

Trust, Quality Assurance and Open Access – Predatory Journals and the Future of the Science Publishing System

The roots of the business model of predatory journals

By the end of the 1990s at the latest the neo-liberal paradigm of ‘new public management’ (NPM) had taken hold of science policy in the leading science nations. With it economic incentives were introduced in a social system to which they were foreign until then, perhaps with the exception of law, chemistry, medicine and the engineering sciences that were closer to the economy or with monetary remunerations respectively. But the larger part of the academic system followed the logic of self-direction by internal disciplinary acquisition of reputation. With the introduction of performance measures policy makers hoped to gain control over a system the operational logic of which was inaccessible to most of them. The advantages of simple quantitative measures seemed so convincing that the concerns expressed initially against a radical reduction of such a complex and partly implicit process like the assessment of contributions to the stock of certified knowledge by the respective competent peers and the attribution of reputation based on it were ignored.

More fatal than the carelessness, sometimes even arrogance on the part of politicians was the facility with which the scientific community could be won over as without its eager acceptance of indicator based performance evaluations NPM would have failed or could at least have been shaped more intelligently. With this science submitted to the logic of ‘externalized performance measurement’ and all its intended, but also its unintended dysfunctional effects. Among the latter one has to count that above all younger scholars are exposed to a competition in which not a wealth of new ideas and innovative thinking are criteria of success but countable products : above all publications, appearing in scholarly journals. These, in turn, are subject to indicators supposedly measuring quality, i.e. journal impact factors (JIF).

Now, the world of money which surrounds the odd world of science and on which science ultimately depends is not one of solid businessmen (the merchant prince for whom a handshake was a contract) but rather one which is populated by a lot of clever characters with sneaky business ideas who occupy areas that are not legally regulated. Where it is profitable they may even cross the borderline of the law of the land or of morality. Earlier, before digitization, these people issued chain letters, promotional excursions for elderly ladies and sales of oriental rugs. No one would have thought that science among all would become a source of income for shady racketeers but NPM has made it possible.

Digitization which has many positive but also many questionable consequences has opened for science, among other things, the option of electronic publishing open to all authors (Open Access). From the perspective of many scientists, in the natural sciences above all, where the turnover of

knowledge and thus the tempo of publishing is rapid this option is very attractive. The traditional journals often have high rejection rates and lengthy review processes, and they ask for hefty fees. For the young scientist the rationale is to counter the publication pressure by choosing a journal that published his/her article rapidly and cheaply.

It is exactly this group, defined as demand or a potentially lucrative market that both the large publishers and diverse racketeers respond. They offer open-access journals that publish rapidly and without lengthy and risky review processes. The titles of these journals are often vacuous, sometimes they sound similar to renowned journals, and above all their number is growing and hard to trace. The latter refers to all those organizations, funders, university administrations, and ministries that have initiated performance measures in the first place. According to Jeffrey Beall, the librarian from Boulder, Colorado, admonisher and guardian over the development of the so called predatory journals, the number of obscure publishers has risen between 2011 and 2016 from 18 to 923, and the number of stand-alone journals between 2013 and 2016 (April) from 126 to 882. Meanwhile he opened two more lists: One is that of 'hijacked journals', i.e. journals for which a fraudulent website with a stolen identity of a regular journals has been set up. Under this wrong identity these journals advertise for articles in the open access format, i.e. the author pays. The number of these journals has gone up from 30 in 2015 to 101 in 2016. With the growth of this kind of journals the number of published articles has also gone up, of course: from 53.000 in 2010 to 420.000 in 2014. In addition, these new highwaymen of the science publishing system have come up with another finesse. To fake a reputation of their journals they invent new metrics or mock organizations that compute the journal impact factor that has been in use for some time. Among them - this is the second list - are such bloomy names like the "Einstein Institute for Scientific Information" or the "International Society for Research Activity".¹

Not enough with that: meanwhile new organizations have emerged, so-called article brokers that squeeze between author and journal. There is, for example, an "Association for Scientific and Engineering" whose Chinese initiators should be thanked for not having a good command of the English language. Beall comments:

On its website, it claims to be 'an international non-profit organization dedicated to advancing science for the benefit of all people,' but this is a big lie. It's an unethical firm that preys on scholarly authors desperate to get their work published in indexed journals to advance their careers [...] All the parties benefit, except one. The authors get published in an indexed journal and advance their careers. The article broker charges a fee and generates revenue. The editor receives payments from the article broker for his or her help in getting the papers published. But because

¹ All data under <https://scholarlyoa.com/2016/01/05/bealls-list-of-predatory-publishers-2016/> (02.04.2016).

the editor or owner of the journal is getting under-the-table payments to facilitate the acceptance and publication of the articles, peer review suffers. There is an incentive to accept and publish as many papers as possible, regardless of their scientific soundness, to make more money. The victims, of course, are the readers, the consumers of scholarly literature, which includes all researchers. Article brokers are constantly seeking cooperative editors, offering deals some cannot turn down.²

This describes comprehensively what the development from predatory journals to article brokers is all about. It is the half legal but unethical business practices in the internet technically enabled by digitization which - via New Public Management - have found an entry into science. Here it threatens the fragile fabric of trust and quality control.

The business model taken up by the predatory publishers has originally been developed by the large science publishers. They were the first to adapt to the challenge of Open Access and developed a new variant of the connection between quality decisions and monetary incentives. Gold Open Access is no threat to the publishing business if they collect so-called article processing charges (APCs) from authors instead of subscription fees from libraries. These fees the amount of which is only limited by the pain threshold of the authors' paying home institutions are the basis of the business model of predatory publishing.

With the introduction of the APC-based Gold-Open-Access-Model and its voluntary acceptance by funding organizations in the US and the EU, coupled with the mandate for scientists to publish in this format science policy has maneuvered itself into a precarious constellation: not only are the costs for the public purse incalculable, but the model prepares the ground for a loss of trust in the quality assurance mechanisms that permeates the entire science system. Even if the share of articles in predatory journals of all open access articles paid by authors is still small - estimates vary from 1% (Bjornshauge) to 5-10% (Beall) - the dynamic of the development is reason for concern (Butler 2013, 435). In the meantime the structure of the market has already changed. Since 2012 those publishers have the largest share that publish between 10 and 99 journals (Shen and Bjork 2014). Now the small crooks are coming.

Anyone who believes that this is primarily a problem of the developing countries and that the suspicious publishers have their headquarters there must be ready for a surprise. Shen and Bjork come to the conclusion in their study that the regional distribution of both authors and publishers is very uneven: three quarters of the authors come from Asia and Africa (Shen und Bjork 2015). John Bannon created some hot discussion with his experiment in which he sent an article with obviously wrong findings to hundreds of Open-Access-Journals and tested their quality controls -

² <https://scholarlyoa.com/2016/03/31/another-article-broker-from-china/> (02.04.2016).

with devastating outcome (Bohannon 2013). In Bohannon's sample a third of the journals came from India, with this the country has the largest share of Open Access Publishing. But surprisingly he sees the US in second place (Bohannon 2013, 64-65). On the basis of his experiment he concludes that the corporations that reap the profit have their headquarters in the US or Europe even if the editors and the bank accounts of the journals are based in developing countries. "Journals published by Elsevier, Wolters, Kluwer, and Sage all accepted my bogus paper" (Bohannon 2013, 65). Indeed, developing and threshold countries are especially vulnerable insofar as they push their scientists more than the countries in the North to publish internationally. Thus, they are also damaged more severely.

Predatory journals and publishers build on open access and discredit it at the same time even if OA does not automatically lead to such practices (Berger and Cirasella 2015). The question which consequences predatory journals will have for science refers to two possible scenarios.

Dystopia of the science publishing system

In principle, predatory journals abrogate the central control mechanism of science which constitutes trust at the same time without which knowledge production cannot grow or only very slowly so. If in highly specialized research fields it is no longer known generally who is very good and who is not so good the internal, implicit attribution of reputation becomes impossible. In the better case other criteria take the place of substantive assessments of research contributions such as profitability or political acceptability. The intensified economization of science that replaces intrinsic motivation by external monetary incentives first of all leads to the negligence of economically uninteresting fields such as the humanities (Lill 2016). A further consequence could be the erosion of research ethics or norms of good scientific practice because of 'goal displacement' (Osterloh und Frey 2000). Even though a causal link can hardly been proven it is conspicuous that the sensitivity about fraud in science has led to regulatory efforts worldwide that react to an increased incidence of scientific malpractice. If the operators of predatory journals can procreate unhindered, propelled by the political pressure on scientists to publish much and fast, the loss of orientation will spread that makes it already difficult to distinguish unequivocally between regular but lower quality journals and predatory journals (Berger und Cirasella 2015). Bad research drives out good research because the reliance on and citing of their work is no longer directed by quality control. The cost of replication will increase, a fact indicated already by the growing number of retractions (van Noorden 2011).

If one extrapolates this development even further grave consequences for the position of science in society can be imagined, i.e. for its authority as the ultimate instance of the production of certified knowledge. If this position will be lost, thus the concern, science will come under the influence of ideology. Both the religiously motivated radicalization in recent years and the mobilization of

questionable beliefs via the social media (e.g. the anti-vaccination campaign) are warning signs. In the end society abdicates the very institution that it has created against the horrors of the religious wars during the 17th century.

Utopia of the science publishing system

Most likely it will not get to be quite so bad. At first the system reacts by trying to protect itself through controls. In order to guard against the 'blacklisting' of OA-journals the Directory of Open Access Journals (DOAJ) was established. However, in reaction to Bohannon's experiment the DOAJ had to slash 114 journals from its 'white list' and sharpen its criteria of admission. A similar strategy is pursued by the Open Access Scholarly Publishers Association (OASPA). Its members have to commit to a code of conduct but even here mistakes happen (Berger und Cirasella 2015, 134).

Controls can lead to absurd consequences. The South African National Research Fund that originally paid generous financial rewards to universities and research institutions for publications under their respective addresses in order to promote the international visibility of its researchers - and to boost their productivity - saw its budget threatened by the fraudulent practices of predatory journals. Now the NRF asks from authors to reveal the names of reviewers of their publications, and if that should be impossible (sic!) at least their home organizations, supposedly to document the solidity of the peer-review process. It should have been known to this institution that with this it asks the editors of scholarly journals to violate the rules of good scientific practice.

If this example suggests that the development will progress in the direction of an ever more elaborate bureaucratization one can think of a utopian scenario which leads to a more intelligent use of digitization. A first step is for science and science policy to abandon the journal impact factor and all other performance indicators that are based on the quantity of publications. In view of their methodological deficiencies this step is long overdue anyhow and is demanded by international science organizations (IMU and San Francisco Declaration). Through such a step the business model of predatory journals and their publishers would be spoiled effectively.

One step further in the direction of a utopia is the suggestion to create a platform that contains all aspects of an open-peer-review system and would be open to all scientists. They would all have to have an account to be identifiable. "Peer reviews, metrics and ratings would then be able to expose fraudulent behaviour by editors, who could eventually be excluded from the platform" (Wehrmeijer 2014, 79). Such a platform could be supported by a consortium of universities and would, in principle, make journals superfluous. It is also imaginable that such formats would take the place of publicly financed libraries, perhaps administered by them, as subsidiaries of science that is committed to the common weal and is itself a public good. In such a system predatory journals and their publishers would have no place.

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