



United Nations  
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# World Social Science Report

2010

Knowledge Divides

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Educational, Scientific and  
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Published in 2010 by the  
United Nations Educational, Scientific and Cultural Organization  
7, place de Fontenoy, 75352 Paris 07 SP, France

and

International Social Science Council  
1, rue Miollis, 75352 Paris Cedex 15, France

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ISBN: 978-92-3-104131-0

This Report is a co-publication commissioned by UNESCO from the International Social Science Council (ISSC).

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The 2010 WSSR editorial team is responsible for the choice of articles, the overall presentation, introductions and conclusions. Each author is responsible for the facts contained in his/her article and the opinions expressed therein, which are not necessarily those of UNESCO or ISSC and do not commit either organization.

The preparation of the 2010 *World Social Science Report* was financed as part of UNESCO's framework agreement with the ISSC, and by generous contributions from the Norwegian Agency for Development Cooperation (NORAD), the UK's Economic and Social Research Council (ESRC) and the Swedish International Development Cooperation Agency (Sida). The Report benefited further from the support of the European Science Foundation (ESF), the Stiftelsen Riksbankens Jubileumsfond, Sweden, and the University of Bergen, Norway.

In addition the fifteen universities listed below have contributed as Partners-in-Publishing to financing the preparation of the Report:

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The print edition of the Report is available from UNESCO Publishing: [www.unesco.org/publishing](http://www.unesco.org/publishing)

The Report is available on line at: [www.unesco.org/shs/wssr](http://www.unesco.org/shs/wssr)

More information about the Report is available at: [www.worldsocialscience.org](http://www.worldsocialscience.org)

Graphic design and lay-out: Marie Moncet

Cover design: Pierre Finot

Printed by UNESCO, Paris

*Printed in France*



Traditional Ainu dance  
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# Chapter presentation

Over the past decades, the growing importance of higher education and research as drivers of economic growth has led to an increase in international competition between countries, institutions and researchers. This chapter deals with the ranking of universities, the assessment of research and its role in project funding, the various ways in which different interest groups have responded to these, and generally, how international competition takes shape. Of particular interest is the divide between those countries, organizations and researchers that can compete at a global level and those that either do not have the abilities and resources to do so, or whose mission is more oriented to the local level.

The chapter begins by discussing the relatively recent phenomenon of the international ranking of universities, its problems, effects and likely future development. Besides cross-national rankings, various national governments and continental bodies have also set up more multifaceted research assessments and other approaches to the evaluation of research in the social sciences. Rankings and other assessment exercises are associated with efforts to improve research performance and quality as well as to guide the allocation of resources. In part because of the latter function, they have both proponents and opponents among scientists and representatives of academic institutions. An assessment that does justice to all universities would probably take into account the social

and educational conditions in which these organizations operate and the diversity of missions that universities have. Research councils can adopt various approaches to the allocation of funding in the social sciences. Examples of the evaluation mechanisms used in these allocations, their benefits and limitations are discussed. The final section of this chapter consists of four papers dealing with the agenda-setting strategies of national funding agencies. Funding is central to intellectual advancement both in terms of individual careers and for the furthering of social scientific knowledge. It is therefore no small matter how research funding is allocated.

Rankings, research assessment exercises, resource allocation mechanisms and the other elements of the research system in which evaluation plays a role are based on two methodological approaches. The first consists of various forms of peer review, the appraisal of proposals, outcomes and organizations by other experts. The second involves metrics-based evaluations to which exercises using international bibliometric databases are central. Both types of evaluation have important limitations, some of which are specific to the social sciences; this is highlighted in various contributions. Rather than using one of these approaches in isolation, the best strategy seems to be for qualified experts to use a combination of both types; that is, both the quantitative type of evaluation and the more qualitative, peer-review process. ∩

## 7.1 Global rankings

### Introduction

In recent years, international rankings of universities have become a prominent feature of competition between research systems and research organizations. The first of these rankings was originally commissioned by the Chinese Government as a way to benchmark its own research universities in order to pursue its aim of developing 'world-class universities'. The publication of the Shanghai Jiao Tong University Rankings (SJTUIHE), however, had a worldwide impact, and other rankings followed (Erkkilä and Kauppi, Sanz-Menéndez and de Moya-Anegón).

The methodologies adopted to arrive at these rankings are controversial, to say the least, as all the authors in this section highlight. In spite of the many conceptual, methodological and technical problems with the ranking of universities, they have become popular and thus deserve to be taken seriously. Examining the problems, as the authors in this section do, is therefore crucial for both refining the rankings, and ongoing attempts to attain excellence in diverse settings and with unequal resources.

The ranking of measurable research performance, and thus the number of publications and citations, forms a large, or in some cases the exclusive, element of these approaches to university ranking. This approach has several important advantages. The indicators it generates are quantifiable and verifiable, which gives them some claim to objectivity. Furthermore they draw indirectly on the professional opinion that members of the global scientific community have of the knowledge claims published by researchers in each organization. However, the focus on international peer-reviewed journal articles rather than on other scientific output such as monographs tends towards an underestimation of university performance in the social sciences in comparison with the natural and medical sciences (van Raan and Erkkilä and Kauppi). To some extent, this problem can be addressed by ranking universities by scientific field: all three rankings mentioned in the articles now have a separate ranking for social sciences, which differ by the indicators used. Significant weight is attached to the number of researchers having received a Nobel Prize in economics in the Shanghai Jiao Tong ranking, high importance is attached to opinion polls ('peer review') in the *Times Higher Education Supplement* ranking, and publication and citation data are the sole indicators used in the Scimago ranking (Sanz-Menéndez and de Moya-Anegón). None of these address the non-inclusion of non-journal outputs in the analysis.

Another point of criticism concerns the reduction of a university's many complex functions into a single, measurable indicator. Such a single indicator increases the rankings' attractiveness to students, policy-makers and the media, but does not do justice to the complex and diverse nature of universities. In this respect it is interesting to refer to Japan, which has a long tradition of ranking its universities across a wide variety of indicators (Kodama and Yonezawa, 2009). In Europe the CHE Excellence Ranking compares the master's and doctoral programmes of a selected group of European universities across various indicators for several subjects including political science, psychology and economics. Such multi-faceted approaches may be less controversial than the search for a simple one-dimensional indicator of quality.

The existing rankings can have several potentially adverse consequences for social sciences and humanities research.

One is to put pressure on universities to resemble the model of research universities at the expense of other functions, such as teaching, which universities also do and in which some are more specialized than others. Further, the attraction of highly ranked universities for students and teachers, as well as policy-makers' concentration of resources on a few elite universities that can compete in these rankings, may lead to an erosion of the higher education and research landscape. Nor does everyone agree that an over-emphasis on publications in international peer-reviewed journals included in the major citation indices, at the expense of other journals, monographs, doctoral theses and multi-authored books, is good for social sciences and humanities research.

Especially in developing countries, but also in Europe, most universities cannot hope to compete on the measures involved in these international rankings. Saleem Badat argues that they should not try to. This does not mean that the evaluation of university performance is of little value, because evaluations and benchmarking can be a central part of a strategy to improve quality. It is important, however, to adopt conceptual, methodological and technical tools and approaches which are suitable for the social sciences and humanities and the varied and different functions of universities.

However, the international ranking of universities is a reality which is likely to remain and multiply, and students, academics, university administrators and policy-makers do react to it. Considering the importance attached to rankings, several new actors are considering entering this market with alternative indicators for particular sets of disciplines, for teaching and learning and for third-mission activities. This includes university groups and newspapers, but also actors such as the European Commission. The authors in this section emphasize the prominence of world rankings, but also suggest ways of improving on them. This is crucial because the global hierarchies and norms established through them bring about significant shifts in national policies and the higher education landscape generally. ☺

# The social sciences and the ranking of universities

Anthony F. J. van Raan

During the last few years, rankings of universities, though controversial, have become increasingly popular. The rankings published by Jiao Tong University in Shanghai and those published by the *Times Higher Education Supplement* have attracted the attention of policy-makers, the scientific world and the public media. In these rankings, the emphasis is largely or even wholly on research performance. Consequently, the number of publications and other bibliometric elements, such as citations, play an important or even decisive role.

The number of social science publications in international journals is much lower than those for the natural sciences and medicine. Thus, the natural sciences and the medical fields dominate university rankings, while the strength of universities' social sciences scarcely contributes to their ranking position. Smaller universities, particularly those with an emphasis on social sciences, will have a better position as a result of the *Times Higher Education Supplement* (THES) ranking's peer-review element than in the more bibliometrically oriented and size-dependent Shanghai ranking. A striking example is the difference in the London School of Economics' position: a top position in the THES ranking and a low position in the Shanghai ranking.

Generally, social science research has a strong international orientation, but national orientation may play a more important role than it does in the medical and natural science fields (Kyvik and Larsen, 1994; Moed, 2005). There are considerable differences in the research and communication cultures between the medical and natural science fields, on the one hand, and the social sciences on the other. An exception is psychology, in which communication practices are similar to those in the exact sciences. In the social sciences, there is often less consensus on what constitutes successful scientific approaches. This may be an important conceptual issue: in the social sciences, the meaning of citations may differ from that in the medical and natural science fields. Publication practices in the social sciences are less standardized than those in the medical and natural science fields. International peer-reviewed journals are less important than in the exact sciences; the written scholarly communication system's structure often does not show a clear core-periphery structure; and English is not always a dominant language. Journals may even be multilingual.

What are the consequences of the ranking of universities for the social sciences (and for the engineering fields and the humanities)? Van Raan (2005) provides a comprehensive discussion of the conceptual, methodological and technical problems with the ranking of universities. The main points are that in the social sciences, the number of citations is generally an order of magnitude lower than in the medical and natural science fields, which complicates the statistical problems. And most social sciences need a considerably longer citation window (for example, counting citations up to five or six years after publication) than the natural sciences and medical fields (mostly four years).

Monographs, doctoral theses and multi-authored books are undoubtedly important sources of written communication in many fields of the social sciences. They should not be omitted from any assessment of social science research performance (Moed, 2005). However, bibliometric analyses usually only take citations from publications in journals covered by the Web of Science (WoS) or Scopus's citation index into account. Nevertheless, non-WoS or non-Scopus publications can be cited quite widely in articles in WoS- or Scopus-covered journals. Moreover, it is possible to determine the citation impact of non-WoS or non-Scopus publications, specifically books and book chapters, with appropriate analytical algorithms. Furthermore, comparison with a European benchmark is an effective means of coping with a possible US bias in the WoS or Scopus.

Besides WoS and Scopus, Google Scholar is becoming increasingly important as a source of citation data. Field-specific databases, such as ECONLIT, Psychological Abstracts and Sociological Abstracts, can also be used for output analyses. However, these databases have several properties that make them less suitable for calculating bibliometric indicators:

- None of the major field-specific databases systematically include cited references.
- The criteria for selecting sources may be unclear.
- The databases may have strong national or geographical biases.
- A considerable percentage of the processed documents do not mention the authors' institutional affiliations.
- The database producers may not include addresses in the database even if they are mentioned.
- Important data elements – even journal titles and country names – may not be standardized.
- Many databases are only available through host computers that offer only limited counting and statistical facilities.
- The use of these databases may be expensive.

A new and important development is the creation of national or university research databases in which publications in all fields of sciences, including the social sciences, are covered on the basis of field-specific quality criteria, regardless of whether a publication is covered by WoS or Scopus, and regardless of the document type. An important example of this development is FRIDA, a comprehensive bibliographical database for all scientific publications by Norwegian research institutions (FRIDA, 2008).<sup>5</sup>

### Anthony F. J. van Raan

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# Alternatives to existing international rankings

Tero Erkkilä and Niilo Kauppi

Ranking lists have turned into customary policy instruments for global governance in higher education. Despite their limitations, they serve as a basis for a number of significant higher education reforms. The European Commission's plan to challenge existing league lists by creating an alternative, multidimensional tool for the evaluation of world universities is an attempt to introduce new assessment criteria into this high-stakes global competition.

In the field of higher education, single league tables provide their users (administrators, students, politicians, journalists) with objectified information in a rapidly growing international student market. Existing ranking systems represent key tools for higher education reform.<sup>1</sup> For administrators and politicians, the quantitative social scientific information provided by these lists has become an indispensable part of policy planning (see for instance Harvey, 2008). As tools of symbolic power, ranking lists reinforce preconceived ideas for some users, while for others, they present a certain state of affairs as being inevitable, shaping reality in the field of higher education.

Two major university rankings (see Table 7.1) are published by the Shanghai Jiao Tong University Institute of Higher Education (SJTUIHE) and in a British magazine, *Times Higher Education (THE)* (formerly a newspaper, the *Times Higher Education Supplement*, *THES*). Jiao Tong has been producing an institutional ranking on a yearly basis since 2003. In February 2007 it published a ranking that covered five disciplinary fields. This ranking focuses on 'measurable research performance' (Liu and Cheng, 2005, p. 133). It is particularly favourable to universities in English-speaking countries: they represented 71 per cent of the world's top 100 universities in 2006. US-based institutions alone occupy seventeen of the world's twenty top-ranking universities.

The first *THES* ranking entitled *World University Rankings* was published in 2004. One of the driving forces behind

**TABLE 7.1** > The assessment criteria used in the Shanghai Jiao Tong University Ranking and the *Times Higher Education Supplement Ranking*, 2007

Shanghai Jiao Tong University ranking (2007) <sup>1</sup>		
Criteria	Indicator	Weight
Quality of education	Number of alumni having won Nobel Prizes and Fields Medals	10%
Quality of faculty	Number of staff having won Nobel Prizes and Fields Medals	20%
	Highly cited researchers <sup>2</sup>	20%
Research output	Articles published in <i>Nature</i> and <i>Science</i>	20%
	Articles in Science Citation Index-Expanded and Social Science Citation Index	20%
Academic performance	Academic performance with respect to the size of an institution <sup>3</sup>	10%

<i>Times Higher Education Supplement</i> ranking (2007) <sup>4</sup>		
Criteria	Indicator	Weight
Research quality	Academic opinion: peer review <sup>5</sup>	40%
	Publications and citations per research staff	20%
Graduate employability	Recruiter review: employers' opinion <sup>6</sup>	10%
International outlook	Percentage of international staff	5%
	Percentage of international students	5%
Teaching quality	Faculty staff: student ratio	20%

Notes: 1. Academic Ranking of World Universities, Graduate School of Education, Shanghai Jiao Tong University (<http://www.arwu.org>). 2. Assessed in twenty-one subject categories. 3. Academic performance is composed of the sum of the weighted scores of the other five indicators (quality of education, quality of faculty and research output) divided by the number of full-time equivalent academic staff (see Saisana and D'Hombres, 2008: 20). 4. *Times Higher Education* (<http://www.timeshighereducation.co.uk>). 5. Sample of 5,101 respondents (2007). 6. Sample of 1,471 respondents (2007). Source: Saisana and D'Hombres (2008, pp. 19–21).

1. In the USA, evaluations of graduate programmes started already in the 1920s and a ranking of US colleges was published from 1983. The university rankings made their way to the UK in the 1990s. The rankings became internationally policy relevant in the 2000s, due to the marketization of higher education and increased mobility of students (Harvey, 2008: 187–88).

the establishment of the league table was a perceived rising demand, in the UK and globally, for advice on higher education (Jobbins, 2005, p. 137). In contrast with the Shanghai ranking, the *THE* composite index partly rests on present reputation, thereby reproducing established global reputational hierarchies (Marginson, 2009b). Both the Shanghai and *THE* lists create a similar global order, in which US universities tend to do well. In the *THE* ranking, UK and Australian universities fare better than in the Shanghai ranking. Continental European universities are badly positioned in both university league tables.

These ranking lists, reproduced by a variety of think-tanks, present similar recipes for success in higher education: 'autonomization' of universities, concentration of resources through the creation of poles of excellence, and greater funding for certain types of research through R&D investment. This recipe has been extensively integrated into reforms of higher education. The single league table presents a clear, 'objective' order, a goal to emulate, and the means to attain this goal – all in the same package.

### Problems and limitations of existing rankings

*THE* and Shanghai rank the top-rated universities consistently, but their overall correlation is only moderate ( $r \leq 0.58$ ) (Saisana and D'Hombres, 2008, p. 11). Several scholars have criticized their dependence on bibliometric methods (for example van Raan, 2005). Rankings do not assess the research that is done in research institutes; they fail to appreciate, for instance, top research in such centres in Germany and France. Furthermore, they do not take into account the resources and institutional designs that are available for successful organizations. Rather, they impose the norms of leading research universities on the rest (Kivinen and Hedman, 2008). Counting the Nobel Prizes awarded to an institution (as in the Shanghai index) is also problematic since Nobel Prize laureates continue to influence their university's results even after their retirement. A large share of the *THE* ranking rests on an opinion-based peer review, lacking thorough assessment.<sup>2</sup> Although a major user group of the *THE* ranking system is students seeking a place to study, it offers very little information on the quality of teaching.

The ranking lists present a number of additional problems. One central shortcoming is their institutional approach: they measure universities without taking into account

the variations between disciplines, let alone assessing the research by discipline. Furthermore, the information is presented as a fact and not as the result of a choice in terms of what to measure and how (Marginson, 2007, p. 139). Last but not least, the academic community have been passive in observing their profession's assessment, leading to calls for greater involvement on their behalf (Usher and Savino, 2007).

Despite these shortcomings, university rankings have become part of the global higher education landscape. The figures have contributed to the creation of a new 'status economy', which sets policies in higher education and innovation (Marginson, 2009a). Global hierarchies and norms are now reproduced, fought over and legitimized by a variety of research institutions specializing in the production of information on these hierarchies, and funded by nation-states or media corporations. Due to their global coverage and high visibility, these lists are causing significant shifts in national policies following a similar policy script. Sharing key causal beliefs and normative views, these symbolic power tools portray the world in a uniform manner. In so doing, their political nature is hidden. The figures produced and the perceptions of competition that they communicate tend to lock policy actors in an iron cage, leaving little room for policy alternatives (Erkkilä and Piironen, 2009).

### The European Commission and the higher education rankings

In 2008, the European Commission declared that it would create an alternative European ranking list of world universities that would 'do justice'<sup>3</sup> to European universities. As a political actor with considerable organizational resources when compared with universities or specialized publications, the Commission entered the field of global higher education by attempting to transform its structure and criteria. This move can be understood in a context of escalating global competition in higher education, a competition over prestige that has a considerable impact on future economic development.

The Commission's strategy reveals the dualistic nature of struggles over classification. An internal competition occurs between figures and what they are supposed to reflect. Since European universities rank relatively poorly in all existing rankings, proposing minor changes to existing ranking lists was not an option for the European Commission. A second, far more radical solution was to introduce a new global assessment of higher education.

2. The notion of peer review is therefore downright misleading. Instead of a thorough investigation into the quality of research and teaching of a single institution, an opinion suffices to evaluate quality.

3. According to the Director General of Education in the European Commission, Odile Quintin (quoted in Dubouloz, 2008, p. 1).

This strategy will be successful only if the European Commission can succeed in delegitimizing existing ranking lists by producing credible alternative information.

The European Commission plans to create a new type of knowledge construct, a ‘mapping’ of certain key qualities in higher education that would include teaching and research, as well as elite and mass-commercial institutions (European Commission, 2008). Following the conclusions of the Berlin Principles on Ranking of Higher Education Institutions (produced by a group of mainly US and European experts in 2004), the aim was to produce a new ‘fairer’ ranking system to replace the existing league tables.<sup>4</sup> The winning bid for the European Commission’s open call for tender for the creation of a multidimensional global university ranking came from the CHERPA-Network consortium, a consortium which is headed by the Centre for Higher Education Policy Studies of Twente University (Netherlands) and the German Zentrum für Hochschulentwicklung (Centre for Higher Education Development).<sup>5</sup> The basic framework should be operational in the course of 2010. During the pilot phase it will cover two disciplines (business studies and engineering) with a sample of some 150 (both European and non-European) universities, before being expanded to the social sciences as well.

In 2009, at least three overlapping Commission initiatives could be identified in the domain of higher education rankings, indicating the issue’s growing politicization.<sup>6</sup>

4. Berlin Principles on Ranking of Higher Education Institutions ([http://www.che.de/downloads/Berlin\\_Principles\\_IREG\\_534.pdf](http://www.che.de/downloads/Berlin_Principles_IREG_534.pdf)).

5. CHE (<http://www.che.de>).

6. In June 2008, the European Commission appointed an Expert Group on Assessment of University Based Research. Later the same year, during the rotating French presidency of the European Union, a project on design and testing of the feasibility of a Multi-dimensional Global University Ranking was launched. Along with these initiatives, there is ongoing work for profiling and classifying institutions of higher education.

The Commission also participates in the OECD’s AHELO initiative, whose purpose is to assess higher education learning outcomes.<sup>7</sup> What is remarkable about these different initiatives is a constant opposition to an accumulated figure, a single ranking number, such as the existing university rankings produce.<sup>8</sup> Ironically, however, in order for the criticism to gain in credibility, the Commission and other actors had to engage in the same venture of creating numerical information on university education and research. In so doing, they stepped into a trap typical of most struggles with classification, that of reducing a highly complex and contentious policy field (higher education) into a data set, albeit a more sophisticated one.

## Conclusions

Public policy instruments such as ranking lists have the power to create reality. The global higher education map is different today from its shape prior to the creation of the 2003 Shanghai ranking of world universities. This global map has become more structured and ranking lists have turned into customary policy instruments for global governance in higher education. Despite their limitations, they have served and continue to serve as a basis for a number of significant higher education reforms. The European Commission’s plan to challenge existing league lists by creating an alternative, multidimensional tool for the evaluation of world universities is an attempt to introduce new assessment criteria into this high-stakes global competition. It remains to be seen how successful this new ranking instrument will be. What is certain is that the actors involved in higher education assessment are gripped by a specific logic of knowledge production: numbers can only be challenged by more numbers produced by social science specialists. √

7. OECD, AHELO (<http://www.oecd.org/edu/ahelo>).

8. In particular, the OECD’s AHELO is explicitly critical of the rankings in higher education.

## Tero Erkkilä and Niilo Kauppi

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# A new industry: university rankings in the social sciences

Luis Sanz-Menéndez and Felix de Moya-Anegón

Despite objections and limitations, rankings – once disseminated – become taken for granted, and transform the environments of institutions by influencing their reputations. While rankings are no substitute for peer review or other types of assessments, they have become signals of quality in a global environment, and universities themselves are interested in being well ranked.

This paper discusses the impact of global rankings and compares two of these rankings – *Time Higher Education's (THE) QS World University Rankings 2008* and the Scimago Institutional Ranking (SIR) in social science.

While rankings are popular with governments and the media, they are regarded as poor performance measures by most university administrators. Despite objections and limitations, rankings – once disseminated – become taken for granted, and transform the environments of institutions by influencing their reputations. While rankings are no substitute for peer review or other types of assessments, they have become signals of quality in a global environment, and universities themselves are interested in being well ranked.

Before the proliferation of rankings, institutions of tertiary education followed different procedures to position themselves in national and international markets and status systems. Institutional reputation depended on the opinions of professionals and recognized academics; status systems were based on a non-systematic aggregation of reputation and credit.

Status is a positional good that is necessarily comparative, relative and reciprocal. Comparisons build a status system that has symbolic value for organizations. In higher education and research, quality comparisons are a central measurement criterion, as information about reputation, productivity and performance is difficult to observe, measure and interpret in these contexts (Sauder and Espeland, 2009).

Rankings make status explicit and have several effects. First, they create a formal hierarchy. Second, by making status judgements public, rankings have caused institutions

to become sensitive about their positions. Third, by imposing a shared metric, rankings help create or unify the organizational field (either in higher education or research) and produce isomorphic pressures. Finally, rankings also have the effect of creating 'good' and 'bad' reputation labels. This limits universities' and institutions' ability to build a reputation based on values or criteria other than those used to construct rankings. This is because assessment by third parties is more credible than self-assessment. There is evidence (Sauder and Lancaster, 2006) that the introduction of institutional rankings alters the structure of a status system and even the system's values and measures.

All measurement systems have problems and advantages. We next compare two different approaches to university rankings in the social sciences.

*THE* presents a 'multi-faceted' view of the relative strengths of the world's leading universities on its ranking list. It compares universities relatively by using a formula that combines six primary measurements of university quality:

- academic peer review (40 per cent)
- employer review (10 per cent)
- faculty/student ratio (20 per cent)
- citations per faculty (20 per cent)
- international faculty (5 per cent)
- international students (5 per cent).

*THE* has been criticized for its failure to take into account many of the attributes that constitute a university's quality and for the quality of its data collection. Additionally, the ranking's instability results from the effects of weightings and normalization, and especially from the peer-review survey.

*THE* includes 300 universities active in social sciences worldwide. The single classification criterion seems to be

'academic peer review'; the 'popularity' results are derived from a survey of 6,000 'experts'. Experts declare subject categories and specific subject competences for the survey.

The Scimago research group has produced an Institutional Ranking (SIR) using Scopus' publication data from 2003 to 2007. These data can be ordered by total output as well as by citations and citations per paper, and can be applied to the world as well as to regions and countries. A total of 2,000 institutions have been ranked, of which more than 1,800 are active in the social and economic sciences.

Owing to the journal coverage in the databases, general methodological problems arise such as biases towards countries, institutions and disciplines. There are a US bias in citation data, lower representation of languages other than English (van Raan, 2005), and limits to the use of

bibliometric indicators in the social sciences (for example, Archambault and Larivière, in this Report; Clemens et al., 1995; Hicks, 1999; Nederhof, 2006).

While bibliometric methods lead to some problems and their use for research quality evaluation has been criticized (especially if they are decoupled from traditional peer review), they have, in comparison with a survey-based approach, the advantage of managing very large numbers and events (of publications and citations) to allow the visibility of small institutions.

Bibliometric rankings involve problems of production and usage. Responsible production entails solving technical problems such as matching citations with publications, normalizing institutions or affiliation-related problems. But 'popularity' rankings, especially in disciplines that still

**TABLE 7.2** > *THE-QS World University Ranking 2008* (social sciences) SIR – Scimago Institutions Ranking 2003–2007 (social sciences)

THE rank	Institution	SIRR rank	Institution
1	Harvard University	1	Harvard University
2	University of California, Berkeley	2	University of California, Berkeley
3	Stanford University	3	University of Pennsylvania
4	London School of Economics and Political Sciences (LSE)	4	University of California, Los Angeles (UCLA)
5	University of Cambridge	5	University of London (includes LSE)
6	University of Oxford	6	University of Illinois, Urbana-Champaign
7	Yale University	7	University of Michigan, Ann Arbor
8	University of Chicago	8	New York University
9	Princeton University	9	University of Washington
10	Massachusetts Institute of Technology (MIT)	10	University of British Columbia
11	Columbia University	11	University of North Carolina, Chapel Hill
12	University of British Columbia	12	University of Toronto
13	University of California, Los Angeles (UCLA)	13	University of Maryland, College Park
14	McGill University	14	University of Wisconsin, Madison
15	Australian National University	15	University of Minnesota
16	University of Toronto	16	University of Oxford
17	Cornell University	17	University of Chicago
18	National University of Singapore (NUS)	18	Cornell University
19	University of Melbourne	19	University of Manchester
20	University of Michigan	20	Universiteit van Amsterdam

Source: QS Quacquarelli Symonds Copyright © 2004-2008 QS Quacquarelli Symonds Ltd. [http://www.topuniversities.com/dev/qaqs.com/worlduniversityrankings/results/2008/subject\\_rankings/social\\_sciences](http://www.topuniversities.com/dev/qaqs.com/worlduniversityrankings/results/2008/subject_rankings/social_sciences)

Source: Scimago Research Group, Copyright 2009. Data Source: Scopus® <http://www.scimagoir.com>

have a relevant local context, need clearer definitions of the respondents' universe, improved sampling procedures and specific data-collection exercises.

There is a significant difference between SIR's emphasis on scientific outputs and *THE*'s emphasis on 'popularity' within the academic community. Despite these diverse methodologies, however, some institutions appear among the top twenty in both rankings.

Both rankings show an overwhelming presence of Anglo-Saxon institutions. Communication in English as the lingua franca provides an advantage in terms of international visibility. But there are differences in the geographical breakdown of institutions: while *THE* has mostly US, Canadian and Australian institutions at the top, SIR has more North American and European ones.

Additionally, SIR offers quality indicators (such as citations per paper) to complement the output indicator. In this case, the universities of Michigan, Harvard and UCLA appear at

the top, alongside Stanford and Columbia, which did not appear among the top twenty for total volume.

Combining the methods used by both rankings – for example, surveying the world's top researchers according to publications and citations – will probably improve the reputation of the measures' quality, even though they will continue to have serious limits as globally valid measures.

For the time being, a proper combination of scientific output and quality indicators – which SIR allows the user to do – can be a provisional solution to difficulties with representing institutions' research capacities. This provides the possibility of analysing better the positions of universities in different world regions in different status systems. Of course, caveats to the intelligent use of these rankings still apply (Weingart, 2005), especially regarding the social sciences, although the availability of data to compare performance has already changed status systems and the ways in which institutions see themselves. ☺

### Luis Sanz-Menéndez and Felix de Moya-Anegón

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# The world-class university and the global South

**Saleem Badat**

The global ranking of universities has come into prominence in the past few years. This paper analyses their value and what is at stake. It is argued that such rankings generate false perceptions and prejudice the global South, and that they should be replaced by alternative instruments that better serve educational and social purposes.

## Global rankings

The Shanghai Jiao Tong University Institute of Higher Education (SJTUIHE) ranking has its genesis in the Chinese Government's quest to create 'world-class universities' as catalysts of development. The SJTUIHE ranking gives priority to six indicators for which data were available (Mohamedbhai, 2009).

The purpose of the *Times Higher Education-Quacquarelli Symonds (THE-QS)* ranking is 'to recognize universities as the multi-faceted organizations that they are, [and] to provide a global comparison of their success against the notional mission of remaining or becoming world-class' (*Times Higher Education, 2007*). It considers a mere six criteria to be pivotal for judging world-class (see Erkkilä and Kauppi in this Report).

## Rankings: what value?

In order to establish their validity, university rankings need to be subjected to critical analysis in terms of their purposes, methodologies, and value to universities and society. I shall briefly address each in turn.

Regarding purposes, the SJTUIHE originated as an attempt to benchmark Chinese universities as a means of charting a trajectory for their development. However, SJTUIHE has become a global ranking of universities, despite being based on a narrow range of indicators which are wholly inadequate for measuring performance and quality in relation to diverse social and educational purposes, or a particular university's goals.

The *THE's* precise purpose for generating a global league table of universities is opaque. Its discourse, however, is one of 'world esteem', with the world-class university representing the gold standard to which all universities

should ostensibly aspire and according to which they should be measured. In the *THE* 'universe, higher education is primarily about reputation for its own sake, about the aristocratic prestige and power of the universities as an end in itself' (Marginson, 2007, pp. 138–39). The internationalization of the student body is valued less for enriching a university; instead, international students are a 'prized quarry' as 'universities are free to charge them whatever the market will bear' (*Times Higher Education, 2007*). Thus, 'it is not about teaching and only marginally about research'. Although it claims 'to recognise universities as multi-faceted organisations', the *THE's* criteria are dubious as proxies for teaching and learning quality.

Methodologically, global rankings suffer from 'weaknesses in data collection and computation; the arbitrary criteria used in ranking; and the arbitrary weightings and standardization procedures used in combining different data sets into composite indexes' (Marginson, 2008a, p. 7). Such indexes 'undermine validity [as] it is dubious to combine different purposes and the corresponding data using arbitrary weightings. Links between purposes and data are lost' (Marginson, 2007, p. 139).

The indicators and their weighting privilege specific university activities, domains of knowledge production, research types, languages and university types. Thus, the natural and medical sciences are privileged over the arts, humanities and social sciences; articles published in English are favoured over those in other languages; journal articles are favoured over book chapters, policy reports and other studies. Furthermore, 'comprehensive' universities and generally larger institutions with a wide range of disciplines and larger numbers of academics – especially researchers – are privileged over others (Charon and Wauters, 2007). The rankings therefore enable the self-selection of universities

whose missions and academic offerings strongly match the rankings' performance measures.

### What is at stake?

In terms of their methodologies, the SJTUIHE and *THE* rankings have little intrinsic value and serve no meaningful educational or social purpose. On the contrary, if they are not challenged, rankings and the assumed notion of the 'world-class university' as gold standard can have perverse and dangerous effects on universities in underdeveloped societies in the global South.

Modernization theory singled out Western capitalist societies as the apex of modernity and made 'catching up' with the West an ultimate development goal. With it came the view that underdeveloped societies' path to development lay in faithful adherence to the prescriptions of Western governments and Western-dominated multinational institutions, including the World Bank and the International Monetary Fund. Later on globalization and its supposed development benefits became the new goal.

If modernization theory depicts Western capitalist societies as the apex of modernity, global university rankings present the world-class university – essentially North American and European institutions – as the pinnacle and goal of all higher education development.

The value of uncritical mimicry of and 'catching up' with the so-called world-class university in order to further socio-economic development is questionable. It also cannot be assumed that creating world-class universities will in itself result in investment or development. Outstanding universities may be a necessary condition, but are not a sufficient condition of development. Many societies in the global South need to create favourable national environments for university work and for universities to contribute to society.

The SJTUIHE and *THE* rankings 'inculcate the idealized model of institution as a norm to be achieved and generalize the failure to achieve it' (Marginson, 2009b, pp. 13–14). The world-class university has until recently existed neither as a concept, nor as an empirical reality. Its status as the gold standard is the normative social construct of the rankers themselves.

The specific national conditions, realities and development challenges of societies in the global South, and the diversity of social and educational purposes and goals that

universities in these societies must serve, require national higher education systems characterized by differentiated and diverse institutions. Institutional differentiation and diversity are to be valued over homogeneity and isomorphism. It makes little sense for all universities to aspire to a common 'gold standard' irrespective of socio-economic needs, missions, goals, capacities and capabilities. Graham has argued that universities should avoid aspiring to 'ideal[s] which they cannot attain' (Graham, 2005, p. 157). Otherwise, 'no sense of worth will be forthcoming' and they can have no 'proper self-confidence' (p. 157). There are many conceptions and models of the university, and these have changed over time. Furthermore, according to Graham, the 'name "university" now applies to institutions with widely different functions and characters' (2005, p. 157), and this means that the 'ideals each can aspire to' will be different (p. 258).

Instead of valuing a horizontal continuum that recognizes the need for universities to have different and diverse missions, and which makes provision for universities that pursue various missions, the idea of the world-class university as 'the idealized model of institution' has the perverse effect of privileging a vertical hierarchy. Universities that do not feature in the top 500 of the SJTUIHE ranking or the top 200 of the *THE-QS* ranking are devalued and are – by implication – poor-quality, second rate or failures. In the face of continuing global North–South inequalities, the burden of such characterizations weighs disproportionately on universities in the global South.

The rankings criteria favour publishing in English-language journals, and in effect privilege the English language. Especially in the arts, humanities and social sciences, prioritizing research and publishing in order to improve ranking can seriously undermine universities with important social, intellectual and cultural roles related to their local, regional and national societies.

Today, the competition for, and concentration on, economic advantage means that certain kinds of knowledge and research – especially those generated by the natural, medical and business sciences and engineering – are privileged. However, as Makwandire argues, 'attempts to improve Africa's prospects by focusing on scientific advances and the benefits accruing from them have all too often overlooked the important perspectives which the humanities and social sciences afford' (2009, ch. 7), and 'it is vital that the social sciences and humanities are granted their rightful place ... if Africa's development challenges are to be fully and properly addressed'.



Rankings compromise the value and promise of universities as they 'divert attention from some central purposes of higher education' (Marginson, 2007, p. 139), and 'to accept these ranking systems is to acquiesce at these definitions of higher education and its purposes' (p. 139).

As important as new knowledge production and the scholarship of discovery are (Boyer, 1990), the foundation for the production of high-quality graduates who can advance development in the underdeveloped global South is high-quality learning and teaching. Moreover, community engagement and service learning are also vital functions of universities in the global South. Both are a 'means for connecting universities and communities with development needs' (Stanton, 2008, p. 3), and 'for higher education staff and students to partner with communities to address development aims and goals' (ibid., p. 2). However, the global rankings are only marginally concerned with learning and teaching, and overlook or omit the value of community engagement.

The extent to which the global rankings are embraced by numerous universities and higher education agencies must be considered a matter of great concern. The validation of rankings as knowledge of universities ultimately corrodes knowledge and science.

## Conclusion

Global university rankings fail to capture either the meaning or diverse qualities of a university, or the characteristics of universities, in a way that values and respects their educational and social purposes, missions and goals. At present, these rankings are of dubious value, are underpinned by questionable social science, arbitrarily

privilege particular indicators, and use shallow proxies as correlates of quality.

Universities in the global South must refuse to play the game as formulated by the SJTUIHE and *THE*, even if others collude with rankings for the sake of self-aggrandisement. Rather than permitting these rankings to prescribe a 'gold standard' and impose narrow definitions of quality, quality should be regarded as historically specific and related to institutional missions and goals as well as to educational and social purposes.

My critique of global university rankings is not a refusal of critical public scrutiny of universities or of universities in the global South. Besides rankings, there is much value in performance indicators and benchmarks if they are carefully conceptualized and designed with clarity of purpose, and are respectful of institutional missions and policy goals. Performance indicators have an important role in institutional development and, through these, the achievement of national socio-economic development priorities. Clearly, effective monitoring, evaluation and critical reviews of universities, including their goals, strategies, academic programmes, administration, governance and financial management, also have key roles in university development.

The challenge for universities in the global South is to effectively replace global rankings with alternative instruments that genuinely serve educational and social purposes, contribute to innovation and development in universities, enhance transparency in and critical public scrutiny of universities, and facilitate informed choices and judgements on the basis of robust social science and appropriate methodologies.☺

## Saleem Badat

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## 7.2 Assessment and evaluation of research

### Introduction

Alongside cross-national or worldwide comparisons, national governments and agencies have stepped up efforts aimed at the evaluation of the quality of research, the identification of productive individual researchers and the performance of departments on various criteria. These exercises are undertaken both to boost research performance and to optimize resource allocation. It is nonetheless clear from the contributors to this section that all this is not as easily done as said.

The UK's Research Assessment Exercise (RAE) is probably the best-known of the various assessment exercises carried out in countries such as New Zealand, Australia, the Netherlands, Romania, Germany and South Africa. In this RAE, panels of experts evaluate information on inputs and outputs provided by university departments. Even if they tend to be better regarded than simplistic international rankings, these assessment exercises have received considerable criticism of, and resistance to, the methodologies they adopt. They are also criticized for the perceived negative effects they have on the social sciences. Large-scale research assessment exercises such as the RAE involve considerable costs in terms of money, human resources and time. In combination with the level of bureaucracy they involve, these costs have led some national agencies to consider a more metrics-based approach, which has advantages in terms of cost savings and a supposedly higher objectivity.

However, the use of bibliometrics in the evaluation of social science and humanities faces considerable problems (Archambault and Larivière). The dominant bibliographical databases used for these analyses have a strong linguistic and geographical bias. This, many would argue, makes them less suitable for the evaluation of research outside the Anglo-Saxon world. The use of bibliometric indicators in the social sciences and humanities is also problematic for other reasons. Publications other than journal articles, such as books, reports and even non-academic outlets are considerably more important here than in the natural sciences. These other publication formats, as well as a large number of less prominent journals, are not included in the

international citation indices and are therefore invisible to evaluations which rely on them. Another potentially problematic point is that much social sciences and humanities research aims for local rather than international relevance and may not be noted in the international literature. The Thomson Reuters Social Science Citation Index (SSCI) and its recently established competitor, Elsevier's Scopus, do engage in efforts to broaden the inclusion of non-English journals, which may alleviate some of the linguistic and geographical bias even if the intensity of citation traffic is likely to continue to favour the Anglo-Saxon world. Weingart and Schwechheimer highlight the specific limitations of the exclusive use of bibliometric tools in the evaluation of research performance in countries where only a small number of articles are published in international peer-reviewed journals. Other, qualitative, approaches may be more fruitful in such cases. While the use of bibliometrics for the evaluation of social science research is problematic in isolation, it can help support qualitative reviews (Weingart and Schwechheimer; Hazelkorn).

Research assessment exercises should combine indicator-based quantitative data with qualitative information, recognize the differences between research disciplines, include assessments of impacts and benefits, and therefore include indicators that are capable of capturing all of this (Hazelkorn). The review of the UK Research Assessment Exercise, however, highlights the complexity of designing a national assessment system that is both fair and effective (Oancea).

In Spain, bibliometric indicators are used for the evaluation of individual researchers (Cruz-Castro and Giménez-Toledo). Researchers' output in journals included in international as well as Spanish-language bibliographical databases is presented to national evaluation agencies. These and other outputs are used to support individuals' peer review evaluations when they apply for accreditation and salary bonuses. Taking into account quality Spanish-language journals as well as discipline-specific factors in the evaluation procedure may help overcome some of the previously noted limitations of bibliometric assessments.☺

# Conceptualizing and measuring excellence in the social sciences and humanities

Peter Weingart and Holger Schwechheimer

Bibliometric analysis is a means to identify prominent researchers, important research results, and institutions that foster good research. The data banks are used as a tool for the evaluation of research as it is reflected in publications and for studies of communication patterns. For this purpose so-called bibliometric indicators have been constructed.

The easiest way to identify prominent researchers, important research results and institutions fostering good research is by way of bibliometric analysis. The principal sources of information for bibliometric analyses in social sciences and humanities are the SSCI and the Arts and Humanities Citation Index (A&HCI). These data banks provide a combination of information about the authors of a given article, their institutional address(es), and the article's citations of other papers. This means that searches can be made targeting authors, their institutions or the number of citations received by an article. These data banks have also been used as a tool for the evaluation of research as it is reflected in publications and for studies of communication patterns, in other words of social structures in science generally. For this purpose so-called bibliometric indicators have been constructed. The most important bibliometric indicators for activity (publications) and impact (citations) are:

- P: number of publications (indicating the activity in formal communication)
- C: number of received citations (indicating the visibility or impact of research but usually being taken as an indicator of the quality of research)
- CPP: citations per publication
- CPP/FCSm: normalized citation rate (against Field Citation Score mean).

To normalize citation rates per publication, which differ widely between disciplines, the absolute citation count is divided by the average citation rate of all publications of the same discipline or journal from the same year of publication. If computed for a sufficient number of

publications, this indicator is widely accepted as a reliable measure for visibility in most areas of the natural sciences.

However, in the social sciences and more so in the humanities, this form of application is highly problematic, because of the inadequate coverage of books in the citation indices. In the social sciences and humanities, we cannot rely on the reliability and validity of these indicators in the same way as in the natural sciences because of the non-paradigmatic nature of most fields in the social sciences and humanities, the heterogeneity of publication behaviours between fields in the social sciences and humanities, and the insufficient coverage of the principal sources of information for bibliometric analyses in the SSCI and A&HCI. The latter is changing, at least for the social sciences, as a result of an increasing internationalization due to incentives for non-English-speaking authors to publish in English. This is particularly true for the European countries, where funding programmes promote publication in English in order to achieve the integration of European research.

To illustrate the problem, consider publications from the countries of the Commonwealth of Independent States and listed in the SSCI and the A&HCI. They show that in all these countries except the Russian Federation and Ukraine, the number of publications is in the tens or single digits. This means, in effect, that we cannot speak of social sciences and humanities communities in these nations, but at best of individual scholars who work more or less in isolation. The numbers themselves do not reveal any trend, whether towards higher or lower numbers of papers, with the exception of the Russian Federation and the Ukraine where the absolute numbers of articles published and

included in the two indices show a downward trend. The actual number of scholars and their output remains unknown because we cannot control for the percentage of coverage of CIS articles in the SSCI and A&HCI. Under such circumstances the application of bibliometric techniques is out of the question.

While in cases such as these, bibliometric indicators are insufficient by themselves to provide reliable assessments, they may be used in conjunction with other indicators and descriptions. For example, visibility in international peer-reviewed journals whose quality standards are established is one indicator of good international standing. However, the results must be controlled for the size of the national social sciences and humanities communities, as it may be the case that only a small number of individuals appear in these journals, representing a very small fraction of the particular national community. Such a lack of visibility may have different reasons: for example, politically motivated limitations to access, or resentment of international cooperation. Thus, publications in international journals, like cooperative authorships with international scholars, should not be taken as definitive indicators of quality of research, but rather as relative, and above all merely as descriptors. They do not reflect the potential quality of work done in the national context and hidden from international view.

As to qualitative assessments of the health and quality of social sciences and humanities research, we suggest two sets of criteria: organizational and intellectual.

Organizational criteria are about both conditions for research and expressions of research culture. A healthy-social sciences and humanities culture should have

sufficient size to allow for a plurality of approaches and methods. Crucial questions are whether the social sciences and humanities have normal department status, where their students find employment after their studies (for example, in academia, as teachers, in industry, public administration or in the media), and whether the social sciences and humanities are represented in national scholarly associations and professional societies.

Intellectual criteria are at the core of any assessment of the health and quality of a discipline or research field. Social sciences and humanities do not have to be integrated into an international scholarly discourse to the same degree as the natural sciences in order to be qualitatively of a high standard. Those research activities that are more narrowly focused on national and culturally specific subject matters and topics must be judged on their own merits. They must, above all, exhibit originality in their theories and methodologies. Indications of this are lively intellectual debates among the relevant scholarly communities, a recognizable progress of research over time, and in the ideal case, an impact on public debates.

An important prerequisite is the existence of independent peer-reviewed scholarly journals and, especially in the case of the humanities, of more popular journals or print media catering to the intellectual elite of the country. Social sciences and humanities that are entirely dependent on a few external sponsors or are only small inbred circles can hardly prove their value to civil society. Nor will they be open to intellectual stimuli from outside. 😊

### Peter Weingart and Holger Schwechheimer

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Holger Schwechheimer studied sociology and obtained his diploma at the University of Bielefeld. His main focus of interest is quantitative methods in science studies, especially bibliometric analyses. In addition to methodological and technical aspects, he has worked on structural changes of the science system and their implications for the disciplinary organization of knowledge production.

This article was published within the framework of Global SSH, coordinated by Professor Björn Wittrock, Swedish Collegium for Advanced Study. Global SSH was supported by the European Community under the Sixth Framework Programme for research, technological development and demonstration (FP6), Priority 7: 'Citizens and governance in a knowledge-based society'.

# The limits of bibliometrics for the analysis of the social sciences and humanities literature

Éric Archambault and Vincent Larivière

There are several limits to the use of bibliometric analysis of scholarly communication in the social sciences and humanities. This paper reviews three of those limits: the lower proportion of social science and humanities journal articles; social sciences and humanities literature's ageing rate, and conversely its post-publication citation rate; and the local relevance of social sciences and humanities knowledge. It also discusses the choice of bibliometric databases when measuring social sciences and humanities research.

While the use of bibliometrics for policy purposes has mostly been limited to the natural and medical sciences, this emphasis is now changing. However, the extension of bibliometrics as an evaluation approach to the social sciences and humanities (SSH) may be a cause for concern unless due care is taken. There are several limits to the use of bibliometric analysis of scholarly communication in the social sciences and humanities (for instance, Glänzel and Schoepflin, 1999; Hicks, 2004; Larivière et al., 2006). Drawing on previously published data and original data, this paper reviews these limits.

Three issues are presented: the lower proportion of SSH journal articles; social sciences and humanities literature's ageing rate, and conversely its post-publication citation rate; and the local relevance of social sciences and humanities knowledge. The choice of bibliometric databases when measuring social sciences and humanities research is also discussed.

## The importance of books and serials in social sciences and humanities knowledge diffusion

The importance of adjusting and clearly stating the limits of bibliometric methods becomes apparent when we consider the importance of books and other documents in the process of scholarly communication in various domains. Hicks (2004) argues that books form a sizeable part of publications in some social sciences and humanities disciplines, that they are also cited more often than other forms of publication, and that this impact cannot be extrapolated from that of journal articles. Thus, the validity of evaluations using bibliometric methods can only be assessed properly if the share of the various types of documents used in scholarly communication is known.

Numerous studies provide data on the relative proportion of journal to non-journal forms of publishing. In their analysis of social science co-citation clusters, Small and Crane (1979) found that 39 per cent of items cited in sociology and 24.5 per cent in economics were books, compared with only 0.9 per cent in high-energy physics. Based on these results, Hicks (1999) estimated that between 40 and 60 per cent of the literature in the social sciences is composed of books. In addition, Leydesdorff (2003) found that whereas 79 per cent of citations in articles covered by the Science Citation Index (SCI) were citations of other articles in the database, this percentage was only 45 per cent for the SSCI (a database produced by Thomson Reuters together with the SCI and the A&HCI). Glänzel and Schoepflin (1999) found that the percentage of references to serials varied between 35 per cent in history, philosophy of science and the social sciences and 94 per cent in immunology.

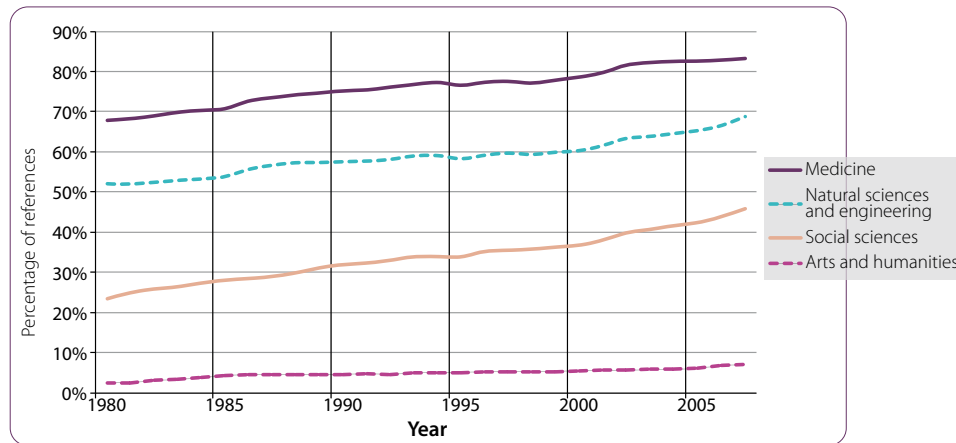
Building on a method presented at length in Larivière et al. (2006), Figure 7.1 presents the percentage of references made to papers indexed in the Thomson Reuters WoS by field (using articles, notes and reviews). The proportion of references made to WoS-indexed papers varies significantly across fields, with medical papers (MED) citing more than ten times the number of WoS-indexed papers or articles in the arts and humanities (A&H). In the natural sciences and engineering (NSE), slightly less than 70 per cent of the references are to WoS-indexed material, whereas this percentage is just under 50 per cent in the social sciences. These data suggest that A&H, including fields such as literature and philosophy, would be best examined using instruments that also consider other types of publications, such as books. The social sciences and the arts and humanities differ significantly from each other in terms of how frequently they refer to papers.

### Rates of literature ageing and citation

The rate at which scientific literature ages and the rapidity with which it is cited have important implications for the way in which scientific impact must be measured in different academic fields. These patterns are particularly

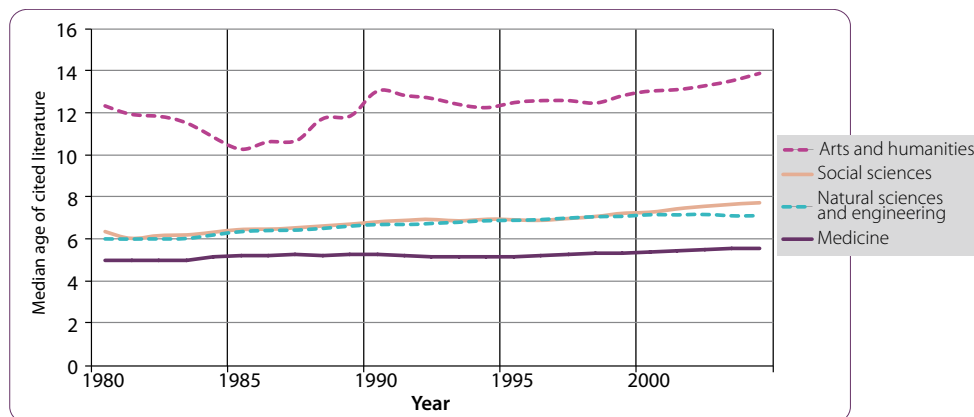
important in determining the length of the citation windows used for citation counts. To measure the NSE paper citation rate, a short window (typically two or three years) is frequently used, as knowledge is rapidly diffused and cited. As can be seen in Figure 7.2, in A&H references

**Figure 7.1** — Share of references made to journal articles indexed in the WoS, by field, 1980–2007

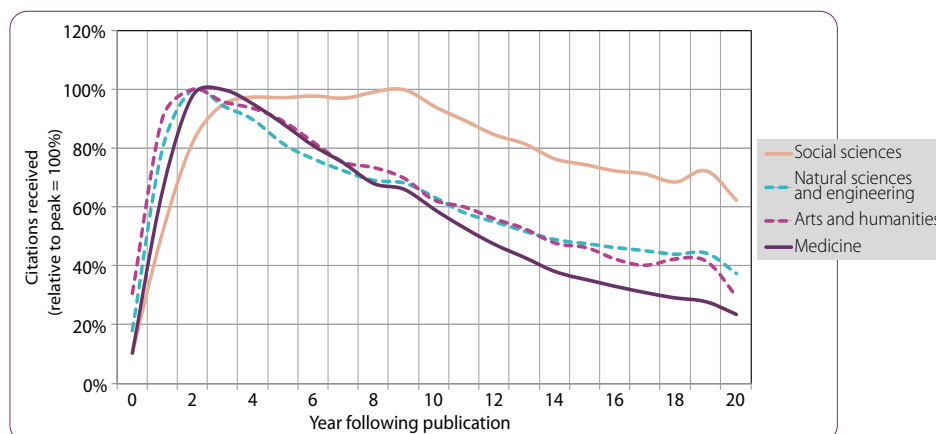


Source: Saisan and D'Hombres, 2008, pp. 19-21

**Figure 7.2** — Median age of cited literature by field (100-year citation window), 1980–2005



**Figure 7.3** — Citations of papers per year following publication



**TABLE 7.3** > Coverage by Scopus and WoS of a sample of Canadian social science and humanities papers, 2009

Language of paper	Scopus		WoS		Scopus & WoS		Sample
	Coverage	(n)	Coverage	(n)	Coverage	(n)	(n)
English	53%	120	43%	97	58%	132	226
French	16%	10	7%	4	20%	12	61
Coverage Canadian sample	45%	130	35%	101	50%	145	289
English as multiple of French coverage	3.2		6.5		3.0		

Source: Compiled by Science-Metrix using Scopus and the Web of Science (WoS) (online versions, week of 23 March 2009).

are made to documents that have a median age twice that observed in other scholarly domains. The useful life of knowledge produced in A&H is longer than in other fields. This suggests that a longer citation window should be used when measuring impact in those fields. In social sciences, the age of what is cited differs from A&H and is highly similar to NSE.

Whereas Figures 7.1 and 7.2 examine how papers refer to the past in their references, Figure 7.3 shows the pattern of citations of papers after their publication. Papers in MED, NSE and – surprisingly – A&H are cited rapidly after publication, but the citation rate drops fairly quickly. Papers in the social sciences are less readily cited and only reach their citation peak some ten years after publication. The implication is that we should allow for longer citation windows when examining the impact of research in the social sciences than for NSE and MED. A window of approximately five years might be the minimum required to determine the effect of a social sciences and humanities publication on the community.

### The local relevance of social science and humanities knowledge

Another aspect requiring careful consideration when performing bibliometric analyses of the social sciences and humanities is the relatively local orientation of social science and humanities research. Whereas the problems identified in the NSE tend to be universal by nature, social science and humanities research topics are sometimes more local in orientation. The target readership may be limited to a country or region (Glänzel, 1996; Hicks, 1999, 2004; Ingwersen, 1997; Nederhof et al., 1989; Nederhof and Zwaan, 1991; Webster, 1998; Winclawska, 1996). In many cases, the concepts and subjects covered in social sciences and humanities can be expressed and understood only in the culture that shapes them. Social science and humanities scholars reportedly publish more often in their mother tongue, and in journals with a limited distribution (Gingras, 1984; Line, 1999).

To assess the coverage of national literature by Thomson Scientific, Archambault et al. (2006) compared the journals list covered by its citation indexes with a comprehensive

source of scientific journals from all over the world – the Ulrich directory. This showed that journals with UK editors were heavily over-represented in the Thomson Reuters database, especially in the social sciences and humanities. According to Ulrich, 18 per cent of journals have a UK-based editor. The Thomson Scientific figure is 27 per cent – an over-representation factor of 55 per cent. Social science and humanities journals with editors located in the Russian Federation, the USA, Switzerland, and the Netherlands are also over-represented, whereas virtually all other countries are under-represented. Archambault et al. (2006) also considered the actual language of journals. This revealed a clear selection bias in favour of journals in which the articles were written in English. Whereas 75 per cent of peer-reviewed journals indexed in Ulrich are in English, the Thomson Scientific figure is 90 per cent – an over-selection rate of about 20 per cent.<sup>1</sup> This evidence shows that in respect of the combined SSCI and AHCI coverage, there is a 20 to 25 per cent bias in favour of English-language scientific output in the SSH. Furthermore, French, German and Spanish journals are under-represented by 28, 50 and 69 per cent respectively.

### Choice of bibliometric databases and indicators

Traditionally, most bibliometric studies have been based on the Thomson Reuters WoS, but Elsevier's Scopus database is becoming a legitimate alternative. Although there is evidence that WoS and Scopus are by and large congruent in their global content and in the NSE (Archambault et al., 2009), the social sciences and humanities coverage evidence is unclear. Examining the extent of WoS and Scopus's coverage in the context of Canadian social science and humanities research diffusion is therefore relevant. Canada, having both English-speaking and French-speaking scholars, is an interesting case. A random sample of 300 papers was drawn from the annual reports of researchers supported by the Social Sciences and Humanities Research

1. Gingras and Mosbah-Natanson (in this Report) give different estimates for the difference in English-language social science and humanities journals included in the WoS and the Ulrich directory. Their assessment refers to 'academic and refereed journals' whereas this paper states 'peer-reviewed journals'. Because the second is a subset of the first, both statements seem consistent with each other.

Council (SSHRC). Following the exclusion of a few anomalies, and with a resulting sample of 289 Canadian scholarly papers, the Scopus coverage was determined at 45 per cent and the WoS coverage at 35 per cent. Combining the two databases would not necessarily lead to a cost-effective solution, as the combined total coverage was 50 per cent – that is, five percentage points more than Scopus alone. Importantly, papers written in English are 3.2 times more likely to be covered by Scopus, which covered 16 per cent of French-language papers, whereas English-language papers were 6.5 times more likely to be covered by WoS. Based on this evidence, Scopus is slightly better overall, and much better at covering French-language research diffusion. In addition, Scopus is set to further expand its coverage of humanities journals. A sizeable number of Canadian journals will soon be added, thus increasing the gap between the two databases.

Overall, these data show that we cannot effectively compare the scholarly output of French-speaking and English-speaking Canadian scholars using these databases. By extension, it would be misleading to use these databases to compare the social sciences and humanities production of Canada's different provinces.

The data presented here show that social sciences and humanities knowledge production can be observed using bibliometric methods only when the greatest care is taken. The existing peer-reviewed journal databases are incomplete and do not satisfactorily cover languages other than English. This means that whenever language issues influence output in one way or another, it is impossible to perform robust comparisons, let alone rankings. This is not to say that questions cannot be studied using bibliometric methods; it simply means that we must be careful when

drawing normative conclusions, especially if the questions examined are likely to be shaped by linguistic and geographic variables. In particular, developing countries are certainly under-represented, especially those that are not English-speaking. Moreover, as always, it is perilous to compare fields (such as the social sciences and the humanities) if the morphology of scholarly communication in each area is not taken into account. It is, for instance, important to bear in mind that books are the preferred mode of knowledge dissemination in the humanities. Furthermore, the current databases are not reliable enough to allow for the computing of statistics on book-based diffusion and the associated impact as measured in respect of books.

The development of a robust bibliographical book database comprising complete references as well as more universal coverage of social sciences and humanities journals would expand our capacity to understand social sciences and humanities knowledge diffusion and use. As long as our tools remain non-existent or limited, the bibliometric analysis of the social sciences and humanities will be less comprehensive than that of the natural sciences. Perhaps too much effort has been spent discussing what is good and what is not, and hence on what should be included in and excluded from databases. With the rapid development of electronic data interchange, inclusiveness and extensiveness should be the goal. Knowing that the supposedly best journals are included in the Thomson Reuters database is of no use when we want to understand how, for example, research on education has evolved in African countries over the past ten years. There are many relevant questions that bibliometric methods can help answer; however, for the time being, the most important question overall is how long we have to wait until this can be done. 😊

### Éric Archambault and Vincent Larivière

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# Pros and cons of research assessment

Ellen Hazelkorn

Rankings and research assessment have become an integral part of higher education and publicly funded research. Research assessment is a means, at both the national and institutional level, for boosting research performance and quality, and optimizing resource allocation. International evidence shows, however, that ranking and assessment processes can have perverse effects, especially when indicators are considered in isolation and simple correlations are made.

## Why assess research?

Rankings and research assessment now form a permanent and necessary part of higher education and publicly funded research. Research assessment is an important mechanism, at both the national and institutional level, for boosting research performance and quality, optimizing resource allocation, differentiating missions and institutional profiles, facilitating international benchmarking, and identifying peers for networking and strategic alliances. It also serves as a tool to increase public awareness and understanding and hence participation in broader discussions about higher education (IHEP, 2009, pp. 1–2). Because research assessment requires improved data collection, it can be beneficial for strategic planning and management, and institutional autonomy.

International evidence shows that ranking and assessment processes can have perverse effects, especially when indicators are considered in isolation and simple correlations are made. The evidence also shows that a number of governments, higher education institutions (HEIs) and researchers are making decisions and realigning their priorities in order to match indicators. This includes over-concentrating research in a few elite HEIs, focusing on particular disciplines (primarily the sciences), and neglecting local or regional issues in order to publish in high-impact international journals. Throughout the world, governments and HEIs have rewritten strategies and priorities, and have made significant changes at both the system and institutional level in order to improve their position in global rankings (Hazelkorn, 2008).

As indicators are not value-free, the chosen methodology and the interpretation of the results can have considerable implications and carry numerous risks. Throughout this section, we discuss the limitations of some frequently used

indicators, and offer some possible alternatives for a ‘good practice’ model.

## Limitations and unintended consequences

Research assessment and ranking can share a number of characteristics. They both seek to benchmark higher education performance on the basis of selected, and sometimes weighted, indicators. Rankings rely heavily on traditional research outputs captured in international bibliometric and citation databases, such as Thomson Reuters WoS and Elsevier’s Scopus. The scores are aggregated into a final descending rank. Rankings are essentially one-dimensional, since each indicator is considered as independent from the others. Their popularity is largely related to their simplicity; as with restaurants, televisions or hotels, rankings of universities provide an easy guide to quality, at least at first glance.

In contrast, research assessment is often a multifaceted review of performance, conducted by public agencies, using qualitative and quantitative indicators. The UK’s Research Assessment Exercise (RAE) is a good example of this. Organized every four years since 1986, it is based on institutional submissions in subject areas or units of assessment, which are ranked by a panel of subject specialist peer reviewers. The results determine the level of resource allocation. This is in sharp contrast to other systems that focus mainly on quality assurance, such as in the Netherlands. In recent years, concern about the financial cost, the human resources and time needed, the level of bureaucracy and allegations of ‘gaming’ have led to the adoption of a more metrics- or indicator-based system. Like the UK, Australia has abandoned its Research Quality Framework (RQF) in favour of the Excellence in Research for Australia Initiative (ERA).

The results of research assessment are rarely ordered in a hierarchical manner, but the publication of their results by the media or other organizations has often led to the production of a 'league table' of HEIs. This practice has facilitated the restructuring of the higher education system, and has arguably led to a growing convergence between assessment and rankings.

Bibliometric and citation databases seek to identify the core literature by selecting journals that publish the overwhelming majority of peer-reviewed articles (around 9,000 in WoS and 18,000 in Scopus). While there are efforts to extend coverage to arts, humanities and social science journals, the main beneficiaries of this methodology have been the physical, life and medical sciences. This is because these disciplines publish frequently with multiple authors. In contrast, the social sciences and humanities are likely to have single authors and to publish in a wide range of formats (monographs, policy reports, translations and so on), whereas the arts produce major art works, compositions and media productions, and engineering focuses on conference proceedings and prototypes.

Since, as Thomson Reuters say, 'English is the universal language of science at this time in history', international databases have tended to favour English-language publications. This disadvantages the social sciences and humanities, which often consider issues that are primarily of national relevance, and publish them in the national language. It can also benefit countries where English is the native language, and countries that publish the largest number of English-language journals.

This disparity is further reflected in citation practices. Citations aim to measure the impact of research on academic knowledge. The system, however, has natural limitations and is open to gaming. Authors are most likely to reference other authors whom they know. Given an intrinsic tendency to reference national colleagues or English-language publications, the reputational or halo factor implies that certain authors are more likely to be quoted than others. This may occur because of the significance of their work, or because of informal networks. Self-citation, by which authors reference their own work, can also have a knock-on positive affect.

Bibliometric and citation databases capture past performance, which is usually interpreted as an indicator of future potential. As a result, new research fields and interdisciplinary research can be neglected. It is sometimes hard to get papers that challenge orthodoxy published, or

they are less likely to be published in high-impact journals. There is an underlying assumption that journal quality is a proxy for article quality.

*Because articles published in new journals remain invisible to most citation indices, they also remain invisible to almost all ranking systems. Such invisibility dramatically skews scholarship ... implicitly encourag[ing] conservatism ...*

(Adler and Harzing, 2009, p. 78)

By measuring impact in terms of papers cited by academic peers, citation and bibliometric indices can ignore research that affects policy, legislation or regulatory regimes, technological or social interventions, business creation and employment, and other non-scholarly forms of impact. This is a key omission – not just because it advantages certain disciplines over others, but because it projects a narrow image of research.

Research has traditionally been divided into two categories: basic and applied. Over time, these boundaries have tended to blur as research and researchers engage in all aspects of the knowledge triangle. Knowledge has also become more democratized as an increasing number of people become aware of the issues and contribute to the application of knowledge. Yet collaborative research and its social impact or economic benefits do not usually form a central feature of assessment. Admittedly, social impact or economic benefits can be difficult to measure, but its value, to paraphrase Einstein, derives from the ability to measure what counts rather than what can easily be measured.

Peer review represents a cornerstone for research assessment. Assessing research quality requires a detailed understanding of the field and its contribution to knowledge. But peer review also has its limitations. Evaluators often assess research in terms of what they know; novel and challenging ideas can be marginalized, as noted above. Marginson notes, 'Not all path-breaking innovations gain early peer recognition and some are sidelined precisely because they challenge established ideas' (2008b, p. 17). Peers often conform to conventionally accepted patterns of belief, and may be influenced by a researcher's reputation rather than their actual contribution to knowledge.

Finally, the results of the research assessment process are usually publicized as institutional results. Because research is increasingly conducted by teams, individual performance data is aggregated using the research field, discipline or department as the unit of assessment. (Individual

performance usually serves for promotional or award purposes.) While this method offers the best opportunities for comparison, both within and between HEIs, comparisons at the department level can be problematic, because departments are often historical constructs. Nevertheless, it is best to assess research at the subinstitutional level in order to overcome the natural distortions that arise when results are aggregated to the institutional level. This is because large HEIs, especially those with medical schools, do best in systems that simply quantify total output, such as global rankings. Most HEIs are excellent in certain domains and in need of improvement in others. Whole-institution comparisons brand everything according to the majority. Differences in disciplinary practice, or new or emerging fields of investigation, can be undermined by this method.

### Research assessment 'good practice'

In order to overcome many of these limitations, careful attention must be paid to the purpose of research assessment. Its purpose depends on the end user: for example, policy-makers and government agencies, HEIs, public or private research organizations, potential researchers or graduate research students, employers, civil society and the media. Each group uses information differently to satisfy a diverse and often conflicting set of objectives. The experience of rankings suggests that the number of users and uses is increasing, and that it is not possible to control the ways in which people use or interpret the data once it has been published.

The choice of indicators is therefore vital. The results can impact on individual, institutional and national reputation and status, students' choices and opportunities, and our own understanding of knowledge and knowledge production (Hazelkorn, 2009). Thus, indicators should be appropriate and verifiable, and the process must be transparent and replicable. It should enable decision-making by internal and external users, and facilitate comparisons over time and across different types of HEIs. Indicators should not be affected by any bias, and they should instil trust. In other words, those being assessed must believe in the indicators' appropriateness and truthfulness. Having too few indicators can lead to distortion. Too many can make the exercise complicated and costly. Ultimately, the choice and weight of indicators should seek to strike a balance between fairness and feasibility (European Commission, 2006; Cañibano et al., 2002). 'Good practice' suggests that research assessment should:

- Combine indicator-based quantitative data with qualitative information, for example, information based on expert

peer or end-user assessment. This enables the quantitative information to be tested and validated within the context and purpose of the assessment.

- Recognize important differences between research disciplines. Peer-reviewed journal articles are the primary publication channel for practically all academic disciplines. However, the complexity of knowledge has led to a diverse set of output formats: audiovisual recordings, computer software and databases, technical drawings, designs or working models, major works in production or exhibition, award-winning designs, patents or plant breeding rights, major art works, policy documents or briefs, research or technical reports, legal cases, maps, translations or editing of major works within academic standards, and others.
- Include impact and benefit assessment. Assessment should include indicators capable of capturing and recognizing the fact that research does not exist in isolation. This may differ along disciplinary lines. It may include indicators such as graduate employment, the number of companies established and employees hired, changes to policy, legislation and regulatory regimes, waste and pollution reductions or improvements in health care (see Australian Government, 2006). Stakeholder esteem indicators point to how research is viewed by the wider community. Among such indicators, we find keynote addresses; prestigious national and international awards and prizes; international visiting research appointments; and appointments to advisory committees in national or international organizations. The involvement of stakeholders or users in the process could be considered.
- Involve self-evaluation as a means of proactively including the research community in the assessment of its own contribution. It also represents a way of placing the research process – which includes the organization, management, and developments over time – in context and ensuring that it stays in line with the institution's mission (Spaapen, Dijkstra and Wamelink, 2007).

### Conclusion

The European Council's 2006 communication, *Delivering on the modernisation agenda for universities: education, research and innovation*, illustrates the ways in which the legacy of rankings has become embedded in higher education policy:

*Universities should be funded more for what they do than for what they are, by focusing funding on relevant outputs rather than inputs. ... Competitive funding should be based on institutional evaluation systems and on diversified performance indicators*

*with clearly defined targets and indicators supported by international benchmarking.*

This has implications not only for research assessment processes but for academic behaviour as well. There has been a clear shift from self-declaration to external verification of quality. Greater attention is being given to the issue of knowledge access. Open science, open source and institutional repositories are just some of the many existing alternatives that are being explored and adopted. In some cases, national agencies are pressing for these changes in order to maximize the visibility, accessibility and scientific impact of knowledge for society and the economy.

An important obstruction to a more inclusive research assessment process lies within academia itself. Because research has the 'capacity to shape academic careers at the point of hiring and promotion' (Marginson, 2008,

p. 17), it has become vital to identify indicators and methodologies that measure, assess and reward the full spectrum of research activity – across all disciplines, including interdisciplinary work, and all discipline outlets. This will help to incentivize academia, increase investor confidence and inform the public. It is also vital because a major handicap for researchers engaging in new forms of knowledge production is that recruitment, tenure, promotion and prestige still reward traditional, disciplinary Mode 1 outputs.

While governments and national agencies may wish to set up simple processes, there is no single set of value-free indicators. Thus, the choice of indicators, the methodology used and the weightings assigned to them are vital. Greater attention needs to be given to all these factors in order to ensure that the process is fit for purpose and avoids producing unintended consequences. 😊

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# Research assessment in the United Kingdom

Alis Oancea

The UK has been assessing higher education research at the national level since the mid-1980s via the Research Assessment Exercise (RAE). Every four years, departments have collected information on staffing, research income, research students, publication outputs, indicators of esteem and research environments. The submissions have then been peer-reviewed and graded. The resulting ratings of research quality have been used by national higher education public funding bodies in their funding and policy decisions.

## Background

The assessment of higher education research at the national level in the UK has been carried out since the mid-1980s via the Research Assessment Exercise (RAE). Every four years (on average), departments have collected information on staffing, research income, research students, publication outputs, indicators of esteem, and research environments. The submissions have then been peer-reviewed and graded (from 1 to 4 in 2008) by subject panels and subpanels, consisting of a mix of academics and users relevant to each field, who had agreed on subject-specific criteria in light of generic guidance. The resulting ratings of research quality were used by national higher education public funding bodies in their funding and policy decisions. Up to 2008, only those departments that had scored highly in the RAE were subsequently funded. In 2008/09 funding was spread more thinly, not on the grounds of overall grades, but on the basis of departmental 'quality profiles'.

The RAE initially met with widespread support as a potential solution to problems generated by the expansion of higher education. The 1992 Further and Higher Education Acts had almost doubled the number of UK universities by granting university status to institutions formerly known as polytechnics. The argument was that the expansion had made block-funding for research, with low accountability levels, unsustainable.

The benefits of the exercise for the social sciences, aside from arguably putting research more firmly on the public agenda, included:

- development of research cultures in post-1992 universities
- enhanced management practices and structures in research units
- increased attention to human resources in research

- improved completion and publication of research
- better overall quality and international standing of research (Harley, 2002; Elton, 2000; McNay, 1997).

Initial support soon became concern. Assessment and funding, although separate processes, were inextricably linked in how most people saw the exercise and in institutions' strategic decisions, particularly as the exact amount of funding was only made known after the end of the assessment process.

## Common concerns about the RAE Research governance and administration

The exercise was accused of promoting an excessive concentration of funding (AUT, 2002) and of weakening the UK's 'dual support' system for research funding, which allocates block grants for research infrastructure separately from competitive grants for individual projects and programmes. Others, on the other hand, worried that the RAE had spread existing resources too thinly, particularly following the expansion of the university sector in the early 1990s (Elton, 2000), and after RAE 2008.

Managing the RAE created a considerable administrative burden at all levels of the system, seen by many as an excessive and stressful bureaucracy (AUT, 2002). For some, the RAE increased managerial control over research, to the detriment of professional autonomy (Harley, 2002). Further department-level impacts of the RAE included a perceived shift in the role of research directors from developer to fund-raiser (Dadds and Kynch, 2003), and resource transfers from teaching to research (McNay, 1997).

## Research quality and diversity

It has been argued that RAE was aimed at eliminating wasteful funding, rather than rewarding excellence (Gillies,

2007). Less conventional, though arguably important, research and researchers may have fallen victim to the rigours of assessment and reward. In addition, the RAE was accused of making research more 'short-termist', due to pressures to publish, and the encouragement of bad practices (split papers, duplicate publication, mushrooming of new journals and so on).

Recent proposals to use bibliometric indicators in future research assessments seemed partly intended to redress such negative impacts by giving greater weight to quality-reviewed publications. These proposals, however, have led to further concerns about biasing assessments towards refereed journals (for example, those included in indexes such as ISI and Scopus), to the detriment of professional publications, monographs and edited books.

In addition, RAE has often been accused of failing to recognize and support diversity in research. For example, it was accused of discouraging innovative, applied and interdisciplinary research, while tilting professionally related subjects towards theoretical work (Elton, 2000; McNay, 1997); favouring policy-related research; or endangering pedagogic research. In addition, RAE-informed concentration of funding may have resulted in reduced regional research capacity (Deem, Mok and Lucas, 2008).

Many have argued that the RAE has been successful when it came to screening out poor-quality research through peer review, but that its financial outcomes threatened 'emerging' research cultures and 'pockets of expertise' in various subfields of social research (Dadds and Kynch, 2003). The 2008 exercise offered an interesting 'natural experiment' in this respect. In 2008, there only needed to be one individual with excellent outputs in order for their institution to benefit from some level of funding. Although the principle underpinning the new formula was sound, a fresh wave of concern emerged regarding its 'redistributive' effects: gains in funding throughout the system were offset by considerable losses by the top-rated institutions, particularly in fields outside science, technology, engineering and mathematics.

#### Human resources and work climate

Further concerns were expressed regarding the detrimental impact for individual staff members of not being submitted to the RAE as 'research active' and about the imposition of the role of 'active researcher', above that of 'teacher' or 'scholar', as the standard in academic careers (AUT, 2002; Elton, 2000; Hare, 2003). According to Harley (2002), although the RAE and the principle of research selectivity

it embodied had been largely accepted within university management circles, mid- and early-career academics reported feeling under pressure to perform and to adapt to what they perceived as inappropriate criteria. Mills et al. (2006) also pointed to the negative influences of 'local interpretations' of the 'RAE culture' on the careers of young researchers; for example, the expectation, based on anticipated funding outcomes, that they produce four publications of 'RAE standard', despite the provision for special circumstances in RAE guidelines (Mills et al., pp. 13, 91). The RAE was also blamed for contributing to increased reliance on short or fixed-term employment contracts in social science research (Mills et al., 2006).

In addition, many commented on the role of the RAE in creating a 'transfer market' of researchers towards 'elite' institutions. Harley's (2002) respondents spoke of 'head-hunting and touting', and of 'RAE appointees', that is, 'academics ... appointed to senior posts specifically to boost RAE ratings' (pp. 193, 199). Such transfers were reported to have occurred prior to each exercise in a bid to increase the chances of a good grade, but also following the publication of the funding outcome, due to the increased capacity of top-rated institutions to recruit and sustain larger numbers of staff. The financial outcomes of the RAE 2008, however, meant that in certain disciplines the top-rated institutions lost some of their financial power to further recruit, while departments with lower overall RAE rankings were sometimes able, through their pockets of excellence, to advertise new positions.

Finally, some argued that the exercise stimulated a climate of divisiveness, unfairness and demoralization among researchers (AUT, 2002; Harley, 2002), as well as a narrowly 'competitive, adversarial and punitive spirit in the profession' and a skewed hierarchy of values, which emphasized research over teaching (Elton, 2000, p. 279; AUT, 2002). These changes challenged academics' 'epistemic' identity, which relied on collegiate peer review, disciplinary recognition, and a balance between teaching and research (Harley, 2002).

#### Technical and procedural concerns

The RAEs have been criticized for their summative character, for parochialism, for unclear criteria, and for their tendency towards bias. Sources of bias, in the preparation of submissions and in their assessment, included gender effects, 'halo' effects in relation to the reputation of institutions, journals or individuals, and 'game-playing'. Peer review quality was also occasionally criticized.

## Concluding comments

Some of these concerns arose early in the RAE process and began to be addressed as early as 1997, when the Dearing Report recommended that institutions should be able to choose between the RAE and a lower level of non-competitive funding. The 2003 Roberts review then proposed an overhaul of the RAE system. Further consultation in 2006–2007 concentrated on the idea of replacing the RAE with a metrics-based exercise (Oancea, 2007). At the time of writing, this idea has been considerably toned down, following strong reactions from within academic circles. The next exercise, dubbed Research Excellence Framework, will still have peer review at its core, although in some disciplines bibliometrics would also play a role.

Although the emphasis of this paper has been on the RAE's shortcomings (perceived or proven), the paper does not argue that the exercise was flawed to the extent that any change would be good change. Many of the effects attributed to the RAE cannot be traced directly to the exercise. Rather, they were responses of the higher education system to wider trends in the UK environment for research policy and public service governance.

The responses to the RAE summarized in this paper highlight the complexity of any attempt to rank research, and

the difficulty of designing a national assessment system that is fair and effective. A recent in-depth review of the impacts of RAE 2008 teased out some of these complexities (Oancea, Furlong and Bridges, 2010). The review revealed a mixed perception of impact. Recent proposals for reform have answered some of the reservations about the RAE described above, but leave most of the objections of principle unaddressed. For example, the presuppositions that underpinned different rounds of the exercise and which were open to challenge included expectations of:

- the value of creating quasi-markets in state-funded research through competition and selectivity
- the importance of high-stakes assessment as driver of quality
- the meaningfulness of aggregates of quality at institution level
- the commensurability of research quality across subfields, types of institutions, research cultures, and communities
- the direct connection between research concentration and research excellence.

Reforms must begin by reassessing such basic principles rather than placing too much hope in the search for generic techniques to fill substantively different holes in the system. ∩

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### Flash

## The assessment of social scientists in Spain

Unlike many other evaluation systems, the Spanish research evaluation system tends to focus on individual researchers rather than on research organizations (Cruz-Castro and Sanz-Menéndez, 2007). The system acts as a provider of individual rewards (grants, salary bonuses, reputation and so on) rather than as a means of steering and managing research institutions. In such a system, peer review forms a core pillar for the evaluation of individual research outputs. Curricula vitae (CVs) are partly assessed in terms of publications, and the quality of the journals in which a researcher's papers appear. Peer commissions in evaluation agencies have used a diverse set of criteria to assess local

social science journals in which researchers have published articles. These are complementary to the traditional bibliometric approaches (Giménez-Toledo, Román-Román and Alcain-Partearroyo, 2007).

Two of the three main evaluation bodies are the Agencia Nacional de Evaluación de la Calidad y Acreditación (ANECA, the National Agency for Evaluation, Quality and Accreditation), and the Comisión Nacional Evaluadora de la Actividad Investigadora (CNEAI, the National Commission for the Evaluation of Research Activities). The first agency provides accreditation in order for academics to access

certain university positions. The second evaluates the scientific output of tenured researchers on a six-year basis. Each successful evaluation leads to a salary bonus. They operate through subject area, academic commissions and a peer-review system. The scientific community is their key source of governance.

The main criteria used by these commissions to evaluate social scientists are available in various public documents.<sup>1</sup> We have analysed them in order to evaluate the extent to which the processes rely on bibliometric indicators when compared with other fields. ANECA strongly values publishing in indexed journals. However, this agency also makes certain distinctions. In the hard sciences such publications form a 'fundamental element' in any evaluation process, but in the social sciences they form an 'important element' together with books and book chapters. CNEAI, on the other hand, requires that in order to obtain a positive evaluation, social scientists must have at least two ISI articles in referenced journals out of the five required contributions. This forms a standard (with a few small variations) for most other research areas as well – mathematics and chemistry require three ISI publications. Looking at the evolutions in the CNEAI criteria over time, it could be argued that behind this standardization of ISI publication requirements was an attempt to develop the internationalization of the Spanish social sciences (Jiménez-Contreras, de Moya-Anegón and Delgado López-Cozar, 2003). Certain disciplinary specificities are noticeable. In the economic and business sciences, for instance, only articles published in journals that are highly ranked in the Journal Citation Reports<sup>2</sup> are taken into consideration. In other social sciences, an article is positively considered by the commissions if the journal is covered by the Indexes, regardless of its position in the Report.

Institutions and researchers have observed how certain well-known publications in their fields were not taken into consideration on the grounds that they were not present in

1. <http://ciencia.micinn.fecyt.es/ciencia> and <http://www.aneca.es>
2. The Journal Citation Reports is a Thomson Reuters product related to the SSCI and SCI. It includes a selection of journals covered in these databases and provides among other things their impact factor. See more information at [http://thomsonreuters.com/products\\_services/science/science\\_products/scholarly\\_research\\_analysis/research\\_evaluation/journal\\_citation\\_reports](http://thomsonreuters.com/products_services/science/science_products/scholarly_research_analysis/research_evaluation/journal_citation_reports)

the traditional databases. In order to deal with this problem, new tools and sources of information on the quality of the social science publications have been developed. The evaluation committees now also assess whether journals are well positioned or valued in other publication evaluation systems such as ERIH (European categorization of journals), Latindex, DICE,<sup>3</sup> In Recs<sup>4</sup> and RESH.<sup>5</sup>

To conclude, peer evaluations of Spanish social scientists regularly use data on publication quality. They do not limit themselves to traditional bibliometric indicators but also use complementary evaluations of local journals in which academics have published their research.☞

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3. DICE is a tool built from RESH, but it does not include the two most controversial indicators in RESH: assessment of specialists and mean impact index. DICE does not allow for ranking publications. <http://dice.cindoc.csic.es>
4. In Recs bases its evaluation on the calculation of a 'Spanish' impact factor, as well as other bibliometric indicators. The aim is to compensate for the lack of coverage of Spanish journals by international citation indexes and, above all, to try to discover the real influence of national journals in the Spanish scientific community. It is developed for social sciences and law. <http://ec3.ugr.es/in-recs>
5. RESH provides seven different quality indicators to assess publications: permanence, compliance with publication frequency, external peer review, value given by Spanish specialists to each journal, number of Latindex criteria fulfilled, databases which systematically include the publication and mean impact index (a sort of impact factor calculated for Spanish journals with a five-year citation window). The final score allows for a ranking of journals by area. <http://resh.cindoc.csic.es>



## 7.3 Project funding and agenda-setting

### Introduction

The way in which resources are allocated is central to the organization of national research systems, and the fine-tuning of these mechanisms may offer ways to improve the effectiveness and international competitiveness of these systems. A problem with the analysis of funding systems is that it is often unclear how much of the block grant funding to institutions is allocated to research, infrastructure and salaries. As discussed in Chapter 2, one of the major trends in the public funding of research in most regions of the world is a move away from block funding and towards competitively allocated project funding. This section is mainly restricted to a discussion of the allocation of funding to social scientists in public sector research organizations in OECD countries and China.

An important element of the research assessment exercises discussed in the previous section is peer review. Peer review is also used in the evaluation of research proposals and the allocation of funding. The use of proposal peer review implies certain trade-offs, and the system is facing several challenges at present (Hackett). As was discussed in various contributions to Chapter 2 of the Report, the peer-review process can also have its limitations. Favouritism and a lack of transparency can hamper the openness and fairness which should be basic principles of the review process. In small and developing research systems there may simply be insufficient peers to anonymously evaluate proposals on a variety of specialist topics. In these cases, drawing on the international scientific community or expatriate scientists may offer a solution. For some purposes, the use of carefully devised formulae to allocate resources may be preferred to the peer review process. Arriving at good metric-based formulae would however be difficult, especially in the social sciences. For the top segment of good proposals, neither proposal peer-review nor the bibliometric quality profiles of applicants explains the eventual funding decisions of several European funding agencies (van den Besselaar). Apart from these measures of quality or excellence, these research councils appear to consider other factors in their eventual evaluation decisions, and this is not necessarily a bad thing.

The description of the evolution of the Chinese social science funding allocation system offers an interesting glimpse of how this system currently shares many features of the European and North American funding systems (Wei). Bibliometric indicators are used to inform proposal peer review, but these assessments are based in part on recently compiled Chinese-language bibliographical databases. This again helps overcome some of the limitations of bibliometric evaluations mentioned earlier.

Changes in funding policy and programmes in Canada have allowed an increasingly strong focus on efforts to make social science research more visible to a diversity of publics apart from other social scientists (Provençal). This also has an impact on the evaluation of proposals and research, since other impact indicators than journal citations are required. The experience of the Dutch research council (Nijkamp) suggests that social scientists are responsive to societal needs, even when applying to open calls for fundamental research proposals. Even if it remains important to set thematic priorities as well, in this national case, the questions originating from the scientific community are considered an appropriate guide for research policy in the social sciences.

The contributors to the previous section generally agreed on the need to combine metrics-based quantitative indicators with qualitative reviews. As this section showed, peer review – in some countries supported by metrics-based evaluations – is central to the allocation of resources to researchers and research proposals. It has its limitations and implies certain trade-offs, but it is likely to remain a central feature of both evaluation and resource allocation mechanisms in most research systems in future. This does not mean that the allocation of funding is not subject to constant reappraisal and change. Some types of innovative, multidisciplinary or application-oriented research may be more amenable to other evaluation mechanisms or a combination of different types of evaluation. ☺

# Peer review and social science research funding

Edward J. Hackett

Peer review in the social sciences is facing the same choices and challenges as scientific peer review in general. However, the dangers are amplified by the shorter intellectual and institutional histories, and researchers' perpetual obligation to justify and enhance their status within intellectual and policy circles. There are alternatives to peer review for the allocation of research support, but these bring grave technical and institutional liabilities, including lower legitimacy and greater vulnerability to political distortion.

Intellectual advances in the social sciences depend on funding from national research agencies to support data acquisition, analysis, student training and the development of new technologies. Peer review (or, equally, merit review) is the established method for evaluating research and allocating resources. This has led to discussions within the social science community about the merits of peer review.

An appraisal of the peer review system should begin by recognizing that its use in the allocation of research funds is a choice, not a requirement. If peers do not allocate resources for science, then who might do so? There are several alternatives, including legislators, research managers and formulas. When legislators allocate funds the practice is formally known as direct appropriation (and informally as earmarking or pork-barrelling). In the 2008 fiscal year, the US Congress earmarked about \$2.25 billion for projects in 920 colleges and universities, continuing a steep upward trend that began in 1996 (Brainerd and Hermes, 2008).

Critics of earmarking complain that it circumvents substantive expertise by ignoring the scientific community's collective wisdom. Earmarking corrodes the meritocratic values of science, stigmatizing recipients and frustrating reviewers, especially when competitive research funding is scarce and sensitivities are high. Supporters argue in response that earmarking enacts principles of representative decision-making (because legislators are elected officials) and distributional or geographic fairness (because legislators are drawn from across the nation). In this view, earmarking offsets the oversights and elitism of meritocratic decision-making.

Alternatively, 'strong managers' might allocate research funds according to their best expert judgement, as is done

in the Defense Advanced Research Projects Agency (DARPA). In effect, this represents peer review by a single peer. The manager must be the intellectual and reputational equal of those applying for support. The person must understand the field, including its epistemic culture and membership, and hold clear and widely shared views of its prospects, in order to ensure that decisions and allocations are made in a wise, legitimate and effective manner.

The strong manager is oriented toward and accountable for attaining clearly defined performance outcomes, because in this system procedural accountability is low. This model's effectiveness stems from its ability to support research projects whose objectives are clear, attainable and defined by the funding agency. In contrast, however, much science funding supports research programmes whose purpose is to advance knowledge by selecting between investigator-initiated, opportunistic and open-ended proposals. Strong manager funding can welcome risk but is particularly averse to and impatient with failure, cutting its losses when a promising idea falls short, whereas programme funding would tolerate a revision of scope or purpose.

A third research funding mechanism consists in using formulas to allocate research resources on the basis of seemingly objective criteria: for instance, to states, universities or institutes, and then to centres, teams or individuals within them. Formulas integrate a variety of criteria, including the number of publications, the number of faculty employed, graduate students enrolled or degrees granted, the regional or state population, the level and type of economic activity, or other indicators of past performance, current needs or potential payoff. Nonetheless, fair and effective formulas are difficult to devise, and the relative merits of alternatives are subject to passionate debates:

- How would newcomers fare in such a system?
- How can older researchers who are less productive be eased out, while retaining those who are performing well?
- Would scientists persevere in a recalcitrant line of inquiry, or would they recurrently change course in order to meet performance standards?
- Who would develop and administer the formula, preserving it from efforts to 'game' the system by doing the things that are rewarded, even if they are not most beneficial to science or engineering?

Finally we come to peer review, an institution imbued with practical and symbolic meaning that spans the worlds of science and policy, academia and government, and varied scientific disciplines, and that extends from research into domains of professional practice (in education, engineering and medicine, for example; Chubin and Hackett, 1990). Calling peer review a boundary process highlights the mix of communities, purposes, evidential standards, argumentative procedures, ethical precepts, theoretical frameworks, epistemic cultures, principles of fairness and the like that mingle and collide in the review process (in a way that resembles 'boundary objects' as discussed by Star and Griesemer, 1989). For example, where government might demand accountability, due process and prudence, science might require freedom, agility and boldness.

Positioned across the border between government and academia, proposal peer review is asked to negotiate among competing purposes, doing things that are not always consistent with each other. Among these are evaluating research ideas, providing expert advice (to proposal writers and funding agencies), imparting momentum to a promising line of research, initiating communication among researchers working at the frontiers of knowledge, asserting the professional autonomy of scientists (in relation to other professions), imposing accountability and interposing social considerations into meritocratic evaluations (Hackett and Chubin, 2003). Spanning the border between academe and government, peer review acts as a transducer, changing the form of energy represented by scientific ideas and effort into the form represented by money, reputation and legitimacy. Peer review in the social sciences may entail explicit valuation of the moral qualities of the proposer such as intellectual boldness and perseverance (Lamont, 2009).

The peer review system juggles trade-offs between desirable qualities or values, and changes in external circumstances may shift the balance of emphasis

between competing values. The presence and dynamics of competing values in science and other forms of social organization were initially presented in Robert Merton's studies of ambivalence (for example, Merton, 1973 [1963], pp. 383–412) and Thomas Kuhn's (1977 [1957]) 'essential tension' between originality and tradition in science. For Kuhn, research is performed in dynamic tension between inconsistent demands, on the one hand to say something new, and on the other to build upon the existing literature. It is in the nature of science to seek originality while at the same time challenging it, for example through organized scepticism exercised by individual self-criticism and collective peer-review. The nature and implications of value tensions in science, and particularly in the peer review system, have been extensively presented in a series of papers (for example, Hackett and Chubin, 2003; Hackett 1990, 2005).

The following value poles pose particular difficulties for peer reviewers:

- Originality–Continuity: support for new ideas, approaches, and topics while maintaining the scientific field's research traditions and trajectories.
- Selectivity–Sensitivity: exclude unsound ideas, weak designs, fishing expeditions, flyers and fads while remaining receptive to imaginative ideas, novel approaches, and challenges to received knowledge.
- Responsiveness–Rigour: address urgent, emerging research issues while advancing fundamental knowledge and retaining methodological rigour.
- Effectiveness–Efficiency: provide thorough and expert reviews identifying the best research for support while doing so at the lowest cost and least burden to the review community.
- Validity–Reliability: adequately evaluate all aspects of a proposal (which may require a variety of forms of expertise) while achieving a high degree of consensus among reviewers in order for the process to appear reasonable, sound and legitimate.

Three challenges are likely to shift the peer-review system along the value dimensions described above. The first challenge, posed by the US National Science Board (which oversees the National Science Foundation), calls for increased support for research that has the potential to fundamentally transform understanding (National Science Board, 2007). Through this report, the National Science Board echoes longstanding criticisms of the risk-averse character of peer-review (Chubin and Hackett, 1990; Kolata,

2009). In response, the NSF has shifted its peer review system toward a strong manager approach, increasing programme officers' levels of responsibility and discretion. This is accomplished through two substantially new programmes in the USA: EAGER (EARly-concept Grants for Exploratory Research) and Rapid (a programme that supports urgent research), awarding sums of up to \$300,000 for periods of up to two years on the recommendation of a programme officer, itself usually based upon internal reviews. In terms of the value poles described above, the tendency is towards originality, sensitivity and responsiveness.

The second challenge arises from the increasingly interdisciplinary, international and socially engaged nature of scientific research. Since 2000, interdisciplinarity has been on the rise, and it is now accompanied by other forms of hybridization that broaden the scope of research to include diverse nations, cultures, purposes and publics. The crisp lines that separated researchers from their research subjects and from the users of their research have been replaced by collaborations, partnerships and hybrid identities. This emerging mix challenges the peer-review system. Those engaged in processes that transcend boundaries often experience difficulty in achieving mutual understanding, and a variety of linguistic and operational accommodations may be required (Galison, 1997). In analytical terms, the system is shifting towards greater responsiveness, greater concern for efficiency (since available resources to conduct reviews are not increasing proportionately with the complications of doing reviews) and lessened reliability. Reviews will be written from an increasingly varied set of standpoints, with a decrease in agreement between reviewers.

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The third challenge that faces peer review is the increasing exhaustion of reviewers. The growing numbers of proposals and manuscripts has increased the number of reviews required to inform decisions, overburdening reviewers and lowering their completion rates. Since reviewers are asked to read a greater number and variety of proposals, completed reviews are shorter, less extensive and perhaps less expert (because the interdisciplinary and intersectoral nature of the proposals draws reviewers into unfamiliar intellectual territory). Accompanying these unfortunate outcomes are increased reviewer curttness, crankiness and willingness to refuse review requests, which, in the terms presented above, contributes to the overall system's lower effectiveness, reliability and validity, and perhaps legitimacy.

Peer review in the social sciences is facing the same choices and challenges as scientific peer review in general. However, the dangers are amplified by the shorter intellectual and institutional histories of the social sciences, as well as their perpetual obligation to justify and enhance their status within intellectual and policy circles. There are alternatives to peer review for the allocation of research support, but these bring grave technical and institutional liabilities, including lower legitimacy and greater vulnerability to political distortion. Emerging challenges – identification and support for transformative research; the increasingly interdisciplinary, international and engaged character of research; and the exhaustion of reviewers in a time of increasing volume, scale and complexity of research – all demand immediate attention. For the social and behavioural sciences, this is both a historical opportunity and a threat that will test available reserves of energy, ingenuity and commitment. ☺

# Research funding as selection

Peter van den Besselaar

Do peer-review scores pertaining to scientific quality and bibliometric performance indicators actually guide funding decisions? One would expect at least a moderate positive association. This, however, hardly occurs. Those selected from the large set of good applications cannot be classified as ‘excellent’ or the ‘best’. What does this imply for research funding systems when there is not enough money to fund all good research?

Research councils are ‘in search of scientific excellence’. Although other criteria are important too, such as the societal relevance of research, research councils define their main role as selecting the best proposals and the best researchers through different forms of peer review, past performance assessment and panel reviews. In a case study (van den Besselaar and Leydesdorff, 2007, 2009) we examined the extent to which a social science research council succeeds in selecting the best researchers (for career grants) and research proposals (in an open competition grants scheme). Mission-oriented and thematic programmes were not included. We focused on fundamental research programmes only. Do peer-review scores pertaining to scientific quality and bibliometric performance indicators as defined by this council actually guide funding decisions? We would expect at least a moderate positive association; however, this hardly occurs. Those selected from the large set of good applications cannot be classified as ‘excellent’ or the ‘best’. What does this imply for research funding systems when there is not enough money to fund all good research?

Our study showed that research funding can be considered as a two-step selection mechanism. The research council operates reasonably well at the first step by identifying and discarding the tail-end of the distribution. Researchers with weak past performance<sup>1</sup> and proposals with low referee scores are generally rejected. However at the second step, which involves selection from the top half of the distribution (the group of the good researchers), review scores and past performance measures did not correlate positively with the council’s decisions. The successful applicants had a lower average past performance than

the equally large group of best unsuccessful applicants. If the past performance indicators and referee scores are combined, there is no difference between the successful and the best unsuccessful applicants. If we accept these quality criteria, it is clear that the council under study does not select the most excellent.

Does this imply that the wrong researchers are funded? That could be too abrupt a conclusion. Since past performances and referee scores do not correlate in this top 50 per cent of applicants, scholarly quality (‘excellence’) obviously has more dimensions. In other words, it is impossible to create a quality ranking order to select the most excellent from the set of good researchers. As criteria never lead unambiguously to decisions, the council has great autonomy in prioritizing the large set of good applications. Although it is generally claimed that research quality is the dominant factor, it is clearly not enough, and the council’s decisions are probably based on other criteria. These can be thematic: what is the research about and how relevant is it for possible applications in economy and society? Criteria relating to academic careers, for example policies to encourage female researchers or researchers from ethnic minorities, can also play a role. In addition, someone’s position in the old boys’ network may influence decisions. In other words, the selection and funding of research is a multicriteria evaluation procedure, and the idea of selecting ‘the best’ researchers and proposals is only meaningful if it is interpreted as drawing a line between a large set of good proposals and the rest. Within the group of good researchers and research proposals, talking about ‘the best’ or ‘the excellent’ may not be fruitful.

It could, of course, be argued that these findings are specific to the case under study. However, other studies in other countries and fields show comparable results (Bornmann

1. We controlled for age, discipline and type of funding scheme. This does not change the findings.

and Daniel, 2008; Hornborstel et al., 2009; Melin and Danell, 2006), as did a recent study in which we compared the social science council with a life sciences council (Bornmann, Leydesdorff and van den Besselaar, 2010). Consequently, the conclusions may be more generally valid.

## Implications

The main issue lies at the systems level. Grant allocations should help the science system work properly despite uncertainties. Trying to improve procedures and statistical indicators for selecting 'the best' individual projects seems a blind alley. This has an important consequence, as project-funding success increasingly influences researchers' careers. If the probability of success is small, we should be aware that rejection does not imply that a researcher and a proposal are not good. Furthermore, while rejection may harm individual researchers, if talent is wasted, the entire research system suffers.

From a science policy perspective, the role of a research council is to improve scientific research more generally. This means:

- supporting talented and innovative researchers
- maximizing the probability of scientific breakthroughs (this is excellent research – but only with hindsight)

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- supporting a balanced set of research and programmes – from the fundamental to the application-oriented and from astronomy to philosophy, that is, portfolio management.

Procedures for allocating funds should be discussed in terms of the effectiveness and efficiency of fulfilling these functions at a systems level, by stimulating variation and through properly functioning selection procedures. Does the funding system support the required variation through a variety of funding institutions? Is the best set selected?

One issue needs special attention. If a variety of selection criteria are used, the question of whether these are applied properly and transparently becomes relevant. Even if the procedures support good mainstream research, they do not necessarily support innovation. The complexity of decision-making may shut the system down, preventing new paradigms and new researchers from entering. This suggests the need to assess regularly the potential bias that may have crept into procedures. It may also be useful to introduce competition between funding agencies. This may help avoid nepotism and keep the science system open for a variety of innovative ideas.☺



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# Funding and assessment of humanities and social science research in China

Wei Lili

China has directed increasing attention and funds to humanities and social sciences research since the beginning of the reform and opening-up period in 1978. Management, funding and evaluation systems have consequently been updated, innovated and improved continuously, reflecting the requirements of research development.

In China, the state has attached increasing importance to humanities and social sciences research since the beginning of the reform and opening-up period in 1978. This has led the state to make more money per year available for research. Consequently, the management, funding and evaluation systems have been updated, innovated and improved continuously, reflecting the requirements of research development.

## The humanities and social science research project funding system in China

Since the reform and opening-up period, China has had a human and social science research and teaching system comprised of five types of institutions. These institutions are universities, social science academies, government research departments, public administration schools and military research institutions. Four of the five types of institutions are found at national and provincial or local levels; the exception is military research institutions. Nearly 400,000 people are employed in humanities and social science teaching and research nationwide; 30,000 of these are full-time researchers (Chen Kuiyuan, 2009).

The Chinese research funding system mainly comprises projects that fall under the National Social Science Foundation of China, the Humanities and Social Science Research Foundation under the Ministry of Education, and the research projects system of the Chinese Academy of Social Sciences (CASS). These are also the major national institutions engaged in the funding and evaluation of research. The National Social Science Foundation is open to all five types of research institutions. The Humanities and Social Science Research Foundation under the Ministry of Education, also called the Humanities and Social Science Research Project, provides research funding for teachers

and researchers in the university system. The CASS research projects system offers funding for thirty-six of its research institutes (or centres) and researchers.<sup>1</sup> The three major Chinese national social science funding agencies follow the principle of assigning equal priority to the humanities and social sciences, and to basic and applied research. In addition, local governments and enterprises fund policy-oriented research, emphasizing local and applied research.

Over the past thirty years, the funding of humanities and social sciences in China has gradually evolved from a single research project funding system to a diversified one. Funding may target research projects, research institutions, discipline development, research teams and individuals, and sometimes publications and journals. The funding and evaluation of research projects is the oldest and most comprehensive instrument.<sup>2</sup>

The project execution management is divided into initiation, interim and concluding stages. Initiation management includes project planning, application, and examination and review by experts as well as examination

1. The National Social Science Foundation of China, the Humanities and Social Science Research Foundation under the Ministry of Education and the CASS research projects system are similar to the National Natural Science Foundation S&T Research Projects under the Ministry of Education and the Project System at the Academy of Sciences.
2. In 2009, the National Social Science Foundation funded 1,720 projects, of which 37 were key projects, 1,006 general projects and 677 young scholar projects. Under general projects, the Humanities and Social Science Research Foundation of the Ministry of Education funds 40 major projects annually, 900 planning projects and 400 young scholar projects. It also funds two projects for each of the 135 key research bases. In addition, it funds 60 completed major projects, key projects and general projects. In the past five years, CASS has annually funded about 30 major projects, 100 key projects, 100 young scholar projects, as well as 100 key research disciplines and 70 academic journals at the CASS level.

of the budget and project approval. The interim stage mainly covers an annual scrutiny, budget management and monitoring. The concluding stage mainly covers the evaluation, the final scrutiny, which includes the holding of seminars, peer reviews (by means of panel meetings or through correspondence), publishing the review results and assigning the predetermined budget in keeping with the grading that the project receives.

Research proposals or results are assessed through peer reviews by experts in the same fields of learning. The assessment can be carried out by means of correspondence or through a panel meeting. In both forms, the review can be carried out anonymously or openly.

The review of a research proposal generally requires four criteria to be met:

- Academic and social value, which includes the originality and social impact of the research.
- The proposal must clearly state and elaborate the methodology, research direction and targeted results.
- The chairperson's prior research results and the potential will be reviewed, as will the research team's knowledge composition. Furthermore, the existence of previous research and results is important, as is the preparation of the materials and other requirements, such as the timeframe.
- The proposal must also include a budget and the schedule should be well planned.

The evaluation of research results has two aspects. The first aspect comprises common quality criteria found in the research community and accepted by scholars in the same field. They include the degree of innovation, maturity and difficulty, the academic values conveyed, and the expected social impacts. The second aspect comprises the targets of the research results and the accepted proposal's expectations as agreed in the contract with the users.

The main characteristics of the system for funding and evaluating humanities and social science research in China are that:

- The determination of research topics is a combination of guided and optional selections. The National Social Science Foundation and the Humanities and Social Science Research Foundation under the Ministry of Education operate as funding agencies to support research, while

CASS is a research institution which funds and manages its own research projects. These institutions' research topics largely fall into the two categories of guided and self-initiated research topics. Annually, funding agencies call for research proposals to be submitted, publish research guidelines and allocate project quotas. Following the various research area guidelines, researchers design and propose projects in their fields of expertise. At the same time, self-initiated research topics, which fall beyond the framework of guidelines, are also proposed and reviewed.

- Research proposals and evaluations in the humanities and social sciences are based on a peer-review system. Expert committees or peer-review panels are involved in each step of a research project. The acceptance and conclusion of a research project do not usually depend on the funding agency and management department's evaluation, but on the opinions of experts, expert groups or committees of experts.
- The research project system<sup>3</sup> is the basic way of organizing and managing research in China. The system follows the principle of fair competition to fund good research. Under a given topic, a research team is established as a basic unit to organize and manage the research activities. The chairperson is responsible for the project and has the autonomy to invite researchers to participate, including those beyond their own organization, organize the research, determine the project's pace, ensure the validity of the research arguments and allocate funds.
- The review procedures and administrative regulations are standardized and systematized. This is important, as projects are managed at different levels, depending on the institution that initially established them. The supervising agency, which examines the approval, evaluation and management procedures, applies standardized and systematized rules. These are also applicable to the supervising agency's criteria and management responsibilities and to the research teams' responsibilities, rights and obligations. The regulations and rules are communicated to researchers in the form of a document, which is available online as well as in newspapers.

3. Research project cycles differ for disciplines and project size. Generally, a social science project lasts two years, whereas one for the humanities three to five years. Contracts for financing research disciplines, institutions, scholars and journals usually run for three or five years.



## New trends in the funding and evaluation of humanities and social science research projects in China

The debate on how to ensure fair and scientific peer reviews focuses on two questions. The first is how to determine rational and scientific evaluation criteria and indicators. The second concerns the peer-review system's credibility and fairness.

Since the 1980s, peer review has been gradually and widely applied in humanities and social science planning, funding, assessment, project conclusions, awards for research results and publication in journals and elsewhere. Since the 1990s, however, the limits of peer review have come to light. Peer reviews' lack of generally accepted criteria and other scientific and non-scientific factors, such as reviewers' expertise, viewpoints, personal preferences and research ethics, have influenced and unsettled the evaluation process. Some peer reviews still exist in their original form, which calls their scientific nature and fairness into question.

With the development of the funding and evaluation of the humanities and social sciences in the twenty-first century, research communities and funding agencies have been contemplating these issues, suggesting new methods of evaluation.

Peer review has established its authority to assess research, and remains the main form and method of assessment in China, even though the practice needs to be improved. Since 2000, the National Social Science Foundation, the Ministry of Education and CASS have adopted a number of measures to improve the system and solve these problems. Thus more experts are now included in the pool of referees. Selection has become more standardized and evaluation is done anonymously. Regulations have been put into place to supervise panel meetings, challenge the system and make the project approval system as well as the evaluation system accountable. In respect of interdisciplinary and multidisciplinary projects, experimental projects or controversial projects on which experts are divided, proposals can be submitted to a special panel of experts in different research fields. Some of the proposals may then be re-examined. These projects' final evaluations may undergo a similar procedure.

A combined qualitative and quantitative evaluation has become the basic mode for assessing research. The introduction of quantitative indicators to the traditional qualitative peer-review process in the late 1990s was

a major change in the humanities and social science evaluation. Research communities and their management find this mode more acceptable. To summarize the development of peer review in China, the application of qualitative and quantitative evaluation has experienced three phases. Qualitative evaluation was the only method of peer review before the 1990s. A combined method using different quantitative analyses was adopted in the mid- and late-1990s,<sup>4</sup> and since 2000 the role of peer experts in assessing research has been further strengthened with the introduction and use of new quantitative methods. The roles of the two methods have become clearer, as has the interplay between them. Although the qualitative evaluation of a peer expert is the main method used to assess research, some quantitative indicators are used to supplement this process.

In quantitative evaluation, bibliometric methods are increasingly applied to assess social science research, and were first used in China in the late 1990s. Most Chinese social science journals are not, however, included in the SSCI, because of language and other barriers. In the mid-1990s, a computer-aided bibliometric method was introduced to establish a Chinese social science citation database. The two major databases in China are the Chinese Humanities and Social Sciences Citation Database (CHSSCD), established by CASS's Centre for Documentation and Information, and Nanjing University's Chinese Social Sciences Citation Index (CSSCI). Both are important data sources for the quantitative assessment of humanities and social sciences research (Ji Liang, 2005). They play a crucial role in the bibliometric research of literature, the evaluation of journals, project evaluations, research result awards, the selection of talented researchers, and performance evaluations at research institutions and universities.

4. In view of peer review's problems and flaws, the research community started studying quantitative indicators in the hope of improving qualitative evaluation some years ago. CASS initiated a key project, 'The study and design of indicator systems to evaluate social science research findings', in 1994. Two separate research teams were organized at the Institute of Journalism and the Bureau of Scientific Research Management to study and design indicator-based evaluation systems from different perspectives. In 1998, two evaluation system designs were used to evaluate research results and select CASS's best research results. Since 1999, the National Social Science Foundation has used the evaluation system designed by CASS's Bureau of Scientific Research Management to evaluate its research projects and select excellent research findings. Consequently, when assessing a research project or a research result, peer reviewers must submit their written opinions as well as evaluate the research findings in terms of the evaluation system's indicators. The combination of the two systems provides a final evaluation.

To encourage dedicated and solid research and generate good results, the National Social Science Foundation, the Ministry of Education and CASS have, since 2004, been exploring new measures and patterns to fund research once it is largely or fully completed. This is done to encourage researchers to greater efforts in their scientific and scholarly activities, rather than merely writing proposals for possible funds. The procedures for assessing these projects and approving their funding are similar to those for research proposals.

Currently, the development of humanities and social science research faces a number of new challenges and issues.

The transition from funding single research projects to a more diversified, more transdisciplinary project funding system is continuing. The number of funding types and the forms of research results continue to grow, which calls for a better classification of the funding, evaluation and management systems. We must explore new funding and evaluation methods for different types of project and research results (multidisciplinary projects, or special projects in the same discipline) and gradually establish commonly accepted and type-specific evaluation criteria.

While bibliometric analysis is increasingly applied to assess humanities and social science research, it is sometimes used over-simplistically. Those who oppose bibliometric evaluation question the data sources, analytical methodologies, standardization of citations, coverage of core journals and the role of peer experts, arguing that metrological methods should have a limited role in evaluation. Those in favour are confident that it works well, and encourage its increasing extensive and intensive use in assessing research, although they are also aware of its immaturity.

With international academic cooperation deepening, Chinese scholars and research institutions have developed bilateral and international exchanges and cooperation with

other countries and international organizations.<sup>5</sup> With the internationalization of funding and evaluation, there has been a convergence and standardization of evaluation criteria and procedures. However in China, international exchanges and cooperation regarding project management and research evaluation are still in an early stage. We need to explore these issues with colleagues abroad in future.

With the help of computers and the use of information technology, project management comprises no longer merely project registration, recording, analysis and the comprehensive use of research information, but also follow-up management and the integration and reuse of project information and data. Reviewers can be selected from a wider range of experts nationwide, or from a specific region, to avoid internal evaluation and conflicts of interest.

Good academic discipline and ethics have important implications for the quality of research and evaluation. This question involves the researcher as well as the reviewer. During the process of obtaining research funding and assessment, it involves the reviewer especially. Although government departments, educational institutions and research institutions have already put policies and regulations into place to prevent unethical behaviour and to punish it, more scientific, stringent and operational methods for supervising reviewers should be established and continuously improved. In doing so, we can strengthen the ethics of all those concerned.☺

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5. The National Social Science Foundation and the Humanities and Social Science Foundation under the Ministry of Education, for example, encourage Chinese scholars to include foreign scholars in their research projects. CASS also attaches importance to international cooperation. CASS took part in the EU Seventh Framework Programme (FP7) and CO-REACH-SSR, recently launched by China and Europe. The project 'The Study of Sino-Japanese History' sponsored by China and Japan is another example of international cooperation.

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## Flash

## An overview of Canadian social sciences research and funding

In Canada as elsewhere, increasing attention has been given to how the reach and benefits of social sciences research can be extended beyond academe to more diverse arenas, in the interest of better addressing the problems of complex and changing societies. Consequently, and in keeping with the current climate of accountability for governments and research funding bodies, 'knowledge mobilization' has gained currency and been made a priority. This has been a cause for concern in the social science research community because it raises questions about the role and work of social science scholars and researchers. Furthermore, it can also be interpreted as suggesting a reductive conceptualization of knowledge; it presents uncertainties about how knowledge is 'mobilized', and it raises questions about arbitrary and inaccurate 'impact' measures. These are all justifiable concerns, certainly, and critical engagement with such issues is vital to both the advancement of social science research and sustained academic freedom. The purpose of this short discussion is therefore to provide a context for such a critical engagement. It does so by highlighting the extended reach of social science research as a priority in the policy and programmes of Canada's key funding body for social sciences research, SSHRC, both at present and since SSHRC was established by Act of Parliament in 1977.

From early on, SSHRC identified collaboration and 'knowledge delivery' as key priorities. In its *Proposed Five-Year Plan for the Social Sciences and Humanities Research Council* (SSHRC, 1979), SSHRC identified the limited 'visibility' of social science research results as an 'urgent' problem that needed to be addressed (p. 11). In *Taking the Pulse: Human Sciences Research for the Third Millennium* (SSHRC, 1989), social science research was described as 'invisible' work (p. 4), and there was an identified need for 'knowledge transfer' (p. 2). In *Striking the Balance: A Five-Year Strategy for the Social Sciences and Humanities Research Council of Canada: 1996–2001* (SSHRC, 1996), knowledge transfer between the research community and Canadians was described as a 'particular concern' (p. 16).

In recent years, SSHRC has released key policy documents focusing on the need for 'knowledge mobilization' of social sciences research. These documents include: *From Granting Council to Knowledge Council: Renewing the Social Sciences and Humanities in Canada* (SSHRC, 2004); *Knowledge Council: SSHRC, 2006–2011* (SSHRC, 2005); and *Framing Our Direction* (SSHRC, 2008). In these, SSHRC identifies itself as part of a 'larger system' within a 'new world' with 'new needs' (SSHRC, 2004, p. 7), and describes how its transformation will be one of 'reaching beyond', through 'interactive engagement' across the disciplines and across stakeholder communities in Canada and internationally, as well as through 'maximum knowledge impact'. The latter would be made possible

through building a 'greater capacity for understanding research and its applicability' (SSHRC, 2004, p. 10). The need for transformation, SSHRC claims, emanates from the social sciences being caught in 'a paradox of ubiquity and invisibility: present everywhere, but for all intents and purposes, visible almost nowhere' (SSHRC, 2004, p. 12). The strategic plan, *Knowledge Council: SSHRC, 2006–2011*, opens with a section entitled 'Future Knowledge: We know how to shape our future, so what's stopping us?' (SSHRC, 2005, p. 2) and calls for 'systematic interaction between the research community and the rest of society' (SSHRC, 2005, p. 10). In *Framing Our Direction*, SSHRC claims that to meet such challenges, there is a need to move 'beyond the familiar counting of journal articles and books or indicators such as citations' (SSHRC, 2008, p. 12) to an investment in 'knowledge mobilization efforts that realize the potential of social sciences and humanities research for considerable impact beyond the campus' (SSHRC, 2008, p. 13).

Some of SSHRC's current funding programme envelopes are considerable investments in extending the reach and benefits of research beyond academe. Although there are relatively few of such programmes, they are some of the largest in terms of funds. Most notable are the Major Collaborative Research Initiative programme (maximum C\$2.5 million per project), which promotes 'the development of active partnership' within and beyond academe to reach 'both traditional and new audiences' (SSHRC, 2009a), and the Community-University Research Alliances programme (maximum C\$200,000 annually for up to five years), which describes 'postsecondary institutions and community organizations' as 'equal partners' (SSHRC, 2009b). It is also noteworthy that community organizations are eligible to apply to several funding programmes, and partnership with such organizations is increasingly encouraged in the SSHRC programme descriptions. Further, in 2009, SSHRC began to review its programme architecture, with early, circulated documents suggesting that partnerships both within and beyond academic communities would be more strongly encouraged and supported. Through changes in Canadian funding policy and programmes, there is an increasing and clear focus on efforts to make social science research more visible to a diversity of publics in order to extend the reach of research as a public good.☞

## Johanne Provençal

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## Flash

## Research policy in a small open economy: the case of the Dutch Research Council

Science plays a major role in our society. Scientific research is also vital to ensure our current and future well-being. We must therefore continue to invest in outstanding talent, expand our knowledge horizons and serve society by producing new insights in order to guarantee the Netherlands a leading position in the global knowledge economy. The Netherlands Organization for Scientific Research (NOSR) aims to achieve this exciting task in partnership with other agencies in the country and around the world.

Netherlands social science research has acquired a prominent international position despite the country's relatively small size. This is the consequence of numerous factors, including strict quality control, dedicated efforts of social scientists and public support.

With a budget of over €500 million, the Netherlands Organization for Scientific Research (NWO) promotes research excellence through highly competitive grants, and takes part in international collaborative projects. Excellence and innovation in research form the main anchor points of NWO's policies for the future of science in the Netherlands. Its mission is to develop and fund world-class research, through partnerships with individual scholars, universities and research institutes, complementary national and international science and research organizations, and society. Universities receive a base funding (first-stream funding), and compete for second-stream funding (competitive project-based public research) through applications via NWO. Although there has been a shift from first- to second-stream research funds, a majority of the funding still goes to universities. University budgets are not always transparent and it is difficult to offer precise data on the levels of research spending. In the social sciences, the distribution between first- and second-stream funding is likely to be in the region of three to one.

The social science research agenda – including behavioural sciences – is not only a reaction to societal challenges and issues. It also stimulates partial or structural changes in modern societies. Education, learning, knowledge acquisition and use and socio-economic embeddedness are all important parts of an advanced and open knowledge society, in which blue sky, fundamental research is a critical factor for success. There is certainly both the need and the scope for broader social science research funding mechanisms. However, in all cases, independent peer-review systems will be decisive.

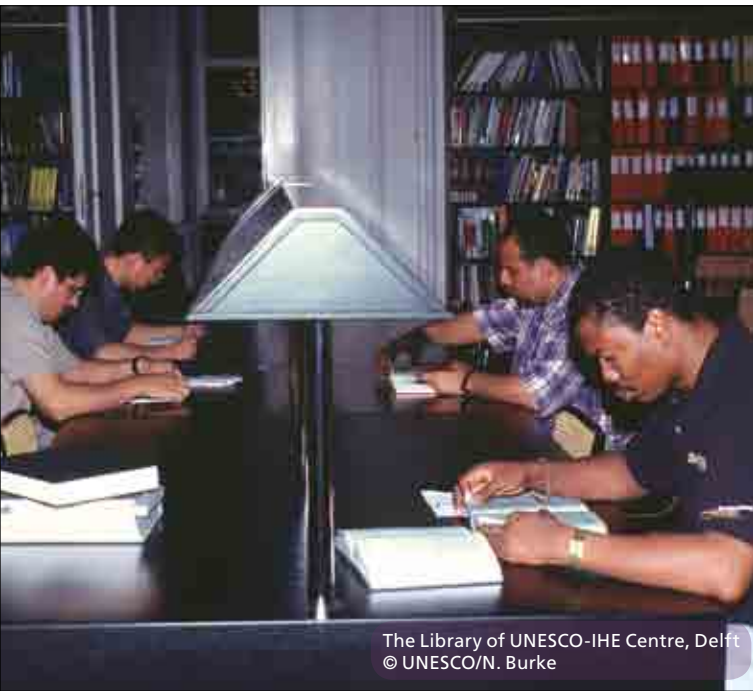
The social sciences have certainly gained a respectable position in NWO's funding policy. This is also reflected in the share of funding for social science research proposals, which

is above the European average. The percentage of NWO's funding that goes towards the social sciences (excluding the humanities) is 8 to 10 per cent. While data on Europe show significant differences, the Netherlands is above average. The Netherlands' strategic view of social science research funding is centred around three anchor points:

- Sufficient scope for basic research and a high level of freedom for individual scientists, where the only criteria are scholarly excellence and the quality of the proposal. This is a highly competitive scheme, offering a variety of opportunities for both young postdocs and established researchers. The funding goes directly to the researcher, thereby not taking into account the 'fair' allocation of resources between universities. It is clear that any distribution of funds between different fields involves different arbitrary aspects. However, if the percentage scores for researchers are fairly similar over the various domains, there is no reason to worry. This funding scheme existed before the emergence of the European Research Council (ERC).<sup>1</sup> Its subsequent adoption by the ERC may explain (partly at least) the high performance rate of Dutch researchers during the first ERC rounds.
- Critical mass for research initiatives that need a scale that goes beyond the individual scholarly level. This includes dedicated programmes as well as funding opportunities for research infrastructure such as large databases. Here too, each funding is based on quality judgement on a competitive basis. This funding scheme is gaining importance, as social science research is increasingly dependent on costly digital databases.
- Thematic research proposals that seek to address societal challenges. Such thematic approaches are the result of a bottom-up process, characterized by an increase in the interactions with important stakeholders such as ministries. The selection and prioritization of such thematic programmes is based on strict rules of quality, societal needs, international cooperation and scientific potential. The number of selected themes is limited. The final decision is based on both a sense of the urgency of the issues, and the potential outcome of possible investment in a given thematic field.

The success rate for funding applications ranges from 10 to 30 per cent, depending on the type of grant. It is noteworthy

1. The European Research Council (ERC), launched in 2007, is the first European funding body set up to support investigator-driven frontier research. For further information on the ERC, see: <http://erc.europa.eu/index.cfm>



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that over the years, the allocation of funds for fundamental social science research by domains, resulting from approved proposals, matched reasonably well the ex ante allocation of funds by thematic programmes. This result suggests that prior and posterior priorities do not show a great divergence in the social sciences. This is of critical importance in any demand to policy-makers for extra funding in the social science domain. The articulation of research priorities is certainly necessary, especially in new and emerging fields of research. However, the research community already appears to be responsive to the new challenges that face our contemporary societies: climate change, sustainable development, security, poverty and so on. Science-driven research emerges as a wise anchor point for research policy and by no means leads to esoteric research orientations in the social science field. ↻

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The ISSC's mission is to advance the social sciences – their quality, novelty and utility – in all parts of the world and to ensure their effective global representation.

The Council works as a catalyst, facilitator and coordinator, bringing together researchers, scholars, funders and decision-makers from all parts of the world in order to promote global social science presence and authority, capacities and connectivity. This involves:

- promoting innovative, inter- and cross-disciplinary, comparative social science research and knowledge exchange;
- determining priorities for the future of international social science;
- providing global platforms to articulate, and strengthen, social science expertise on the most urgent questions of the day;
- strengthening social sciences in developing and transitioning societies;
- fostering international collaboration on the basis of equal partnerships;
- collecting, analysing and disseminating data on social science systems and resources, their availability and impact in different parts of the world;
- broadening inter-disciplinary collaboration among the social sciences, and expanding exchange and joint work between the social sciences, the humanities, natural and other sciences;
- linking social science knowledge effectively to public policies and local needs;
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