

All that Glitters: A Perspective on Peer Reviewed Publications

Danielle Jameison, BA¹, Sheila Lee, MD²

¹University of North Carolina School of Medicine, Chapel Hill, NC 27516

²UNC Hospitals, Department of Radiology, Chapel Hill, NC 27516

Correspondence should be addressed to D.J (danielle_jameison@med.unc.edu)

As trainees and even as established clinicians, we are often gifted the following wisdom: pursue your passions, but make sure your passions are productive. The hidden meaning embedded in this term “productive” is that these passions should culminate in not just any form of scholarly material, but a peer reviewed paper. In an exploration of the origins and present state of peer review and its role for both the individual clinician and academic medicine at large, what follows is a discussion of the peer-reviewed publication as the “gold standard” of productivity, and what alternatives might be considered.

As trainees and even as established clinicians, we are often gifted the following wisdom: pursue your passions, but make sure your passions are productive. In the shadow of this encouragement is an implicit caveat – the kind of productivity these passions should inspire need not take the form of an oral presentation, nor a workshop, not a new tool, but a paper.

At the core of medicine is evolution – an antero-grade inertia towards better. If research undergirds this ceaseless journey, then the peer-reviewed publication (PRP) is the gold standard. Certainly, the challenges of this system – delays in publication time, difficulty in detecting error, adequate power, availability of funding, and numerous sources of bias – have been described^{1,2}. On the other hand, there are reasons for which the gold standard has gone untouched for so long. What follows is an exploration of the historical and current contexts that frame and reinforce the peer-reviewed publication as the mecca of academic medicine, and a reflection on whether we might make room for a second “first-line.”

Publications: Past & Present Scholarship

Peer review in the sense that it functions today dates back to at least 1752 when the Royal Society of London established the so-called “Committee on Papers,” which was formed for the explicit purposes of “refereeing” articles for publication in the scientific manuscript *Philosophical Transactions*.³ One of the oldest and most established pillars of scientific integrity, the PRP persists as a cornerstone of academic medicine. The modern medical journal deliberately espouses this mission: selection of the “best research papers for their quality of work and the progression they bring” and maintenance of the “highest standards of editorial integrity” are listed right alongside the “improving lives” and the “betterment of public health” in the mission statements of some of today’s most prominent journals.^{4,5}

Through print, PRP’s deliver innovation to a large audience simultaneously. Although one might argue that an oral presentation at a contemporary national meeting serves a similar purpose, referencing such a medium months or years later is more difficult. Moreover, at a time in history that did not boast modern conveniences like the internet or expedited travel, a written manuscript may have been the best,

if not the only, mechanism by which new information could be widely disseminated and preserved.

Aside from the public utility, a paper has individual advantages. For authors, a publication is the abstract pursuit of influence, the intrinsic desire to effect lasting change in their respective fields, made concrete. Of perhaps equal importance, it is also a means to an end in the ascent of the ivory tower. Although contemporary academic physicians in pursuit of tenure are considered for promotion based on a number of variables, productivity as measured by publications is the most consistent and significant factor. Though one might expect PRP's to be a focus of promotion for research and clinician-investigator tracks, one study found them to be a primary focus for even clinician-educators, albeit with fewer expected publications.⁶

Despite ongoing debate about the ability of peer review to neutrally assess a given study, the intensity of the process and its emphasis on “well-designed” scholarship places the product that emerges on a pedestal of objectivity. Although few would suggest

that even the best of studies could yield truly objective data, a published, well-powered randomized control trial comes highly regarded and satisfies medicine's asymptotic pursuit of certainty better than any other form of scholarship. A PRP that survives the scrutiny of revision is therefore presumed to offer consumers the closest entity to an “answer” that we in our humanity can hope to generate; it is, we might say, the best we have.

More than One Winner: Future Directions

Historically, measures like impact factor and “number of times cited” have served as proxies of both dissemination and the contributory value of a given article or journal. And though widespread distribution is inherently valuable in perpetuating scholarship, there may be novel ways to quantify the same variables. Video platforms (e.g. YouTube, Vimeo) are accessed by millions of people everyday, and a video's number of views, shares, or comments are an objective measure of a product's reach. A suturing skills tutorial which will be watched upwards of

Artist: Leela Breitman
Harvard School of Dental Medicine



2 million times may have little to no influence on best practices the way a landmark trial cited over 2000 times will, but perhaps there is equal, albeit different, value in the extent to which it shapes its consumers' learning and patient-care landscapes.

Moreover, the story an author writes shapes the way it is told; that is, her intended impact guides the type of scholarship she will produce. An investigator seeking to demonstrate the noninferiority of a new therapy will conduct a trial and report her findings in traditional peer-reviewed form. A clinician-educator, by contrast, may seek to impart a skill rather than merely share information (i.e. how to conduct a large-group lecture), which may be best facilitated by a workshop, recorded video, or visit to another institution. In the case of the latter, the process of one-time "peer review" for submission in a journal may be less robust than the reiteration and revision that come from giving the same presentation repeatedly. This medium also has the potential to evolve and be adjusted more rapidly and organically than, for example, the findings of a years-long trial. This is not to say that educators or administrators cannot produce traditional peer-reviewed content; only that their particular narratives create the opportunity to disseminate content differently and in ways that are not only suited to their scholarship, but have unique benefits as well.

Finally, although the PRP provides the medical community with reassurance that we continue to evolve, we must question what sort of evolution it is that we seek. If, for example, we aim only to move the needle on best practices and novel therapies, the current paradigm is well suited. But if we aim to evolve individuals as well, there must be space for their ideas to not only flourish, but be affirmed and rewarded. The unspoken agreement that the PRP is the gold standard for faculty trickles down in whispers to trainees and, even if unintentionally, redirects them into "productive" tracks of thought. It encourages them to create in a way that answers a question rather than simply posing one. It puts that

which is potentially novel at odds with that which is definitively high-yield.

The peer-reviewed publication is not going anywhere, and frankly we do not submit that it should. The gold standard remains a robust and reliable marker of progress, and a catalyst for innovation. But in considering the many ways to contribute meaningfully to this profession, it is apparent that other forms of innovation are not only acceptable relative to the PRP, but in some sense preferable and uniquely suited to perpetuate individuality and inquisition in scholarship. There is no regulation prohibiting any of us from pursuing these alternatives (e.g. a workshop video for trainee education or an oral presentation teaching participants how to use a new tool), only the inherent drive so many who seek careers in medicine have for success as defined by the worldly standards of the day. Rather than forcing these among us to weld a separate and, effectively, unequal accolades, let us foster a space that creates the freedom to... well, create. In doing so, we may unveil that not only gold glitters.

References

1. Lee, C. J., Sugimoto, C. R., Zhang, G. and Cronin, B. Bias in peer review. *Journal of the American Society for Information Science and Technology*. 2013;64: 2-17. doi:10.1002/asi.22784
2. Manchikanti L, Kaye AD, Boswell M, Hirsch JA. Medical Journal Peer Review: Process and Bias. *Pain Physician*. 2015;18:E1-E14.
3. Kronick DA. Peer review in 18th-century scientific journalism. *JAMA: The Journal of the American Medical Association*. 1990;263(10):1321-1322. doi:10.1001/jama.263.10.1321.
4. About Us. The Lancet. <https://www.thelancet.com/about-us>. Accessed June 5, 2018.
5. For Authors. JAMA. <https://jamanetwork.com/journals/jama/pages/for-authors#fa-about>. Accessed June 6, 2018.
6. Atasoylu AA, Wright SM, Beasley BW, et al. Promotion Criteria for Clinician-educators. *Journal of General Internal Medicine*. 2003;18(9):711-716. doi:10.1046/j.1525-1497.2003.10425.x.
7. Smith CC, McCormick I, Huang GC. The Clinician-Educator Track. *Academic Medicine*. 2014;89(6):888-891. doi:10.1097/acm.0000000000000242.