

Commentaries

Deciphering citations

I pause in the midst of reading Max Weber to write this commentary on the potential uses and abuses of citations for two very compelling reasons. First, I believe citations are far too important to be left to university librarians and analysts of bibliographic information systems. Citation counts and their associated impact on the ranking of individuals, journals, and even institutions have recently been elevated to such a planetary level, thanks to digital technology and the globalisation of the ‘audit-cum-benchmarking culture’, that ignoring or not knowing their potential uses and abuses would simply be detrimental. This rise in the ‘soft’ power of citations reminds me very much of Weber’s infamous characterisation of the growing bureaucratisation of modern capitalism as the “iron cage” in which social life is ruled by instrumental rationality. Let me put the latent power of citations in another way—it is like the credit ratings of stocks and shares of particular companies and the credit worthiness even of nations and states (see also Sinclair, 2000)! No doubt the producer of citation data, the Philadelphia-based Institute for Scientific Information (ISI, <http://www.isinet.com> accessed on 10 October 2002) has no intention to be the equivalent of Standard and Poor’s or Moody’s in the financial world. But this does not relieve the ISI from the unintended consequences of its work. Now owned by the gigantic information-solutions conglomerate, Thomson (<http://www.thomson.com> accessed on 10 October 2002), the ISI was first founded by Eugene Garfield in the USA in 1960 to develop bibliographic information systems for education and research in the sciences and social sciences (<http://www.garfield.library.upenn.edu> accessed on 10 October 2002). Clearly, such noble aims remain highly visible to those of us who frequent, and benefit from, the ISI citation indexes. But I am less sure when these 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.

A second reason is that I can no longer resist sharing—in this format—my experience in ‘mining’ citation databases for the past seven years. I am now convinced by numerous informal discussions with colleagues, editorial board members, and academic publishers that there is indeed a *genuine* interest among all of them to know more (and better?) about the potential uses and abuses of citation data. Before I go further, let me reveal a bit more about my positionality in this pursuit. For several years, one of my key administrative duties in my own department was to benchmark on an annual basis different geography departments worldwide and to rank different geography journals. The main purpose of such exercises was to recognise and learn from the strengths and weaknesses of our relatively recent endeavour to become a ‘world-class’ department and, if possible, university (see also Kong, 1999). While I cannot share the results of these benchmarking exercises that some of you may find of great interest, I can safely say that I have been using the citation indexes so much that they have become part of my everyday life (including, of course, the writing of this commentary). Although I prefer to talk about this experience in informal ways, recent conversations with colleagues in the United Kingdom compel me to let the cat out of the bag, so to speak. Although I do not claim that my experience and story are unique (see Bodman, 2002; Short, 2002; Whitehand, 2002; Wrigley, 2002), I do think that, for reasons suggested above, it is increasingly imperative for us to unpack citation data,

to understand how they might be abused, and to learn how they could be ‘weapons of the weak’. The following three sections will address each of these themes.

Unpacking citations: myths and realities

Citation data refer simply to online databases that show how many times a piece of work has been cited in journal articles indexed in these databases. As of 10 October 2002, three such citation indexes are particularly prominent—the Science Citation Index (SCI: 5946 journals), the Social Sciences Citation Index (SSCI: 1755 journals), and the Arts and Humanities Citation Index (AHI: 1122 journals). They are available as the ISI Web of Science online database. For the twenty-year period from 1981 to 10 October 2002, the SCI contains over 17 million documents (17 076 058), the SSCI nearly 3 million documents (2 852 313), and the AHI nearly 2.5 million documents (2 474 302). Together, there are 8823 journals and over 22.4 million documents in the three ISI Web of Science indexes and these figures are growing literally by the day.

With these facts and statistics in mind, let me now unpack some of the myths about citation data and their uses. The first popular myth is that *only* journal articles are cited and, by inference, it is undoubtedly good to publish in journals—the higher their citation impact factors (see below) the better. The reality, however, is that any document and/or thing can be cited in these 22.4 million documents. There is no distinction between books, journal articles, book reviews, book chapters, unpublished theses, magazines, reports, pamphlets, films, art, poems, or what have you. The two most important criteria are that the author(s) or creator(s) can be identifiable and a document in the indexes actually cites it. This means that one needs not necessarily publish in a refereed journal in order to be cited. In table 1, I have painstakingly compiled citation counts of some highly cited human geographers and their counterparts from five major social science disciplines during the period 1981–2002 (see the last section for a full discussion). It is clear that several highly cited human geographers have one third to almost two thirds of their citations attributable to one major book—David Harvey’s 1989 *The Condition of Postmodernity*, Doreen Massey’s 1984/1995 *Spatial Divisions of Labour*, Ed Soja’s 1989 *Postmodern Geographies*, and Peter Dicken’s 1986/1992/1998 *Global Shift*. The ‘citability’ of one’s work, therefore, does not always depend on the venue or medium of publication, although the venue or medium does play a role in the dissemination of this work and thereby its probability of being cited. In short, (highly) cited items are not exclusively limited to journal articles and it may be a big mistake to privilege *only* journal publications.

The second popular myth is that citation data tend to be biased and unfair because of multiple citations of the same author or multiple authors cited in one of these 22.4 million documents. In fact, citations data count only on the basis of *citing* documents, not *cited* items. In other words, someone’s citation count refers to the total number of documents among these 22.4 million that have cited his or her work. It does not refer to the total number of works by this scholar that have been cited. Theoretically, the maximum number of citations one can achieve during the period 1981–2002 is exactly the total number of documents (that is, 22 402 673), even though all these documents may cite only *one* particular piece of work by the author in question. In short, one excellent piece of work—in whatever format of publication and disciplinary field—can account for a large proportion of one’s total citations. This also implies that the *citing* journals need not be exclusively limited to one’s discipline. Thus, a large number of documents citing the exemplary books of human geographers in table 1 are published by journals outside geography. Moreover, multiple authorship does not reduce one’s citation counts precisely because only *citing* documents count. This is indeed good news for collaborative work and joint publications. For example, a February 2001

Table 1. Citation counts of selected human geographers and social scientists, 1981 – October 2002 (sources: the Social Sciences Citation Index and the Arts and Humanities Citation Index, accessed during 10–15 October 2002).

Disciplines, authors, and total citations ^a	Disciplines, authors and total citations ^a
<i>Geography</i> (33 journals)	<i>Social theorists</i> (all journals)
Ash Amin 1 174	Ulrich Beck 2 288 (1 034: BK in 1992)
Peter Dicken 1 055 (608: BK in 1986)	Gilles Deleuze 1 684
Derek Gregory 1 062	Jacques Derrida 1 198
David Harvey 3 508 (1 920: BK in 1989)	Michel Foucault 2 968
Ron J Johnston 1 296	Donna Haraway 2 233
Doreen Massey 2 336 (799: BK in 1984)	Bruno Latour 2 321 (1 590: BK in 1987)
Allen J Scott 1 488	Karl Polanyi 2 142 (1 438: BK in 1944)
Ed W Soja 1 364 (680: BK in 1989)	Richard Rorty 2 731
Michael Storper 1 647 (426: BK in 1989)	Edward Said 1 798 (777: BK in 1978)
Peter J Taylor 1 081	
Nigel J Thrift 1 709	
Yi-fu Tuan 1 222	
<i>Economics</i> (165 journals)	<i>Sociology and Anthropology</i> (140 journals)
Paul Krugman 1 647	Arjun Appadurai 2 226 (559: BK in 1996)
Robert E Lucas 5 671 (1 277: AR in 1988)	Manual Castells 2 061 (581: BK in 1996)
Douglas C North 2 307 (1 421: BK in 1990)	Clifford Geertz 1 901
Paul M Romer 2 427 (1 247: AR in 1986)	Anthony Giddens 5 928 (2 456: BK in 1984)
Herbert A Simon 4 366	Mark Granovetter 2 896 (1 644: AR in 1985)
Joseph E Stiglitz 3 459	Douglas S Massey 2 262
David J Teece 2 506	Alejandro Portes 2 446
Raymond Vernon 1 725	Saskia Sassen 1 567 (729: BK in 1991)
Oliver E Williamson 4 673 (3 702: BK in 1975)	
<i>Management and business</i> (97 journals)	<i>Political science and international relations</i> (119 journals)
Jay B Barney 1 744 (862: AR in 1991)	David Held 1 584
Paul J DiMaggio 2 692 (1 293: AR in 1983)	Peter J Katzenstein 1 372 (472: BK in 1985)
John H Dunning 1 443	Robert O Keohand 1 848 (900: BK in 1984)
Bruce Kogut 1 517	Joseph S Nye 1 096
Michael E Porter 5 750 (1 672: BK in 1990)	John G Ruggie 1 019
Walter W Powell 2 551 (1 293: AR in 1983)	Susan Strange 937
C K Prahalad 1 796 (864: AR in 1990)	

^aNumbers in parentheses next to some authors' citation counts refer to citation counts of their most cited books (BK) or articles (AR) and the year of first publication. Such data in parentheses are not available for some authors either because of my ignorance or because of the difficulty in identifying their most cited works.

Notes: This is *not* a ranking exercise and therefore the names are intentionally listed in an alphabetical order. The authors chosen may not necessarily be the most cited in their disciplines. For more accuracy, I include only authors whose names are less likely to have the same initials as other highly cited authors. The only exceptions are Ash Amin, Derek Gregory, Doreen Massey, and Peter J Taylor, and an item-by-item search was done for these authors to ensure accuracy. This choice avoids misattribution of citations, but excludes some highly cited geographers. All middle initials, if available, are used in the search. There are some significant overlaps with citation counts without using these initials. For authors with 'unique' surnames, the 'wildcard' search option (for example, Thrift N* or Soja E*) that include first and middle names was used to eliminate these overlaps.

Table 2. Citation impact factors (CIFs) and prestige factors of journals in geography and social sciences, 2001 (sources: the 2001 Journal Citation Reports, Social Sciences Edition, and The Social Science Prestige Factors 2001 Edition).

Name of journal (ranked by CIFs within disciplines)	CIF 2001	Total SSCI ^a citations in 2001	Ranking in SSCI by CIF (<i>N</i> = 1682)	Ranking in SSPF ^b list (<i>N</i> = 1468)
Geography (33 journals)				
1. <i>Transactions of the Institute of British Geographers</i>	3.093	829	38	129
2. <i>Progress in Human Geography</i>	2.288	579	94	251
3. <i>Annals of the Association of American Geographers</i>	1.855	1 119	142	371
4. <i>Environment and Planning D: Society and Space</i>	1.583	679	207	204
5. <i>Political Geography</i>	1.519	476	226	405
6. <i>Geoforum</i>	1.456	333	241	338
7. <i>Economic Geography</i>	1.441	516	247	91
8. <i>Antipode</i>	1.385	271	261	na
9. <i>Environment and Planning A</i>	1.070	1448	384	272
10. <i>International Journal of GIS</i>	0.905	531	484	447
Subtotal of SSCI citations in 2001	6 781 of 12 024 in total (56.4%)			
Economics (165 journals)				
1. <i>Journal of Economic Literature</i>	7.929	2 050	4	na
2. <i>Quarterly Journal of Economics</i>	3.795	5 324	21	16
3. <i>Journal of Financial Economics</i>	2.577	3 570	70	na
4. <i>Journal of Economic Perspectives</i>	2.103	2 085	108	na
5. <i>American Economic Review</i>	2.087	10 480	110	117
6. <i>Economic Policy</i>	2.000	342	123	na
7. <i>Energy Journal</i>	2.000	363	123	na
8. <i>Econometrica</i>	1.923	8 907	129	111
9. <i>Journal of International Economics</i>	1.909	1 352	132	na
10. <i>Journal of Political Economy</i>	1.904	7 695	134	77
Subtotal of SSCI citations in 2001	45 168 of 121 547 in total (37.2%)			
Management (61 journals)				
1. <i>Administrative Science Quarterly</i>	3.980	4 140	20	200
2. <i>Academy of Management Review</i>	3.157	3 874	35	na
3. <i>Academy of Management Journal</i>	2.831	4 568	53	104
4. <i>Strategic Management Journal</i>	2.682	4 152	65	65
5. <i>Leadership Quarterly</i>	2.511	468	77	na
6. <i>Harvard Business Review</i>	2.465	3 571	81	28
7. <i>Organization Science</i>	2.058	1 778	115	na
8. <i>MIS Quarterly</i>	1.796	1 256	156	na
9. <i>Sloan Management Review</i>	1.698	1 090	176	na
10. <i>Management Science</i>	1.502	6 177	231	361
Subtotal of SSCI citations in 2001	31 074 of 54 958 in total (56.5%)			

^a SSCI—Social Sciences Citation Index.

^b The Social Science Prestige Factor (SSPF) 2001 Edition ranked 1468 social science journals on the basis of six independent variables from 1998, 1999, and 2000 (<http://www.prestigefactor.com> accessed on 15 February 2002). Because of the trial nature of the SSPF, the above website may no longer be available until further notice. Unlike the calculation of citation impact factors in the Journal Citation Reports, the SSPF included only original research articles and excluded all review articles and others. This ranking was based on the logic that only original research articles report new scientific findings that contribute to new knowledge. As I did not keep a full record of rankings of all journals, I use 'na' in the table to denote the unavailability of data.

Table 2 (continued).

Name of journal (ranked by CIFs within disciplines)	CIF 2001	Total SSCI ^a citations in 2001	Ranking in SSCI by CIF (<i>N</i> = 1682)	Ranking in SSPF ^b list (<i>N</i> = 1468)
Political science (78 journals)				
1. <i>American Political Science Review</i>	2.302	3 684	92	148
2. <i>American Journal of Political Science</i>	2.028	2 245	117	na
3. <i>Political Geography</i>	1.519	476	226	405
4. <i>Journal of Peace Research</i>	1.390	451	258	na
5. <i>Comparative Politics</i>	1.239	445	303	na
6. <i>Comparative Political Studies</i>	1.211	464	309	na
7. <i>Politics and Society</i>	1.132	289	357	na
8. <i>Journal of Conflict Resolution</i>	0.950	1 046	457	na
9. <i>Journal of Politics</i>	0.947	1 226	460	na
10. <i>New Left Review</i>	0.857	560	512	140
Subtotal of SSCI citations in 2001	10 886 of 23 991 in total (45.4%)			
Sociology (93 journals)				
1. <i>American Sociological Review</i>	2.767	5 690	59	94
2. <i>American Journal of Sociology</i>	2.716	4 506	62	75
3. <i>Sociology of Education</i>	1.815	696	154	na
4. <i>Annual Review of Sociology</i>	1.742	1 278	166	na
5. <i>Discourse and Society</i>	1.725	300	169	na
6. <i>Journal of Marriage and the Family</i>	1.699	3 709	175	na
7. <i>Theory and Society</i>	1.349	391	270	na
8. <i>Sociology of Health and Illness</i>	1.240	801	302	na
9. <i>Law and Society Review</i>	1.227	864	304	na
10. <i>Sociological Methodology</i>	1.176	433	324	na
Subtotal of SSCI citations in 2001	18 668 of 41 169 in total (45.3%)			

paper in *Science* on the sequence of the human genome (Venter et al, 2001) has already been cited in 1119 documents in all three indexes within one and a half years of its publication for obviously important reasons. In theory, all of its 200-plus authors will *each* receive 1119 citations. But how such counts are actually used and apportioned may vary from discipline to discipline and from institution to institution.

The third common myth is that the citation impact factor (CIF) of journals shows how *often* or how *much* they are cited. Most users of the CIF, ranging from policy-makers, to administrators, academics, graduate students, and so on, seem to believe in and take for granted the 'objectivity' of this measurement. This belief has a significant impact on the *choice* of journals in which academics and researchers—in the eyes of their peers and evaluators—should publish. The fact remains, however, that the CIF is a highly simplified and implicitly biased measurement of the *average* extent to which articles in a particular journal have been (and, by inference, might be) cited in a given year. It is neither static nor necessarily comparable unproblematically across different disciplines. In table 2, I have again compiled some data on ten journals each in geography, economics, management, political science, and sociology ranked by their CIFs (see the last section for a full discussion). Take the CIF of this journal as an example. Its CIF of 1.07 in 2001 is calculated on the basis of dividing the number of citations in 2001 to articles published in the previous two years ($N = 104 + 141 = 245$) by the total number of articles published in these two years ($N = 113 + 116 = 229$). This relative measurement, therefore, does not necessarily privilege journals that publish more articles each year or journals that

have a much longer history of publication. A journal may accumulate a lot of total citations in a particular year (for example, *Annals of the Association of American Geographers* and *Environment and Planning A*). But this does not necessarily mean it will achieve a higher CIF, unless a large number of these citations refer to articles published in the previous two years. So, although documents published by *Environment and Planning A* in all its 32 years of existence attracted a total of 1448 citations in 2001 (highest in the SSCI geography list), it has a lower CIF than, say, *Progress in Human Geography* that has only a total of 579 citations in 2001 of all its documents published over a 24-year span. The fact that *Progress in Human Geography* has a much higher CIF at 2.29 (135 divided by 59) is attributed to its significantly smaller number of articles published in the previous two years ($N = 31 + 28 = 59$), despite the lower number of citations accrued to these 59 articles ($N = 53 + 82 = 135$).

In addition, the CIFs of journals in different disciplines depend on two key factors, thereby making direct comparison quite messy and inaccurate. The first factor refers to the propensity with which researchers in these disciplines cite the most recently published articles. In clinical and applied psychology, for example, the norm for research articles is to refer to empirical results from the latest experiments in the relevant field. The same norm is applicable to the discipline of law whereby the latest court judgments and research findings or arguments matter most. It is thus not surprising to find many psychology and law journals among the top SSCI journals ranked by their CIFs. All but two top-ten CIF-ranked journals among 1682 journals in the SSCI in 2001 were psychology or neuroscience journals. The two exceptions were *Journal of Economic Literature* (fourth) and *Harvard Law Review* (fifth). For this reason, journals in these disciplines tend to receive a high total number of citations as well. This phenomenon occurs when any article in these journals tends to cite many other journal articles in the same field (that is, a longer list of references citing mostly articles in similar journals).

The second factor has to do with the speed and turnaround time of publications in specific disciplines. Clearly a journal in, say, history that takes more than a year to publish an accepted paper will suffer significantly from a much lower CIF. This is because citations to articles published in the previous two years in this history journal are unlikely to make the two-year rule of CIF calculation. Take *American Historical Review* as an example. Despite its number-one ranking among sixteen journals in the field of history, its CIF in 2001 was 1.0. One may counterargue that, this being so, articles in *American Historical Review* can still attract more immediate citations by articles in journals belonging to other fields that may have a much quicker turnaround time (say, *Environment and Planning A*!) These faster citations by articles in other fields should contribute to a higher CIF. If we examine in detail the data of cited and citing journals available on Journal Citation Reports (<http://www.isinet.com/isi/products/citation/jcr/index.html>, accessed on 10 October 2002), however, the key fact remains that journals within the same field tend to top the list of citing journals.

How bad can it be? The abuses of citation counts

Now that I have unpacked some of the most popular myths in our understanding of citations in relation to individual authors and journals, I can move on to examine the potential abuses of using citation counts. It must be cautioned here that I am not arguing wholesale against the use of citations. In fact, I am, and will continue to be, a committed advocate for using such data as one of the many indications of the impacts of an individual, a team, a department, or a journal. With this qualification in mind, then, what can really go wrong with the use of citation data? I think the worst

abuse is to see these data as unproblematic and therefore fully comparable across individuals, journals, and disciplines without putting them in proper context. It is very easy and tempting, for example, for a policymaker or an evaluation panel to compare directly the total citations over a particular period (however they are derived, presented, and averaged) of two individuals or groups of individuals in two different subdisciplines or even departments. Whatever the purposes of such a comparison, the intrinsic danger is that different fields (even within the same discipline, say, geography) have different ‘citability’—some areas of research are a lot ‘hotter’, have many more (citing) journals in the indexes, and have more or larger citation networks comprising groups of individuals. It is thus reasonable to expect authors in the area of, say, globalisation studies to be more cited than their counterparts who specialise in the symbolism of particular architectural forms in rural China during the early Ming dynasty. Moreover, in many fields, it is virtually impossible to measure the individual researcher in such a singular unit, as done in citation counts. A recent anonymous commentary in this journal, for example, has asked “Where does the academic ‘individual’ begin and end?” (Anonymous, 2002, page 1331). It raises questions about the particular modality (for example, citation counts) of “identifying, recognising, and rewarding individual academic contributions... [that] is arguably corrosive of the inherent sociality of intellectual life” (page 1332).

Having said that, however, this qualification should *not* negate the relevance of citation counts. So it makes no sense to throw the baby out with the bathwater. Instead, we *must* situate our citation counts and analysis in their appropriate institutional and knowledge contexts. As I have argued before (Yeung, 2001), social scientific knowledge—as captured in the millions of documents in the SSCI and the AHI—is by no means neutral and unproblematic. The fact that its production is geographically uneven and dominated by the Anglo-American academic world means that knowledge of certain regions and places is likely to be less ‘relevant’ and less cited, irrespective of the authors of this knowledge and their institutional affiliations. *Ceteris paribus*, two economic geographers working within the same theoretical framework, but on two very different regions (say, the Silicon Valley of the USA versus Penang in Malaysia), are likely to receive quite different citation counts. Raising our sensitivity to these inherent biases in citation counts is perhaps one of the most urgent tasks for those interested in developing performance measurements on the basis of citation data.

Other less serious abuses include the evaluation of one’s work purely on the basis of the CIF of journals in which one has published. This problem is becoming more significant as researchers from the non-English-speaking world are increasingly seeking and privileging publications in ISI-listed journals. I can see at least two inherent dangers in this ‘tunnel vision’. First, such an evaluation criterion, if taken at its highest hegemonic power and influence—is capable of driving most authors to send their work *only* to a very small set of journals with high CIFs. This phenomenon will simply lead to the excessive domination and concentration of disciplinary power in the hands of a few privileged journals, a phenomenon very much akin to oligopoly in the commercial world. I know of at least two social science disciplines in which only three or four journals really matter when there are indeed over 100 journals in each of these disciplines listed in the SSCI. Although these ‘other’ 90-plus journals have a role to play, I suspect this role will be subservient at best. Revisiting table 2, for instance, it is not difficult to see that the top-ten CIF-ranked journals in economics, management, and sociology accounted for over one third to a half of the total citations to all journals in these disciplines in 2001. Although the top-ten economics journals made up only 6% of the 165 journals in the discipline, they attracted 46 158 citations or 37.2% of a total of

121547 citations to all 165 economics journals. In management and sociology, 16.4% and 10.8% of journals (top-ten) accounted for 56.5% and 45.3% respectively of all citations. With only 33 human geography journals listed in the SSCI, I certainly hope we do not end up in this intellectually ‘monopolistic’ state [see also an analysis of geography results in the UK Research Assessment Exercise 2001 in Johnston (2002)]. In 2001, 30.3% of human geography journals made up 56.4% of total citations in human geography. This figure certainly shows *less* concentration of citations in human geography journals than for journals in the other three social science disciplines.

Second, this tendency towards publishing in only a few high-CIF journals almost necessarily leads to a process I call ‘intellectual involution’ through which dominant ideas and concepts are repeatedly debated and exemplified in lieu of an appetite for innovation and originality. Authors may become overtly cautious and, sometimes, conformist in their writing in order to pass the ‘gatekeepers’—both the editors and the reviewers. The reviewers of these ‘prestigious’ journals may ask for so much that no one can really write to their complete satisfaction. The end product may become so ‘sterilised’ and ‘sanitised’ through rounds of harsh reviews and revisions that much of what the author *originally* wanted to say is replaced by realistic and pragmatic prose to please the editors and reviewers. This lack of diversity and tolerance of concepts, methodology, and empirical foci could significantly reduce the viability of a discipline in a changing world in which lateral thinking and breadth of knowledge are highly valued.

What’s in citations for geography and geographers?

With all these qualifications and ‘health warnings’, what remains of the use of citation data, particularly by geographers? Notwithstanding my arguments above, I think geographers can make good use of citation data (both citation counts and CIFs) as our ‘weapons’. This ‘weapons of the weak’ argument is based on the assumption that most university administrations and funding agencies tend to privilege the sciences (including medicine) and engineering and look down upon such social sciences as geography. This struggle for geography’s legitimacy often happens in such deliberations as promotion, grant awards, and funding allocations. Here, I believe we can turn citation data to our advantage, provided of course that we know what we are talking about. I have several empirical facts in favour of geography and geographers and these are summarised in table 1 (please read the notes to the table for limitations). In the first place, citation really counts! Bearing in mind the earlier qualifications, I submit that the highly cited geographers during the period 1981–2002 in table 1 indeed have very respectable citation counts (both in total and for their single most important work) when compared with well-known economists (many Nobel laureates), sociologists, political scientists, and social theorists. This achievement is *despite* the fact that the geography list in the SSCI has only 33 journals—significantly fewer than other major social sciences. In other words, these geographers are almost certainly cited very often by documents in journals other than these 33 human geography journals. On the basis of these counts, we can reasonably and without doubt argue that human geography is a pretty significant discipline within the social sciences. Many of our most cited human geographers are clearly *exporting* ideas and concepts, as evident in their large number of citations by articles in nongeography journals listed in the SSCI and the AHI.

What about challenges from the sciences and engineering—the disciplines that love citation counts? I think our best tactic is to situate these citation counts in the context of the significantly lower number of journals (and thus documents published) in the

SSCI vis-à-vis the SCI (see earlier figures). Put in the crudest way and bearing in mind all qualifications, a scientist or an engineer should have at least three times more citation counts than a human geographer to be on a comparable ground. In a discipline-specific context, for example, a biochemist and an electrical engineer should have 308 and 200 journals, respectively, in their fields to cite their work. Combined with the greater propensity in the sciences and engineering fields to publish *only* in journals and to cite latest work—the so-called ‘science model’ of research—this highly differential ‘citability’ can be strategically deployed in favour of human geographers. As a caveat, I am not arguing that great scientists aren’t great! Some of them received tens of thousands of citations between 1981 and 2002 (<http://www.isihighlycited.com> accessed on 10 October 2002). But I believe our most influential geographers are comparable with the majority of scientists and engineers—at least on citation counts, if they mean anything at all.

In terms of journals, human geography journals are sometimes viewed unfavourably by our social science colleagues, a fact that has something to do with the history of our discipline. This bias can again present a major obstacle to geographers’ career advancement, grant applications, and so on. Here, I believe we can turn the CIF to our advantage. We can legitimately claim that the top-ten human geography journals ranked by CIF in the Journal Citation Reports have respectable CIF figures compared with their counterparts from economics, management, political science, and sociology (see table 2). Again, this is *despite* the fact that there are significantly fewer human geography journals (33) than economics (165), management and business (97), political science (119), and sociology and anthropology (140). As such, a publication in a top human geography journal can achieve *relatively* similar impact in terms of citation counts as one in a top economics or sociology journal. Table 2 also presents the ranking of human geography journals and some top discipline journals by both their CIFs and their Social Science Prestige Factors (see footnote to table 2 for details). On the basis of CIF ranking, the top three geography journals certainly have comparable CIF figures with their equivalent in major social science disciplines. In terms of the Social Science Prestige Factor—an index based only on original research articles, it is gratifying to know that two key geography journals (*Economic Geography* and *Transactions of the Institute of British Geographers*) made it to the top 130 journals in 2001—a position comparable with *American Economic Review*, *Academy of Management Journal*, *American Political Science Review*, and *American Sociological Review*.

For all their weaknesses, I do not think we are witnessing the demise of citation counts. Indeed, quite the reverse is happening. More benchmarking, ranking, and auditing procedures will build citation counts and CIFs into their formulae. More quantitative data will be produced in the spirit of scientific objectivity. More and more fellow geographers and geography departments will be evaluated on the basis of these ruthless quantitative measures. It seems to me that, in this world of ‘maximum squeeze’ on academic researchers, there is no way out except to know better your worst ‘enemy’. If citation counts must be an integral component of the future rules of the ‘academic game’—as some people put it—I think geographers must think seriously about how to deploy them in the most informed manner. If this is done in the right way, we can perhaps win some really important arguments for ourselves and our discipline. Let me end this commentary with a relevant quote from Max Weber just to remind us the resistance against the “iron cage” of bureaucratisation must be a critical part of our intellectual endeavour:

“Thus in all probability someday the bureaucratisation of society will encompass capitalism too, just as it did in Antiquity. We too will then enjoy the benefits of bureaucratic ‘order’ instead of the ‘anarchy’ of free enterprise, and this order will be essentially the same as that which characterised the Roman Empire and—even more—the New Empire in Egypt and the Ptolemaic state” (Weber, 1983, page 159). May we all enjoy such an “order”...

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Country of residence and pension entitlement: the arbitrary geography of UK legal formalism

About ten years ago, *Society & Space* published my editorial on one of Justice Thurgood Marshall’s last opinions before he retired from the US Supreme Court (Clark, 1992). The issue addressed in Marshall’s opinion and in my editorial was one of social justice in the global economy—the proper treatment of foreign employees of US multinationals. Marshall argued that US multinationals should be held to account for their treatment of foreign employees in non-US jurisdictions when that treatment discriminates against those employees in favour of expatriate US nationals within the same firm. Against common practice, and against sentiments in favour of respect for (different) national standards, Justice Marshall argued that US law regarding discrimination ought to be applicable beyond US borders. His vision of social justice

was ambitious, not least of all because he believed that gross inequalities between people ought to be regulated even if this means looking closely at US corporations' strategic use of national borders to differentiate and manage the costs and benefits of territorial expansion.

On 22 May 2002, in the High Court of England, Justice Stanley Burnton declined to intervene on behalf of Ms Annette Carson in her appeal against UK social-security policy.⁽¹⁾ A resident of South Africa since 1990, Ms Carson had spent her working life in England and had paid the appropriate National Insurance contributions thereby earning an entitlement to UK social-security (pension) benefits. She began to draw her UK pension in late 2000, receiving a combined benefit of £103.62 per week. However, as is the case for UK pensioners resident in South Africa, Australia, Canada, and New Zealand (and all other countries of the old Commonwealth), by government policy she is deemed ineligible for any increase in the basic retirement pension paid subsequent to her initial claim for that benefit, including any adjustments made for inflation. By contrast, UK pensioners living in the USA, the European Union, and in a number of other countries spread around the world are deemed eligible for any increase in the basic pension benefit. Were Ms Carson to move back to the United Kingdom or move to the United States (for example) she would be immediately eligible for the basic pension augmented by any increases previously denied her.

Justice Burnton noted that less than half of the 750 000 UK pensioners and beneficiaries living abroad receive annual adjustments in the basic pension. The majority of UK pensioners living outside the country live in countries deemed 'outside' of the UK government's social-security and pension policy 'jurisdiction'. Justice Burnton sought to establish reasons for inclusion and exclusion, searching for official pronouncements that might explain the apparent discrimination between expatriate UK pensioners according to where they reside. He was not successful. In fact, he cited official statements from the (then) Department of Social Security, committee proceedings in the House of Commons, and debate in the House of Commons to the effect that the list of countries deemed eligible as opposed to those countries deemed ineligible was entirely arbitrary. Moreover, he noted that "the United Kingdom is the only OECD country that discriminates (in the value of benefits paid) between pensioners (resident) in different overseas countries." A condition for the payment of incremental pension benefits is to be resident in a country that has concluded a reciprocal agreement with the United Kingdom on the mutual recognition of social-security benefits. What could not be established, however, were systematic reasons for such agreements apart from geopolitical and related state-craft interests.

Ms Carson contended that UK policy contravened the European Convention on Human Rights. In particular, she claimed that the policy violated Article 1 of the First Protocol (protection of possessions) and Article 14 (prohibition of discrimination). In the first instance, the argument was that social-security pension entitlements are effectively 'property' in that the entitlement has a monetary value even if it cannot be bought and sold to third parties. This issue—social security as a property right—is widely debated in Europe because so many 'reforms' of European state-provided social security have discounted its promised value for future retirees. If it were treated as property, presumably those adversely affected by government policy could claim compensation or restitution of lost benefits (Clark, 2003). However, as Justice Burnton properly indicated, UK social-security entitlements are not property; contributions are not accumulated in individually tagged retirement accounts [as is the case in most

⁽¹⁾ See Annette Carson and the Secretary of State for Work and Pensions and the Commonwealth of Australia [2002] EWHC 978 (Admin); Smith Bernal Reporting Limited, 190 Fleet Street, London EC4A 2AG.

privately funded pension schemes (Clark, 2000; 2002)]. Notwithstanding widespread misunderstanding of the nature and structure of social-security systems, UK social security is just like most other pay-as-you-go (PAYG) systems in that benefits paid to current retirees are paid out of the contributions and taxes levied upon current contributors (workers) (see Gillion et al, 2000).

On the issue of discrimination, Article 14 says in part “the rights and freedoms set forth in this Convention shall be secured without discrimination on any grounds such as sex, race, colour, ... or other status.” As part of his analysis of the relevant issues, Justice Burnton posed a series of questions to determine whether Ms Carson’s claim fell within the meaning of Article 14. In sum, was the fact that she is resident in South Africa justifiable grounds with respect to Article 14 in excluding her from incremental adjustments in the value of the basic state pension? After arguments and exercises in logic, Justice Burnton concluded that as Article 1 was applicable to the case so too was Article 14 (a finding initially opposed by the UK government). He also found that there was evidence of different treatment by the UK government of people with the same status (namely, resident in another jurisdiction and entitled to a UK basic pension). But he also concluded that “the comparison between the positions of persons living in different countries, in different social and economic circumstances, and under different tax and social security regimes, is complex, and cannot simply be restricted to a comparison of the sterling amounts of the UK pensions.”

In fact, Justice Burnton rejected Carson’s petition. In doing so, Justice Burnton cited a summary decision of the European Commission on Human Rights applicable to the present case which ruled a similar complaint inadmissible. In that instance, the Commission did not explain its reasoning. But he suggested that one reason for rejecting the petition could be the failure to compare the welfare of the applicant with that of other pensioners in countries where incremental adjustments are paid. Going on, he suggested that, whereas no government could deny any eligible contributor a social-security benefit, the government could vary the value of that pension outside of the UK jurisdiction. By contrast, to vary the value of the benefit *within* the United Kingdom (between regions, for example) would constitute, all things being equal, discrimination. Furthermore, he suggested that the fact that some expatriate UK pensioners are covered by reciprocal agreements with the governments of countries in which they are resident whereas other expatriate UK pensioners are not covered by such agreements is an issue of foreign policy not social-security policy. And finally, with respect to the status of government policy in relation to the European Convention on Human Rights, Justice Burnton noted that as the UK government is accountable to Parliament it has justifiable discretion in acting according to its (obviously) unstated objectives.

This is an outrageous judgment. It justifies gross inequalities between UK pensioners imposing considerable hardship on those who have been resident for many years in noneligible countries. In his discussion of the case, Justice Burnton noted that Mr Williams Hayes, a UK pensioner resident in Australia since 1972, receives just £6.75 per week (the nominal value of the UK basic pension at the time he retired). In effect, the UK government has transferred and discounted its long-term pension liability with the migration of UK citizens and legal residents. If it is, in the view of the UK Treasury, a desirable policy in relation to the enormous social-security liabilities faced by European governments and the imperatives driving global financial markets (Clark, 2003), it imposes on certain people and not others harsh penalties for their choice of residence. More generally, it reflects a commonly noted UK government policy to the effect that social-security benefits

are just one component of retirees' incomes and that they are also responsible for saving for their future retirement. Yet more generally, it reflects accepted levels of current and future income inequality amongst UK retirees at odds with European expectations *and* at odds with US experience [compare Budd and Campbell (1998) with Munnell (2003)].

We could argue that this judgment is symptomatic of the failure of UK pension policy. We could argue that the government's use of geography is (at best) opportunistic and (at worst) a cynical exercise in liability shifting. And we could also argue that it is another instance of UK hostility to the objectives underpinning the European Convention on Human Rights. But I also want to suggest that it is symptomatic of a basic difference between UK and US judicial decisionmaking. In this respect, the apparent differences between Marshall and Burnton are indicative of deeply held but different views about the proper logic of legal reasoning.

In their landmark study comparing US and English legal systems, Atiyah and Summers (1987) argued that for all their similarities and common law heritage the practice of legal reasoning in these two countries is profoundly different. Specifically, they suggested that "the English legal system is highly 'formal' and the American highly 'substantive'" (page 1). 'Substantive' was defined in terms of the motivating sentiments driving legal reasoning, be those sentiments economic, political, or social in origin. At issue, therefore, are the grounds for making decisions referencing core values and beliefs in society at large. In this respect, Justice Marshall's intervention on the side of foreign employees of US multinationals was an intervention motivated by a substantive understanding of the nature of discrimination which was justified by reference to an ideal conception of fair treatment or equitable treatment of people. His views may, of course, be disputed, as they were in that case. And it is apparent that US jurisprudence is racked with debate over the motivating sentiments that should properly guide legal reasoning. But the nature of legal reasoning is rarely debated. In arriving at his opinion in relation to the majority of the court, Marshall used a mode of legal reasoning entirely consistent with accepted practice in US federal courts.

By contrast, Atiyah and Summers (1987, page 2) argued that "a formal reason [for a decision] is a legally authoritative reason on which judges and others are empowered or required to base a decision or action, and such a reason usually excludes from consideration, overrides, or at least diminishes the weight of, any countervailing substantive reason arising at the point of decision or action." Elsewhere, they also suggested that legal formalism is less concerned with the content of any particular dispute and is more concerned with placing the dispute in relation to accepted rules of decisionmaking and the record of decisions taken in previous cases. Furthermore, legal formalism relies upon a hierarchical order of protocols which are then applied to specific cases. In this respect, it would be uncommon to justify a decision in terms of the substantive content of the issue addressed; justification, although very important in terms of the legitimacy of the courts, is a move made in relation to the prevailing set of rules. Finally, it is worth noting that there is considerable unease about judges' own values and backgrounds and, by contrast, a strong commitment to the formal political process and parliamentary institutions. In this respect, Justice Burnton's opinion may be seen to be an instance of legal formalism.

But note the problems encountered by Justice Burnton in setting out his opinion and bringing it to a conclusion. At the outset, he recognised the apparent arbitrariness of government policy and the adverse welfare consequences of that policy for many individuals. He also recognised that the parliamentary process could not provide a reasonable justification for such an arbitrary policy. And yet, whatever

his oblique concerns about the welfare consequences of such policy for UK pensioners resident in other countries, his decision has all the hallmarks of legal formalism. In that regard, his opinion seems as arbitrary as the government policy. Furthermore, whereas Justice Marshall directly engaged his colleagues, government policy, and the practices of US multinationals in his argument against discrimination by geography, Justice Burton's voice in the matter was neutered by the iron-clad formal framework imposed upon UK judicial decisionmaking. Not surprisingly, we look in vain in his opinion for any motivating substantive sentiments that might justify discrimination by geography between UK pensioners and beneficiaries. Likewise, we look in vain for an argument for or against UK policy in the manner exemplified by Marshall.

Here lies the unease felt by many liberals about the institution of legal formalism. If parliamentary democracy cannot be counted upon to respond to state-mandated gross injustices between people whether by geography or otherwise, and if the judiciary are imprisoned behind walls of legal formalism, who has the authority to speak on behalf of those adversely affected by government policy? Notwithstanding the idealism of many social democrats, once the parliamentary process is captured by government imperatives one is left with the uncomfortable feeling that 'rights talk' is the only way out for those adversely affected by state power. In this regard, the European Convention on Human Rights, the Social Charter, and other related instruments of judicial review are more important than ever before in regulating the powers and policies of government. And yet, as I have tried to indicate, even those instruments may be sidestepped if legal formalism drives legal reasoning as opposed to the substantive ideals embodied in the European Convention on Human Rights.

Just at the moment, UK pensioners across the old Commonwealth must be wondering about the arbitrariness of government policy while explanations by counsel about the implied theory of legal reasoning must appear to be quaint but costly gestures to 18th and 19th century conceptions of parliamentary sovereignty. Little wonder, then, that pension rights and the mobility of people is one of the most fraught and litigated issues in European and UK courts.

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