

Open access vs academic power

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That the United States and its European allies dominate the world of knowledge, is unquestionable. This is reflected in indicators of academic “output”. According to the National Science Foundation of the United States, the US accounted for 26% of the world's total Science & Engineering (S&E) articles published in 2009 and the European Union for 32%. In 2010, the US share in total citations of S&E articles stood at 36% and the EU's share at 33%, whereas that of Japan and China remained at 6% each.

This domination comes from two, among other, sources. First, leadership in spending. Despite the growing importance of Asia (especially China), the United States remained the largest single R&D-performing country in 2009, accounting for about 31% of the global total. The European Union accounted for 23%. Second, the ability to attract the world's best talent. The foreign-born share of U.S. S&E doctorate holders in US academia increased from 12% in 1973 to nearly 25% in 2008, and nearly half (46%) of post-doc positions in 2008 were held by foreign-born US S&E doctorate holders. A dominant share of these came from China and India. A similar trend holds in the social sciences, though exact data are not available.

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There are a number of collateral consequences of these trends. One is what Jean-Claude Guedon calls the “structuring of power” in science, with the most powerful institutions and journals being based in the US and Europe and having international reach. These institutions set the agenda and the standards for science. As a corollary, publishing in those journals with their high impact factors is becoming a marker of academic standing even in the less developed countries of the periphery. For younger scholars, obtaining a Ph.D. from abroad and publishing in international journals has become a prerequisite for obtaining jobs in the best universities even in developing countries.

There are a number of adverse consequences that this can have. In the sciences, for example, one consequence is that the research pursued in leading institutions in developing countries trails that in the developed world. As a result there emerges a disjunction between science and production in these countries because, while science seeks to keep pace with the developed countries, production does not, since much of the economy remains “informal”. Or, as happens in the pharmaceuticals industry, there is a lack of correspondence between the drugs being researched and developed (under international influence over priorities) and the disease pattern that prevails in these countries.

In the social sciences the problem can be more severe. North Atlantic domination often destroys plurality. In economics for example, the resulting domination of neoliberal theory with its rhetoric of market fundamentalism, in which the market or ostensibly “free economic exchange” is presented as the most efficient mechanism to work the economic system, paves the way for policy that permits the increasingly unfettered functioning of private capital, both domestic and foreign. Markets are not benign, and the extent, nature and consequences of growth tend to be adverse. Such policies are pursued even when in the developed countries the state intervenes to restrain markets and supplement them. In practice, this amounts to recommending that developing countries should do as developed country governments say, and not as those governments actually do.

It is in this background that the relevance of the [Open Access](#) (OA) movement for the developing countries needs to be addressed. That movement tries to undermine the control exerted by the corporate sector over the distribution and sharing of knowledge, especially peer-reviewed scholarly research published in journals, generated largely with financial support from the state. A leading example of the movement is the [Public Library of Science](#) (PLOS), launched in 2000 with a letter that urged scientific and medical publishers to make research literature available for distribution through free online public archives, such as the U.S. National Library of Medicine’s PubMed Central. Nearly 34,000 scientists from 180 nations signed the letter, and the movement gained momentum when in 2003 PLOS launched itself as a publisher. More recently, the OA movement grew more targeted. In early 2012, 3000 leading academics signed what is known as the “[Cost of Knowledge](#)” petition, which declared their intention to boycott publishing in, refereeing for or serving on the editorial board of journals published by Elsevier, because it charges “exorbitantly high” prices for its journals and adopts indefensible trade practices like selling only “bundles” to libraries that include many unwanted journals.

Such corporate behaviour is, of course, geared to maximising profit. Some journals cost thousands not tens or hundreds of dollars. To defend such pricing, the academic publishing industry imposes barriers such as copyright restrictions and distribution limitations on authors, and constructs pay walls in the form of subscriptions, licensing fees or pay-per-view rules for users. This restricts the sharing of knowledge and discriminates against those endowed with less resources than their peers in developed societies and richer institutions. It also results in the inefficiencies associated with journal publishing in the closed access world with long waiting times, publishing queues and delayed access, even at a cost.

Open access uses the digital, online, free-of-charge model to disseminate peer-reviewed research and is in that sense hugely efficient and cost effective. It is also democratising. Those remotely located and without the resources to buy access to journal bundles, online sources or journal archives, can now have access to it. Without printing, the publishing time even with peer review is considerably shortened. Since costs of production are minimal for online journals the number of journals are far more than earlier, so that publishing queues and waiting times for publication shrink. More academics and their output are able to obtain a platform to disseminate their research. Realising the popularity of this mode of dissemination, the academic publishing industry is responding by changing its model. Instead of covering costs and earning hefty profits with individual submission fees and subscription charges, they are persuading universities and research institutions to pay for the cost of having the work of their staff peer reviewed, edited and distributed either in print or online. The goal remains the same: not better science, but a large profit.

Seen in this background, open access is indeed democratising. But only partially. Open access only helps democratise the distribution of peer-reviewed research. It does not democratise research activity itself, nor does it transform the peer review system, which for different reasons appears weighted in favour of a self-selecting elite. The issue to be addressed is whether OA would rid the system of journal branding and journal hierarchies. A journal's "brand value" is created, in the first instance, by the fact that a group of academics leading a particular discipline establish or endorse the journal, and sometimes referee its contents. Given the credibility the journal carries, it is read by those who want to publish in it. They adopt the themes privileged by the journal and the articles published in it are cited as points of departure.

This process is given a "scientific" flavor with the use of metrics like the citation index for articles and authors and the impact factor for journals. The impact factor measures the influence of a journal by the number of times work appearing in it was cited by others. A high impact factor leads to higher readership and makes the journal a must for all libraries. There are a number of obvious problems with this sequence. Popularity is not necessarily an index of quality. Self-referential research may deliver high citations but suppress originality, novelty and plurality. Citation does not guarantee readership, with one study finding that those citing works had not actually read as much as 80 per cent of them. The need to please potential reviewers may lead to indiscriminate citation. A "reputation" and high impact increases the reach of journals, feeding citation further.

It is this branding of journals, which allows a few to be identified as the best that need to be acquired by all librarians, that allows a private publisher controlling that journal to charge exorbitant prices and earn huge profits. But brands are not created by publishers but by academics who need journal rankings to separate out "better" publications and authors from the rest. Journal rankings are used by those who award grants and appoint staff, but don't have the time or ability to themselves rate the work of applicants in increasingly specialized disciplines. So, given the structure of branding, it is unlikely that good work published in a relatively new open access journal would stand comparison with indifferent work published in a well established journal.

Further, if journal hierarchy is created by academics, then open access may aggravate rather than reduce the problem. With more readers now able to easily access recognised journals, their readership and citation could go up, leading to a further privileging of those who obtain publishing access to those journals, rather than just readership-access to them. The former may be influenced by a host of factors such as the location of the author in terms of country and university, kind of questions raised and works cited, as opposed to some abstract indicator of quality. What is more there is strong evidence of confirmatory bias, or a tendency to rate better research that supports the views of the referee. As a result, there is little inter-referee agreement either on which articles deserve publishing or on how good an article is.

Such problems notwithstanding, peer review and journal publication gain importance because of a feature that is central to higher education under capitalism: the underfunding of education in the aggregate and the differential distribution of that funding across universities and departments. In time these inadequacies are justified in terms of having to create and promote a meritocracy in order to generate and award good science and knowledge. The worst form this takes is the metric-based evaluation system of universities

and their research to decide on funding. That credentialist system that helps allocate “scarce resources” is based on journal ranking and publication.

Peer review is, in fact, given a credentialist role despite much evidence that the system can fail. This is partly illustrated by the growing evidence of retraction, or the reversal of the stamp of approval provided by leading journals that publish refereed articles. University of Regensburg Professor Björn Brembs extrapolates on the basis of articles published in a large database of thousands of medical journals, that given the rising rate of retraction, it is likely that by 2045 as many journal articles will be retracted as are being freshly published. He attributes this to the rewards system that makes choices on which journals to subscribe to and on which to privilege when making hiring and research granting decisions based on the citations index. This puts pressure on those publishing to undertake their research keeping the citation prospect in mind. In the race to find a space in these journals, marketing of research rather than good science is the winner. One result is the high rate of retraction.

This is not a problem only in the science domain. That problem gets worse in the social sciences as the system is in many areas captured and used to privilege system-legitimizing knowledge rather than pluralism. Hence the question as to why there was little “acclaimed” research in economics that foresaw or predicted the crisis of 2008. Unfortunately rankings have their impact not only on what is read but where scholars from developing countries need to publish to win academic standing. The result would be the skewing of academic research in these countries with grave consequences. That is a problem that Open Access perhaps cannot address. It is not clear what will.

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