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Beyond Bibliometrics – Identifying the Best

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Beyond Bibliometrics – Identifying the Best

The 8th Forum on the Internationalization of Sciences and Humanities

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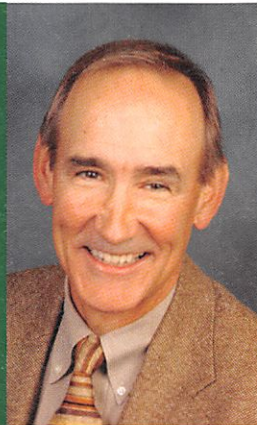


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Beyond the Bibliometrics We Have to the Bibliometrics We Need

How do we develop more inclusive and effective bibliometrics for the challenges of the twenty-first century? Traditional peer review is collapsing under its own weight, and existing bibliometrics don't properly measure excellence. Creating genuinely open global fields of research will demand some rethinking. | by William W. Kelly

"What was intended as a historiographical tool has become, without reflection, an assessment and accountability bludgeon."

Do bibliometrics accurately measure scholarly excellence? No. From my standpoint as an academic researcher and teacher in an American university, they are crudely distorting as presently defined and deployed. Their dangers are three: what they mean, what they measure, and how they are used. Bibliometrics themselves are spuriously objective and falsely standardizing across many of the disciplines in which they are making inroads, including my own field of Anthropology. Their increasing role in processes of scholarly and academic evaluation is driving out a broader mix of peer review that must remain robust and equitable.

Bibliometrics are presented as a means of "auditing impact" – "auditing" being measurement based on a single or a few quantifiable metrics and "impact" being the effect of research products. However, even the very thorough and thoughtful London School of Economics 2011 Handbook on Maximizing the Impacts of Your Research modestly defines impact by "occasions" rather than by "outcomes."¹ That is, bibliometrics can only quantify the number of times a scholarly publication is cited, not determine its substantive impact on subsequent work. This is the first problem: "impact" does not equal creativity or distinction or influence, themselves often incommensurate ambitions of the best research.

Mission creep: from citation indexes to Google Scholar

The second danger is "mission creep." Eugene Garfield formulated the notion of citation index in his 1955 article in *Science* initially as a quantifiable strategy for researching the history of science.² It was only in the 1970s that the Science Citation Index was used to evaluate the relative impact of journals, and only from the 1990s have such metrics been taken up as measures of individual and collective research productivity. The h-index only dates from 2005 (the proposal of physicist Jorge Hirsch), and Google Scholar, formulated in 2004 by Anurag Acharya, has just more recently refined its ranking metrics. What was intended as a historiographical tool has become, without reflection, an assessment and accountability bludgeon.

Peer review too subjective? Bibliometrics are also biased

At my own university, faculty candidates for hire and promotion have long been evaluated by the senior faculty of their departments and then by a supra-department divisional faculty committee. At both stages, there is thorough debate using our own evaluations of the

Impressions

- 1 Former IAB member Choon Fong Shih (National University of Singapore) and IAB member Liqiu Meng (TU München)
- 2 John Ball (Oxford University) and Arto Mustajoki (Academy of Finland)
- 3 Sandra Schmid (University of Texas Southwestern Medical Center) and Susanne Arning (Humboldt Foundation)



candidate's publications, teaching, and service portfolios together with written assessments from outside academic reviewers. Some of my colleagues now consider this too imprecise, too subjective, and too unaccountable. Bibliometrics have been inserted into the Yale University process at both levels under the innocuous pretense that they provide just "one more" form of evidence.

But numbers are never neutral; they are not merely available tools. This is the third danger. Bibliometrics at Yale are quickly becoming normative and regulative. Why? They fit certain locally dominant disciplines, and they are, frankly, a lazy excuse for what used to be a more time-consuming local exploration and discussion of the body of work. Sadly, bibliometrics are not supplementing but rather are supplanting multi-faceted peer review as the fundamental principle of evaluating scholarly excellence.

Let me offer a distressing, symptomatic anecdote. Recently, a leading scholar in environmental anthropology from another research university came to lecture at Yale. She is known and respected by many of us for her several books and innovative, cutting-edge research. She gave a fascinating presentation of her latest work, but one of my faculty colleagues reported to me that, as he was leaving the lecture room, he overheard two of our first-year doctoral students dismissing our visitor with the view, "Her Google Scholar citation index is really low!" All three dangers of such bibliometrics as assessment are revealed in that one comment.

So what is to be done? Of course as scholars, we want to make a difference – with our minds, with our research, with our publications – and we want to hire and retain those scholars and teachers who make a difference and who we judge will continue to make a difference. We share, with administrators, funding agencies, and the public, a fundamental motivation to identify, measure, and reward relevant accomplishment. Our differences are not with the "why" of assessment but with the "what" and the "how."

Evening out unequal landscapes

In closing, let me suggest two such imperatives for developing new bibliometrics. The first is the urgent challenge to create genuinely open global fields of research and disciplinary communities – which we have yet to achieve 150 years after the nineteenth-century formation of professional academic disciplines. There are anthropologists in

every country of the world that has a national university, but world anthropology is still a highly unequal landscape on whose lofty heights sit those bastions of privilege like, well, my own university, Yale! We have yet to develop fair measures of non-metropolitan journals, presses, and scholarly associations necessary for a poly-lingual, global community. We must think creatively about how bibliometrics might help us – not in spurious comparisons of anthropologists and electrical engineers, but in fashioning more inclusive, more equitable, and more motivating standards of achievement within global research communities.

A second challenge faces our commitment to peer expert review. We researchers and scholars have long valued and protected peer review as the essential process for judicious assessment, but the fact is that the process has broken down in many ways in all disciplines. Many of us are swamped with constant requests and suffer from chronic reviewer fatigue. There are too many pro forma requests and recycled letters and hasty prose. To preserve peer review we must reform it, and in so doing, we must try to figure out just where in the many uses and multiple stages of peer review some types of bibliometrics might be justified and deployed.

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Scholars and scholarly associations must seize the initiative in debating and defining more responsible standards of excellence and accountability, both qualitative and quantitative (an important illustration of which is the 2012 San Francisco Declaration on Research Assessment). Only then can we move from the bibliometrics we have to those that we actually need for the real challenges that face every field of research and scholarship in the twenty-first century. ■

¹ http://www.lse.ac.uk/government/research/resgroups/LSEPublicPolicy/Docs/LSE_Impact_Handbook_April_2011.pdf

² Eugene Garfield: "Citation Indexes for Science: A New Dimension in Documentation through Association of Ideas", In: *Science* 15 July 1955: Vol. 122 no. 3159 pp. 108-111

