

# No Citation Analyses Please, We're British

*A Royal Society report shows British academics loathe the citation index but like peer review and "indicators of esteem"*

London—"PSEUDOSCIENCE," "UTTERLY misconceived," "based on a conceptual fallacy," "totally mistaken," "the refuge of Philistines"...such are the harsh judgments that British academics have passed on the use of citation counts to measure the impact of research papers. The flood of invective was loosed when the Universities Funding Council and the Committee of Vice-Chancellors and Principals circulated a "consultative paper" on ways to produce quantitative assessments of the research performed by university departments.

The anonymous responses, published this week in a report written by Peter Collins, head of the Royal Society's Science and Engineering Policy Studies Unit (SEPSU), reveal what he drily calls "a surprising depth of feeling" about citation analysis. The reason: British academics fear that the Universities Funding Council may be preparing to use citation scores to help determine the distribution of research funding.

They have good cause to be suspicious. Under the Thatcher government, British academics became one of the most assessed groups in the world, and further rounds of evaluation are planned. Responding to demands to produce more value for money, the Universities Funding Council in 1985 launched what it described as "the first attempt in any country" to make a "comprehensive assessment of the quality of university research." The exercise was repeated in 1989, when 300 assessors and 100 outside advisers rated all university departments on a 5-point scale. The rating in turn determined a part of the block grant given to universities to support their research.

The SEPSU report, which examined more than 500 pages of comment from almost all of Britain's 45 universities, shows that most academics believe that citation counts and "impact ratings" will not accurately measure departmental quality and, even worse, may be abused and drive research in the wrong direction.

The tradition of free exchange of ideas "without thought of enhancement of reputation" is at stake, according to one respondent. Several others placed the Britain of tomorrow in the America of today, where, they claim, people cite "teachers, colleagues,

and friends merely to improve their citation count." Several respondents thought such citation "circles" or "cartels" may spread to Britain "if citation analysis became a normal part of research assessment."

Much of this criticism is regarded as excessive at the Institute for Scientific Information (ISI), home of the Science Citation Index. David Pendlebury, editor of the ISI magazine *Science Watch*, says that citation circles, for example, are probably just academic folklore: "A bit like the unicorn—everyone has heard of them, but no one has ever found one."

Pendlebury also dispatches another complaint quoted repeatedly in the report—that papers may win a high citation score not because they are good but because they are bad. Although some papers may attract many critical citations (some reports of cold fusion may come into this category),

---

***"Citation analysis... is flawed to the point of being both misleading and inherently absurd."***

---

—BRITISH ACADEMIC

Pendlebury says that most citations are neutral references to earlier work, many are overtly positive, and "less than 10%" are negative. "When scientists disagree with earlier work the typical reaction is to ignore it, not cite it," he says.

Many of the other criticisms leveled by respondents in the SEPSU report carry more weight, however—particularly if citation counts are used to assess a small group (a department) over a short period of time (5 years). That time period may not accurately assess different fields, complained many of the respondents. Pendlebury agrees: "Time lags are very different in different fields—hot fields like molecular biology get the bulk of their citations in 2 years, chemistry is longer, and social sciences are longer still."

Language is another problem raised in

the SEPSU report that Pendlebury agrees could discriminate against some researchers. With Britain's increased involvement in European Community projects, researchers who are cited in a non-English language publication may find their citations are not registered in the ISI database.

Then there's the problem of identifying who really did the work being cited. In the Science Citation Index, the most common source of citation data, citations are awarded to the person whose name comes first on the paper. But that may not necessarily be the senior author. More sophisticated data are used in some ISI research, but they treat all authors as equal—not good enough for one SEPSU respondent who believes weightings should be given to reflect the "input of each author" and so ensure that "all are given their due credit."

With citation scores so universally maligned, but another round of assessment assured, what measures would British academics accept? No surprise: Peer review. The survey respondents' "vigorous, spontaneous affirmation of peer review struck me very strongly," says Collins. Less predictable, however, was the enthusiasm expressed for the relatively unknown idea of "esteem indicators."

Esteem is not easy to pin down and respondents came up with some 20 variables that might be used to measure it. Among them were election to learned societies such as the Royal Society, involvement in international organizations, the receipt of major prizes and honorary degrees, and recognition in the form of journal editorships and invitations to lecture at prestigious conferences (such as the Gordon conferences).

But there are great practical difficulties with esteem measures. As Collins points out, "You can't add them up—are two Fellows of the Royal Society in a department worth one journal editorship?" Esteem might, in any case, sound far too weighted toward past reputation for a government determined on making the universities leaner and meaner.

Many respondents to the SEPSU survey clearly felt that "quantitative assessment" will be thrust upon them whether they like it or not. "Whatever the impracticalities and inequities [of quantitative measures] the inevitable is obvious," wrote one respondent. "Citation indices will be used whatever we say," writes another.

Collins has a different view. Now that responses to the consultative paper have come in, the depth of feeling against citation scores will make it hard to introduce for assessing departmental quality, he believes. Instead peer review will continue to rule the day.

■ ALUN ANDERSON