West is West, East is East

The divide in science

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Compared to works from the affluent and industrialized countries of the West and Japan, research output from less-developed-countries (LCDs) or developing countries (or the "Third World") is still in its infancy, or meager to say the least. In the light of the open letter alleging that there is a small circle of interest insidiously stifling the publication of dissenting opinions,[1] it is pertinent to highlight the "double burden" that often hampers researchers from LCDs. One aim of the present discussion is to highlight some of the prevailing peer review issues confronting research output coming from LCDs, which has direct bearing on accumulating pluralism on the world of knowledge, for which medical sciences is no exception.

Double burden that hampers research in LCDs to be apparent on the subsequent paragraphs has been largely ignored in the recent debate on the integrity of peer review. On the other hand, a small scientific circle is well known to unreasonably reject manuscripts from LCDs for preposterous reasons.[2] Being literally disenfranchised from having the possibility of airing any grievance, many of the findings from LCDs tend to end up in the so-called low impact journals, most of them, thus never getting exposure to the world of science. This may deprive humanity of possibly another interesting source of understanding of nature. Some politically incorrect proponents would advocate the view that many Western scientists tend to have an element of "distrust," or hold the view that work coming from "backward" LCDs does not merit publication. However, bad science has not been consistently shown to originate from LCDs alone. Errami and Garner[3] reported that there has been an exponential increase of "illegitimate publications" in the past decade. Upon hearing this, with the prevailing negative views towards Third World scholarship, the natural inclination is to assume that the reference to "illegitimate publication" involves articles submitted from the Third World. Ironically, most "illegitimate publications" come from Western countries and Japan.[3,4] It is possible that LCDs have been cushioned from "illegitimate publications" as their research output tends not to reach international audience, or do so only after much stringent scrutiny. Such treatment for research from LCDs appears not to be simply one of the many trumpets of conspiracy theory. In his attempt to shed light whether "scientists overcite papers from their own country," Moed[5] has addressed differences in citation practices between the United States and Western Europe. He noted there is robust "significance from self-preoccupation, insularity, or other biases in referencing practices". Similar sentiment, which has been termed as "editorial racism" has been reported in situation between studies emerging from South America.[2]

However, this is not the only source of attrition for research from LCDs. In addition, researchers in LCDs tend to suffer from the least acknowledged form of peer review. This issue arises when academic institutions in the LCDs, in their quest to gain some degree of "respectability" seek the "expert" opinion of academicians working among the elite, or well regarded universities of the United States and Western Europe. Here, the peer review entails evaluation of research mainly for the purpose of emotive academic promotion. The reports of those experts often reveal very little sensitivity to the taxing circumstances, under which academic research is conducted in most countries in the developing world. For lack of better terms, this may be perceived as academic ethnocentrism. Even very bright and productive scientists from the LCDs

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are discouraged when their work, which has made their way even into some high impact journals, does not yet get proper evaluation and appreciation in reference to promotion. What is overlooked is that research output in the LCDs needs to be understood in its context. One aspect of this is that research in developing countries is generally low in terms of relevant resource allocation. However, using a local yardstick, these modest research projects are indeed tackling various important problems, and shedding light on ways to overcome some of the intractable social, economic, and developmental issues affecting these countries. In the parlance of peer review, originality is considered to constitute the aura of academic excellence. Yet, in the present myopic peer review environment, "originality" is not conceptualized by reference to a country or region, rather, it is global originality, a feat that would be difficult to achieve in a region characterized by poor manpower and infrastructure, relevant for research. As a whole, this would suggest that standard of "global relevance" places real challenges on researchers in LCDs. One of the net outcomes of such a scenario is the brain-drain of promising scholarship to affluent centers of learning. This further fuels the prevailing economic and social inequality.

In addition to the often cited allegation of lack of originality, search engines for accessing databases of citations are also not helping researcher from LCDs either. Several search engines (such as NIH's Medline/PubMed, Thomson Reuters ISI Web of Science, and Elsevier's Scopus) are currently employed to assess the worth of the publications of scientists, biomedical scientists, and medical professionals in general. Citation indexes and citation metrics that translate into high citation scores or h-indexes are a *sine-qua-non* for aspirant Nobel laureates, yet, there are several pitfalls in this approach. Scopus, for example, measures the citations that the paper has received over the years since its publication. Eighty percent of the global population lives in LCDs, but their citation performance is often dwarfed compared to those of the 20%.[6] One of the dicta in the world of citations is the '80/20 rule' that is, 20% of published studies tend to produce 80% of the citations.[5] But the 80/20 rule is skewed in favor of Western academia. Such a dictum nicely encapsulates the prevailing "science divide" in the midst of globalism. Eighty per cent of the global population lives in LCDs, but their impact factor is often dwarfed compared to that of the 20% who live in the affluent part of the world. If we move this metaphor to the world of citations, even if work is published from the LCDs, it often solicits few, if any, citations.[7] Relevant to LDCs, it appears the situation echoes Rudyard Kipling's poem: "East is East and West is West, and never the twain shall meet." It is possible that "in-group bias," or to use a classical metaphor "charity begins at home" may have contributed to this predicament. But the most plausible explanation is that articles emerging from LDCs may be seen as "untrustworthy," this view being probably partly fueled by the negative connotation equated with research emerging from LDCs.[2] It has been paradoxically noted that LCD authors preferentially cite articles from the developed world and discriminate against their own papers.[8] The contention that there are citation biases towards publication from LCDs has not been empirically explored, but there is an anecdotal evidence to suggest that there is preferential of "US citing of US papers and this is not simple related to "Angelophone bias".[9] Also missing on this equation is the absence of reasons behind the lack of publication acceptance in top notch journals. One possible venue to shed light on this issue is to conduct a double blind study, in which manuscripts from developed world researchers and from LCD researchers are evaluated, and scored before publication. After publication, a citation analysis could be conducted to examine whether there is bias in citation, based on the pre-publication scores. This has never been carried out, and to our knowledge, a feat that would require urgent attention if the contention of the "divide in science" has heuristic value.

In conclusion, studies are needed to explore how "good" papers from developing countries fare in the citation metrics. If the answer to this is negative, related implications need to be contemplated.[2] First, is that scientific malpractice is rife in the Western academia. Second, if indeed there is wide occurrence of such scientific malpractice, humanity should lament being deprived of a vast source of knowledge emanating from 80% of the global population living in developing countries.

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