Battling the Paper Glut

THE ACADEMIC COMMUNITY CONTINUES TO BELIEVE THAT THE FORMAL SCHOLARLY PUBLISHING process separates sound research from shoddy or biased counterparts. Unfortunately, scholarly publishing may not be able to effectively fulfill its role as a gatekeeper much longer.

As soon as the “publish or perish” concept (the imperative to publish work constantly to further or sustain an academic career) surfaced in the United States in the early 1950s, academics criticized it openly as a recipe for disaster (1, 2). Nevertheless, in the early to mid-1980s, administrators in universities systematically began to use the number of articles published per year by individual faculty members as a measure of their productivity. The shift transformed scholarly publishing. Researchers began “salami slicing” their manuscripts in ever smaller “least publishable units” and began rushing manuscripts to publication before proper replication or evaluation of results. Multi-authored manuscripts increased, regardless of true contribution to the work. Doctoral students began to write dissertations as a series of publishable chapters, some submitted even before the defense. As a result, the quantity of articles published in scholarly journals increased on average by about 200 to 300% from the early 1980s to the late 1990s (3).

Researchers in countries such as China and India are subjected to a numbers game similar to that in the West, sometimes with the added incentive of monetary rewards for articles published in “top” journals. In 2008, China passed the United States to become the second scholarly producer (in total number of articles) after Europe.

Researchers have reacted to this publication glut by developing bibliometric indices, such as the h- and g-indexes, based on citation counts, to evaluate a researcher’s impact in their discipline. Perhaps these indexes do evaluate impact better than counting annual number of articles. However, in various ways, they also encourage researchers to publish more articles to directly inflate their own citations or to cite friends who then cite them in return.

The top journals now are flooded with numbers of manuscripts beyond most editors’ capacity to handle. Reviewers are solicited to scrutinize not just manuscripts but also research proposals and governmental reports. Yet, peer-reviewing is rarely, if ever, valued by academic institutions as a fruitful way for researchers to spend their time, so finding good reviewers has become more and more difficult.

Researchers need to fight to contain the current paper glut. The number of articles published per year should never be used, under any circumstance, as a criterion in tenure or promotion decisions, or to rank academic institutions. As the medical community proposed 25 years ago (4), researchers should never be allowed to include more than three publications per year in activity reports; in research proposals, principal investigators should cite no more than 10 papers. University administrators should consider peer-reviewing as not only legitimate, but a vitally important way for researchers to contribute to scholarship, and should reward it as such. One way to accomplish this would be a new generation of review impact indexes, based on information provided by publishers (3, 5). Effectiveness in peer-reviewing should be viewed as an essential skill to acquire for Ph.D. students, worldwide. Journals should demand that for every paper submitted, an author provide three reviews of other manuscripts. Perhaps if authors knew that their reviewing workload would increase dramatically with the number of papers they submit, they would craft fewer and better papers, ultimately benefiting all involved.

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References

India’s Courteous Creativity

IN HIS EDITORIAL “IRREVERENCE AND INDIAN science” (30 April, p. 547), R. A. Mashelkar observes that Indian science lacks adventure and a spirit of questioning established ideas. He suggests that the situation has deep roots in Indian culture and tradition.

I disagree. Creativity can and does exist in a society that values decorum over irreverence, such as India. In fact, a healthy skepticism, an ability to be introspective, and an urge to revisit and reexamine existing ideas have always been part of India’s intellectual tradition. Take, for example, literary works known as bhashyas, which are commen-
Archaeology Augments Tibet's Genetic History

T. S. SIMONSON ET AL. (“GENETIC EVIDENCE for high-altitude adaptation in Tibet,” Reports, 2 July, p. 72) and especially X. Yi et al. (“Sequencing of 50 human exomes reveals adaptation to high altitude,” Reports, 2 July, p. 75) estimate that the genetic divergence of Tibetan populations with unique high-altitude adaptations occurred as late as ~2750 years ago. We have investigated this same problem from an archaeological perspective. Our results partly support the genetic-based scenario but suggest some contradictions between the two data sets. We currently have no evidence of permanent occupations on the Qinghai-Tibet Plateau before the middle Holocene, ~7000 years before the present (yr B.P.) (1), contrary to claims of occupations as old as 30,000 yr B.P. (2, 3). Mobile foragers did exploit the Plateau margins up to 3300 m by ~15,000 yr B.P. (4). Directly dated sites documenting human presence above 4000 m are younger still, at ~11,000 to 8000 yr B.P. (1). These early sites represent intermittent, seasonal occupations by populations who most likely spent much of their time at lower elevations. Foragers may have established more permanent occupations on the Plateau margins as high as 3300 m after ~7000 yr B.P. (5–7), but these groups interacted extensively with agricultural populations in low-elevation environments.

Year-round occupation above 4000 m likely became possible only after 4000 yr B.P. with the emergence of dedicated pastoralist adaptations centered on domesticated yaks (6, 8). If the genetic traits suggested by Simonson et al. and Yi et al. evolved in response to selection on populations living exclusively above 4000 m, then the genetic divergence dates of ~2750 yr B.P. reasonably agrees with the archaeological evidence. If selection for these traits occurred among populations below 4000 m (2), where most Tibetans currently live, then more complex population dynamics are indicated. Understanding the archaeological chronology behind the peopling of the Qinghai-Tibet Plateau is critical to evaluating the tempo of selection operating on contemporaneous human populations.

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References


Response

WE THANK BRANTINGHAM ET AL. FOR THEIR interest in our study; we agree that both molecular and archaeological evidence should be...
used to understand the demographic history of the Tibetan people. Our Report focused not on the demographic history of the Tibetan population, but rather the selection acting on specific putatively adaptive mutations segregating in the Tibetan population. We included some limited demographic analyses because they helped illuminate our results regarding natural selection. The real demographic model is clearly likely to be more complex than the simple models of two populations diverging from each other. For example, Zhao et al. (1) used mitochondrial DNA to argue that late settlers of the Tibetan plateau may not have entirely replaced the original population, but rather the selection acting on genetic ancestry back to some recent immigrants into Tibet, even though humans have lived in Tibet for a much longer time—possibly with some continuity of culture—is important for understanding the difference between inferences based on archaeology and inferences based on genetics.

Letters to the Editor
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Archaeology Augments Tibet's Genetic History — Response
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