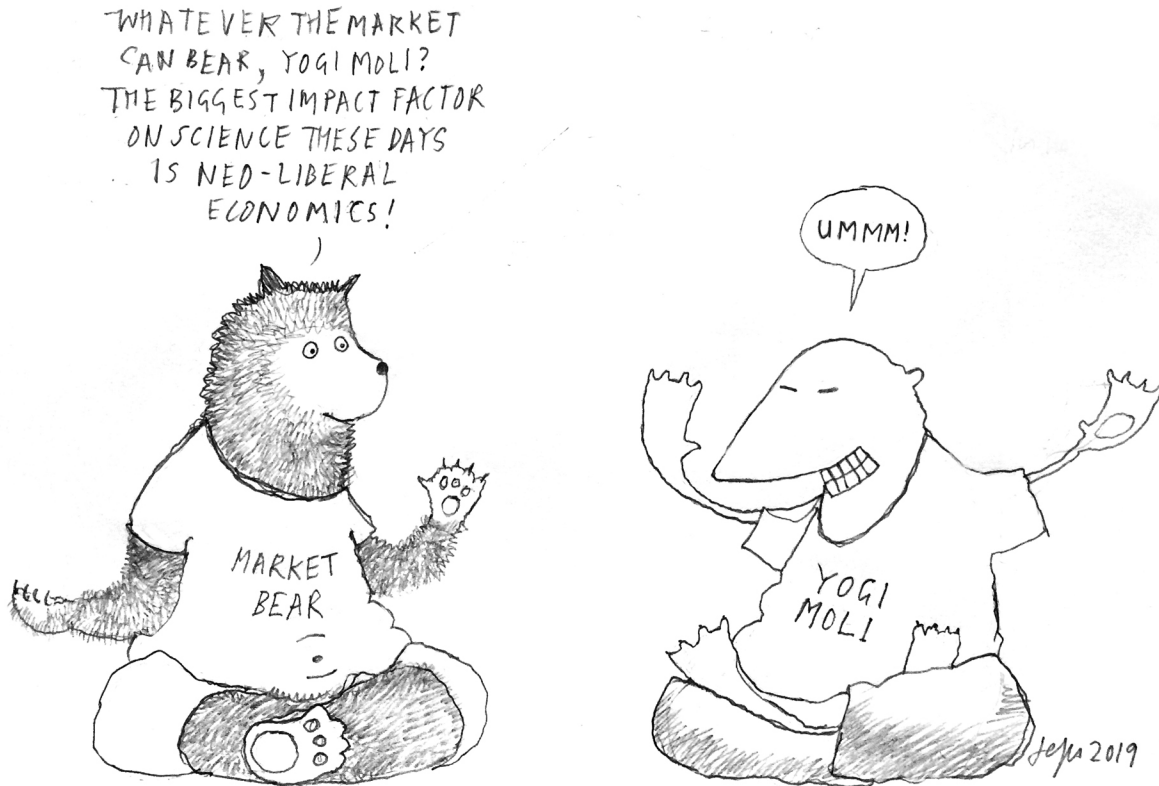


STICKY WICKET

Impact! IV. In defense of journals

Mole



Namaste! No, I'm not doing yoga, but I am at a sort of New Age Center on the California Coast. At a scientific meeting of course. But it's very peaceful here, and there's plenty of snoozing – I mean meditation – happening at the sessions.

If you're just joining us, we were talking about journals, and impact factors (IF you recall), and we detoured into a fantasy institute for biomedical research information before coming to no particular conclusion at all. Sorry about that.

The problem is, while we don't much like the idea of IF or related metrics, we use such metrics all the time, either directly or indirectly, to rate journals and, by extension, ourselves and each other (in terms of where we publish our work). While we know that IF is often not an accurate measure of journal quality (and especially not for one publication in a journal), our careers often depend on this false equivalence. Any alternative to this system really has to take into account the simple fact that a very large number of papers are published every year, and searching through this number is often untenable for even a single, rather specialized field. Journals that apply a filter, selecting papers deemed high 'quality' by editors (especially professional editors who work hard to attain a rather broad knowledge), despite mistakes and flaws (most obviously when they reject my papers), provide us with not only a place to read papers in our field that may impact our work, but also papers in other fields we will likely find interesting. Editors work especially

hard to achieve this interest level, and at some level (with exceptions), this probably does correlate with IF.

But there is a real problem with all of this. Some publishers of journals have huge profit margins, that is, they have raised their prices for access to their journals. In some cases this is so high that a backlash is in the works. (FYI, this does not include the publishers of the journal you are currently perusing). A large collection of universities in the U.S. state in which I'm currently retreating have decided to boycott one such publisher. Meanwhile, one EU country, and in time, perhaps the whole of the EU are taking this one step further, requiring any funded laboratory to only publish in journals that provide instant public access to the paper.

The intent, I think, is to place pressure on publishers to change their business model. Of course, some already have; instead of charging to read a paper, they are charging to publish the paper. I suspect that this will become more widespread as these initiatives take hold, and if history is any indication, publishers of 'better' journals will charge very high rates indeed, which will increase to 'what the market will bear,' sustaining their high profit margins to the best of their ability (and some of these publishers will argue that this is necessary, since they must be responsive to their shareholders).

How much can this 'market' bear? Here's a hint. I'll argue that most of the papers we publish are already very, very expensive. Here's the trick to determining how expensive. If your laboratory

has only one form of output, that is, publications (I know that there are other important outputs, but for many of us, this is the only one we have; I include my own lab in this pool) then the cost of each publication we publish is roughly the amount of money we spend on all activities per year divided by the number of publications our lab publishes per year. Do the math. The cost of a single paper, by this metric, may surprise you. So how much more money will we pay to ensure that each paper (our output) is actually published? 10% of this total cost per paper? 20%? More?

And as the costs increase, I predict that the backlash will also increase, as Universities and funding entities set limits on such expenditures. Journals will have to cut their costs, and we may well lose professional editors all together. You may relish such an idea (Mole! All these editors do is decide that my work isn't interesting!). But I think that if this happens, we will lose something precious – the existence of journals that reliably publish things outside our own fields that will inform our own science, and more than that, inform *us* of the wonderful things we may not devote all our time to studying. The world, alas, will be a sadder place.

Yesterday, I was discussing this problem with my colleague, Professor Hawk. He suggested that perhaps this is all okay, because in time we will not use journals at all. Instead, we will post our work in large on-line repositories that we will peruse, not by sifting through the titles, but instead, by training sophisticated deep-learning algorithms that will do the perusing for us, thereby alerting us to the work we will likely find interesting. And our work, and by extension, ourselves, will be ranked on the metric of 'hits' (Professor Fisher Cat, who was at our table, noted that Google already provides this metric for papers, so that part is easy). All will be well, Hawk thinks.

Me, I'm not so sure. As Mr. Wednesday famously noted, "Rigged games are the easiest ones to beat." Perhaps we will figure out how to fill our papers with verbiage most likely to yield maximum exposure – I suspect we can exploit the same deep-learning

algorithms to figure this out for us (maybe we'll even let them write our papers for better effect). And of course we will turn to social media to promote our papers.

Some of us already are. My friend, Professor Tree Kangaroo (who, it happens, doesn't live where there are many trees) is a whiz at promoting interesting papers – not his own – on social media, posting several per day, and has acquired a large and growing cohort of followers. Should he include his own paper in this healthy feed, I suspect that his paper is 'hit' more often than might otherwise occur. That's okay for now – indeed, why shouldn't he promote himself? But as this approach gains traction, more of us will do it, and there will be a lot of competition, until any value will be diluted like tears in the ocean. I'm not actually crying into the ocean, but I could if I follow this reasoning to its conclusion: will we hire social media experts to promote our labs to increase our visibility?

And who will these social media experts be? Well, the journals will be gone, and there will be a lot of professional editors who are out of work. So, publishers will re-invent themselves as public relation services, and each of us will submit our work for consideration for expert social engineering. In turn, we will subscribe to such services to get advice on which papers to read, and the costs of these subscriptions will be a reflection of how useful the service tends to be. So we need a metric to tell us which service is most likely to be useful to us. I know, we might ask for a number that indicates how often their recommended publications are cited. We can call it 'Impact Factor.'

Rigged games are the easiest ones to beat. As for me, I *like* reading journals, and the best ones have professional editors who take the time and effort to ensure that what is published meets a standard they set. And I don't need a deep-learning algorithm to pick one up and read it. But sure, I'm hopelessly old-fashioned.

The sky is a rich blue, there are birds singing in the trees, and the temperature here is mild. Nice day. I might sit a while and read a bit. I wonder if there's any 'tea' I can sip while I do. Namaste.