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Problematizing 'predatory publishing': A systematic review of factors shaping publishing motives, decisions, and experiences

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Abstract

This article systematically reviews recent empirical research on the factors shaping academics' knowledge about, and motivations to publish work in, so-called 'predatory' journals. Growing scholarly evidence suggests that the concept of 'predatory' publishing' – used to describe deceptive journals exploiting vulnerable researchers – is inadequate for understanding the complex range of institutional and contextual factors that shape the publication decisions of individual academics. This review identifies relevant empirical studies on academics who have published in 'predatory' journals, and carries out a detailed comparison of 16 papers that meet the inclusion criteria. While most start from Beall's framing of 'predatory' publishing, their empirical findings move the debate beyond normative assumptions about academic vulnerability. They offer particular insights into the academic pressures on scholars at the periphery of a global research economy. This systematic review shows the value of a holistic approach to studying individual publishing decisions within specific institutional, economic and political contexts. Rather than assume that scholars publishing in 'questionable' journals are naïve, gullible or lacking in understanding, fine-grained empirical research provides a more nuanced conceptualization of the pressures and incentives shaping their decisions. The review suggests areas for further research, especially in emerging research systems in the global South.

INTRODUCTION

Within the field of scholarly publishing, there is a growing realization that the broad concepts of 'predatory' journals and 'predatory' publishing practices are no longer analytically helpful (Allman, 2019; Anderson, 2015; Eriksson & Helgesson, 2018). Such concepts are freighted with normative judgements, setting up Manichean oppositions between 'good' and 'bad' publications. The labelling, since Beall, of up to 20,000 journals as 'predatory' is simplistic, and an unhelpful mapping of a complex and increasingly diverse global academic publishing landscape. Eriksson and Helgesson (2018) suggest that the term 'predatory' is too broad, confuses misconduct with poor quality, and fails to focus on ways to support this developing scholarly landscape. Smart (2017) asks whether a phenomenon that appears to be 'predatory' might actually be the emergence of a new alternative publishing economy, partly driven by the rapid acceptance of Open Access publication models within emerging academic systems. Focusing solely

on the publishers, she suggests, ignores 'what is happening in international academia that forces publication of more articles' (*ibid*, p. 104).

This paper begins with a short overview of the history of 'predatory' publishing (Beall, 2010) showing how the research literature has been dominated by attempts to define the characteristics of 'predatory' journals (Grudniewicz, 2019). The paper then systematically reviews (Kennedy, 2007) recent empirical research on the factors shaping academics' choices to publish in 'predatory' journals and uses the findings to suggest an agenda for future research, guided by the research question: *What is the existing research evidence on academic authors' motivations for and experiences of publishing in so-called 'predatory' journals*? The review's findings refute simplistic representations of academic ignorance or lack of knowledge, and the value of understanding the institutional pressures, drivers and incentives shaping individual strategies and decisions. Our recommendations for further research include a more holistic approach to understanding individual scholars' publications, experiences, motivations, and rationales.

Key points

- Most research and commentary on 'predatory' publishing perpetuates assumptions about academic researchers' lack of knowledge and understanding.
- This review reveals the role of institutional contexts and incentives for publishing in low-quality journals.
- Low-quality journals may play a role in providing effective outlets for research, but may also marginalize knowledge produced in the global South.
- Future research on academic publishing practices needs to take a more holistic and less value-laden approach.

The history of labelling publishers as 'predatory'

Scholarly concerns about the academic integrity of journals and peer review practices long predated the work of librarian Jeffrey Beall. In 1996, Jeffrey Sokal submitted a spoof article to a social theory journal to test the robustness of social science peer review (Ross, 1996; Sokal & Bricmont, 1998). Further stings strengthened this sense of unease (Bohannon, 2013; Djuric, 2015).

With the publication of 'Beall's list', the concept of 'predatory' publishing quickly entered academic discourse. Beall, a librarian at the University of Denver, Colorado, used the term to describe academic publications of questionable quality whose publishing practices were characterized by solicitation, high Article Publishing Charges (APCs), and little to no peer review (Beall, 2012). He began publishing a list of publishers on his Scholarly Open Access blog that he deemed 'predatory', with the numbers rising from 18 in 2011 to more than 920 in 2017. Other terms including 'questionable', 'hijacked', 'fake' and 'false' have been used to describe such publishers, but 'predatory' stuck, and has become by far the most common descriptor in public debate and academic papers.

Some argue that the rapid growth of Open Access since the late 1990s (Laakso *et al*., 2011) facilitated opportunities for predatory publishing (Beall, 2013). In the face of growing complaints about spam and solicitation e-mails from OA journals (Eysenbach, 2008), Peter Suber (2009) listed the 10 key challenges that OA journals faced in developing their reputation. Ten years later, Tennant *et al*. (2019) still felt it was necessary to challenge 10 persistent myths about OA, again questioning the assumption that OA created 'predatory publishers'. Allman (2019) describes how some OA journals came to be viewed as exploitative, partly because they challenged existing hierarchies of prestige. Proponents of Open Access publishing have emphasised its particular importance to scholars in the global South (Bell, 2019; Nobes & Harris, 2019; Nwagwu, 2015). Nwagwu (2016, p. 62) argues that the rise of open access publication in Africa is a direct response to 'the state of academic journals in Africa and the rest of the South before the open access regime', and that it plays a key role in addressing 'local' problems, making scholarship visible and available to all.

Beall remains a highly controversial figure within the field of scholarly publishing (Crawford, 2014; Esposito, 2013). He took a particular dislike to the Open Access journal movement, claiming that the movement was 'anti-corporatist', and sought to deny the freedom of the press to companies it disagrees with (Beall, 2013). Many emerging academic journals were inspired by Open Access principles, and made use of freely available software, such as Open Journal Software. While his list was removed from his university website in 2017, reportedly for legal reasons, mirror copies are still available online. Others – such as Cabell's – have developed comparable commercial products. Growing numbers of universities and national higher education regulators are producing their own lists of accredited journals. The South African Ministry of Higher Education (DHET) has been updating its database of approved journals each year for more than a decade.

The list itself becomes increasingly contentious (see Teixeira da Silva & Tsigaris, 2018). Anderson (2015) points out that several of the qualities identified by Beall as evidence of 'predatory' publishing can also apply to so-called legitimate journals. He suggests a possible spectrum of publishers ranging from those with very transparent high-quality peer review processes to those with quick turnaround, high APCs, no peer review, etc. Strinzel, Severin, Milzow, and Egger (2019) assessed the criteria used by journal blacklists and whitelists (such as DOAJ and Cabell's) to identify 'predatory' and legitimate journals, and found many journals (234) and publishers (296) on both lists. This suggests that either some journals are erroneously classified, or, more likely, that a 'grey zone' exists in which journals have some characteristics that meet both sets of criteria. The quality of peer review was vaguely defined and therefore difficult to assess (Strinzel *et al*., 2019).

Despite this controversy, the 'p-word' continues to be widely used within debates about scholarly publishing. This discourse is often perpetuated by op-eds and commentaries warning readers of

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the dangers of publishing in the 'wrong' journals (Grudniewicz, 2019), often published alongside the main research paper (Cobey *et al*., 2018, Cobey *et al*., 2019).

Efforts to define and demarcate 'predatory' publishing continue. These are actively promoted by the major biomedical and scientific journals. *Nature* sponsored a 2019 'summit' of researchers and publishers to come up with a definitive definition of 'predatory' publishing (Cukier *et al*., 2020). The result: 'predatory journals and publishers are entities that prioritize self-interest at the expense of scholarship and are characterized by false or misleading information, deviation from best editorial and publication practices, a lack of transparency, and/or the use of aggressive and indiscriminate solicitation practices' (Grudniewicz, 2019). The definition sustains the existing normative assumptions. While the participants at this summit recognized the limitations of the concept, they agreed that 'changing an already established term would likely be confusing to the scientific community' (Cukier *et al*., 2020, p. 4).

Sociological critiques, such as that of Bell (2017) and Allman (2019), also problematize the 'predatory' journal label. For Bell, attention to these publishers' (exaggerated) profits and the supposed 'victimization' of researchers 'is a serious oversimplification of a much more complicated issue' (2017, p. 659). Bell instead suggests that these journals might be viewed as 'parodies', as they blur the lines between 'legitimate' and 'illegitimate' journals. Allman (2019) argues for seeing these journals as redistributing resources, techniques and expertise, and even as a force that can 'disrupt exploitation' (2019, p. 423). As authors, we share this discomfort with the normative academic discourse. We are not alone, and there has been a good deal of critical discussion of the concept of 'predation' in this journal and elsewhere. Our aim is to go beyond critique and counter-critique. Rather than attempt a critical discourse analysis, we felt it was important to systematically review original empirical research on the factors shaping scholarly publishing decisions in what have been characterized as 'predatory' journals.

Beyond ascriptions of scholarly ignorance

Early research studies suggested that those publishing in so-called 'predatory' journals were more likely to be based in the global South, including India, China and various parts of Africa. Shen and Björk (2015) found that, in total, three quarters of the authors in their extensive survey of predatory publications were from Africa and Asia. Xia *et al*. (2015) identified four geographical clusters of 'predatory' publishers (Nigeria, India, the UK and the USA) but also concluded that most were 'young and inexperienced researchers from developing countries' (*ibid*, p. 1406). They went on to suggest that the 'economic and sociocultural conditions in these developing countries have contributed to different patterns of authorship. Xia *et al*. (2015) sought to try and describe these conditions in some depth, but others continue to interpret these practices as the result of academic ignorance and lack of knowledge (Panjikaran & Mathew, 2020). Kingori and Gerrets (2019) question the perceived 'geographies of authenticity' that lie behind these assumptions, suggesting that 'perceptions of what is real or fake' are shaped by Northern attitudes about researchers in the 'Global South' (*ibid*, p. 382). The assumption that so-called 'predatory' publishers solely target early career researchers in the global south is challenged by more recent work. Researchers from all over the world publish in emerging or non-mainstream journals, with one recent study noting that scholars in both India and the USA are substantial contributors to 'predatory' journals' (Cobey, 2017; Cohen *et al*., 2019).

A growing body of research explores the publication motivations and experiences of academic researchers more broadly. This work shows how particular academic cultures and institutional incentives shape publishing decisions. Examples include detailed research into South Africa's system of financial rewards to scholars who publish and its distorting impact on academic cultures (Muller, 2017; Snowball & Shackleton, 2018; Tomaselli, 2018), the tiered payments made to China's scholars for publishing in internationally indexed journals (Xu, 2019), the impact of ranking systems in Brazil (Perlin, Imasato, & Borenstein, 2018), the attitudes of Nigerian scholars to low-cost 'local' journals (Omobowale, Akanle, Adeniran, & Adegboyega, 2014) and Colombian academics' decisions to publish in 'non-mainstream' Spanish-language journals for teaching and personal development purposes (Chavarro, Tang, & Ràfols, 2017).

The purpose of this systematic review is to survey this work, and in so doing to move the scholarly debate on from a normative focus on defining, classifying and judging 'predatory' publishing practices. The review's focus on the evidence about the perspectives of researchers (and also, in two cases, journal editors) puts into question the dominant consensus that 'vulnerable' authors are being exploited and preyed upon by powerful commercial journals. The review summarizes and distils the main findings from this work, and makes a number of recommendations for further research.

METHOD

Scope of the review and search terms

This review, broadly conducted in accordance with PRISMA guidelines, included peer-reviewed papers published in English with a focus on researcher experiences with, or motivations for, publishing in supposedly 'predatory' journals. Scopus, Web of Science, and ProQuest Social Sciences were chosen as the three online databases informing the literature search. We selected the keywords 'predatory' journal*', 'predatory' publish*', 'questionable journal*', 'questionable publish*', 'parod* journal*', and 'parod* publish', which were chosen based on our initial readings of the literature. The search results were then limited to results in English. Although our focus was on peer-reviewed, evidence-based research, we also collated relevant conference papers, book chapters and editorial commentaries that the conversations around 'predatory' publishing in the introductory section of this

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literature review. All searches were completed on 24 April 2020. See below for the search string:

> TITLE-ABS-KEY ('predatory' journal*' OR 'predatory' publish*' OR 'questionable journal*' OR 'questionable publish*' OR 'parod* journal*' OR 'parod* publish') AND (LIMIT-TO (LANGUAGE, 'English'))

Article filtering

Using this search string across the three databases resulted in 601 papers from SCOPUS, 526 papers from Web of Science, and 168 from Proquest. These were imported into Mendeley with most duplicates automatically removed for a total of 810 papers. A manual check for additional duplicates resulted in 749 unduplicated results. We then did an initial filtering of irrelevant papers based on title, excluding those clearly outside the scope of this review – for instance, papers on journalism, politics, science, or medicine – which resulted in 684 papers. In the second round of filtering, abstracts were read and either included or excluded based on the following criteria, resulting in 18 remaining papers:

Included:

- Papers focusing on 'predatory' publishing or open access with mention of 'predatory' publishing; *and*
- Papers exploring researchers' motivations for choosing to publish in 'predatory' journals

Excluded:

- Papers examining awareness of 'predatory' publishing but not reasons for choosing to publish in such journals
- Papers that are not evidence-based (e.g. commentaries, editorials)

In the third round of filtering the 18 papers were read in full. It became clear that not all focused on experiences of reasons for publishing in 'predatory' journals. Three focused on publishing in, or knowledge of, open access journals and made only marginal mention of 'predatory' journals in terms of awareness. One was a literature review rather than empirical research. These were eliminated to leave a total of 14 remaining papers. In reading these 18 papers, we also took note of other potentially relevant studies included in the reference lists and not captured in the initial literature search (9 papers) and downloaded and read these. Of the nine, only one was relevant. This left a result of 15 papers. Finally, an additional paper that appeared in our background reading but was not captured in the literature search as it used the term 'non-mainstream' as a synonym for 'predatory', was included, for a final total of 16 papers. Please see Fig. 1 for an illustration of the article filtering process and Table 1 summarising the characteristics of the 16 papers.

The final 16 papers were then read, discussed and tabulated by both authors. They analysed and compared the findings of each study, focusing on knowledge about the publishing process and the key factors underlying an individual researcher's decision to publish their work.

In addition, editorials and op-eds were identified and quantified within the initial unduplicated results in order to understand the composition of the literature on 'predatory' publishing. This category included editorial notes and statements on 'predatory' publishing, opinions and commentaries, and news articles in publications like *Times Higher Education* and *Nature* reporting on 'predatory' publishing.

Findings and emerging insights

More than half (394; 57%) of the 686 title-filtered results on 'predatory' publishing consisted of brief commentaries/editorials in natural/medical science journals describing 'predatory' publishing and advising authors on how to avoid such journals. Common phrases in these publications included 'beware', 'what you need to know', 'threat', 'caution', and 'problem'. In general, these publications were found in journals in the STEM fields (particularly natural, biomedical, and engineering disciplines) as well as library science or publishing journals; there were very few results from social science or humanities. This demonstrates how the discourse around so-called 'predatory' publishing is perpetuated across the sciences, as well as the potential for a conflict of interest, given the gatekeeping role played by established journals.

While no time restrictions were set in conducting the literature search, all 686 title-filtered papers on 'predatory' publishing were published after 2011. This shows that a whole new field of knowledge was opened up by Beall, as the term was simply not used before 2011. Most of the existing empirical studies tended to assess the prevalence of so-called 'predatory' journals or citations of 'predatory' journals in a particular field, or the extent of overlap between journals on black and whitelists, and how these lists have changed over time.

This remainder of this section begins with an overview of the included papers and their characteristics, including the methodologies they employed. It then discusses the main findings, which are grouped into four categories: (1) motivations: institutional and national contexts, (2) knowledge of academic publishing practices, (3) editors, and (4) conceptualizing 'predatory' publishing.

The final review corpus of 16 includes 10 papers published in the fields of librarianship and scholarly publishing, as well as 2 from Medicine, 3 from the social sciences, and 1 in the field of research policy. Seven focus on specific national contexts that are on the peripheries of the global science system, including Nigeria (Omobowale *et al*., 2014), Colombia (Chavarro *et al*., 2017), Ghana (Atiso, Kammer, & Bossaller, 2019), India (Seethapathy, Santhosh Kumar, & Hareesha, 2016), Egypt and Saudi Arabia (Shehata & Elgllab, 2018), Turkey (Demir, 2018), and Iran (Ebadi & Zamani, 2018). Eight carried out international online surveys, with a significant number of responses from scholars based in the global South (and especially India) as well as from

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the USA. One focuses solely on the experiences of Danish researchers (Shaghaei *et al*., 2018). This distribution and the findings that emerge demonstrate two things: that more empirical research is being carried out in the global South on the factors shaping academic publishing practices, and that an attention to specific national/regional contexts is important.

Fourteen of the 16 articles carry out surveys of academics, either via e-mail or online. Survey response rates varied significantly, from 54% (Bagues, Sylos-Labini, & Zinovyeva, 2019) down to 10% (Alrawadieh, 2020). In several cases the respondent population is sizeable, perhaps because of the nationality or perceived institutional legitimacy of the researcher team. For example, 480 of the 2,000 India-based scholars approached by Seethapathy *et al.* (2016) completed surveys, as did 580 Italian early career scholars (out of 1,080) approached by Bagues *et al*. (2019).

None of the 16 were assessed and filtered on methodological grounds for potential bias. This would have been difficult given the range of methods. Some draw general conclusions from

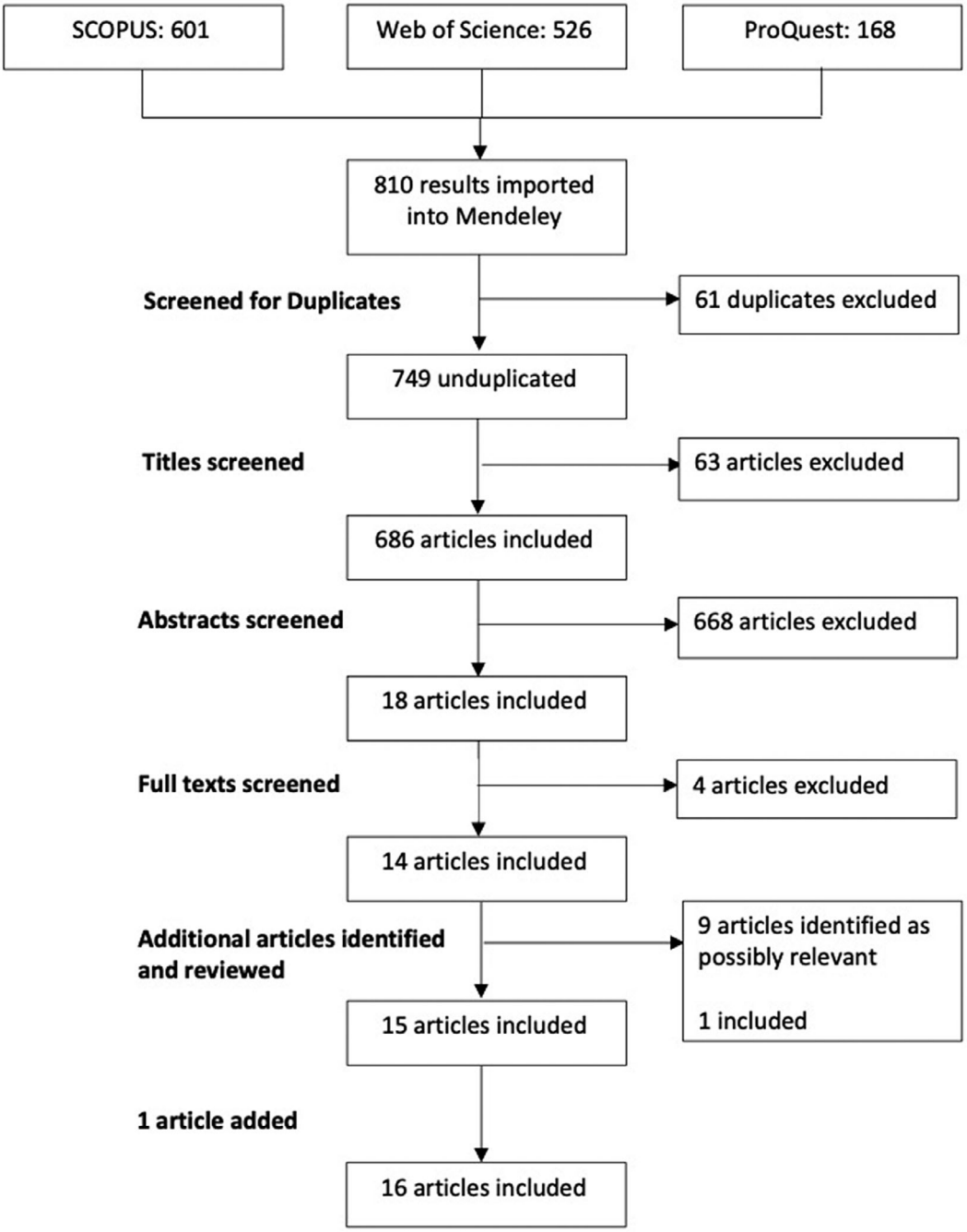

FIGURE 1 Flow chart of article filtering process.

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TABLE 1 Characteristics of included articles

Article	Context	Purpose	Method	Key/relevant findings
Alrawadieh (2020)	Tourism and hospitality discipline	'The current investigation aims to explore tourism and hospitality predatory publishing by identifying its academic market characteristics. The study also identifies the reasons why authors choose to publish their works in predatory journals' (73)	Mixed methods. Used Beall's list to identify 13 tourism and hospitality journals. Any appearing on the DOAJ were excluded. All articles in published in the journals were identified and author information collected. Citations of these papers were also assessed via Google Scholar. An online survey was then sent to all identified authors. Of the 612 e-mails, 96 bounded back and 48 responded. Survey thematically analysed. One hundred prolific authors were also identified and sent a survey on response strategies, and 17 responded.	The countries with the most authors were USA, Nigeria, Taiwan, Malaysia, Turkey, and India, and 59% of the articles were never cited. Although ECRs were more likely to publish in predatory journals, evidence suggested that some experienced researchers also publish in these journals. The survey analysis revealed 4 key reasons for publishing in predatory journals: (1) pressure for publication (for promotion, etc.), (2) lack of awareness, (3) high submission and rejection rates in legitimate journals, and (4) deliberate publishing for the sake of publishing. Most authors (89.6%) claimed they did not know the journal's predatory status when they submitted, and believed they were deceived (27/48). However, 14.6% did not agree that the journal was predatory. Regarding response strategies, raising awareness and reconsidering promotion and tenure requirements were identified as the two key strategies.
Atiso *et al.* (2019)	Ghana	'This paper presents the findings of an exploratory, mixed methods research study that investigates researcher's awareness of predatory publishing practices in Ghana'. (278)	Mixed methods: online survey on awareness of predatory journals, interviews with 5 survey participants + analysis of participants' publication lists.	Most (92%) of participants were aware of predatory publishers but believed awareness could be improved through professional education, and most respondents have received e-mails from predatory journals. About half were aware of Beall's list and 40% knew of the DOAJ. The pressure to publish was identified as a key reason for knowingly publishing in predatory journals, as well as lack of information/training. Analysis of publications showed 15/128 papers were in predatory journals, though there were no predatory publications after 2015. Half of the papers were published in Ghanaian or other African journals, though there were a number of international publications as well.
Bagues *et al.* (2019)	Italy (National Scientific Qualification – NSQ-is a two-stage evaluation required in order to advance to associate and full professor. Criteria include number and quality of publications)	'In this paper, we study the extent of publications in 'predatory'journals using data from Italy and we identify two ways in which authors may benefit from these publications' (463)	Gathered info on all participants in NSQ first cohort and identified publications in journals on Beall's list. Random sample of researchers selected for survey participation, of which 54% (584) responded. Authors then analysed author characteristics and quality of the journals appearing on Beall's list via bibliometric and survey results.	Roughly 5% of NSQ cohort published in a Beall's list journal, and 38% of those journals were indexed in Google Scholar. The survey results reported that 8% of researchers did not receive reviews of their papers, 22% received editing only revisions, and 26% questioned the journal quality. In selecting the journal, 1/3 heard of the journal through colleagues and 27% received e-mail solicitations. Ten percent of researchers offered positive views on the journals. Further, some researchers reported being misled by journals or chose to publish in them despite awareness of their predatory status because 'they expected these publications to receive a positive assessment in some evaluations' (469). Finally, a number of Beall's list journals appear in Scopus and Web of Science, and the Italian ANUVUR list.

TABLE 1 Continued

Article	Context	Purpose	Method	Key/relevant findings
Chavarro *et al.* (2017)	Colombia (increasing publications in both mainstream and non-mainstream journals)	'This article investigates the motivations of researchers to publish in non-mainstream journals and the functions of these journals in scientific communication' (1,667)	Researchers in agricultural sciences, B&M, and chemistry were identified through the CvLAC database of Colombian researchers' CVs. Criteria included membership in research group endorsed by Colciencias certified organization, PhD holder, and a minimum of 5 papers published in last 10 years. Sixty researchers were contacted and 30 interviews conducted (10 per discipline). Interviews analysed via thematic analysis. Publication patterns were analysed by determining number of papers in journals indexed in RedALyC and Scielo (non-mainstream), Scopus, or WoS.	Most researchers published in order to contribute and gain scientific recognition (24) as well as in response to career, monetary, funding and university incentives (20) – though career advancement was linked to mainstream publication. The results suggest that publishing in non-mainstream journals was used for (1) training (practice for publishing in mainstream journals, introduction to academic publishing for PhD students), and (2) bridging and gap-filling (introducing methods and concepts to the local community, generating teaching materials, disseminating research that is overlooked by mainstream journals, etc.) Making material available open access and in Spanish were key rationales, as was the publication of research in areas neglected by mainstream journals.
Cobey *et al.* (2019)	India, USA, and Ethiopia represent largest proportions of participants	'Here, we seek to examine the motivations and experiences of biomedical researchers who have submitted to predatory journals' (2)	Online survey on researchers who published in predatory biomedical journals. Analysed via descriptive statistics and content analysis. Participants identified either by participation in previous study on Beall's list publications, or by having published in predatory journals listed on Beall's list or OMICS. Eighty-eight respondents (14% response rate).	25.9% of participants came from India, 21% from the USA, and 6.2% from Ethiopia. 'When asked about factors that influenced their decision to submit to the selected journal, participants noted academic and professional factors (e.g. publishing pressure, for tenure), factors related to the journal (fit of paper with journal, perception of quality), factors related to the paper published (difficulty in publishing elsewhere due to low originality of the research, previous rejections), desire to disseminate research, invitation from the journal, recommendation from a colleague or personal factors (lack of mentorship, lack of knowledge, personal motivations to publish). In addition to general publishing pressure, seven respondents (8.5%) noted that they had to publish as part of degree requirements or did so to support the CV of a student' (4). Notably, most researchers believed they received substantial feedback from the journals.

TABLE 1 Continued

Article	Context	Purpose	Method	Key/relevant findings
Cohen *et al.* (2019)	Participants from 54 countries, most significantly India and the USA	'Our objective was to understand the motivation of authors in sending their work to potentially predatory journals. Moreover, we aimed to understand the perspective of journal editors at journals publicly cited as potentially predatory'. (2)	350 publishers randomly selected from Beall's list. Biomedical journals included while those appearing in DOAJ, OASPA, and USA National Library of Medicine were excluded. The most recent article published by each journal was selected and author and editor information recorded. Surveys were sent to authors and editors with editor response rate of 6.5% and author response rate of 18.9%.	Authors came from 54 countries, with India (23.3%) and the USA (13.6%) as most significant contributors. Motivations for choosing the particular journal included open access, solicitation, and affordability. Roughly 30% of authors would describe the journal as predatory and 87.9% would not publish again in the journal. Editors came from India (40%) and the USA (20%), as well as a number of other countries. Notably, '40% of editors (17/43) who responded were not aware that they were listed as an editor for the particular journal in question' (6) and nearly all other editors did not believe their journal was predatory.
Demir (2018)	Turkey ('researchers must publish at least one article in journals indexed in international indices' (1,304) and some PhDs are required to publish before graduation)	'This study aims to investigate who mostly publishes in PFJs and what their reasons are based on a particular subset of the participants (Turkish researchers only)' (1,297)	Sequential explanatory mixed methods: identified 832 predatory journals from Beall's list and checked the domain of each journal, classifying each as developed or developing based on GPD. Editor locations and articles published in the journals in 2017 identified. Authors of articles in Turkey invited to semi-structured interview; qualitative data analysed via inductive, content analysis, and constant comparison.	Most journals (62%) (and editors) located in India, followed by the USA and Turkey; India, Nigeria, and Turkey account for largest number of publications in journals. Interview data revealed that publication requirements for PhDs and in some cases, career advancement, represent significant motivation for choosing predatory journals. Researchers in state universities in Turkey are also paid incentives for publishing in international journals, regardless of predatory status. Other factors include: rejection by indexed journals, emphasis on quantity versus quality in university system, and lack of awareness.
Ebadi and Zamani (2018)	Iran (scientifically productive, promotion often based on quantity of publications without differentiation between legitimate and predatory journals)	'the main objective of this study is to explore the sociopolitical factors that affect the substantial increase in the number of publications in predatory journals among Iranian higher education students' (6)	Mixed methods: Likert-scale questionnaire, results statistically and qualitatively analysed through critical frame. Participants: 52 Iranian graduate students.	Almost all participants needed to publish in order to defend thesis. 'Of the individuals, 59.7% admitted that they were forced to publish articles on the part of their professors that sometimes led them to plagiarize and write a wishy-washy paper to submit and receive the term grade' (8). Supervisors thus perpetuated publish or perish pressure (symbolic violence). Participants identified high impact factor, quick publication, and low fees as most important qualities of journals, and those who published in predatory journals chose to due to fast publication, superficial peer review and low fees. Further, most universities do not provide enough support for research but do link promotion to publishing history.

TABLE 1 Continued

Article	Context	Purpose	Method	Key/relevant findings
Kurt (2018)	Participants from various counties, particularly in Africa and Asia	'This study examines the reasons why authors publish in predatory journals' (143)	Grounded theory. Authors randomly selected 50 journals from Beall's list. Three hundred articles, 6 per journal, were randomly selected and contact info obtained. Authors were then contacted via e-mail to fill out survey (9 open-ended, 1 multiple choice). Ninety-six responded. Qualitative analysis for categories and sub-categories, then to identify themes.	Majority (almost 80%) of authors came from 10 countries, including India, Pakistan, Turkey, and China. Four themes emerged on reasons for publishing in predatory journals: social identity threat (sense of not belonging, poor English skills, assumption that Western journals would not be interested, etc.), unawareness (70% unaware they published in predatory journals), high pressure, and lack of research proficiency (feeling that research skills were lacking in part due to lack of resources and info).
Oermann *et al.* (2016)	Nursing discipline, though majority of respondents from India and USA	'The purpose of this study was to identify predatory journals in nursing and describe characteristics of those journals and articles published in them, including the APCs, peer review and publication processes, and editors and editorial boards. In addition, a survey of authors, reviewers, and editors revealed more about their experiences with their affiliated journals' (625)	Nursing journals from Beall's list were selected, and any appearing on DOAJ were removed. A form based on Beall's list criteria was used to first evaluate journal websites. Next, three surveys were developed for editors, reviewers, and authors, purposely selected from the identified journals. Four out of 19 authors, 4 out of 12 reviewers, and 4 out of 8 editors responded.	Most authors and editors were from India and the USA. Reasons authors selected journals included e-mail invitations, familiarity with the journal, and prior (pre-predatory) reputation. All authors reported peer review of 'average' quality with publication time ranging from 1 to 3 months. Two of the four reviewers were not aware they were listed as reviewers for the journal, but the other two were satisfied with the reviewing process. All four editors were aware that they were listed as editors and were selected through a review of their experiences.
Omobowale *et al.* (2014)	Nigeria (publishing often in local journals, difficulty accessing indexed journals, pressure to publish internationally)	'The primary focus of this article is the context of foreign paid publishing in Nigeria as a dimension of peripheral scholarship and academic dependency' (668)	In-depth interviews with 30 academics in social sciences/humanities and science, and 8 key informant interviews. Data was analysed via content analysis.	'Specifically, the spread of patronage has continued to be bolstered due to four primary reasons: first, previous successful utilization by academics of such sub-standard paid-for foreign journals to achieve promotion; second, the desire of 'academics' who are 'weak' in empirical traditions to have rapid promotion; third, sheer ignorance on the part of prospective authors about the status of sub-standard foreign paid journals; and fourth, the acceptance of these pay-to-publish international journals without adequate scrutiny by the A&PCs' (670–71). Some of the excerpts also suggest a spectrum of sub-standard paid-for journals.

TABLE 1 Continued

Article	Context	Purpose	Method	Key/relevant findings
Salehi, Soltani, Tamleh, and Teimournezhad (2020)	Does not specify, but results show that majority of participants were from Asia and Africa	'Our study hopes to provide new information on the practices of predatory journals, especially their peer review process and their methods of communication with the authors. We also hoped to investigate authors' incentives for publishing in them' (90)	3,000 authors were identified who had published in journals listed on Beall's list. Eighty participated. Participants were sent questions via e-mail, and responses for each question were analysed via thematic analysis, then descriptive statistics to assess frequency of categories.	Most participants found journals through e-mails and internet searches. In selecting a journal, journal name was important, and 43.75% of participants 'believed the journals had a good reputation' (91). About half of participants published due to PhD or job requirements, and the key reasons they chose to publish in the relevant predatory journal was fast publication, low coast, and good feedback. In fact 35% thought they had good/excellent peer review, and 70% said 'there was acceptable feedback and understanding of their work or field of study' (93). And many were happy with the selected journal.
Seethapathy *et al.* (2016)	India (increasing publications but also large contributor to predatory journals)	'The specific objectives of the present study are: (1) To estimate which category of educational and research institutes predominately publishes in predatory OA journals in India. (2) To understand whether academicians in India are aware of predatory journals and what motivates them to publish in such poor-quality predatory journals'. (1,760)	Selected 3,300 articles from 350 journals on Beall's list and extracted author contact info, journal info, etc. Created list of all Indian HEIs and classified them by type of institute; did it with research institutes and assigned authors to different categories based on affiliation. Online questionnaire sent to 2,000 authors and 480 responded.	Majority of research in national research centres and several central and state universities. However, private, government colleges, and other 'second-level' institutes contributed to 51% of predatory publications, some of which were apparently funded by research grants. Questionnaire results show that 57% of participants were unaware of predatory journals, and 20% agree they knowingly published in such journals. Pressure to publish was major reason for choosing predatory journals, supported by many institutional guidelines that emphasize quantity over quality.
Shaghaei *et al.* (2018)	Denmark (Southern Denmark University – high ranking, emphasis on quality vs. quantity, researchers may use the Bibliometric Research Indicator to choose journals, which is also used by the state to allocate funding)	'The purpose of this paper is to identify reasons why experienced researchers from the developed world publish in predatory journals' (3)	Identified 31 researchers at Denmark university who had published in possibly predatory journals (Beall's list) in 2015–2016. Researchers invited to interviews via e-mail; six responded.	Some researchers were unaware of the possible predatory status of the journals, while others weighed quick publication and previous rejections against fees. Two participants were enticed by supposed high impact factors and journal's appearance on Danish BFI list. The researchers' experience with the journals ranged from having to submit corrections to no feedback and minimal revision. In choosing journals, researchers considered readership, Open Access (wider audience, collaboration), and speed of publishing process, particularly for junior researchers under pressure to find jobs.

TABLE 1 Continued

Article	Context	Purpose	Method	Key/relevant findings
Shehata and Elgllab (2018)	Egypt, Saudi Arabia (Arab publication decreasing while Egypt increasing international outputs, promotion prioritizes local publications, and sometimes co-authorship is discouraged)	'the study focuses on investigating the reasons that motivate Arab scholars to publish in predatory journals. The study also explores which Arab countries have authors who publish in predatory journals and scholars with awareness of predatory journals' (222–23)	Mixed methods–questionnaire (109 participants) + interviews with 32 participants from Egypt who had published in journals mentioned within Beall's list.	Results suggest that most participants appear unaware of predatory journals and are used to pay to publish. In selecting Arabic journals, decisions were based on journal rank assigned by promotion board, but English journals selected for publishing cost and speed. Further, 'interviews revealed that many participants tried to publish in indexed journals. However, the success rate in publishing was very low, which led them to search for an easier alternative to publish' (228). Most participants were happy with journal choices, so long as the promotion board accepted them.
Yeoh, Cazan, Zaib, Muss, and Jacic (2017)	Developing Asian countries and Europe	'This study reports on the experiences of researchers in publishing their research papers, their encounters with these questionable journals, and their perceptions on them, and we will focus on how the respondents manage to navigate through the challenges of predatory publishing' (56)	Questionnaire (open-ended) sent to researchers in Asia and Europe (15 participants each) who had published in journals listed by Beall. Questionnaire was developed by the authors (three European, two Asian) based on their own experiences and research in predatory publishing.	10 participants used black lists and white lists to check journals before publishing, and 15 had published in journals on Beall's list. Participants believed that inexperience and desire to publish quickly were reasons to publish in predatory journals, though most of them had negative notions of these journals, characterizing them as 'fake' and business-oriented. Participants believed institutions needed to spread awareness through creating black and white lists and that researchers need to be more diligent. They also noted that 'personal lack of rigour, finding resources, lack of good journals and their high rejection rates and high fees of genuine open access journals' (64) were reasons why it was difficult to practice 'ethical publishing'.

limited survey response rates, while others offer insightful analyses based on a few in-depth interviews. There may well be weaknesses in their research designs, leading to a risk of biased analysis. Most offer only limited accounts of the particular challenges of doing research in this sensitive area, such as low-response rates, selection bias, or sampling challenges. The experiences of Demir (2018) are telling. Of the 2,310 authors of supposed 'predatory/fake' journals that were approached to participate in a Skype interview, only six agreed: in the end none actually participated. We also learn little about the academic career stage of the respondents (e.g. how many are undergraduate or postgraduate students) and how this might shape what are perceived to be 'questionable' publishing decisions.

Five of the research designs carried out in-depth interviews with academics (Atiso *et al*., 2019; Chavarro *et al*., 2017; Demir, 2018; Omobowale *et al*., 2014; Shaghaei *et al*., 2018), either to supplement surveys or as a stand-alone method. These interview-based designs provide rich empirical insights, allowing for a deeper exploration of the issues facing scholars, and a range of further explanations. Omobowale *et al*. (2014) attend to the political tensions between senior and junior Nigerian scholars around changing publication requirements for promotion. They note the eclipse of local 'unpaid' journals, and suggest that growing expectation to publish in 'international' or what they call 'foreign paid' journals, could defeat efforts to move Nigerian scholarship into the 'global scholarly mainstream' (*ibid*, p. 666). Atiso *et al*. (2019) describe the uncertainty of individual Ghanaian academics about the legitimacy of certain journals, and the importance of mentoring in helping encourage informed publication decisions.

Motivations: Institutional and national contexts

These studies underscore the importance of understanding academic publishing decisions in the light of specific institutional or national incentives and expectations. Several go into detail on the role of incentives (monetary and promotion-based) in shaping publication decisions. In an increasing number of countries, a publication is a necessary condition for the award of the doctoral (and sometimes even Masters) degree. One study points to Iran's requirements that students publish their work in order to graduate (Ebadi & Zamani, 2018), another points to the willingness of Turkish universities to pay their staff for publications (Demir, 2018), while a third describes how the Ghanaian universities make publications a requirements for promotion (Atiso *et al*., 2019). All these papers demonstrate the pressures on early career researchers, be they staff or students.

This pressure to develop a publication record drives journal demand and explains the rise in the volume of published research articles as well as the variability in quality control procedures among journals. The turn to 'international' open access publishers, which often offer low APCs and rapid publication cycles, is a straightforward way of meeting tenure requirements or bolstering a Curriculum Vitae. Respondents to Omobowale *et al*. (2014) describe the politicization of this process. These institutional requirements are partly designed to build research capacity and publication outputs, but can lead to unhealthy distortions and consequences for individual researchers. Decisions are also shaped by funding incentives: there is a growing literature on academic gaming and rent-seeking created by publication subsidies (Tomaselli, 2018; Mouton & Valentine, 2017; Muller, 2017). These are some of the consequences of being largely excluded from a publication system a dominated by the disciplinary interests of academics based in the global North.

Many of the 16 articles focus on the particular publication challenges faced by researchers in 'emerging' research universities (Bawa, 2009) or countries on the margins of the 'global science system' (Marginson,). But this phenomenon is not solely a Southern response to geopolitical marginality or the gatekeeping practices of 'Northern' academia (Collyer, 2016). Shaghaei *et al*. (2018) describe how early career researchers in Denmark also felt under similar pressures to publish, and made decisions partly based on the speed of publication, perceptions of impact, OA, and readership, rather than on existing knowledge of a journal or an awareness of its reputation. The challenges of academic precarity and 'impact factor fundamentalism' are shared globally even if the structural inequalities and exclusions are felt much more strongly on the peripheries. This is supported by existing literature on 'mainstream' publishers. Memon (2019) notes that 'predatory' practices also happen in established journals, while Eve and Priego (2017) discuss the harms caused by existing academic publishing cultures.

Knowledge about academic publishing

The papers vary widely in the depth of their analyses of academics' knowledge about the publishing process. Their interpretations partly depend on whether psychological or sociological explanations are favoured. Cohen *et al*. (2019) detect a broad lack of awareness among editors and authors of the concept of so-called 'predatory' publishing. Kurt (2018) suggest that 70% of researchers (mostly from the developing world) were unaware of the concept. Drawing on local knowledge but also local prejudices, Omobowale *et al*. (2014) refer judgementally to the 'sheer ignorance' of some Nigerian authors. Atiso *et al*. (2019), on the other hand, claim that Ghana's academics are aware of the difference between legitimate and so-called 'predatory' journals, but that the latter 'take advantage of scholars' frustrations by offering a quick and easy path to publication (as opposed to the long, tortuous and uncertain journey of traditional publishing)' (*ibid*, p. 279). This could also be understood as a lack of tolerance for the slowness, inequities and unpredictability of peer review in an academic culture already defined by gatekeeping and patronage. Some researchers reported perceptions of themselves as less well trained and resourced, or as conducting research that would not appeal to Western journals. This was exacerbated by their sense of lack of English skills.

Editors

Only two articles investigate the views of editors of journals (Cohen *et al*., 2019; Oermann *et al*., 2016). The former found that

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40% of these editors had no knowledge that their journal was viewed as being of questionable quality, while the latter notes that half of the reviewers surveyed were unaware that their name was even associated with the journals. This suggests that many editorial boards have very limited engagement with the journals that bear their names, especially in the humanities and social sciences. Some are unable to commit the necessary time, while a number of journals have very little editorial direction.

Conceptualizations of 'predatory' publishing

Twelve of the 16 articles used Beall's list of 'predatory' publishers to inform their research design. In each case, the research team started by identifying journals listed as potentially predatory by Beall, and then went on to contact authors of papers published in those journals. This approach makes it difficult for these authors to then question the associated deficit assumptions about individuals' naivety or lack of knowledge. Three papers use the term 'predator' but do not use Beall's listing of journals to inform the survey sample and research design (Omobowale *et al*., 2014; Atiso *et al*., 2019; Ebadi and Zamani, 2019). Only one paper (Chavarro *et al*., 2017) does not use the term at all, referring instead to 'non-mainstream' publishing.

The three studies published in social science journals all used their interview findings to develop a more critical conceptualization of the power relations at work. Ebadi and Zamani (2018) focus on the 'symbolic violence' of supervisors, while Omobowale *et al*. (2014) deploy the concept of academic dependency (Alatas, 2003) to explain the rise of what they call 'foreign paid scholarship'. Chavarro *et al*. (2017) offer a rich discussion of the way 'non-mainstream' publishing serves an important role within the Colombian context. Their paper is unique in making a positive case for these alternative publishing cultures, particularly in applied areas such as agricultural science, where locally relevant knowledge is so key. Their respondents point to these publications as having a training function, giving PhD students an opportunity to publish their work, and providing a 'gap-filling' role by disseminating knowledge via Open Access, Spanish-language publications. These publications were often used for teaching, or by scholars unable to read in English or access mainstream journals behind publisher paywalls. Chavarro *et al*. (2017) also provide an important alternative perspective on how 'non-mainstream' publications serve the contextual needs of a national research communities, and 'illuminate the knowledge neglected by universalistic research evaluations in other marginalised or "peripheral" contexts' (*ibid*, p. 1678). Indeed, their use of the term 'non-mainstream' itself might be viewed as a way of reframing how such journals can serve positive roles within a research community.

Summary

This corpus of 16 articles offers a rich set of empirical cases that support more general theorizations of knowledge flows within a global knowledge system (Collyer, 2016; Kieńć, 2017; Sidaway, 2016). Kieńć (2017) suggests that there may indeed be two publishing landscapes, driven by the structural inequalities within global science, with scholars in 'emerging' knowledge systems more likely to publish Open Access. Collyer (2017) points to two possible consequences of the 'embedding' of boundaries of difference between 'Southern' and 'Northern' knowledge: either greater visibility and opportunities for Southern critiques of Northern knowledge, or an increasingly introverted 'Northern' academia.

LIMITATIONS

The review has several limitations. First, it was not possible to include non-anglophone research literature within the review. There is, for example, a Chinese literature on what are called 'junk' journals. A fuller study would need to review the non-Anglophone literature on the subject, given that the phenomenon is partly the result of the gatekeeping by global North journals. It is also possible that other terms are being used instead of 'predatory', such as 'emerging', 'marginal' or 'non-mainstream'. These search terms were not included in the original literature search, and this may have meant the review overlooked potentially relevant articles. However, subsequent search using 'pseudo' and 'hijacked' journals in Scopus revealed 40 further articles, none of which were relevant, being primarily cautionary editorials. Further, as previously acknowledged, we were unable to assess methodologically assess the included papers for risk of bias.

A final challenge for the review was the value-laden connotations of academic vulnerability conveyed by the term 'predatory publisher'. In some articles this led to a contradiction between their initial conceptualization of 'predation' and their empirical findings. However, a study's adoption of the predatory term does not necessarily reflect the views or values of authors given the term's widespread adoption within the research community. We also brought our own positionality to this research, and knew we needed to be explicit about our views about the normative values connoted by the concept. There is a role for empirical research in this area adopting a more self-reflective and less judgemental position about the factors shaping publishing decisions.

CONCLUSION

The results of this systematic review are revealing. They demonstrate how few empirical studies have explored the factors shaping authors' motivations for publishing in so-called 'predatory' journals. At the same time, the number of academic commentaries condemning 'predatory' publishing continues to grow. Consistent with prior reviews (Cobey *et al*., 2019), our initial set of 749 papers included more than 350 papers (57% of the total) that were commentaries and editorials. These tend to perpetuate a discourse of caution and fear, warning that so-called 'predatory' journals are deceptive, exploit inexperienced researchers and publish poor-quality research.

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The corpus of 16 papers allows a rich comparative analysis of the different institutional environments shaping academic practice on the peripheries of the global science system. By attending to local geographical and institutional contexts, and drawing on the authors' own knowledge of these university cultures, the 16 articles offer a complex portrait of the publication incentives and pressures on individuals, and the ways in which 'emerging' (Meneghini, 2012) or 'non-mainstream' (Chavarro *et al*., 2017) journals play a valuable role for knowledge production and dissemination.

Read comparatively, the studies offer rich insight into the considerations taken into account by researchers in choosing where and how to publish. These include previous experiences of rejection, finances, knowledge of the field, career requirements, and other contextual considerations. Publishing decisions need to be understood less as the result of individual predilections than as situated within a system of incentives, pressures and expectations.

The empirical evidence summarized here suggests that many academics knowingly turn to 'non-mainstream' journals to advance their careers, cognisant of the challenges they face (English language proficiency, slow publication cycles, a lack of conceptual capital, 'Northern' disciplinary gatekeeping) when publishing within existing journals. Sidaway points to the growth in these journals as directly related to 'issues of hegemony' and the 'uneven geographies of power' (Sidaway, 2016, p. 391). One reading is that these alternative journals may serve as increasingly important and effective outlets for research within an emerging and increasingly diverse global knowledge ecosystem. The disturbing alternative, as Collyer (2016, p. 69) notes, is two separate publishing circuits, leading knowledge produced in the global South to be 'systematically marginalised, dismissed, under-valued or simply not made accessible to other researchers'.

This review demonstrates the importance of conducting research that uses empirical findings and data to develop new conceptual understandings and explanations of academic publishing practices. It signals the importance of moving beyond deficit theories of academic 'ignorance' in this area, and of developing more holistic analyses of academic practice within institutional contexts and environments, as well as approaches the acknowledge the asymmetric circulation of knowledge within the global science system. It highlights a number of areas for further research:

- Comparative surveys and interviews with scholars in different national systems (especially those on the margins of the global science system) who have chosen to publish in non-mainstream journals. This would help to understand the range of pressures, expectations and incentives placed on individual scholars, and how these might change over time or over the course of an academic career. A Masters student who needs a publication quickly in order to graduate or apply for an academic post might make a different choice at a subsequent career stage. There is insufficient attention to the processual dimensions of publishing across an academic career and the timing of individual choices in most accounts of predation.
- Interviews with journal publishers and editors offer an invaluable complement to the perspectives of individual academics. Their views allow a more nuanced understanding of the symbiotic relationship between journals, authors, readers and publishers, and supplement attempts to classify and accredit journals based on supposedly objective criteria (e.g. numbers of articles, regularity of publication, level of peer review etc.).
- Extended country-specific case studies would facilitate a comparative mapping of evolving publication choices and practices in the context of institutional and national incentives and regulatory environments. Individual choices and publication trends are often driven by university regulations or requirements, such as making publication a requirement for graduation, or the introduction of a list of accredited journals.
- Longitudinal studies that tracked journal quality and academic reputation over time would complement snapshot assessments of quality. Many journals struggle initially and may be forced to publish poor-quality work, until they have a track record that allows them to apply for accreditation, to be indexed or included on whitelists. Funding support, visibility and institutional support all shape these reputational journeys. Again, detailed case studies would offer further insight.
- The development of conceptual frameworks that go beyond 'dependency theory' explanations to understand the complex transnational flows of academic knowledge and how these link to local institutional contexts and academic relationships to shape the academic career.

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