

Globalisation, academic capitalism, and the uneven geographies of international journal publishing spaces

Anssi Paasi

Department of Geography, Linnanmaa, 90014 University of Oulu, Finland;

e-mail: anssi.paasi@oulu.fi

Received 10 April 2004; in revised form 27 September 2004

Abstract. Geographers have been arguing recently that the idea of what is ‘international’ in this field has been occupied by the hegemonic discourses of Anglo-American geography and journals. This paper takes this lively debate as an indicator of the global challenges facing higher education and research and provides an analysis of the changing conditions of knowledge production, characterised by internationalisation and competition. Knowledge production is governed to an increasing degree through practices based on market-like operations. The author argues that this may lead to the homogenisation of social science publication practices, which are known to be heterogeneous and context dependent. One indicator of this homogenisation is the demand for publishing in international journals that is arising in social sciences and humanities round the world. Both ‘international’ and ‘quality’ are increasingly being connected with the journals noted in the Institute of Scientific Information’s (ISI) databases. Starting with an analysis of the changing conditions of knowledge production in general and in human geography in particular, the author scrutinises the spatial patterns of the international journal publishing spaces constituted by the ISI. The results show specific geographies: not only the manner in which the Anglo-American journals dominate the publishing space in science but also how the publishing spaces of the natural sciences, social sciences, and humanities are very different. The publication space of social science journals is particularly limited to the English-speaking countries, and this is especially the case with human geography.

1 Introduction

A number of human geographers operating outside the Anglo-Saxon world, and some in North America, the United Kingdom, and the formerly colonised ‘peripheries’, have recently commented on the gradual monopolisation of the idea of ‘international publishing’ by a group of journals published in English in the UK or the USA. This has been part of a broader critique of the geography practised in the US and UK as the product of a global ‘core’ while that practised in other areas is regarded as a product of the ‘periphery’. Attention has been drawn to the intellectual and theoretical exclusiveness of certain Anglo-American journals, and it is argued that geographers operating outside this context become ‘Others’, whose research may be defined as marginal or irrelevant and who are seen as importers rather than exporters of theory (Berg, 2001; 2004; Berg and Kearns, 1998; Desbiens, 2002; Garcia-Ramon, 2003; *Geoforum* 2004; Gregson et al, 2003; Kitchin, 2003; Kitchin and Fuller, 2003; Kong, 1999; Lew, 2002; Minca, 2000; Olds, 2001; Potter, 2001; Short et al, 2001; Slater, 1992; *Society and Space* 2003). Most comments have been in brief editorials, but empirical observations on the nationalities of authors and the members of editorial boards show that many international forums are in fact narrowly Anglo-American (Gutierrez and López-Nieva, 2001; Yeung, 2001).

Contrary to previous arguments, Rodríguez-Pose (2004) suggests, by taking the success of the natural sciences as an example, that the growing use of English is crucial to ensure the survival of diverse geographical traditions, because this is the only way to guarantee that these traditions are exposed to and interact with each other. English, he

suggests, is the key medium for increasing interaction and for reaching out beyond national “endogamous and hierarchical cocoons” (page 2).

Johnston and Sidaway (2004a; 2004b) challenge the idea of a unified Anglo-American geography by showing that, in spite of common roots, there are major differences between the two. Geographers have also argued that national scales, traces, and traditions are indeed hybrids that are “inextricably tangled-up with other contexts” (Samers and Sidaway, 2000, page 666). This suggests that it is not merely that the cores are located in the West and the peripheries elsewhere but that both are also scaled in complex ways vertically within countries, universities, and even single departments. Binary divisions, such as Anglophone versus the rest of the world, thus hide the fact that these contexts are in themselves heterogeneous and modified by power geometries. The core itself is usually heterogeneous and this must also be the case with the peripheries (compare Kyvik and Larsen, 1997). Indeed, the vertical scaling inside states seems to be strengthening along with the rise of market-like practices in academia, and this scaling—which often means simply rankings—is particularly strong in the case of publication forums.

The ranking of scientific institutions is not a new idea, of course. It was echoed forty years ago in the almost social Darwinist account produced by Price, who compared the distribution of scientific activities with the rank-size order of cities.

“This general pattern, carrying all the implications of our previous analysis of productivity distribution, is followed fairly well by such diverse hierarchical lists as those giving the sizes in faculties, or in PhD’s per decade, of the college scientific departments, in any field or in general, in the United States or in the world. It is followed by ranked lists showing the scientific contributions, in terms of papers, journals or expenditures of the nations of the world, ranging from big procedures on any scale or absolute to the minor production of the large number of underdeveloped countries ... About this process there is the same sort of essential, built-in *undemocracy* that gives us a nation of cities rather than a country steadily approximating a state of uniform population density. Scientists tend to congregate in fields, in institutions, in countries and in the use of certain journals. They do not spread out uniformly, however desirable that may or may not be. In particular, the growth is such as to keep relatively constant the balance between the few giants and the mass of pygmies. The number of giants grows so much more slowly than the entire population that there must be more and more pygmies per giant, deploring their own lack of stature and wondering why it is that neither man or nature pushes us toward egalitarian uniformity” (Price, 1963; 1986, page 53).

2 The aims, context, and empirical data used in this paper

The response of the Anglophone geographical community to the ‘internationalisation’ debate has been mainly silence (but see Gregson et al, 2003; Johnston and Sidaway, 2004a; 2004b; Kitchin, 2003; Leyshon et al, 2002; Short et al, 2001), hopefully not implying approval of the Pricean perspective. That is, the debate is being regarded only as one more ‘peripheral’ phenomenon, or a ‘natural’ result of the expansion of science. It would be all too easy to label recent criticisms merely as reactions of frustrated but ambitious scholars from ‘peripheries’ calling for recognition [as many social groupings do in the globalising world (Lash and Featherstone, 2002)] and their share of the symbolic capital and prestige (Bourdieu, 1979) in the field of ‘international geography’. The rise of the debate inside the core as well nevertheless implies that this is a much more problematic question regarding the understanding of what ‘international geography’ in general means.

There are various themes and motives in this debate on ‘internationalism’, but I will argue that this discourse is at least partly an expression of ambiguity that results

from the changing demands in the production of knowledge and in academic publishing practices. Some discussants have noted that the academic 'Others' coming from 'peripheries' are forced to use 'international publishing spaces' because of the 'internationalism' required by national science policies and institutions (Berg and Kearns, 1998; Gregson et al, 2003; Kong, 1999; *Society and Space* 2003; Yeung, 2001; 2002). In the globalising knowledge market this internationalism is usually defined in terms of the English language and is identified with US/UK-based journals that are indexed by one US-based firm, Thomson ISI (Institute of Scientific Information).

The debate entered into by geographers is one example of the emerging resistance, but it is not unique. In postcolonial studies, Canagarajah's (2002) analysis of the geopolitics of academic writing, for instance, critically evaluates both the Western textual, publishing, and social conventions governing academic writing and the forms of hegemony that emerge from the linguistic dominance of English. The architect Crysler (2003), analysing discourses on spatial theory in certain journals, notes the rising importance of journals in the construction of authority, power, cultural capital, and the boundaries of the spaces of knowledge.

The structural elements and power relations built up in this obvious tension between texts and contexts force us to problematise the changing context of knowledge production and distribution, and to make a critical analysis of current publishing spaces. As internationalism in science is most typically associated with publications, I will concentrate in this paper particularly on *journals*, for two reasons. First, it is 'international' journal articles that are particularly revered by the dominant science policy in many countries. Articles in refereed international journals represent a kind of "gold standard against which other products are valued in the hierarchy of academic commodities" (Smith, 2000, pages 332–333). Second, journals are crucial institutions of modern science and the articles in them are the most typical products of scholarly studies (Canagarajah, 2002, pages 32–37). For practitioners, the field 'exists' mostly in journals (Waeber, 1998). Scholarly journals are therefore both "institutions in themselves, and part of larger institutions of knowledge and power" that define and are defined by the "shifting networks of cultural, educational, and political institutions, as well as metropolitan, national, and international contexts in which the participants (and objects studied) are located" (Crysler, 2003, pages ix, 189).

I will analyse in this paper the current reshaping of international journal publishing spaces which is occurring as part of the changing global information order and expanding higher education. My argument is that this perspective will help us to understand the challenges that scholars in various countries and fields face on account of the corporatisation of higher education and research. I will not limit this analysis to geographical journals and publication practices alone, but will also evaluate more generally the differences between the international publishing opportunities in science, social science, and the humanities. This 'structural analysis' will aim to render visible the asymmetries of transforming global publishing spaces, elements that have hardly been touched upon in the previous geographical debate, even though this clearly provides a major context for understanding the role of the English language in science and academic publishing.

The empirical analysis will be based on the journals listed by the ISI (Web of Science). The key argument for this is the fact that the ISI citation data and journal rankings have not only become the most important and institutionalised sources for bibliographic studies—where they doubtless provide researchers with one of the best instruments available for tracing English-language journal articles—but also major instruments for the evaluation of the quantity and quality of research. They are being used increasingly to monitor, rank, and govern the publishing practices of researchers

from medicine to the biosciences and from the humanities to social science (compare Fuller, 2000). Scholars from China (Ren and Rousseau, 2004) to Italy (Ugoloni and Casilli, 2003), from Belgium (Debackere and Glanzel, 2004) to South Africa (Ingwersen and Jacobs, 2004), from Australia (Butler, 2003) to the Nordic countries (Bjarnason and Sigfusdottir, 2002), to take but a few recent examples, rely on such data to discuss the success, impact, and visibility of research in specific contexts. The data in question consequently provide a very powerful vision of what 'international' means in research. Furthermore, my personal discussions with colleagues operating in such diverse contexts as Spain, France, Estonia, and the Czech Republic confirm, together with evidence from the references cited in this paper, that the pressure to harmonise 'international' publishing practices is real. It is therefore important not only for the politics of knowledge but also for the political economy of knowledge to analyse critically the limits of such data in constituting the image of what is international.

This paper is organised as follows. First, to understand the emerging demands for international publications, I will discuss the globalisation of knowledge production and the corporatisation of universities in general and of the knowledge entailed in geography in particular. Second, I will discuss briefly the geopolitical background to the rise of bibliometrics, that is, how the ISI data have become a mirror of internationalism. Third, using the listed journals as empirical material, I will analyse the publishing spaces of science, social science, and the arts and humanities and how the quality of research is increasingly being associated with ISI journal and citation data. Some conclusions will then be drawn about the future of international publishing in geography.

Finally—and I will add this emphatically—I do not by any means object to writing in English. On the contrary, my experience from working in a 'double-peripheral' national and linguistic context confirms that it can be very emancipatory for a critical geographer to operate in many contexts and that the English language is the broadest medium for this activity (Paasi, 2004). What I want to challenge is the emerging tendency for homogenisation in geographical research and publication practice! This tendency is a structural problem in which the English language is the medium, not the cause.

3 The changing global contexts of science

The current process of globalisation is being shaped in complex ways in and by the transformations of the world economy and geopolitics, and it involves a number of core forces of social life, such as the spread of rationalism as a dominant knowledge framework, transformations in capitalist production, technological innovations in communication, and various forms of governance enabling new regulatory frameworks (Scholte, 2000). One key element in this process is the dynamics of science. Knowledge is a major element in the forces of production and an increasingly significant part of internationalisation, competition, and the governance and regulation of globalisation in most countries (Burbules and Torres, 2000; Delanty, 2001; Slaughter and Leslie, 1997; 2001; Välimaa, 2004). It is also, as part of the (higher) education system, a key element in social reproduction.

Previous forces have served as backgrounds for the rise of corporate universities, have made them more dependent on external resources and have—as part of the homogenising market logic—tended to 'harmonise' the practices taking place in them. Science studies have scrutinised the way in which the new market orientation and a whole new vocabulary have emerged. Expressions such as McUniversity, for-profit higher education, academic capitalism, triple helix, or Mode 1 and 2 have become much used slogans since 1990, and diverging, even opposing views have been presented on the relations between science, universities, and society (Albert, 2003;

Clark, 1998; Gibbons et al, 1994; Hackett, 1990; Henkel, 1999; King, 2004; Morey, 2004; Prichard and Willmott, 1997; Slaughter and Leslie, 1997; 2001; Ylijoki, 2003).

The globalisation thesis provides one background for analysing current pressures in publishing cultures (Burbules and Torres, 2000; Delanty, 2001; Teichler, 2004), a background that pays attention to the instrumentalisation of the university as it embraces market values and information technology. Scientists—or some of them, at least—are now identified as part of a ‘super-creative class’, which shapes new ideas and technologies and is crucial for the economic success of (urbanised) societies (Florida, 2002). Slaughter and Leslie (1997; 2001; compare Hackett, 1990; Ylijoki, 2003) speak about *academic capitalism* in which market-like behaviour and the principle of performativity become crucial, and this will transform, reposition, and regulate the activities of researchers. This process increases the power of management and diminishes the autonomy of professional academics (Parker and Jary, 1995). I would argue that this process will also result in the homogenisation of publication practices in social science, which are known to be heterogeneous and context dependent. Research and knowledge production in social science and the humanities are bound not only to the respective national structures, policies, and scientific institutions but also to language and specific empirical worlds. The origins of many fields lie as much in nationalist (and imperialist) passions as in satisfaction of the need to produce new knowledge. Political science, sociology, and especially fields such as geography, history, and folklore have been closely linked with national contexts and the power/knowledge relations associated with nation-states (Barnes, 2001; Johnston and Sidaway, 2004b; Taylor, 1985).

International publishing has of course been a part of research practice for a long time, in line with the basic requirements of the Mertonian norm of ‘communism’: science is a shared activity (Merton, 1973). There are topics—for example, theoretical and methodological themes—that are more likely to be international/universal than national/particular, but there may also be countless contextual (social, political, economic, and cultural) reasons for publishing ‘nationally’, using the respective languages. The demand for publication only in English-language international journals would crucially challenge this pattern.

Science studies scholars have noted that peer recognition and freedom have by tradition been recognised as the primary forces in the economies of science, not money or security (Becher and Trowler, 2001, page 75; compare Florida, 2002, pages 94–95). The Weberian idea of science as a vocation stressed the “subtle but real personal satisfaction one could derive from a life of scholarship” (Fuller, 2000, page 85). The rise of corporate universities is transforming and diversifying these economies. Webster (2002, page 116) argues that since the mid-1970s there has been not only a huge expansion in higher education, but also an assault on professions such as those of university teacher, researcher, or librarian and a manifest decline in the returns on higher education certification (compare Mitchell, 1999). For him these are examples of the power of the market system rather than examples of the supposedly increasing power of ‘informational labour’, and he argues that the rise of informational labour appears to have done “little if anything to limit the determining power of capital in the realm of work” (page 117). At the same time Weber’s assumption that all scholarly work would be *read* has become too demanding in the expanding markets of academic research. This will lead to “new insidious forms of marginalization”—forms associated with publications and citations (Fuller, 2000, page 85).

The shift from personal to impersonal forms of control has been an important transformation in contemporary capitalism (Webster, 2002). Similarly, academic capitalism is concerned not only with competition between academic fields and researchers but also with the fact that the production and distribution of knowledge are increasingly

being *governed* impersonally, one background to this being the claim that national resources should be more profitable. Economies of scale and scope are significant in the laboratory sciences (Johnston, 1994), where the relevant knowledge is normally atomistic and where it is easier to split research problems into separate group work packages, normally resulting in multiple-author publications, which are increasingly being based on international projects (compare Becher, 1989). Hence the 'big science' model based on resource concentrations—preferably 'centres of excellence' (Katz and Martin, 1997)—has become a key solution to match the challenge of the market. Matthiessen et al (2002), using the ISI science citation data, show that coauthorship is concentrated nationally, but that there are also 'international centres for citations', such as London. It is well known that multiple-author publications may pave the way to ethical problems regarding authorship (Sheikh, 2000), but the research group model is also spreading into fields that have by tradition been dominated by individual scholars (Demeritt, 2000).

The stick and carrot of this effort towards 'excellence' and 'world class' in many countries is the ranking of academic departments or institutions and publication forums (King, 2004; Slaughter and Leslie, 1997). The UK Research Assessment Exercise (RAE) is a model example of the governance of research in both internal university management and national quality control (Batty, 2003a; Clifford, 2002; Henkel, 1999; Johnston, 2003). The links between the RAE and academic capitalism are explicit, as the information that the RAE provides is regarded as being helpful in guiding funding decisions in industry and commerce (<http://www.hero.ac.uk/rae/aboutUs>). The RAE displays how national research contexts and academic cultures are steered not only on a disciplinary basis but also within the structural context of the broader (national) governance of science. Accordingly, this broader rationalist social structure will homogenise scientific practices.

This homogenisation has long roots. Ever since the Enlightenment, Scholte (2000) suggests, rationalism has been spread by colonialism to most areas of the world and science has become the apex of modern rationality (Delanty, 2001; Schofer, 2003). The spread of the models of Western science has been explained by a diverging set of factors: industrialisation, Protestantism, colonial rule, cosmopolitan social elites accumulating cultural capital, and complicated networks that have led to the international institutionalisation of academic fields (Schofer, 2003). The neo-institutionalists have pointed to the importance of transnational cultural and organisational structures for explaining the global spread of Western practices and cultural forms and as a context for the process through which Western science has become institutionalised globally (Schofer, 2003). The current globalising science, reflecting Western and Anglophone textual and publishing conventions (Canagarajah, 2002) may become an increasingly effective medium for creating and strengthening colonialism and imperialism in modern research communities. The current culture of competition may transform centre-periphery relations in academic markets on all spatial scales from individual researchers and departments to international constellations of academic fields and the movement of people and ideas. This is inevitably a contextual phenomenon, however, and the major context must be individual academic disciplines, even if the changing relations between university, state, and market may also call the academic disciplines as we know them into question (Gibbons et al, 1994; Sarles, 2001).

4 Geography and the question of 'international'

A questioning of the effects of corporate universities—condensed in such expressions as accountability, market-like operation, competition, evaluation, world class, or excellence—has also emerged in geography (*Antipode* 2000; Castree and Sparke, 2000;

Mitchell, 1999; Roberts, 2000, Smith, 2000; *Society and Space* 2003). One worry has been whether critical research will be swallowed up as part of the normalising practices of corporatisation and whether this will smooth over critical approaches as just mere instruments on the academic chessboards of competition—or as parts of the academic product cycle (Castree, 2002).

However, although geographers have noted that universities are increasingly being steered as parts of transnational frameworks (of political economy) (Roberts, 2000), they have neglected the broader implications of this on publishing cultures *outside* the Anglo-American context (but see Garcia-Ramon 2002; *Geoforum* 2004). British geographers, for example, have discussed the ‘future of geography’ and publication practices, raising questions such as how to define, identify, and improve the quality of research in an increasingly postdisciplinary academia (Johnston, 2002; 2003; Thrift, 2002), or mapping the differences between British and US geography (Turner, 2002). The future of geography has thus become equivalent to the future of British (and US) geography (but see Gregson et al, 2003; Johnston and Sidaway, 2004a; 2004b; Short et al, 2001). This confirms the observation made in science studies that strengthening claims to be international typically emerge from national contexts (Becher and Trowler, 2001).

A national context makes a difference, however. The location of geography among the natural sciences (biology, biochemistry, physics, mathematics, etc) both in the university faculties and in the national funding bodies in Finland, for instance (especially in the Academy of Finland), has made publishing in English-language journals an almost self-evident requirement for human geographers (Paasi, 2004). This contextual example not only shows the adaptation of human geographers to the natural science model echoed by Rodríguez-Pose (2004) but also illustrates the broader Finnish science policy in which internationalisation has been a major keyword since the late 1980s (Hakala, 1998).

Clifford (2002) has recently suggested that geography matters; it is not the same in all countries. He suggests that “it is equally clear that there is a kind of academic globalization which means that the health and status of a discipline in one country impacts sooner or later on the health in another” (page 435). This comment has ‘Pricean’ echoes about it. Fuller (2000, pages 85–86) notes how the most concrete legacy of Merton, Price, and their followers as far as the ‘health’ of (big) science (its quality, relevance, and influence) is concerned was the Science Citation Index (compare Canagarajah, 2002). The question is then whether or not the indicators used to define and measure this ‘health’ one-sidedly favour certain contexts and undervalue others. Although the ideas of competitiveness and excellence—implying the existing RAE culture—are obvious in the future-oriented paper of Thrift (2002), (for a more sceptical view, see Kitchin, 2003), the reactions of the continental European geographers are examples of the ambiguity aroused by these ideas in ‘peripheries’.

Questions of core–periphery relations and hegemony are not limited to geography, however, for the idea of an ‘Anglophone hegemony’ has emerged in international relations studies (Waever, 1998), postcolonial studies (Canagarajah, 2002), and even in such apparently ‘universal’ areas as medicine (Stenius, 2003; Tuomisto, 1999). Even though some scholars speak about the ‘continentalisation’ of networking science that will make the location of a centre and periphery less and less apparent (Leclerc and Gagne, 1994), science studies demonstrate that patterns of and motives for internationalisation and international activity are affected by centre–periphery dynamics, so that researchers in ‘peripheries’ are more dependent on ‘cores’ (or ‘metropolises’) than researchers in ‘cores’ are dependent on ‘peripheries’ (Hakala, 2002; Kyvik and Larsen, 1997). ‘International’ is often national science from the core, but it shapes the criteria for

'excellence' in the periphery as well, where science institutions try to develop strategies which could bring them to be viewed as 'part of the core'. This often leads to adaptation to the intellectual claims of the cores (in geography, see Kong, 1999; compare Page, 2003). Correspondingly, some authors have discussed how we are experiencing—concomitantly with academic capitalism—a period of academic imperialism, in which the particularistic vocabularies of US social science are supposed to be universal representations (Bourdieu and Wacquant, 1999; compare Berg and Kearns, 1998). This indicates that the homogenising pressures also hold for the epistemic content of research and not only for the form in which this research is published. One example of this homogenisation in social and cultural science has been the proliferation of various 'turns' (cultural, linguistic, ethnographic, etc) that have penetrated academic debates at an increasing pace. The origin and direction of the flows of knowledge then become crucial (Bourdieu and Wacquant, 1999). The comment by Bonnett (2003; compare Jacobs, 2003) on the rise of turns is a sceptical one: these have been turns *away* from the international and global, and indeed steps towards 'the West', or more accurately, the English-speaking West.

Academic territories and tribes differ from each other with respect to their moral orders and epistemic cultures and they have different strategies for creating and warranting knowledge (Ylijoki, 2000). National forms of academic socialisation, specific rules and 'pecking orders', have by tradition produced differing publication practices and a diverging understanding of what quality means (Becher, 1989). These are now being challenged by the new forms of internationalism.

5 The emerging linguistic and institutional monopolisation of international publishing spaces

'International' and 'internationalisation' became keywords of higher education in the 1990s and were associated with both the internationalisation of science *and* national science policies, both showing a high degree of congruence across national boundaries. States adopted increasingly similar views of science policy, and of the instruments and forms of management (Clark, 1998; King, 2004; Ruivo, 1994; Schofer, 2003).

I have suggested above that the management of globalising science is taking place through the standardisation of scientific practice and the certification of quality. One part of this process is the creation of a common understanding of 'international journal publication spaces' in which the major medium is the English language (Short et al, 2001). The current dominance of English in science is a fact that has to be faced. Although native English speakers make up some 8% of the world's population, the language is now spoken by 1.7 billion people throughout the world (Scholte, 2000; Short et al, 2001). Its importance is also unavoidable in the publishing markets, as a consequence of both the political economies of the publishing business and the acceptance of English as the global lingua franca (compare Phillipson, 2003). Institutional demands to be 'international' will strengthen this dominance, because the general status of the language "plays an important part in boosting the prestige of academic journals published in English" (Canagarajah, 2002, page 40). Another question is how we define what 'international' in publishing means. I have shown above that the identification of internationalism and quality in research is increasingly being linked in many countries and fields with the data produced by Thomson ISI, and because this approach is being adopted increasingly around the world, it may become instrumental in steering national publishing cultures step by step in the same direction.

Thomson ISI is now a part of the Thomson Corporation, which had a revenue of \$7.8 billion in 2002 (Stenius, 2003). The ISI was originally established and developed as a result of the persistent efforts of the chemist and library scientist Eugene Garfield, but this occurred in a broader social and geopolitical context. At first the mapping

of the publication activities of researchers was said to make sense as a means of governing the skyrocketing flows of knowledge and simply helping scholars to follow new publications and their information. This took place in the North American Cold War geopolitical reality, which provided a structural background for a renewed interest in science. The competition for control over the flows of knowledge was becoming fiercer, and the effect was speeded up by the space race with the Soviet Union (Risteli, 2003).

The oil crisis and the activity of the OECD brought science indicators into the international debate. Many countries then followed US models in their science policies, and organisations such as UNESCO encouraged states to establish science ministries and science policies and to forge links between science and industry (Hakala et al, 2003; Ruivo, 1994; Wouters, 1999). Virtually all countries began to invest large portions of their GDP in science (Schofer, 2003, page 742). The ‘hegemony’ of the USA is easy to understand because the total volume of its research activities and the number of researchers is larger than that of the EU countries put together (see figure 1) (EC, 2003; Hakala et al, 2003, page 173; ; OECD, 2000, page 230).

Although the citation index was developed for *bibliographic* use in the 1960s, it was soon found that it could also be used to evaluate the work of researchers (Yeung, 2002). The rise of competitive universities has provided a forceful context for exploiting the ISI data *bibliometrically* in science policy. As Johnston (2003, page 134) has observed, by the 1990s geography and all large and buoyant disciplines had a substantial number

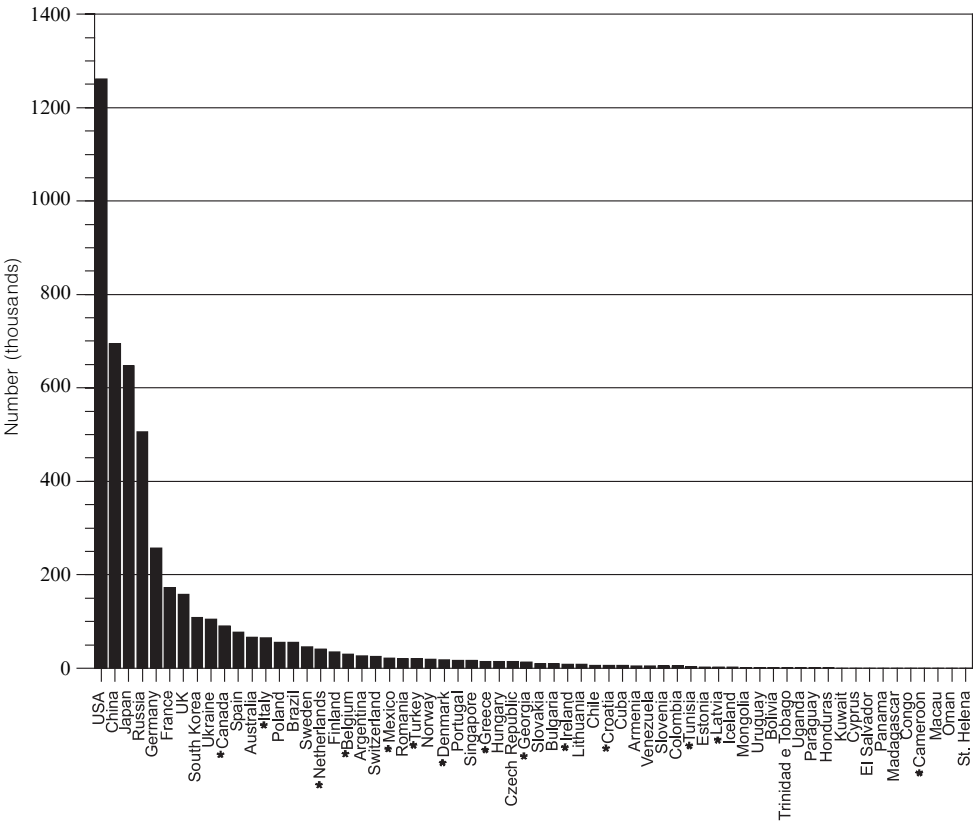


Figure 1. Numbers of researchers in various countries (source: UNESCO Institute for Statistics, <http://www.uis.unesco.org/template/html/>; OECD statistics). Data are for the years 2000 or 1999 (the latter marked with an asterisk).

of journals which had become arranged in the form of a hierarchy, their prestige being based increasingly on their rankings and citation patterns (compare Campbell et al, 1999).

The ISI database provides a materialised, apparently objective basis for assessing quality. This partly web-based instrument provides a fast and up-to-date way of comparing individual researchers, academic fields, research institutes, and nations. Its indices are a good example of the elements of globalisation identified by Scholte (2000): rationalist (homogenised) knowledge, capitalist production (an easily marketable but expensive product), automated technology (it was made possible by computer technology), and governance (rankings of fields, scholars, journals, or articles and their use in the allocation of material and symbolic resources). All these elements contribute to homogenising the spaces of knowledge, most clearly in science but also in the fields of social science and the humanities. Although ISI data may be especially useful for Anglo-American geographers operating in the larger national powerhouses of academic disciplines (Yeung, 2001; 2002), its one-sided use will certainly challenge the pluralism and context dependence of research in human geography elsewhere (compare Barnes, 2001; Kitchin, 2003).

6 The uneven geography of the global journal publishing space of the ISI indexes

The globalisation, homogenisation ('harmonisation'), and governance of publishing through the ISI indices is a brilliant idea, because its 'geography' is not based on proximity but on an overwhelming hegemony through which traditional national publishing practices begin to take shape as inward-looking 'zombie' institutions (compare Beck, 1997)—which in some cases they may well be! The ISI is a fitting example of globalisation as the development of "global flows of information and resources along networks transcending nation-states' influence and disturbing nationally-organized systems and practices" (Becher and Trowler, 2001, page 2). Paradoxically, these developments are often generated by the state in the course of organising and monitoring its higher education system.

Scientific journals can be understood as networks, and the ISI has constructed a specific cut-off, as the total number of journals has been estimated to be as high as 100 000 (Canagarajah, 2002, page 33). The mission of the ISI is to "provide comprehensive coverage of the world's most important and influential research." The database covers more than 16 000 journals, books, and proceedings in the sciences, social sciences, and humanities. Some 8600 journals are covered on an annual basis, which is of course far removed from the total volume of journals. The Science Citation Index (SCI), established in 1964, covers almost 6000, the Social Science Citation Index (SSCI), established in 1974, covers some 1700 journals, and the Arts and Humanities Citation Index (AHCI), established in 1978, covers about 1100 journals (compare Risteli, 2003), and these three datasets partly overlap. The possession of articles with English-language titles, abstracts, and keywords is essential for a journal to be accepted by Thomson ISI into a database (<http://www.isinet.com/selection>).

Thomson ISI inevitably has an interest in spreading the use of its expensive instruments to the global level. The actual ISI products—information on mainly English-language journals—are advertised on the company's web-sites in no less than eleven languages, including French, German, Italian, Korean, Chinese (both traditional and simplified), Spanish, Portuguese, Russian, and Arabic as well as English, which shows the company's effort to market its English-language internationalism globally. Because this firm produces, spreads, and markets the indices, there is a risk that not only the interpretations of what international and successful science is but also

how research money in various states is distributed, will be influenced by one specific US-based firm (compare Risteli, 2003; Tuomisto, 1999)

It has been noted that the ISI cannot be held responsible for the uses to which its statistics are put (*Nature* 2002, page 101) and even the ISI web pages include comments on the limitations of the data. But this fact does not seem to prevent its increasing use. The databases are mined by “university administrators, research councils, and even government ministries for an unintended purpose—to evaluate the success (and failure) of particular researchers, departments, faculties, and institutions” (Yeung, 2002, page 2093). Fitting examples of its emerging use in the governance of research are the European Commission report series, such as “Key Figures”, which are based on the goals that the EU set itself at the Lisbon Summit (2000), according to which the EU should become “the most competitive and dynamic knowledge-based economy in the world” (EC, 2001, page 3). The report presents many indicators that can be used to compare research between countries, but this has so far been based on the SCI data, because the social sciences and the humanities are more ‘national’ and it is more difficult to compare them by using ISI data. It is evident that these data will also be included in bibliometric analyses of EU research in the future (private communication K Husso, Expert national détaché, Commission Européenne, October 2003).

The longer the step we take from the ‘universal’ sciences towards the social sciences and the humanities, the more we are dealing with particularistic fields that were established as part of the building of the modern nation-states. Even today, when most social science and humanities fields have an increasingly international profile, the national link is at least implicit in the fact that the SSCI and AHCI databases include far fewer journals than the SCI, that is, social science and humanities journals are typically published in the national language, and that is rarely English. Even in the United Kingdom, scholars operating in social sciences are more ‘national’ than natural scientists in their publishing practices (Johnston, 2003). A difference can be seen even between human and physical geographers in that the human geographers more often publish in geographical journals and physical geographers are increasingly making use of interdisciplinary journals such as *Nature* and *Science* (Johnston, 2003; Thrift, 2002; compare Ferguson, 2003). Matthiessen et al (2002) have used SCI data to map the publications produced in major cities and respective patterns of citations. Tokyo, Osaka – Kobe – Kyoto, Paris, Moscow, and states such as Switzerland and the Netherlands with well-known research centres rank highly, which indicates that some fields of natural science operate largely internationally.

The number of journals included in the three databases not only implies the division between universal and particular fields, but also implies the differences between the total numbers of English-language journals in science, the social sciences, and the humanities. The volumes and spatial patterns of the global journal publishing spaces are shown in figures 2–4. The USA and United Kingdom dominate the total number of ISI journals per country (figure 2, over). All three datasets display a similar global asymmetry (figure 3, over) and show that most journals are from English-speaking countries: 63% in the science database, 66% in the arts and humanities, and as many as 85% in the social sciences. This pattern indicates that the current ‘internationalism’ represented by the ISI data has its limits (compare Garcia-Ramon, 2003; Yeung, 2002). This observation becomes even more dramatic for research themes, because there is an overwhelming US influence in many social science journals in terms both of research topics and of the home countries of the authors (Yeung, 2001).

The absolute number of ISI journals in each country displays how the ‘internationality’ defined by the ISI indices is present or absent in each national context (figure 2). The unbalanced pattern is revealed most clearly, however, when the number of researchers

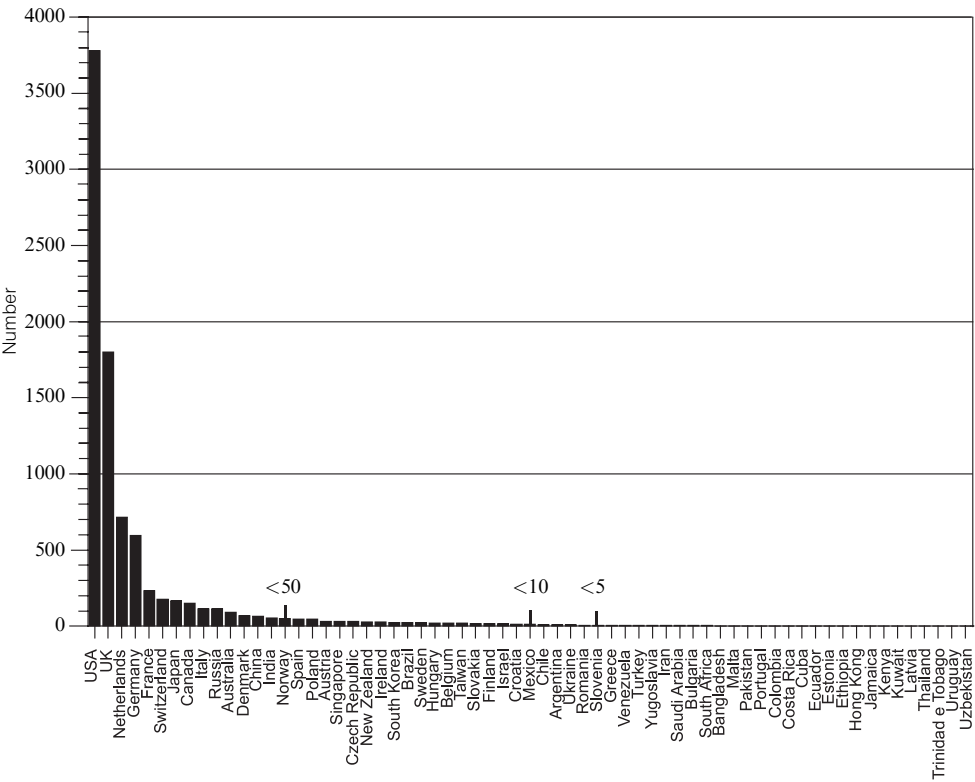


Figure 2. Numbers of journals in ISI journal citation reports, by country, in spring 2003 (source: ISI Web of Science). The data for arts and humanities journals was compiled on the basis of the countries of publication as given in <http://www.isinet.com/cgi-bin/jrnlst/jloptions.cgi?PC=H>.

is related to ISI journals in various countries (figure 4, over). Even though the various indices partly overlap and there are some differences in the construction of the national data on researchers, the tendency for the list to be dominated by the established publishing states, especially the United Kingdom and United States, is clear. Although there are fewer than 100 researchers per indexed journal published in some countries, there are others in which the number is more than 10 000. Unfortunately the data do not allow an analysis to be made of the ratios of science, social science, and arts and humanities journals separately to research personnel. Without doubt the differences would be even more striking.

Thus scholars operating in various countries and wanting to publish in indexed social science and arts and humanities journals have to publish abroad more often than do their colleagues in science fields in order to be ‘international’ (figure 3). A large number of states in the world remain totally outside the ‘international’ publishing space represented by the indices. Although this imbalance is a fact, it is not a matter of any contention as to where scholars should publish their papers (compare Rodríguez-Pose, 2004). Indeed, small Western countries such as Switzerland, Denmark, and Norway which invest a lot in R&D have been successful in the rankings depicting the number of scientific publications per million of population (EC, 2003), based only on the ISI SCI data.

Indexed journals are not merely important channels of communication, but in the current atmosphere of competition they also have a specific prestige, which is missing from nonindexed journals. Even though the number of indexed journals has been increasing constantly, reflecting both the expansion of the research sector and the

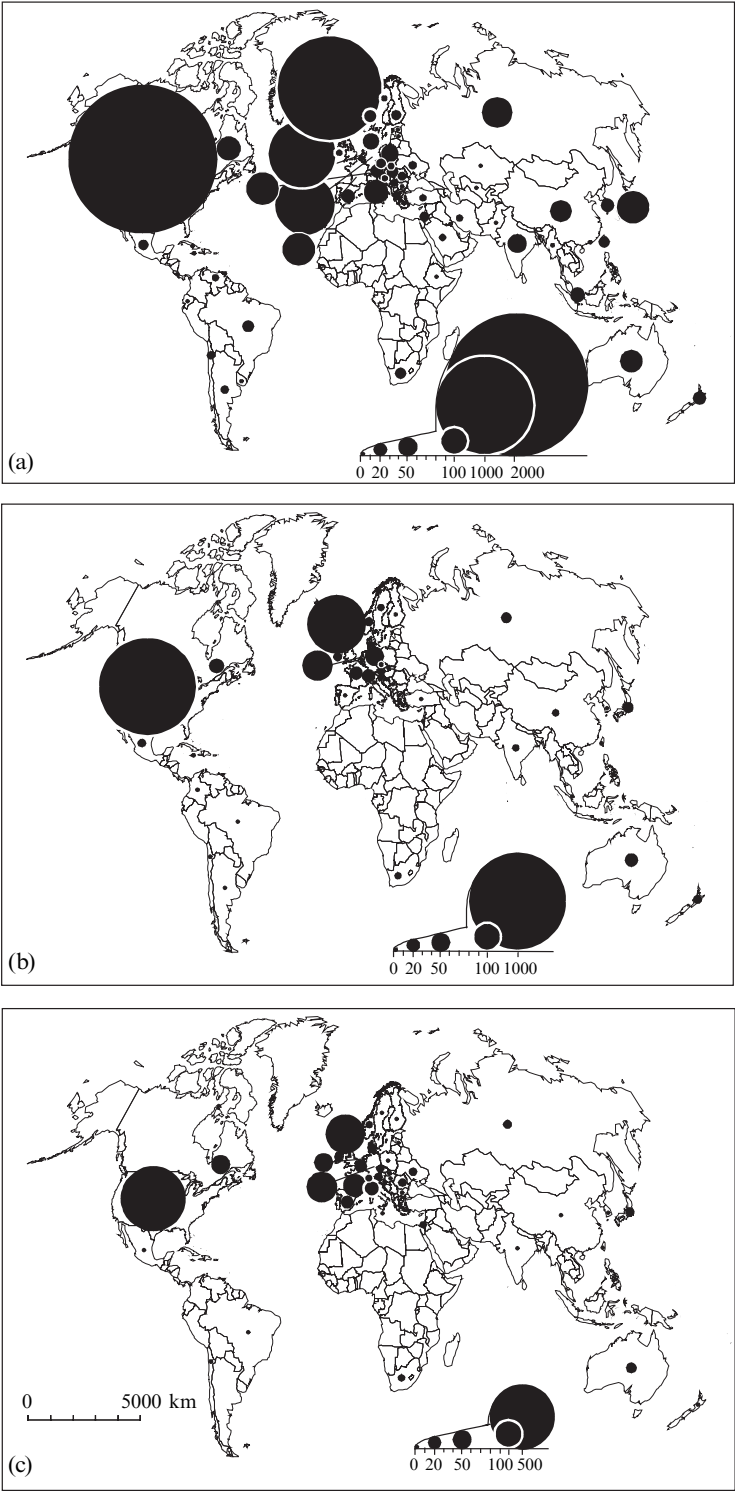


Figure 3. The global geography of international publishing spaces of (a) science (5875 journals), (b) social science (1708 journals), and (c) arts and humanities (1132 journals), in spring 2003 (source: ISI Web of Science).

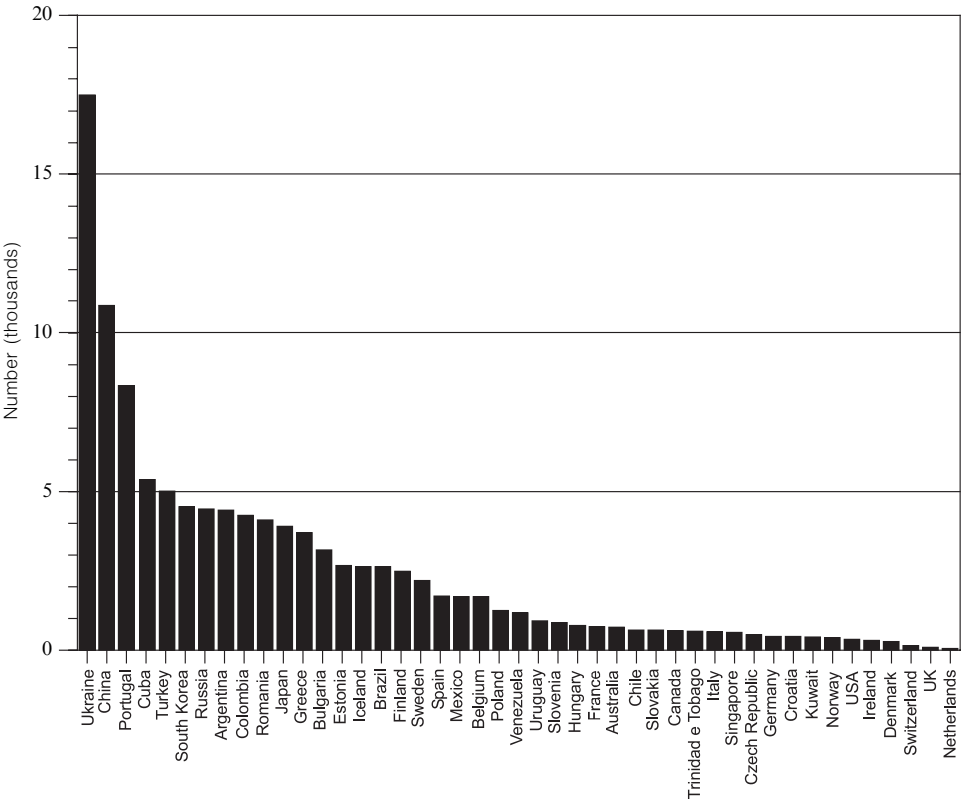


Figure 4. Researchers per ISI-indexed journal published in given countries (source: ISI Web of Science; UNESCO Institute of Statistics; OECD statistics).

seductiveness of the ISI instruments, many quality journals in Anglo-American human geography are not included in the database (for example, *Gender, Place and Culture* and *Geopolitics*). If the indexed/nonindexed criterion were to become decisive in the division of material and symbolic resources among departments and universities in various countries, the publishers of nonindexed journals would have two possible futures: they would either have to get their journals into the ranking lists or face losing potential authors (compare Walford, 2000).

One major feature of publishing spaces, and also a background to the differences between publication cultures, is the existence of huge differences between the volumes of existing publication forums (figure 5). Novices entering different academic tribes simply face very different cultures and possibilities. Compare, for example, the number of medical journals with those in the social sciences and humanities. Most science fields normally have hundreds of indexed journals, as do some fields in the social sciences. Psychology and economics (including business and management) are especially interesting cases among the social sciences, because these have more listed journals than do many science fields.

It is known from scientometrics that the countries in which journals are published are readily understood as indicators of their quality (Kortelainen, 1999; Penava and Pravdic, 1989). This is a major problem in fields in which indexed journals are concentrated in only a few countries. Human geography has only thirty-five listed journals and the list is extremely Anglo-centric. The SSCI (in 2003) includes only three journals that are published outside the English-speaking world (*Tijdschrift voor Economische en Sociale*

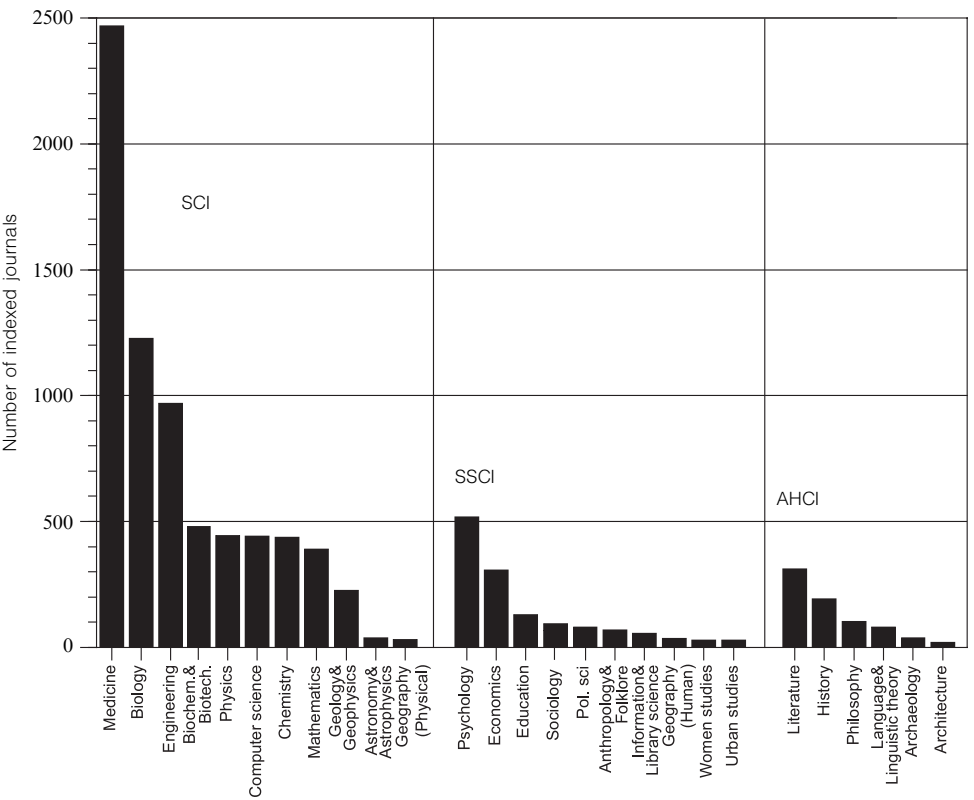


Figure 5. Numbers of ISI indexed journals in certain fields of science, the social sciences, and the arts and humanities, in spring 2003 (source: fields constructed on the basis of the ISI Web of Science).

Geografie TESG, *Geographische Zeitschrift*, and *Österreichische Geographische Mitteilungen*). This simply means that to satisfy the current claims to be ‘international’, geographers in the United States and United Kingdom can publish in their ‘national’, albeit indexed journals (or in practice in Anglophone journals which may be edited and published ‘across the Atlantic’), whereas most of those operating outside have to publish abroad in ‘international’ journals. ‘National’ indexed journals published outside the English-speaking world may of course also be ‘bought up’ by major English-language publishers as part of the concentration of the publishing business. The Dutch *TESG*, for example, is published by Blackwell. It is to be noted, of course, that there are also topical journals (in urban and regional studies, planning, gender, and ethnic studies) that many geographers use as a forum.

7 ‘Citation consciousness’: governing the quality of research

The criteria for the quality of research differ between fields (Becher and Trowler, 2001), but research can be normally regarded as significant if it contributes to the world views of human beings and society, provides solutions to specific (practical) problems, or perhaps is original enough to contribute to research practices, methods, and thinking within a single discipline [on the use, exchange, and sign/symbolic values of academic publications, see Sidaway (2000)]. All these are ‘slow indicators’ of quality, in the sense that they cannot be reduced to one quantitative parameter.

There has been much debate on the roles of citations and journal impact factors (JIFs) (Warner, 2000). These values given by ISI are widely used as indicators of quality in medicine and the natural sciences, but not unanimously. JIF values are also being used at times in the social sciences, but in the humanities they are so problematic that the ISI does not give them at all (Stenius, 2003). The ISI citation data include not only citations of ranked journals but also citations of books and journals that are not ranked by the ISI, and in this sense the ISI 'citation spaces' may be much more international than the ISI journal spaces analysed above.

Human geographers have shown relatively little interest in citation patterns since the 1980s and early 1990s (for example, Bodman, 1991; Boots, 1996; Wheeler, 1994), perhaps because they recognise how such information can easily be misused as an instrument of symbolic violence. Yeung (2002) notes how the power of citations resembles the famous Weberian idea of the growing bureaucratisation of modern capitalism as an iron cage in which social life is ruled by instrumental rationality.

Citation data and JIF values are both seemingly useful for corporate universities. JIF is a seductive instrument for a rationalist understanding of knowledge, because it provides a numerical 'objective shape' and rank for quality in the form of a hierarchy of journals. Perhaps indicating the power of corporatisation, the quality of geographical journals has indeed been recently associated with the JIFs (Martin, 1998; 2001; compare Dunford et al, 2002; Emel et al, 2004; Johnston, 2003; Leyshon et al, 2002). Geographers are on the way to fulfilling Garfield's dream: "I think it is important not only to be literature minded, but to develop citation consciousness. I'm not sure how you teach this. It requires indoctrination by informed mentors" (cited in Hargittai, 1999, page 28). Geographers are not alone. Walford (2000; compare Yeung, 2001) in fact presumes that the RAE has motivated researchers in the United Kingdom to pay attention to the impact factors of journals when choosing where to submit their work, and this has had an effect on publishers, so that they are actively trying to get their journals covered by the indices [compare Laurie (2004), on the less journal-committed publication practices in the USA]. Campbell et al (1999) observe that among academic lawyers the RAE has encouraged writing for academic journals, normally at the expense of other forms of scholarly discourse (compare Johnston and Pattie, 2004). The idea of 'harmonisation' of the European higher education and research area implies that these forms of classification may soon be normal practice elsewhere, too.

Citations also have their uneven geographies. Science studies have shown that there is a tendency not only to associate certain high-quality journals with specific countries but also to cite articles or books by eminent scholars from prestigious institutions (Becher and Trowler, 2001, page 79), which leads to a 'global circulation' of ideas that might originally have been very much context dependent (compare Bourdieu and Wacquant, 1999). The top-twenty ranking of institutions by the number of highly cited scientists shows that two of them are in the United Kingdom and all the others in the USA (Batty, 2003a; 2003b). The ISI lists themselves are also concentrated, in that 150 journals account for a half of what is cited and one quarter of what is published. Furthermore, about 2000 journals account for about 85% of the articles published and 95% of those cited, but this core is not static (<http://www.isinet.com>).

8 Discussion

Geographers have been arguing recently that the idea of what is 'international' has been occupied by the hegemonic discourses of Anglo-American geography and journals. The debate has been contextualised here by showing that this 'occupation' results from the present-day practices of corporate university and academic governance. Articles in international publications, particularly those noted in the ISI indices, have

become crucial for the evaluation of the success of university departments around the world, and scholars in many countries are steered to publish in these journals. The aim of this paper has been to show that ISI-driven internationality is limited. Not only do the English-language journals, especially Anglo-American ones, dominate this publication space, but the sciences, social sciences, and humanities show very different patterns in this respect. Indexed social science journals in particular tend to be Anglo-American, and journals of human geography constitute a small, very Anglo-centric fragment of the social science publishing space.

One feature of the recent geographical debate has been the question of language. The English-language-based research community is perpetually expanding as part of the globalisation of knowledge, and the homogenising effects are spreading not only through academic publications but also through various forms of interaction (www-policies, conferences, etc) and academic migration. The proportion of foreign students among those enrolled in PhD programmes in the USA, for instance, is 25.6% and that in the United Kingdom 28.8%, while as many as one third of all doctoral students in Belgium and Switzerland are foreign (OECD, 2002; compare Batty, 2003a; 2003b). This simply means that the most intensively followed scientific texts will be increasingly published in English, a fact that geographers also have to face. Some Anglo-American journals (*Social and Cultural Geography*, *Geoforum*) have taken a proactive role in this problem by helping foreign geographers with language problems. It is to be hoped that this openness will be followed by other geographical journals as well.

One future question is what will happen to existing centre–periphery relations when new information technologies not only help communication and lessen the need for travelling but also create new virtual communities in which geographical locations are perhaps less significant (Hakala et al, 2003, page 173; OECD, 1998). Gibbons et al (1994, page 131) were not optimistic when predicting ten years ago that, although networking and on-line access will help scholars from ‘peripheries’ to make contacts and to reach research literature, they may also experience pressure against working in their native languages, or against studying questions that differ from those attracting attention in the centres, for ultimately they will be measured against their peers in the centres and not against scholars in their own institution or region. Recent geographical debates imply that this prediction was on the right track.

It is clear, however, that global cultural, economic, and academic forces have not yet transformed the narrow ISI journal-based understanding of ‘internationality’ into a global fact in the social sciences. Monographs and the writing and editing of books have been an important part of the plurality and visibility of human geography everywhere since the institutionalisation of the field. It is to be hoped that this situation will persist. If this is not so, the number of indexed geographical journals will have to be expanded markedly. Many journals have already begun to publish more issues per year, putting more pressures on publishers, editors, and even referees (Johnston and Pattie, 2004; Walford, 2000). The expansion of the higher education sector in most countries and the rising number of researchers may, of course, further transform publishing practices, not least because of the increasing prices of journals. One alternative vision may be the strengthening of commercial/noncommercial online/open-access journals, which are emerging in geography and in other fields. The old principle, ‘print and then distribute’ may be challenged by a new one: ‘distribute and then print’. But this will not challenge the power of the English language in the publication market, of course.

Acknowledgements. I would like to thank the editor, Ron Johnston, and the three anonymous referees for their very helpful comments. Similarly, thanks are due to Rob Kitchin, Claudio Minca, Lawrence Berg, Joan Nogué i Font, and my Finnish colleagues Jouni Häkli, Pauli Tapani Karjalainen, and Jarkko Saarinen for their remarks and/or discussions on the theme of this paper. I am also grateful to Terttu Kortelainen, an information scientist, for her suggestions.

References

- Albert M, 2003, "Universities and the market economy: the differential impact on knowledge production in sociology and economics" *Higher Education* **45** 147–182
- Antipode* 2000, "Special issue on the corporatization of university" **32** 222–339
- Barnes T J, 2001, "'In the beginning was economic geography'—a science studies approach to disciplinary history" *Progress in Human Geography* **25** 521–544
- Batty M, 2003a, "Editorial: World class universities, world class research: what does it all mean?" *Environment and Planning B: Planning and Design* **30** 1–2
- Batty M, 2003b, "The geography of scientific citation" *Environment and Planning A* **35** 761–765
- Becher T, 1989 *Academic Tribes and Territories* (Open University Press, Milton Keynes, Bucks)
- Becher T, Trowler R L, 2001 *Academic Tribes and Territories* 2nd edition (Open University Press, Milton Keynes, Bucks)
- Beck U, 1997 *The Reinvention of Politics* (Polity Press, Cambridge)
- Berg L, 2001, "Masculinism, emplacement, and positionality in peer review" *The Professional Geographer* **53** 511–521
- Berg L D, 2004, "Scaling knowledge: towards a critical geography of critical geographies" *Geoforum* **35** 553–558
- Berg L, Kearns R, 1998, "America unlimited" *Environment and Planning D: Society and Space* **16** 128–132
- Bjarnason T, Sigfusdottir I D, 2002, "Nordic impact: article productivity and citation patterns in sixteen Nordic sociology departments" *Acta Sociologica* **45** 253–267
- Bodman A R, 1991, "Weavers of influence—the structure of contemporary geographic research" *Transactions of the Institute of British Geographers, New Series* **16** 21–37
- Bonnett A, 2003, "Geography as the world discipline: connecting popular and academic geographical imaginations" *Area* **35** 55–63
- Boots B, 1996, "Referees as gatekeepers: some evidence from geographical journals" *Area* **8** 77–85
- Bourdieu P, 1979 *Questions de Sociologie* [Questions of sociology] (Éditions de Minuit, Paris)
- Bourdieu P, Wacquant L, 1999, "On the cunning of imperialist reason" *Theory, Culture and Society* **16** 41–58
- Burbules N C, Torres C A (Eds), 2000 *Globalization and Education* (Routledge, London)
- Butler L, 2003, "Explaining Australia's increased share of ISI publications—the effects of a funding formula based on publication counts" *Research Policy* **32** 143–155
- Campbell K, Vick D W, Murray A D, Little G F, 1999, "Journal publishing, journal reputation, and the United Kingdom's research assessment exercise" *Journal of Law and Society* **26** 470–501
- Canagarajah A S, 2002 *A Geopolitics of Academic Writing* (University of Pittsburgh Press, Pittsburgh, PA)
- Castree N, 2002, "Border geography" *Area* **34** 103–112
- Castree N, Sparke M, 2000, "Professional geography and the corporatization of the university: experiences, evaluations, and engagements" *Antipode* **32** 222–229
- Clark B R, 1998 *Creating Entrepreneurial Universities* (Pergamon, Guildford, Surrey)
- Clifford N J, 2002, "The future of geography: when the whole is less than the sum of its parts" *Geoforum* **33** 431–436
- Crysler C G, 2003 *Writing Spaces* (Routledge, London)
- Debackere K, Glanzel W, 2004, "Using bibliometric approach to support research policy making: the case of Flemish BOF-key" *Scientometrics* **59** 253–276
- Delanty G, 2001, "The university in the knowledge society" *Organization* **8** 149–153
- Demeritt D, 2000, "The new social contract for science: accountability, relevance, and value in US and UK science and research policy" *Antipode* **32** 308–329
- Desbiens C, 2002, "Speaking in tongues, making geographies" *Environment and Planning D: Society and Space* **20** 1–25
- Dunford M, Perrons D, Reilly B, Bull R, 2002, "Citations, authors and referees: regional studies, 1981–2002" *Regional Studies* **36** 1053–1065

- EC, 2001 *Key Figures 2001. Towards a European Research Area. Special edition. Indicators for Benchmarking of National Research Policies* (European Commission, Brussels)
- EC, 2003 *Key Figures 2003–2004. Towards a European Research Area. Science, Technology and Innovation* (European Commission, Brussels)
- Emel J, Leyshon A, Robinson J, 2004, "A five-year plan? Providing a forum for excellence and diversity in geography" *Geoforum* **35** 1–4
- Ferguson R, 2003, "Publication practices in physical and human geography: a comment on Nigel Thrift's 'The future of geography'" *Geoforum* **34** 9–11
- Florida R, 2002 *The Rise of the Creative Class* (Basic Books, New York.)
- Fuller, S, 2000 *The Governance of Science* (Open University Press, Milton Keynes, Bucks)
- Garcia-Ramon M D, 2003, "Globalization and international geography: the questions of languages and scholarly traditions" *Progress in Human Geography* **27** 1–5
- Geoforum 2004, "The spaces of critical geography" **35** 523–558
- Gibbons M, Limoges C, Nowotny H, Schwarzman S, Scott P, Trow M, 1994 *The New Production of Knowledge* (Sage, London)
- Gregson N, Simonson K, Vaiou D, 2003, "Writing (across) Europe: on writing spaces and writing practices" *European Urban and Regional Studies* **10** 5–22
- Gutierrez J, López-Nieva P, 2001, "Are international journals of human geography really international?" *Progress in Human Geography* **25** 53–69
- Hackett E I, 1990, "Science as a vocation in the 1990s: the changing organizational culture of academic science" *Journal of Higher Education* **61** 241–279
- Hakala, J, 1998, "Internationalization of science: views of the scientific elite in Finland" *Science Studies* **11** 52–74
- Hakala J, 2002, "Internationalization of research—necessity, duty or waste of time? Academic cultures and profiles of internationalization" *VEST* **15** 7–32
- Hakala J, Kaukonen E, Nieminen M, Ylijoki O H, 2003 *Yliopisto: Tieteen kehdestä projektimyllyksi?* [University: from a cradle of science to a project mill] (Gaudeamus, Helsinki)
- Hargittai I, 1999, "Deeds and dreams of Eugene Garfield: interview by Istvan Hargittai" *Chemical Intelligencer* (October) 26–31
- Henkel, M, 1999, "The modernisation of research evaluation: the case of the UK" *Higher Education* **38** 105–122
- Ingwersen P, Jacobs D, 2004, "South African research in selected scientific areas: status 1981–2000" *Scientometrics* **59** 405–423
- Jacobs J M, 2003, "Editorial: Home rules" *Transactions of the Institute of British Geographers, New Series* **28** 259–263
- Johnston R J, 1994, "Department size, institutional culture and research grade" *Area* **26** 343–350
- Johnston R J, 2002, "Reflections on Thrift's optimism: political strategies to implement his vision" *Geoforum* **33** 421–425
- Johnston R J, 2003, "Geography: a different sort of discipline?" *Transactions of the Institute of British Geographers, New Series* **28** 133–141
- Johnston R, Pattie C, 2004, "On journal publication and professional responsibilities" *Area* **36** 84–85
- Johnston R J, Sidaway J, 2004a, "The trans-Atlantic connection: 'Anglo-American' geography reconsidered" *Geojournal* **59** 15–22
- Johnston R J, Sidaway J, 2004b *Geography and Geographers* 6th edition (Arnold, London)
- Katz J S, Martin B R, 1997, "What is research collaboration?" *Research Policy* **26** 1–18
- King R, 2004 *The University in the Global Age* (Palgrave Macmillan, London)
- Kitchin R, 2003, "Disrupting and destabilizing Anglo-American and English-language hegemony in geography" *Documents d'Anàlisi Geogràfica* **42** 17–36
- Kitchin R, Fuller D, 2003, "Making the 'black box' transparent: publishing and presenting geographic knowledge" *Area* **35** 313–315
- Kong L, 1999, "Commentary: Asian higher education and the politics of identity" *Environment and Planning A* **31** 1525–1528
- Kortelainen T, 1999, "Kansallisesta kansainväliseksi. Tutkimus suomalaisen tieteellisen lehden kansainvälisestä diffuusiosta" [From national to international: a study of the diffusion of a Finnish journal] *Acta Universitatis Ouluensis. Ser. B humaniora* **31** (Oulu)
- Kyvik S, Larsen I M, 1997, "The exchange of knowledge: a small country in the international research community" *Science Communication* **18** 238–264
- Lash S, Featherstone M (Eds), 2002 *Recognition and Difference: Politics, Identity, Multiculture* (Sage, London)

- Laurie N, 2004, "The politics of publishing and print" *Geoforum* **35** 141–142
- Leclerc M, Gagne J, 1994, "International scientific cooperation: the continentalization of science" *Scientometrics* **31** 261–292
- Lew A A, 2002, "Internationalizing tourism geographies" *Tourism Geographies* **4** 225–226
- Leyshon A, Robinson J, Emel J, 2002, "Editorial" *Geoforum* **33** iii–iv
- Martin R, 1998, "Editorial: marching towards the millennium" *Transactions of the Institute of British Geographers, New Series* **23** 147–149
- Martin R, 2001, "Editorial: Of publishers and popularizers" *Transactions of the Institute of British Geographers, New Series* **26** 3–6
- Matthiessen C W, Schwarz A W, Find S, 2002, "The top-level global research system, 1997–99: centres, networks and nodality. An analysis based on bibliometric indicators" *Urban Studies* **39** 903–927
- Merton R K, 1973 *The Sociology of Science* (Harper and Row, New York)
- Minca C, 2000, "Guest editorial: Venetian geographical praxis" *Environment and Planning D: Society and Space* **18** 285–289
- Mitchell A, 1999, "Commentary: 'Scholarship means dollarship, or, money in the bank is the best tenure'" *Environment and Planning A* **31** 381–388
- Morey A I, 2004, "Globalization and the emergence of for-profit higher education" *Higher Education* **48** 131–150
- Nature 2002, "Editorial material: 'Errors in citation statistics'" *Nature* **415** 101
- OECD, 1998 *University Research in Transition* (OECD, Paris)
- OECD, 2000 *Science, Technology and Industry Outlook* (OECD, Paris)
- OECD, 2002 *Science, Technology and Industry Outlook 2002: International mobility of S&T personnel* http://www.oecd.org/document/55/0,2340,en_2649_37417_1963063_1_1_1_37417,00.html
- Olds K, 2001, "Guest editorial: Practices for 'process geographies': a view from within and outside the periphery" *Environment and Planning D: Society and Space* **19** 127–136
- Paasi A, 2004, "Between national and international pressures: contextualizing the progress of Finnish social and cultural geography" *Social and Cultural Geography* (forthcoming)
- Page S J, 2003, "Evaluating research performance in tourism: the UK experience" *Tourism Management* **24** 607–622
- Parker M, Jary D, 1995, "The McUniversity: organization, management and academic subjectivity" *Organization* **2** 319–338
- Penava Z, Pravdic N, 1989, "Comparative evaluation of information flow from national and international journals: an empirical study in a small country" *Journal of Information Science* **15** 71–80
- Phillipson R, 2003 *English-only Europe? Challenging Language Policy* (Routledge, London)
- Potter R, 2001, "Geography and development: 'core and periphery'?" *Area* **33** 422–439
- Price D J de S, 1963 *Little Science, Big Science* (Columbia University Press, New York)
- Price D J de S, 1986 *Little Science, Big Science ... and Beyond* (Columbia University Press, New York)
- Prichard C, Willmott H, 1997, "Just how managed is the McUniversity?" *Organization Studies* **18** 287–316
- Ren S, Rousseau R, 2004, "The role of China's English-language journals in scientific communication" *Learned Publishing* **17** 99–104
- Risteli L, 2003, "Sitaatioindeksin alkuvuosisikymmenet ja oppihistorialliset yhteydet" [The early decades of citation index and its historical connections], unpublished MA thesis, Department of History, University of Oulu, Oulu
- Roberts S M, 2000, "Realizing critical geographies of the university" *Antipode* **32** 230–244
- Rodriguez-Pose A, 2004, "On English as a vehicle to preserve geographical diversity" *Progress in Human Geography* **28** 1–4
- Ruivo B, 1994, "'Phases' or 'paradigms' of science policy?" *Science and Public Policy* **21** 157–164
- Samers M, Sidaway J, 2000, "Exclusions, inclusions, and occlusions in 'Anglo-American geography': reflections on Minca's 'Venetian geographical praxis'" *Environment and Planning D: Society and Space* **18** 663–666
- Sarles H, 2001, "A vision: the idea of a university in the present age" *Organization* **8** 403–415
- Schofer E, 2003, "The global institutionalization of geological science, 1800 to 1990" *American Sociological Review* **68** 730–759
- Scholte J A, 2000 *Globalization* (Palgrave, New York)
- Sheikh A, 2000, "Publication ethics and the research assessment exercise: reflections on the troubled question of authorship" *Journal of Medical Ethics* **26** 422–426

- Short R, Boniche A, Kim Y, Li Li P, 2001, "Cultural globalization, global English, and geography journals" *The Professional Geographer* **53** 1–11
- Sidaway J, 2000, "Recontextualizing positionality: geographical research and academic fields of power" *Antipode* **32** 260–270
- Slater D, 1992, "On the borders of social theory: learning from other regions" *Environment and Planning D: Society and Space* **10** 307–327
- Slaughter S, Leslie L L, 1997 *Academic Capitalism: Politics, Policies, and the Entrepreneurial University* (Johns Hopkins University, Baltimore, MD)
- Slaughter S, Leslie L L, 2001, "Expanding and elaborating the concept of academic capitalism" *Organization* **8** 154–161
- Smith N, 2000, "Who rules this sausage factory?" *Antipode* **32** 330–339
- Society and Space 2003, Guest editorials by B Braun, D Vaiou, O Yiftachel, H Sakho, S Chaturvedi, J Timar, and C Minca *Environment and Planning D: Society and Space* **21** 131–168
- Stenius K, 2003, "Journal impact factor—mittari joka vahvistaa tutkimusmaailman hierarkiaa" [Journal impact factor—an instrument that will strengthen the hierarchy in the world of research] *Tieteessä tapahtuu* number 6, 35–39
- Taylor P J, 1985, "The value of a geographical perspective", in *The Future of Geography* Ed. R J Johnston (Methuen, London) pp 92–110
- Teichler U, 2004, "The changing debate on internationalization of higher education" *Higher Education* **48** 5–26
- Thrift N, 2002, "The future of geography" *Geoforum* **33** 291–298
- Tuomisto J, 1999, "Sitaatio- ja impaktiluvut—isäntä vai renki?" [Citation and impact values—a master or a hired man] *Duodecim* **115** 142–145
- Turner II B L, 2002, "Response to Thrift's 'the future of geography'" *Geoforum* **33** 427–429
- Ugolini D, Casilli C, 2003 "The visibility of Italian journals" *Scientometrics* **56** 345–355
- Välimaa J, 2004, "Nationalization, localisation and globalization in Finnish higher education" *Higher Education* **48** 27–54
- Waever O, 1998, "The sociology of a not so international discipline: American and European developments in international relations" *International Organization* **52** 687–727
- Walford L, 2000, "The research assessment exercise: its effects on scholarly journal publishing" *Learned Publishing* **13** 49–52
- Warner J, 2000, "A critical review of the application of citation studies to the research assessment exercises" *Journal of Information Science* **26** 453–460
- Webster F, 2002 *Theories of the Information Society* (Routledge, London)
- Wheeler J O, 1994, "Achievers of influence: most cited authors in urban geography, 1980–1986" *Urban Geography* **15** 503–506
- Wouters P, 1999 *The Citation Culture* PhD thesis, University of Amsterdam, Amsterdam;
<http://www.garfield.library.upenn.edu/wouters/wouters.pdf>
- Ylijoki O H, 2000, "Disciplinary cultures and the moral order of studying—a case study of four Finnish university departments" *Higher Education* **39** 339–362
- Ylijoki O H, 2003, "Entangled in academic capitalism? A case-study on changing ideals and practices of university research" *Higher Education* **45** 307–335
- Yeung H W C, 2001, "Editorial: Redressing the geographical bias in social science knowledge" *Environment and Planning A* **33** 2–9
- Yeung H W C, 2002, "Editorial: Deciphering citations" *Environment and Planning A* **34** 2093–2102