Sub-States' Governance and Strategies* (London, Routledge, 2005).

Social science doctorate holders: who are they? Where are they working?

Laudeline Auriol

Until recently, little was known about the employment patterns of doctoral graduates. This is why the OECD, together with the UNESCO Institute for Statistics and Eurostat, has, since 2007, measured the labour market outcome of this highly qualified population. This contribution looks at the characteristics and employment patterns of doctoral graduates from the social sciences.

In 2006, OECD countries delivered some 52,000 doctorates in the social sciences, covering disciplines as diverse as social and behavioural sciences, journalism and information, business and administration, law, and education science and services. This represented around a quarter of the total doctorates awarded in the OECD area. For the second year in a row, more than half (52 per cent) of these advanced research qualifications in social science[1] went to women.

The training of researchers is a long and costly endeavour, which is nevertheless regarded as essential in a knowledge-based and complex economy. Since 2000, doctoral awards have indeed increased at the same pace as, and even slightly more rapidly than, other degree awards. Doctoral graduates are considered the best-qualified to create, implement and disseminate new knowledge and innovation.

The question of the return on investment of such a long education and training is, however, a policy concern. Furthermore, until recently, not much was known about the employment patterns of doctoral graduates. This is why the OECD, together with the UNESCO Institute for Statistics (UIS) and Eurostat, has since 2007 measured the labour market outcome of this highly qualified population in the framework of the Careers of Doctorate Holders (CDH) project (see box).

This contribution looks in more detail at the characteristics and employment patterns of those doctoral graduates specializing in the social sciences.

1. In this paper, as well as in the CDH project, the term 'doctorate' refers to the 1997 International Standard Classification of Education (ISCED-97) level 6, that is, a degree at the second stage of university education equivalent to an advanced research qualification such as a Ph.D.

Age at graduation and main field of specialization

While doctoral awards have steadily increased over the past years (by 40 per cent between 1998 and 2006), those in the social sciences have grown even more rapidly (by 50 per cent) than in the other fields. This growth is partly due to the increased participation of women in doctoral studies. Their number of degrees increased by 75 per cent over the same period.

At what age do doctoral students receive their doctorates? The way higher education and doctoral programmes are organized is quite diverse between countries, and has an impact on the age at graduation and time taken to comlate the doctoral degree. The data collected in the framework of the CDH project shows that the median age at graduation of those receiving their Ph.D. in the social sciences between January 2005 and December 2006 ranges from 29 years old in Lithuania to 41 years in Australia and the Czech Republic. The median age at graduation is higher in the social sciences than in science and engineering. With the exception of Denmark, Latvia, Norway, Slovakia and Sweden, the median age at graduation is lower for women than for men (see Annex 3, Table A1.1).

The fact that the age at graduation is higher in the social sciences may be due to a number of different factors. Fieldwork in the social sciences, as in the humanities, may take longer than laboratory work in the natural sciences or technology. Public funding, fellowships and scholarships are probably more available and substantial in the natural sciences and engineering than in social sciences or the humanities. The CDH data confirm this: a higher percentage of students in natural sciences and engineering benefit from fellowships or scholarships as well as from teaching or research assistantships. Students in social

The Careers of Doctorate Holders project

The Careers of Doctorate Holders (CDH) project is a joint OECD/UNESCO Institute for Statistics/Eurostat effort which aims to better understand the labour market, career paths and mobility of a population regarded as key for the production and diffusion of knowledge and innovation. Particular efforts are devoted to measuring the international mobility of this population.

As part of the project, methodological guidelines, a model questionnaire and templates for output tables were developed with the help of an expert group constituted of statisticians from the participating countries. Due to the methodological challenges involved, notably the constitution of doctorate holder registers, alternative data sources such as censuses, administrative registers or labour force surveys were also used in some countries (such as Australia and Canada) to obtain a limited number of comparable indicators.

A large-scale data collection, conducted in 2007 and processed in 2008, is currently being analysed. Some twenty-five countries participated, and a rich set of data was made available. Most countries were in Europe, including many in central and eastern Europe. Although they showed interest, some of the larger European countries, including France and the UK, did not participate in this voluntary exercise. Among non-European countries, Argentina, Australia and Canada participated. The target population defined in the project is the total number of doctorate holders aged below 70 years, whether they are economically active or not, who are resident in the reporting country. Owing to some quality and comparability limitations, some of the data presented refers to a more restricted section of the population: that is, graduates who received their doctorate between 1990 and 2006. The project's next data-collection round is scheduled to take place in 2010.

More information may be found at http://www.oecd.org/sti/cdh

sciences and the humanities are more dependent on other forms of funding such as occupations, loans, personal savings and family support.

A look at the subjects in which Ph.Ds are awarded puts the natural sciences in first or second place in every country studied by the CDH project (see Annex Figure A8.5). The relative importance of other fields varies between countries. In Austria and Cyprus, social sciences are the first field of specialization, with respectively 36.5 per cent and 30.4 per cent of doctorate holders in these disciplines. The social sciences also account for around 25 per cent of doctoral graduates in Latvia and the USA, and around 20 per cent in Portugal, Slovakia and Spain.

Demographic and labour market characteristics

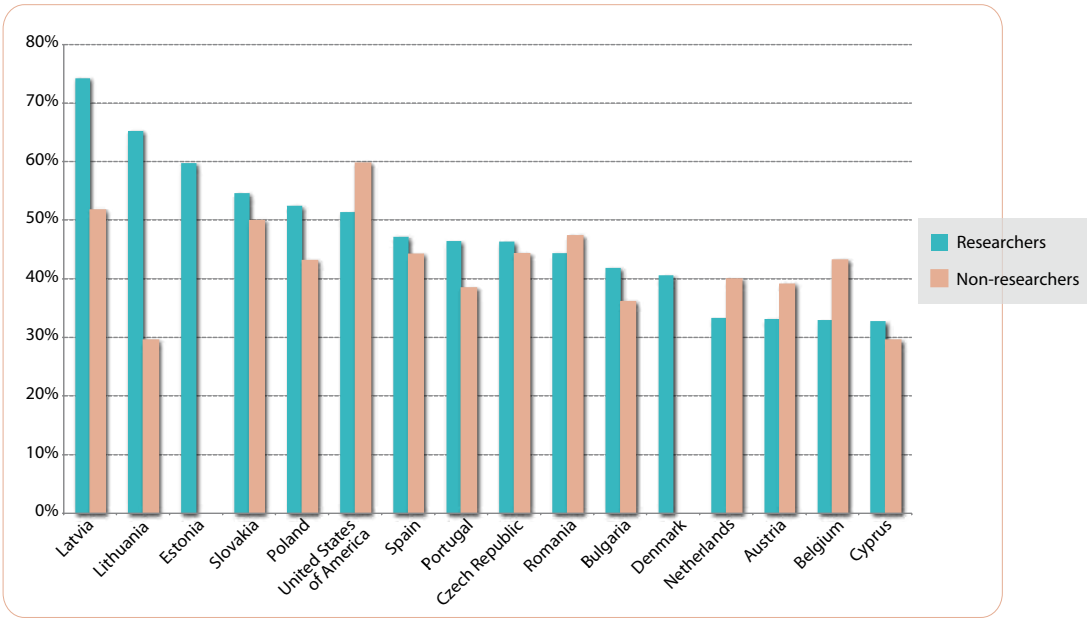
With an ageing population, the ability to replace the ever-growing cohorts of employees who are retiring is an important concern. Owing to their long education and their late arrival in the labour market, the age structure of employed doctorate holders is skewed towards the upper age categories. The data is available for six countries – Australia, Canada, Germany, Finland, Sweden and the USA – and shows that the employed population of doctoral graduates is relatively aged. At least 20 per cent of the employed Ph.Ds aged below 64 in these countries are also 55 or older, and in Canada, Sweden and the USA it is 25 per cent. These percentages are higher than for the whole population of tertiary graduates, and also higher than for the whole population of employed persons. Here only 10 to 15 per cent of the population is aged 55 to 64, except in Sweden, where it is closer to 20 per cent.

At the other end of the age pyramid, the share of employed doctoral graduates below 35 years old is also relatively small. The share of those in the middle-aged classes (that is, 35 to 44 and 45 to 54 years old) is relatively more important than for the whole population of tertiary-level graduates.

Data is not available separately for doctorate holders in the social sciences. It is also difficult to draw any deduction from the overall patterns above, since doctoral graduates in the social sciences obtain their doctorate at an even older age than other doctoral graduates, but social science doctoral degrees are increasing more rapidly than for all other fields, particularly in the light of women's increasing participation.

Another important trend that has affected labour markets in the past decades is indeed the increased participation of women in employment. As was mentioned earlier, the share of women among social science doctoral graduates is growing. Female Ph.Ds in the social sciences have higher participation in employment than those specializing in the science and engineering fields, and participation is increasing with the new cohorts arriving on the labour market. In the Baltic countries, Poland, Slovakia and the

Figure 8.1 — Percentage of women out of 1990–2006 social science doctoral graduates working in research and non-research activities (selected OECD countries), 2006

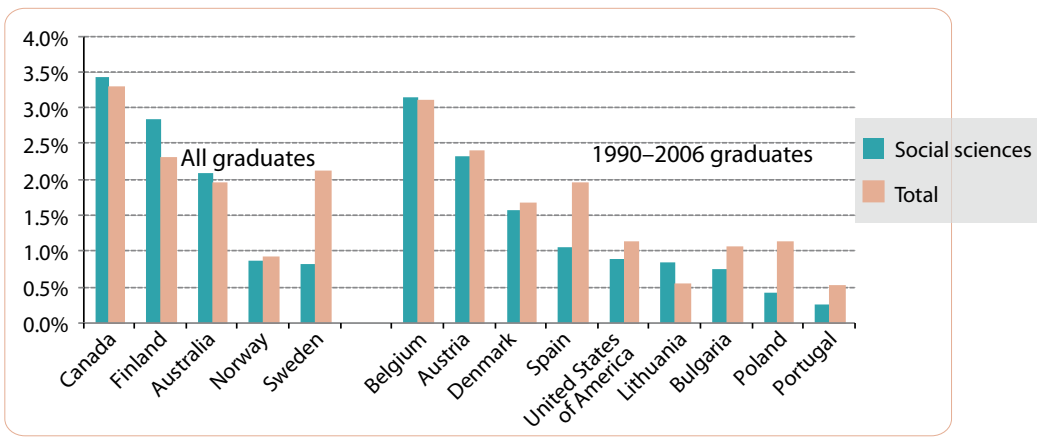


Note: 2005 data for Belgium and the Netherlands; 1987–2005 doctoral graduates and 2005 data for Denmark.
Sources: OECD (2009), OECD/UNESCO-UIS/Eurostat data collection on careers of doctorate holders.

USA, women are the majority of social science doctoral graduates employed. Their participation in research is also higher than in non-research jobs in these countries, except in the USA. Conversely, their participation is higher in non-research jobs in Austria, Belgium, the Netherlands, Romania and the USA (Figure 8.1).

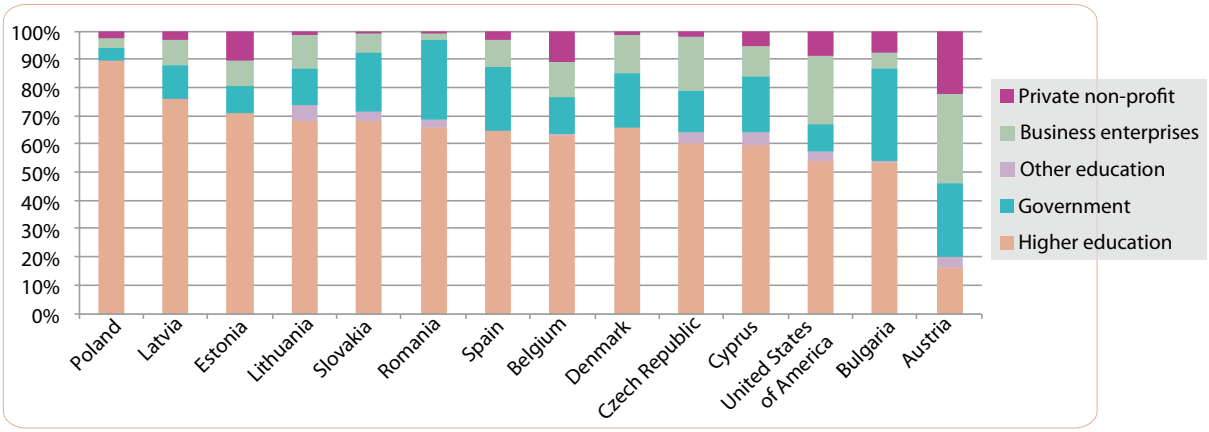
It is important to emphasize that doctoral graduates have better employment prospects than other university and tertiary-level graduates, not to mention those with a lower level of education. Furthermore, in the majority of countries for which data is available, unemployment rates of holders of social science doctorates are lower than for the whole population of doctorate holders. Exceptions are Australia, Belgium, Canada, Finland and Germany (Figure 8.2). But with the exception of some eastern Europe and Baltic countries, the incidence of temporary and part-time employment is not negligible, especially at the start of the career. Part-time employment is also more common among social science doctoral graduates than for 1990–2006 graduates as a whole. Some doctoral graduates may also be employed in occupations for which they are

Figure 8.2 — Unemployment rates of doctoral graduates (selected OECD countries), 2006



Note: 2005 data for Belgium and Norway; 1987–2005 doctoral graduates and 2005 data for Denmark.
Sources: OECD (2009), OECD/UNESCO-UIS/Eurostat data collection on careers of doctorate holders.

Figure 8.3 — Breakdown of 1990–2006 social science doctorate holders by main sector of employment (selected OECD countries), 2006



Note: 2005 data for Belgium; 1987–2005 doctoral graduates and 2005 data for Denmark.
Sources: OECD (2009), OECD/UNESCO-UIS/Eurostat data collection on careers of doctorate holders.

overqualified. In nine countries out of fifteen for which data is available, this is the case for at least 5 per cent of the social science doctoral graduates, and this percentage reaches 14 to 15 per cent in Austria, Germany and Slovakia, and 9 per cent in Denmark. In most cases, however, these percentages remain lower than for the whole population of doctorate holders. Interestingly, too, the social science Ph.Ds' share of managerial occupations is higher than for all doctorate holders in almost all countries.

Employment sectors and occupations

What do doctorate holders do? The majority work in the higher education sector. The government sector is the second main employer of doctorate holders. This pattern is even more marked in the social sciences (Figure 8.3). The only exception among the countries for which data is available is Austria, where the business enterprise and private non-profit sectors employ a larger share of doctorate holders.

It follows that, like the overall population of doctorate holders, an important share of doctoral graduates in the social sciences is employed in teaching occupations (at least 40 per cent) and research (at least 50 per cent). Others work as business and legal professionals (particularly in Austria and Germany, where the occupation patterns differ slightly from the other countries) or as sociologists, psychologists and other social science-related professionals (particularly in Canada, Denmark and the USA). (See Table A8.3 in Annex 3.)

Conclusions

This analysis suggests that in the countries studied, the situation of doctorate holders in the social sciences does not differ much from that of other doctoral graduates, and is if anything more favourable. The number of doctorates in these disciplines is increasing rapidly, and at a higher rate than for all doctorates. The presence of women is increasing, including among those employed.

The employment situation of doctoral graduates is generally better than for less educated people. This may somehow counterbalance the fact that the doctoral population has studied for many years and is relatively aged compared with other tertiary-level graduates and with the entire employed population. The employment prospects of doctorate holders in the social sciences are also relatively favourable by comparison with all doctoral graduates. In two-thirds of the countries, they have lower unemployment rates and fewer of them are in occupations for which they are overqualified. But part-time employment is more common.

A majority of social science doctoral graduates work as researchers, and an important share teach at a higher education level. Other occupations in which they are employed reflect the diversity of the different social science disciplines. Their presence in managerial occupations is also higher than for other doctoral graduates, which is an indication of their influence in society.

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8.2 Diffusing and accessing social science knowledge

Introduction

This section deals with the dissemination of social science knowledge through printed publications (monographs and textbooks). It continues by discussing the impact of developments in information and communication technologies (ICT) on the dissemination of social science knowledge in open access journals, as well as the impact of these technologies on the production of social science knowledge.

As was discussed in Chapter 7, most social science fields are experiencing a shift towards journal articles at the expense of monographs, because of the nature of the research evaluation process. Journal subscriptions represent an increasing share of university library spending in a context of decreasing budgets. This has resulted in substantial falls in sales of monographs. Furthermore the major international publishing houses increasingly emphasize sales volume, which leads to an emphasis on books that can be sold worldwide (Ward). In general, research monographs are published less than in previous times and when they are, it is increasingly in English. However, these trends vary widely between countries and disciplines. Textbooks, discussed in more detail in Section 8.1, are another important medium in the diffusion of social science ideas and concepts. The textbook market has also witnessed a considerable process of concentration in recent years.

Developments in ICT are having far-reaching effects on the diffusion and dissemination of social sciences. They offer new ways of collecting, analysing and communicating data, and they facilitate interactions and cooperation between scholars. However, not all researchers have an equal chance to make use of these opportunities as a result of the persistent digital divide between the developed and developing world (Wyatt). The web technologies, of course, play a major role in changing the ways in which social science research is published and disseminated.

Open access approaches are a way of reducing the costs of journal subscriptions and of increasing access to social science knowledge (Perakakis, Taylor and Trachana). The publishers of scientific journals also increasingly allow authors the option of giving open access to their articles. In these cases, as in most open access journals, authors are in charge of covering the publication costs. Open access models in which authors or their institutions pay for the publication can have major negative implications for developing countries and the visibility of their social scientists' work (Wyatt). Authors can also make their publications available free of charge on their website, or in open access repositories – and funding agencies increasingly require this from the scholars they support. According to Perakakis, Taylor and Trachana, this seems to be the most likely direction for future policy on open access, since it increases the number of citations and the access to social science knowledge by the general public and for scholars in developing countries.

An interesting development in this context is the growth of open access journal depositories in the Latin American region. Such portals offer journals the opportunity to increase their visibility (Babini). Like Latin American publications, African academic journals are rarely included in international citation indices. Mouton (in Chapter 2) mentions the African Journals Online (AJOL) initiative, aimed at increasing the international visibility of, and facilitating access to, the research produced in Africa.ب

Research monographs: an overview

Kevin Ward

This paper analyses recent international trends in the publishing of research monographs in the social sciences. First, it examines changes in the publishing industry in a number of countries. Second, it turns to changes in the performance assessment of some social scientists. Third, it considers some differences in the publishing of research monographs by country and by social science discipline. Finally, the paper summarizes the main trends in the international publishing of research monographs.

This paper analyses recent international trends in the publishing of research monographs in the social sciences, by which we mean single- or multiple-authored 'specialist text[s] aimed at fellow researchers … usually narrow in scope and technically and theoretically sophisticated' (Kitchen and Fuller, 2005, p. 75).

This paper is organized in four sections. First, it examines changes in the publishing industry in a number of countries which are partially behind current trends in the publishing of research monographs. Second, it turns to changes in the performance assessment of some social scientists. These have contributed to new trends in the publishing of research monographs. Third, it considers some differences in the publishing of research monographs by country and by social science discipline. Fourth, and finally, the paper concludes by summarizing the main trends in the international publishing of research monographs.

International trends in the academic publishing industry

Since the 1980s, the publishing of social science research monographs has been transformed dramatically in four ways. The first is the growing business concentration in educational publishing. A small number of international firms now dominate this market, with consequences for the publishing of research monographs. As Thompson (2005, p. 2) puts it:

> *Today a handful of large conglomerates, many operating in an international and increasingly global arena, wield enormous power in the publishing world and harbour a growing number of formerly independent imprints under their corporate umbrellas.*

UK academic publishing – broadly understood to include books for both teaching and research – is dominated by Edward Elgar, Palgrave, Routledge, Sage and Wiley-Blackwell. These firms are also present in the research monographs section of the market, alongside a small number of university presses, such as those of Cambridge and Oxford universities. Across continental Europe these large presses are also important, alongside others such as Kluwer/Springer. In Singapore, these same companies also dominate, besides a series of national presses that publish in one of the national languages. In Canada, however, academic publishing is dominated by three university presses: McGill-Queen's, the University of British Columbia, and the University of Toronto. The largest publishers are present in Canada but they do not dominate as they do elsewhere in the world (Ward et al., 2009). In the USA, while the large international presses are present in the mass publishing section, it is the university presses that are dominant in the publishing of research monographs. Columbia University, Duke University, Harvard University and the University of Chicago presses, amongst others, have a number of social science lists that publish research monographs.

The second significant change is the increasing emphasis by the largest publishers on sales volume. This translates into a preference for the commissioning of collections, companions, readers and textbooks rather than research monographs. In some ways this both reflects and reinforces the teaching of the social sciences. Academics have some say in what gets published and when, for example through their use of reading lists. This leaves it to a shrinking number of publishers to print research monographs.

The third significant change is the extension of the geographic reach demanded by publishers for the books

they commission. It is no longer enough to produce a book of national interest, at least not for the largest international publishing houses. Many publishers look to achieve sales across the world. Not all countries are equal, however, in this search for sales, with the US market often given disproportionate weight.

Fourth, and finally, new technologies have transformed the whole business of writing, submitting, publishing and marketing a research monograph. According to Thompson (2005, p. 85), the 'scholarly [or research] monograph supply chain' has been deeply and profoundly restructured. Technology has also made possible a small but important development in monograph publishing: the academic author is now required to do more and more of the proofing and production work.

Trends in the international working conditions of academics

A growing number of academics are now finding their publishing practices under ever closer scrutiny. More and more countries are introducing systems for evaluating the output of their academic staff. In most cases these exercises share three features (Castree et al., 2006).

First, they emphasize the importance of journal articles over research monographs, which tends to mean the privileging of short- to medium-term intellectual programmes over longer-term ones. Second, to differing degrees, they rely on citation counts through the ISI Web of Knowledge or its rival Scopus to rank the quality of publications. If a journal does not have an ISI number, evidence suggests, academics are often encouraged to publish elsewhere (Ward et al., 2009). If it does have an ISI number, then the higher the impact factor the better. In many countries this has led to a narrowing in the range of journals in which social scientists can usefully publish. There is also evidence that some national governments offer financial incentives to social scientists to publish in particularly high-impact and high-ranking journals, often in the name of 'national competitiveness' (Ward et al., 2009). Third, English has become the international language in and through which academics communicate. This has led some social scientists to argue that their work has been marginalized because of where they write from and the language in which they write (Paasi, 2005).

These trends in the monitoring of academic performance, coupled with transformations in the academic publishing industry, have produced the current context for the publishing of research monographs.

International trends in the publication of research monographs

According to Thompson (2005, p. 94):

> *The decline in the sales of [research] monographs has undoubtedly been one of the most significant trends with which academic publishers have had to deal over the last two decades – more than any other single factor it has transformed the economic conditions of scholarly publishing.*

The first international trend in the publishing of research monographs is the decline in the number of sales per title. In general terms this is the result of the cutting of university library budgets and the growth of other forms of distribution for scholarly works (Pearce, 1998). This has meant that some academics have found it harder to get their research published in monographs. While the details differ from country to country and from discipline to discipline, various commentators have expressed their concern over the declining numbers of monographs being written by social scientists (Ward et al., 2009).

The second international trend in the publishing of research monographs is the growing dominance of the English language. While this English-language-based 'internationality' has not gone unchallenged by a series of non-English-speaking scholars, this trend seems to be irreversible.

The third international trend is the continuing importance of different national languages. English-language research monographs are increasingly the international 'gold standard' for many academics. That said, there remain significant differences from one country to another in the production of English and national-language research monographs. In general, social scientists in France, Germany, Italy and Spain have retained a strong tradition of publishing monographs in their own languages, often as part of the academic promotion process. In Germany, a published habilitation thesis is still obligatory in the pursuit of an academic career. In these countries, research monographs in English tend to be notable exceptions. Danish, Finnish, Norwegian and Swedish social scientists also still publish the bulk of their monographs in their own national languages, and again, English-language research monographs are very much in a minority. In contrast, in the Netherlands, the production of Dutch-language research monographs has slowed, as the emphasis has switched to publishing monographs with the top anglophone academic publishers (Ward et al., 2009).

The fourth international trend in the publishing of research monographs is the continued variety in output between social science disciplines. In some disciplines research monographs are highly valued. Examples include anthropology, archaeology and history – disciplines that value interpretive research and analysis and that, in some countries, lie at the boundary between the humanities and the social sciences. In other disciplines research monographs are valued but are considered less important than journal articles. Examples include human geography, law, politics and sociology (Clemens et al., 1995; Ward et al., 2009). In a third group of social science disciplines, research monographs are not really valued at all. These tend to be disciplines such as economics and psychology that see themselves as being at the interface of the social sciences and the sciences proper, where the publishing of monographs is positively discouraged (Clemens et al., 1995). In these it is multi-authored scientific papers that are understood to have the greatest value, particularly those published in one of a small number of elite journals.

Conclusion

The absence of large international data sets makes this short examination of contemporary monograph publishing necessarily impressionistic. While it is clear that much has changed over the past couple of decades, the impact of those changes on individual academics depends on their discipline and where in the world they work. That all are affected does seem to be irrefutable. Future trends are hard to predict with any certainty, particularly those that transcend very different national publication systems (Hicks, 1999). Nevertheless, it is clear that in a growing number of countries there is less and less scope for academics to publish research monographs, but that the intellectual value attached to them, as judged through promotion cases and reputational capital, remains intact.

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Presentation of World Digital Library, UNESCO Headquarters
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Digitizing social sciences and humanities

Sally Wyatt

ICT is one of the much-heralded technologies of the late twentieth century. This technology has been accompanied by promises to eliminate repetitive, boring and tedious work, and to improve access to information and entertainment, not to mention the quality of social justice and democracy. Yet, despite improvements, inequality in its many forms persists.

Radical developments in science and technology have usually been accompanied by promises to alleviate the problems of the global poor. Whether in terms of food, shelter, health, poverty or safety, the divide between the global North–West and South–East was going to be bridged by nuclear power, the green revolution, advanced transportation technologies, biotechnology and nanotechnology. The reality has nearly always been otherwise, and quite often new divides have emerged or old ones have deepened (Wyatt et al., 2000).

This article focuses on one of the much-heralded technologies of the late twentieth century, namely ICT. This too has been accompanied by promises that it would eliminate repetitive, boring and tedious work, and would improve access to information and entertainment, as well as the quality of social justice and democracy. While there are instances of such improvements, inequality in its many forms persists.[1]

The use of ICT is having far-reaching effects on knowledge production and distribution. Digitization can take many forms, altering established ways of doing research as well as introducing new ones (Jankowski, 2009). For example, questionnaires can now be administered online, facilitating data entry and analysis enormously. In addition, the digital traces many people leave when they travel, conduct their banking online, do their shopping, use their mobile phones or visit a website provide enormous amounts of data for economists and sociologists. Digital material, such as websites, blogs, games and social networking sites, is of great interest to media scholars, anthropologists, cultural historians and many others.

It is not only about new data and new or hybrid methods of data collection and analysis. Digitization also offers scholars many new ways to store, exchange and present data, including dynamic databases, three-dimensional simulations and digital archives. The new communication possibilities offered by social networking sites and other collaborative platforms provide researchers with exciting opportunities to interact with one another as well as with broader audiences (Virtual Knowledge Studio, 2008). These kinds of development have a long history. The humanities have been adapting information technology to research since the 1940s, when scholars began to imagine how computers could assist in developing detailed indices of ancient and religious texts. There is currently a critical mass of scholarly electronic editions of primary sources, facilitating both access to these sources and new kinds of analyses (ACLS, 2006).

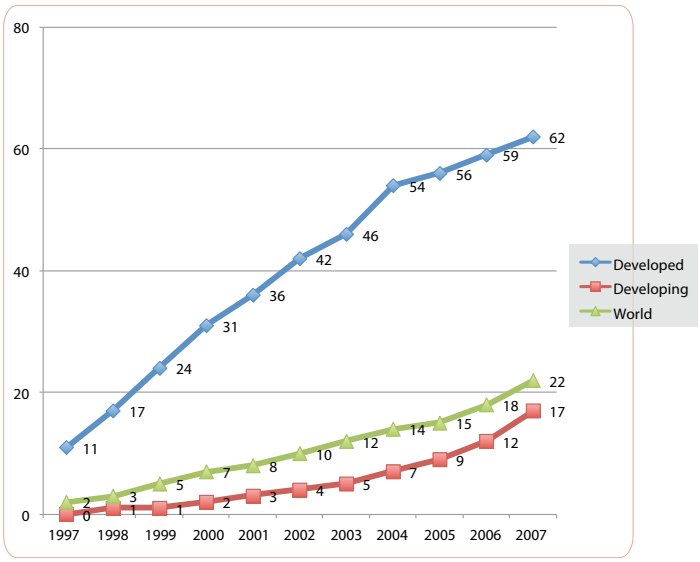
This article focuses on what ICT means for the production of knowledge. Knowledge, and the ability to generate and use it, are necessary prerequisites for individuals, communities and countries to make choices about their social and economic needs and priorities. First the paper draws attention to a major challenge affecting all areas of ICT use, namely the digital divide. It then examines the 'open access' movement. Some of the crucial differences between the social science and humanities on the one hand and the natural sciences on the other are outlined in the final section.

Digital divides: forgotten but not gone

In the mid- to late-1990s, there was much concern about the digital divide within and between countries and regions

1. This article draws on abstracts and presentations made by Wiebe Bijker, Geoffrey Rockwell, Kevin Urama and Shiv Visvanathan at the World Social Science Forum, Bergen, May 2009. Any errors in facts or interpretation are those of the author.

Figure 8.4 — Internet users per 100 inhabitants in developed and developing countries, 1997–2007



Source: ITU (International Telecommunication Union). ICT Statistics.
Available online at: http://www.itu.int/ITU-D/ict/statistics/ict/graphs/internet.jpg (accessed 7 July 2009).

of the world (Cammaerts et al., 2003). As levels of access have risen in industrialized countries, their interest in solving the digital divide has apparently declined. Figure 8.4 presents the number of internet users per 100 inhabitants in developed and developing countries. It clearly illustrates that the global digital divide remains. Even though the gap has narrowed in the early years of the twenty-first century, it is still considerable. These figures also mask major differences within developed and developing countries. For example, some African countries such as Burundi, Congo and Ethiopia have fewer than one internet user per 100 people whereas Morocco has thirty-two. Even within the European Union, there are significant disparities: the Netherlands, Sweden and Denmark have more than eighty internet users per 100 inhabitants, whereas Portugal and Italy have fewer than fifty. This data, compiled by the International Telecommunication Union, is based on nationally reported figures, usually based on surveys. They differ in their methodology, especially in terms of the age of the included users and frequency of use.

Another indicator of internet connectivity is the number of hosts, or computers connected directly to the internet. Table 8.1 lists the number of internet hosts within a country. The difference between the richest and poorest countries is stark, differing by a factor of a billion. These data also illustrate some anomalies. For example, Christmas Island and Tuvalu have more internet hosts per capita than the USA. Some small countries have desirable addresses that are bought by internet service providers; others provide secure havens from financial, copyright or other criminal investigation. Nonetheless, these sorts of data clearly indicate that access to digital resources remains a major problem, and one that is exacerbated in many of the poorer countries of the world by other infrastructural problems with electricity supply and education.

Table 8.1 > Number of internet hosts per million population, 2008

Country	Number per million people	Rank
USA	1,040,073.642	4
Netherlands	659,825.381	8
Canada	154,127.807	44
France	51,581.052	67
Brazil	48,756.614	70
China	10,756.031	94
Nicaragua	10,051.598	96
India	2,358.022	133
Kenya	721.297	152
Somalia	0.105	230
Weighted average	64.545	-

Source: Nationmaster.com (compiled from CIA World Factbooks). Hosts (per capita) by country. Definition, graph and map. Available online at: http://www.nationmaster.com (accessed 1 July 2009).

In terms of knowledge production, however, access is not the only problem. It is also important to consider divides in the production of online content and infrastructure. Unfortunately, data is not available for all countries. Table 8.2 presents two relevant indicators for OECD countries: websites per country and communication technology patents per country. Even amongst the richest countries in the world, there are huge disparities in terms of production of content (websites) and hardware (patents).

Table 8.2 > Producing the internet

Country	Websites, per 1,000 people, 2003, in rank order	Communication technology patents, per million people, 1998–2000 (rank)
Germany	84.7	5.2 (10)
Denmark	71.7	3.8 (12)
Norway	66.4	1.3 (=15)
United Kingdom	64.2	8.7 (7)
USA	63.7	13.1 (5)
Netherlands	48.2	18.0 (4)
Canada	32.9	4.6 (11)
Sweden	28.0	42.0 (2)
Austria	22.6	3.1 (13)
Switzerland	20.5	9.2 (6)
New Zealand	15.3	0.8 (18)
Australia	14.5	2.3 (14)
Finland	13.3	53.5 (1)
Belgium	13.0	7.3 (9)
Italy	12.9	1.O (17)
France	10.5	8.0 (8)
Ireland	5.8	1.3 (=15)
Japan	2.9	23.2 (3)
Weighted average	32.8	11.5

Source: Nationmaster.com (compiled from OECD Communications Outlook, 2003, Tables 5.6 and 3.12), websites by country and Communication technology patents by country. Definition, graph and map. Available online at: http://www.nationmaster.com (accessed 7 July 2009).

Open access: open for what; open to whom?

One of the promises of the internet is that it provides free and easy access to information, which includes not only scholarly articles and books, but also original data. It could be argued that it does not matter where the host or website is based, as long as people all over the world can access data and information. In 2003, many academies, universities, research councils and institutes adopted the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (Berlin Declaration, 2003). In 2009 there were more than 100 signatories, mostly from Europe but also from North and South America. Open access is defined 'as a comprehensive source of human knowledge and cultural heritage that has been approved by the scientific community'. The declaration identifies the internet as the most important tool for making 'original scientific research results, raw data and metadata, source materials, digital representations of pictorial and graphical materials and scholarly multimedia material' freely available. The signatories are committed to finding ways of developing existing legal and financial frameworks to make open access possible.

There are indeed challenges to realizing the objectives of the Berlin Declaration, not least scientific publishers' long-standing practices. Many scientific journals have 'article processing charges', which can be as much as US$5,000. Sometimes there are additional charges simply to submit an article for consideration and for colour printing. For example, the *Journal of Neuroscience* charges authors a $100 submission fee, $850 publication fee plus $1,000 for each colour figure and an optional $2,500 'open access' fee (BioMed Central, 2008). These sums are far beyond the means of many universities. Sometimes fees are automatically waived for authors based in poorer countries, but often exemptions have to be sought on a case-by-case basis. In these instances, 'open access' means that the authors pay instead of, or as well as, the readers. This has consequences for the distribution of knowledge production, with richer disciplines and universities having greater opportunities for publishing their research results. These and other practices (Sismondo, 2009) seriously question the scientific principles of transparency, disinterestedness and peer review.

Social sciences and humanities: how do they differ from the natural sciences?

Charging authors for publication is rare in the social sciences and humanities, not least because such departments are usually less well-funded than their natural science counterparts, even within a single university. However, charging practices can cause problems for those in the social sciences and humanities who study ethical, legal and social issues relating to science and technology and who wish to communicate their results to a natural science audience. There are other important differences between the disciplines. One of the aims of the Berlin Declaration, as mentioned above, is that there should also be greater access to data. Much of this discussion assumes a computational view of what science and research are about. In this view, data is collected and then, in the interests of openness, digitally deposited and preserved so that others can use it to replicate the results and test new hypotheses. But scholars in the interpretative humanities and social sciences work with different kinds of data in which the context of data collection is integral to its interpretation and understanding. Defining species of plants or insects is already difficult; coming to agreement on occupational codes in order to make comparisons about the work people do across time and countries is even more difficult. Making sense of qualitative interview data about, for example, people's understanding of health and illness, collected by someone else, is almost impossible.

Moreover, there are very good reasons why open access to data and data sharing may be resisted, especially by smaller and less powerful researchers and research groups. There are few incentives for sharing data within the research system, and even fewer for doing the hard and time-consuming work needed to ensure that data is compatible and accessible in meaningful ways. The privacy of research subjects and participants may even be compromised by open access to many types of qualitative data (Wouters et al., 2007). Some countries, such as Canada, require researchers to destroy data after five years, precisely in order to protect research participants. This is a different ethical principle from open access, but nonetheless an important one in that it is related to the questions about the life of data and how long it remains open.

There is yet another conundrum relating to open access that particularly affects the knowledge created within the social sciences and humanities. Open access assumes that knowledge is universal, and that anyone can use it once they have access to it. But knowledge is created within local disciplinary, social and cultural contexts. While much natural science and engineering knowledge can and does transcend local boundaries, it is much more difficult for social science and humanities knowledge to do so. Thus, it remains important to question what open access means in practice, in order to ensure that it does not disadvantage those in the social science system who are less powerful in disciplinary, institutional or geopolitical terms.

Finally, it is important to remember that knowledge production in the humanities and social sciences is not always progressive in a temporal sense – the newest is not always the best. The activities and insights of those long dead remain of great interest and importance. Just as agricultural, industrial and informational modes of production coexist in the contemporary world (Castells, 1996–1998), so do different forms of knowledge and knowledge production. Oral, print and digital information and knowledge coexist in practice and as an ideal.

Conclusion

A new knowledge landscape is emerging that increasingly incorporates digital technologies, offering scholars opportunities to collect, combine, represent and exchange data in novel ways. As digitized knowledge comes to dominate Western social science and humanities, researchers in all parts of the world need to understand the possibilities and limitations of the various means of knowledge production, just as they have always done. It remains important to keep the following questions in mind. As new research tools become more widely diffused, what happens to those scholars who do not use them, voluntarily or otherwise? Will they experience difficulties in doing research, at each step of the process, from making grant applications to accessing literature, gathering data and publishing results? Just as the digitization of the everyday world in advanced industrialized countries makes it increasingly difficult for people to organize their financial affairs or travel on public transport, will the digitization of the research process make it more difficult for those scholars who do research differently from what might become the digital norm?

Social science and humanities knowledge is often produced in the context of local needs and situations, which raises particular challenges for its effective digitization and globalization. Fundamental constraints remain to the full democratization of knowledge production across the globe, such as major inequalities in health, education and access to infrastructure. Until these are resolved, the promise of digitization will be no different from the promise of other new and emerging technologies, such as genomics and nanotechnology.

Digitization could easily reinforce old patterns of colonialism in the new knowledge economy in two ways. First, computational methods and approaches developed to meet the needs of research paradigms in the natural sciences and quantitative social sciences may be imposed on the more interpretative social sciences and humanities, with unforeseen and possibly undesirable consequences for knowledge production. Second, the global North and West will not only remain the major consumers and users of knowledge, but also its dominant producers, thus exacerbating an already existing knowledge divide.

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The roads to open access

Pandelis Perakakis, Michael Taylor and Varvara Trachana

Commercial publishers and journal monopolies have radically changed a system originally designed to facilitate the dissemination of academic knowledge, turning it into a profit-seeking business whose financial barriers hinder access to information. While scholars around the world exchange results and ideas in real time and free of charge, their research articles take months or years to be published in an academic journal. And as fewer libraries are able to meet the increasing subscription costs, the work of such authors becomes invisible.

The key features of our current academic publishing system were first elaborated long before the digital era. In the early days, articles published in journals, printed on paper and distributed through postal services, formed the only means of communicating new ideas and research results among scholars. Academics looking for recognition among their peers submitted their articles free of charge to journals. Other scholars, considered to be experts in their fields, volunteered to review and assess the submitted articles. Publishers then assumed the responsibility of distributing the journals back to universities and institutions at a reasonable price.

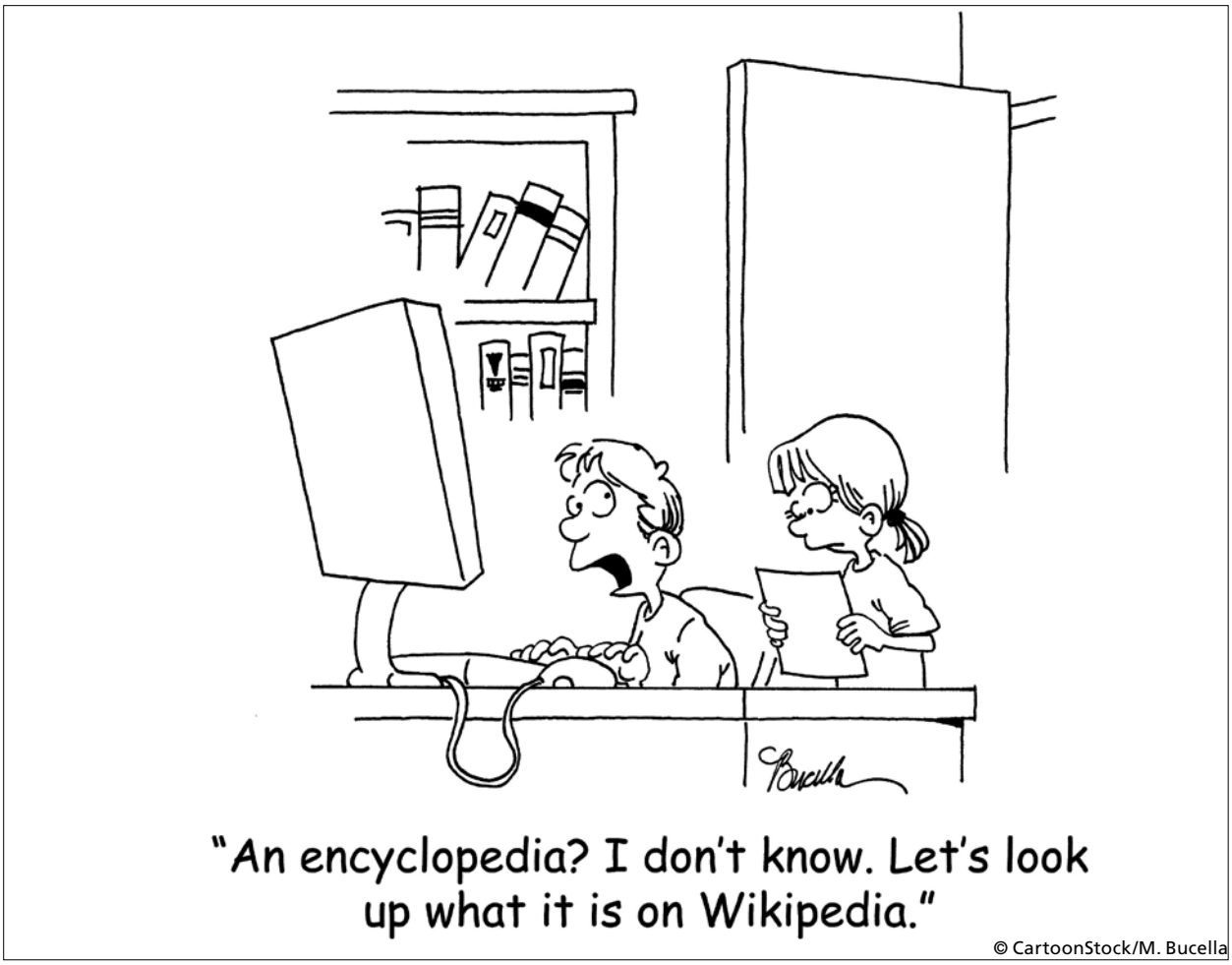
Today's academics, driven by the same desires for impact, prestige, tenure and funding, continue to provide their articles free of charge to publishers. Commercial publishers, however, have dramatically increased journal subscription prices since the late 1970s. According to the Library Journal's *2008 Periodicals Price Survey*, the average cost of journal titles included in Thomson Reuters Social Sciences Citation Index (SSCI) increased in the period 2004–2008 by an average of 37.8 per cent for US titles and 40.9 per cent for non-US titles. Higher subscription costs force libraries to cancel their subscriptions to the least-used or the least cost-effective journals, and to depend more on interlibrary loans in order to provide their users with an adequate access to academic material.

It has become evident that commercial publishers and journal monopolies have radically changed a system that was originally designed to facilitate the dissemination of academic knowledge, turning it into a profit-seeking business whose financial barriers are hindering access to information (Taylor, Perakakis and Trachana, 2008). This is most evident in developing countries, whose progress depends heavily on the assimilation of information (Annan, 2004.) What makes this situation all the more paradoxical is that this is happening at a time when electronic media and the internet have dramatically reduced publishing costs and increased our ability to store and distribute information. While scholars around the world exchange results and ideas in real time, through emails, online chats, web meetings, homepages, institutional webpages and blogs – free of charge – their research articles take months or years to be published in academic journals. And as fewer libraries are able to meet the increasing subscription costs, for the vast majority, the work of such authors becomes invisible.

The open access alternative

This paradox gave birth to a movement led by academics and librarians, and supported by private and public institutes, physicians, patients and the informed public, demanding open, unrestricted and free access to all peer-reviewed scholarly material. The open access (OA) publishing movement's first major international defining statement dates back to the Budapest Open Access Initiative (BOAI). Its statement (Chan et al., 2002) has been signed by 489 organizations and 5,015 individuals.

The movement comprises two main strands. The first, known as the 'golden' road to OA, involves authors submitting directly to an OA journal. OA journals have existed since the late 1980s and come in different forms. Fully OA journals grant free online access to all published material without charging publication fees to authors. Hybrid OA journals charge publication costs, or may charge for an 'OA option' or limit online access to material, and fee-based OA journals provide free OA. However, they often transfer the economic burden to authors through hefty publication fees (McCabe and Snyder, 2004).



At present, the vast majority of OA journals do not charge publication fees. The *Directory of Open Access Journals (DOAJ)* lists 4,117 journals (919 belonging to social sciences) of which 1,485 are searchable at article level. Of all fully OA journals, only 33 per cent charge publication fees (Hooker, 2009). Despite their significant presence in the academic landscape, however, the majority of OA journals are not included in citation indexes such as SSCI and SCI. The exclusion of social science journals from citation indexes makes invisible not only articles, but also the scholars who produce them, their research and their institutions.

Self-archiving

Self-archiving is the second current within the OA movement, and is also known as the 'green' road to OA. Self-archiving involves authors publishing in a traditional (usually non-OA) subscription journal while simultaneously making their articles freely accessible online by placing them on an institutional online repository (IOR) such as the ones maintained by many universities worldwide, or else in a subject-based repository such as arXiv. Self-archiving is not a new idea, and it has been common practice for decades in fields such as computer science and physics.

Scholars in the social sciences and humanities, however, are less familiar with self-archiving practices. Repositories in social sciences trail those of other fields in their rate of both establishment and submission. There are some promising exceptions such as RePEc (Research Papers in Economics), which holds over 631,000 searchable items, and E-LIS (E-prints in Library and Information Science), which hosts more than 9,072 documents. Other repositories in the social sciences however, have not yet gained ground in attracting scholars (Xia, 2007).

Despite the varying levels of awareness within different disciplines, the academic community is gradually realizing that the green road, right now, appears to be a more plausible and viable route to OA. This is reflected in the number of official demands for scholars to self-archive their work. The majority of these demands emanate from research funders such as the National Institute of Health (NIH) in the USA, Research Councils UK (RCUK) and the European Research Council (ERC) in Europe. Harvard and MIT have established similar mandates (Plotkin, 2009). Two potentially influential multi-university mandates have also been proposed: one for all 791 universities in the 46 countries of the European

University Association (EUA) and one for all universities and research institutions in Brazil (Harnad et al., 2008). One significant issue is that at present, copyrights for scholarly articles are held by journals. However this is likely to change, particularly if authors, responding to national, international or institutional mandates, self-archive prior to submission.

Succumbing to pressures from the academic community, a large number of journals have already turned green. In a recent survey of more than 10,000 journals, 90 per cent were found to be green (http://romeo.eprints.org/stats.php). Data from the *DOAJ* also indicates that only 10 per cent of all journals are gold. However, due to the uncertainty regarding the cost-recovery of the golden road, most publishers prefer to give the green light to authors rather than make the transition to OA publishing (Harnad et al., 2008).

Although self-archiving practices are being adopted by a growing number of authors, it has still not become habitual. Evidence suggests that at present, 39 per cent of authors provide OA for at least one of their published articles through self-archiving (Swan and Brown, 2004). The role of librarians in the green road to OA is essential, not only for the establishment and maintenance of repositories, but also to inform authors of self-archiving-compliant formats, copyright procedures, and in particular about the citation advantage offered by self-archiving. A large number of studies have shown that articles freely available online receive a significantly larger number of citations than toll-access articles (Lawrence, 2001). In addition, in developing countries, OA articles tend to be cited more frequently.

A new future

OA is on the rise, and increasing awareness of self-archiving has the potential to lead to 100 per cent availability of all scholarly material. The peer-review process itself may also undergo significant changes. As an increasing number of disciplinary global archives go online, providing free access to full-text articles, web technology such as GPeerReview could potentially broaden the peer-review process and make it more inclusive. We can even imagine a scenario in which both the reviews and reviewers are rated.

In a new era of publishing, OA will make funds available for library spending and librarians will have access to a greater amount of documents. Journals, far from disappearing, could select the most important and prized articles from the vast pool of information provided by subject-based repositories and global archives. Such a scenario would, however, imply a loss of control over access to published research.

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Flash

Open access to social science journals in Latin America

During the 2000s, Latin America has contributed to the development of alternative journal portals intended to improve the visibility of and access to regionally published social science journals.

The relatively poor visibility of regional journals and their authors is often due to budgetary constraints for the distribution of printed journals, and their limited presence in international indexes. These are an incentive for the development of open access (OA). Although they do not yet necessarily have a sustainable business model, a number of Latin American journals have chosen to take up the challenge of online OA as a means of dealing with these problems.

In order to bolster online OA, funding has been channelled principally towards national and regional journal portals rather than individual publishers, while the latter assume a great portion of the costs of journal indexing, platform development and updating, and building bibliometric indicators. A growing number of journals are also using open source journal management and publishing systems (for example Open Journal System, OJS) in order to increase their efficiency on the web, reduce costs and ensure harvesting by journal portals.

Building upon a long history of regional bibliographical information networks[1] and taking advantage of the existence of one common language for most Latin American countries, several regional journal portals have been developed, improving the visibility of and accessibility to social science journals. These developments have also contributed to the provision of much-needed regional scientific indicators (SCIELO and REDALYC), facilitating the evaluation of research.

SCIELO – Scientific Electronic Library Online (www.scielo.org)

SCIELO is a multidisciplinary OA journal portal with 631 full-text journals, of which 79 are in the social and human sciences. The journals are selected by national scientific focal points in 11 Latin American and Caribbean countries as well as in Spain and Portugal. SCIELO was initiated in 1998, and after ten years could boast a monthly average of 1,865,369 full-text downloads of social and human science journals. The SCIELO project, based in BIREME (www.bireme.br), has developed a methodology for the preparation, storage, sharing and evaluation of electronic scientific publications.

REDALYC – Red de Revistas Científicas de América Latina y el Caribe, España y Portugal (www.redalyc.org)

REDALYC is a multidisciplinary open access journal portal with an available collection of 550 peer-reviewed full-text journals, of which 401 are in the social and human sciences. REDALYC offers open access to 79,702 full-text social and human science articles. In 2008, there was an average of 1,445,221 monthly article requests in the social and human sciences.

REDALYC was developed in 2002 through a research programme of the Autonomous State University of Mexico (UAEM). The main objectives were to increase the visibility of and access to Ibero-American journals, to develop regional bibliographical indicators for research evaluation, and to periodically provide analyses of regional socioscientific networks.

CLACSO – Red de Bibliotecas Virtuales de Ciencias Sociales de América Latina y el Caribe (www.biblioteca.clacso.edu.ar)

The CLACSO network of virtual libraries is an open access and cooperative digital library that offers over 11,000 full-text social science publications (books, working documents, journals and papers). The various documents come from CLACSO´s network of 250 social science institutions in 21 Latin American and Caribbean countries. Collections are regularly updated by a working group of CLACSO-affiliated publishers and librarians. This social science portal was established in 1998 to support education, research and policy by improving the visibility of and access to social science research. This regional cooperative digital library functions through an open software Greenstone platform, providing advanced search options and download statistics. In 2008 there was an average of 600,000 text requests per month. CLACSO and REDALYC have signed an agreement to improve the complementarities of both their platforms (REDALYC indexes forty-nine journals from CLACSO´s network) thereby avoiding the duplication of indexing costs.

Latindex – Sistema Regional de Información en Línea para Revistas Científicas de América Latina, el Caribe, España y Portugal (www.latindex.org)

This online regional information system for Latin American, Caribbean, Spanish and Portuguese scholarly journals is

1. Examples: BIREME-OPS (health, www.bireme.br); REDUC (education, http://biblioteca.uahurtado.cl/ujah/reduc/catalogo.htm); CLACSO (social sciences, www.biblioteca.clacso.edu.ar); CLAD-SIARE (public management and policies, www.clad.org.ve/siare/).

grounded in a cooperative network of national scientific organizations that gather and disseminate bibliographical information on regionally produced scientific publications. The Latindex database, which is run by the National Autonomous University in Mexico (UNAM), provides information on approximately 8,609 social science journals. Out of this total, 3,810 profiles include web links to the journal webpage.

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Flash
Challenging the international academic publishing industry

South Africa's higher education is confronted with three major priorities: produce a highly qualified human resource base, train future academics, and produce innovative and high-quality research to enhance the country's competitiveness. These priorities require that scholars and students have access to the latest knowledge available in international academic journals and books. But the profit-making orientation of the international academic publishing industry prevents South Africa and other countries from reaching these goals.

Academic journals are extremely expensive, and most academic libraries have to make painful decisions about subscriptions. The most well-endowed universities manage to get the best of the journals, but the poorest do not. This effectively means that the least well-endowed universities, those that service the poorest students, do not have access to a quality academic journal base and are unable to deliver quality higher education. They do not even have access to all articles produced by South African scholars.

South Africa is starting to address this situation. The Department of Science and Technology commissioned the Academy of Science of South Africa (ASSAF) to search for solutions. ASSAF is considering a set of proposals to support the publication of academic books in and from South Africa, and to develop a cost-effective journal platform to serve as an outlet for the free online dissemination of research results worldwide. The platform is called SCIELO South Africa, and is embedded in the growing multicountry SCIELO system originally created in Brazil. The Academy is also investigating ways to provide cheap access to global knowledge, that is, to the 'international literature' produced in North America and Europe by multinational companies on commercial platforms, as the Brazilian, Chilean and Pakistani governments do. In Brazil, one of its science institutions, CAPES, is mandated with the responsibility of buying access to international journal platforms for most of the public universities with strong postgraduate degree programmes. Pakistan and Chile have a variant of this model which is much cheaper, and which provides public universities with access to a smaller range of journals.

If the goal is to provide all South African universities with broad access to scientific journals, are these measures sufficient? Could more radical measures not be considered, such as challenging the commercial model of academic publishing in North America and Western Europe? Should the government not pass legislation making it mandatory for South African universities to make scientific articles published by their academics available free online within six months to a year of appearing in international journals? Could pressure not be put on publishers to offer better conditions to developing countries and to universities in the Global South? Should inspiration not be taken from the recent wars on drugs prices and against exclusionary clauses on intellectual property, which were won by the combined struggles of civil society and progressive governments of the South?

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Chapter 9
Social sciences and policy-makers

Indonesian puppets
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9 Social sciences and policy-makers

Chapter presentation

Chapter 8 discussed the dissemination of social science to society, and mentioned the role of social scientists as experts and advisers to public or private decision-makers. This chapter focuses on the interface between social science knowledge producers and policy-makers. There are still many disagreements between researchers on the extent to which social scientists should be involved as experts and advise policy-makers, rather than observing social phenomena and limiting themselves to a critical role in society and public policy. Both traditions exist, and they imply quite different epistemological choices. One of the debates concerns whether social scientists have enough reliable evidence to provide sound advice, and whether they can apply an analysis undertaken in a specific context to another context. Researchers also express concern about the way decision-makers and representatives of power make use of the knowledge they produce.

The interface between academic researchers and policy-makers is often marked by tension. In most countries, researchers rely on public funding to finance their research, but claim the right to choose the topics on which they want to work. In a context of shrinking public funds, politicians and decision-makers sometimes question whether the social science research they support is relevant to current public issues, and regret the lack of evidence to inform their policy decisions. In brief, they wonder whether they 'get value for money'. In undemocratic societies the situation is much worse, and there are examples of decision-makers wanting to influence not only the themes on which research is conducted, but also the results.

There is no denying the public engagement and influence of social scientists. The most famous thinkers of the past, such as Smith, Tocqueville, Mill, Marx, Freud, Durkheim, Weber and Keynes, and more recently Arendt, Bourdieu and Sen, to name just a few, have had and still have considerable influence on national and international debates and policies. The question is not whether social scientists influence decisions, but whether researchers work on themes directly related to policy concerns and to what extent; whether they should be financed accordingly; and whether it is justified that their work be assessed on the basis of its impact in the short term.

This chapter starts off by exploring the differences between scientific rationality and the social and political forms of rationality. By means of a few examples, Section 9.1 explores what social science and social scientists can and do achieve, what decision-makers expect, and what they do with the knowledge produced.

In recent years, there has been a growing interest in evidence-based decision-making. Clear and transparent evidence of what works in a specific context, and why, is more likely to influence policy decisions than more general studies. But the production of evidence raises a series of questions. What kind of research is methodologically robust enough to be used with confidence to influence policy? What is socially relevant evidence? These issues are discussed in Section 9.2.

Research is conducted outside the academic world by consultancy firms, non-governmental organizations (NGOs), think-tanks and government agencies. Many of them produce new knowledge or review existing research with a view to informing the decision-making process. Many add to democracy by informing different stakeholders and contributing to clear and better-informed debates. But there are several problems related to these developments, as was discussed in Chapter 3. Think-tanks have developed quickly over recent years. Section 9.3 examines their role in society, and discusses whether a case can be made for conducting similar activities within universities.

9.1 The political use and abuse of social sciences

Introduction

Governments regularly state that they would like to use credible and relevant research results to inform their decisions and to feed their choice of policy options. However, both the culture of government research and the political context influence the degree to which research influences policy. This means that the relationship between research and policy-making is rarely a linear one. In many countries, decision-makers continue to take their decisions on the basis of intuition, ideology, or pressure from different interest groups. They often refer to research only to justify or legitimize their choice. But in democratic societies, research concepts, theories and findings do percolate through informed publics and through the media, and after several years, end up influencing policy debates and decisions. Here research findings influence decisions, but rarely do so immediately.

Researchers themselves have different positions with respect to policy advice. Some adopt a contentious approach, and prefer to act as moral critics of government actions. But many others are eager to work with or for policy-makers. The dialogue with politicians is not easy. Researchers and high-level decision-makers have different time perspectives and different interests. Researchers wish to test a theory, while policy-makers need to obtain solutions. Researchers are also anchored in a specific discipline, while decision-makers require a more interdisciplinary perspective on matters at hand. A strong link between society, policy and science is needed – at least in a democracy. But storing knowledge and ready-made solutions in some kind of repository or clearing house of what works may not be the solution. Instead, a flexible, context-situated social science is needed (Nowotny).

Tedesco and Piot offer their experiences of the difficult interface between researchers and decision-makers. Tedesco makes the point that the relationship between social sciences and policy-making should not be the same in a democracy as in an authoritarian political context. He also regrets being unable, as a minister of education, to obtain answers to concrete problems because of the specialists' inability to move out of their subject-specific concerns. Conversely, Piot illustrates a case where policy-makers did not want to hear what science had to say. AIDS was a good illustration. While several academic sectors and disciplines worked together and reached ground-breaking results, this science was not immediately translated into policies. While the medical solution was available in the shape of antiretroviral therapy, its introduction was slowed down by a policy-maker's denial of the scientific evidence that HIV was responsible for AIDS and by the difficulty of overcoming strong cultural beliefs and widespread malpractice among the population. Strong mobilization by the international community and civil society convinced the decision-maker to take action. Decision-makers exist at all levels, but ultimately people and actors at the grassroots level have to be informed and mobilized.

Out of science – out of sync?

Helga Nowotny

Moving out of science means leaving a world of scientific certainties behind only to embrace the messiness of the 'real' world. Or does it? The gulf that seems to separate the specific forms of scientific rationality from social rationalities may be smaller than previously believed. Science and society have become increasingly intertwined. We must be prepared to draw together intellectual and organizational forces in order to find solutions to difficulties that originate in a shared problem.

The orderly world of science vs. the messiness of the 'real' world?

The contrast seems familiar: moving out of science means leaving a world of scientific certainties behind only to embrace the messiness of the 'real' world. But the gulf that seems to separate the specific forms of scientific rationality from social rationalities may be smaller than has been believed. When modern science first became institutionalized in the seventeenth century, it had to be protected from arbitrary interference by religious and political authorities, and was granted relative autonomy. In present-day democracies, citizens call for accountability from all institutions, including scientific organizations. Society has learned to 'speak back to science', and science is well advised to listen. Divisive issues are subject to public debate, and pluralistic societies must strive for a viable consensus. This means that science and society have become increasingly intertwined. Science has become an integral part of society.

Nevertheless, some differences persist between the two. The scientific community has its own ways of working, and typically operates on a long timescale, while electoral cycles impose a short-term horizon on the political world. Policy-makers are often under immediate pressure to take action, and yearn for science to supply them with ready-made solutions, while researchers insist on defining interesting new research questions, and are confident that the results will be beneficial to society.

Yet something dramatically new is occurring. The exuberant faith in planning of the 1960s and 1970s, with its excessively technocratic vision of the future, produced disappointing results, especially from the moment that the social sciences did not deliver on their promises. Most of today's major issues cannot be clearly categorized as belonging to either the natural or the social order. They are the result of complex, mutual interdependencies. Typically they emerge through a process of co-production which privileges neither social nor natural science. Climate change is the latest and perhaps most potent example: a natural phenomenon caused at least partly by anthropogenic intervention in the natural environment. Humanity has reached the planetary limits for numbers and resources, and must confront hard choices: how to discount the future, the cost for future generations, and the price a society is willing to pay in order to decrease carbon emissions. The scales of space and time found in nature need to be reconceptualized in order to accommodate human spans and the human spatial environment.

Another example of co-production comes from the life sciences, which now routinely create novel entities at the molecular level. The understanding of life can no longer be separated from human intervention in the laboratory and has already moved out, as with regenerative medicine, to novel systems for the production, quality control, storage, packaging and distribution of living cells.

Moving out of science may get us out of sync, but the deeper reason for feeling disconnected stems from a co-produced world, in which a growing number of artificially created entities and phenomena belong to both the orderly world of science and the messiness of the social and political order.

Running out of science – can knowledge be stored in advance?

The second part of this section's title refers to the strategies that are necessary in order to cope with living in a co-produced world. Are we running out of scientific knowledge in the face of current complexities? Should knowledge

production be reorganized so as to store knowledge in advance, or to produce it just-in-time, making it readily available when needed?

These aspirations have a familiar ring, echoing the dreams of the Enlightenment. The quest for relevance in the social sciences triumphed during the mid-twentieth century, celebrating planning, social engineering and foresight. Its latest embodiment is the belief in evidence-based policy. Yet, it is often difficult to discern which kind of evidence counts in a given situation, whose evidence is to be used, and for what purpose.

To a certain extent, knowledge can be prepared in advance. It is generally stored in people who need institutions to work in. In order to be usable when needed, knowledge production must take the context of its application into account, combining scientific and technological dimensions with political, regulatory or financial ones. Cultural and normative elements as well as timing play an important role. Processes evolve at different speeds and can become interlocked like an arms race. Will the dynamics of climate change outpace the policy measures that are developed to fight it? Will the institutional, economic and political reform programmes developed to combat the financial and economic crisis work in time?

Being out of sync has to do with urgency and with the different speeds of different actors, from the moment when events start to unfold to the point when policy measures become effective. These are usually situations in which scientific knowledge is uncertain, while passions and interests abound about the actions that need to be taken. The view of a controllable future has been replaced, perhaps irreversibly, by futures that appear more fragile than ever before. And yet the desire to prepare for the unforeseeable persists.

The reorganization of social science knowledge production in the quest to help society be better prepared can only succeed if we acknowledge that most uses of knowledge cannot be foreseen and that contexts matter. Historical circumstances exert their own weight and pull. Otherwise stored knowledge runs the risk of becoming out of date.

The social sciences and their capacity to address policy questions

Acknowledging these limitations does not remove the need to prepare for present and future contingencies. An admittedly superficial look at the capability of social science knowledge to address policy questions shows that it is perceived as reliable and credible when it is based upon scientific consensus. This holds for all scientific knowledge. But the scientific consensus is simultaneously fragile and immensely robust. It is fragile when poked at with a disciplinary knife and when technical details are masked by normative assumptions. Here as elsewhere, the way questions addressed to the scientific community are framed matters. Scientific consensus is also eminently robust when rooted in scientific procedures that subject all knowledge claims to argument, criticism and empirical evidence. The scientific community is heard on policy matters from the moment that it speaks with one voice.

A frequent criticism of social science knowledge is that it is fragmented. This mistakes heterogeneity (a strength) for incoherence (a weakness). Given its research objects, social science knowledge naturally integrates a variety of social perspectives. Likewise, methodological pluralism is not a problem but a necessity, as is a sufficiently wide basis of expertise. The social sciences will continue to make use of new kinds of data, such as those that are now being used in the analysis of social networks. They will continue to 'export' a social science perspective to parts of the natural sciences and to newly emerging interdisciplinary research areas, thereby discovering new, significant points of views as a result of linking concepts with empirical evidence and asking new kinds of question. Social science knowledge will pursue its integration of different perspectives, in particular those that have largely been excluded: the voices from the global South that make up the vast majority of the world's population, and whose aspirations and ways of coping with change must become an integral part of the social science agenda.

Self-reflexivity and the capability to make institutions more self-reflexive are important criteria for the social sciences if they are to be useful in a deeper, non-instrumental sense. Empirical work on policy advice has demonstrated the importance of framing a question or a problem. Instead of looking for relevant social science knowledge as pre-defined, ready-to-use or produced just-in time, it is advisable to see it as emerging in context-specific ways. This renders it loosely coupled to policy, and allows it to cross boundaries and contexts, gaining depth through comparison. If, in addition, it is self-reflexive and capable of inducing self-reflexivity in individuals, groups and institutions, it will enable them to integrate their experience, rendering knowledge more socially robust.

From relevant knowledge to socially robust knowledge

The other route to be followed leads from reliable knowledge to socially robust knowledge. Society increasingly expects

contributions from science, which implies an increasing integration of societal dimensions into the work of scientists. These may be ethical or environmental considerations, or may concern specific future uses for knowledge, even in basic research. This enhances the indispensable reliability of scientific knowledge. Far from being an unwelcome intrusion, socially robust knowledge is capable of better withstanding various tests to which it exposes itself as it affects society, and is better adapted to anticipating societal aspirations and to responding to latent needs. It leaves room for human agency. Participation, especially upstream, creates a sense of ownership and allows a vision of scientific citizens to emerge.

The recent financial and economic crisis has revealed the importance of beliefs, emotions and mental states. Did people really believe that the risk assessment models spawned by 'quants' in order to predict the evolution of financial markets were something akin to predictive truth machines? Economic theories may have been reliable, but by ignoring non-economic motivations and irrationalities, 'the animal spirits', as Keynes called them, turned out not to be socially robust.

Shifting from relevant knowledge to socially robust knowledge includes multiple, even contradictory, perspectives. Institutions serve as important mediators and brokers. Socially robust knowledge includes views of alternative futures and the imagination that shapes them. It crosses the lay–expert divide. As Harry Collins has shown, many people are capable of interacting with experts, without necessarily contributing to their expertise (Collins and Evans, 2007). Interaction with lay individuals sharpens an expert's sense for the context-dependency of his or her claims, and thus promotes mutual respect.

Future directions and forms of engagement

Social scientists may appear to be too eager to offer their advice to policy-makers, or alternatively may seem too distant to engage with public concerns. Following earlier disappointments, social scientists have argued for a more realistic, incremental view of the policy-making process. Decision-making was pictured in the past as a series of arbitrary points on a winding road, mixing strands of bureaucratic, political, economic and cultural interests, not as some ideal of rational decision-making.

At present, interaction with policy-makers takes a more pragmatic form, and a greater desire by the social sciences to engage with society can be observed. Controversies about real or potential risks associated with scientific and technological advance have transformed the relationship between science and society into an important political interface. A learning process has set in within the scientific community, and genuine efforts have been made to move beyond a naïve 'public understanding of science' – whose sole aim is to improve the acceptance of science. Science's greater societal awareness and engagement have highlighted an ongoing public discourse to which the social sciences have contributed. While some social scientists have used action research as their public arena, social studies of science have played an important role in exploring existing tensions between science and democracy in such contested areas as risk assessment and embryonic stem cell research.

Future engagement with policy issues and a greater desire to shape the policy process will very much depend on the social sciences' ability to reposition themselves in a rapidly changing and globalizing world. Engagement is called for in at least three domains.

The first is renewed engagement in the public discourse on innovation. The dominant rhetoric equates innovation solely with scientific and technological innovation, as though it existed in a social vacuum. But in order to respond to latent societal demands, scientific-technological innovations must be taken up and appropriated by society. Social innovations often precede or supplement scientific and technological ones. The rapid diffusion of the internet and its novel uses are a good example, highlighting social innovation in organizations and in everyday practice.

Another engagement arises from the factors that will transform the social sciences in the twenty-first century. Institutionalized during the nineteenth century under the shadow of the nation-state, the social sciences contributed to shaping national identities and establishing new bureaucratic institutions. Now they face globality, with its diversity, its multiple modernities, its many forms of capitalism and its novel scales of time and space. In the past, the overriding question was how social order could be established and maintained under industrialization. Now the overriding question is how a co-produced world, in which the natural and the human-made are intrinsically intertwined, can be shaped under conditions of globality. While the blurred boundaries of market and state are being redrawn, the social sciences are pressed to integrate knowledge and cultural understandings from other parts of the world and to engage in a fresh dialogue with the Other.

A third form of engagement concerns the design of new institutions as a timely response to present challenges and problems. Rapid transformation and turmoil, whether this is caused by the disturbances of financial markets, the

impact of scientific and technological advances, or changes in the cultural sphere, imply the creation of new institutions, capable of accompanying the various experiences that people have and the meanings they create. These institutions must strike a balance between offering space for individual experience and simultaneously offering new forms of collective solidarity.

We must not expect ready-made, just-in-time and ready-to-use knowledge. We must, however, be prepared to draw together intellectual and organizational forces in order to find solutions to difficulties that originate in a shared problem. Public problem spaces must be experimental in spirit, given the inherent uncertainties of the age we live in.

My vision of the form that such a collaborative engagement should take is relatively close to what John Dewey has called for:

> *Reconstruction can be nothing less than the work of developing, of forming, of producing (in the literal sense of that word) the intellectual instrumentalities which will progressively direct inquiry into the deeply and inclusively human – that is to say moral – facts of the present scene and situation.*
>
> (Dewey, 1920; 1948; 1957)

This is as valid now as it was then.

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Flash
The politician and the researchers

A vast amount of literature analyses the links between politicians and academics. These studies highlight the need to identify the historical context of these connections and to delineate the specific areas in which these links can be found, with regard to both politics and social sciences.

In authoritarian political contexts, the social sciences are normally disconnected from government policies. They play the important role of providing the critical thinking necessary for those who oppose dictatorships or tyrannies. Because of its history, which is characterized by long periods of oligarchic, authoritarian or dictatorial regimes, Latin America has a long tradition of a social science sector that is cut off from government policies. The return to democracy changed this situation, creating new opportunities and challenges for social scientists and policy-makers.

It is also necessary to contextualize the interface in terms of policy areas. Economic and health policies have always been more closely linked to scientific theories than other domains. Areas such as education, on the other hand, have been managed on the basis of inputs that did not stem from academic production. The underlying reasons for these differences relate to the evolution of the social sciences, which vary in their ability to generate answers to issues that are faced by governments. An OECD study which compares education and health highlights this phenomenon clearly (OECD, 2000).

Following these general ideas I wish to refer specifically to the interface between policy and the social sciences in the field of education policies, on the basis of my own experience as minister of education of Argentina.

On the important issue of education management, the social sciences provide contradictory answers which often reflect researchers' own personal views and interests. This is apparent in connection with issues related to educational administration as well as to matters that are specifically related to pedagogy. The weakness of the answers that are provided generates doubts among decision-makers. These doubts can only be resolved through a high level of political risk-taking.

A useful anecdote can help to illustrate this situation. During a meeting with the team in charge of policies related to information technology, I was presented with the idea of launching a set of pilot projects whose ambition was to test the efficiency of three new technological devices that had been recently designed by companies working in this field. The specialists gave explanations on the potential of these devices, much of which was related to their speed of transmission, size, image quality and the interactivity of messages. At the end of the presentation I asked the following question: among the problems that we currently face in education, which are the ones that could be resolved through these technological devices? The question produced confusion among the specialists, who were used to reasoning about technology, not the problems that policy-makers are faced with. Similar situations occurred in other contexts, particularly with regard to teacher training. Specialists have a tendency to teach what they know rather than what teachers need to know.

This situation has produced disappointment over science's potential contribution to the definition and implementation of public policies. In this regard, we only have to recall a discussion between George Steiner and Cécile Ladjali (2003) to appreciate the extent to which trust in these disciplines has deteriorated, not only among politicians but among intellectuals as well. As Steiner explains, 'Goethe says that "the one who knows how to do does. The one who does not know how to do teaches."[1] And I [Steiner] add that: the one who does not know how to teach writes teaching manuals' (Steiner and Ladjali, 2003, p. 93).

Secondly, a minister of education faces challenges that are related to the process of change which is at the heart of political action. In the case of education, decision-makers know that one of the fundamental problems relates to changes in the attitudes and representations of those who are the main actors in the educational process, including teachers, supervisors, administrators, principals, students and their families. In Foucault's terms, we no longer govern populations in order to govern subjects. The management of public opinion and communication issues has become as important as the policy content. In terms of both diagnosis and policy design, contributions from the social sciences fall short of the problems that face us. This space is currently occupied by surveys of public opinion and marketing experts, as well as image consultants, who prepare their reports and recommendations with little scientific rigour.

Thirdly, I wish to mention one area in which the social sciences have traditionally provided important policy inputs: problem identification or diagnosis, and prospective analysis. With regard to diagnosis, it is necessary for social scientists to identify both the problems and the factors that may contribute to resolving them. The identification of prospective solutions becomes simpler from the moment that politicians accept a certain level of uncertainty. Conversely, academics must also assume greater political commitment when it comes to prospective analysis, knowing that

1. This is in fact a citation of George Bernard Shaw in his play Man and Superman, 1903. "He who can, does; he who cannot, teaches."

there are no technological determinisms but only socially constructed destinies.

As a general conclusion, it is possible to say that education policies need the social sciences in order to achieve greater rationality and efficiency in their formulation, as well as to facilitate the monitoring and social control of their development. However the opposite is also true: social scientists have to articulate their activities with those of policy-makers, since the management sphere is also a sphere of knowledge production. Better articulation would enable the social sciences to achieve higher levels of relevance and validity.

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Job-seekers, Brazil
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What social science can provide for policy-makers: the case of AIDS

Peter Piot

Social science research is a key means to help unravel sexual and addictive behaviours in different contexts, foster a better understanding of the structural drivers impacting on the AIDS response, and provide analytical tools for policy decisions and political leadership.

We need to translate innovative ideas – technological and in the social sciences – into actual practices that benefit people much faster than we do today.

Because of its complex character, AIDS forms an almost perfect case study of the ways in which several sectors and disciplines can work together and reach ground-breaking results. It also shows us the ways in which science can or cannot be translated into policies.

A disease that was unheard of less than 30 years ago is now a leading cause of death in Africa. Every day approximately 6,000 people die of AIDS throughout the world. Since the beginning of the twenty-first century, over 4 million people in low- and middle-income countries have been able to benefit from antiretroviral therapy through concerted global action, as compared to only a few hundred thousand five years ago. Even though the AIDS epidemic is far from over, nowadays fewer people die of AIDS and fewer people are infected by the virus (UNAIDS, 2008). This development arose from a unique synergy between science (medical and social), politics and finance. Few people expected the extraordinary results that this synergy would produce.

The main scientific breakthrough was the discovery of antiretroviral drugs capable of treating HIV infections. Through lifelong treatment, AIDS was no longer deadly. Shortly after the announcement in 1996 that HIV could be treated, drugs became widely available in high-income countries and mortality rates dropped significantly. The reality and the perception of AIDS changed radically as well. But as long as the price of treatment remained high ($14,000 per person per year in 1996), this breakthrough was limited to a minority of HIV-infected individuals. An unprecedented level of global mobilization was necessary to ensure that antiretroviral drugs were easily accessible to all, especially in the developing world.

The politics of AIDS

What made the difference was political action. With a few notable exceptions, such as Brazil, Thailand, Uganda and Senegal, there were relatively few early signs of political leadership on AIDS. At the turn of the new millennium there was an increase in the political momentum on the issue, eventually culminating in the UN General Assembly Special Session on HIV/AIDS in June 2001, in which Member States agreed on a roadmap to defeat the epidemic – the Declaration of Commitment on HIV/AIDS (2001).

This new political momentum was the result of several congruent processes. The first is civil society activism, particularly by those with HIV. A potent example of activism is the Treatment Action Campaign (TAC) in South Africa, which grew rapidly to become a mass movement in a country in which over 5 million people are infected with the virus. Through political and legal action, TAC won a series of major victories over the South African Government, which now runs the world's largest antiretroviral treatment programme (De Waal, 2006).

In a parallel move, AIDS activists in North America and Europe campaigned for the implementation of a multilateral funding mechanism to fight AIDS, the Global Fund to Fight AIDS, Tuberculosis and Malaria.

A variety of activist groups came together to form a global movement. Along with environmental groups, AIDS activists are a prime example of a new form of transnational civil society activism: an informal, horizontal network that makes extensive use of modern communications

technologies. Activists also use the knowledge that is generated by both the natural sciences (particularly biomedical science) and the social sciences.

A second process that contributed to develop the global momentum on AIDS was the emergence of a 'brilliant coalition' (Hochschild, 2005). AIDS produced unlikely bed-fellows. In South Africa, for instance, an alliance brought together AIDS activists, Anglican bishops, scientists, trade unionists, communists and the Chamber of Mines.

A third important process was the repositioning of AIDS from being a medical curiosity to a global health problem with profound implications for development, human rights and human security. AIDS became a hot topic for finance ministers, the UN Human Rights Council and the UN Security Council, which organized a historic session on AIDS in Africa in 2000.

A fourth factor was the decline in the price of antiretroviral drugs. Politicians now felt that they could support a feasible solution to the AIDS problem with quantifiable results in terms of the lives that could be saved. An added bonus for some was that they no longer had to deal with sensitive issues such as sex, drugs, homosexuality or gender inequality.

In 2001, a series of global and regional political events brought these various issues together. The Nigerian President Obasanjo hosted a Special OAU Summit on AIDS, breaking years of silence by African leaders on the subject. During this summit, Kofi Annan made his historic call for a war chest of US$7 billion per year to fight AIDS. Two months later the UN General Assembly held its historic Special Session on HIV/AIDS.

This newfound political momentum led to a substantial increase in funding to combat AIDS. A defining moment was President George W. Bush's launch of the Emergency Plan for AIDS Relief in 2003. This ultimately led to $14 billion becoming available for the benefit of low- and middle-income countries in 2008 – over fifty times more than had been spent in 1996 when UNAIDS was launched.

The international community's response to AIDS shows that global concerted action can help to reorientate and shape the international political agenda. Whenever progress has been made, it has always been the result of policy decisions (Piot, 2007).

We are now at a historical turning point when it comes to tackling AIDS. We are finally achieving large-scale results, which must be sustained. We are also waking up to the fact that AIDS is a long-wave phenomenon. These new insights require a revision of our strategies and new approaches, in which the social sciences must play a greater role (AIDS 2031, 2009).

The need for multidisciplinary action

A hallmark of the AIDS response is its espousal of multidisciplinarity. The absence of a technological fix may have played a role in the unusual diversity of actors who are now working toward a common goal. In the case of AIDS, epidemiological and biological research are still more advanced than sociology, anthropology, economics and political science.

The fundamental role played by social determinants was highlighted by the World Health Organization (WHO) Commission on the Social Determinants of Health (WHO, 2008). A number of attempts at multidisciplinary work in the fields of AIDS and health were unsuccessful. However, there have also been several successful efforts: the work of the WHO Commission, the Commission on Macroeconomics and Health, and the AIDS 2031 project (AIDS 2031, 2009). At a practical level, there has been a productive collaboration on the extremely stigmatized and politicized issue of drug addiction, leading to highly effective HIV-prevention programmes. But on the whole, multidisciplinary work continues to be the exception rather than the rule.

Why is interdisciplinary work so complicated?

The first problem with multidisciplinary work is that people tend to disregard other people's approaches and methods instead of embracing methodological pluralism. In addition to this psychological explanation, and the hermetic nature of the vocabulary of each scientific field, there are three major factors that form disincentives to interdisciplinary work.

The first factor starts with our educational silos. Acquiring an in-depth knowledge of a specific discipline is a key goal for education. However, we could become much better at providing incentives for joint degrees at graduate and postgraduate level, and offer cross-disciplinary career paths.

These silos persist through the ways in which academic institutions are funded, and organize their internal accounting and academic promotions. These often favour individual work and disciplinary excellence. Research proposals are usually reviewed in silos by peers in a particular field.

Whereas in theory we can break down these silos, the process is stalled by the sheer complexity of the phenomena under study and the magnitude of the knowledge that is required. We clearly need to find new solutions, perhaps with the help of complexity science.

Finally, it is one thing for five different specialists to work on a similar topic, and another to have these same experts work as a team. It is the latter form of work that is of most interest to policy-makers.

What can social sciences provide to policy-makers?

For over ten years as the head of the Joint United Nations Programme on HIV/AIDS (UNAIDS), I was a policy-maker. I always tried to have the best possible science at my disposal to inform me, in addition to considerations of justice. This often turned out to be difficult, sometimes because the full evidence was not there, or because I was confronted with competing explanations. In addition, much of the knowledge produced by the social sciences got lost in translation because of poor communication.

The social sciences can fulfil at least four of the policy-makers' main desires: by providing a theoretical framework, analysing and explaining issues, finding solutions, and raising new questions.

Social theories have had a tremendous impact on the construction of the modern world. They have also shaped the current AIDS response model, which, since Jonathan Mann, the founder of WHO's Global Programme on AIDS in 1986, has been embedded in a rights-based approach (Mann and Tarantola, 1996).

A major issue for AIDS activists has been dealing with the conspiracy theories that surround the HIV question, including its very existence and its cause. When a head of state embraces these theories, human lives are at stake (Nattrass, 2007). Equally dangerous are the scientists who try to impose an unrealistic magic bullet solution. Such pseudo-solutions undermine comprehensive efforts and confuse the general public (Piot et al., 2009).

Today, those who fight against AIDS require theoretical insights into concepts of leadership, societal coping and resilience mechanisms (De Waal, 2006; Barnett and Whiteside, 2006). They also have to deal with a post-Westphalian international system of governance of the AIDS response, in which a loosely organized transnational civil society has played a highly influential role in setting agendas.

The experience of AIDS is relevant to theories of smart foreign policy, global public goods, national sovereignty, and the right to intervene when states do not adequately protect their citizens from epidemics. This has been the case for AIDS in a number of countries.

Decision-makers need not only social science theories, but analyses as well. To illustrate this point, let us consider vaccination coverage in contemporary Western societies. Vaccines are one of the greatest advances in medical history, yet parents in a number of countries are increasingly refusing to vaccinate their children for reasons of supposed safety. The problem is not limited to poverty-stricken populations, as is generally the case when it comes to health-care access. In the USA, unvaccinated children are more likely to be white, from high-income households, and to have a married mother with a university education (Bauchner, 2009). Does this challenge the widely accepted assumption that education leads to better health? The answer is No. However, it illustrates the fact that culture and beliefs play as much of a role as economic conditions. Indeed, culture and beliefs with regard to gender are also important explanations for the dramatic health indicators for women and girls in South Asia.

AIDS provides a similar challenge to conventional wisdom on the links between poverty and disease. Whereas the poor are generally more affected by illnesses than the wealthy, the rate of HIV infection in Africa is highest within the high-income categories of the population (Piot et al., 2007). On the whole, the AIDS epidemic is largely associated with inequality questions (including gender and social inequalities) which put people into vulnerable positions in terms of decision-making about sex.

High on my wish list for social science research are an unravelling of sexual and addictive behaviours in different contexts, a better understanding of the structural drivers impacting on the AIDS response, and analytical tools for policy decisions and political leadership.

Ultimately we need to translate innovative ideas – technological and in the social sciences – into actual practices that benefit people much faster than we do today. Think of the low coverage of many effective health and social programmes. The innovation that is required is often about the how, not so much the what or the new. This may require a shift in the funding priorities for both research and aid programmes. It also calls for the development of a new implementation science.

The main obstacles to policy decisions about AIDS derive from the power of pre-existing beliefs, not from scientific evidence. In a number of cases, policies are the product of moral beliefs rather than of scientific evidence. The Bush administration's 'abstinence only' policies are a good example of this, despite the fact that the administration had a remarkable track record in the developing world. Despite a lack of evidence as to their effectiveness, the previous US Congress funded massive abstinence-only programmes. In July 2009 the succeeding Congress abolished the programme, while maintaining the President's Emergency Plan for AIDS Relief. It was not scientific evidence that led to either decision but beliefs.

Science has rarely played a determining role in policy decisions relating to AIDS. It is political activism (by AIDS and gay activists, conservative and religious groups) that has ultimately fashioned policy on the AIDS issue. One notable exception was the Chinese decision to introduce harm reduction programmes for injecting drug users. In this case, decisions were made by a group of specialists whose individual backgrounds were in science or engineering. As in other fields, policy failures are often the result of poor execution or a refusal to accept knowledge on the grounds of belief, rather than any lack of knowledge.

Greater efforts should be made to improve the dialogue with the social forces that ultimately shape policy. In the case of AIDS, this means interacting with politicians, people with HIV, church leaders, and representatives of business. The mismatch between science and policy is a widespread phenomenon that is not limited to AIDS.

Conclusion

To conclude, let me share a few thoughts on the way forward. None of them is original but breakthroughs often come from pushing more of the same at the right time.

First, let us come to terms with complexity, and incorporate it in our work and theories.

Second, let us ask ourselves the following question: how ready are the social sciences for the new wave of technological innovations of the next ten years? It is urgent to anticipate and measure their future impacts, opportunities and risks, and to work with technology developers, marketers and users.

Third, an obvious and urgent task is to create incentives for multidisciplinary education and research in teaching, research, careers and funding. This will require genuine respect for other methodologies than our own.

And fourth, we must learn to communicate better, as so much valuable information is lost in translation. If the arrogance of science competes with the arrogance of power, this is a competition we cannot win.

Above all, please keep asking questions: keep questioning yourselves, and those who are in power.ب

Peter Piot

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9.2 Evidence-based decision-making

Introduction

An evidence-based approach aims at assisting decision-makers and practitioners to identify different policy options to solve a problem, and then to choose between them. One major difficulty for this endeavour is to identify the major cause of a problem and to isolate the impact of an intervention on the factor considered the major cause; that is to say, to measure the impact of that intervention regardless of other possible changes.

Various disciplines and methodological approaches can contribute to identifying what works in a specific context, or what does not work and why. Through long and repeated observations, they may also contribute by identifying the causes of a problem. But in evidence-based research in the social sciences and in causal knowledge, the use of experimental design is a methodological breakthrough. It is used in psychology, and increasingly in economics and in areas related to public service, such as education, health care and prevention, and microfinance. The experimental method allows us to measure the outcome of an intervention on a randomly selected group and compare it with the outcome of a control group who did not benefit from the intervention. Duflo and Takavarasha present several variants of the randomized control experimental approach. They allow the impact of various intervention components to be assessed and measured over the long term and across contexts. The method also allows theories to be tested and unexpected causalities between variables to be observed.

The experimental method requires the use of sophisticated quantitative techniques. But the selection of the policy to be tested implies a thorough review of previous research, and a deep understanding of the context and functioning of the society in which the intervention will take place and of theory building. It may not be used everywhere nor all the time.

Traditional statistics are used more often than designed experiments to measure the impact of government policies. The changing role of the state – moving from an interventionist position to a more regulatory role following the introduction of neoliberal economic policies – has had a great impact on statistics (Desrosières). New concepts of accountability, performance-based management and benchmarking have flourished, leading to an increase in the number of indicators to be calculated. These are not linked, but they are meant to monitor progress towards goals set and to allow comparison over time and across systems or institutions. A culture or ranking (of universities, schools, hospitals, for example) has developed which, even if it is criticized, is probably here to stay (see Chapter 7). The production, dissemination and interpretation of these indicators can increase the tensions between policy-makers, the institutions being evaluated and the statisticians, whose professional autonomy has to be guaranteed. It is not always easy to speak truth to power.

Knowledge production is not neutral. The choice of indicators and the categories used are the result of a technical and political process. The choice of problems to be solved, of the policy or the intervention to be tested in a research experiment, is also political. For a policy to be implemented, it has to be accepted by the population concerned. The early participation of the relevant stakeholders in the research process and the consultation of the population concerned can guarantee a greater sense of ownership (von Fürstenberg). Beyond the concept of methodological robustness, the concept of social robustness has to be taken into consideration, and this requires constant collaboration between researchers, policy-makers and citizens.ب

Social science and policy design

Esther Duflo and Kudzai Takavarasha

Policy design requires a world view or a frame of reference to guide the choice of which priorities to adopt and which solutions to try. Knowledge has its part in shaping a policy-maker's world view. But whether it plays a larger part than intuition, political beliefs or conventional wisdom will depend on the policy-maker's access to rigorous and transparent evidence for what works. This paper questions the role that experimental social science can play in this process.

Identifying what works, with rigour and transparency

A policy-maker faced with a set of possible interventions to improve learning wants to know what would work. Would additional textbooks improve learning? Would extra teachers? Would prizes for teachers work better than prizes for students? Each option under consideration could improve learning, but so could many other things that the policy-maker has not chosen to consider. What they want to know is not whether test scores will increase, but whether and to what extent they will increase because of the intervention. A social scientist, facing a set of plausible explanations for a test-score increase, wants to know exactly the same thing. When social science answers causal questions empirically it answers the core policy design question: would (or does) the intervention have an impact?

This is a difficult question. It requires that we know what would have happened in the absence of the intervention. If we give textbooks to students, we can never know what their test scores would have been had they not received textbooks. The best we can do is to use the outcomes of non-participants – students who do not have textbooks – to estimate the outcomes of the participants had they not taken part in the intervention. The problem is that participants and non-participants are often not comparable. The two groups may differ in other important ways. Schools with extra textbooks may also have more motivated teachers. The difference in outcomes could be due to the effort of these teachers and not the presence of extra textbooks. Such pre-existing differences make it difficult to measure the impact of the intervention.

The only way to even out these pre-existing differences completely is to randomly select the participants for an intervention from a pool of comparable candidates, for example through a lottery. The intervention becomes the only systematic difference between the two groups. When we compare outcomes after the intervention has been implemented, we can be sure that any differences observed are caused by the intervention. PROGRESA, a conditional cash transfer programme to improve education and health in rural Mexico, is an example. A pilot study was conducted in a few hundred villages, chosen by lottery from among all of the eligible villages. These pilot villages were compared with the others, in which the programme started two years later. The evaluation found that PROGRESA significantly improved targeted education and health outcomes (Skoufias, 2005). Since PROGRESA had been shown to be effective, it was scaled up in Mexico and replicated in other countries, including Nicaragua, Ecuador and Honduras. Some of these replications have been accompanied by randomized pilot studies. These studies showed the PROGRESA results to be robust across contexts and implementing agencies.

The case for expanding and replicating PROGRESA was probably advanced by the fact that these experimental impact estimates were more transparent than those from non-experimental methods, such as propensity score matching, regression discontinuity designs and difference-in-differences. These methods attempt to create ex post a group of non-participants comparable to the participants by making specific assumptions. For example, in regression discontinuity designs, non-participants who are just below the eligibility threshold for the programme are compared to participants who are just above. In propensity score matching, non-participants are compared with participants with the same observable characteristics. All these are useful policy evaluation methods, but they

rely on untestable assumptions to interpret the difference between the non-participants and the participants as a causal effect. Experiments, by contrast, do not rely on theoretical assumptions for impact estimation. Justification of the researcher's choices and interpretations play a smaller role in the discussion of the results. This means that the differences between a good and a bad study, and thus between valid and invalid results, are easier to discern and to communicate. Finally, because impact estimates from field experiments are more robust and more transparent, their implications for policy are harder to contest.

Refining knowledge of what works

Sometimes there is evidence that a programme as a whole works but, like PROGRESA, the programme itself may comprise various elements. It is useful to find out why the intervention works: in other words, which of its components or variants are most important to the success of the intervention. If the intervention design is varied and these variants are assigned to different groups, experiments can answer these more refined questions.

The Extra Teacher Program (ETP) was implemented in western Kenya to reduce class size, which had exploded with the introduction of free primary education to over 100 pupils per class in the lower grades in some areas. The ETP pilot funded the hiring of additional young qualified teachers on one-year renewable contracts. This enabled funded schools to split the grade one class into two streams. Did this impact learning? Instead of assigning the same intervention to all pilot schools, the implementing NGO introduced several variants. Some school committees were trained to monitor the extra teachers while other schools assigned students to the two streams based on their preparedness. With this design the researchers could answer questions on the impact of the various intervention components: class-size reduction, young teachers on short-term contracts, monitoring by school committees, or streaming students by preparedness. The findings suggested that what mattered were pedagogy and teacher incentives. With smaller classes and comparable students, teachers could tailor the lessons to student needs, which improved learning for all streams (Duflo et al., 2008).

Evolving knowledge of what works through iterative experiments

Sometimes the questions centre on the interplay between short- and long-term policy effects and on which are the dominant effects over time. If the same population is offered a sequence of experimental interventions designed iteratively, it is possible to answer successively finer questions on a given topic. This iteration paces and accelerates the evolution of knowledge on that topic.

An iterative experiment in a poor population in western Kenya examined the relative impact of free distribution and user fees on the coverage and usage of insecticide-treated bednets (ITNs), used to prevent malaria. In the short term, free distribution increases coverage rapidly; but charging a user fee could in theory increase usage. In the long term, free distribution could, in theory, reduce coverage by reducing willingness to buy ITNs. The first experiment examined the impact of price on ITN demand and usage. It found that as price increased, demand fell precipitously, but usage remained the same (Cohen and Dupas, 2009). If sensitivity to price reduces demand for a life-saving product, how can the sensitivity be reduced? The second experiment piloted a number of marketing campaigns on the same population. None of them had an impact, which suggests that only the price matters, a finding that favours free distribution (Dupas, 2009a). But what are the implications of free distribution for long-term coverage? Would people get used to free ITNs and consequently be less willing to buy them? Or would people learn about the benefits of ITNs and therefore be more willing to buy them? The third experiment suggested that it is the learning effect that dominates (Dupas, 2009b).

Discovering policy

Systematic creative experimentation, in the tradition of research and development, is required to devise innovative solutions. This often requires the policy-maker and the social scientist to break down the distinction between designer and evaluator, beginning their collaboration with the conception and design of the intervention. Such collaborations are more likely in standing partnerships. Here, the social scientist is free to contribute all of his/her theoretical and empirical knowledge, while the policy-maker, free from the threat of political penalties that normally attends failed projects in high-stakes policy environments, can systematically try out innovative ideas, even those that seem unlikely initially to succeed.

For example, the NGO Seva Mandir implemented a programme to raise immunization rates in Rajasthan, India, where they remained low despite free immunization. The low rates are often attributed to unreliable health services and deep resistance to immunization. Another factor may be upfront costs. Research suggests that parents may delay undertakings with large future rewards if they face small upfront costs. Small incentives could mitigate the effects of these costs. Seva Mandir and its partners piloted two interventions: reliable service, by holding travelling immunization camps in the villages at a fixed date; and increased incentives, by giving the mothers a 1 kg bag of lentils (valued at INR 40, or just under US$1). Immunization rates were 6 per cent in the control group, 17 per cent in the group offered reliable service, and

38 per cent in the group offered both reliable service and incentives (Banerjee et al., 2008).

The policy discovery was not that incentives increase uptake. PROGRESA had already shown that. It was that small, non-cash incentives could have such a large impact on the uptake of as vital a service as immunization. Lentils for vaccines is an unlikely idea. It would not seem promising enough to be tried at a large scale, in a high-stakes public health policy environment. Yet its success at the small scale may prompt replication in other settings.

A comparable example is what happened with mass deworming. While its potential as health policy was apparent, it was an improbable educational intervention. An experiment in Kenya, however, showed that the mass deworming of schoolchildren reduced absenteeism by 25 per cent (Miguel and Kremer, 2004). This evidence bolstered the case for deworming, and successful efforts to scale it up now focus on its education gains.

Testing the theoretical foundations of policy

Policy design always uses theory, either implicitly or explicitly. When an intervention is evaluated, the underlying theory is opened up to empirical scrutiny. Experiments are particularly well suited to this because they do not themselves depend on theory for impact estimation. Experimental findings are what they are. When they do not accord with the theory, the social scientist is forced to question and to rethink the theory.

As an example, microfinance institutions and others that offer credit to the poor have to contend, explicitly or not, with 'moral hazard' and 'adverse selection', the theoretical constructs used to explain why it is so difficult to lend to the poor.

Moral hazard says that borrowers with little at stake face a high temptation to default if the repayment burden becomes too high. Thus the poor can only be given very small loans. Since the administrative costs are spread over small amounts, the loans typically have very high interest rates. High interest rates further increase the likelihood of default, which further reduces the loan size, and so on. In the end, there is no rate at which poor clients can borrow and they have to be excluded from credit.

Adverse selection leaves aside the interest rate problem, focusing on information asymmetries. Some projects will fail. The borrowers may know more about this risk than the lenders. Since the lenders cannot know the true risks for every project, they will charge an interest rate high enough to cover the overall risk of failure. This rate may be too high for the safer projects and so they forego the loan. With only the risky projects taking loans, the portfolio will have too many risky clients, which could lead to the complete failure of the credit scheme.

Karlan and Zinman (2005) decided to test whether moral hazard and adverse selection exist in practice. Clients of a South African lender received letters offering loans with randomly assigned high and low interest rates. Some clients responded. Those responding to low-rate offers were given low-rate loans (the low-to-low group because their repayment burden was low and remained low). But those responding to high-rate offers were split into two groups. Half were randomly 'surprised' with a lower-rate loan (the high-to-low group), while the rest agreed to borrow at the original high rate (the high-to-high group). Moral hazard predicts that comparable clients who borrow at a higher rate are more likely to default; and with this design, the likelihood of default could be identified by comparing the high-to-high and the high-to-low groups. Adverse selection predicts that clients who agree to borrow at a higher rate are more likely to default; the likelihood of this could be identified by comparing the high-to-low and the low-to-low groups. The experiment found only weak evidence for either, suggesting a need to rethink the determinants of demand for loans and the behaviour of poor borrowers.

Conclusion

Experiments create a mutually enriching dialogue between social science and policy design. Each experiment answers some questions and asks new ones; the next experiment builds on the previous one, successively adding to and subtracting from our ever-evolving fund of theoretical and practical knowledge of what works in fighting poverty.

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From representative statistics to indicators of performance

Alain Desrosières

Statistics is increasingly a basic instrument used to guide and manage public actions. But what are the linkages between tool of government and tool of proof? The answer to this question can only be a historical one: the state is changing over time. The ways in which mechanisms of power are organized have regularly shifted over the past two centuries. New statistical forms and practices have appeared at each juncture.

The German *Statistik* of the eighteenth century was initially a science of the state. Statistics later became an offshoot of mathematics, used to validate regularities and general rules that had been established through a series of empirical observations. It is still, and increasingly, a basic instrument used to guide and manage public actions. What are the linkages between these aspects: tool of government and tool of proof? The answer to this question can only be a historical one: the state is a changing notion, continuously evolving over time. The ways in which 'mechanisms of power', to borrow Michel Foucault's expression, are organized have regularly shifted over the past two centuries. New statistical forms and practices have appeared at each juncture.

The 'engineer state' of Colbert and the French *polytechniciens* was grounded in practices of direct management and concern with population, fiscal issues and public infrastructure. It gave way to the 'liberal state' whose core characteristic was minimal public intervention. From 1890, the 'welfare state' developed and spread, centred on questions of labour and social protection. After 1945 it was the turn of the 'Keynesian state', which, while adopting free-market logic, was nonetheless concerned with maintaining the economy at a balance, notably through national accounting. It is during the deep economic and social crises of the 1890s and 1930s that the welfare and Keynesian state models grew and became accepted.[1] The crises of the 1970s and 1980s coincided with severe critiques of these forms and their gradual replacement by a 'neoliberal state', in which quantified performance indicators play a decisive role.

1. For a more detailed presentation of this state form typology and of their respective statistics, see Desrosières (2003).

The statistics that are used by these successive state-form approaches are 'representative', since they are meant to offer the most appropriate tool to represent and describe societal aspects for which public action is regarded as legitimate and necessary. The aspects themselves vary depending on the epoch. Among the available tools we find the census, civil registers, surveys, administrative registers, and national accounting. Allegedly, the data they produce is sufficiently strong to model and adjust public policies developed by one actor, the state, which places itself above and outside the private interests of businesses and individuals.

This configuration changes with the spread of the neoliberal state and the critiques of the welfare and Keynesian state systems that have developed after the profound renewal of liberal theory (Foucault, 2004). In its pure form – as those who promote it argue – the ultimate objective is less the frequently stated one of restricting the state's role, and more a matter of transforming it through the development of radically new instruments. These include legal tools and institutions that secure and organize free and undistorted competition, and state organs that are transformed into 'agencies' managed like private enterprises. These agencies are no longer considered as being above other actors. They develop contractual relations among themselves, under the auspices of private law. Their performances are evaluated through the use of quantitative indicators. Benchmarking makes it possible to compare them and to make them compete against each other.

Performance indicators represent one of the key aspects that distinguish this state form from the minimal liberal state of the nineteenth century. The representative statistical tools that quantify a nation's growth, unemployment and inflation are of course not replaced.

However, performance indicators are used for different purposes from these. The European Union is already partly organized along neoliberal principles. European policies are effectively of two different types. On the one hand, policies relating to the markets, competition and money are Community-driven and governed by the Rome and Maastricht treaties. In this case, the Directorate-General for Competition uses corporate statistics to detect and manage potential antitrust activities. But other policies (for example on labour, education, research and exclusion) continue, in principle at least, to be under Member State control. An intergovernmental procedure has been set up, the open method of coordination (OMC), based on the selection and harmonized quantification of target indicators, and intermittent assessments of national performance. By sharing their 'good practices', Member States supposedly contribute to the enhancement of the overall results. This method was initiated in 1997 to drive a 'European employment strategy', and was then promoted to coordinate research and education policies as well as policies to fight exclusion (Bruno, 2008).

The main difference between such a 'performance-based' logic and previous instruments is that the actors (in this case, EU Member States) compete against each other. Previous state instruments were implemented at a higher level, for example macroeconomic and macrosocial policies. The same logic can be found in the reforms that were introduced throughout the 1980s in New Zealand, the UK and Sweden. They were inspired by management methods that were tested in large private corporations and transposed to the public sector under the name of 'New Public Management' (Hood, 1998). The characteristics of the service provision and the performances of the concerned parties are standardized, quantified and contractualized. On the basis of these qualities and performances, new spaces of equivalence and comparison are developed, notably between the present and the future (through conventions of actualization). Policies are evaluated through a series of indicators.

Unlike the well-articulated and coherent models of the Keynesian era (notably those of the national accounts),[2] these indicators are poorly related to each other by logical or statistical relations. They can be criticized and transformed without bringing into question the underlying logic that underpins this way of managing competition between actors. University rankings, for instance, have taken on great importance in a seemingly irreversible manner. The criticisms that are made of them, however numerous, do not fundamentally alter this form of competition grounded in a unified set of criteria (Espeland and Sauder, 2007). One of the most frequent criticisms is that professionals coming from various domains are dispossessed of their own specialisms through the imposition of a set of standardized criteria (Miller, 1994).

Relations between public statistics built according to rigorous principles of objectivity and neutrality, and indicators aimed at evaluating and fixing objectives for public policy, are not easy. Indeed, as 'accountability' specialists have argued for a long time through the Goodhart law: 'When a measure becomes a target, it ceases to be a good measure' (Bird, 2004). This problem was the origin of the widespread disregard for Soviet statistics that were associated with state planning.

Over the first few years of the twenty-first century, other criticisms of prior public statistical measures have been formulated from a 'well-being' perspective (which is itself controversial). The main criticism is that traditional statistics often serve to classify countries (Gadrey and Jany-Catrice, 2006). Gross domestic product (GDP) is criticized on the grounds that it does not count non-monetarized services (particularly those of women), it does not sufficiently consider inequality and poverty, and most importantly, it does not account for the environmental consequences (mainly for climate and biodiversity) of economic growth. The conjunction of the environmental, financial and economic crises and of these critiques could produce a statistics for the twenty-first century, linked to an ecological, social and feminist state that has yet to be imagined.

2. National accounting is a well-articulated and coherent tool for measuring a nation's economic flows, notably through a double system of accounting constraints of equilibrium between the 'resources' and the 'employments', according to, on the one hand (in columns) the 'agents', and on the other (in rows), the 'operations'. The (notably Keynesian) macroeconomic models which were used between the 1950s and 1980s increased this logical integration. However, the 'indicators' of new public management are often enumerated one after the other, without any apparent concern for such conceptual integration.

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Mapping out the research-policy matrix: UNESCO's first international forum on the social science–policy nexus

Christina von Fürstenberg for MOST Secretariat, UNESCO
www.unesco.org/shs/most

In 2006, UNESCO's Management of Social Transformations programme (MOST) held an international forum on the social science–policy nexus (IFSP) in Uruguay and Argentina. It consisted of different workshops in five thematic areas: Global Issues and Dynamics, Social Policies, Population and Migration, Urban Policies, and Regional Integration. Opinions varied on the role of social scientists in policy-making.

This paper highlights some major findings of the international forum on the social sciences policy nexus (IFSP) held by UNESCO's Management of Social Transformations programme (MOST) in 2006.

While there was an implicit consensus that it was important to link research and policy, opinions varied on the role of social scientists in policy-making. While most contributors expected social scientists to explain the causes, context and effects of policies, some expected them to refrain from the implementation process. Ensuring research independence and autonomy from political power proved to be highly controversial. This controversy was mostly provoked by the deep historical, political and epistemological implications of such involvement, and by mistrust of the goals that may be driving the linking of research to policy.

Towards a different understanding of the link between social science research and policy

The forum concluded that there is a need to distinguish – in both epistemic and political terms – between instrumental and conceptual approaches to the interface between social science and policy. Some approaches or authors have a rationalistic understanding of how research influences policy. This leads them to focus on policy-relevant research and identify different kinds of knowledge gaps. From this point of view, the absence of policy-relevant research, policy-makers' low level of access to research and data, and the lack of communication and comprehension between researchers and policy-makers, are all facets of a problematic relationship.

On the other hand, many actors involved in the policy process focus on the more wide-ranging, interactive and indirect ways of using research-based knowledge. In this approach, the links should not be understood in terms of the direct impact of policy-relevant research on policy decisions, but rather through broader patterns of socio-political, economic and cultural influence, thus questioning the presuppositions of research relevance.

Evidence: a hotly disputed issue

Another forum finding is that evidence has many meanings and can be produced in different ways. This was highlighted by the multitude of synthetic – if not syncretic – approaches employed by the participants.

Many in policy-making consider that extensive, quantitative data and statistical analysis produce the only forms of reliable evidence. However, these provide only one kind of social scientific evidence. The search for the right statistics or best practices to address specific social problems goes hand in hand with a vision of the social sciences as an instrument that can provide foolproof answers. A great majority of the participants highlighted the political nature of knowledge and, by extension, the political nature of amassing and presenting evidence. Critical comments stressed that knowledge production is always vested in normative frameworks. Different knowledge paradigms aim to order the social sphere differently and refer to different pools of evidence. Statistical robustness and a wealth of hard data cannot arbitrate between conflicting claims.

The challenge that these insights present to the standard, rational model of policy-making and evidence adjudication emphasizes that evidence can be collected via a variety of techniques. Historical and anthropological research involves more interpretative human studies, and these have their uses in this context. So has direct contact with affected populations. This provides critical and reliable knowledge when it comes to understanding and responding to social

Demonstration concerning immigration, Italy
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needs. This kind of data can complement and enrich quantitative analyses.

What kinds of knowledge do policy-makers need?

Policy-makers need knowledge that is both intellectually credible and socially relevant. Optimally, they prefer concrete social scientific results which provide practical solutions to concrete problems. On the other hand, many of the synthetic approaches proposed by the contributors highlighted the point that social research has an indirect and conceptual influence on policy-making. Social research which at first seems irrelevant and impractical may become indispensable in the mid-term, changing the way problems are approached.

Knowledge at its best is socially grounded. Increasingly, policy-makers need knowledge that is both socially relevant and socially robust, produced through interaction with affected populations and relevant stakeholders. Policies that take account of the social barriers to change and of the values, expectations and behaviour patterns of affected communities are more likely to succeed and take root than those designed by isolated bureaucracies. The production of scientifically valid, socially accountable and politically relevant knowledge requires tripartite mediation as well as constant communication and collaboration between researchers, policy-makers and citizens.

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9.3 Knowledge brokers and think-tanks

Introduction

To fill the gap between academic researchers and the full range of knowledge users, policy-makers and civil society members, a large number of research institutions, brokerage agencies, foundations, consulting firms and polling organizations have emerged outside universities in the past few decades. Those that inform public debate can be publicly financed and attached to a government department. But many are private, attached to a variety of civil society organizations, trade unions, political parties, NGOs and big foundations. Think-tanks are one form of these institutions meant to mediate the research and policy interface (Anheier). The first think-tanks appeared in the USA at the beginning of the twentieth century, and played a significant role after the Second World War. But in recent decades, think-tanks have developed rapidly in the countries of the global North, particularly in the USA and the UK. Privately funded, carrying out empirical and multidisciplinary research and commissioned by a variety of users, they represent a new model of knowledge production. What is the role of these think-tanks? How do they function and what is their contribution to policy debate?

The definition of a think-tank varies, as do their functions. Some are quasi-universities; others are more engaged with specific advocacy groups and stand at the political forefront. Yet others work on demand for third parties. Their common characteristic is an orientation towards the future and towards applying knowledge to current and future events in policy and politics (Anheier). Many of the researchers operating in these institutions have an academic background. They contribute to the war of ideas, but also to enriching public policy debate. Issues are raised concerning the quality of their research, since unlike universities, they are not assessed by a rigorous process such as peer review (Asher and Guilhot). They are evaluated by their sponsors and the funders' market, but this is not a guarantee of quality.

Could this model of research organization, supported by mixed funding, promoting interdisciplinary research and sensitive to market demands, be considered appropriate for academic research? To a certain extent, new university funding mechanisms and assessment methods have brought the two models closer, and in the process have blurred the distinction between traditional academic research in universities and that conducted elsewhere (Asher and Guilhot). Nobody really challenges the need to keep a strong academic research sector doing basic research, while also providing expertise on issues of the day alongside other agencies. Open and critical reflection is needed on the kind of relationship that should exist between research and decision-making, and the kind of research evidence that policy needs.

Social science research outside the ivory tower: the role of think-tanks and civil society

Helmut Anheier

Think-tanks are one of several systems of knowledge creation in modern societies. Their greater prominence signals a major shift in the demand, production, supply and dissemination of knowledge. Whether autonomous, political or demand-driven, think-tanks are the institutions in modern societies where wars of ideas are fought out. They are typically located at the political forefront, connecting constituencies and serving their knowledge needs and interests.

Think-tanks are one of several systems of knowledge creation in modern societies. Their greater prominence signals a major shift in the demand, production, supply and dissemination of knowledge. Think-tanks are the institutions in modern societies where 'wars of ideas' (Smith, 1989) are fought out. These in turn motivate specific research projects, policies and debates. They bring together ideologues, political entrepreneurs, scientists, policy experts and policy-makers to discuss the future in terms of programmes, policies and influence (Rich, 2004). More generally, think-tanks are typically located at the political forefront, connecting various, often opposing, constituencies and serving their knowledge needs and interests.

Think-tanks have significantly contributed to several fields ranging from health care, media, human rights and equal opportunities to education, security and political reform. They have influenced policies in all of these fields. The Urban Institute, for instance, has contributed to the advancement of the cause of minorities in the USA; the Adam Smith Institute to the development of neoliberal policies; the Hoover Institute to democracy; the Rand Corporation to security issues; the Bertelsmann Foundation to university reform; and the Brookings Institution to economic and social policies.

There are three basic types of think-tank.[1] The first type has been termed 'universities without students'. These organizations pursue knowledge in a scholastic fashion, knowledge for the sake of knowledge. They are typically shielded from the wider academic, political and economic systems that surround them through different institutional and financial arrangements ensuring a high level of independence. The Institutes for Advanced Study in Stanford, Princeton and Berlin are examples of think-tanks that celebrate individual scholarship and academic independence.

A second group of think-tanks is formed by advocacy groups which pursue ideological or political goals. These organizations place a particular emphasis on knowledge dissemination in order to support policy positions and advance their own agendas and those of their allies. Examples include the Heritage Foundation and the Cato Institute in the USA, which both seek to push through liberal economic policies.

A third group consists of think-tanks that produce knowledge on demand for third parties. The knowledge they produce is sold and licensed for use in either market or non-market contexts by governments, corporations, foundations or individuals. Examples include the Rand Corporation and the Urban Institute in the USA.

The latter two types have experienced significant growth in recent decades. However, the kind of knowledge they produce differs from the knowledge created through basic research at universities or university-like institutions. It is typically concerned with the application of ideas to current events and policy issues, with a focus on short-term rather than long-term projects and programmes. In this sense, certain think-tanks bear a resemblance to consultancy firms.

Of course, some think-tanks are combinations of these three types, and no dominant organizational form has emerged. Today, the label 'think-tank' is used to describe a diverse set of organizations: government research units, international organizations such as the OECD, NGOs such as Transparency International, and corporate research entities

1. Several classifications of think-tanks exist that are variously based on revenue structure or objectives (Braml, 2006; Gehlen, 2005).

such as the Nomura Research Institute (Stone, 2007, p. 267). Indeed, as think-tanks have evolved, so has their form. While many are non-profit organizations (particularly in the USA, the UK, Australia and Germany), with their own endowments or donors, others are governmental agencies and quasi-public entities.

The history of think-tanks reveals that their origins are to be found in civil society, and that civil society stakeholders, in particular foundations, have been among the most influential in shaping their evolutions. Government and business interests have played significant roles as well. Gehlen (2005) has suggested four major phases in the development of modern think-tanks, each reflecting the shifting nature of civil society, government and corporate involvement over time:

Proto think-tanks originated the UK and the USA in the nineteenth century as academic and civic institutions. They combined scientific, public policy and social concerns. As civil society organizations, they were generally the product of a largely urban elite, outside established academic institutions and partisan groups. Examples include the Franklin Institute in Philadelphia (1824) and the Fabian Society in London.

Progressive-era think-tanks (ca. 1900–1920) such as the Russell Sage Foundation (1907) and the Carnegie Endowment for International Peace (1910) took on openly reformist agendas and integrated the nascent social sciences into their search for solutions to the problems that affect our industrial societies. With the support of private philanthropists, they were able to diversify their sources of income. By the 1950s, they established themselves as an independent sphere of knowledge production alongside universities.

During the Second World War and the Cold War era, the private sector and governments increased their involvement in think-tanks. Security (such as the RAND Corporation) and social policy issues dominated, in addition to racial segregation, poverty and urban decline in the USA. Examples include the Institute for Research on Poverty (1966) and the Urban Institute (1968).

From the 1970s onward, think-tanks grew in scale, scope and numbers. Governments, corporations and civil society actors created, promoted and supported think-tanks. New think-tanks soon played an influential role in political and policy-making circles (such as the Adam Smith Institute, Bertelsmann Foundation, Centre for European Policy Studies, French Institute of International Relations, and the Heritage Foundation). Existing think-tanks expanded, specializing in new areas of research (such as the RAND Corporation and the Urban Institute).

Nine out of ten existing US think-tanks were founded after 1951, and they more than doubled in numbers between 1980 and 2007. Little systematic information is available on the number, scale and activities of think-tanks in non-OECD countries. Despite the limited data, McGann (2007) has counted 5,080 think-tanks worldwide, 38 per cent of which are in North America, 24 per cent in Europe, 12 per cent in Asia, 8 per cent in Latin America, 5 per cent in Africa and 4 per cent in the Middle East.

McGann (2007) and others (e.g. Weiss, 1992; Gehlen, 2005) see a number of related reasons for the expansion of think-tanks. They include the growing complexity of many policy issues and demand for the analysis and development of policy alternatives, but also the growing need for quick, reliable and easy-to-understand answers to policy questions that neither government, corporations nor academia could supply in a timely and cost-effective manner. For Stone (2007), the greater availability of philanthropic funds over the past two decades has driven the development of think-tanks, along with democratic consolidation, economic development, and growing political stability (Anheier and Daly, 2005).

The multitude of information and knowledge available is both a cause for and the outcome of civil society's greater involvement in the public sphere, and has been facilitated by lower communication costs and greater media access. With information being provided and demanded by a variety of actors and institutions, knowledge itself has become both a private commodity and a quasi-public good. Think-tanks have become demand-sensitive knowledge producers for a multiplicity of clients, including civil society actors, governments and corporations. Naturally there are divergences depending on the national context. Countries with poorly integrated party systems (for example, the USA) create higher demand for think-tanks than countries with rigid party structures (the UK) and strong ministerial bureaucracies (France) or both (Japan).

Think-tanks and the policy process

Uncertainty and multiple uses of knowledge for policy and politics are the think-tanks' *raison d'*être. Recently, however, the role of think-tanks in policy-making has been criticized. Stone (2007) seeks to debunk the myths embodied in the still nascent literature about think-tanks: their image of themselves as thinking organizations, their

dedication to the public good, and their role as a bridge between the social sciences and policy. Instead, in her view, a number of think-tanks are opportunistic and frequently fall hostage to professional and corporate interests. They are only interested in winning grants or contracts; and serve as holding pools for political has-beens.

The level of bridge-building and service to the public good that think-tanks can deliver, and the amount of thinking and knowledge creation they can do, depend on the kind of policy environment they find themselves in. If we reach a point where 'neither political knowledge production nor knowledge exchange is apolitical' (Stone, 2007: 275), their role will be reduced. Nevertheless, they will still make an important contribution. They provide a multiplicity of open grounds on which wars of ideas can be fought out, and test sites for policies to be contested. In this sense, think-tanks contribute to modern societies' problem-solving capacity.

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Explaining research, USA
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The collapsing space between universities and think-tanks

Thomas Asher and Nicolas Guilhot

The ecology of the social sciences is increasingly less limited to traditional academic institutions. As short-term advocacy or policy needs drive knowledge production, the risk is that research will reinforce rather than challenge commonly held ideas and values. The reduced space between university research and policy leads to a blurring of research and activism, once the hallmark of think-tanks.

A wide range of bodies are involved in the production, diffusion and communication of social-scientific knowledge. These extra-university bodies include administrative agencies, philanthropic foundations, public and corporate research bureaux and various para-academic organizations. They produce social statistics, methodological innovations and social science studies. Among these institutions, think-tanks figure prominently as purveyors or brokers of social science knowledge.

The rise of the think-tank

Initially close to the academic world, the policy research institute of the early twentieth century became a central institution of the Cold War science regime in the USA. During the 1970s, these 'university campus[es] without students' (Mirowski and Sent, 2002: 18) evolved again into various shades of conservative or neoliberal think-tank, in the context of a downsizing of the research capacity of US public administrations (Smith, 1991). This process accelerated in 1994 with the gutting of the Congressional Budget Office, the defunding of the Arms Control and Disarmament Agency and the closure of the Office of Technology Assessment. The work of these institutions in the promotion of non-partisan research for the public interest was outsourced to a range of think-tanks. These proliferated throughout Washington, DC and beyond to become a global model for policy dispensation (Stone and Denham, 2004). The recent commitment by the Bill & Melinda Gates Foundation, the International Development Research Centre and the William and Flora Hewlett Foundation to provide US$100 million over ten years to strengthen think-tanks in the global South underscores the prominence of these institutions for the formulation of research to address national policies.

Today, the relevance of think-tanks for the future of the social sciences has less to do with their use or even abuse of social science research than with the alternative model of knowledge organization they represent. Their approach is characterized by reliance on private funding, proximity to corporate and policy interests, and a tendency to generate studies that reflect both funding and media exposure opportunities. Such 'research for hire' is sometimes contrasted with a somewhat idealized image of disinterested scholarship. Acting in a competitive marketplace of ideas, close to corporations and economic interests, think-tanks seem far from the Mertonian model that establishes disinterestedness as one of the normative foundations of modern science (Merton, 1942; 1973), or the Weberian portrait of an objective and neutral scientific ethos (Weber, 1918; 1946). Yet current trends in higher education and research finance, as well as the re-engineering of universities in the context of a putative 'knowledge economy', have blurred this distinction. Increasingly, academic institutions are required to operate in a competitive environment, to develop ties with corporations, to deliver just-in-time research to external clients, and to fund their research activities externally. Interdisciplinary research centres which seek external funding for projects that are usually tailored to fit this purpose have appeared alongside traditional departments, to become the familiar face of this hybridization of universities and think-tanks.

Think-tanks and new trends in research organization

Think-tanks are an alternative template for knowledge organization, one that is attuned to the current discourse on higher education reform that extols the 'new production of knowledge', 'Mode 2 knowledge', or the 'knowledge

economy' (Gibbons et al., 1994; Nowotny et al., 2003). This template is premised on several assumptions: that research should be driven by practical problems rather than disciplinary questions; that innovation is better produced by ad hoc interdisciplinary teams than by university departments; and that competition for funds ensures responsiveness and accountability in research, and guards against the insulation of an ivory tower unconstrained by oversight and overtaxed with emulation. This discourse has gained much traction in policy circles, despite involving unwarranted ideological claims and a lack of supporting empirical evidence.

The reorganization of research institutions on the think-tank model is also based on the assumed superiority of markets as distributed information processors. In this context, the creation of a genuine marketplace of ideas requires the removal of the rigid institutional structures that characterized previous academic arrangements. A recent World Bank report on knowledge societies advocates the application of post-Fordist principles of flexible specialization to the research university:

> *The need for tertiary education institutions to be able to respond rapidly to changing labour market signals and to adjust swiftly to technological change may also require more flexible arrangements for the deployment of academic staff and evaluation of performance, including moving away from civil service regulations and abandoning tenure-track appointments. Under a more radical scenario, the multiplication of online programmes and courses could induce tertiary education institutions to contract independent professors not affiliated to any specific college or university to prepare tailor-made courses*
>
> (World Bank, 2002, p. 27).

While this prescription applies to teaching, it also orients research innovations. More than a mere slogan, the marketplace of ideas that think-tanks claim to have inaugurated is becoming gradually institutionalized as a device for the development and assessment of university research programmes.

What are the implications of these recent developments for the social sciences?

The tendency to reconfigure the institutional set-up of the social sciences around immediate problem areas entails a process of de-disciplinarization. Disciplines are viewed as self-contained, unaccountable, and too rigid to provide research products in a sufficiently responsive fashion. More often than not, the term 'interdisciplinarity' refers less to the complementarity between established methodologies than to a novel set of criteria for what constitutes good research. Suspending disciplinary forms of evaluation opens the research process to external control according to a set of criteria that are no longer established by scientific communities.

This shift raises issues about the validation of scientific knowledge. The principle of peer review comes to be seen as a cause of disciplinary over-specialization and the self-referentiality of much social science research, rather than being a condition of scientific progress. The ideals of academic freedom and scientific autonomy, which insulate scientific production from external influence, come to be seen as obstacles to the smooth functioning of a knowledge economy. This view leads to increasingly frequent calls for the abolition of tenure and the imposition of a research-for-hire model. The re-engineering of research on a competitive, funding- and communication-driven model tends to bypass the traditional circuits of scientific validation, and to generate uncertainty as to what really defines scientific value.

As the project format becomes prominent within university research programmes and imposes its own time constraints on the research process, the timeframe of consensus formation in the social sciences tends to overlap increasingly with that of consensus formation in policy-making and the media. Social scientists are encouraged to produce research rapidly and to work on the same set of assumptions as policy-makers or advocates. As short-term advocacy or policy needs drive knowledge production, the risk is that research will reinforce rather than challenge commonly held ideas and values. The reduced space between university research and policy leads to a blurring of research and activism, once the hallmark of think-tanks.

What are the implications of blurring research and advocacy?

The push to develop engaged social scientists frequently displaces an emphasis on long-term, basic research. Instead, university administrations and the foundations that support academic institutions are making explicit calls for the development of university expertise modelled on think-tanks. Such expertise tends to be topical, focused narrowly on current concerns and crises. It is identified by its potential as a tool of advocacy, particularly in the space of public policy. Most notably, it is no longer the university setting

or peer review that gives authority to expertise. Instead it is increasingly legitimized through the public communication of knowledge. Media appearances, participation in policy forums and consultation with government officials demonstrate and reinforce existing concepts of expertise, and create 'experts' in the public domain (Abelson, 2004; Rich, 2004). The result is a paradoxical situation where expertise is used as a rhetorical device to legitimize the absence of legitimate scientific authority.

This outcome is perhaps salutary on one level. This concept of expertise opens up the possibility of a more responsive and engaged social science community, one that is oriented towards worldly problems and is unwilling to leave public communication to pundits and representatives of think-tanks. Yet more communication is not sufficient for the development of sound policies, even when scholar-activists wield carefully considered analysis, informed by strong research and deep contextual knowledge of an issue. Without a mechanism for developing a conversation about the public use of social science knowledge, a politics of expertise is unleashed by which multiple opposed voices clamour for attention, without a means of resolving their differences. A healthy deliberative democracy requires forums that allow critical reflection on the relationship of research to policy-making, and the kinds of evidence that ought to inform this relationship. Yet these forums are too often absent. Instead, the short-term, problem-oriented project economy on which researchers increasingly depend erodes the legitimacy of disciplines and politicizes the production of knowledge. This ensures the irresolute reception of research findings, which casts doubt on the mission of think-tanks and universities alike.

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Unequal development, Mexico
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Chapter 10
Conclusions and future lines of action

Adult and child learning to read
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10 Conclusions and future lines of action

With global challenges and change affecting all human societies, social science knowledge is more crucial than ever. The contribution of the natural sciences to the struggle against these global challenges is indisputable. Yet this Report illustrates many ways in which the methodological, analytical and critical resources of the social sciences also grant them a key role, far greater than many might believe. In a wide variety of ways, the social sciences teach us that 'global' is not the same as 'uniform'. The same challenge or social trend will be seen differently in various societies, and this means that responses to change need to be adapted to context.

Climate change is a case in point. The struggle against its effects, and for the reduction of greenhouse gas emissions, supposes a thorough knowledge of local contexts, and broad understandings that jointly articulate global and local contexts. Social sciences are crucial to identifying the problems that underlie, result from and aggravate such change, and they then provide the basis for developing sustainable solutions to such problems. Another example is poverty. Fighting against poverty requires global mobilization and worldwide studies. However, meaningful solutions require an understanding of how the poor apprehend their situation, what they most suffer from, and how to mobilize them best. We are in a period in which local studies and global theorization are both needed.

But there is more to the significance of social sciences in today's world than the acknowledgement that 'context matters', an axiom that no one will contest in theory, even if they do so in practice. Under favourable conditions, social sciences accompany the evolution of human societies. They are shaped by the transformations in societies and at the same time invite societies to reflect and act upon themselves. Are social sciences in a position to fulfil these functions at the beginning of the twenty-first century? Or do the divides in their organization impede them? The report maps out the condition of social sciences throughout the world and considers the impact of various factors on social science knowledge production and use.

The report points towards positive achievements worldwide in the ten years since the last *World Social Science Report*. These include: the enormous increase in the number of graduate and postgraduate students in social sciences, which has increased faster than the overall increase in university enrolments; the multiplication of publications; the increased demand for social science knowledge and skills; and the growing influence of social science concepts and theories in public debates, and their greater dissemination in scientific communities and societies. This has been made possible by advances in information technology, and has occurred in spite of sometimes limited access to specialized reviews and websites. Beside these positive achievements, the Report portrays a number of inequalities and asymmetries. It identifies eight divides:

- a geographical divide
- a capacity divide
- the unequal degree of internationalization of knowledge production
- the divide between disciplines
- the divide between mainstream research and alternative approaches
- the competition resulting from new managerial practices
- the sometimes tense relations between academics and society and between academics and policy-makers.

To varying degrees, these divides undermine the capacity of social sciences to contribute answers to global challenges and to analyse trends affecting human societies. A series of conclusions can be derived from the various contributions to this volume, and in general terms they can be grouped under two main headings: the persistent disparities in research capacities, and knowledge fragmentation.

Persistent disparities in research capacities

In spite of very positive achievements, a number of striking inequalities persist across regions and within countries. While the number of researchers, students, graduates, including Ph.D. graduates, and publications has increased everywhere over the past decade, the internationalization of knowledge has strengthened the existing big institutional players: North American and European journals, bibliographical databases, universities and research centres.

During this period, some countries have significantly improved their research capacity and have emerged as important centres of knowledge production. European, including east European, social sciences have improved their presence in international networks and publications. Brazil and China have significantly expanded their numbers of social scientists and of publications in international journals. These examples suggest that comprehensive and well-funded long-term policy by governments, regional organizations and associations can be decisive in the reinforcement of social science capacities. In Brazil and China, such comprehensive policies have included improvements in research infrastructure and local education facilities, the development of postgraduate programmes in first-grade universities, exchange programmes for students and professors, scholarships, and subsidies for publication and translation.

The biggest inequalities in social science performance largely result from differences in funding for higher education generally and for research in particular. There is enormous inequality between the well-funded institutions of the global North and the highly underfunded ones of the global South. In some emerging countries, major commitments to higher education and social science research are bringing rapid advancement. At the other extreme, already difficult situations in developing countries have been worsened by political instability and conflicts. Examples of such countries can be found in sub-Saharan Africa and South Asia. In between these extremes several countries and knowledge institutions in the global South have supported training over research, and quantity over quality in social sciences.

The relative and sometimes absolute decline in public support for social science research is not limited to developing countries. It is not a new phenomenon either: it started in the 1980s, but the trend was certainly not reversed in the first decade of the twenty-first century. Instead, a number of policies and management tools were gradually put in place which were intended to compensate for this relative decline. These policies resulted in the marketization of research, the multiplication of research centres and consultancy firms outside universities, increased competition for funding, greater attention to the international ranking of institutions, and evaluations being increasingly based on quantitative indicators. The impact of these new developments on capacity is mixed, depending on the context and the strengths of the research institutions involved.

In developing countries, the marketization of research has resulted predominantly in the multiplication of non-state actors outside universities, especially consultancy firms and non-governmental organizations (NGOs) funded by international agencies. To an extent, this has allowed some research to take place where public funding is no longer available, thus giving social science research some visibility and credibility. But the explosion of consultant-led research has influenced the type and nature of the research conducted. It has given undue prominence to certain themes, easily funded by aid agencies, and has led to an overemphasis on data collection, empirical studies and expertise-oriented work at the expense of more theorized research. Furthermore, the quality of such research is far from guaranteed, since consultancy firms and NGOs work under strong time pressure and often shift quickly from one theme to another. Consultant-led research has also contributed to the internal brain drain. Private and semi-private agencies and organizations offer researchers far better working conditions than universities can. This form of research can also lead to the creation of a large pool of temporary researchers waiting for a full-time position. In this sense, the marketization of research has been detrimental to academic social science research but also to institutional capacity.

In developed countries, the marketization of research takes somewhat similar forms, but its effects are far less harmful to academe and to research. The emergence of NGOs, consultancy firms and think-tanks has encouraged the development of a more responsive and engaged

Rebuilding National Office of Ethnology, Port-au-Prince, Haiti, after January 2010 earthquake
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community, oriented towards today's problems. But it can unduly politicize the production of knowledge and encourage partisanship. This raises the question of the quality control of the research produced. Another concern is for the number of 'invisible' researchers: that is, those in unstable and uncertain professional situations.

Project funding

The relative increase in project funding and the decrease in core funding are not unrelated to the marketization of research, and can exert similar pressures. At a general level, project funding was meant to stimulate researchers to increase the quantity of their output and to promote excellence. It was also meant to encourage interdisciplinary and policy-relevant studies. In many cases this succeeded, but a deeper comparative analysis of the impact of project funding remains to be done. Project funding can be detrimental to academic research if short-term projects are overly privileged, if researchers are overburdened with administrative tasks, if only a handful of funding agencies are active in a region or country, or if only restricted research agendas are supported. These potential threats are present in all regions and countries. But they are more damaging in regions with limited – or no – deep-rooted capacity in social sciences. The degree to which funding agencies – national or international, public, private, semi-private or NGOs – have become prescriptive and influence research agendas also varies across regions and between countries.

Quantitative evaluation methods, bibliometrics and ranking

Project funding leads to greater competition for funds and often to quantitative evaluation of outputs. Many social science research systems now include mechanisms to evaluate outputs and assess the impact of programmes, research projects and individual academics. This tendency is strong in developed countries, where management-like practices of yearly reports and accountability have become the routine of many academics, and where mechanisms to ensure quality have been institutionalized. Nevertheless, it is no less predominant in regions where a large share of the research output is funded by aid agencies and NGOs. Brazil, China, Mexico, South Africa, Venezuela and other countries implement similar evaluation mechanisms. Often the notion of 'excellence' is a watchword for competitive systems. But striving for continuous quality improvement may be a more effective and realistic strategy, even in countries with strong research capacities.

Two other phenomena have become prominent in academic life in recent years: bibliometrics and rankings. These tools increase competition between institutions.

Bibliometrics is largely used in the evaluation of institutions, programmes and sometimes, in combination with peer review, researchers themselves. However, its use in the evaluation of social science research has serious limitations. The main instruments of bibliometrics, databases and citation indexes, focus on a relatively small number of international journals and do not adequately mirror social research landscapes, particularly in countries outside the global North.

The national and international ranking of institutions has mobilized attention and raised much concern among researchers, heads of universities and policy-makers in the global North, but also in emerging countries. Most rankings have strong biases that are detrimental to social sciences. Their impact on capacity is not well known, although it is likely that the best students try to enrol in top-ranked institutions, and lecturers and researchers do their best to join them. Ranking and bibliometrics reinforce existing hierarchies and favour the concentration of funds in the best-ranked institutions, possibly limiting variety in social science research themes.

Despite the numerous debates and discussions on their methods and value, bibliometrics and international rankings surpass any alternatives as means of comparison and benchmarking in academic competition. Whatever criticism they face, they are likely to endure and influence the university landscape. Nonetheless, they do require improvements. The evaluation of research systems, institutions and researchers needs to combine bibliometrics with qualitative criteria such as peer evaluation. Furthermore, the number of national and international databases and indexes should increase, thus encompassing a greater share of the world's social science production. The number of university and department rankings also needs to increase to include different measures of success and strength, thus better mirroring quality in social science research and teaching. The model that is used in some countries, in which various university rankings are produced based on a wide variety of indicators, seems to do better justice to the various functions of a university.

Brain drain and professional migration

Professional migration is another major trend affecting research capacities everywhere, albeit in different ways. In regions and countries with very weak social science capacities, academic brain drain endangers research as well as teaching. Africa is particularly at risk, but is not unique in this regard. The migration of social scientists often starts with the migration of students who study abroad and who, at the end of their studies, join a research team in the country where they studied. Various countries have put incentives in place to persuade graduates to come back after graduating from a foreign university. But the efficiency of these measures is moderate, and promises to remain so unless working conditions improve significantly in the sending countries. Regions and countries with better social science capacity also suffer from the brain drain. But they have more scope to counter its effects with programmes dedicated to attracting qualified academics from other countries, so that they can benefit from increased diversity in their recruitment.

Still, mobility is not all one way. New poles of attraction have developed, researchers circulate, and after years spent abroad, students and professional social scientists may return to their country of origin. When this happens, brain circulation is beneficial for the sending regions and countries. It offers opportunities to confront ideas and transfer new concepts, and helps integrate local scholars into the networks of a worldwide knowledge system.

Most of the trends mentioned above increase the capacity divide between regions and countries, undermining the ability of the social sciences to fulfil their role in society. The report highlights another set of divides touching on theoretical and epistemological issues and problems. Many of these issues and problems concern the meaning and limits of the internationalization of social science knowledge, and the extent to which it contributes to improving the quality and relevance of social sciences. Others concern the multiplication of disciplines and their presumed lack of collaboration, which undermine their ability to respond to today's problems.

Knowledge fragmentation: one social science? Disciplines apart? Worlds apart?

In order to fulfil their functions in the face of global challenges and to keep analysing the trends affecting human societies, the social sciences need to become more international and more inter- and trans-disciplinary than they have been. Let us develop these two aspects.

Internationalization of research

Internationalization changes the face of social science research. This involves redefining the scale on which research is carried out, and developing new ways of articulating local and global research. One obvious consequence is the increasing demand for global topics and outlooks. The production of 'global studies' on 'global issues' has grown over the past few years. In developing countries, social science research remains largely dominated by topics of local relevance that affect their immediate surroundings. This research is often written in local languages and disseminated in national books and journals. It is often invisible at international level and is insufficiently reflected in global studies. The internationalization of knowledge has confirmed the prevalence of the ideas and knowledge traditions of Northern countries over others, as well as that of English as the almost exclusive language of international research collaborations and dissemination. French, German and Spanish are still used to a lesser extent. Paradoxically, many universal or global studies are in fact very local, relying almost exclusively on the observation of one or a few similar societies, and quote works in only one or two languages. To improve their ability to address global and local issues, social sciences need to become genuinely international.

This criticism of the North Atlantic hegemony is a thread throughout the pages of this Report, and is a common feature of many fora on the issue. Challenges come from very different parts of the world, including the global North itself. They focus on the topics and language favoured in international peer-reviewed journals. Even when regional social science production meets the quality requirements of international research, it usually fails to influence international debates and discussions when it takes the form of local studies written in a language not widely spoken in international networks, or when it concerns countries and topics not well represented in bibliographical databases.

Contesting the hegemonies of topics and models in social science production is one thing, but providing actual alternatives is another. Alternative global theories and frameworks ought to be developed on the basis of broader comparative analyses which encompass more diverse regions than is usually done, and ought to be formulated in ways that allow generalizations. Greater institutionalization of mechanisms to ensure research quality would also contribute to making alternative research more visible.

Criticisms of the North Atlantic hegemony should eventually become more visible in the social science production of the global North, even though many of them originate from there. 'Global' studies might then become much more international than they are, paying more attention to the variety of local situations. Social scientists who want to study the functioning of foreign societies would be well advised to learn their languages, and to incorporate local traditions and the local production of social science knowledge in their analyses.

Another way of improving the quality of international social sciences is to favour collaboration through research networks and communities. They can help bridge the theoretical-epistemological divides, especially if more collaborations are developed between local networks in the 'peripheries' and in the North Atlantic 'centre'. 'Glocal' collaborations between different peripheries are another channel for overcoming the limitations of international social science.

Despite the potential of collaboration, past efforts have shown that networks have not always been strong enough to reverse the effects of unequal resources; nor has pluralistic thinking been strong enough to reverse existing hegemonies. Better communications do not necessarily mean more diversity of viewpoints.

Inter- and trans-disciplinary research

There are divisions between national traditions of knowledge, and also between and within disciplines. These divides are essential for the renewal of knowledge and the creativity of social scientists.

One effect of the recent evolution of disciplinary boundaries is the multiplication of subdisciplines and hyperspecial-

ization. Some universities try to counterbalance these trends and their effect on the education of undergraduate students by setting up liberal arts colleges and professional schools. However, these play only a minor role in research, for which interdisciplinary centres have been developed. Social scientists and research institutions are already testing new forms of knowledge organization, often around specific topics, and are likely to continue doing so. The desire to facilitate communication between subfields has also led to the creation of new journals.

Social scientists from different disciplines are increasingly expected to work together on the same problems, especially when it comes to addressing global challenges. One of the difficulties to achieve this concerns the development and support of centres and institutes open to cooperation between the social and natural sciences. There are however many obstacles to such collaboration. To start with, inter- and trans-disciplinary work often does not place all disciplines on an equal footing. Other obstacles relate to funding structures, systems of evaluation and promotion, methodological approaches, and pedagogical issues concerning interdisciplinary training. Many of these remain discipline-specific. Often the challenge is not merely for those in the different disciplines to work together, but more fundamentally for degree programmes at undergraduate and postgraduate levels to adopt multi-method approaches to research, training and knowledge-seeking. Unless countries and universities address these obstacles, inter- and trans-disciplinary collaborations are likely to remain wishful thinking.

Knowledge gaps on the state of the social sciences worldwide

The report highlights an extended range of important issues and trends in the organization of social sciences worldwide. It brings together a wealth of new knowledge and data on areas not well covered in the international literature, thanks to the strong commitment of the authors to provide the latest and most reliable data available. But as a clearer picture of the state of the social sciences emerges, so do the limits of our knowledge. The authors repeatedly notice the scarcity and deficiencies of available data on social scientists and their activities. Most research in science studies does not adequately discuss aspects specific to the social sciences. The study in Annex 1 summarizes the state of accessible international data on social sciences, and emphasizes the incomparability of data on the number of researchers between countries and regions, and over time. This makes it difficult to show how fast social science teaching and research have progressed in the world in the past ten years. The annex again stresses how little social science knowledge the social sciences have about themselves. A stronger focus of science studies on the social sciences could be helpful in overcoming these gaps.

Several areas that have been covered in this Report require more research. Amongst the most important areas, the following need to be stressed:

- the major themes analysed by social sciences in different regions, and the extent of the internationalization of the research content;
- major changes affecting institutions on which social science depends, such as the growth of the for-profit sector in research, the expansion in the number of think-tanks and NGOs, and the transformation of institutions supporting scholarly communication;
- the extent of institutionalization of social science in public and private organizations, such as ministries of finance and advertising companies;
- the penetration of social science terminology, perspectives and theories in the media and public discourse;
- the extent and characteristics of social science teaching at secondary level and the role of the social science textbook industry in legitimizing and transmitting knowledge to new generations of students;
- the effects of language hegemonies, and ways of promoting linguistic diversity;
- the impact of digitization and large databases on the nature and type of research produced;

- the prerequisites for research networks to function well, assessing the success and failures of previous attempts to overcome divides.

Authors have used national statistics to describe the state of social sciences in their country or region, but these statistics are often not comparable between countries. Comparable data on the following would be useful to better portray international trends in the state and production of social sciences: the number of full-time social scientists and students in the different disciplines at the different levels; the kind of institutions at which they work; and the amount and source of their research funding. Present statistics suggest that most professional social scientists work at universities and research institutes. However, the increasing number of trained social scientists working for agencies, organizations, NGOs, think-tanks and other non-academic research institutions is unknown.

Data on the international circulation of social scientists and ideas is grossly insufficient. On the whole, we know little of the circulation of scientists, and even less of the circulation of social scientists specifically. How many social scientists in the different disciplines are trained in foreign countries? Where do they work? What measures are taken to offer professional positions to those studying and working abroad? How do international networks impact the circulation of academic personnel and ideas?

Directions for future action

The following suggestions for future action are addressed to international bodies such as the International Social Science Council (ISSC) and UNESCO, to funding agencies at national and international levels, to governments, and to major academic institutions that are concerned with overcoming knowledge divides. They are presented in general terms which should be made specific at the regional or national levels.

The development of research capacity requires that governments, international organizations and aid agencies provide funding to support research institutions as well as individual training. The three levels of capacity – individual, organizational and systemic – all need sustained attention. Funding has to be made available for a sufficient period to produce results. Long-term rather than immediate impact is the objective. To combat the negative aspects of brain drain, programmes enhancing the circulation of ideas and social scientists should be promoted, and should include support for diasporic networks.

There are great disparities between regions, countries and institutions in terms of access to knowledge. Governments, research councils, foundations and funding agencies should provide universities and research institutions with the technology and money needed to support equal access to the most important national and international journals in social sciences. Furthermore, governments and international organizations should negotiate with major publishing groups to accelerate and extend free and open access to articles published in international peer-reviewed journals. Non-state actors, agencies, regional organizations and national governments could also increase their support for open-access, peer-reviewed journals. African Journals Online (AJOL), SCIELO, REDALYC and CLACSO in Latin America can serve as models for the development of similar and broader initiatives.

New technologies foster a variety of modes of collaboration between social scientists. Open-source technologies are likely to play a significant role in the development of research capacity in social sciences. Initiatives aiming at developing new digital tools for research, collaboration and networking in the social sciences will be of critical importance. It is suggested that governments, research councils and consortia of universities cooperate in developing open access archives for the deposit and dissemination of social science studies.

It is essential to reinforce multilingualism among social scientists, especially those in the global North. One goal is that everyone should be able to work and collaborate in their own language while understanding other languages. Translation, data treatment and circulation, and collaborative tools require specific development. International bodies and organizations may want to consider helping translation policies in social sciences. For example, studies addressing global challenges from a local perspective should be translated in order to widen the scope of public debate.

International associations, networks and communities are important for circulating ideas, disseminating knowledge and building capacity. Efforts should be made to strengthen existing structures and develop new ones. Regional and subregional networks can contribute very positively to the restructuring of the research landscape along regional lines, if they are supported by a variety of public national, international and private funding agencies. Different networks are required, with different purposes and memberships. Regional social science networks should work to transcend disciplinary, linguistic, gender, generational, regional and ideological divisions. South–South networks supported by private foundations and international organizations could go a long way to reduce disparities in the global academy.

Competitive project funding is likely to remain a dominant trend in the years to come. As shown in the Report, it has advantages. But it has disadvantages as well, such as the extreme bureaucratic procedures involved in selection and monitoring processes, and, in certain cases, the dominance of short-term funding. Selection and evaluation processes should be kept as simple as possible. In order to ensure diversity, some resources should be reserved for innovative projects which fall outside the list of priority topics identified by funding agencies. Governments should also be aware of the importance of balancing project funding with a strong basis of core funding. Social science research needs a baseline of stable funding. This allows institutions to attract and retain professors and researchers, to offer them an adequate research infrastructure, and to support innovative research.

Many of the challenges that the social sciences are asked to address require knowledge beyond the confines of single disciplines, and at times encompass the domains of the natural sciences and humanities. It is important to encourage interdisciplinary research and to institutionalize it. It has been suggested that interdisciplinary research centres should be created to improve our understanding of the social aspects of major global challenges such as environmental change. Here researchers from different disciplines could cooperate, and researchers with more than one disciplinary background could be hired. Experimental programmes in which natural scientists are educated in the social sciences and social scientists in the natural sciences would be welcome.

International digital databases are essential tools for overcoming knowledge divides between different areas of the world, and for opening up the possibilities of international research programmes. International organizations and various funding agencies should support their development.

International bodies such as UNESCO, ISSC, the Organisation for Economic Co-operation and Development (OECD) and regional organizations could usefully address the information gaps mentioned above. A working group should be set up to identify what is feasible in the relatively short term, and to identify other issues which should be dealt with at the national level.

The importance of social sciences in today's world is indisputable, yet their overall influence remains limited because of huge disparities in research capacities across countries and the fragmentation of knowledge. Much remains to be done, but on the global level the Report makes a number of suggestions on how to address these divides.ب

Annexes

Gymnastics class, Taipei, China
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Annexes

Annex 1 Basic statistics on the production of social sciences

Measure for measure: quantifying the social sciences

Michael Kahn

Introduction

More than half a century of effort has been devoted to the problem of quantifying national commitments to investment in research and experimental development (R&D) (Godin, 2008). The quantification of innovation is more recent, dating from the early 1990s. Such measurement and the construction of associated science, technology and innovation (STI) indicators are of interest to national authorities for monitoring and planning purposes as well as for determining international comparability. Notwithstanding this long history, such efforts face considerable difficulties – epistemological, definitional and methodological. It is the task of this paper to describe how research in the social sciences is quantified at the national level by means of standardized datasets. Comment is also provided on the quality and meaning of the data. The data are found at the end of this Annex, (Tables A to F) and cover the following:

Table A. Socio-economic data
Table B. Financing of R&D
Table C. Researchers
Table D. Student enrolments
Table E. Graduates
Table F. Scientific output

It should be noted that the data of the core tables, B to F, have been collated from different sources. At least three major actors are involved: education departments, agencies responsible for R&D surveys, and the owners of the bibliometric databases.

For purposes of international comparability, the approach to R&D measurement is 'standardized' by the methodological guidelines of the Frascati Manual (OECD, 2002), which first appeared in 1963 and is now in its sixth edition. The Organisation for Economic Co-operation and Development (OECD) operates as the de facto clearinghouse for the publication of its member and observer states' STI data (OECD, 2008). European Union (EU) law requires all member states to conduct regular standardized R&D surveys and to report the results to Eurostat, which then disseminates the aggregated information. The UNESCO Institute for Statistics (UIS) gathers STI data from UNESCO Member States by means of its own instrument, which is consistent with the OECD guidelines.

Further afield, Red de Indicadores de Ciencia y Tecnología (RICYT) is a non-governmental organization (NGO) that carries out a clearinghouse function for STI data in Latin America and the Caribbean and works in association with the UIS. In Africa, the S&T Secretariat of the African Union/ New Partnership for Africa's Development (AU/NEPAD) is driving efforts to quantify the R&D and innovation performance of the African Union members. The S&T Secretariat also follows the Frascati Manual guidelines. RICYT and AU/NEPAD collate data from national statistical agencies.

The socio-economic data (Table A) are 'unproblematic' and will not be commented upon here. Consequently, the paper begins with a consideration of research and experimental development (Tables B and C), which with its cousin, innovation, are understood as key drivers of economic growth and well-being. Tables D and E are also 'unproblematic', as they are extracts from education statistics. However, there are problems with the discipline boundaries pertaining to social sciences as opposed to the humanities. The assessment of scientific output (Table F) by counting publications is fraught with difficulties and deserves comment.

What counts as R&D?

The Frascati Manual is concerned with the inputs to R&D performance, namely finance and research personnel. National statistical agencies, or other designated parties, gather these data through a confidential questionnaire, using both census and purposive survey methods. Numerous problems of definition and scope make the collecting of R&D data a labour-intensive practice. Subsequently, a standard set of indicators is populated using the survey data.

The problems begin with the definition of R&D as 'creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications' (OECD, 2002, p. 30). This inclusive definition covers basic and applied research and experimental development across all fields of inquiry in both the natural and social sciences. Care must be taken to distinguish between 'in-house' R&D (counted) and extramural R&D (excluded).

The Manual provides extensive guidance on what counts as R&D as opposed to 'related scientific and technological activities', which are generally excluded. What counts as R&D (for example, a new computing algorithm) and what does not (for example, routine database development) is a contested area. Novelty is a critical test. Clinical trials[1] in Phases I, II and III that determine the safety, side-effects and effectiveness of new drugs are included; scientific and technical services (STS), such as testing, conducting routine surveys, preparing maps and mineral exploration, are not. Scientific and technical education and training, and scientific and technological services may be essential to the performance of R&D, but are not generally counted as R&D (see §2.2–2.4 in OECD, 2002). However, where STS are part of an R&D project, they are counted. Feasibility studies are out, but a feasibility study of a research project is in.

The origins of aggregating R&D inputs lie in industry and natural sciences laboratories. This gives rise to persistent emphasis on the natural sciences, engineering and technology – to the extent that many countries do not count social sciences R&D in their business sector surveys. Counting R&D in the social sciences is approached with caution, and there is advice that 'projects of a routine nature, in which social scientists bring established methodologies, principles and models of the social sciences to bear on a particular problem, cannot be classified as research' (OECD, 2002, p. 48). Deciding what to count as R&D often involves a value judgement.

The collection methodology divides the universe of R&D performers into different sectors, but the boundaries between these are somewhat porous. The business sector constitutes all registered private companies as well as state-owned corporations trading at market prices. However, in some countries, state-owned corporations are counted in the government and not the business sector. Higher (tertiary) education generally refers to universities, whether public or private. However, France includes its publicly funded National Centre of Scientific Research (CNRS) in the higher education sector, while academies are split across the higher education and government sectors in the Russian Federation. The government sector comprises both state laboratories and department-based research institutes. State laboratories include entities such as the Chinese Academy of Social Sciences (CASS), the Human Sciences Research Council (South Africa), the Council of Scientific and Industrial Research (CSIR) (India) and the Institut de Recherche pour le Développement (IRD) (France). Department-based research institutes are entities that carry out research within internal divisions; common examples are in the fields of agriculture, water, statistics and the environment. But there are many anomalies: as already noted, in France the CNRS is counted as part of higher education, and the Chinese Academy of Social Sciences is a government-sector academic research organization, which also has its own graduate school.

The fourth sector is that of the not-for-profit organizations (NPOs) whose boundaries are even more difficult to define with precision. It appears that some statistical agencies include state-owned enterprises within the NPO category; in other countries, foreign-headquartered NPOs are excluded from national figures. The extent of the sector is generally unknown, the novelty test is difficult to apply, and so on. Indeed, many NPOs are active in 'development' or even 'development research' and do not follow the Frascati Manual guidelines to meet their reporting requirements, which means their research efforts are not recorded in national returns.

Defining and measuring R&D in the social sciences

From the UNESCO perspective, the Fields of Science (FoS) are those as defined in the International Standard Classification of Educational Disciplines (ISCED) of 1997. The FoS were revised for the OECD and agreed upon in 2006 (OECD, 2006). The ISCED and OECD Fields of Science

1. http://clinicaltrials.gov/ct2/info/understand#Q19

are very similar, the exception being education, which is a separate ISCED field. OECD counts education as a component of social sciences. This might suggest that the matter of FoS is settled, a done deal. Not so. The placement of education, psychology and archaeology serves as an example. The US National Science Board (NSB) separates psychology from the social sciences, deems archaeology a social science, and lists education under a separate category, 'professional'. The Thomson-Reuters journal classifications place education and psychology under the social sciences and archaeology under humanities.

Consequently, there is an element of blurring across the social sciences–humanities (SSH) boundary, and attempts to split off the social sciences cleanly from the humanities are subject to classification problems. This must be borne in mind when examining the data. In some countries the social sciences are combined with the humanities; in OECD datasets, data are presented as social sciences, business and law (SSBL), which is separated from the humanities, arts and education; UNESCO often treats education as a separate category, as in the *Education for All Global Monitoring Report* (UNESCO, 2008). To make comparability even more difficult, the US NSB and the UK Higher Education Statistics Agency (HESA) follow their own FoS classification systems.

It is currently impossible to precisely separate SSH into SS and H, and the designation SSH is therefore followed (Table C).

As is implied in the data in Table C, social sciences research is often specifically excluded from business-sector R&D surveys. Therefore, besides the general problem of the under-reporting of R&D, the under-reporting of the social sciences and the humanities' contribution to R&D in the business sector lies in the design of the assigning approach. In practice therefore, the main sectors in which SSH R&D is 'found' are in higher education and government laboratories, science councils or academies, as the case may be. By default, the universe of performers of R&D in social science is well defined and thus lends itself to a census approach. Yet, as the gaps in the datasets below attest, this assumption does not work in practice. Beyond these two sectors, there may be important think-tanks in the NPO sector, and, provided their activities are countable as R&D, they should be included if possible. Government think-tanks would, of course, be counted in the government sector. However, consulting firms in the business sector may conduct social science research for clients in other sectors. Care must be taken to ensure that this activity meets the criteria to be counted as R&D, and if it is countable, that it is correctly attributed.

Indicators derived from R&D surveys

National statistics agencies carry out the collecting of R&D data from which S&T indicators are derived. Standard financial indicators include gross expenditure on R&D (GERD), business sector expenditure on R&D (BERD), higher education expenditure on R&D (HERD), government expenditure on R&D (GOVERD), the ratio of GERD to gross domestic product (GDP), namely GERD:GDP, sources of funds by sector, expenditure by type of activity (basic or applied research, and experimental development), and expenditure by FoS.

The standard indicators concerning R&D personnel include the overall headcount (HC), and full-time equivalent (FTE) split according to gender, and personnel qualifications. Some countries can tabulate FTEs against FoS, but these are exceptions (Canada and Japan) rather than the rule. Data on researcher age and nationality are also collected in some countries.

Methodological issues

In the data collection process, the structure of the questionnaire is critically important. On the one hand, the response rate and quality of responses may be enhanced if the instrument is kept concise. On the other hand, agencies conducting surveys often seek to elicit as much information as possible, since future queries of the resulting database are difficult to predict. Data redundancy is preferable to data drought.

Where information is demanded by statute, or where it forms the basis for decisions on funding, the recipient of the questionnaire obviously has an incentive to respond; on the other hand, if the eventual use of an item is not obvious, a recipient may be less inclined to invest time and effort in providing a complete return. The greyness of the definitions and boundaries means that R&D surveys are more complex than, say, health or education surveys – they involve a great deal of estimation and approximation, especially as they are retrospective. It is 'easy' to count desks or schools, or record infant deaths. In contrast, the subjects of R&D surveys are unique, whether these are firms, universities or research institutes, and the quality of their institutional information systems is crucial for generating accurate data. It is generally accepted that GERD may be compiled to an accuracy of 10 per cent to 15 per cent.

The problem of measuring R&D goes beyond disciplinary classification. As mentioned above, the first difficulty is to identify where countable R&D takes place. The second is to determine who is contributing to the work (research-

ers, technicians, support personnel), and the third is to determine their FTE on research. Once these have been ascertained, it is possible to calculate research expenditure as the sum of current and capital expenditures. The vigour and rigour with which this measurement is effected vary between countries and sectors.

Estimating the number of social science researchers

Table C provides the official information available on researcher headcounts and FTEs. It is immediately obvious that the bulk of social science researchers are reported to be in higher education. An accurate estimation of the FTE is necessary for the calculation of HERD. International experience has shown that calculating HERD is difficult. In some countries, historic factors make for an uneasy relationship between higher education institutions and the central government, so that information flows are compromised. In others, the weakness of university management information systems leads to poor-quality returns.

The fundamental driver of a good survey is the extent to which university academics are prepared to disclose exactly how they spend their time: what proportion goes to teaching, what to research, what to consulting, and what to community service. It is tedious for academics to respond in this way; university managers cannot wrench the information from reluctant staff; central administrations are not equipped to collect such data; consequently, an approximation must often suffice. Another contested matter is how to count and where to attribute the research role of graduate students. The Frascati Manual guideline is that doctoral students and postdoctoral fellows should be counted as part of the university researcher cadre. In some countries, Master's students contribute to research, but this effort would be excluded by the above restriction.

Arriving at appropriate values for university researchers and graduate research students' FTE is critical for the estimation of HERD. Some countries rely on a self-reported FTE (South Africa); in Canada, predetermined factors are applied to researchers according to their rank and the type of institution in which they work.

In general, little information is forthcoming on the way that the FTE is arrived at. In some cases, though, it is found that FTE factors are based on historic academic diary studies. Some universities simply respond that their staff are contracted to spend a fixed proportion of their time on research, which predetermines their research FTE. Full-time doctoral students may be assumed to spend 100 per cent of their time on their research, but in some countries, graduate teaching assistants do both research and teaching, so that their research FTE must be less than 100 per cent. Other countries do not bother with the FTE calculation and only tabulate headcount data (USA).

The FTE and HC of many countries' government sectors are almost identical. They are equal for France, while the UK, Japan and Argentina show FTEs above 0.9. It appears that the assumption is made that staff are employed to do research, therefore they do research. But staff rarely spend all their time on research: a researcher in an agricultural research organization will spend time in meetings, may be part of a team offering testing services, or conduct training courses for agribusiness. None of this is R&D per se. And the problems multiply when we consider staff engaged in policy-related research in government departments or research institutes. Many government departments do not report this as research, even if the employee may have recently moved from a senior academic post to join government. The work this person did in academia may have appeared in academic literature; once they are in government, however, the same work is now deemed to be 'routine' or a related scientific activity (RSA), and thus not countable as R&D. In some cases, government departments may simply not respond to a survey carried out by a sister department, unless it is the national treasury, in which case the response rate will be high.

Moving to specifics, Table C presents headcount (HC) and full-time equivalent (FTE) data on researchers in fifty-five countries by sector and subject area. It is immediately obvious how incomplete these data are, even at an aggregate level. HC data disaggregated by the main sectors are available for only 38 countries, including thirteen for which no NPO sector data are presented. Aggregate FTE data are available for 53 countries, with 6 under-reporting the business sector and 27 providing no FTE data for the NPO sector.

Accordingly, when it comes to the disaggregation of researchers into the broad fields of science, engineering and technology (SET) and SSH, the data are even sparser. The list of countries for which the SET and SSH headcount and FTE data are more or less complete is restricted to twenty-five: the Czech Republic, Hungary, Poland, Romania, the Russian Federation, Slovakia, Slovenia, Turkey, Mexico, Chinese Taipei, Japan, Singapore, Austria, Belgium, Canada, Denmark, Germany, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain and Sweden. Of the world's five largest spenders on R&D, only Germany and

Japan appear in this list, as the data for China, the USA and France are incomplete. The UK data are also missing.

In order to present a more complete picture, other public data sources[2] are used to provide estimates of researcher HC and FTEs for France, the UK, the USA, China and the Russian Federation (Table A1.1).

incomplete, as many countries do not provide UNESCO, Eurostat or the OECD with suitable data. The available data have been captured for the years closest to 2000 and 2006 respectively.

Table D provides ISCED 5 and 6 enrolment data for 57 countries. It is obvious that there are a number of gaps in

Table A1.1 > Calculated headcount (HC) and full-time equivalents (FTE) for SET and SSH, selected countries and years

		Business	Higher education			Government		
		SET	Total	SET	SSH	Total	SET	SSH
France	HC	107,401	100,849	70,998	29,851	31,936	27,146	4,790
(2003)	FTE	100,646	59,047	43,695	15,352	31,936	27,146	4,790
UK*	HC		241,127	139,099	102,028	9,894	8,962	932
(2006)	FTE	95,592	67,719	39,059	28,660	9,311	8,563	748
USA	HC			297,000	275,000			
(2006)	FTE			120,000	111,000			
China	HC			-	-			
(2005)	FTE			166,400	55,508			
Russian Federation	HC	221,445	30,111	26,130	3,981	139,378	126,413	13,235
(2005)	FTE	237,959	70,494	61,595	8,899	154,827	140,425	14,402

*GOV for 2005.
Notes: SET Science, engineering and technology; SSH Social sciences and humanities

By combining the data of Table A1.1 with those of Table C, we can obtain a first-pass estimate of the FTE stock of SSH researchers in some thirty countries. This yields a total FTE across the four sectors of close to 0.5 million researchers, who are predominantly (85 per cent) in higher education.

The future generation of researchers

Students are both an input to and an output of innovation systems. Tables D and E show the flow of students – the new blood for innovation systems. The tables provide data on enrolment (input) and graduation (output) in undergraduate and postgraduate programmes in the social sciences at ISCED levels 5 and 6 respectively.[3]

Of interest are the time trends, the proportion of students registered for social sciences, business and law (OECD Category 310), the proportion of female students, and the eventual Ph.D. graduates. Here, too, the datasets are

the data and in some cases information is unavailable for the 2000 and 2006 reference years. With these caveats in mind one may estimate that global tertiary level enrolment rose from around 80 million students in 2000 to 120 million in 2006, an annual compound growth rate[4] of 7 per cent. It should be noted that China accounts for some 16 million of this figure and, if excluded, the global growth rate would fall to around 6 per cent.

Partial SSBL enrolment data (OECD Category 310) 2000 and 2006 (Table D) are available for the reference years for some 51 countries, notable exceptions being Egypt, the Russian Federation, China, Indonesia, and Nigeria. (The data for India show irregularity between 2000 and 2005 and are excluded from the total). With these limitations, one finds that total enrolment in SSBL increased from around 11.4 million in 2000 to 22.0 million SSBL students in 2006, a compound annual increase of 11 per cent, higher than the growth in all tertiary enrolments. In absolute numbers, one notes a decline in six countries: Bulgaria, Chile, Austria, Belgium, Portugal and Spain. In relative terms, the picture is different: there is a decline in the

2. France: OST (2006) tables I-2-33; I-2-34; I-2-36; I-2-39 for estimation of SET:SSH ratio.
   UK: HESA (2007) tables 8 and 12 for estimation of SET:SSH ratio.
   USA: NSB (2008) tables 2-7, 5-27 for estimation of SET:SSH ratio.
3. ISCED level 5 covers the first stage of tertiary education and level 6 the second (graduate) stage.
4. UNESCO Institute for Statistics table 15 shows an increase from 76 million to 122 million.

proportion of SSBL students in 15 countries and an increase in 24. Eastern Europe shows an overwhelming increase in 9 countries compared with a decline in 2. The 4 Asia/Pacific OECD member states show modest increases, with Japan having a slight decline. Western Europe is split, with 10 up and 9 down. Regarding the gender distribution, UIS data show an overall 50 per cent male:female ratio in SSBL.

Students in SSBL made up around 30 per cent of total tertiary enrolment in 2006, with a median value of 36 per cent and a range of 36 percentage points. High outlier countries (>50 per cent) are Latvia, Romania and South Africa, while lower outliers (<25 per cent) include Canada, Cuba, Finland, Ireland, the Republic of Korea, Pakistan and Tunisia.

Next, the data on graduates (Table E) are shown. These data may be aggregated to provide estimates of the world total of SSBL graduates for the comparator years. It must be remembered that such an estimate excludes China, India, Indonesia and Canada for which full data on SSBL graduates are not at hand. With this restriction in mind, we find that there were some 2.7 million SSBL ISECD 5–6 graduates in 2000 and 4.6 million in 2006, suggesting an annual growth of 11.7 per cent over the period. The major sites of the 2006 SSBL graduate production were the USA (1.0 million), the Russian Federation (0.8 million), Japan, Brazil and Egypt (0.3 million each), United Kingdom and Poland (0.2 million). The EU27 rose from approximately 900,000 in 2000 to 1,400,000 in 2006, at a lower growth rate of 9 per cent.

Finally, there is the issue of doctoral students – the seedbed of the next generation of researchers. The available Ph.D. enrolment data (China estimated; Germany unavailable at the time of data extract) show that in 2006 (or nearest year) there was a global total of some 1.9 million doctoral students. Of these, around 850,000 or 45 percent were women. The number of Ph.D. graduates by subject area is available for 42 countries for the years of interest.

A total of 276,846 students were awarded Ph.Ds in all subjects in 2006 against an enrolment of 1,652,088, giving a crude graduation rate of 16.7 per cent.

A derived indicator of interest is the number of Ph.D. graduates per million of the population. Data are available for 41 countries, with a median value of 148.6 and ranging from Sweden (426) to Argentina (11). The higher the proportion of FTE researchers, the higher the country Ph.D. enrolments are likely to be.

Publish or perish

Collecting data on scientific publications presents problems of definition, classification and attribution. 'Publications' include articles, reviews, letters, conference proceedings, books, chapters in books and so on. The categorization of publications presents immediate problems: disciplines must be assigned to specific subject areas, journal articles span disciplines, and journal titles also span disciplines. Various disciplines exhibit varying propensities to publish, and disciplines favour different publication modes. Health sciences journals may publish articles (case notes) of half a page; historians may prefer to publish books rather than a twenty-page journal article, and so on.

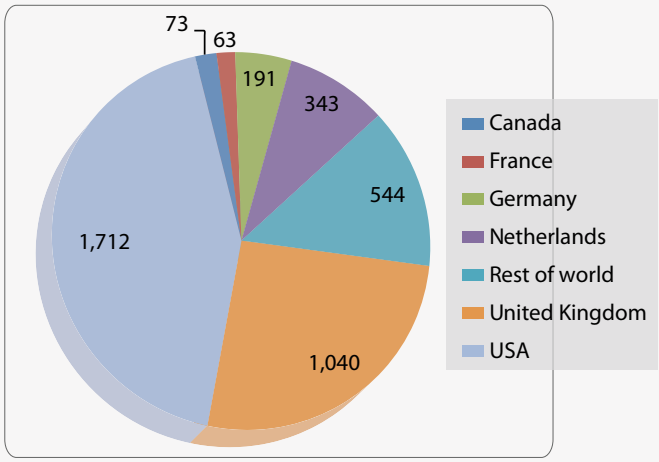
The interpretation and analysis of these data are the substance of bibliometrics. Publication counts, publication citations, and the rating of individual researchers (h-factor) are important attributes arising from the data analysis. The special character of publications in the social sciences is of critical importance to this paper.

Archambault et al. (2006) provide a review of the unique character of publications in the social sciences compared with those in the natural sciences. They address the more universalist nature of the natural sciences and the way that the universalist agenda is well served through the medium of the English language. Social science, on the other hand, whilst intrinsically universalist, is locally contextual, often addresses a local readership, and is better served by publication in local languages in local journals. Authors who work in languages other than English and wish to publish in English-language journals thus face the additional hurdle of either writing in English or paying for translation.

The standard tool for bibliometric analysis is the Thomson-Reuters set of databases, the best-known of which are those of the Web of Science,[5] namely the Science Citation Index Expanded (SCI-E), the Social Science Citation Index (SSCI), and the Arts and Humanities Citation Index (A&HCI). The Web of Science shows an inherent English-language bias when compared with other 'equivalent' databases, and Archambault et al. (2006) thus advise that when country comparisons are made, they should draw on more than one database. Consequently, we draw on the Web of Science and Elsevier Scopus.[6] Thomson-Reuters has quite naturally taken account of the language bias problem,[7]

5. http://www.isiwebofknowledge.com/
6. http://www.scopus.com/scopus/home.url
7. http://thomsonreuters.com/products_services/science/free/essays/regional_content_expansion_wos/

Figure A1.1 — Geographic distribution of journals indexed to Scopus social sciences, 2009



and since 2006 has significantly increased its coverage of social science journals beyond its English-language core. It must be borne in mind that such increases in coverage may introduce distortions in the time series.

Scopus also shows English-language bias. This is immediately obvious from Figure A1.1, which shows the geographic distribution of the social sciences journals that it indexes.

The SSCI captures some 2,800 journal titles, while Scopus Social Sciences covers close to 4,000. The combined Scopus subject areas of 'Social Sciences', 'Economics, Econometrics and Finance', 'Business, Management and Accounting' and 'Psychology' overlap somewhat with the SSCI; Scopus 'Arts and Humanities' is thought to closely match the A&HCI. This is the best that can be done without a journal-by-journal match across the databases.

The most obvious observation to be made of Table F is that publication data are available for many more countries than is the case for financial or personnel data. There are many reasons for this, especially for countries with relatively underdeveloped science systems, where national scientists working abroad and temporarily operating from local institutions may be driving the locally credited publication output. Another reason may be the self-interest of science professionals (publish or perish), which is independent of the action of local statistical agencies.

It is obvious from the Web of Science database that natural sciences articles vastly outnumber those on SSH, and given the disparity in the number of FTE researchers between the two, they should. The number of article counts recorded on SCI-E is eight times larger than that for SSCI and A&HCI combined.

The second observation is that there is a concentration by country. The five largest producers for the SCI-E are the USA (21.9 per cent), China (6.6 per cent), Japan (6.5 per cent), Germany (6.4 per cent) and the UK (5.5 per cent), which together account for approximately 47 pe cent of world production (double counting notwithstanding). The appearance of Chinese publications over the last decade is noteworthy.

Regarding the concentration of publications listed on the SSCI and A&HCI, two features stand out: first, a higher degree of geographic concentration, and second, that both China and Japan have very low numbers. The five largest volumes on the SSCI are the USA (38.9 per cent), the UK (12.1 per cent), Canada (5.6 per cent), Germany (4.4 per cent) and Australia (4.0 per cent). For the A&HCI, the list reads: the USA (41.1 pe cent), the UK (13.5 per cent), Canada (6.0 pe cent), France (5.7 per cent), and Germany (5.2 per cent). By comparison, the social sciences data from Scopus are ranked in the order: the USA (30.2 per cent), the UK (13.4 per cent), Canada (5.6 per cent), China (5.1 per cent) and Germany (4.6 per cent). For Scopus Arts and Humanities, the list reads: the USA (31.5 per cent), the UK (16.5 per cent), Canada (5.4 per cent), Germany (5.0 per cent) and France (4.5 per cent). Australia is in sixth place at 3.3 per cent.

The country rank ordering between the Web of Science and Scopus is remarkably consistent, with the exception of China.

According to the Web of Science SCI-E, SSCI and A&HCI databases for the listed countries, journal article production stands at 889,895, 101,804 and 17,675 respectively for a world total of some 1,1 million. For SCI-E citations North America and Western Europe account for 64 per cent, Asia and the Pacific 24 per cent, and other regions 12 per cent. For the SSCI, the proportions are more skewed at 85 per cent, 12 per cent and 5 per cent, while, for the A&HCI, the figures are 87 per cent, 7 per cent and 6 per cent respectively.

On the SCOPUS databases, the distribution for social science is 75 per cent, 17 per cent and 8 per cent respectively, and for Arts and Humanities 80 per cent, 11 per cent and 9 per cent. It appears that the SCOPUS database indexes journals that are more popular with authors outside North America and Western Europe.

Toward improving the measurement of R&D in the social sciences

The measurement of the inputs to and outputs from R&D is problematic in all countries; the systematic revisions of the Frascati Manual are evidence of a constant effort to improve the situation. But there is no absolutely standardized process for data collection, which means that it is addressed in varying ways according to the desire for accuracy, the resources available to those tasked with generating the data, the willingness of the respondents to engage and the perceived legitimacy of the survey process. Ultimately, the data are as reliable as the responsible national agency declares them to be. If the data are designated as official statistics, they have to be accepted as such. The comparability of the statistics per category is another matter.

It may be noted that since mid-2007 UNESCO-UIS has been developing guidelines for improving the measurement of R&D in developing countries. These guidelines may well have applicability in all countries irrespective of their development status, and apply to all fields of science, including social sciences.

The least complete datasets are those concerned with R&D personnel, which in turn determine the estimation of the inputs to R&D activity in both SET and SSH. This area could therefore be the main leverage point for improvement.

At the outset, it will be important that statistical agencies gather their data according to a common definition of what constitutes the social sciences, and what should be regarded as humanities. Nevertheless, the rapid shifts in discipline boundaries suggest that a review of discipline boundaries may be needed every five to ten years.

Provided the political will is there, it should be possible to mobilize quite modest resources to conduct an R&D survey focusing on the social sciences where this is currently unavailable. This work might best be given to a team of leading social sciences practitioners who are well-acquainted with country activity in the field. They will know where to look and who to ask regarding 'in-house' R&D in social sciences (and possibly humanities). It is unlikely that a postal survey conducted by the national statistical agency would achieve the same result. Drawing on the knowledge of informed experts is an effective way of improving R&D surveys in any field of science.

We might reasonably expect that such a purposive survey could be achieved by personal networking through brief telephonic or e-mail communication, thereby obtaining reasonable estimates of a headcount and the FTE of researchers for the social sciences. Once the FTE is known, we could estimate the labour costs. This, combined with data on the current and capital expenditure, provides an estimate of the total expenditure on R&D. On the income side, we must then track all sources of funds, which should ideally equate with the expenditure.

The approach could be extended to the business sector by concentrating on firms that are active in services, thus yielding a rough estimate of business-sector R&D in social sciences.

Any such R&D survey of the social sciences should, of course, be endorsed by the responsible national statistical agency.

The under-reporting of social sciences R&D is to the detriment of those active in the field. This under-reporting could serve to incentivize the social sciences research community to work more closely with national statistical agencies to ensure that a more complete and accurate survey is carried out. The professional self-interest that drives researchers to monitor the correct citation of their published works could be harnessed to achieve a reliable R&D survey. Ultimately, however, it comes down to the proper institutionalization of the survey, including the allocation of the necessary budget and personnel. If the survey is deemed to be serious, it will be supported. Institutionalization, not lip service, is key for a thorough survey.

While it is appreciated that the quantitative, indicator-generating approach of the Frascati Manual tells only one part of the story, that part needs to be told with conviction. The quantitative story should be told and complemented with the qualitative narrative which is so well provided by evaluation methodologies. In this way, the social sciences may better be appreciated for their integral contribution to social, economic and technological change.

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Table A > Socio-economic indicators, 2005

	Population	Gross national income	Gross domestic product/capita		Human Development Index
	million	PPP$ billion	PPP$ thousand	Gini coefficient	
Arab States					
Algeria	33	222	6.8	0.35	0.748
Egypt	74	329	4.4	0.34	0.716
Tunisia	10	79	7.9	0.4	0.762
Central and Eastern Europe					
Bulgaria	8	67	8.6	0.32	0.834
Czech Republic	10	205	20.1	0.26	0.897
Estonia	1.4	29	21.9	0.34	0.872
Hungary	10	171	16.9	0.28	0.877
Latvia	2	31	13.5	0.38	0.863
Lithuania	3	49	14.2	0.36	0.869
Poland	38	515	13.5	0.36	0.875
Romania	22	193	8.9	0.31	0.825
Russian Federation	143	1,523	10.6	0.41	0.806
Slovakia	5	85	15.8	0.26	0.872
Slovenia	2	44	22.2	0.24	0.923
Turkey	73	612	8.4	0.44	0.798
East, South Asia and Pacific					
Australia	20	622	32.2	0.35	0.965
China	1,305	8,610	6.6	0.47	0.762
Chinese Taipei	23	757	33.0	0.34	0.932
India	1,095	3,787	3.5	0.37	0.609
Indonesia	221	820	3.7	0.36	0.726
Japan	128	4,019	31.4	0.38	0.956
Korea (Republic of)	48	1,055	21.8	0.35	0.928
New Zealand	4	95	23.0	0.36	0.944
Singapore	4	130	29.8	0.43	0.918
Latin America and Caribbean					
Argentina	39	539	13.9	0.49	0.86
Brazil	186	1,534	8.2	0.57	0.807
Chile	16	187	11.5	0.55	0.874
Colombia	46	338	7.4	0.54	0.787
Mexico	103	1,034	10.0	0.46	0.842
Uruguay	3	34	9.8	0.45	0.859

Table A > Socio-economic indicators, 2005 (cont.)

	Population	Gross national income	Gross domestic product/capita		Human Development Index
	million	PPP$ billion	PPP$ thousand	Gini coefficient	
Venezuela	27	171	6.4	0.48	0.826
North America and Western Europe					
Austria	8	272	33.1	0.26	0.951
Belgium	10	342	32.6	0.28	0.948
Canada	32	1,040	32.2	0.32	0.967
Cyprus	0.8	23	29.2	0.29	0.912
Denmark	5	182	33.6	0.24	0.952
Finland	5	163	31.2	0.26	0.954
France	61	1,855	30.5	0.28	0.955
Germany	82	2,409	29.2	0.28	0.94
Greece	11	262	23.6	0.33	0.947
Iceland	0.3	13	42.6	0.25	0.968
Ireland	4	144	34.7	0.32	0.96
Israel	7	175	25.3	0.39	0.93
Italy	57	1,657	28.8	0.33	0.945
Luxembourg	0.5	41	85.1	0.26	0.956
Malta	0.4	10	24.2	0.28	0.894
Netherlands	16	530	32.5	0.31	0.958
Norway	5	187	40.4	0.28	0.968
Portugal	11	208	19.7	0.38	0.9
Spain	43	1,120	25.8	0.32	0.949
Sweden	9	284	31.4	0.23	0.958
Switzerland	7	276	37.1	0.34	0.955
United Kingdom	60	1,968	32.7	0.34	0.942
USA	296	12,438	42.0	0.45	0.95
Sub-Saharan Africa					
Nigeria	132	137	1.0	0.44	0.499
South Africa	45	548	12.1	0.58	0.67

Sources:
World Bank (2007), *World Development Report*; UNDP (2006), *Human Development Report*.

Table B > Expenditure on research and development, 2005

	GERD/capita PPP$/capita	GERD/GDP %	SSH/GERD %	
Arab States				
Algeria	4	0.07		U, O
Egypt	11	0.26		U, O
Tunisia[a]	65	1.03		U, O
Central and Eastern Europe				
Bulgaria	45	0.49		U, O
Czech Republic	286	1.41	5.8	O
Estonia	220	0.94		U, O
Hungary	160	0.94	14.6	O
Latvia	74	0.56		U, O
Lithuania	107	0.76		U, O
Poland	77	0.57	9.5	O
Romania	39	0.41	4.7	O
Russian Federation	126	1.07	3.0	O
Slovakia	81	0.51	9.8	O
Slovenia	336	1.46	9.0	O
Turkey	61	0.59	16.9	O
East, South Asia and Pacific				
Australia[b]	578	1.78	8.3	O
China	54	1.33	1.4	O
Chinese Taipei	638	2.45	3.1	O
India[c]	13	0.69		O, U
Indonesia[d]	1	0.05		O, U
Japan	1,007	3.32	4.6	O
Korea (Republic of)	636	2.98		O
New Zealand	290	1.16		O
Pakistan	9	0.44		U
Singapore	996	2.30		O
Latin America and Caribbean*				
Argentina	50	0.46	11.2	U, O
Brazil[e]	71	0.83		U, O
Chile[f]	77	0.67		U, O
Colombia	8	0.17		U, O
Mexico	57	0.46	18.0	O
Uruguay[g]	18	0.26		U, O
Venezuela	23	0.23		O
North America and Western Europe				
Austria[h]	830	2.44	7.8	O
Belgium	590	1.84	6.2	O
Canada	706	1.98	7.7	O
Cyprus	98	0.40		O, U

Table B > Expenditure on research and development, 2005 (cont.)

	GERD/capita	GERD/GDP	SSH/GERD	
	PPP$/capita	%	%	
Denmark[i]	822	2.45	7.9	O
Finland	1,061	3.48	6.7	O
France	625	2.10		O
Germany	757	2.48	5.3	O
Greece	148	0.58		O
Iceland	990	2.77		O
Ireland	478	1.26	7.3	O
Israel	1,050	4.49	14.2	U, O
Italy	304	1.09		O
Luxembourg	1,099	1.57		O
Malta	111	0.54		O, U
Netherlands[j]	603	1.74	7.3	O, U
Norway	725	1.52	14.2	O
Portugal	161	0.81	15.5	O
Spain[k]	306	1.12	7.9	O
Sweden	1,304	3.80		O
Switzerland	1,015	2.90	2.8	O
United Kingdom	587	1.76		O
USA	1,093	2.62	5.5	O
Sub-Saharan Africa				
Mauritius	38	0.38		U, O
South Africa	78	0.92	12.4	O
Uganda	2	0.23		U

Abbreviations:
GERD Gross expenditure on research and development
HERD Higher education expenditure on research and development
SSH Social sciences and humanities

Sources:
O denotes OECD Main Science and Technology Indicators 2008–2.
U denotes Unesco Institute for Statistics
* http://www.ricyt.edu.ar

Notes:
a. Tunisia 2004
b. Australia 2004
c. India 2004
d. Indonesia 2001
e. Brazil 2004
f. Chile 2004
g. Uruguay 2006
h. Austria 2004
i. Denmark 2001
j. Netherlands HERD 2003
k. Spain 2002

Table C > Researcher headcounts (HC)

		Total			Business		
		SUM	SET	SSH	SUM	SET	SSH
Arab States							
Algeria	HC	13,805					
	FT	5,593					
Egypt	HC						
	FT						
Tunisia	HC	25,445					
	FT	14,650					
Central and Eastern Europe							
Bulgaria	HC	11,920			1,251		
	FT	9,840			1,157		
Czech Republic	HC	37,542	30,574	6,968	12,120	11,753	547
	FT	24,169	20,607	3,563	10,354	10,107	247
Estonia	HC	5,734			1,402		
	FT	3,331			883		
Hungary	HC	31,407	20,029	11,378	6,108	5,950	158
	FT	15,878	11,715	4,163	5,008	4,875	133
Latvia	HC	5,748			606		
	FT	3,282			468		
Lithuania	HC	11,918			916		
	FT	7,637			716		
Poland	HC	97,875	70,447	27,428	11,403	11,259	133
	FT	62,162	46,829	15,333	9,412	9,297	115
Romania	HC	29,608	25,449	4,159	10,644		
	FT	22,958	19,883	3,075	10,319		
Russian Federation*	HC	391,121	370,324	20,797	221,445	217,885	3,560
	FT	464,577			237,959		
Slovakia	HC	17,526	12,544	4,982	2,414	2,260	154
	FT	10,921	8,505	2,415	1,946	1,816	130
Slovenia	HC	7,644	6,168	1,476	1,858*	1,812*	46*
	FT	5,253	4,433	832	1,620*	1,576*	44*
Turkey	HC	83,190	53,605	23,505	10,952	10,742	210
	FT	39,139			9,456	9,307	149
Latin America and Caribbean							
Argentina	HC	49,050			4,715		
	FT	31,868			3,763		
Brazil	HC	143,864					
	FT	84,979			22,355		
Chile	HC	18,365			10,064		
	FT	13,427			6,724		
Colombia	HC	12,751			166		
	FT	5,632			136		
Mexico	HC	44,577	33,016	11,561	10,688	10,136	552
	FT	33,484	25,334	8,150	9,176	8,276	450

and full-time equivalents (FT) by sector, 2005

Higher education			Government			Not-for-profit			
SUM	SET	SSH	SUM	SET	SSH	SUM	SET	SSH	Source/Note
13,075			730						U
4,863			730						U
22,260			3,185						U
12,861			1,789						U
3,894			6,472			303			U
2,607			6,076			128			U
17,411	12,074	4,707	8,361	6,703	1,658	100	44	56	
7,576	5,688	1,888	6,113	4,778	1,335	127	34	93*	*National stats
3,618			622						U
1,905			474						U
19,086	9,948	9,138	6,213	4,131	2,082				
5,911	3,304	2,607	4,959	3,536	1,423				
4,368			773						U
2,224			589						U
9,124			1,878						U
5,116			1,805						U
72,261	46,111	25,795	14,094	12,750	1,344	117	27*	90	*National stats
40,449	26,525	13,924	12,175	10,956	1,219		51	76	
11,492	9,879	1,613	7,267	4,744	2,523	205	182	23	
5,386	4,772	614	7,082	4,644	2,438	171	148	23	
30,111	26,130	3,981	139,378	126,413	13,235	187	166	21	*Headcount for full-time staff only
70,494			154,827			1,298			
12,249	8,105	4,144	2,845	2,162	683	18	17	1	
6,458	4,751	1,707	2,503	1,926	577	14	13	1	
3,564	2,514	1,050	1,846	1,448	398	31	26	5	*2002
1,695	1,305	390	1,591	1,198	393	31	26	5	*2002
67,504	43,592	23,912	4,734	4,670	64				
25,434	16,541	8,893	4,249						
29,237			14,074			1,024			U
14,200			13,285			620			U
									U 2004
56,008			5,625			991			U 2004
6,820			615			866			U 2004
5,222			615			866			U 2004
11,275			589			727			U 2004
4,442			480			461			
24,183	14,599	9,584	7,217	6,666	551	2,483	1,615	874	2003
16,791	10,137	6,654	6,376	5,889	487	1,591	1,032	559	2002

Table C > Researcher headcounts (HC)

		Total			Business		
		SUM	SET	SSH	SUM	SET	SSH
Uruguay	HC	3,839					
	FT	1,242			12		
Venezuela	HC	4,626					
	FT	2,301			39		
East, South Asia and Pacific							
Australia	HC						
	FT	73,173			20,541		
China	HC						
	FT	1,118,698			696,413		
Chinese Taipei	HC	115,954	102,929	13,024	56,900	55,619	1,281
	FT	88,859	82,284	6,575	51,202	50,142	1,060
India	HC						
	FT	115,936			34,724		
Indonesia	HC						
	FT	42,722			253		
Japan	HC	861,901	737,648	99,935	519,360	514,713	4,647
	FT	705,659			481,496		
Korea (Republic of)	HC	224,702			154,306		
	FT	179,812			137,706		
New Zealand	HC	27,570			7,356		
	FT	17,235			3,690		
Singapore	HC	27,969	25,846	2,123	15,964	14,431	1,533
	FT	23,789	21,919	1,871	14,238	12,820	1,418
North America and Western Europe							
Austria	HC	44,127			20,587		
	FT	33,146					
Belgium	HC	48,757			20,850*		
	FT	33,146			17,991*		
Canada	HC						
	FT	125,300	105,870	19,460		76,280	
Cyprus	HC	1,424			317		
	FT	612			130		
Denmark	HC	29,791			12,281*		
	FT	19,453			9,651*		
Finland	HC	50,773			26,122		
	FT	39,130			21,967		
France	HC	251,599					
	FT	202,507			106,387		
Germany	HC	397,130*			175,040		
	FT	264,385*			157,836*		
Greece	HC	26,340			4,375		
	FT	14,371			3,797		

and full-time equivalents (FT) by sector, 2005 (cont.)

Higher education			Government			Not-for-profit			
SUM	SET	SSH	SUM	SET	SSH	SUM	SET	SSH	Source/Note
									U 2002
1,064			166						U 2002
									RICYT
1,748			514						RICYT
42,779	25,462	17,317	8,036				1,812	94	2002
221,908			168,774	161,885	6,889				
41,958	31,160	10,798	16,171	15,384	767	944	766	178	
23,180	18,425	4,755	13,790	13,152	638	687	565	122	
22,100			59,112						U 2000
26,138			16,331						U 2001
271,158	179,865	91,293	36,675	34,060	2,615	10,390	9,010	1,380	
181,214	127,918	53,296	34,035	32,290	1,745	8,924	7,894	1,030	
64,895			13,465			2,036			Excludes SSH
27,416			12,791			1,899			Excludes SSH
18,087			2,127						
11,731			1,812						U 2005
9,991	9,443	548	2,014	1,972	42				High NEC
8,187	7,739	448	1,365	1,360	5				High NEC
20,888	14,531	6,357	2,315	1,122	1,193	337	135	202	
8,280	6,130	2,150	1,030	470	560	134	75	62	
			2,511	2,063	448	260	255	5	*2001
13,853	9,918	3,935	2,273	1,881	392	250	247	3	
41,380	22,500	18,880	7,210	6,630	580		460		
807			222			78			U 2005
375			107						U 2005
15,682	10,403	5,279	2,834	2,142	692	410	400	10	*2001 Graduates assumed as researchers
8,242	5,593	2,649	2,104	1,666	438	208	203	5	*2001 Graduates assumed as researchers
18,495			5,622			534			MSTI 2007-2
12,879			3,772						MSTI 2007-2
66,290			25,889						
180,514	124,836	55,318	44,898	38,315	6,583				*U 2003
70,844	50,434	20,410	39,911	34,365	5,546				*2001
18,998			2,868			99			2001
8,544			1,980			50			2001

Table C > Researcher headcounts (HC)

		Total			Business		
		SUM	SET	SSH	SUM	SET	SSH
Iceland	HC	3,231			1,211		
	FT	1,859			853		
Ireland	HC	17,194			6,937*		
	FT	8,949*			5,971*		
Italy	HC	100,442*			29,360*		
	FT	66,702*			26,550*		
Luxembourg	HC	2,443*			1,807*		
	FT	2,091*			1,532*		
Malta	HC	972			262		
	FT	442			189		
Netherlands	HC				28,313		
	FT	45,517	40,501	4,366	22,414		
Norway	HC	36,888	27,619	9,269	14,369	14,327	42*
	FT	21,693	17,690	3,963	10,692	10,574	118
Portugal	HC	37,769	26,080	9,712	6,186	3,967	242
	FT	21,126	15,266	4,490	4,014	2,515	129
Spain	HC	181,023	136,010	44,653	43,627		
	FT	109,720	86,207	23,512	35,033		
Sweden	HC	82,496			42,476		
	FT	55,090			36,697		
Switzerland	HC	44,230			17,450		
	FT	26,105			16,275		
United Kingdom	HC						
	FT	174,559			93,717		
USA	HC						
	FT	1,387,882*			1,097,700		
Sub-Saharan Africa							
Nigeria	HC						
	FT						
South Africa	HC	39,266			7,480		
	FT	17,303			5,896		

Notes:
NEC Not elsewhere classified
SET Science, engineering and technology
SSH Social sciences and humanities
HC Headcounts
FT Full time equivalent
The sum of the breakdown may not add up to the total.

Sources:
Data from OECD Research and Development Statistics 2008/1 for year 2005 unless otherwise stated
U denotes UNESCO Institute for Statistics
RICYT Table 11 from http://www.ricyt.edu.ar
MSTI 2007-2 denotes OECD Main Science and Technology Indicators 2007-2
Eurostat: http//epp.eurostat.ec.europa.eu/portal/page/portal/education/data/database
Web sites accessed mid 2009

and full-time equivalents (FT) by sector, 2005 (cont.)

Higher education			Government			Not-for-profit			
SUM	SET	SSH	SUM	SET	SSH	SUM	SET	SSH	Source/Note
1,018			678			324			2001
520	365	155	424			68	21	47	2001
9,800	6,360	3,440	457	393	64				*2001
4,390	3,150	1,240	419	362	57				*2001
69,844	44,786	25,058	18,818	16,299	2,519	5,045	3,291	1,753	*2001
46,920	34,123	12,797	14,454	12,489	1,965	2,923	2,065	858	*2001
205	121	84	431	353	78				*U
176	94	64	383	315	58				*U
676									Eurostat
225				18					Eurostat
			7,807			614			2001
15,750	11,178	4,113	6,799			554*	110	253	2001, *National stats
17,977	10,401	7,576	4,542	2,891	1,651				*National stats
7,512	4,898	2,614	3,449	2,218	1,231				
21,384	13,568	7,816	5,602	4,974	628	4,597	3,571	1,026	
10,956	7,668	3,289	3,338	2,759	578	2,819	2,325	494	High NEC
108,823	66,084	42,379	28,212	25,988	2,224	361	311	50	
54,028	32,398	21,629	20,446	18,598	1,848	213	178	35	
34,942	17,483	8,358	4,771	2,768*	2,003*		307		*Adjusted. High NEC
15,851	10,488	3,639	3,018						High NEC
26,010			770						2000
9,425			405						2000
			10,188	9,028	1,160				2001
67,719			9,311	8,387	924				
			48,187			11,800**			*Rounded total, **1999
28,879			2,664			243			U
9,235			1,974			199			

Table D > Student enrolments, by level, total, social science, business and law, and gender, 2000 and 2006

		All fields	SSBL	% SSBL	% Female	All fields	% Female	
	Level	ISCED 5-6	ISCED 5-6	ISCED 5-6	ISCED 5A	ISCED 6	ISCED 6	Source/ Note
	Year							
Arab States								
Algeria	2000	544,009			...		...	U
	2006	817,968	318,136	39	59	37,787	45	U
Egypt	1999	2,447,088				16,675		U
	2006	2,594,186			49			U
Tunisia	2000	180,044			...	10,334	...	U
	2005	325,325	57,062	18	68	22,800	55	U
Central and Eastern Europe								
Bulgaria	2000	261,321	105,198	40	57	3,091	47	E
	2006	243,464	103,395	43	54	5,153	50	E
Czech Republic	2000	253,695	59,782	24	48	15,222	35	E
	2006	338,009	93,217	28	53	22,646	38	E
Estonia	2000	53,613	21,859	41	56	1,251	55	E
	2006	68,286	26,605	39	62	1,972	54	E
Hungary	2000	307,071	114,763	37	54	4,302	42	E
	2006	438,702	182,453	42	58	7,965	47	E
Latvia	2000	91,237	42,819	47	65	1,003	52	E
	2006	131,125	71,049	54	64	1,809	60	E
Lithuania	2000	121,904	37,456	31	58	2,023	55	E
	2006	198,868	83,165	42	60	2,878	57	E
Poland	2000	1,579,571	681,454	43	58	22,239	44	E
	2006	2,145,687	877,299	41	57	32,725	49	E
Romania	2000	452,621	189,723	42	51		-	E
	2006	834,969	417,599	50	56	21,694	48	E
Russian Federation	2000		...		56	111,024	43	U
	2006	9,167,277	...		58	147,181	43	U
Slovakia	2000	135,914	34,722	26	50	7,173	38	E
	2006	197,943	56,056	28	58	10,739	43	E
Slovenia	2000	83,816	35,186	42	59		-	E
	2006	114,794	49,903	44	62	1,057	47	E
Turkey	2000	1,015,412	290,098	18	...	19,857	35	E
	2006	2,342,898	1,110,426	47	43	32,575*	39	E. *U
Latin America								
Argentina	2000	1,766,933			57	5,931	58	U
	2005	2,082,577	824,161	40	55	4,981	57	U
Brazil	2002	2,781,328	1,448,445	52	57	102,192	55	U
	2005	4,572,297	1,852,373	41	57	119,141	55	U
Chile	2000	452,177	181,879	40	48	7,705	40	U
	2006	661,142	170,129	26	52	2,753	41	U
Colombia	2001	934,085	421,184	45	53	55,911	49	U
	2006	1,314,972	563,394	43	53	1,131	34	U
Cuba	2000	158,674	...		54	1,428	53	U
	2006	681,629	163,495	24	61	4,129	43	U
Mexico	2000	1,962,763	783,409	40	49	7,911	38	U
	2006	2,446,726	968,044	40	51	13,458	41	U
Uruguay	2000	97,641	...		61		...	U
	2006	113,368	44,299	39	62		40	U
Venezuela	2000	668,109	...		60		...	U
	2006	1,381,126	...		...		...	U

Table D > Student enrolments, by level, total, social science, business and law, and gender, 2000 and 2006 (cont.)

		All fields	SSBL	% SSBL	% Female	All fields	% Female	
	Level	ISCED 5-6	ISCED 5-6	ISCED 5-6	ISCED 5A	ISCED 6	ISCED 6	Source/ Note
	Year							
East, South Asia and Pacific								
Australia	2000	845,132	277,980	33	56	27,615	47	U
	2006	1,040,153	394,673	38	55	40,417	50	U
China	2000	7,364,111	...		...	54,038	22	U
	2006	23,360,535	...		44**	167,267*	...	U.* PhD 2000 Estimates** 2003
Hong Kong (China), SAR	2000				52*		40*	U *2003
	2006	155,324	56,194	36	53	5,508	42	U
India	2000	9,404,460	5,630,412	60	38	55,019	36	U
	2005	12,852,684	...		40	84,140	40	U
Indonesia	2001	3,017,882	...		42	53,799	34	U
	2006	3,657,429	...		47	62,065*	35	U. *PhD for 2005
Japan	2000	3,982,069	1,183,013	30	37	59,007	25	E
	2006	4,084,861	1,198,169	29	41	75,028	30	E
New Zealand	2000	171,962	50,387	29	58	3,336	47	U
	2006	237,784	82,690	35	59	5,325	51	U
Pakistan	2002	385,506	...		43	8,155	31	U
	2006	820,347	150,503	18	45	10,389	27	U
Republic of Korea	2000	3,003,498	624,265	21	36	31,787	25	U
	2006	3,204,036	691,884	22	37	43,443	34	U
North America and Western Europe								
Austria	2000	261,229	115,799	44	50	24,531	42	E
	2006	253,139	88,589	35	53	16,819	46	E
Belgium	2000	355,748	119,172	34	49	2,348	35	E
	2006	394,427	108,352	28	51	7,482	41	E
Canada	2000	1,212,161	322,438*	27	58	26,221	45	*U 1999
	2004	1,326,711	335,037*	25	58	34,716	46	*U 2003
Cyprus	2000	10,414	3,673	35	77	72*	-	E. *U 2002
	2006	20,587	9,763	47	73	302	49	E
Denmark	2000	189,162	44,335	23	52	4,648	42	E
	2006	228,893	67,618	30	59	4,751	46	E
Finland	2000	270,185	62,727	23	54	19,750	47	E
	2006	308,966	69,459	23	54	22,145	52	E
France	2000	2,015,344	...		55	94,327	47	E
	2006	2,201,201	759,984	35	56	77,056	46	E
Germany	2000	2,054,800	553,346	27	45		...	E
	2006	2,289,500	627,648	27	48		...	E
Greece	2000	422,317	169,181	40	51	2,096	40	E
	2006	653,003	205,998	32	53	22,483	44	E
Iceland	2000	9,667	3,278	34	64	18	33	E
	2006	15,721	5,969	38	65	156	58	E
Ireland	2000	160,611	32,710	20	55	2,904	45	E
	2006	186,044	43,031	23	58	5,146	48	E
Israel	2000	255,891	85,921	34	58	6,647	51	U
	2006	310,014	119,923	39	55	9,715	53	U
Italy	2000	1,770,002	712,872	40	56	13,177	49	E
	2006	2,029,023	741,190	37	57	38,262	52	E

Table D > Student enrolments, by level, total, social science, business and law, and gender, 2000 and 2006 (cont.)

		All fields	SSBL	% SSBL	% Female	All fields	% Female	
	Level	ISCED 5-6	ISCED 5-6	ISCED 5-6	ISCED 5A	ISCED 6	ISCED 6	Source/ Note
	Year							
Luxembourg	2000	2,437	...		46	23	.	E
	2006	2,692	1,218	45	54*	24	52*	E. *U 2004
Malta	2000	6,315	2,182	35	53	15	7	E
	2006	8,900	3,927	44	...	64	36	E
Netherlands	2000	487,649	195,952	40	50	4,556	42	E
	2006	579,622	217,163	38	51	7,475	42	E
Norway	2000	190,943	52,338	27	60	2,125	47	E
	2006	214,711	69,918	33	60	5,047	46	E
Portugal	2000	373,745	133,011	36	56	11,680	52	E
	2006	367,312	115,808	32	55	20,512	56	E
Spain	2000	1,828,987	673,970	37	53	65,675	51	E
	2006	1,789,254	570,202	32	54	77,056	51	E
Sweden	2000	346,878	88,311	26	60	20,714	43	E
	2006	422,614	110,665	26	61	21,377	49	E
Switzerland	2000	156,879	55,999	36	44	12,933	34	U
	2006	204,999	76,022	37	49	17,324	40	E
United Kingdom	2000	2,024,138	475,195	24	53	74,242	41	E
	2006	2,336,111	630,423	27	55	94,180	45	E
USA	2000	13,202,880	...		56	293,202	42	E
	2006	17,487,475	4,779,632	27	57	388,685	52	E
Sub-Saharan Africa								U
Nigeria	1999	699,109			26*	9,262	39*	U. *2003
	2005	1,391,527			36	8,385	24	U
South Africa	2000	644,763	303,325	47	54	6,795	38	U
	2006	741,380	392,201	53	55	9,828	42	U

Notes:

SSBL denotes social science, business and law as defined by UNESCO and OECD

Sources:

E denotes Eurostat: http//epp.eurostat.ec.europa.eu/portal/page/portal/education/data/database

U denotes UNESCO Institute for Statistics

Table E > Student graduation, by level, total, social science, business and law, and gender, 2000 and 2006

	Year	ISCED 5-6 All fields	ISCED 5-6 SSBL	ISCED 5-6 % SSBL	ISCED 5-6 % F SSBL	PhD	PhD SSBL	F PhD F SSBL	PhD/ million	Source
Arab States										
Algeria	2004	91,811	47,091	51	63					U
	2006	107,515	54,285	51	62					U
Egypt	2000	291,191	248,069	85						U
	2006	396,240	322,625	81						U
Tunisia	2000	19,586								U
	2006	56,559								U
Central and Eastern Europe										
Bulgaria	2000	46,718	22,493	48	68					E
	2006	45,383	21,700	48	65	583	99	57	49	E
Czech Republic	2000	38,376	12,852	34	59					E
	2006	69,312	19,914	29	64	2,023	290	120	173	E
Estonia	2000	6,441	3,323	52	69					E
	2006	11,541	4,226	37	74	143	18	7	149	E
Hungary	2000	59,883	23,640	40	55					E
	2006	69,756	30,529	43	70	1,012	165	86	89	E
Latvia	2000	15,260	6,320	41	67					E
	2006	26,414	14,792	56	72	106	24	13	42	E
Lithuania	2000	25,241	7,431	29	67					E
	2006	43,343	17,739	41	74	326	77	52	100	E
Poland	2000	344,339	127,371	37	66					E
	2006	504,051	214,939	43	69	5,917	745	377	144	E
Romania	2000	67,940	28,215	42	59					E
	2006	174,821	84,205	48	63	3,180	619	294	122	E
Russian Federation	2000	1,190,567	...	...						U
	2006	1,870,973	847,023	45		29,850*	5,910*		209	U. *NSB
Slovakia	2000	22,699	6,301	28	57					E
	2006	40,190	11,026	27	64	1,218	202	105	171	E
Slovenia	2000	11,991	4,782	40	64					E
	2006	17,145	8,504	50	68	395	76	41	178	E
Turkey	2000	190,080	52,165	27	47					E
	2006	373,375	140,672	38	47	2,594	493	185		E
East, South Asia and Pacific										
Australia	2000	168,913	62,318	37	52					U
	2006	284,910	119,226	42	56	4,763*	569*		238	U. *NSB 2004
China	2000	1,775,999								U
	2006	5,622,795				23,446*	1,309*		18	U. *NSB 2004
Hong Kong (China), SAR	2003	40,361	13,221	33	65					U
	2006	41,080	13,450	33	64					U
India	2000									U
	2006					13,733*			13	U. *NSB 2003
Indonesia	2001	476,971								U
	2004	612,975								U
Japan	2000	1,081,435	265,069	25	32					E
	2006	1,067,939	288,599	27	39	15,979	1,686	586	132	E
New Zealand	2000	42,791	11,419	27	55					U
	2006	59,320	22,301	38	57	623*	66*		156	U. *NSB 2004

Table E > Student graduation, by level, total, social science, business and law, and gender, 2000 and 2006 (cont.)

	Year	ISCED 5-6 All fields	ISCED 5-6 SSBL	ISCED 5-6 % SSBL	ISCED 5-6 % F SSBL	PhD	PhD SSBL	F PhD F SSBL	PhD/ million	Source
Pakistan	2000									U
	2006									U
Korea (Republic of)	2000	519,719	110,035	21	48					U
	2006	605,160	120,580	20	47	7,946*	1,351*		166	U. *NSB 2004
Latin America and Caribbean										U
Argentina	1999	136,878								U
	2001	140,099	70,371	50	59	685º	161º		11	U.ºRICYT.
Brazil	2001	347,978	151,540	44	55					U
	2005	757,553	277,572	37	54	9,366º	890º		44	U.ºRICYT.
Chile	2000	53,417	26,343*							U. *2003
	2006	73,203	22,931	31	52	249º	34º		12	U.ºRICYT.
Colombia	2002	65,720	30,411	46	59					U
	2006	115,488	60,092	52	51	39º	10º			U.ºRICYT.
Cuba	2000	16,967								U
	2006	100,874	3,956	4	63	447º				U.ºRICYT.
Mexico	2000	299,146	132,372	44	55					U
	2005	380,413	165,482	44	59	2,325*	382*			U.*NSB.
Uruguay	2000	7,629								U
	2006	8,485	2,796	33	66	21º				U.ºRICYT.
Venezuela	2000	60,912	26,109	43	66					U
	2006	138,557								U
North America and Western Europe										
Austria	2000	24,981	6,892	28	50					E
	2006	34,825	10,031	29	58	2,158	684	335	306	E
Belgium	2000	68,225	20,768	30	54					E
	2006	81,567	23,060	28	58	1,718	261	99	148	E
Canada	1999	225,020	77,341	34	60					U
	2002	246,589				3,709*	657**		116	U.*NSB **OECD
Cyprus	2000	2,813	930	42	659*					E
	2006	3,858	1,687	44	61	29	7			E
Denmark	2000	39,017	9,432	24	40					E
	2006	47,539	14,463	30	52	910	125	57	158	E
Finland	2000	35,635	8,228	23	68					E
	2006	40,044	9,451	24	71	1,409	210	113	373	E
France	2000	508,189	190,844	38	63					E
	2006	643,604	267,695	42	63	9,818	1,931	931	138	E
Germany	2000	302,095	62,263	21	43					E
	2006	358,706	98,619	22	50	24,946	4,451	1,628	316	E
Greece	2001	38,963								E
	2006	64,387	16,753	28	67	1,248	94	31	118	E. PhD 2005
Iceland	2000	1,779	550	31	56					E
	2006	3,397	1,160	34	59	10			33	E
Ireland	2000	42,009	13,039	31	58					E
	2006	59,184	20,566	35	59	979	115	65	171	E
Israel	2000	62,363	20,928	34	58					U
	2004	76,726				1,135*	114*		162	U. *NSB

Table E > Student graduation, by level, total, social science, business and law, and gender, 2000 and 2006 (cont.)

	Year	ISCED 5-6 All fields	ISCED 5-6 SSBL	ISCED 5-6 % SSBL	ISCED 5-6 % F SSBL	PhD	PhD SSBL	F PhD F SSBL	PhD/ million	Source
Italy	2000	201,290	74,235	37	55					E
	2006	432,068	144,718	33	53	10,188	1,877	970	111	E
Luxembourg	2000	680	335	49						E
	2006									E
Malta	2000	2,003	816	41	39					E
	2006	2,676	1,182	44	52	1				E
Netherlands	2000	76,927	27,439	36	48					E
	2006	117,392	44,892	38	52	2,993	566	247	167	E
Norway	2000	29,935	7,717	26	51					E
	2006	33,529	9,058	27	50	882	153	64	151	E
Portugal	2000	48,533	19,022	39	74					E
	2006	71,828	23,102	32	60	1,094	196	112	360	E
Spain	2000	260,225	91,195	35	62					E
	2006	285,957	80,830	28	64	7,159	1,342	623	184	E
Sweden	2000	42,390	8,830	21	58					E
	2006	60,762	15,044	25	63	2,660	262	106	426	E
Switzerland	2000	55,970	19,792	35	35					E
	2006	56,320	27,022	48	44	3,198	566	218	422	E
United Kingdom	2000	504,081	154,957	31	55					E
	2006	640,848	195,519	31	56	16,466	2,978	1,530	254	E
USA	2000	2,150,954	877,707	41	56					E
	2006	2,639,006	1,005,047	38	56	56,067	10,912	6,221	142	E
Sub-Saharan Africa										U
Nigeria	1999	58,455			44					U
	2004	174,602			41					U
South Africa	2000	103,203	41,293	40	53					U
	2006	124,676	53,440	43	58	1,100			24	U

Notes:

SSBL denotes social science, business and law as defined by UNESCO and OECD

F Female

Sources:

NSB denotes National Science Board 'Science and Engineering Indicators 2008' Appendix Table 2-40

RICYT Table 20 from http://www.ricyt.edu.ar

E denotes Eurostat: http//epp.eurostat.ec.europa.eu/portal/page/portal/education/data/database

U denotes UNESCO Institute for Statistics

OECD denotes OECD *Education at a Glance* (2008)

Table F > Articles abstracted to the Thomson-Reuters and Scopus databases, 2007

	Thomson-Reuters			Scopus	
	SCI-E	SSCI	A&HCI	SOCSCI	ARTS
Arab States					
Algeria	870	8	1	21	2
Egypt	3,106	58	11	91	7
Tunisia	1,408	24	2	54	4
Central and Eastern Europe					
Bulgaria	1,586	33	5	83	6
Estonia	696	86	8	91	14
Hungary	3,686	172	43	309	70
Latvia	229	16	0	12	0
Lithuania	810	64	54	177	37
Poland	10,615	258	75	426	44
Romania	2,062	69	50	97	29
Russian Federation	21,717	390	114	299	78
Slovakia	1,049	108	71	159	59
Slovenia	1,833	137	39	343	20
Turkey	14,322	848	77	1,052	44
Latin America					
Argentina	4,758	136	52	232	47
Brazil	16,705	813	72	1,627	153
Chile	2,815	207	106	336	82
Colombia	889	113	9	230	16
Mexico	7,727	668	91	423	10
Uruguay	396	13	3	20	0
Venezuela	944	25	13	110	6
East, South Asia and Pacific					
Australia	22,376	4,167	523	4,540	293
China	62,063	1,980	197	5,225	261
Chinese Taipei	16,444	1,341	31	1,481	28
India	26,810	630	51	1,496	90
Indonesia	543	59	9	105	6
Japan	60,557	1,489	109	1,988	103
Korea (Republic of)	22,818	874	72	934	53
New Zealand	4,397	899	121	1,031	83
Singapore	5,449	485	44	582	31
North America and Western Europe					
Austria	7,267	525	84	614	57
Belgium	10,484	1,158	254	1,263	130
Canada	35,763	5,861	1,074	5,719	479
Cyprus	289	68	13	114	4
Czech Republic	5,116	263	86	302	25
Denmark	7,975	833	78	783	59
Finland	7,076	894	87	963	69

Table F > Articles abstracted to the Thomson-Reuters and Scopus databases, 2007 (cont.)

	Thomson-Reuters			Scopus	
	SCI-E	SSCI	A&HCI	SOCSCI	ARTS
France	42,563	2,200	1,018	2,872	396
Germany	59,628	4,678	924	4,651	438
Greece	7,320	457	84	738	65
Iceland	397	62	10	61	4
Ireland	5,045	754	146	592	48
Israel	9,615	1,371	236	1,197	131
Italy	33,355	1,758	362	2,214	181
Luxembourg	176	21	1	33	1
Malta	60	10	4	9	1
Netherlands	18,772	3,573	316	3,559	194
Norway	5,739	992	84	997	61
Portugal	4,938	289	33	463	26
Spain	27,338	2,298	518	2,519	193
Sweden	14,381	1,860	131	1,616	116
Switzerland	14,241	1,302	124	1,310	92
United Kingdom	51,844	12,749	2,426	13,732	1,450
USA*	205,320	40,877	7,367	30,874	2,770
Sub-Saharan Africa					
Nigeria	1,287	112	12	217	16
South Africa	4,226	669	150	778	84

Notes:

Thomson-Reuters:

SCI-E Science Citation Index – Expanded

SSCI Social Science Citation Index

A&HCI Arts and Humanities Citation Index

Scopus:

SOCSCI combines the subject areas of social science, business, psychology and economics

ARTS covers the subject area of arts and humanities

* USA from National Science Board 'Science and Engineering Indicators 2008' Appendix Table 5-34

Annex 2
Bibliographical databases and repositories

This annex provides a brief overview of some of the main bibliographical databases (and bibliometric indices) with relevance to the social sciences. The main aim of this annex is to give the non-expert reader a brief explanation of the differences between the databases used by the various authors in this Report.

Bibliographical databases

Bibliographical databases are indices of publications which mostly include information on the authors, title, date of publication, publisher and so on. They are used primarily to find literature. Since the late twentieth century various national and disciplinary bibliographical databases have been constructed. These databases may be accessible online, and sometimes include links to the full text of the publications.

A specific subset of bibliographical databases can be used for bibliometric analyses. These indices contain standardized data, which, besides the general bibliographical entries, include information on the number of citations the publication has received, those publications to which it refers, and the institutional addresses of the authors. This additional and standardized information allows for the evaluation of the knowledge claims contained in these databases in terms of their visibility, and indicates the number of citations they receive. By extension, the databases are used to evaluate research systems, research organizations and (in combination with peer review) individual researchers. In addition, they are used for mapping the dynamics of science systems. The bibliometric indices currently in use tend to be restricted to publications in a limited set of 'highly visible' journals. For a discussion of the limitations of the existing bibliometric indices for the evaluation of knowledge claims in the social sciences see, among others, Archambault and Larivière and other contributions in Chapter 7 of this Report.

Bibliometric databases

The two main bibliographical databases used for bibliometric analyses are Thomson Reuter's Web of Science (WoS) and Elsevier's Scopus.

The WoS includes the:

- Science Citation Index Expanded (SCI-E), which mainly, though not exclusively, contains the publications in natural and life science journals going back to 1900. The SCI Expanded contained 8,150 journals at the end of 2009.
- Social Science Citation Index (SSCI), which contains journals classified as belonging to the social sciences going back to 1956. The SSCI contained 2,759 journals at the end of 2009.
- Arts and Humanities Citation Index (A&HCI), which contains journals classified as belonging to the arts and humanities going back to 1975. The A&HCI contained 1,516 journals at the end of 2009.

There is some overlap in the coverage of these three main citation indices. Furthermore, the WoS also offers the so-called Journal Citation Reports, which provide various visibility indicators for journals in both the natural and social sciences.

In recent years, Elsevier launched a competitor to the WoS, Scopus. This index offers the analyst a similar data source and similar functionality as that offered by the WoS indices.

As with the WoS, it is also possible to restrict searches to the social sciences or subsets within that broad field. The main difference between the two databases is that the journal coverage is different. According to the information provided on its website, Scopus contains 16,500 journals. It is reported to contain 5,100 social science titles (which encompass more than just journals). The producers of both indexes are actively expanding their coverage, and the figures presented in this section may already have been surpassed. The geographical and linguistic bias of Scopus is said to be lower than that of the WoS. (Most of) Scopus references only go back to 1996 at present.

National science citation indices

Besides these international bibliometric databases, national citation indices have also been developed as of the 1990s. The most prominent examples of these are the Chinese Science Citation Indices and the Chinese Social Science Citation Indices (see also Wei in this Report). The Russian Federation is also making attempts to compile a Russian Science Citation Index (see Pipiya in this Report). In Spain, efforts have been made to establish a Spanish-language counterpart of the Thomson Reuter's WoS Journal Citation Reports in the social sciences (see Cruz and Jimenez in this Report). Considering the limited inclusion of Chinese, Russian and Spanish-language journals in the international citation indices, these different types of national citation indices may play an important role in the evaluation of research in these countries.

Disciplinary bibliographical databases

There are a large number of bibliographical databases which are restricted to journals in a specific disciplinary field. Examples of these disciplinary databases are ECONLIT, Worldwide Political Science Abstracts (WPSA), Sociological Abstracts and Psychinfo. These disciplinary bibliographical databases can also be used for output analyses. For various reasons, they are less suitable for other bibliometric analyses (see also van Raan in this Report).

Other bibliographical databases

A complete list of bibliographical databases would be very long – most libraries worldwide, for example, maintain a bibliographical database of their stocks. See, for example, Ammon (international bibliography of the social sciences) as well as Waast, Arvanitis, Richard-Waast and Rossi in this Report for potential uses of these databases for analyses of social science dynamics. In addition, there are a large number of national and disciplinary bibliographical databases which can be used to identify and retrieve literature from various sources. 'Humanindex' is an example of an institutional bibliographical database containing over 48,000 references to books, articles, presentations and catalogues in the social sciences and humanities produced by the researchers of the Universidad Nacional Autónoma de México.

Open access (journal) repositories

The open access repositories which have been set up in recent years deserve a special mention. Some of these are regionally based, such as AJOL (see Mouton in this Report) in sub-Saharan Africa, and SCIELO, REDALYC and CLACSO in Latin America (see Babini in this Report). See also Perakakis et al. (in this Report) for more information on developments in open access.

JSTOR is an example of a not-for-profit multidisciplinary journal repository which requires a library subscription. Cairn is a portal offering free access to almost 70,000 French- language journal article abstracts and old articles (full text) as well as to recent articles after payment.

Open access repositories

As mentioned in the introduction, there are also repositories containing a wide variety of textual sources. Important examples in the social sciences are, for example, Research Papers on Economics (RePEcs IDEAS), the Social Science Research Network (SSRN), and E-LIS for documents on library and information science. Besides disciplinary repositories, there are also national repositories such as the French CNRS HAL. Finally, there are institutional repositories which contain textual output from a single institution, such as the Igitur Archive Universiteit Utrecht, Universitat Politécnica de Catalunya UPCommons, the Agecon Search Research in Agricultural and Applied Economics, King Fahd University of Petroleum and Minerals ePrints, and Kyoto University Research Information Repository. Examples and visibility rankings of general repositories and institutional repositories can be found at http://repositories.webometrics.info/top400_rep_inst.asp. Apart from open access repositories, there are also services that only collect and store information for subscribers.

Journal directories

A final subset of bibliographical databases which should be mentioned here consists of the journal directories compiled by, among others, Ulrich. This Ulrich directory contains bibliographical and publisher information for more than 300,000 periodicals of all types – including academic peer-reviewed journals but also popular magazines, newspapers,

newsletters and so on. In contrast to the bibliographical and bibliometric databases discussed in this annex, these journal directories do not contain data on individual articles. While unsuitable for bibliometric analyses, they may be complementary. Several authors in this Report have made use of this directory to make statements about the geographical and linguistic biases of existing bibliometric databases (see also Archambault and Larivière as well as Gingras and Mosbah-Natanson in this Report).

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Annex 3
Supplementary figures and tables

Annex to Chapter 4

Table A4.6 > Development of inter-regional collaboration links over time

	Period	North America	Western Europe	Southern, Central and Eastern Europe and CIS	Arab States	East Asia and the Pacific	South Asia	Latin America and the Caribbean	Sub-Saharan Africa	Oceania
North America	1989–1993	x	0.607	0.330	0.089	0.313	0.160	0.215	0.154	0.219
	1994–1998	x	0.570	0.285	0.068	0.355	0.125	0.218	0.137	0.188
	1999–2003	x	0.580	0.249	0.065	0.296	0.091	0.198	0.141	0.180
	2004–2008	x	0.566	0.221	0.059	0.306	0.092	0.191	0.127	0.152
Western Europe	1989–1993	0.607	x	0.098	0.047	0.070	0.060	0.059	0.067	0.146
	1994–1998	0.570	x	0.192	0.049	0.087	0.057	0.081	0.110	0.163
	1999–2003	0.580	x	0.203	0.058	0.123	0.075	0.102	0.147	0.181
	2004–2008	0.566	x	0.215	0.064	0.147	0.085	0.125	0.139	0.202
Southern, Central and Eastern Europe and CIS	1989–1993	0.330	0.098	x	0.000	0.013	0.013	0.007	0.000	0.021
	1994–1998	0.285	0.192	x	0.009	0.018	0.004	0.006	0.004	0.020
	1999–2003	0.249	0.203	x	0.011	0.018	0.008	0.006	0.008	0.017
	2004–2008	0.221	0.215	x	0.012	0.016	0.015	0.009	0.006	0.024
Arab States	1989–1993	0.089	0.047	0.000	x	0.000	0.008	0.007	0.014	0.005
	1994–1998	0.068	0.049	0.009	x	0.003	0.000	0.000	0.011	0.007
	1999–2003	0.065	0.058	0.011	x	0.014	0.017	0.017	0.011	0.008
	2004–2008	0.059	0.064	0.012	x	0.003	0.019	0.010	0.010	0.021
East Asia and the Pacific	1989–1993	0.313	0.070	0.013	0.000	x	0.027	0.002	0.116	0.071
	1994–1998	0.355	0.087	0.018	0.003	x	0.028	0.010	0.039	0.095
	1999–2003	0.296	0.123	0.018	0.014	x	0.030	0.014	0.032	0.107
	2004–2008	0.306	0.147	0.016	0.003	x	0.047	0.012	0.027	0.124

Table A4.6 > Development of inter-regional collaboration links over time (cont.)

	Period	North America	Western Europe	Southern, Central and Eastern Europe and CIS	Arab States	East Asia and the Pacific	South Asia	Latin America and the Caribbean	Sub-Saharan Africa	Oceania
South Asia	1989–1993	0.160	0.060	0.013	0.008	0.027	X	0.008	0.016	0.028
	1994–1998	0.125	0.057	0.004	0.000	0.028	X	0.019	0.015	0.027
	1999–2003	0.091	0.075	0.008	0.017	0.030	X	0.014	0.021	0.039
	2004–2008	0.092	0.085	0.015	0.019	0.047	X	0.016	0.018	0.014
Latin America and the Caribbean	1989–1993	0.215	0.059	0.007	0.007	0.002	0.008	x	0.014	0.015
	1994–1998	0.218	0.081	0.006	0.000	0.010	0.019	x	0.015	0.011
	1999–2003	0.198	0.102	0.006	0.017	0.014	0.014	x	0.019	0.010
	2004–2008	0.191	0.125	0.009	0.010	0.012	0.016	x	0.022	0.029
Sub–Saharan Africa	1989–1993	0.154	0.067	0.000	0.014	0.116	0.016	0.014	x	0.022
	1994–1998	0.137	0.110	0.004	0.011	0.039	0.015	0.015	x	0.021
	1999–2003	0.141	0.147	0.008	0.011	0.032	0.021	0.019	x	0.031
	2004–2008	0.127	0.139	0.006	0.010	0.027	0.018	0.022	x	0.034
Oceania	1989–1993	0.219	0.146	0.021	0.005	0.071	0.028	0.015	0.022	x
	1994–1998	0.188	0.163	0.020	0.007	0.095	0.027	0.011	0.021	x
	1999–2003	0.180	0.181	0.017	0.008	0.107	0.039	0.010	0.031	x
	2004–2008	0.152	0.202	0.024	0.021	0.124	0.014	0.029	0.034	x

Table A4.7 > Countries by region

1	North America	Canada , USA
2	Western Europe	Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Wales, England, Scotland, Northern Ireland
3	Southern, Central and Eastern Europe and CIS	Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Cyprus, Czech Republic, Estonia, Georgia, Hungary, Israel, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Montenegro, Poland, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Slovenia, The former Yugoslav Republic of Macedonia, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan
4	Arab States	Algeria, Bahrain, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Morocco, Oman, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates, Yemen
5	East Asia and the Pacific	Brunei Darussalam, Cambodia, China, Fiji, Hong Kong (China) SAR, Indonesia, Japan, Kiribati, Lao People's Democratic Republic, Malaysia, Marshall Islands, Micronesia, Mongolia, Myanmar, Nauru, Palau, Papua New Guinea, Philippines, Republic of Korea, Samoa, Singapore, Solomon Islands, Thailand, Tonga, Tuvalu, Vanuatu, Viet Nam
6	South Asia	Afghanistan, Bangladesh, Bhutan, India, Islamic Republic of Iran, Maldives, Nepal, Pakistan, Sri Lanka
7	Latin America and the Caribbean	Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela
8	Sub-Saharan Africa	Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, São Tomé and Príncipe, Senegal, Seychelles, Sierra Leone, South Africa, Swaziland, Togo, United Republic of Tanzania, Uganda, Zambia, Zimbabwe
9	Oceania	Australia, New Zealand

Annex to Chapter 5

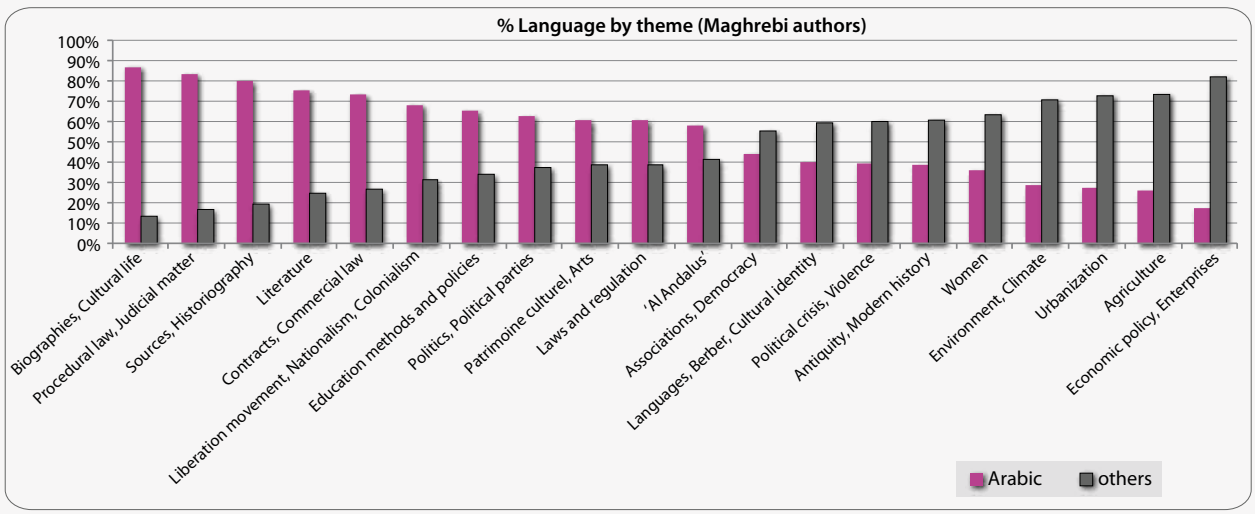
Table A5.2 > Evolution (emergence and decline) of the main scientific themes in the social sciences in the Maghreb

Themes	1980–1986	1987–1992	1993–1998	1999–2004
Procedure, judicial precedents	-8,5	-8,8	-6,4	18,7
Contracts, Corporate law	-2,4	0,0	-4,0	5,1
Literature, Arts and civilization, Poetry	-5,5	-3,0	-6,4	12,0
Laws and regulations	-2,0	-5,0	0,0	5,0
New themes**	-8,0	-3,0	0,0	9,0
Politics, political parties	-4,5	-3,2	0,0	7,4
Political crisis, Islam in politics	-8,7	-2,9	3,5	5,0
Languages, Berber, Cultural identity	-7,9	-4,6	0,0	7,9
Cultural heritage	-6,0	0,0	-3,0	7,0
Environment, Climate	-6,0	0,0	8,0	-4,0
Sources, Historiography	-3,0	0,0	5,0	0,0
Women, Women's condition	-3,5	3,4	3,4	-3,3
Economic policy, Enterprises	0,0	5,2	11,0	-14,2
Urbanization	0,0	4,2	0,0	-3,3
'Al Andalus'	0,0	6,6	0,0	-4,4
Antiquity, Modern history	5,6	7,3	-5,1	-14,4
Liberation movements, Nationalism	5,7	0,0	0,0	-4,6
Agriculture	7,2	3,6	5,3	-12,7
Education methods and policies	0,0	0,0	0,0	2,4
Biographies, Cultural life	0,0	0,0	0,0	0,0

Notes: Figures in the table represent a v-test of a theme which measures whether the theme is over-represented (v > 0), under-represented (v < 0) or normally represented (v = 0) in the corpus during a period of time. We highlighted, for each theme: in yellow, its emergence (v becomes > 0), in green, its apex (v is maximum), in orange its slowdown (v decreases) and in red its regression.

** New themes that appeared in the last period and thus have no precedent: Associations and democracy; Local development; Communication and media; Human rights.

Figure A5.4 — Language and themes in the social sciences in the Maghreb, 1985–2004



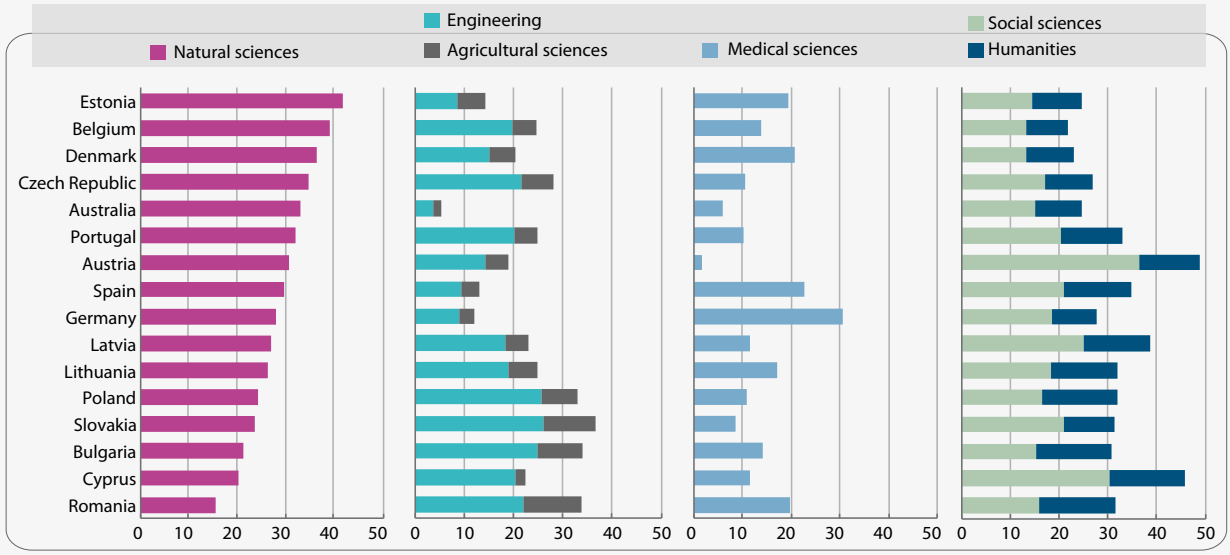
Annex to Chapter 8

Table A8.3 > Median age at graduation of doctorate holders having

		ARG	AUS	AUT	BEL	BGR	CHE	CYP	CZE	DNK	ESP
Natural sciences	Women		31.0	30.4	28.0	34.0	30.0	29.0	36.0	31.8	29.0
	Men		31.0	31.4	28.0	35.0	30.0	28.0	38.0	30.9	30.0
	Total	**34.0**	**30.0**	**31.1**	**28.0**	**35.0**	**30.0**	**29.0**	**39.5**	**31.1**	**30.0**
Engineering	Women		31.0	30.9	29.0	34.0	30.0	0.0	33.5	31.7	31.0
	Men		31.0	32.5	28.0	45.0	31.0	28.0	40.0	31.1	32.0
	Total	**33.0**	**31.0**	**32.4**	**28.0**	**44.0**	**31.0**	**28.0**	**39.5**	**31.2**	**32.0**
Medical sciences	Women		35.0	27.8	28.0	42.0	30.0	37.0	37.0	36.2	33.0
	Men		35.0	32.7	30.0	44.0	32.0	34.0	38.5	34.7	34.0
	Total	**33.0**	**35.0**	**28.8**	**29.0**	**43.0**	**31.0**	**36.0**	**40.0**	**35.2**	**33.0**
Agricultural sciences	Women		34.0	30.8	31.0	30.0	29.0		32.0	33.9	30.0
	Men		34.0	29.6	29.0	39.0	31.0		35.0	33.8	33.0
	Total		**33.0**	**30.1**	**30.0**	**34.0**	**30.0**		**35.5**	**33.9**	**31.0**
Social sciences	Women		41.0	28.4	30.0	35.0	0.0	31.0	37.5	34.2	35.0
	Men		41.0	30.5	33.0	37.0	0.0	42.0	40.0	33.3	37.0
	Total	**34.0**	**41.0**	**30.1**	**31.0**	**37.0**	**0.0**	**37.0**	**41.5**	**34.0**	**36.0**
Humanities	Women		40.0	33.8	29.0	39.0	36.5	36.0	37.5	38.5	36.0
	Men		40.0	39.7	31.0	37.0	36.0	40.0	35.0	35.8	38.0
	Total	**34.0**	**40.0**	**33.8**	**30.0**	**39.0**	**36.0**	**39.0**	**37.5**	**36.8**	**37.0**
All fields	Women		34.0	30.3	29.0	35.0	31.0	31.0	36.5	34.1	31.0
	Men		34.0	31.5	29.0	40.1	31.0	33.0	38.3	32.4	33.0
	Total	**34.0**	**34.0**	**31.1**	**29.0**	**38.0**	**31.0**	**32.0**	**39.5**	**33.1**	**32.0**

Sources: OECD, 2009, OECD/UNESCO Institute for Statistics/Eurostat data collection on careers of doctorate holders.

Figure A8.5 — Distribution of 1990–2006 doctoral graduates over main fields of science (selected OECD countries), 2006



received their degree between January 2005 and December 2006 (selected OECD countries)

EST	FIN	ISL	JPN	LTU	LTV	NOR	POL	PRT	ROM	SVK	SWE	USA
36.0	32.0	31.0	28.0	31.0	32.0	32.0	31.0	33.0	34.0	29.0	32.0	30.2
32.0	32.0	31.0	30.0	32.0	33.0	31.5	30.0	34.0	36.0	31.0	32.0	30.7
30.0	**32.0**	**31.0**		**31.0**	**32.0**	**31.7**	**30.0**	**34.0**	**35.0**	**31.0**	**32.0**	**30.5**
37.0	34.0		33.5	31.0	32.0	30.7	32.0	34.0	38.0	30.0	32.0	30.2
32.0	33.0		34.0	29.0	32.0	31.1	32.0	36.0	43.0	30.0	32.0	31.0
34.5	**33.0**			**30.0**	**42.0**	**31.0**	**32.0**	**36.0**	**40.0**	**30.0**	**32.0**	**30.8**
38.0	38.0	32.0	33.5	35.0		38.5	33.0	39.0	39.0	39.5	37.0	37.2
31.0	36.0	42.0	32.0	38.0		38.3	33.0	42.0	42.0	34.0	38.0	34.6
32.5	**37.0**	**33.0**		**37.0**		**38.4**	**33.0**	**42.0**	**40.0**	**37.0**	**37.0**	**36.1**
49.0	35.0		32.5	32.0		33.2	30.0	37.0	36.0	33.0	33.0	33.1
48.0	39.0		33.5	32.0		36.1	31.5	38.0	38.0	29.0	36.0	33.4
32.0	**35.0**			**32.0**		**34.3**	**31.0**	**38.0**	**37.0**	**31.0**	**34.5**	**33.2**
33.0	40.0	35.0	32.0	30.0	42.0	40.2	31.0	40.0	34.0	30.0	37.5	36.1
35.0	40.0	38.0	35.0	29.0		39.0	31.0	40.0	39.0	29.0	37.0	35.9
31.0	**40.0**	**36.5**		**29.0**	**35.0**	**39.4**	**31.0**	**40.0**	**36.0**	**30.0**	**37.0**	**36.0**
34.0	41.0		44.0	34.0		37.9	31.0	42.0	40.0	34.0	39.0	34.7
33.0	41.0		34.5	31.0		38.4	31.5	44.0	42.0	31.0	38.0	35.3
37.5	**41.0**			**34.0**	**35.0**	**38.2**	**31.0**	**42.0**	**41.0**	**31.5**	**39.0**	**35.0**
37.0	37.0	34.0	33.0		37.0	36.0	31.0	38.0	37.0	31.0	34.0	33.2
32.0	35.0	32.5	32.0		33.0	34.4	31.0	38.0	39.0	31.0	33.0	32.4
33.0	**36.0**	**33.0**			**33.0**	**35.0**	**31.0**	**38.0**	**38.0**	**31.0**	**33.0**	**32.7**

Table A8.4 > Breakdown of 1990–2006 employed

	Austria	Canada	Cyprus	Czech Republic	Denmark
LEGISLATORS, SENIOR OFFICIALS AND MANAGERS	17.6	10.3	27.3	10.4	13.6
PROFESSIONALS	67.0	87.2	72.7	80.7	77.0
Physical, mathematical and engineering science professionals	1.5	14.4	3.0	3.7	3.9
Life science and health professionals	0.6	3.7	2.0	0.4	1.9
Teaching professionals	15.9	41.3	59.6	54.6	48.5
Other professionals	49.0	27.8	8.1	22.1	22.7
Business professionals	8.1	5.1	3.0	2.9	7.4
Legal professionals	26.1	0.3	0.0	6.8	2.7
Archivists, librarians and related information professionals	0.4	0.6	1.0	0.6	0.0
Social science and related professionals	13.9	19.1	3.0	7.8	12.6
Writers and creative or performing artists	0.4	2.7	1.0	0.1	0.0
Religious professionals	0.1	0.0	0.0	0.0	0.0
OTHER OCCUPATIONS	15.4	2.5	0.0	8.8	9.4
TOTAL	100.0	100.0	100.0	100.0	100.0

Note: All doctoral graduates for Canada and Iceland, 1987–2005 doctoral graduates and 2005 data for Denmark, 1990–2006 doctoral graduates for the other countries.

Sources: OECD (2009), OECD/UNESCO-UIS/Eurostat data collection on careers of doctorate holders.

social science doctoral graduates by occupation in selected OECD countries, 2006

Germany	Iceland	Latvia	Lithuania	Poland	Portugal	Romania	Slovakia	Spain	USA
7.6	22.9	12.3	7.7	1.5	2.6	9.2	2.8	3.4	6.5
77.5	77.1	87.0	92.3	96.1	96.5	82.4	83.2	93.6	91.7
14.3	0.0	4.4	0.9	1.5	0.5	0.2	1.7	0.9	2.2
	4.6	0.0	2.6	0.3	0.3	0.1	0.9	2.0	2.5
17.6	51.7	71.3	68.3	80.5	90.4	67.7	63.1	78.8	38.9
43.5	15.0	11.3	20.5	13.7	5.2	14.3	17.6	9.8	48.2
15.1	1.3	1.7	7.0	7.7	0.2	0.6	2.3	2.0	4.5
17.6	0.0	2.0	6.4	2.1	0.9	8.6	3.4	4.4	0.3
	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.4	0.2
	12.5	6.1	7.2	3.5	4.0	4.7	9.1	2.8	42.0
	0.0	0.7	0.0	0.0	0.0	0.4	0.6	0.2	0.7
	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.2
14.9	0.0	0.7	0.0	2.4	0.9	8.4	13.9	3.0	1.8
100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Abbreviations and acronyms

A&H	Arts and humanities
A&HCI	Arts and Humanities Citation Index
AAPS	African Association of Political Science
AASSREC	Association of Asian Social Science Research Councils
AAU	African Association of Universities
ACLS	American Council of Learned Societies
ACSS	Arab Council for the Social Sciences
AERC	African Economic Research Consortium
AERC	Applied Economics Research Centre (Pakistan)
AFREPREN/FWD	African Energy Policy Research Network/Foundation for Woodstove Dissemination
AHCI	Arts and Humanities Citation Index
AHELO	Assessment of Higher Education Learning Outcomes
AIDS	Acquired Immune Deficiency Syndrome
AILA	Association Internationale de Linguistique Appliquée [International Association of Applied Linguistics]
AJOL	African Journals Online
ALRN	African Labour Research Network
ANECA	Agencia Nacional de Evaluación de la Calidad y Acreditación [National Agency for Quality Assessment and Accreditation (Spain)]
AP	Asia-Pacific
ARG	Argentina
ASSAF	Academy of Science of South Africa
ASSC	Arab Council for the Social Sciences
AU	African Union
AUS	Australia
AUT	Association of University Teachers
BEL	Belgium
BERD	business sector expenditure on research and development
BGR	Bulgaria
BIREME-OPS	Biblioteca Regional de Medecina–Organización Panamericana de la Salud [Regional Library of Medicine–Pan-American Health Organization]
BOAI	Budapest Open Access Initiative
BPO	business process outsourcing
BRCSS	Building Research Capability in the Social Sciences
BREAD	Bureau for Research and Economic Analysis of Development

BRIC	Brazil, Russia, India and China
BSLM	Behavioural Science Learning Module
BSSRC	Bangladesh Social Science Research Council
CAPES	Coordenação de Aperfeiçoamento de Pessoal de Nível Superior [Coordinating Agency for the Improvement of Higher Education] (Brazil)
CAS	Chinese Academy of Sciences
CASS	Chinese Academy of Social Sciences
CAUT	Canadian Association of University Teachers
CBR	Centre for Basic Research (Uganda)
CDH	Careers of Doctorate Holders
CDR	Centre for Development Research (Denmark)
CEBRAP	Centro Brasileiro de Análise e Planejamento [Brazilian Centre of Analysis and Planning] (Brazil)
CEDES	Centro de Estudios de Estado y Sociedad [Centre for the Study of State and Society] (Argentina)
CERI	Centre for Educational Research and Inovation (France)
CESSDA	Council of European Social Science Data Archives
CHE	Switzerland
CHERPA	Consortium for Higher Education and Research Performance Assessment (European)
CHSSCD	Chinese Humanities and Social Sciences Citation Database
CINVESTAV	Centro de Investigación y de Estudios Avanzadas [Center for Research and Advanced Studies of the National Polytechnic Institute] (Mexico)
CIS	Commonwealth of Independent States
CISEA	Centro de Investigationes Sociales sobre el Estado y la Administración [Centre of Social Research on the State and Administration] (Argentina)
CLACSO	Consejo Latinoamericano de Ciencias Sociales [Latin American Council Social Sciences]
CLAD-SIARE	Centro Latinoamericano de Administración para el Desarrollo [Latin American Center for Development Management – Analytical Information System on Public Sector Reform]
CNA	Consejo Nacional de Acreditación [National Council of Accreditation] (Colombia)
CNEAI	Comisión Nacional Evaluadora de la Actividad Investigadora [National Commission for the Evaluation of Research Activity] (Spain)
CNPq	Conselho Nacional de Desenvolvimento Científico e Tecnológico [National Council for Scientific and Technological Development] (Brazil)
CNRS	Centre National de Recherche Scientifique [National Centre of Scientific Research] (France)
CO-REACH-SSR	Co-ordination of Research between Europe and China – Social Science Research
CODESRIA	Council for the Development of Social Science Research in Africa
CONACYT	Consejo Nacional de Ciencia y Tecnología [National Council on Science and Technology] (Mexico)
CONICET	Consejo Nacional de Investigaciones Científicas y Técnicas [National Council of Scientific and Technical Research] (Argentina)
COSH	Centre of Social Sciences and Humanities (Pakistan)
COSS	Council of Social Sciences (Pakistan)
COST	European Cooperation in Science and Technology
CPP	citations per publication
CRE	Centre of Research Excellence
CREST	Centre for Research on Science and Technology (South Africa)
CROP	Comparative Research Programme on Poverty (based in Norway)
CSDS RAS	Centre for Science Development Studies of Russian Academy of Sciences
CSIC	Consejo Superior de Investigaciones Científicas [Superior Council for Scientific Research] (Spain)
CSIR	Council of Scientific and Industrial Research (India)
CSSCI	Chinese Social Science Citation Index
CYP	Cyprus
CZE	Czech Republic

DANIDA	Danish International Development Assistance
DARPA	Defense Advanced Research Projects Agency (USA)
DICE	Difusión y Calidad Editorial de las Revistas Españolas de Humanidas y Ciencias Sociales y Jurídicas [Diffusion and Editorial Quality of Spanish Journals of Humanities, Social Sciences and Law]
DNK	Denmark
DOAJ	Directory of Open Access Journals
ECLA	Economic Commission for Latin America
ECPR	European Consortium for Political Research
EHESS	École des Hautes Études en Sciences Sociales [School for Advanced Studies in the Social Sciences] (France)
E-LIS	E-prints in Library and Information Science
EP	environmental psychology
ERA	Excellence in Research for Australia
ERC	European Research Council
ESCWA	United Nations Economic and Social Commission for Western Asia
ESF	European Science Foundation
ESFRI	European Strategy Forum on Research Infrastructures
ESP	Spain
ESRC	Economic and Social Research Council (UK)
ESS	European Social Survey
EST	Estonia
ESTIME	Évaluation des Capacities Scientifiques, Techniques et d'Innovation des Pays Méditerranéens [Evaluation of Scientific, Technology and Innovation Capabilities in Mediterranean Countries]
ETH	Eidgenössische Technische Hochschule [Swiss Federal Institute of Technology]
ETP	Extra-Teacher Program
EU	European Union
EURAB	Europe Research Advisory Board
FAPESP	Fundação de Amparo à Pesquisa do Estado de São Paulo [Sao Paulo Research Foundation]
FCSM	Field Citation Score Mean
FIN	Finland
FINEP	Financiadora de Estudos e Projetos [Brazilian Innovation Agency]
FLACSO	Facultad Latinoamericana de Ciencias Sociales [Latin American Social Sciences Faculty]
FNDCT	Fundo Nacional de Desenvolvimento Científico e Tecnológico [National Fund for Scientific and Technological Development] (Brazil)
FoS	Fields of Science
FP	Framework Programme
FRIDA	Forskningsresultater, informasjon og dokumentasjon av vitenskapelige aktivitetekauppir [Research results, information and documentation of scientific activities]
FTE	full-time equivalent
G20	Group of Twenty
GAL	Gesellschaft für Angewandte Linguistik [Society for Applied Linguistics] (Germany)
GDI	gross domestic income
GDP	gross domestic product
GECHS	Global Environmental Change and Human Security
GERD	gross expenditure on research and development
GI	government issue
GOVERD	government expenditure on research and development
GUNI	Global University Network for Innovation
HC	headcount
HE	higher education

HEFCE	Higher Education Funding Council for England
HEI	higher education institution
HERD	higher education expenditure on research and development
HESA	Higher Education Statistics Agency (UK)
HIV	human immunodeficiency virus
HSRC	Human Sciences Research Council (South Africa)
IAS	Institute for Advanced Study (USA)
IAS-Fudan	Fudan Institute for Advanced Study in Social Sciences (China)
IBBS	International Bibliography of the Social Sciences
IBE	International Bureau of Education
IBH	India Book House
ICOPHIL	International Conference on Philippine Studies
ICREA	Institució Catalana de Recerca i Estudis Avançats [Catalan Institution of Research and Advanced Studies]
ICSSR	Indian Council of Social Science Research
ICT	information and communications technologies
IDB	Inter-American Development Bank
IDRC	International Development Research Centre (Canada)
IEMED	Institut Europeu de la Mediterrània [European Institute of the Mediterranean]
IESALC	Institut International de l'UNESCO pour l'Éducation Supérieure en Amérique Latine et dans les Caraïbes [UNESCO International Institute for Higher Education in Latin America and the Caribbean]
IFLA	International Federation of Library Associations and Institutions
IFPRI	International Food Policy Research Institute
IFSP	International Forum on the Social Science–Policy Nexus
IHDP	International Human Dimensions Programme
IHEP	Institute of Higher Education Policy (USA)
IIT	Indian Institute of Technology
IMF	International Monetary Fund
INASP	International Network for the Availability of Scientific Publications
INR	Indian Rupee
IOM	International Organization for Migration
IOR	institutional online repository
IPPR	Institute for Public Policy Research (UK)
IPS	Institute of Policy Studies (USA)
IPSA	International Political Science Association
IRD	Institut de Recherche pour le Développement [Research Institute for Development] (France)
ISCED	International Standard Classification of Educational Disciplines
ISF	International Science Foundation (USA)
ISI	Institute for Scientific Information
ISL	Iceland
ISS RAS	Institute for the Study of Science of the Russian Academy of Sciences
ISSC	International Social Science Council
IT	information technology
ITN	Insecticide-Treated Net
IUPSYS	International Union of Psychological Science
IWT	Institut für Wissenschafts und Technikforschung [Institute for Science and Technology Studies] (Germany)
JCR	Journal Citation Reports
JET	Joint Education Trust (UK)

JPN	Japan
JUST	Jordan University of Science and Technology
LA	Latin America
LAC	Latin America and the Caribbean
LSE	London School of Economics (UK)
LTU	Lithuania
LTV	Latvia
MA	Masters
MASS	Maori Association of Social Scientists
MCT	Ministério da Ciência e Tecnologia [Ministry of Science and Technology] (Brazil)
MDG	Millennium Development Goals
MEC	Ministerio de Educação [Ministry Education] (Brazil)
MED	Medical Papers
METRIS	Monitoring European Trends in Social Sciences and Humanities
MICIT	Ministerio de Ciencia y Tecnología [Ministry of Science and Technology] (Costa Rica)
MINCYT	Ministerio de Ciencia, Tecnología e Innovación Productiva [Ministry of Science and Technology] (Argentina)
MIT	Massachusetts Institute of Technology (USA)
MOE	Ministry of Education
MORST	Ministry of Research, Science and Technology (New Zealand)
MOST	Ministry of Science and Technology
NBER	National Bureau of Economic Research (USA)
NCES	National Center for Education Statistics
NEPAD	New Partnership for Africa's Developement
NGO	non-governmental organization
NIES	National Institute for Education Statistics (USA)
NIH	National Institute of Health (USA)
NISC	National Inquiry Service Centre (USA)
NOR	Norway
NORAD	Norwegian Agency for Development Cooperation
NORFACE	New Opportunities for Research Funding Agency Cooperation in Europe
NPO	not-for-profit organization
NSB	National Science Board (USA)
NSE	natural sciences and engineering
NSF	National Science Foundation (USA)
NUS	National University of Singapore
NWO	Nederlandse Organisatie voor Wetenschappelijk Onderzoek [Netherlands Organization for Scientific Research]
NYC	New York City
NYU	New York University
OA	open access
OAU	Organization of African Unity
OECD	Organisation for Economic Co-operation and Development
OJS	open journal system
OMC	open method of coordination
OSSREA	Organization for Social Science Research in Eastern and Southern Africa
PAASE	Philippine-American Academy of Science and Engineering
PhD	doctor of philosophy
PIDE	Pakistan Institute for Development Economics

PLO	Palestine Liberation Organization
PNPG	National Postgraduate Programmes
PNPG	Planos Nacionais de Pós-graduação [Brazilian Graduate Programmes]
POL	Poland
PPI	Programa de Promoción del Investigador [Programme for the Promotion of Researchers] (Venezuela)
PPI	public–private initiative
PPP	purchasing power parity
PRO	public research organization
PROGRESA	Programa Educación, Saludy Alimentacion [Education, Health and Nutrition Programme of Mexico]
PRSPs	Poverty Reduction Strategy Papers
PRT	Portugal
QS	Quacquarelli Symonds
R&D	research and development
RAE	Research Assessment Exercise (UK)
RAEC	Red Académica Electrónica de CLACSO [CLACSO's Electronic Academic Network]
RAS	Russian Academy of Sciences
RCUK	Research Council UK
RECS	Revistas Españolas de Ciencias Sociales [Spanish Journals of Social Sciences]
REDALYC	Red de Revistas Científicas de América Latina y el Caribe, España y Portugal [Network of Scientific Journals of Latin America and the Caribbean, Spain and Portugal]
REDUC	Red Latinoamericana de Información y Documentación en Educación [Latin America Network of Information and Documentation on Education]
REPEC	Research Papers in Economics
RESH	Revistas Españolas de Ciencias Sociales y Humanas [Spanish Journals of Social and Human Sciences]
RFBR	Russian Foundation for Basic Research
RFH	Russian Foundation for Humanities
RICARDIS	Reporting Intellectual Capital to Augment Research, Development and Innovation in SMEs
RICYT	Red de Indicadores de Ciencia y Tecnología [Network of Science and Technology Indicators]
ROM	Romania
ROSSTAT	Federal State Statistics Service (Russian Federation)
RQAN	Return of Qualified African Nationals
RQF	Research Quality Framework
RSA	related scientific activity
S&E	science and engineering
S&T	science and technology
SA	South Africa
SADC	Southern African Development Community
SAHARA	Social Aspects of HIV/AIDS Research Alliance
SAPES	Southern Africa Political Economy Series
SARUA	Southern African Regional Universities Association
SCAS	Swedish Collegium for Advanced Study
SCI	Science Citation Index
SCI-E	Science Citation Index Expanded
SCIELO	Scientific Electronic Library Online
SESTAT	Scientists and Engineers Statistical Data System
SET	Science, Engineering and Technology
SHARE	Survey of Health, Ageing and Retirement in Europe
SIDA/SAREC	Swedish International Development Cooperation Agency/SIDA's Department for Research Cooperation
SIR	Scimago Institutional Ranking

SJTUIHE	Shanghai Jiao Tong University Institute of Higher Education
SME	small and medium enterprises
SNI	Sistema Nacional de Investigadores [National System of Researchers]
SPEaR	Social Policy Evaluation and Research
SPRU	Science and Technology Policy Research Unit, University of Sussex
SS	social sciences
SS&H	social sciences and humanities
SSA	sub-Saharan Africa
SSBL	social science, business and law
SSCI	Social Science Citation Index
SSH	social sciences and humanities
SSHRC	Social Sciences and Humanities Research Council
SSRC	Social Science Research Council
ST&I	science, technology and innovation
STEM	science, technology, engineering and mathematics
STI	science, technology and innovation
SU-HSE	State University Higher School of Economics (Russian Federation)
SVK	Slovakia
SWE	Sweden
TAC	Treatment Action Campaign
TB	tuberculosis
THES	Times Higher Education Supplement
TRIPs	Trade-Related Aspects of Intellectual Property Rights
UAEM	Universidad Autónoma de Estado de México [Mexico State Autonomous University]
UCLA	University of California Los Angeles
UGC	University Grants Commission
UIS	UNESCO Institute for Statistics
UK	United Kingdom
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UNU-CRIS	United Nations University-Comparative Regional Integration Studies
UNU-IAS	United Nations University-Institute of Advanced Studies
UOE	UNESCO-UIS/OECD/Eurostat
UQAM	Université du Québec à Montréal [Québec University in Montréal]
US	United States of America
USA	United States of America
USAID	United States Agency for International Development
USD	United States dollar
WoS	Web of Science
WHO	World Health Organization
WTO	World Trade Organization
WW	World War
WWW	World Wide Web
ZiF	Zentrum für Interdisziplinäre Forschung [Centre for Interdisciplinary Research] (Germany)

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The International Social Science Council (ISSC) is an independent, non-governmental organization and the primary international body representing the social, behavioural and economic sciences at a global level. It was founded by UNESCO in 1952.

The Council has a wide membership, from which it draws its strength and its role. ISSC members include:
- international disciplinary associations or unions;
- national academies of science or social science;
- national research councils;
- regional associations of social sciences; and
- other national and international agencies and foundations.

The ISSC's mission is to advance the social sciences – their quality, novelty and utility – in all parts of the world and to ensure their effective global representation.

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- determining priorities for the future of international social science;
- providing global platforms to articulate, and strengthen, social science expertise on the most urgent questions of the day;
- strengthening social sciences in developing and transitioning societies;
- fostering international collaboration on the basis of equal partnerships;
- collecting, analysing and disseminating data on social science systems and resources, their availability and impact in different parts of the world;
- broadening inter-disciplinary collaboration among the social sciences, and expanding exchange and joint work between the social sciences, the humanities, natural and other sciences;
- linking social science knowledge effectively to public policies and local needs;
- advancing the social science literacy of citizens.

In addition to producing regular *World Social Science Reports*, key ISSC activities include the convening of World Social Science Fora, the co-sponsorship of international scientific programmes and research networks, as well as actions aimed at developing a future generation of world social science leaders.

The ISSC secretariat is based in Paris and directed by Heide Hackmann, Secretary-General.

The *2010 World Social Science Report* has been produced by an Editorial Team selected and appointed by the ISSC, and was led by Françoise Caillods, Senior Managing Editor.

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