
Too Many Journals? Nonsense!

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Every few weeks I read another journalist's jab at the value and quantity of scientific journals. When discussing the ever-expanding literature, reporters of the popular press frequently indulge in superficial analyses that distort reality, whether through misunderstanding or exaggeration.

Nancy Jeffrey revealed profound misunderstanding in "Mollusks, Semiotics and Dermatology: Narrow Scholarly Journals Are Spreading" (*Wall Street Journal*, August 27, 1987, p. 25). She invites readers to check out college library shelves and tells them "some off-beat periodicals are bound to jump out at you." A litany of journal titles—one carefully drawn up to invite ridicule—follows. This serves only to reinforce a contempt for specialized knowledge and reflects an increasing anti-intellectualism I see in the press and among the public.

How does Jeffrey explain journal proliferation? She says nothing about twiggling, the natural fractionation of knowledge and its embodiment in new journals. Nor does she note that more scientists are alive today than ever before, and that the journal is their primary medium of communication. Rather, Jeffrey attributes the appearance of new journals to institutions' pursuit of "glory" and "prestige" or individual researchers'

attempts to beef up their vitae.

A misunderstanding of the social process of science and knowledge accumulation has misled the editors of the *Wall Street Journal* into publishing a shallow and absurd commentary on the exponential growth of journals. To attribute the growth of the journal literature to the pursuit of personal or institutional gain ignores the substance of what is being published in those many new journals. It is instinctive for researchers exploring uncharted terrain to band together to form invisible colleges; it is also quite logical for them to create new journals in which to conduct their specialized discussions. Is Jeffrey suggesting that we abandon new areas like molecular biology for which no journals existed 30 years ago? Are we to expect that superconductivity will be discussed only in existing journals?

Last month William J. Broad took up this same theme (*New York Times*, February 16, 1988, pp. C1,C11). Under the headline "Science Can't Keep Up With Flood of New Journals," Broad claims: "the number of scientific articles and journals being published around the world has grown so large that it is starting to confuse researchers, overwhelm the quality-control systems of science, encourage fraud and distort the dissemination of important findings."

Surely Broad exaggerates. By repeating the unqualified assertion that there are "40,000 scientific journals now estimated to roll off the presses around the world," he in no way supports the contention that the size of today's literature "is starting to confuse...overwhelm...[or] distort..." I first heard this sort of dire warning as long ago as 1953. And its equivalent can be found as early as the 17th century.

Modern Information Methods

Obviously no one reads 40,000 or even 400 journals. As is well known among experts whom Broad has the arrogance to ignore, a mere handful of journals accounts for the great majority of significant publications in any field (Bradford's Law). There are probably no more than 25 titles (and often fewer) that an individual needs to follow regularly (Garfield's Law). As a supplement, the organized researcher makes use of modern information retrieval tools to scan the rest of the literature. This is part of being a professional scientist. Moreover, as the literature grows, new methods evolve to lessen the load of keeping current.

As for the contention that quality-control systems are being "overwhelmed," I would point out that the number of journals published elsewhere has nothing to do with the professionalism of a particular journal's editorial staff.

Although Broad contends that "much of the growth is seen as a healthy part of the success and expansion of the scientific enterprise in the 20th century," he prefers more dramatic explanations. He emphasizes dark personal motivations and the impact of the publish-or-perish syndrome: "undertaking trivial studies because they yield rapid results, and needlessly reporting the same study in install-

ments, magnifying the apparent scientific output." He mentions simultaneous submission of the same paper to two or more journals and the practice of unwarranted co-authorship.

Deviant behavior certainly exists in science. But does Broad seriously believe that this is the fuel driving the dynamic growth of scientific journals? Apparently so, for he states, after detailing such misdeeds: "The upshot of all this is a continuing surge in the number of new journals." Consider that non sequitur! Certainly such behavior accounts for some articles, but I doubt that journals have been launched because of it.

Broad also claims that the bigger the literature is, the greater the likelihood of fraud. Fraud and other forms of deviant behavior occurred in the age of little science and they will also occur in the age of big science. Broad, however, cites not a shred of empirical evidence for an increase in such deviance, whether owing to the proliferation of journals or to any other factor. He fails to do so because the evidence just doesn't exist.

The misdeeds of science, like those of any other profession, deserve careful investigation. I welcome the news that a number of forums are planned to examine publication and research practices and how they might be improved to guard against these problems (p. 4). But merely asserting that journal publishing is out of control does nothing to explain the growth phenomenon or to solve the problems that do exist.

I find it ironic that reporters so often use evidence of the success of science to limit more of that success by raising the cry of "too many journals." Allegations of misconduct may sell newspapers, but they may also cause a backlash that even the science muck-rakers may one day regret. ■