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Why do researchers decide to publish in questionable journals? A review of the literature

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Abstract

Peer review is a cornerstone of scientific publication and consequently, predatory journals are feared to be a threat to the credibility of science as they perform no or low-quality peer review. The question of why researchers decide to publish in a questionable journal remains relatively unexplored. This paper provides an overview of the existing literature on why researchers decide to publish papers in questionable journals, specifically whether or not they search for a low-barrier way to getting published, while being aware that the chosen journal probably does not adhere to acceptable academic standards. The choice of a publication outlet can be seen as a submission tree which consist of various incentives, and explaining why authors publish in deceptive journals may thus consist of a combination of awareness and motivational factors. Awareness as well as motivation of diligent authors is far from those of unethical authors. Unethical authors may use lack of awareness to excuse their actions, but they do indeed search for a low-barrier way to getting published. There are different types of authors who publish in deceptive journals, and we thus need different approaches to solve the problem.

Introduction

Predatory journals actively request papers and collect article processing charges from authors who publish with them, but do not provide proper peer review or editorial services. They merely mimic the scholarly ambitions of legitimate open access journals to serve their own economic interest, rather than promoting science (Shen & Bjork, 2015; Shamseer et al., 2017). The past few years has seen a growth in predatory publishing (e.g. Memon, 2017; Umlauf, 2016), but opinions on the effects of the phenomenon are divided (Shamseer et al., 2017). Many agree though that publishing in predatory journals is a waste of resources, including wasted research and funding (e.g. Moher et al., 2017; Ferris and Winker, 2017). Roberts, for example, (2016: 1831) characterizes the journals as parasitic and argues that “[b]y publishing in a predatory journal, researchers immediately render their work unusable, illegitimate, and stigmatized”.

There has been much discussion about the term of ‘predatory’ journal or publisher (e.g. Eriksson & Helgesson, 2017) and lately, some have started to question the validity of the term. The term ‘predatory’ implies a one-way relationship between journals and researchers, but some researchers may willingly use these journals to lengthen their publication lists rather than falling prey to them. Kolata (2017) questions the use of the term predator to describe these journals, as at least some of the authors cannot be characterized as prey, while Roberts (2016) characterize the relationship between desperate or insincere researchers and predatory journals as a symbiosis built on deceit and greed.

Studies have indicated that many of these questionable journals are based in India or Nigeria and primarily used by authors from developing countries (Frandsen, 2017; Xia et al., 2015). However, as recently argued by David Moher in *Nature*, the problem is not just confined to developing countries. A study by Moher and colleagues at The Ottawa Hospital Research Institute and The University of Ottawa in Canada found that a substantial amount of articles published in biomedical journals deemed likely to be predatory was published by authors from high- and upper-middle-income countries, with some even affiliated with high ranked universities (Moher et al., 2017). These results are supported by recent analyses of German scientists made by journalists (NDR, 2018).

The question of why researchers decide to publish in a questionable journal remains relatively unexplored. Just a few scientific studies have been conducted to ascertain the motivations of the authors for publishing in these journals, as noted by David Moher in a recent interview (Oransky, 2017). Banerjee (2013) argues that those who choose to publish in deceptive journals may gather an impressive number of articles published in so-called scholarly journals during a very short time period. While such articles may not have been through a qualified peer-review-process, this can be difficult to determine for the untrained eye. In some countries, publishing in deceptive journals can therefore lead to academic or administrative positions achieved without the proper merits i.e. a so-called zombie professorship (Balehegn, 2017). Pyne (2017) presents the results of a case study of the benefits of publishing in deceptive journals. The study finds that a publication in a deceptive journal has a negative, but insignificant effect on faculty salary. However, the number of journal publications has a strong positive significant effect on salary. These results suggest that the quantity of publications is more important than the quality, and the author concludes that in this case there are few incentives not to publish in deceptive journals.

This paper aims to provide an overview of the existing literature on why researchers decide to publish papers in questionable journals, specifically whether or not they search for a low-barrier way to getting published, while being aware that the chosen journal probably does not adhere to acceptable academic standards. To provide the relevant context for this, it is important to review the literature on which factors researchers consider to be most important when deciding where to submit and the literature on awareness of journal quality among researchers. Following that overview, the awareness and motivations of authors in questionable journals will be addressed. Finally, the consequences and action needed are discussed.

Deciding on a publication outlet

The choice of a publication outlet can be seen as a submission tree. The submission-tree-model implies that authors aim at the top journals in the first submission, and, if the article is rejected, follow the path established and submit to a second or a third journal (e.g. Salinas & Munch, 2015). Heintzelman and Nocetti (2009, p. 23) conclude that authors largely have an incentive to submit their work to the best journals first and then subsequently, work their way down a schedule of journals. The exceptions to this simple rule occur when authors are particularly impatient or risk-averse. The submission tree can consist of various incentives depending on a number of factors (Wong et al., 2017; Oster, 1980) and is typically tied to perception of journal quality (Regazzi & Aytac, 2008). Oster (1980) suggests the following four characteristics of a journal to include: Prestige Index, familiarity Index, mean waiting time and acceptance probability. Other frameworks exist but there are great overlaps in the categorization (e.g. Knight & Steinbach, 2008; Björk &

Holmström, 2006; Björk & Öörni, 2009; Hsieh, 2017 and Cheung, 2008). A more general framework has been suggested by Pepermans and Rousseau (2016) in which the factors that have been found to drive an author's decision to submit to a given journal are organized in three categories: Author characteristics (e.g. past submission success), journal characteristics (e.g. publication delays, rejection risk, author charge, prestige), and other research characteristics (potential impact or visibility of the paper, ethical issues). The majority of the existing studies are based on surveys with a list of factors that could drive an author's decision to submit to a given journal organized in categories and determined a priori (e.g. Ozcakar, Franchignoni, Kara, & Lasa, 2012; Rowlands & Nicholas, 2005; Sandesh & Wahrekar, 2017).

Open access is for some authors a factor when deciding on a journal to submit to, yet the underlying factors are similar to the already mentioned factors such perception of impact as well as prestige (Boukacem-Zeghmouri et al., 2018; Swan & Brown, 2004). Open access is not a factor that determines the publishing strategies of researchers in general although there are differences across e.g. fields and means of funding (Tenopir et al., 2017). A survey by Rowlands and Nicholas (2005) indicates that the most important criteria for selecting a journal to publish in is (in descending order of importance): The reputation of the journal, readership, impact factor, speed of publication and reputation of editorial board. Gordon (1984) finds that audience is the most important factor indicating that journals are primarily selected on the basis of what they offer as media of communication and stresses the importance of discipline specific differences. Prestige, readership and topic frequency are the most important criteria in the study by Frank (1994). Soreide and Winter (2010) does not include audience or readership and thus other factors are found to be more important, i.e. impact factor, overall reputation, fast-track. Finally, Wijewickrema and Petras (2017) find statistically significant differences across fields although they also identify factors in common (across fields authors give the highest attention to a journal's peer reviewed status).

Summing up, the existing literature on how authors decide on a publication outlet includes author characteristics, journal characteristics and other research characteristics as factors. Although some studies are comprehensive, such as Pepermans and Rousseau's (2016), the majority is limited by geography, discipline, or type of respondent. The above-mentioned studies do include e.g. rejection risk as a factor among many others. But researchers may be under a considerable pressure to publish and therefore the issue of simply getting a paper published may disrupt the ideal criteria for judging a journal. The pressure to publish and the existence of predatory journals are believed to be related (Grančay, Vveinhardt, & Šumilo, 2017; McCann & Polacsek, 2018; Moher & Srivastava, 2015).

Deciding on a questionable publication outlet

Few studies exist on the awareness and motivation of authors who publish their work in questionable journals and it is difficult to ask the authors of such publications as they will probably claim unawareness or defend the journal regardless. In a recent case of 5000 German researchers found to be authors of articles in questionable journals, not one has come forward to admit to being aware that the chosen journal probably did not adhere to acceptable academic standards. In other cases, authors of articles in deceptive journals are found to be the greatest defenders of the journals (Beall, 2017).

Eriksson & Helgesson (2016) highlight three explanations for publishing in a deceptive journal,

although these are not empirically tested:

1. Dissatisfaction with traditional academic journals,
2. Lack of awareness of deceptive journals, and
3. Intention to use low-barrier ways to publish

Empirical approaches to the question include a study by Kurt (2018) that identifies four themes on the basis of a survey study using a grounded theory, qualitative methods approach for data collection and analysis:

1. Social identity threat
2. Unawareness
3. High pressure
4. Lack of research proficiency.

Social identity threat is the fear of being viewed as inferior to others because of belonging to a particular group which is the case for some researchers from developing countries or researchers with poor English abilities. Not being aware that the journal was predatory was another factor that leads to different levels of concerns. Some might even publish in them again. Publishing may be tied to a position leading to high pressure to publish. Finally, lack of research proficiency makes publishing in high-quality standard journals unlikely and researchers need training as well as assistance to meet the quality criteria within their field.

The study by Kurt doesn't seem to suggest that authors have the intention to use low-barrier ways to publish knowing that the chosen journal does not adhere to acceptable academic standards. However, the methods used in the survey may have bearing on the results. The empirical work by Kurt is based on a survey dealing with a number of sensitive questions. Asking sensitive questions affects response rates, item nonresponse rates and response accuracy, which are three important survey outcomes (Tourangeau & Yan, 2007). There are methods to decrease the negative effect on survey outcomes and they seek to reduce the respondent's sense of the presence of another person or affect the respondent's motivation to tell the truth or both (Tourangeau & Yan, 2007). In a review of scientific misconduct, the authors find three important methodological factors: whether the survey asked about self or not, whether it was mailed or handed out to respondents, and whether it explicitly used the words "fabrication" and "falsification" (Fanelli, 2009). The survey outcomes in the study by Kurt (2018) are likely to be negatively affected by the fact that the survey was mailed, addresses self and uses the word "predatory". Furthermore, a strong pressure to publish is mentioned in the survey as an explanation for choosing the specific journal and thus an explanation is offered to the respondents. Consequently, although empirically based, Kurt (2018) probably only offers a part of the explanation.

Shehata and Elgllab (2018) use surveys and semi-structured interviews and implement measures to decrease the negative effect on survey outcomes (e.g., not mentioning predatory journals). They find that acceptance likelihood is the main reason for the choice of a deceptive journal. Researchers with publication experience in well-esteemed journals argue that publishing in esteemed journals is difficult and time-consuming, unlike the deceptive journals that rarely require corrections and publish timely.

Based on 30 interviews with Nigerian researchers Omobowale et al. (2014) find four explanations for authors choosing a deceptive publication outlet:

1. Colleagues using the journals and achieving promotion
2. Achieving rapid promotion
3. Ignorance
4. Inadequate evaluations

Researchers see their colleagues achieve promotion on the basis of deceptive publication outlets and thus becoming zombie professors which can lead them to follow their path. They may be able to publish in decent journals but use the deceptive journals to fast track their promotion. Thirdly, researchers may be ignorant of the quality of the deceptive journals. Finally, articles in questionable journals are accepted without adequate scrutiny by appointment and promotion committees. Omobowale et al. (2014) concludes that the deceptive journals are increasingly used among scholars in developing countries looking for a quick publication to achieve promotion as these journals satisfy the ‘international publishing rule’ which is common in developing countries.

Summing up, the explanations for publishing in a deceptive or deceptive journal include lack of awareness and different perspectives on motivation as well. Explaining why authors publish in deceptive journals may thus consist of a combination of awareness and motivation.

Questionable research conduct and deceptive journals

In understanding why authors publish in a deceptive journal we can draw on the literature on questionable research behaviour and scientific misconduct. Publishing in a deceptive journal can be considered questionable research conduct. Ideal research behaviour can be characterised as responsible conduct of research whereas research behaviours that fall short of responsible conduct can be termed deliberate misconduct and questionable research practices (Steneck, 2006).

Grimes (2018) models questionable research conduct and provides a sub-divide of the broad spectrum of researchers into three distinct classes. In the existing literature addressing deceptive journals we have so far focused primarily on what Grimes (2018) would characterize as ‘diligent researchers’, that do not dishonestly manipulate results, and ‘careless researchers’ that do not falsify results, but may be sloppy. They fall prey as they are not aware that the journal, they have published in, is in fact deceptive. However, we also need to address the third of Grimes’ classes, which is the ‘unethical researchers’ that may occasionally manipulate data or knowingly submit dubious results. They publish low-quality research without any risk of rejection and get a long publication list that may seem scientific to the untrained eye.

These classes of authors publish papers that generally are of poorer quality than non-questionable publications. Moher et al. (2017) find that biomedical articles in questionable journals severely lack descriptions of study methods, results and study registration. Although compliance with guidelines tends to be irregular even in mainstream publications, the sample of articles in predatory journals reveals significantly lower adherence. Similar findings are found in questionable nursing journals (Oermann et al., 2018). We know very little of the distribution of these two author groups and there is a risk of overestimating the proportion of unethical researchers. Fanelli, Costas and Larivière (2015) argue that there is a disproportionate attention paid to extreme cases of fraud which often represent spectacular examples which attract the attention of the scientific community and the mass media. On the other hand, conservative estimates are expected when asking researchers sensitive questions (Fanelli, 2009).

Questionable research conduct in general is assumed to be caused by a number of factors of which the most frequently studied are the following: policies, culture, peer control, pressures to publish, early career and gender (Fanelli, Costas & Larivière, 2015). Fanelli, Costas and Larivière (2015) have analyzed the risk factors for scientific misconduct and find that the widespread belief that pressure to publish is a major driver of misconduct was not entirely supported by their empirical study. Consequently, pressure to publish may not necessarily drive researchers to publish in questionable journals.

We seem to be dealing with at least two different types of authors, who publish in deceptive journals, and we thus need at least two different approaches to the problem. Authors who want to get help should be informed so they can use some of the plentiful tools available to assess scientific journals. Researchers in general and inexperienced researchers in particular should be offered training and assistance to meet the expectations of high-quality journals.

The actions by unethical researchers on the other hand should be addressed using a completely different set of tools as lack of awareness is not the problem and they have not fallen into a trap. Wallace and Perri (2018) find concentrations of publications in specific deceptive journals suggesting that once an author learns of an ‘easy’ publication outlet, he/she informs like-minded. The authors may use lack of awareness to excuse their actions, but indeed they search for a low-barrier way to getting published, while being aware that the chosen journal probably does not adhere to acceptable academic standards. The alternative for these authors is not well-esteemed journals. Prior to using deceptive journals as publication outlet they earned promotion based on e.g. self-publishing or publishing using contacts in local journals (Omobowale et al., 2014). However, the “international rule” provides these researchers with incentives to publish in questionable journals as they despite the lacking quality control fulfil the rule. Consequently, incentives not to publish in deceptive journals or removal of the current incentives to use these journals are necessary.

Several approaches may also be necessary to face the problems of questionable research conduct in general. Based on their results Fanelli, Costas & Larivière (2015) recommend the following:

“establishing policies and structures to handle allegations of scientific misconduct, promoting transparency and mutual criticism between colleagues, and bolstering training and mentoring of young researchers might best protect the integrity of future science” (Fanelli, Costas & Larivière, 2015).

The problem of predatory journals may also need to be addressed by training and mentoring of in particular young and inexperienced researchers as well as by implementing policies and structures to prevent that publishing in questionable journals can be an “easy” publication outlet that can provide unethical researchers with a shortcut to promotion. If the quality of publications is clearly valued over the quantity, it would provide the researchers with fewer incentives to publish in deceptive journals. Under such a regime, unethical authors would not be able to fast-track a promotion using a large quantity of low-quality publications.

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