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Tensions between evaluations and communication practices

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When publications are used in the evaluation of research performance, tensions between the simplifying, standardising approaches of evaluations and the communication practices of scientific communities are likely to arise. An analysis of data gathered in an evaluation at the Australian National University demonstrates that many academic disciplines employ communication channels that are recognised neither by the current Australian funding formulae for university research nor by universities internal evaluation systems that mirror those formulae. This discrepancy has the potential to distort the communication practices and ultimately the production of knowledge in some fields.

Introduction

One of the distinctive characteristics of scientific communities is the use they make of different publication channels. The difference between the almost exclusive use of journal articles in the natural sciences and the importance of books and book chapters in the social sciences, arts and humanities is well known, and can affect the validity of evaluations based on citation counts (Butler and Visser 2006). Most methodological studies of the subject are concerned with the coverage of publications by major databases and therefore distinguish chiefly between journal articles that are indexed by the databases and other publications ("non-source items", ibid., Luwel et al. 1999, Moed 2005: 119-136, 161). However, for studying the relationship between evaluation practices and communication practices it is necessary to go beyond this dichotomy and to apply a more fine-grained categorisation.

With this note, we take advantage of a recent data collection at the Australian National University, which allows a comparison of what academics from different disciplines regard as their most important publications. We will use the material for a discussion of the relative importance of communication channels in different fields, and of the impact standardised evaluations can have on communicative practice in fields that don't fit this standard.

Communication channels used by academics for their best work

Our investigation of communication channels draws on data from an evaluation of the Australian National University (based on peer review) that was conducted in 2004 (see Gläser and Laudel 2005). As part of this evaluation, academics had to choose their five best research outputs from the period between 1995 and the beginning of 2004, which were then submitted to external assessors. Academics were not restricted in their choice of types of output. As expected, their choices reflect

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the varying importance of communication channels (table 1). We distinguished four types of disciplines according to the communication channels used by academics for their most important work:

- *Journal disciplines* whose selected output contains more than 80% journal articles (Astronomical, Biological, Biomedical, Physical, Chemical, Earth, Mathematical Sciences, Psychology and Mental Health, Business and Commerce);

- *Augmented journal disciplines* whose selected output contains between 50% and 70% journal articles; the second important channel being either conference papers (Information Science and Engineering) or books and book chapters (Economics, Environmental Research, Law, Asia-Pacific studies, Australian and Indigenous Studies, Policy and Political Sciences);

- *Book disciplines* whose selected output contains more than 50% books and book chapters (History and Archaeology, Language and Culture, Studies in Human Society); and

- *Non-publication disciplines*, namely the Arts whose output consists predominantly of creative works (more than 89%) (Gläser and Laudel 2005).

Discipline	Journal article	Book chapter	Book	Conference paper	Edited Book or journal	Creative work	Research Report/ Working Paper	Report for external users	Encyclopae-dia entry	PhD Thesis	Others
Mathematical Sciences	224	10	10	5					1		
Astronomical Sciences	118	2	1	2							
Physical Sciences	513	13	7	27				1			
Biological Sciences	309	13	5								
Biomedical Research	509	15	4				6	4			3
Business and Commerce	108	8	2	8	2						1
Chemical Sciences	289	6	7	2							2
Earth Sciences	329	20	5	8	1		1		1	1	3
Information Sciences and Engineering	226	21	11	106			2			1	4
Economics	277	63	34	16	6		18	5		2	1
Environmental Research	134	30	19	15	3		3	2			3
Law	224	85	62	7	13		10	10		1	1
Australian Indigenous Studies	74	48	40	4	13	4	19	10	1	1	2
Philosophy	72	36	17	2					1		1
Policy and Political Sciences	205	98	84	6	24		15	4	1		1
Psychology and Mental Health	198	51	17	8			11	4	2	2	3
Studies in Human Society	268	135	86	19	27	9	12	10	1	4	7
Asia-Pacific Studies	347	190	143	17	6	9	14		2		5
History and Archeology	179	137	121	11	25	3	4		6		6
Language and Culture	134	164	84	21	26	18	1		5		6
Creative Arts	4	2		3		115			1		4

Table 1 Types of work ANU academics nominated for assessment

Table 2 presents the percentages of major types of outputs chosen by academics in the four types of disciplines. Journal disciplines, augmented by books and book chapters have two additional important publication types – edited books and research reports/ working papers. In book disciplines, academics also frequently submitted edited books as their best work. Encyclopaedia entries were sometimes submitted, too. As expected, the Arts as a non-publication discipline do not fit into the standard publication patterns. Their major outcome is creative work, such as exhibitions, compositions, films and performances. Even though the Arts are incorporated within universities, it is questionable whether their products should be treated as *research* output.

Type of Output	Journal discipline	Augmented journal discipline (predominantly by conference papers)	Augmented journal discipline (predominantly by books/ book chapters)	Book disciplines	Non-publication disciplines
	%	%	%	%	%
Journal articles	92	61	52	33	3.1
Book chapters	3	5.7	21.2	31.6	1.5
Books	1.5	3	14.5	21.5	0
Conference papers	2	28.5	2.7	3.4	2.3
Edited books and journals	0.1	0	3.5	5.4	0
Creative works	0	0	0.6	2.2	89.2
Research reports/ Working papers	0.3	0.5	2.9	0.5	0
Reports for external users	0.3	0	1.3	0	0
Encyclopaedia entries	0.1	0	0.2	1.2	0.8
PhD Thesis	0.04	0.3	0.3	0	0
Other*	0.3	1.1	0.7	1.2	3.1
Total	≈ 100	≈ 100	≈ 100	≈ 100	≈ 100

Table 2 Most frequently nominated types of output per discipline group

* Other publication types were: acquisition of creative work (3 times selected); award for creative work(1); revised Book (9); revised edited book (1); book review (2); book translation (5); commissioned project design (1); conference abstract (6); conference presentation (5); database (2); educational material (1); Patent (4); patent application (2); reprinted article (1); software manual (1); software product (1); website (2); edited working paper series (3); and unclassified work (3).

Apart from the kind of publications one would expect in this list, academics nominated edited books, research reports, reports for external users, and encyclopaedia entries as their best output. While the frequency of nominations is low, it is not negligible. A possible reason for the submission of these types of outputs, which are commonly regarded as 'marginal', might have been the simple fact that some young or less productive academics had nothing else to submit. We tested this hypothesis for selected disciplines and found that most of the academics who submitted 'marginal' publications had alternatives. They had more than five publications, and had additionally published

journal articles which they did not nominate. Another possible explanation is that the academics have misjudged the communication channels by placing important work in unimportant publication types. This possibility cannot be excluded, and has indeed been confirmed in one case by an assessor who recommended using 'better' journals for this type of work. On the other hand, assessors also explicitly confirmed the importance and reputation of publication types such as reports and working papers.

These findings are somewhat surprising. While the 'marginal' publication types can be expected to occur in any complete collection of an organisation's research output, their frequent nomination as best products of a longer period of time indicates that they are important means of communicating results rather than simple 'byproducts' of research. Thus, the diversity of research outputs is not an artefact but reflects the different use of communication channels made by different fields. This has been confirmed by Bourke and Butler who found that in some social science fields working papers (which were often book-length publications) frequently achieved high citation scores (Bourke and Butler 1996). A more general confirmation can be derived from the fact that publications not indexed in the major databases achieve high citation scores (Gläser 2004; Butler and Vijssen 2005).

'Exogenous' versus 'endogenous' evaluations

If output-based quantitative indicators are used in research evaluations, a decision must be made about what counts as a research output. This construction of types of output is easy wherever a field's communication is dominated by few channels, as is the case for the journal disciplines and for the augmented journal discipline Information Science and Engineering. If other fields are evaluated, the selection of communication channels becomes more difficult. For example, in an evaluation of law and linguistics the expert committees found it necessary to include a large number of different publication types (Luwel et al. 1999: 30-31). If the complexity of communication is neglected, tensions between the 'endogenous' evaluation (the valuation of communication channels by scientific communities) and the 'exogenous' evaluation (the valuation of publication types by science policy and science management) may occur, as we will now demonstrate for the Australian case.

Australia's universities are partly funded on the basis of a formula that converts research income, publications, and research students into funding allocations (for more details see e.g. Butler 2003). Attempts to base the funding formula on a list of 22 publication types (AVCC 2005) were quickly abandoned in favour of a list of only four types because this simplified the data collection and made it easier to use. Since then, the only four types of accountable publications that earn the university funding are journal articles, books, book chapters, and conference papers. Australia's ministerial Department of Education, Science and Training (DEST) strictly defines accountable journal articles, books, book chapters, and conference papers (DEST 2005). All items must have undergone a form of peer-review and must be published in print or electronic form. Books and chapters in books must have a commercial publisher (including an ISBN number). Table 3 gives an overview of the most important types of publications that do not meet the DEST criteria.

Journal article	Book	Book chapter	Conference paper	Others
▪ Book reviews ▪ Brief communications ▪ Articles in non-refereed journals	▪ Textbooks ▪ Edited books ▪ Translations ▪ New editions	▪ In Textbooks ▪ In Translations ▪ In New editions ▪ Entries in reference books	▪ Conference abstracts ▪ Papers that are not peer-reviewed ▪ Peer-reviewed papers that are not published in conference proceedings	▪ Research Reports/ Working Papers ▪ Reports for external users ▪ Creative works

Table 3 Types of publications that are excluded by the Australian formula for university funding

From the 7521 publications submitted by ANU researchers, the majority (92%) fall in the four categories journal articles, book chapters, books and conference papers. We have no information how many of these items did not meet the strict criteria of peer-review and publishing applied by DEST. However, the collection of research items enables an assessment of the occurrence of the four types among the publications nominated by ANU's researchers as their best.

While the total share of 92% potential DEST publications is impressive, significant variations between fields can be observed. Moreover, in ten of the 21 disciplines the four publication types used by DEST are not the four most frequently nominated types of research output. Academics from these ten disciplines receive a message from the exogenous evaluation that directly contradicts the endogenous valuation of communication channels by their disciplines. The fact that all ten disciplines belong to the Social Sciences, Arts and Humanities confirms that the DEST publication collection is informed by a natural science model (as are research evaluations in general).

The exogenous message about what constitutes a valuable publication is very strong because universities tend to use the four DEST publication categories in internal funding decisions and in the evaluation of their academic staff. As a consequence, the practices of publishing and ultimately the practices of knowledge production might change. Such changes are indicated by the following quotes from interviews with historians (from two universities other than the ANU), which were conducted in an ongoing investigation of the impact of evaluation based funding on the content of Australian university research.

> I mean, the way we are funded now by the government, by the faculty, by the university, we are severely discouraged from writing book reviews, we are severely discouraged from writing reference articles, encyclopedia articles. I mean, if somebody asked me to do that now I always say no.

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> Well, the argument is we don't get paid for this from DEST so we should not be doing those things we won't get paid for […] Which is in the long run I think a disaster for the intellectual life of this university and the profession, because if nobody is reviewing books – and I know this is a problem already because I've worked on a journal and it's increasingly difficult to get people who are prepared to review books.

The quotations show that exogenous evaluations that apply reduced approaches to research outcomes divert researchers from the production of certain forms of knowledge that are important for the discipline. The inherent tension here is the one between a ubiquitous urge for evaluations, which

drives simplification, and the complex nature of communication in science. Since the journal disciplines serve as archetypes for modelling evaluations, the social sciences, arts, and humanities are bound to suffer most.

References

AVCC (Australian Vice-Chancellors' Committee) (2005). Higher Education Research Data Collection time series data 1992-2003 (http://www.avcc.edu.au).

Bourke, Paul, and Butler, Linda (1996). Standards issues in a national bibliometric database: The Australian case, *Scientometrics*, 35, 199-207.

Butler, Linda (2003). Modifying publication practices in response to funding formulas, *Research Evaluation*, 12, 39-46.

Butler, Linda, and Martijn S. Visser (2006). Extending citation analysis to non-source items. *Scientometrics*, 66, 327-343.

DEST (Australian Government, Department of Education, Science, and Training) (2005). *Higher Education Research Data Collection: Specifications for the collection of 2004 data*. http://www.dest.gov.au.

Gläser, Jochen (2004). Why are the Most Influential Books in Australian Sociology not necessarily the most highly cited ones? *Journal of Sociology*, 40, 261-282.

Gläser, Jochen, and Grit Laudel (2005). Advantages and dangers of 'remote' peer evaluation. *Research Evaluation*, 14, 186-198.

Luwel, M., H.F. Moed, A.J. Nederhof, V. De Samblanx, K. Verbrugghen, and L.J. van der Wurff (1999). *Towards Indicators of Research Performance in the Social Sciences and Humanities: An exploratory study in the fields of Law and Linguistics at Flemish Universities*. Brussel: Vlaamse Universitaire Raad.

Moed, Henk F. (2005). *Citation Analysis in Research Evaluation*. Dordrecht: Springer.