MEASURING THE VALUE OF SOCIOLOGY? SOME NOTES ON PERFORMATIVE METRICISATION IN THE CONTEMPORARY ACADEMY

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Abstract

The performative co-construction of academic life through myriad metrics is now a global phenomenon as indicated by the plethora of university research or journal ranking systems and the publication of 'league' tables based on them. If these metrics are seen as actively constituting the social world, can an analysis of this 'naturally occurring' data reveal how these new technologies of value and measure are recursively defining the practices and subjects of university life? In the UK higher education sector, the otherwise mundane realities of academic life have come to be recursively lived through a succession of research assessment exercises (RAEs). Lived through not only in the RAEs themselves, but also through the managed incremental changes to the academic and organizational practices linked to the institutional imaginings of planning for, and anticipating the consequences of, the actual exercises. In the 'planning for' mode an increasing proportion of formerly sociology submissions have shifted into 'social policy'. This is one instance of how institutional 'game-playing' in relation to the RAE enacts the social in quite fundamental ways and how, with the other outcomes of the RAE, have been integral to the restructuring of our discipline. Planning an RAE 2008 submission in Sociology required anticipation of how a panel of 16 peers would evaluate 39 institutions by weighted, relative worth of: aggregated data from 1,267 individuals who, between them cited a total of 3,729 'outputs'; the detailed narrative and statistical data on the research environment; and a narrative account of academic 'esteem'. This data provided such institutional variables as postgraduate student numbers, sources of student funding, and research income from various sources. To evaluate the 'quality of outputs various measures of the 'impact' and/or 'influence' of journals, as developed from the Thomson-Reuters Journal Citation Reports, was linked to the data. An exploratory modeling exercise using these variables to predict RAE 2008 revealed that despite what we might like to think about the subtle nuances involved in peer review judgments, it turns out that a fairly astonishing 83% of the variance in outcomes can be predicted by some fairly simple 'shadow metrics': quality of journals in the submission, research income per capita and scale of research activity. We conclude that measuring the value of sociology involves multiple mutual constructions of reality within which ever more nuanced data assemblages are increasingly implicated and that analysis of this data can make explicit some of the parameters of enactment within which we operate in the contemporary academy.

Introduction

Academic life, like so many other spheres of what we used to think of as the 'public sector', has become increasingly metricised (Hammer, 2011). The various technologies of the audit culture have reached ever deeper into the everyday fabric of university life (Strathern, 2000). In the UK, for example, the life-world of the university is increasingly enacted through complex data assemblages drawing upon all manner of emissions emanating from routine academic practices such as recruiting students, teaching, marking, giving feedback, applying for research funding, publishing and citing the work of others (De Angelis and Harvie, 2009). Some of these emissions are digital by-products of routine transactions (such as journal citations), others have to be collected by means of surveys or other formal data collection techniques (such as the National Student Survey (NSS)[1]) and others still require the formation of a whole expensive bureaucratic edifice designed to assess the quality of administrative, teaching and research work (such as, the focus of this paper, research assessment exercises). The performative mutual or co-construction (Saetnan *et al.*, 2011) of academic life through myriad metrics – such as the NSS, the Transparent Approach to Costing (TRAC)[2] data, data on average UCAS entry tariffs,[3] PhD completion rates, research income per capita, individual and group h-indices (Woeginger, 2008), journal impact factors, Quality Assurance Agency (QAA) subject and institutional reviews and so on – is ubiquitous. Increasingly, of course, such data is also being formally aggregated into any number of commercially driven ranking and 'league' table systems, such as those developed by various national newspapers and, now, at a global level, by Times Higher Education (THE).[4] Adopting a view of such data assemblages as not simply imprints or products of the social world, but as actively constituting that world, leads us to focus on the work that new technologies of value and measure do in constituting the university and recursively defining its practices and subjects. This, of course, is not just of analytic interest, as the post-Browne[5] reforms of British higher education begin to take hold these various metrics will become instantiated in the 'prices' we are able to charge for our courses.

Our focus in this paper is on what has hitherto been one of the most important metrics -the various attempts that have been made to measure the value of the research that academics undertake in the UK in order to inform state funding allocation decisions.[6] The paper begins by briefly reviewing the various iterations of measuring the 'quality' of research that have been tried over the last few decades. It then takes a detailed descriptive case study of the manner in which our own discipline - sociology – has been evaluated, with a particular focus on the most recent exercise, the results of which were reported in 2008. This may appear to be a rather dull - if worthy - exercise, likely to be of little interest to an international readership and/or colleagues with a primary interest in more conceptual debates about measure and value in contemporary sociological analysis. We hope to demonstrate otherwise for three reasons - although readers unfamiliar and/or intolerant of quantitative styles of work may need to bear with us a little.

First, the institutional arrangements we are about to describe for making judgments about the quality of research are fast becoming internationalized, and many colleagues outside of the UK are already subject to or are about to become subject to very similar regimes of research assessment. Similar schemes have been operationalised in Australia[7], Hong Kong and New Zealand, for example. But, as already noted, even in those countries where state-sponsored measurement of research quality is not yet being used to determine the allocation of resources – such as the USA - the ongoing metrification of research performance to determine the supposed global standing of particular institutions and subjects within them by commercial providers of data, means that there is no escape from this particular manifestation of the relationship between measure and value (Hicks, 2009).

Second, the theoretical and methodological anxieties which currently permeate the social sciences – and perhaps sociology in particular (Savage and Burrows, 2007) – are thoroughly enmeshed with the processes we describe. The enactment of value and relative worth in academic work by formal processes of academic judgment, measurement and algorithmic resource allocation has become fundamental to survival. Both authors are old enough to remember a time when the quality of what one wrote was still a matter of the inherent characteristics of the piece rather than largely a function of where it was published, who funded

it and how many times it was cited. As we shall show below, although we sometimes comfort ourselves that such inherent (almost aesthetic) judgments of the value of our work ('outputs') made by our 'peers' still provides the basis for our position in the academic 'league table', in actuality, these judgments almost perfectly mirror a set of quite basic underlying statistical drivers of 'quality'. As we all quietly make decisions about what to write about, how to write it, where to send it for publication and the rest – sometimes as directed by our institutions, but more often than not under our own volition – many of us profoundly intuit that the metrics we are orientating towards are producing disciplinary knowledge that could, and perhaps should, be other than that which we end up with.[8]

Third, much of what we are about to describe – and, indeed, some of the methods we employ to do it – impinge more directly than one might initially suspect on many of the broader debates with which this monograph is concerned. We are perhaps a little more circumspect than are some of the other contributors here to the idea that conventional hegemonic methods of social research are dysfunctional 'for grasping the complex and generative character of reality' (Adkins, 2009a: 234). As we hope to demonstrate later on in this paper, even if one accepts as a domain assumption of sociological practice that statistical metrics and social and organizational processes are mutually constitutive (Law, 2004; Saetnan *et al*., 2011), some quite simple statistical analyses of administrative and transactional data still has something to offer as a descriptive device, even when the object of our inquiry is something as supposedly complex, unstable, elusive, vague and multiple as the quality of sociological research in the UK.

A Brief History of the Assessment of Research Quality

University research in the UK has long been subject to something called a 'dual support system' made up of two parts: block-grants provided by the Government in order to provide a general underpinning for research capacity; and, second, funds for specific research grants, made available by competition, administered by the research councils (for the social sciences this was mainly the Social Science Research Council (SSRC) until 1983 when (due to largely political motivations) it was transmogrified into the Economic and Social Research Council (ESRC)). These two sources of funding for research thus relied on very different administrative

processes. Although it was clear on what basis specific research grants were awarded – peer-review and competition – the allocation of block grant was an altogether different matter. Up until the mid-1980s it would be fair to say that their allocation was, at best, opaque. At the time the University Grants Committee (UGC) was responsible for the allocation of block grants and it, along with many other public sector bodies, was encouraged by the Thatcher regime to begin to take measures of performance seriously in the allocation of funds between institutions (Johnes *et al.*, 1993). So, with the publication of *A Strategy for Higher Education into the 1990s* (UGC, 1984) began the long process of the development of ever more refined, precise and supposedly transparent mechanisms for measuring the quality of research in order to inform funding allocation decisions.

A first, at best half-hearted, attempt was made in 1985-86 to make some sort of judgments about the relative quality of university-based research. The criteria by which the quality of research was judged in this first Research Selectivity Exercise (RSE), as it came to be known, was hardly more transparent than had been the allocation of block grants. Each subject area within participating institutions was asked to produce a brief 'research profile', of no more than 3 sides of A4 paper, within which, it was suggested, might be information on: indices of any financial support for research; staff and research student numbers; any measures of research performance deemed significant; a statement of current and likely future research priorities; and the titles of no more than 5 books or articles produced since 1980 considered to be typical of the best research produced (Bence and Oppenheim, 2005). On 27 May 1986 the 'results' of this first RSE were published to some consternation within the academy. Each subject within each university had been judged as either 'outstanding', 'better than average', 'about average', or 'below average'. However, as Smith (1986: 247) noted at the time: 'No evidence or argument was provided in support of the ratings, and there was no statement of method or formula adopted'.

A more robust second attempt was made by, what by then had become, the University Funding Council (UFC) in 1989. This second RSE was taken far more seriously as it was becoming increasingly apparent that the results would significantly impact upon funding allocations. The

1989 RSE was based on 'informed peer review' from 70 advisory groups and panels, containing 300 individuals, and was estimated to have cost about one per cent of the total university research budget of around £500 million in 1989-90 (Johnes *et al*., 1993: 273). This time the panels were provided with far more structured data on research performance including: the number of publications (books, chapters in books, papers in journals and other identifiable outputs) in relation to the number of full-time academic staff; bibliographical details of up to two publications for each full-time member of academic staff; the number and value of research grants and research contracts; and the number of research studentships.

This information was used by each advisory group in order to rate each unit of assessment on a five-point scale using the rhetoric of 'national level' and 'international level' excellence. So, for example: the lowest rating was a '1' meaning that there existed national levels of excellence in none, or virtually none, of the sub-areas of activity; the mid-point was '3' meaning national levels of excellence in the majority of the sub-areas of activity; and the top-rating, '5', was defined as international levels of excellence in some sub-areas of activity and national level in virtually all others.

By the time of the third exercise in 1992 the university sector had been expanded to include the ex-polytechnics. Each institution was now invited to select 'research active' staff in post on 30th June 1992 for assessment. Each assessment was divided into 72 academic units of assessment (UoAs). The data collected became more extensive; in addition to each academic nominating two publications, quantitative information on all publications was also required. Each submission was then ranked on a 5-point scale very similar to the one used in 1996. The allocation of resource by the UFC was then based upon not only a 'quality' measure using this scale, but also the 'volume' measure based upon the number of 'research active' staff submitted (Bence and Oppenheim, 2005: 145-146).

The fourth exercise in 1996 relied less upon quantitative measures of research output and more on the quality of publications. 'Research active' staff in 69 different UoAs had to provide details of up to four publications published during the period covered by the assessment and this was supplemented with details of 'indications of peer esteem' in the form of editorships of

prestigious journal, papers given at key conferences and so on (Bence and Oppenheim, 2005). The rating scale was further finessed (to become, essentially, a 7 point scale) with the introduction of a new 'top' 5* rating and the former band 3 being subdivided into 3a and 3b. The 'measurement' of 'quality' was undertaken by peer review panels. Again resources were distributed based on the quality grade multiplied by the volume of research active staff.

Further recalibrations in the process were undertaken for the fifth exercise in 2001 in order to make it more transparent (Bence and Oppenheim, 2005: 147-151). However, the essence of the assessment remained intact even though the descriptions attached to the points on the rating scales were reworded somewhat. UoAs awarded a 5* in 2001 who had also received such a rating in 1996 were later awarded a new 6* rating to produce a new 8 point scale.

Throughout this period not only did the information gathering involved in the various exercises become ever more detailed and prescribed there was also clearly an aspiration to shift the level of measurement used to assess the quality of research from an ever more differentiated ordinal scale towards one closer to a cardinal level of measure (which was almost completely realized in the 2008 exercise, about which more below). The combination of an ever more refined quality rating being traded off against a volume measure decided at an institutional level led, inevitably, to ever more 'game-playing' by universities. Anyone who has worked within the UK higher education sector during this period will attest to how much academic and organizational practices have been incrementally recalibrated in relation to the RAE. Increasingly many of the mundane realities of academic life have been recursively lived through not only the exercises themselves, but institutional imaginings of what such future exercises might bring. Indeed, orientating towards the RAE and scenario planning for possible outcomes has become central to the more routine discourse of futurism (Adkins, 2009b) that has come to permeate university life.

For the sixth and most recent exercise, the results of which were published in 2008, the process of research quality assessment was altered quite fundamentally in order to produce a rating system that could better approximate to an interval level of measurement. Rather than each submission being awarded an overall rating, each was given a 'quality profile'. This quality

profile was constructed from three sub-profiles relating to 'outputs', 'research environment' and 'esteem'. The weightings attached to each of these sub-profiles varied between UoAs. In the case of sociology 'outputs' were weighted at 75 per cent, 'environment' at 20 per cent and 'esteem' at 5 per cent. A panel of 16 peers[9] examined – in the case of sociology - 39 detailed submissions containing information on: 4 publications for each member of staff submitted; a detailed narrative and statistical data on the research environment; and a narrative on various esteem measures. Each output was evaluated as follows[10]: 4* Quality that is world-leading in terms of originality, significance and rigour; 3* Quality that is internationally excellent in terms of originality, significance and rigour but which nonetheless falls short of the highest standards of excellence; 2* Quality that is recognised internationally in terms of originality, significance and rigour; 1* Quality that is recognised nationally in terms of originality, significance and rigour; and 'Unclassified Quality' that falls below the standard of nationally recognised work, or work which does not meet the published definition of research for the purposes of the assessment.

The same descriptions were then also applied to the information provided on the research environment and esteem in each submission (although exactly how an ordinal scale was applied to the measurement of the quality of the narratives remains unclear). If we take our own two institutions – Goldsmiths and York[11] - by way of example we can see how the overall quality profiles were derived.

Table 1

Sub-Profiles for Sociology at Goldsmiths and York

Sub-Profiles	Outputs					Environment				Esteem				Final Profile			
UoAs	*4**	*3**	*2**	*1**	*U/C*	*4**	*3**	*2**	*1**	*4**	*3**	*2**	*1**	*4**	*3**	*2**	*1**
Goldsmiths	20.6	26.2	40.5	11.1	1.6	80	20	0	0	80	20	0	0	35	25	30	10
York	18.3	32.4	30.3	8.5	0.0	70	30	0	0	70	10	20	0	30	30	35	5

At Goldsmiths 20.6 per cent of published outputs were graded at 4*, whilst at York the figure was 18.3 per cent. At Goldsmiths 80 per cent of both the research environment and esteem were graded at 4* quality whilst at York the comparable figures were both 70 per cent. Once the weightings were applied to the three sub-profiles the overall research quality profiles is revealed as 35:25:30:10 for Goldsmiths and 30:30:35:5 for York. A summary measure of these profiles in the form of a grade point average (GPA) gives both institutions a similar score of 2.85. This GPA was widely used to construct the various 'league tables' that have inevitably followed each RAE.[12]

These research quality profiles, weighted by the number of staff submitted within each submission, were used to inform the allocation of over £12 million of funding to sociology per annum (known in the argot of the RAE as 'QR'). Initially this allocation was based on 2* being weighted at 1, 3* at 3 and 4* at 7. This resulted in highly disparate allocations of resource: Manchester, for example, gaining £23,776 per capita; Goldsmiths and Essex both £22,799 per capita; and York £21,822. Further down the rankings, however, allocations were substantially less; Liverpool gaining just £9,445 per capita; Teesside £8,794 per capita; and Huddersfield just £6,514.[13] Subsequently these allocations were even more steeply ramped to favour 'excellence' in research to become 1:3:9, thus concentrating funding even further towards those UoAs with the highest proportion of 4* work.

Table 2 shows the consolidated results for the RAEs in 1992, 1996, 2001 and 2008 for the Sociology UoA. It is a complex table that requires some deciphering. The first column shows the alphabetically ordered (current) names of all of the institutions who have ever submitted to the sociology UoA in any of the four RAEs (in England, Northern Ireland, Scotland and then in Wales). The results are shown for each of the assessments along with the number of 'research active' full-time equivalent (FTE) staff submitted. When sociologists were submitted under the auspices of the social policy UoA instead of sociology UoA, this is indicated. When no submission was made this is indicated by 'ns'. This means that either sociologists (if any) at the institution were not submitted to a particular RAE or they were submitted under the auspices of a different UoA (other than social policy).

So, to take a couple of illustrative examples, 12 sociologists were submitted by Leeds in 1992 and were graded '4'. In 1996 21.6 were submitted and they obtained the same grade. However, in subsequent exercises Leeds did not submit under the auspices of the sociology UoA choosing instead to submit to the social policy UoA. Lancaster, on the other hand, submitted to the sociology UoA on all four occasions: 23.5 staff were submitted in 1992 and were graded '5'; in 1996 28.5 were submitted and were again awarded the top grade (now a 5*); in 2001 the 28.3 staff submitted again gained a 5*, subsequently raised to a 6* (having obtained a 5* on two occasions); and in 2008 29.8 staff were submitted gaining a GPA of 2.80 (ranking them 5th out of 39 on this measure).[14]

The table reveals a secular decline in the number of submissions made to the sociology UoA, from 67 in 1992 to just 39 in 2008. Related to this, it also shows how, over time, an increasing proportion of submissions have shifted into social policy. Here is a prime example of how institutional 'game-playing' in relation to the RAE enacts the social in quite fundamental ways. Colleagues who otherwise self-identify as sociologists are now constituted as social policy analysts. However, despite this, it also reveals an increase in the number of research active staff submitted to the sociology UoA, from a total of 826.6 in 1992 to 927.37 in 2008. It also shows, and as Savage (2011) has recently observed, that sociology has fared relatively well in research intensive institutions but less so in those more orientated towards teaching. In 2008 the 4 top rated departments had all displayed remarkable growth compared to 1992: Essex had grown by 64 per cent; York by 84 per cent; Goldsmiths by 117 per cent; and Manchester by 189 per cent. It is clear that the results of the RAE – as a fundamental element of the broader performative data assemblage within which UK higher education is now so enmeshed – has been integral to the restructuring of our discipline.

In a sense what follows is an attempt on our part to explore the performative character of the social processes that resulted in the 39 submissions being ordered and ranked in the manner in which they were. The 'raw' material for the exercise - the grants, the students supervised, the books, chapters and articles published, the activities that supposedly accrue 'esteem' (editing journals, giving a conference plenary, getting prizes and so on), the 'strategic hires', the new

investment in research infrastructures and so on, are all (more or less) elegantly inscribed in (bespoke) software. Then data is collected, numbers are crunched, 'outputs' selected, narratives constructed, excuses made (illnesses, the birth of children, inexperience and other life-events), panels are selected, reading is completed, 'score-cards' are filled, trains, hotels and meals are booked, debates and disagreements ensue….and at the end of the process a set of 39 quality profiles are revealed to public scrutiny

Once released the data takes on a reified form and also develops an autonomous 'public life'. It is not only used to inform funding allocation decisions. It is inserted in other secondary algorithms used to determine the eligibility to apply for certain types of research and postgraduate funding. It is used as a rhetorical device by institutions in their prospectuses, on their web sites and in their funding bids. It feeds into myriad aggregate league tables manipulable via web 2.0 applications by students, industry, colleagues, government, the media and so on. Some of us celebrate the outcomes; others are forced to rethink their strategies; others still are closed down. But, in the end, we are all implicated and some come to realise that this is a performative 'game' from which it is almost impossible to escape. Hammer (2011:79), for example, points to the brilliant HBO TV series *The Wire* (see Penfold-Mounce *et al*, (2011) for a broader introduction to the sociological relevance of the show) to elaborate on this general point. Many of the episodes deal with issues of value and measure, and 'the strategies and problematizations that can be related to governing by numbers', in particular. Most of Series 3, for example, is concerned with the role of metrics and performance measures in neo-liberal governmentality, especially the co-constructive processes of institutional life. But it is perhaps the sagely pronouncements of one of the best-loved characters in the show, the gay stick-up artist Omar Little, that best encapsulates the dilemma we are trying to register here: 'the game's out there, and it's play or get played.' The scaling up of the RAE means that universities *must* act strategically in order to gain more QR and this, in turn, creates a new type of competition that is far more than just a battle over reputational capital; it becomes more and more about the 'bottom line'. Indeed, the constitutive power of this data increasingly functions via myriad processes of 'financialisation'.

Table 2

The Results of the RAEs in 1992, 1996, 2001 and 2008 for the Sociology UoA.

	1992		1996		2001		2008	
Institution	*Grade*	*FTEs*	*Grade*	*FTEs*	*Grade*	*FTEs*	*Grade*	*FTEs*
Anglia	3	1.0	2	9.5	Social Policy		Social Policy	
Bath Spa	1	5.0	2	3.0	ns	ns	ns	ns
Bath	3	14.5	3a	13.1	Social Policy		Social Policy	
Birkbeck	ns	ns	ns	ns	3a	1.0	2.10	24.55
Birmingham	3	6.0	ns	ns	ns	ns	1.95	18.0
Bradford	2	13.0	3a	12.3	Social Policy		Social Policy	
Bristol	2	8.0	3a	10.5	5	13.0	2.40	17.93
Brunel	3	10.4	4	10.7	5	16.5	2.45	11.0
Bucks	1	2.0	ns	ns	ns	ns	ns	ns
Cambridge	5	23.8	4	30.8	5	21.8	2.65	21.0
Guildhall	1	4.0	2	5.0	3a	6.0	Social Policy	
City University	4	13.0	4	21.6	4	11.7	2.30	27.2
Coventry	ns	ns	1	2.0	ns	ns	ns	ns
Crew and Alsager	1	6.0	ns	ns	ns	ns	ns	ns
Derby	1	12.1	3b	8.2	2	14.2	ns	ns
Durham	3	23.0	3a	21.7	4	13.0	Social Policy	
East Anglia	3	4.9	ns	ns	ns	ns	ns	ns
East London	3	9.6	3a	26.3	4	38.9	2.20	31.9
Essex	5	26.6	5*	32.7	5*/6*	41.1	2.85	43.7
Exeter	2	10.5	3a	8.2	5	10.0	2.70	18.72
Goldsmiths	3	15.0	5	15.5	5*	24.0	2.85	32.6
Greenwich	2	12.0	3a	13.5	3a	16.0	ns	ns
Huddersfield	ns	ns	ns	ns	2	5.0	1.70	9.0
Hull	3	9.0	Social Policy		Social Policy		Social Policy	
Keele	3	13.5	3b	14.0	Social Policy		Social Policy	
Kent	4	12.5	3a	10.5	Social Policy		Social Policy	
Central Lancashire	1	6.0	2	4.0	3b	18.5	Social Policy	
Lancaster	5	23.5	5*	28.5	5*/6*	28.3	2.80	29.8

Leeds	4	12.0	4	21.6	Social Policy		Social Policy	
Leicester	3	17.0	4	19.0	4	22.3	2.10	12.5
Liverpool	2	14.0	3b	9.3	Social Policy		1.95	21.0
Liverpool Hope	ns	ns	2	4.0	2	6.6	ns	ns0
Liverpool John Moores	1	37.0	ns	ns	ns	ns	ns	ns
LSE	4	16.4	4	27.2	5	38.8	2.40	37.75
Loughborough	5	26.8	5	33.0	5*	37.0	2.40	47.22
Manchester	4	17.0	5	33.2	5*	39.3	2.85	49.2
Manchester Metropolitan	2	7.0	3b	13.0	3a	18.0	2.15	22.5
Middlesex	3	12.0	Social Policy		Social Policy		Social Policy	
Newcastle upon Tyne	Social Policy		Social Policy		Social Policy		2.50	21.6
Northampton	ns	ns	ns	ns	3b	10.4	ns	ns
North London	ns	ns	4	2.5	3b	4.5	Social Policy	
Northumbria	2	11.0	2	11.0	Social Policy		Social Policy	
Nottingham	Social Policy		3b	24.8	Social Policy		2.40	8.3
Nottingham Trent	2	8.5	3b	7.0	Social Policy		Social Policy	
Open University	4	11.5	4	14.0	4	14.0	2.60	42.3
Oxford	4	22.9	5	7.0	5	13.0	2.65	18.75
Oxford Brookes	2	3.5	3b	6.0	4	10.5	ns	ns
Plymouth	3	14.0	3a	25.4	4	13.2	2.15	23.0
Portsmouth	2	9.0	3a/3b	10.0	3a	27.5	ns	ns
Reading	2	11.0	3b	9.0	3a	12.8	ns	ns
Roehampton	2	14.7	3b	22.0	3a	12.0	2.05	16.25
Royal Holloway	3	8.0	3a	9.0	Social Policy		Social Policy	
St Mary's College	ns	ns	2	3.0	ns	ns	ns	ns
Salford	4	10.0	4	17.0	4	19.6	Social Policy	
Southampton Institute	1	5.0	ns	ns	ns	ns	ns	ns
Southampton	3	13.6	4	17.0	Social Policy		Social Policy	
Staffordshire	2	16.0	3b	16.4	3a	7.2	ns	ns
Surrey	4	14.9	5	15.8	5*	23.4	2.75	21.4
Sussex	4	10.0	4	25.3	4	22.6	2.55	14.0
Teesside	3	9.0	3a	9.0	3a	23.0	1.95	10.0
Trinity and All Saints College	1	4.0	1	2.0	ns	ns	ns	ns
Warwick	5	29.5	5	31.5	5	27.8	2.70	37.8

UWE, Bristol	2	7.0	3b	22.0	3a	15.7	1.65	12.0
Worcester College of HE	1	1.0	2	3.0	2	6.6	ns	ns
York	3	11.5	4	10.0	5	14.0	2.85	21.2
Queens, Belfast	4	12.0	4	14.0	5	22.8	2.60	23.0
Ulster	3	10.0	3b	9.0	3b	9.0	Social Policy	
Aberdeen	2	7.9	3a	9.7	5	14.9	2.60	14.0
Edinburgh	5	26.5	5	23.4	5	22.9	2.75	46.3
Glasgow Caledonian	2	10.0	ns	ns	3a	10.5	1.50	11.2
Glasgow	4	17.0	4	18.0	4	20.0	2.25	27.5
Napier	ns	ns	ns	ns	ns	ns	1.55	6.8
Paisley	1	13.0	ns	ns	ns	ns	ns	ns
Robert Gordon	ns	ns	ns	ns	ns	ns	1.40	6.0
Strathclyde	2	4.3	3a	7.0	3a	7.0	1.95	9.0
Cardiff	3	15.8	4	30.1	5	33.0	2.70	61.4
Glamorgan	1	6.0	Social Policy		Social Policy		Social Policy	
Swansea	3	14.4	Social Policy		Social Policy		Social Policy	
Totals	**67**	**826.6**	**59**	**892.8**	**48**	**858.9**	**39**	**927.37**

The 'Shadow Metrics' of the 2008 RAE

We now want to move to more concrete analysis and focus on the results of the most recent RAE for sociology using the full submission data released in May 2009. We should begin by noting some major limitations with the data which means that coverage of *all* sociological research in the UK is partial. The National Student Survey (NSS)[15] suggests that in the year the RAE data was gathered sociology was taught in 89 higher education institutions in the UK (with 67 institutions offering single honours degrees through UCAS) whilst social policy was offered in only 33. However, as we have seen, only 39 RAE submissions were made to the sociology UoA, whilst 67 were made to the social policy UoA. Clearly institutions are involved in complex 'game playing' with many choosing to submit what is clearly mainstream sociological research to the social policy panel because their organizational arrangements make this a sensible thing to do in terms of the viability of the narratives they are able to construct about their research environments. At both of our own institutions – Goldsmiths and York – the

existing departmental structures meant that separate submissions to both the Sociology *and* the Social Work and Social Policy and Administration panels was a viable option. However, in many institutions the departmental/school co-location of sociologists with social policy analysts and others meant that a submission to the social policy panel was a more tempting prospect (although, of course, RAE related considerations often play a central role in institutional restructuring strategies in the first place). The consequence of this is that many sociologists working in some of the historically most important institutions for the subject (Savage, 2010) – Durham, Keele, Kent, Leeds, Nottingham,[16] Salford, Sheffield and Southampton amongst them – are excluded from the analysis which follows.

Although the data is 'partial', what we want to try and do is to see how easy it is to mimic the judgments made by peers on the panel, by trying to construct statistical models able to predict the GPAs of each submission. We recognize, of course, the playful irony in our attempt to do this in a paper about the metricisation of academic life-worlds. Our point in so doing, however, is that despite what we might like to think about the subtle nuances involved in peer review judgments, it turns out that even they are explicable in terms of some fairly simple 'shadow metrics'. These shadow metrics could, of course, be thought of as simply those variables best able to statistically model the judgments of the panel. But if we take the 'performative turn' in social science research at all seriously (Law, 2004) we must recognize that there is more to it than that. It is almost certainly the case that these judgments are already shaped by the 'public life of data' - such as the increasingly well publicized impact factors of journals - and/or perhaps these very metrics are themselves simply the outcome of prior academic reputation (people read journals with a good historical reputation so they are the ones that get the citations and the thus high impact factors). Be this as it may, what we want to do here is to decipher the underlying statistical patterns that structure the data. What inferences about shadow metrics can we squeeze out of our 39 cases? What we want to model is the distribution of the overall quality profiles. A summary of this data is given in Table 3.

Table 3: Summary of Quality Profiles for Sociology Submissions in the RAE 2008 (%)

Quality Rating	N	Minimum	Maximum	Mean	Standard Deviation
4*	39	0.0	40.0	15.8	11.8
3*	39	5.0	40.0	26.8	7.7
2*	39	25.0	55.0	34.6	6.2
1*	39	5.0	45.0	20.4	11.5
Unclassified	39	0.0	15.0	2.4	3.4
GPA score	39	1.4	2.85	2.33	0.4
9:3:1 Funding GPA	39	0.7	4.45	2.6	1.1

On average about 16 per cent of sociological research was graded as 4* - but with some submissions achieving as much as 40 per cent in this category. Over 2 per cent of research submitted was unclassified. The minimum GPA was 1.4 and the maximum was 2.85 with a mean of 2.33. It turns out that the GPA weighted by the 9:3:1 weights for funding allocations is the version of the variable that is the most susceptible to statistical modeling.[17] This runs from a minimum of 0.7 (Robert Gordon) to a maximum of 4.45 (Manchester) with a mean of 2.6 and a standard deviation of 1.1. It is variation in this weighted version of the GPA that we attempt to model.

The most powerful single predictor of how well a submission did in the RAE 2008 was how well it did in the RAE 2001. If one considers the 33 cases submitted to both assessments the degree of continuity is quite stark. Indeed, in statistical terms, variation in the results obtained in 2001 'explain' 76 per cent of the variation in 2008. However, even if we put past performance to one side we can still construct models that are highly predictive of variation in the weighted

GPAs by using data contained within each of the submissions and linking this data to other publically available sources.

The 39 submissions contained information on 1,267[18] individuals who, between them cited a total of 3,729 'outputs'. For reasons that we will explain below, where these outputs were articles published in journals included in the Thomson-Reuters Social Science Citation Index (SSCI) we attached various measures of the 'impact' and/or 'influence' of the journal. We then aggregated the total number of outputs in the various formats and these measures of 'journal quality' (where available) to the institutional level. We then added additional institutional variables to the dataset derived from the submissions such as: postgraduate student numbers; sources of student funding; research income from the various sources; and so on.

Given the small number of cases we have available relative to the number of possible predictor variables some method of summarising multiple indicators was desirable. The method used was, first, to consider a range of indicators within each of a number of different categories of potential interest - *volume*, *research income*, *journal quality* and other factors[19] – and to decide which the most suitable single variable was to represent the range of possibilities. Once these variables had been selected we then entered them into an OLS regression model using forward selection stepwise procedures. Use of forward rather than backward selection avoids the problems of multicollinearity when regressing indicators of the same measure against a criterion variable. The results of this exercise is to produce either the single most important predictor of the GPA score or a weighted additive index of those indicators that have an impact on the GPA score.

Size of Submission

We might consider that, *a priori*, the size of a submission would be positively associated with the GPA. Scale, of course, is in part a function of previous research performance, but it could also be important since leading figures in the field might be more likely to be attracted to larger UoAs that have practices and infrastructure supportive of high quality research activity. We examined a range of variables that would measure variations in the scale of the submission. The

single variable that gave us most purchase for accounting for variation in the weighted GPA in this area was the *$\log_e$ of the total number of outputs submitted*.[20]

Research Income

Variations in both total research income and research income per capita were highly correlated with variations in the weighted GPA. The mean level of research income per capita over the period covered by the assessment was £124,600; the minimum was £8000 and the maximum £394,000. However, a better measure than this was *the $\log_e$ of research income per capita derived from the UK research councils*. On average 43.1 per cent of research income came from this source (with a minimum of zero and a maximum of 91.6 per cent): mean research council income was £55,200; the minimum was zero and the maximum £309,000. Variation in research council income per capita over the period of the assessment explained some 46 per cent of the variation in weighted GPA.

A Citation Based Metric?

We next considered how best we might incorporate some form of citations based metrics into the analysis, especially given all of the recent controversy concerning their potential role in any future research quality assessments.[21] Although what follows is inevitably crude, following through the logic of what is possible has the advantage that, as a potentially incendiary analytic byproduct, we are able to produce a journal ranking scheme for the discipline of sociology in the UK based upon the judgments made in the RAE 2008.

Of the 3,729 outputs submitted: 2,366 (63.4 per cent) were journal articles; 619 (16.6 per cent) were authored or co-authored books; 526 (14.1 per cent) were chapters in edited books; 96 (2.6 per cent) were edited books; with the other 122 (3.2 per cent) items were a mixture of internet publications, research reports, conference contributions, digital or visual media, exhibitions or other forms of assessable output. Here we want to focus on the 2,366 journal articles. These articles were published in a total of 847 different journals (a huge range which speaks perhaps to the lack of a core to the discipline in the UK?). Of these 847 journals 309 (34 per cent) were included in the Thompson-Reuters Journal Citation Reports (JCR)®.[22] These claim to offer:

a systematic, objective means to critically evaluate the world's leading journals, with quantifiable, statistical information based on citation data. By compiling articles' cited references, *JCR Web* helps to measure research influence and impact at the journal and category levels, and shows the relationship between citing and cited journals. [23]

For each journal cited in the RAE 2008 with a JCR entry we attached a range of different citation based measures of impact or influence.[24] An excellent discussion of the various metrics available can be found in Pringle (2008). Perhaps the best known measure is the Journal *Impact Factor* (IF) which is a ratio of citations and recent citable items published.[25] Crudely, an Impact Factor of 1.0 means that, on average, an article published in the journal is currently cited once. An Impact Factor of 2.5 means that, on average, an article published is cited two and a half times. The journal, to which this monograph is related, for example, currently has an IF of 1.019 which places it 40th out of the 98 sociology journals currently monitored within the JCR.

There are, however, at least another 5 different measures of journal impact or influence that can be constructed based upon citation practices: the 5 year mean impact; an Immediacy Index; the Cited Half Life; something called the JCR Eigenfactor; and a complex metric known as Article Influence Score (AIS). In our analysis we considered the utility of all 6 of these measures in accounting for variation in the weighted GPA for sociology. In the modeling it was the most complex of these metrics – the AIS – that was, and by some distance, the best predictor of RAE 2008 outcomes. So what is the AIS? It is based upon the Eigenfactor Score which, like the IF, is essentially a ratio of the number of citations to the total number of articles published, but it eliminates journal-level self-citations and weights each reference according to a stochastic measure of the amount of time researchers report reading the journal. Unlike the IF, the Eigenfactor is not scaled to journal size, so typically a larger journal (in terms of the number of articles published) will have a larger value than a smaller journal. A journal's AIS score is the journal's Eigenfactor Score divided by the fraction of articles published by the journal. It aims to measure the average influence of each article published by the journal for the first five years after publication. The mean AIS Score is 1.00; a score greater than 1.00 indicates that each article

in the journal has an above-average influence; a score less than 1.00 indicates that each article in the journal has a below-average influence. That fraction is normalized so that the sum total of articles from all journals is 1.00. Within the discipline of sociology the journals with the highest AIS is the *American Sociological Review* (the *ASR*) with a current AIS of 4.03. The *British Journal of Sociology* is the most highly ranked UK based sociology journal on this metric with an AIS of 1.33. On this metric the journal associated with this monograph ranks 38th globally with an AIS of 0.602. In general our analysis suggests that sociologists, in the UK at least, as evidenced by their submissions made to the 2008 RAE - publish in journals with less than average global influence when compared to non-sociology journals in the social sciences more generally (cf. Erikson, 2005; Payne, 2007).

In hindsight, it is perhaps not surprising that the AIS, although only an indirect measure of the quality of the research published in a journal, is a good predictor of the outcomes of RAE 2008. However, we also wished to confront one of the main problems of citation indices: their failure to recognize 'disciplinarity'. Academics publish to address audiences defined by discipline boundaries, and across these boundaries there are important variations in citation practices. A sociologist publishing in a medical journal would benefit from the higher rates of citation typical of that field of study; however, it might be thought that the article is of more limited value to the core concerns of sociology as a discipline. Global citation based measures provide just one metric of journal quality. Clearly different disciplines within different national contexts will give different priorities to different journals. The *ASR* may be top of the pile in the JCR but within our own two institutions within the UK it is read only by the occasional 'socially minded' econometrician, whilst journals much further down the global rankings are much more highly valued - the *Sociological Review* included! So how can we best adjust the AIS to take account of such variation?

If we assume that the best papers, for example, those of paradigm-changing potential or otherwise addressing the core concerns of the discipline, are more likely to be published in the journals selected as 'suitable' by research active sociologists, then the authors of such papers are

more likely to chose the 'core' sociology journals rather than those representing a more marginal area of the discipline. These arguments required us to weight the AIS by some measure of each journal's 'centrality' to the discipline. Our thinking is that, in one sense, data from the RAE 2008 gives us a clear indication of the journals most 'valued' by UK sociologists. This 'value' was measured by the number of times a journal was chosen for inclusion in the sociology submissions made for the 2008 RAE. When the AIS scores for each journal were weighted by the number of citations this did prove to be a far more effective predictor of RAE 2008 outcomes than the simple unweighted scores.

We experimented with various ways of operationalising the centrality weighted AIS within our analysis. Given that our concern was to measure what might be thought of as the 'top' journals in the UK we ranked all of the journals in the submissions by their centrality weighted AIS scores, and then we calculated the proportion of each institution's journal articles that were in the highest quartile. Across the institutions, the average 'top quartile' proportion was 45 per cent of the articles submitted, the lowest proportion was just 18 per cent, and the highest was 64 per cent.[26] It was this final adjustment to the citation impact data that provided the most effective predictor of weighted GPA scores in RAE 2008. It was the percentage of journal articles included in a submission that were published in the 'top' quartile of journals (ranked by AIS adjusted for journal centrality in UK sociology) that proved to be the best citation based predictor of the outcomes of RAE 2008.

Some Implied Journal Rankings in UK Sociology?

Although not central to what follows, readers may find the journal ranking that we used in the analysis of interest. However, perhaps we need to recognize that in producing this ranking we might concretize them and thus contribute to the very constitutive powers of the data that are the focus of the paper. With these 'dangers' in mind, Table 4 shows the 'top 20' journals based upon our measure of journal AIS weighted by centrality to the discipline in the UK.[27]

Table 4 The 'Top 20' Journals in UK Sociology

Journal Title	Number of Articles in Submissions	Weighted AIS
1 Sociology	91	81.9
2 British Journal of Sociology	58	70.8
3 Social Science and Medicine	54	65.7
4 Sociological Review	57	43.4
5 Sociology of Health and Illness	40	39.9
6 American Journal of Sociology	7	26.6
7 Journal of Ethnic and Racial Studies	24	21.2
8 Social Studies of Science	23	21.0
9 American Sociological Review	5	19.5
10 Economy and Society	18	17.7
11 Work, Employment and Society	23	17.7
12 Environment and Planning A	20	17.5
13 Theory, Culture and Society	39	16.8
14 Child Development	7	16.4
15 European Sociological Review	24	16.4
16 British Journal of Criminology	36	15.4
17 British Journal of Social Psychology	13	13.9
18 Journal of the Royal Statistical Society Series A	10	13.5
19 Journal of Social Policy	18	11.5
20 Urban Studies	13	9.6

This ranking throws up few surprises. The 'big 3' mainstream UK sociology journals – *Sociology*, the *British Journal of Sociology* and *Sociological Review* – feature highly, mainly due to the number of articles published in them submitted to the RAE. The strength and quality of UK work in medical sociology is also apparent with both *Social Science and Medicine* and *Sociology of Health*

and Illness ranking highly (as a result of both a reasonably large number of submissions published in these journals combined with a relatively high - for sociology - AIS).

The Final Model

Although we could have constructed a more complex model containing up to 5 different variable able to explain some 87 per cent of the variation in the weighted GPA scores a more parsimonious model containing just 3 variables does the job almost as well – explaining 83 per cent of the variation – but which is far more interpretable analytically (and remember we only have 39 cases from which to make any inferences about which 'shadow metrics' are implicitly operating here). The final model contains: *the log$_e$ of the number of outputs*; *the per capita research income obtained from research councils*; and *the percentage of articles published in the top quartile of the most influential journals in UK sociology*. This is shown in Table 5.

The biggest influence on the weighted GPA is the size of the submission (with a beta coefficient of 0.53); essentially, on average, the larger the scale of the submission the better the result obtained. The two other variables in the model - research income from UK research councils per capita, and the percentage of articles published in the top quartile of the highest quality journals - both have a similar impact on the weighted GPA (as indicated by beta coefficients of 0.37). So the model implies that use of these three 'shadow metrics' would have produced a very similar ranking of research quality to that actually produced by the more qualitative process of informed peer review actually undertaken.

Table 5 OLS Model Predicting (9:3:1) Weighted GPA Scores for Sociology (RAE2008)

Model 2 explains 83% of the variance in the RAE 2008 Weighted GPA	Beta Coefficients	Sig.	Tolerance
Number of Outputs (loge) in RAE Submission	0.53	.00	.72
Research Council Research Income (loge) per Category A Staff FTE	0.37	.00	.68
% of Articles in Top Quartile Journals as defined by centrality-weighted AIS	0.37	.01	.90

How can we account for this 'agreement' between the long and complex qualitative deliberations of the peer review panel and predictions of a simple three-variable linear regression model? Are panels merely the means of reproducing established intellectual hierarchies dominated by traditional universities and conservative institutionalised judgments? Is peer-review 'high-trust' because it would always fail to propose radical shifts in funding? Certainly academics appear wedded to the notion that only the exhaustive, expensive qualitative processes of peer review are capable of delivering legitimate outcomes. Yet when we turn the 'naturally occurring' quantitative submission data (ignoring the narrative that sets the

context for the data – known at the RA5) into a set of fairly simple measures, these allow us to explain a very high proportion of the variance in the GPA scores allocated. Here we have a series of decisions made by sociologists who inhabit an intellectual world generally dominated (in the UK at least) by subjectivism, anti-positivism and relativism that are themselves largely predicted by a set of quantitative indicators formed into a simple regression model embodying what some might view as an opposing ontology and epistemology. Or is another explanation possible? Could the outcomes of the RAE 2008 for sociology implied by our simple model be interpreted as little more than the product of the peer review of prior peer review? For example, both the awarding of ESRC grants and the acceptance of an article for publication in a 'good' journal both involve extensive processes of peer review. Is the model able to mimic the judgments of the panel as well as it does because the variables it uses are themselves originally derived from complex processes of qualitative peer review translated into quantitative metrics? Of course, we do not know the answer to these questions. But what we can surmise is that measuring the value of sociology (or rather, sociological research) – or any academic discipline for that matter - involves multiple mutual constructions of reality within which ever more nuanced data assemblages are increasingly implicated. What we hope we have shown here is that, on occasion, a playful and reflexive engagement with some of this data can still usefully make explicit some of the parameters of enactment within which we operate within the contemporary academy.

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Acknowledgements

Notes in the Text

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[1] See http://www.thestudentsurvey.com/

[2] See http://www.hefce.ac.uk/finance/fundinghe/trac/

[3] See http://www.ucas.ac.uk/students/ucas_tariff/

[4] See http://www.timeshighereducation.co.uk/world-university-rankings/

[5] *The Independent Review of Higher Education Funding and Student Finance*, published on the 12th October 2010, see http://hereview.independent.gov.uk/hereview/

[6] Readers may find the recent thoughts of Nigel Thrift on these issues of interest. In a speech at a recent conference in Wellington, New Zealand (*Imagining Value, Running Hot 2010: Wonder and Widgets – Realising the Value of Research for NZ*, 1-3 November 2010, available at http://www.youtube.com/watch?v=S8KqDfapipI) he offers an analysis that tries to combine his role as Vice-Chancellor of a leading research intensive university with that of a social and cultural theorist.

[7] The results of the first exercise in Australia – Excellence in Research for Australia (ERA) - were published as we were drafting this paper. Using a simple 5-point scale each institutional outlet carrying out sociological research has been evaluated. Of the 34 outlets evaluated only one – the University of Queensland – achieved the 'top' '5' ranking and only four achieved a '4'. The results can be found at http://www.arc.gov.au/era/outcomes_2010/FoR/SBE1608.

[8] How could this be otherwise? We have been driven by organizational concerns about who and what is 'RAEable' (we will explain below what the RAE is for readers unfamiliar with the beast) for so long now that the fabric of the lifeworld of the academy is now largely woven using this particular pattern.

[9] The details of panel membership can be found at http://www.rae.ac.uk/pubs/2007/03/.

[10] Derived from http://www.rae.ac.uk/aboutus/quality.asp.

[11] The original submissions for which are available at:
http://www.rae.ac.uk/submissions/submission.aspx?id=129&type=hei&subid=1354
and http://www.rae.ac.uk/submissions/submission.aspx?id=174&type=hei&subid=1024.

[12] See the Guardian league tables for sociology at http://www.guardian.co.uk/education/table/2008/dec/18/rae-2008-sociology for example.

[13] This data can be found at http://www.hefce.ac.uk/pubs/hefce/2009/09_08/.

[14] See the Guardian league table rankings using this measure already referred to under note 12.

[15] Available at http://unistats.direct.gov.uk/.

[16] Nottingham is a complex case because it does appear in the dataset but, in fact, the majority of the sociologists working in the School of Sociology and Social Policy were submitted under the auspices of social policy. The Nottingham sociology submission is wholly made up of staff working in the, now defunct, Institute for Science and Society (ISS).

[17] So, by way of illustration, using our two examples of Goldsmiths and York. The (9:3:1) weighted GPA for Goldsmiths is given by (0.35x9)+(0.25x3)+(0.3x1)= 4.2 and for York is given by (0.30x9)+(0.30x3)+(0.35x1)=3.95.

[18] This figure differs from the total of 927.37 FTEs shown in Table 2 because it is based on a simple count (eg a 0.5 FTE counts as 1 here) of all people submitted even if they were not eligible to be included in the volume measure (eg 'Category C' staff).

[19] We also examined data in relation to *postgraduate students* and *types of submitted outputs*. The proportion of postgraduate students funded by the UK research councils correlates positively and the proportion funded by the institution itself correlates negatively with the weighted GPA. However, neither correlation is particularly strong and other variables have much greater explanatory strength so we do not consider this factor any further here. Variations in the types of output submitted do not seem to have much influence on the weighted GPA, other than if a large proportion of outputs are 'other forms of output' – that is, not a journal article, authored book, edited book or chapter in a book. Although having a high proportion of journal articles does not in itself correlate highly with the GPA, as we will see below, the proportion of such articles published in 'good quality' journals' does have a significant impact on the weighted GPA.

[20] It was a better measure than the number of staff submitted. In most cases 4 outputs per member of staff submitted was expected. However, for 'early-career' researchers a minimum of 1 or 2 outputs was acceptable. For staff working less than full-time a reduced number of outputs was also acceptable. A reduced number of outputs was also acceptable if a staff member had special circumstances such as periods of maternity leave or periods of illness during the assessment period. So this means that there is not a perfect correlation between the numbers of FTEs submitted for assessment and the number of outputs.

[21] See, for example, the June 2009 HEFCE Report on the matter http://www.hefce.ac.uk/pubs/rdreports/2009/rd13_09/.

[22] Some 38 per cent of journal articles submitted were in journals in the JCR.

[23] From http://thomsonreuters.com/products_services/science/science_products/a-z/journal_citation_reports (accessed on 23.7.10)

[24] Note that our analysis is based upon the impact or influence of the journal within which the article was published and *not upon* any measure of the impact or influence of the individual article itself.

[25] As Pringle (2008: 87) explains 'It is calculated as follows: A= total cites in 2006. B = 2006 cites to articles published in 2004-5 (a subset of A). C= number of articles…published in 2004-5. D=B/C = 2006 impact factor'.

[26] We also examined a measure based upon the proportion of all outputs submitted that were journal articles of this type, but it was not as powerful. As we have already noted, the overall proportion of outputs that were journal article was 63.4 per cent. However, this figure varied between a minimum of 23.8 per cent and a maximum of 92.1 per cent. The measure we are using here is based upon the proportion of journal articles in each submission (which itself varies) that are published in the 'top' quartile of journals (based upon our ranking).

[27] So, to take a couple of examples, the AIS for Sociology is just 0.9 whilst that for Behavioural and Brain Science (BBS) is 8.5. However *Sociology* articles appear 91 times whilst there is only 1 instance of an article from BBS. So we have weighted journals by how many times they appear in the RAE 2008 submission to get an estimate of their 'centrality' to the discipline in the UK.