Non-traditional publishing choices can enrich science

SIR — The paramount importance of publishing in biology dissuades many young scientists from making non-traditional choices with regard to where and how we publish our work. My colleagues and I believe it is in our own interests to identify the shortcomings of traditional publishing and to explore other publishing possibilities that are free of those problems.

What can we do? First, learn about our options. There are several innovative developments poised to change the publishing landscape dramatically. Video publications, preprint archives and high-throughput online journals are but a few that have recently surfaced (for a discussion, see www.harvardpublishingforum.com). The onus is on all of us to investigate these resources and to consider how they might enrich our science.

To make a difference, we also need to contribute. Frustrated by technical difficulties in reproducing published experiments? Then publish a video protocol in the *Journal of Visualized Experiments*. Have you benefited from a colleague's comments at a conference? Then extend the experience, and comment on articles published by *PLoS One* and posted on *Nature Precedings*. These initiatives will take hold and achieve their full potential only with strong support from the scientific community.

If we collectively embrace these ideas, publishing will become more effective. Although the psychological and social barriers to submitting a contribution initially are surprisingly high, becoming involved has proved to be rewarding. Ultimately, scientific progress and the published record have a symbiotic relationship — improved communication will enhance the pace, progress and efficiency of research.

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Pakistan needs a powerful ethics and integrity body

SIR — Your Editorial 'The paradox of Pakistan' (*Nature* **450,** 585; 2007) highlights the importance of continuing reforms to the country's science and higher education. It is also crucial to establish an independent and powerful statutory body that oversees scientific research in Pakistan, to ensure that it complies with the universal norms of research ethics and integrity.

This body would make sure that all educational institutions throughout the country have such programmes in place, while recognizing that the three major elements of research ethics — individuals' autonomy, beneficence and justice in human-subject research — also conform with Islamic values. Unification of the Muslim world's intellectual resources with those of the rest of the world will help accelerate the pace of scientific discovery.

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Albedo-watching satellite needed to monitor change

SIR — Stewart Brand's Essay 'Whole Earth comes into focus' (*Nature* **450,** 797; 2007) makes a strong case for continuous satellite observations of the "whole Earth". A key reason is that existing observations are inadequate to monitor changes in global albedo — the amount of sunlight reflected by Earth and a key determinant of Earth's climate.

A comparison of existing albedo measurement programmes, which are based on polar-orbiting and geostationary satellites, shows large discrepancies in trends taken over several years, as well as poor correlations in monthly anomalies (N. G. Loeb *et al. J. Clim.* **20,** 575–591; 2007). In addition, there is a significant difference between the historical reflected flux data of the Earth Radiation Budget Experiment and the Clouds and the Earth's Radiant Energy System (CERES), and a large imbalance in the amount of incoming and outgoing radiation derived from the CERES measurements (F. A. Bender *et al. Tellus* **58A,** 320; 2006). The causes of these discrepancies are unknown and call for independent high-quality data.

DSCOVR, the radiometric satellite that Brand mentions — which is "mothballed" but ready to launch — would provide the data needed. From its position 1.5 million kilometres away at the Lagrange-1 point, it would orbit the Sun in synchrony with Earth and provide a continuous, well-calibrated proxy for global albedo by observation of the sunlit side of Earth. Understanding this albedo proxy could be helped by simultaneous diagnostic observations from the CALIPSO satellite (which measures the reflected laser light) and from the suite of instruments comprising the A-train satellite constellation, which includes CERES. It is therefore a matter of urgency to launch DSCOVR soon, in order to achieve synergy with existing satellites and to provide a bridging link with future systems.

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Citations in supplementary information are invisible

SIR — I would like to draw attention to a substantial drawback in publishing supporting scientific data online, in supplements to the printed research paper, usually because of space limitations. Unfortunately, the additional citations in this supplementary information are invisible to those services that rely on citations as a measure of the 'quality' of journals or of individual scientists, using them to determine impact factor, h-index or Scimago journal ranking, for example.

This becomes obvious when looking under the article heading for any citation that is referenced only in the supplement, using search engines such as PubMed, Scopus, Web of Science or Google Scholar. None will indicate that the particular reference is cited in the paper's supplement. This omission will affect ranking calculations, particularly for journals that post details of experimental methods in their supplements.

Like it or not, ranking of scientific achievement by citation-based methods is an important part of the scientific system, and journals should make all their citations accessible to those who need accurate numbers. The solution to this problem seems quite simple: the citations in the supplement have to be incorporated into the reference section of the main text by the authors.

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References in *Nature*'s Extended Methods sections, which are online-only but fully integrated into the full-text and PDF, are indexed in external databases such as PubMed. Supplementary Information for *Nature*, presented as a merged PDF online separate from the article PDF, does not usually contain references; see http://tinyurl.com/2of24c — Editor, *Nature*.