

Chapter 8

Disseminating social sciences



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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
- form 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



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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.

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.☺

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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).⁵

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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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 science¹ 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.

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 complete 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

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.

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

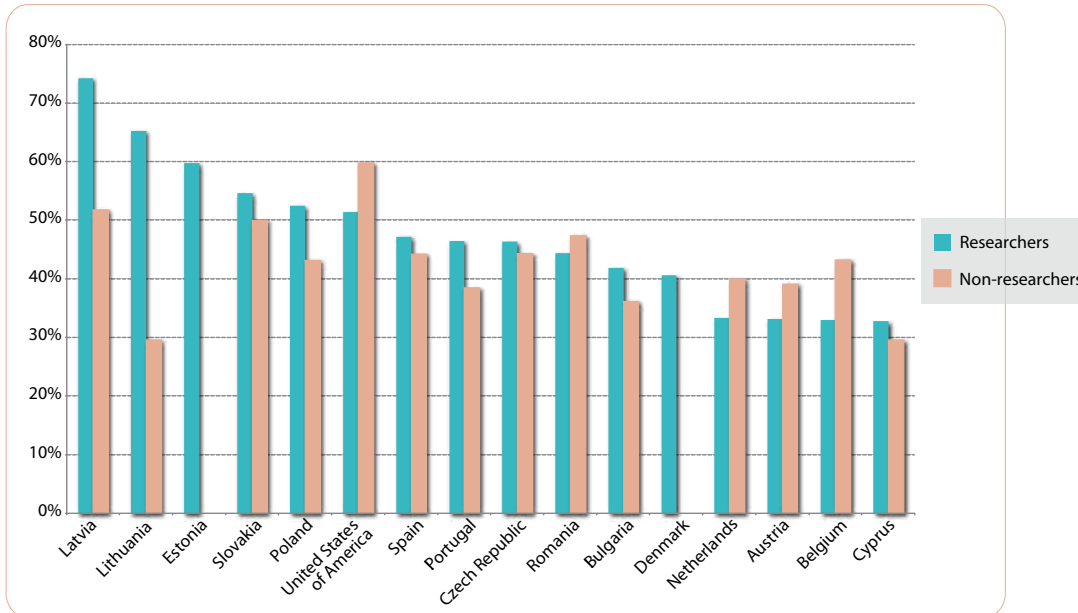
whole population of tertiary graduates, and also higher than for the whole population of employed persons. Here only 10 to 15 per cent of the population is aged 55 to 64, except in Sweden, where it is closer to 20 per cent.

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



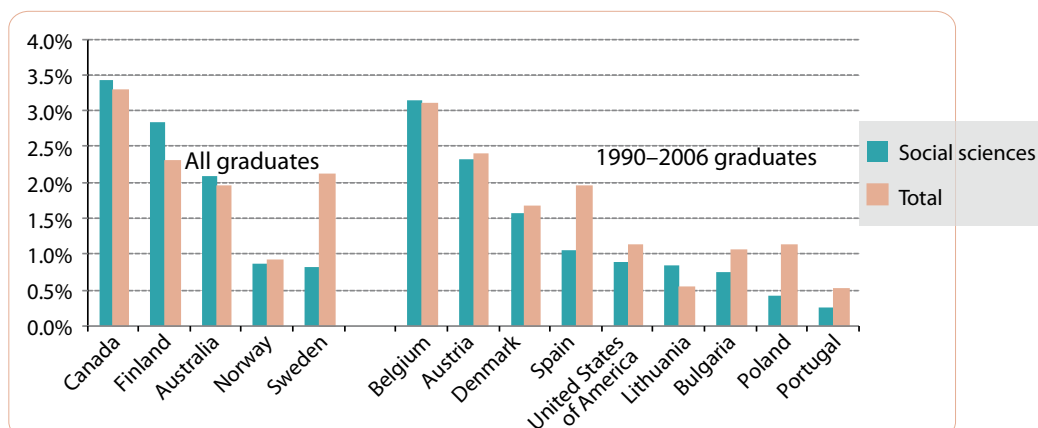
Note: 2005 data for Belgium and the Netherlands; 1987–2005 doctoral graduates and 2005 data for Denmark.
Sources: OECD (2009), OECD/UNESCO-UIS/Eurostat data collection on careers of doctorate holders.

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

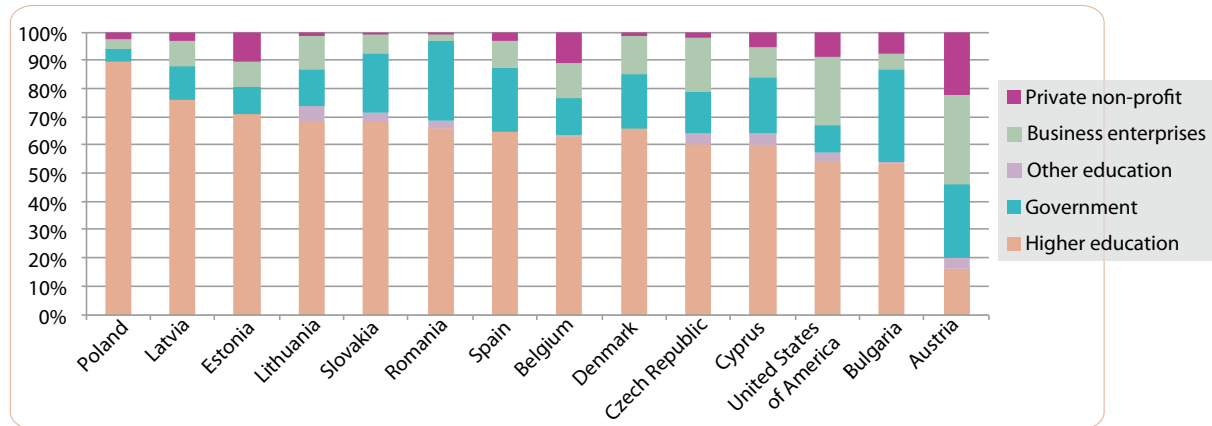
countries for which data is available, unemployment rates of holders of social science doctorates are lower than for the whole population of doctorate holders. Exceptions are Australia, Belgium, Canada, Finland and Germany (Figure 8.2). But with the exception of some eastern Europe and Baltic countries, 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.)

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Is OECD administrator and coordinator of the project on Careers of Doctorate Holders. She has more than fifteen years of experience in the field of science and technology indicators, and is the author of articles in specialized or academic journals. The opinions expressed in this paper are her sole responsibility and do not necessarily reflect those of the OECD nor those of its member countries' governments.

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.

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.☺

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.

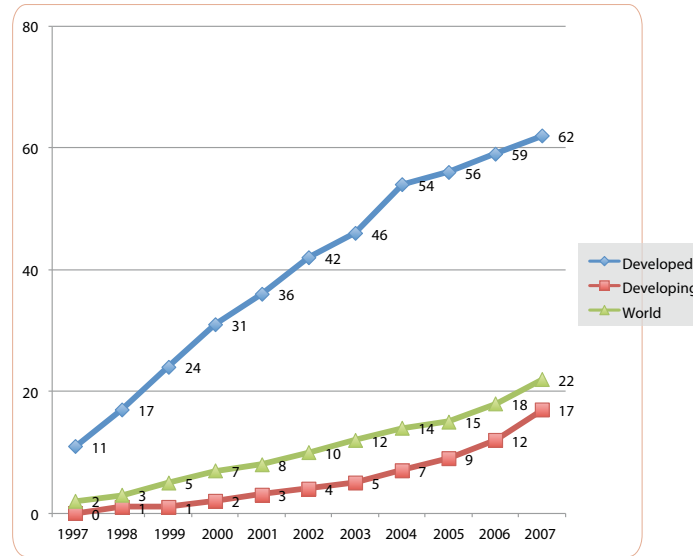
It is not only about new data and new or hybrid methods of data collection and analysis. Digitization also offers scholars many new ways to store, exchange and present data, including dynamic databases, three-dimensional simulations and digital archives. The new communication possibilities offered by 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	1.0 (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.

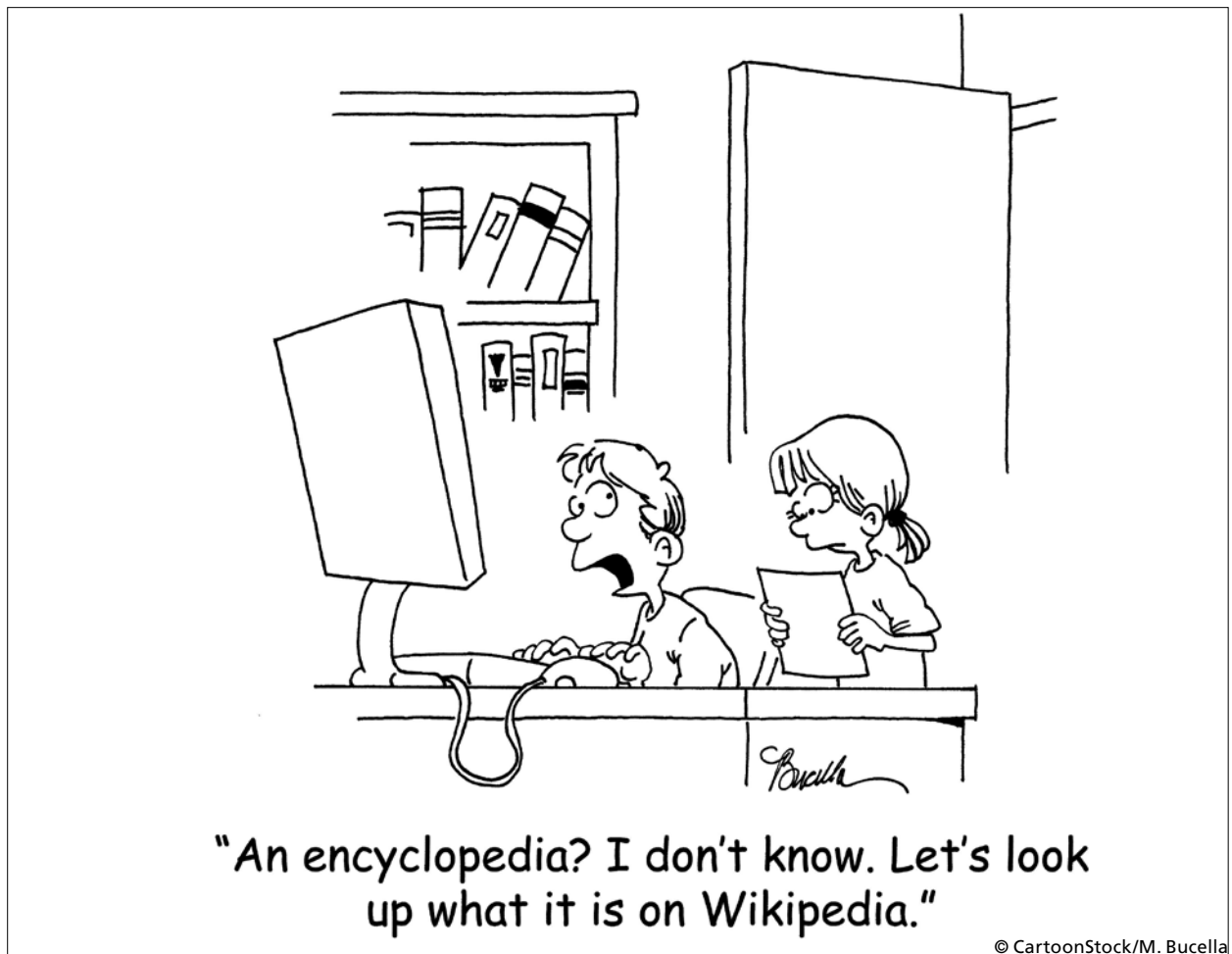
It has become evident that commercial publishers and journal monopolies have radically changed a system that was originally designed to facilitate the dissemination of academic knowledge, turning it into a profit-seeking business whose financial barriers are hindering access to information (Taylor, Perakakis 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 networks¹ 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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