THE PREDATORY PARADOX

ETHICS, POLITICS, AND PRACTICES IN CONTEMPORARY SCHOLARLY PUBLISHING

AMY KOERBER, JESSE C. STARKEY,
KARIN ARDON-DRYER, R. GLENN CUMMINS,
LYOMBE EKO, AND KERK F. KEE

Cover image: Trinity College Library, Dublin, Ireland. Photo by Lyombe Eko (2021), CC BY-NC. Cover design: Jeevanjot Kaur Nagpal

Introduction

Academic life is a lot like a reality television show. In reality television, we get an insider's perspective on people interacting with each other, working toward a goal that may or may not be seen as important to anyone other than the contestants in the show. Sometimes these contestants collaborate with each other, and they often compete against each other. Quite frequently, they do all they can to make sure someone else loses so they can win. The contest is subject to rules that should be followed but do not always have to be followed. For those who accumulate the right allies, such rules can also become contingent on the whims of those who wield the power to enforce them. When it comes time to make a final judgment about the outcome of the contest, there is a vote — either anonymous or not — with results that can be impacted by preexisting alliances, political motivations, and manipulation of the process. In both reality television and academic knowledge production, we have those who participate in the process (contestants and researchers), we have those who profit from the process (producers and publishers), and we have consumers (viewers and readers). In short, reality television exposes all the messiness, beauty, complexity, elegance, and ugliness that is inherent in any endeavor that involves multiple human beings — academic life being no exception.

Most of us involved in the pursuit of scholarly knowledge — whether as publishing professionals, teachers, researchers, editors, or some other professional title — aim to produce knowledge for the betterment of society. We tend to conceive our motives as loftier than those at play in reality television. In opening with this analogy, our intention is not to deny any of these loftier motives. We do not mean to imply that we should trust academic knowledge any less than we ever have; nor is it our intention to diminish bedrock institutions such as tenure and promotion and peer review, or to devalue these mechanisms in any way.

Rather, opening with an analogy to reality television is meant to open some new perspectives on the 'ivory tower' that we often idealize as the place where scholarly knowledge is produced. It is a reminder that scholarly communication is not, and never has been, a pure, unfettered product of scientific advancement or progress. Academic knowledge is created by humans and is, therefore, fraught with the same uncertainties, idiosyncrasies, complexities, and nuances as any other human endeavor. And like any other human endeavor, academic knowledge production is to some extent a game, or contest.

The Predatory Paradox: Ethics, Politics, and Practices in Contemporary Scholarly Publishing is an open access book designed to prepare researchers, academic administrators, publishing professionals, and other stakeholders to be ethical and successful players in this game. Our premise in this book is that to succeed, these stakeholders need to know how to navigate a rapidly evolving landscape that presents more options than ever before, but also a greater number and type of pitfalls. The knowledge and expertise that is offered in this book is meant to benefit not only these individuals but all of us who live in a society that depends on scholarly communication to continue as a successful enterprise for generations to come.

Although the game of academic knowledge production is continually evolving in new and interesting ways, the game itself is nothing new. At least as long as the scientific method has been in place as a trusted means for producing knowledge, we can safely say this game has existed. It existed, for example, in 1953 when James D. Watson and Francis H.C. Crick (Watson and Crick 1953) published an article in *Nature* that established their double-helix model of DNA as the one that would be accepted as scientific fact for generations to come. In so doing, Watson and Crick won a big victory over other 'contestants' in the game, including Oswald Avery and two coauthors, who had published a paper nine years earlier, in which they were the first to argue for the existence of DNA (Avery and others 1944). At the time it was published, Avery and his coauthors' paper received far less attention than Watson and Crick's. However, it is not so much that Watson and Crick 'won the game' because their science was superior to Avery's. Rather, a complex array of factors was at play, including timing, or *kairos*. As explained by Carolyn R. Miller (1994), Avery and colleagues' article was written

in a style of 'cautious skepticism' (p. 311). Although this may be one reason why it did not receive as much attention as Watson and Crick's, the explanation is not quite this simple. Rather, Miller (1994) asserts, the more cautious style used in Avery and colleagues' article was necessary because they were presenting an idea that the scientific community was not yet ready to accept when their article was published: the idea that DNA was something other than a protein. So even though Avery and his colleagues' findings were widely accepted many years later, they received little attention when they were published in 1944. In terms more familiar to us today, we might say Avery and his colleagues' article had far less *impact* than the article published nine years later by Watson and Crick. However, as is often the case today, the lesser impact of Avery and his colleagues' findings had little to do with the quality of their science and much to do with a wide array of other factors beyond the scientists' immediate control — factors such as audience reception, historical context, and timing.

Of course, many of the rules have changed since Watson and Crick published their double-helix model of DNA in 1953, and we now have a wider variety of media available for disseminating scientific knowledge. However, we are still playing this game today, almost a century later. For example, researchers across the globe have been competing to find answers to the many unknowns that the scientific community faces regarding COVID-19 — disagreeing, sometimes vehemently, on the level and duration of immunity offered by various vaccines, the length of immunity after vaccination or infection with the virus, the value of face masks as a protective measure, and many other topics. Someday we will be able to look back and identify winners and losers in this game, but for now all we can do is be grateful that the game exists; without it, we would have little hope.

Scholarly publishing has long been a crucial component of this game — scientific knowledge that is not published cannot be said to exist. However, as this book will explore, the mechanisms that regulate the production and sharing of scientific knowledge are facing new threats. Specifically, the emergence of unethical and sometimes illegal variants of scholarly publishing — such as so-called 'predatory publishing' — are posing new problems for the integrity of the scholarly research and publication paradigm.

In setting out to provide the skills and expertise that researchers and other stakeholders need to succeed in today's academy, this book extends the work that individuals and organizations have already undertaken to offer guidance on so-called 'predatory publishing' and related phenomena that are emerging as potential threats to the integrity of scholarly communication. In addition to addressing the historical, political, and economic aspects of scholarly publishing that have culminated in the present situation, each chapter also offers practical advice on how to navigate this complex and contradictory situation. Based on National Science Foundation-funded research[1] that has included interviews, case studies, legal and policy analysis, and content analysis, *The Predatory Paradox* aims to provide readers with a comprehensive, systematic, and accessible resource on predatory publishing and the academic trends associated with it.

What is Predatory Publishing?

A relatively recent addition to the game of academic publishing, predatory publishers and journals first caught the attention of the scientific community in 2008 when Jeffrey Beall, a librarian at the University of Colorado-Denver, coined the term to characterize a small number of open access journals and publishers that he included on a 'blacklist'[2] he had published on his website. Along with its many benefits, the transition to open access has also introduced new practices, such as the 'article processing charge' or APC, whereby the cost of an article's publication is shifted partially or fully to authors to enable open access via the publisher. Beall (2012) used the word *predatory* to characterize journals and publishers that he believed were exploiting this publishing model to accept a greater number of articles, purely for the sake of increasing profits, often without adequate peer review. He started his list to help scholarly authors make informed decisions in the context of this rapidly changing publishing landscape.

---

1 Award#1926348.https://www.nsf.gov/awardsearch/showAward?AWD_ID=1926348
2 'Blacklist' was the term that Beall used, and it was widely used at the time. In recent years, the terminology has changed to avoid the racial symbolism implied by the terms 'black' and 'white' (Bisaccio, 2020).

When it first appeared in 2008, Beall's list included a handful of journals and publishers that he identified as predatory. However, as the list grew, so did the controversy that surrounded it. The controversy flared when Beall [@Jeffrey_Beall] tweeted on 18 October 2015, that he had added a journal called *Frontiers* to his list of predatory journals (Beall 2015). A *Frontiers* associate editor [@Lakens] immediately tweeted back: 'Frontiers being added to Beall's list reveals the big weakness of Beall's list: it's not based on solid data, but on Beall's intuition' (Bloudoff-Indelicato 2015; Crawford 2014; Teixeira da Silva 2020).

Beall took his list offline in 2017, amidst controversy and accusations that it was too reliant on anecdotal evidence and personal judgment (Bloudoff-Indelicato 2015; Crawford 2014). As an indication of the intensity of the controversy that surrounded Beall's list, when he took it offline, he offered the following explanation: 'In January 2017, facing intense pressure from my employer, the University of Colorado Denver, and fearing for my job, I shut down the blog and removed all its content from the blog platform' (Beall 2017: para. 1).

However, many years after the demise of Beall's list, predatory practices continue to be a concern for scholars, policymakers, research funders, and the public. In fact, a report by the National Academies of Sciences, Engineering, and Medicine identified predatory journals as one of the 'new forms of detrimental research practices' that currently threaten research integrity ('Fostering Integrity' 2017: 2). Although most stakeholders agree on the seriousness of this problem, there is widespread disagreement on many issues related to it. For instance, experts disagree on the inherent value of open access publishing as a sustainable publishing model and even on how to define *predatory* (Roberts 2017; Teixeira da Silva and others 2019). Some groups are developing consensus around agreed-upon definitions (Grudniewicz and others 2019; 'Predatory Publishing' 2019), whereas others have argued for abandoning the term altogether and replacing it with another term such as *deceptive* (Anderson 2018).

Some recent books on publishing have paid attention to predatory publishing, often situating it in the context of other twenty-first century trends in scholarly publishing. One is *Gaming the Metrics: Misconduct and Manipulation in Academic Research*, published in 2020 by Massachusetts Institute of Technology Press (Biagioli and Lippman 2020). This edited

collection's focus is the academy's current obsession with metrics such as impact factor that are being used to offer a numeric evaluation of a publication's value independent from considering the quality of its actual content. Predatory publishing is presented as a product of this evaluation system: 'While light-years away from high impact journals like *Science*, *Nature*, or *Cell*, these 'predatory journals' may be simply the other side, or perhaps the bottom, of the same metrics economy' (Biagioli and Lippman 2020: 9). Thus, predatory journals are situated as one of many current practices that, the editors contend, require us to expand our understanding of academic misconduct to account for the many new forms of illegitimate scholarly activity that can occur as researchers and other stakeholders in academic publishing develop new ways to 'game' the system in a 'metrics economy'.

Another book that offers significant coverage of predatory publishing is *Scholarly Communication: What Everyone Needs to Know* (Anderson 2018). This book is intended as a guide for scholarly authors and other audiences who want to understand various aspects of publishing in the present time. The book offers definitions of key terms and concepts that are central to scholarly publishing, as well as some historical coverage to show how current trends and practices have come to exist as we know them today. The author's statement of purpose in the introduction echoes that indicated by the title; he aims to provide coverage of 'things about scholarly communication that everyone (or most people anyway) would benefit from knowing' (Anderson 2018: 1). To a greater extent than most other recent books on scholarly publishing, this author considers predatory publishing part of that content. For example, a chapter titled 'Problems and Controversies in Scholarly Publishing' devotes significant coverage to topics such as 'What is predatory publishing?' and 'What is the difference between predatory publishing and vanity or subsidy publishing?' In a writing style that is clear and accessible, this book succeeds at explaining these basic concepts to a broad audience that extends beyond the academy.

In recent years, two books devoted exclusively to predatory publishing have been published. The first was published by Routledge (Xia 2021). In this book, Xia offers an overview of predatory practices and examines how these practices have impacted scholarly communication. Xia cites Beall (2013) as a source for a definition of predatory publishing as 'an

exploitative business model in the scholarly publishing market that is devised solely for financial gain' (p. 1) and claims that 'predatory publishing has become an epidemic practice over the last two decades' (p. 2). In addition to introducing readers to the various practices that can be considered 'predatory', Xia also summarizes various initiatives underway to combat predatory publishing and provides readers with some advice on how to avoid falling prey.

The second recent book on predatory publishing is Simon Linacre's (2022) open access book published by Against the Grain Media. Linacre says his aim in this book is 'to shed light on the dark arts of predatory journals' (p. 4). He aims to provide both 'contextual information' and 'practical guidance' on predatory publishing. Along these lines, Linacre offers a comprehensive history of the term, an overview of key events such as the origins and demise of Beall's list, and some analysis of key journals that have come to be known as predatory. An important contribution of Linacre's book is his insightful analysis of the different reasons why scholars submit their work to predatory journals — a more complex set of reasons than we might expect. In his final chapters, he also leaves readers with some creative suggestions for moving forward, including steps that individuals can take to avoid falling prey to predatory publishing practices as well as systemic changes we might consider as members of the larger scholarly community.

In *The Predatory Paradox*, we aim to expand on the groundbreaking research of Xia (2021), Linacre (2022), and other authors who have addressed predatory publishing in recent years. We offer a scholarly explication of key terms and concepts that goes beyond the basic introductory explanations that general audiences need to understand scholarly communication, and we offer recommendations to a wide array of stakeholders, including academic authors as well as publishing professionals, academic administrators, policymakers, and science journalists. The recommendations we offer in the book are based on extensive interview research with a wide array of stakeholders in scholarly publishing and on various forms of textual inquiry that we have used to follow up on questions posed by these interviews. Thus, we are equipped in this book to extend the scholarly conversation on predatory publishing in new directions and, hopefully, to set the agenda for future researchers who will investigate this problem for years to

come. Our research has found that any attempt to create a list, or any other mechanism, that makes clear-cut distinctions between journals, publishers, or publishing practices that are predatory and those that are not will be incomplete, subject to dispute, and out-of-date from the moment it is conceptualized. This is partly because of the extent to which predatory publishing is changing and growing every day. In short, we argue in this book, defining *predatory publishing* is far from a simple task. Although some have argued we should abandon the term altogether, in this book we aim to achieve a more robust understanding of the word *predatory* by embracing the many paradoxes — 'contradictory yet interrelated elements that exist simultaneously and persist over time' (Smith and Lewis 2011: 382) — that arise from it. In so doing, we use predatory publishing as a window into the complex and fascinating world that is scholarly publishing in the twenty-first century.

By conducting interviews with forty-eight individuals who are involved in scholarly publishing in various capacities, from multiple disciplines, and a diverse set of geographic locations, we sought to gain a deeper understanding of this term and of the ways in which it impacts diverse stakeholders.[3] From these interviews, we have learned that the term itself, 'predatory publishing', is the product of a desire to find simple solutions and understandings to what is inherently a complex problem.

When authors receive emails inviting them to submit their work to a journal far afield from their own discipline, they often have good reason to suspect that these email solicitations are fraudulent. This can happen, for example, when a communication scholar who conducts research in health communication or science communication publishes articles with titles and key words that turn up in searches to identify potential authors for medical journals. If the editors of a peer-reviewed medical journal invite a communication scholar to submit a research article to their journal, this is clearly fraudulent, and the author is likely not qualified to submit their work to a medical journal. But in many cases, it is far less straightforward.

---

3   Our Texas Data Repository Dataverse includes a table showing participant demographic information. See https://doi.org/10.18738/T8/QUBMLI ('Participant Occupation and Regional Demographics Table').

The Multidisciplinary Digital Publishing Institute (MDPI) presents us with one such case. This publisher was added to Beall's list in 2014 but was removed on 28 October 2015 after a successful appeal by MDPI. However, as explained in a recent blog post by Paolo Crosetto (2021), determining whether MDPI should be considered predatory is not at all straightforward:

> So, is MDPI predatory or not? I think it has elements of both. I would name their methods aggressive rent extracting, rather than predatory. And I also think that their current methods & growth rate are more likely to make them shift towards more predatory over time. (para. 3, original emphasis)

Crosetto goes on to argue that depending on how one views MDPI, they could be seen as world leaders in a new model of academic publishing, or as a quintessential example of how predatory practices can infiltrate commercial publishing on the largest scale possible.

Regardless of which perspective one adopts toward MDPI, the publisher is remarkable for the pace of its growth: they published 36,000 articles in 2017 and 167,000 in 2020 — more than a four-fold increase in only three years. In fact, one recent blog post predicts that MDPI will soon move ahead of Taylor & Francis to become the '4th largest publisher in the world', and that MDPI is already, as of 2019, the largest open access publisher, having overtaken Springer (Petrou 2020). The author of this blog post, Christos Petrou, reports the following response from an interview he conducted with Delia Mihaila, CEO of MDPI, when he asked her about the publisher's remarkable growth and whether they have sacrificed quality of publication for speed and quantity:

> Delia attributes MDPI's fast performance to getting the headcount and task allocation right. She said that large, in-house teams (as many as 70–80 FTEs for one of the large journals) take over the tedious part of the work of the academic editors. The in-house team pushes and negotiates with the other stakeholders (editors, reviewers, authors) to meet strict deadlines as well as possible. Delia said that adhering to such deadlines may sometimes lead to complaints, but MDPI always shows flexibility. She added that ultimately there is common understanding that a rapid process serves everyone's interests.
>
> I asked Delia whether, in addition to working fast, MDPI takes any editorial risks. She said that given its ascent, MDPI is in the spotlight and as result 'we are very, very careful in everything we do, and we must

always have evidence of a rigorous peer review process. Open Access
publishers are always under the suspicion of skipping the peer review
just for the sake of making money. We cannot afford to not conduct the
peer review properly or to act unethically.' (Petrou 2020: 27–28)

Authors like MDPI for their fast turn-around time, and on some markers
of quality, MDPI journals have been successful. For example, seventy-
four of their journals currently have an impact factor, and eighteen of
these have an impact factor above four (Crosetto 2021).

In addition to these business successes, the publisher also emphasizes
the social benefits that their publishing practices offer:

MDPI's focus on offering the best service to the scientific communities
of the world remains unchanged. The past year once again proved that
making research results freely and immediately available to as wide an
audience as possible is of the utmost importance. This strengthened our
efforts and reaffirmed our commitment to serve researchers by delivering
important scientific insights faster than was ever previously possible.
('Annual Report' 2020: 1)

Along these lines, the publisher reports that the 'median time from
submission to first decision remains short, at around three weeks'
('Annual Report' 2020: 1). Even while maintaining this rapid
turnaround time, though, the publisher claims that they uphold the
highest standards of peer review and that 57% of articles submitted in
2020 were rejected.

Despite these successes, MDPI is still subject to intense criticism,
such as that expressed in a blog post titled 'Why not to publish in
"Sustainability" (and you're welcome to share this post') (Fischer
2020). *Sustainability* is one of MDPI's titles, and the author of this blog
post complains about receiving repeated spam emails encouraging
him to submit articles to special issues of the journal or to guest edit a
special issue:

If you do accept to guest edit a special issue, you become one of now more
than 1800 editorial board members (!). (I won't link this to the journal's
website, but you can find that information easily on the journal website.)
Hardly much of an achievement or distinction, given the predatory
process with which the journal recruits people who are willing to run
special issues. (Fischer 2020: para. 3)

What further complicates any effort to assess MDPI is that other publishers who are more well established are starting to mimic the practices that have led to MDPI's growth and success. For example, Springer Nature recently announced its *Discover* journal series, which is intended not only to expand open access options but to offer authors many of the same benefits that have made MDPI so successful in recent years. Specifically, the new series will include 'up to 40 new titles' in various disciplines. Through this initiative, the publisher is promising 'a new streamlined OA publishing experience, extending Springer Nature's commitment to OA by supporting quick access to high quality research to aid the advancement of scientific discovery' ('Springer Nature Continues to Drive OA' 2020: para. 11). This move by Springer reminds us that publishing, even when carried out by an entity not named as 'predatory', can be a commercial endeavor. And publishers — whether 'predatory' or not — do not always operate with purely altruistic motives.

Springer makes some claims about the *Discover* series that suggest the publisher is adopting the same practices that have made MDPI attractive to authors. For example, the Springer Nature Group website claims, 'The series puts the author at the heart of the publication process and aims to publish manuscripts 7–10 weeks from submission — whilst maintaining the high levels of research integrity expected of any Springer Nature title' (para. 2). Putting the author 'at the heart of the publication process' (para. 2) clearly means a promise of fast turnaround times, but the Springer Nature brand is invoked to assure authors that research integrity will be maintained. Emphasizing the benefits to the author is an interesting twist on the typical rationale for open access, which tends to emphasize benefits to the public — suggesting the publisher is, at least in part, motivated by a need to compete with publishers such as MDPI. But it is also worth noting the *Discover* series is adopting open science principles, not just open access: 'The *Discover* series will also seek to address the issue of reproducibility and negative publication bias by introducing Registered Reports (1) across the portfolio for authors conducting hypothesis-driven research' ('Springer Nature Continues to Drive OA' 2020: para. 2).

Sage Open is another example of a publishing initiative adopting strategies that, in many ways, resemble those employed by MDPI. This journal's promotional materials suggest they are trying to revolutionize scholarly publishing. The journal accepts articles from all disciplines. It does not have an editor in the traditional sense; rather, it has an editorial team consisting of section editors with diverse disciplinary backgrounds, university affiliations, and geographic locations. When the journal receives a submission, a section editor assesses the content and determines who would be appropriate to review it, then invites the relevant expert to provide a review. The journal's description as it appears on the website is as follows:

> *Sage Open* is an open access publication from Sage. It publishes peer-reviewed, original research and review articles in an open access format. Articles may span the full spectrum of the social and behavioral sciences and the humanities.
>   *Sage Open* seeks to be the world's premier open access outlet for academic research. As such, unlike traditional journals, *Sage Open* does not limit content due to page budgets or thematic significance. Rather, *Sage Open* evaluates the scientific and research methods of each article for validity and accepts articles solely on the basis of the research. This approach allows readers greater access and gives them the power to determine the significance of each article through article-level usage metrics. Likewise, by not restricting papers to a narrow discipline, *Sage Open* facilitates the discovery of the connections between papers, whether within or between disciplines. ('Journal Description' [n.d]: paras. 1–2).

Thus, one of the serious challenges we face today is how to distinguish legitimate efforts to be innovative in scholarly publishing from those that are fraudulent in one way or another.

The label 'predatory' is the result of a desire to make this distinction a simple one. Labeling some journals, or publishers, as 'predatory' and others as not is closely tied to initiatives such as lists, or checklists, or some other mechanism to sort out the good from the bad. But as we argue in *The Predatory Paradox*, predatory publishing is not a problem that can be addressed through simple solutions such as labels or lists. In short, it is the same set of demands and changes — the increased need for rapid turnaround from submission to acceptance to publication — that have created a situation in which so-called predatory publishing has come to thrive. Herein lies the 'paradox' that is indicated in our title and

is the key word that informs our approach to these complex issues in this book. We refer to the 'predatory paradox' to capture all the nuance and complexity of the current situation in which predatory publishing practices have been able to emerge and flourish. Although many organizations and individuals have attempted to keep Beall's project alive, even after the 2017 demise of his list, it has proven extremely difficult, if not impossible, to succeed at the list approach to solving this problem. In fact, our research suggests it is virtually impossible to distinguish in simple terms between publishers or journals that are 'predatory' and those that are not.

Predatory Publishing Is Not the Only Way to Cheat the System

The rules in the game of scholarly publishing have continually changed and evolved over the centuries. Through this evolution process, many other entities have developed as part of the game. These include peer review, citation metrics, rating systems for journals, rating systems for authors, indexing systems, knowledge-sharing networks, new technologies for publishing and distributing knowledge, and new business models to support scholarly publishing. Among these entities that sustain scholarly publishing, the one that enjoys the most prominence and perhaps the longest history is double-blind peer review. Historians offer different perspectives on the origins of this institution. It was long believed, as asserted in a 1971 article by Harriet Zuckerman and Robert K. Merton, that the origins of peer review could be traced to the origins of modern science itself (Zuckerman and Merton 1971). Specifically, Zuckerman and Merton traced the origins of something resembling peer review to Henry Oldenburg, who served in a capacity that today we would call editor of the *Royal Transactions*, often touted as the first scientific journal.

More recently, however, it has been suggested that the earliest use of referees to evaluate reports of scientific research did not occur until the nineteenth century, and the term 'peer review' was not adopted until the late twentieth century (Baldwin 2019). Of course, the mechanisms and processes through which peer review is conducted have changed dramatically since the practice was first used in a form we would

recognize in the nineteenth century, around the same time that journals were emerging as the primary venue for communicating scientific findings.

Despite this uncertainty about when exactly peer review began, most scholars trained in the modern academy have been taught to recognize this mechanism as the gold standard for assessing the legitimacy and credibility of scientific findings published as journal articles. We might say peer review is one of the most important and well-established elements in the game of scientific knowledge production. And it is quite remarkable that, two centuries later, we are still relying on this seemingly simple practice of vetting scientific findings by sending them to a small number of individuals who are considered experts and asking them to evaluate the findings in a double-blind process, meaning the reviewers do not know the author's identity and vice-versa. And for the most part, these reviews are conducted on a voluntary basis, without any compensation, and without any specific training — it is a task that academic professionals are expected to perform in addition to their regular paid jobs, even though many publishers make a profit from the work.

Nonetheless, as is the case in any game, some players cheat, and this cheating occurs in many forms. In the case of peer review, many 'predatory' journals are accused of cheating by claiming their articles are peer reviewed without actually sending manuscripts out for review. Of course, this can be hard for readers of a journal to detect because in traditional double-blind peer review, it is only the editor and author who see the reviews. But another form of cheating in peer review is one that has been occurring with some frequency even at well-established journals that are believed to have legitimate peer-review processes in place. This form of cheating is called 'fake peer review'. This form of cheating can be conducted in different ways; one of the most common is when journals allow authors to recommend reviewers when they submit their manuscripts. Instead of recommending legitimate reviewers, an author can cheat the system by providing a variety of email addresses that appear to be tied to real experts in the field but are actually owned by the author him or herself. Then when the individual is selected as a reviewer, the author writes their own review, which is entirely positive, and submits it from the fake email account. It might seem unbelievable

that an author could get away with this fraudulent behavior, but it is quite common. In fact, in 2017, the publisher Springer Nature retracted 107 articles because of fake peer review (Gao and Zhou 2017). As this example illustrates, the system can be manipulated and players can succeed at cheating, even when we are dealing with the seemingly trustworthy publishing entities; in this case, cheaters were successful at one of the most prestigious scientific journals in existence. This phenomenon appears to have become more common in recent years, with fifteen percent of retractions reported by Retraction Watch since 2012 attributed to fake peer review (Kaplan 2015).

Another means of cheating the system is that special issues can be exploited to publish articles without adequate vetting. Again, this form of cheating is reportedly occurring even at well-established journals. For example, a scam such as this occurred recently at a journal published by Springer Nature, *Journal of Nanoparticle Research*. In this case, the journal editors had received a special-issue proposal from a team of people posing as 'eminent scientists' (Pinna and others 2020). The proposal was apparently well written enough to be accepted as a special issue, and for that issue, the editorial process was entirely turned over to the guest editors. It was only after some articles were accepted and published that the editorial staff at the journal started questioning whether peer review had actually occurred, based on the low quality of the articles. As it turned out, the guest editors had not sent any of the submissions to peer reviewers and had instead accepted articles and moved them quickly through to publication, without any vetting process ('Multiple #3 – Issue 31' 2021). The editors published their account of what happened in December 2020, referring to the journal as 'victim of an organized rogue editor network' (Pinna and others 2020). In this account, the editors go to great lengths in describing the process through which they received and vetted this special issue proposal, ultimately determining it was just the kind of timely topic on which they had been seeking special issues. Thus, they turned over editorial control of that issue to the guest editors. It was not until several months later that they noticed this issue was receiving an unusually large number of submissions — which they initially thought to be a good sign — but when they looked more closely, in their words, 'we rapidly noted that most of the manuscripts were of a low quality and/or did not fit with the topic of the special issue' (p. 375).

They go on to report that they 'acted immediately, but it was already too late because 19 manuscripts among the 80 submissions had already been accepted and/or published' (p. 375). They then conducted an internal investigation and discovered the whole effort had been a complex hoax in which the scam artists had created fake email addresses that looked like they were from real university accounts, all with the goal of creating a special issue that allowed a significant number of articles to get published in a highly prestigious scientific journal without undergoing peer review. The editors provide the following account for their failure to notice this when the special issue was first submitted: 'Have we been careless? Probably, but who would have thought scientists would go to that extent, i.e., to organize a whole rogue network and propose a sound and interesting special issue in a scientific journal, just to get a few articles published?' (Pinna and others 2020: 375). They conclude their statement by connecting this particular scam special issue to a larger set of problems in scientific research: the fact that instances of scientific misconduct like this one are becoming more frequent because of the exponential growth in the number of scientific articles published, which is, in turn, an effect of growing pressure on researchers to publish ever-increasing quantities of research, creating a situation in which it is hard for anyone to find time to stop and vet the quality of published work.

As these examples illustrate, every game has rules and systems in place that can be manipulated by those who wish to do so for personal gain or other reasons. Scholarly publishing is no different, and predatory publishing is best understood as one of the many ways in which the system can be manipulated. We are also seeing endless new varieties of ways in which legitimate publishing models can be exploited as those who intend to do so find new ways to mimic these processes for their own personal and financial gain. For example, in 'hijacked journals', cybercriminals literally 'hijack' a prestigious academic journal, taking its name, claiming to be editors, starting a false website, and then sending spam emails to authors encouraging them to submit and pay an author's fee (Asadi and others 2017; Shari and others 2018).

But, again, it is not as simple as it seems. The motivations and desires of those who have manipulated the system are not as simple as the term *predatory* might imply. It might suggest that this is a system where we can clearly identify who is the predator and who is

the prey. It might imply that we have a limited number of fraudulent publishing companies in shady offices in remote locations, and they are sending out solicitation emails to naïve, unsuspecting authors who are so desperate to get their scholarship published in peer-reviewed outlets that they gladly pay a publication fee in exchange for a rapid peer-review turnaround, quick acceptance, and quick publication. But it is not that simple or straightforward. Firstly, a growing number of legitimate, well-trusted journals are charging author fees to publish articles open access. For some journals, this is the publishing model in place for every article they publish. For others, open access publishing is offered as an option for those authors who are willing and able to pay a publication fee. In both models, there is no getting around the fact that authors are, in a sense, customers, and thus, it makes sense for journals to solicit submissions from them. In fact, because commercial scholarly publishing is a business, and the number of journals in existence is continuing to increase, journals are in competition for authors, so it is not at all unreasonable that some would send out solicitation emails inviting the best authors to submit their work to a specific journal.

Secondly, many highly legitimate, well-trusted journals are offering rapid turnaround times for peer review of submitted manuscripts and publication of accepted articles. In the wake of COVID-19, scientific journals have sped up the submission, review, and publication processes to try to get new findings distributed globally as quickly as possible. As a result of this growing desire for fast distribution and easy access to the latest scientific information, new channels and media are arising and taking on greater prominence during the pandemic. For example, early in the pandemic, the flurry of excitement around research on malaria drugs, including hydroxychloroquine and chloroquine, as possible treatments for COVID-19, was initially dismissed as 'fake news' (Lecrubier 2020). But the idea gained a groundswell of support and interest on 16 March 2020, when Professor Didier Raoult, of the IHU Méditerranée Infection in Marseille, posted a YouTube video of a presentation on a study he had personally conducted that suggested that chloroquine was a successful treatment for twenty-four patients in his hospital (Raoult 2016). The YouTube video to date has received 1,460,735 views. By contrast, an open access peer-reviewed study that reported results of an in-vitro study that contrasted the antiviral properties of hydroxychloroquine

to those of chloroquine was published on 9 March 2020, and currently has received only 87,728 downloads (Yao and others 2020). Although the latter study would be considered more rigorous by scientific standards — and has withstood the scrutiny of peer review — its findings are more modest in their contribution to the promise of a cure and thus less attention-grabbing than those of the French physician who reported the drug was successful on twenty-four patients in his hospital. Along these lines, we are also seeing a growing reliance on preprints, which are publications that allow scientific findings to be published rapidly before they are peer reviewed (Kupferschmidt 2020). As we keep a critical eye on the publishing trends that are emerging, we cannot ignore these pressures for faster distribution and better access to the latest scientific knowledge, even if it means distributing findings before undergoing peer review. Some of the same practices that are easy to label 'predatory' are practices that publishers are intentionally adopting to respond and adapt to these pressures. Just like any other business, the publishing industry must be able to respond to and adapt to such pressures if they are going to stay relevant in the current climate. This is the argument of Albert N. Greco (2020) in *The Business of Scholarly Publishing*. Specifically, he says, 'Scholarly publishing is not a declining industry; it is an industry in transition from one that was 100% print, a hybrid one that offers content in both print and digital formats, and a complete 100% OA digital model' (p. 7).

In short, some of the very same practices that can lead a publisher or journal to be suspected as 'predatory' — such as rapid turnaround times and speedier pace of publication — are also desperately needed innovations in scientific publishing, which has long been known for its slow pace and long turnaround times. Paradoxically, these are some of the reasons why we have trusted the scientific knowledge production processes that have evolved over the centuries. It is simply not in our nature as academics to have faith in knowledge that is quickly produced, vetted, and shared with wider public audiences. But as times change, processes need to change as well. The COVID-19 pandemic was certainly not the first situation that made us aware of the need to distribute scientific data and findings more quickly to a vast global audience, but it heightened our awareness and will likely have long-term implications for how we communicate science (Koerber 2021).

Diversity, Equity, and Inclusion in Scholarly Communication

Many of the new publishing initiatives place a rhetorical emphasis on openness and inclusion, with the idea that the principles of open access and open science, if they are widely adopted, will revolutionize scientific knowledge production, making it more available to global stakeholders and ensuring that we achieve a science that is inclusive as possible. Although diversity, equity, and inclusion in the academy are often characterized as a numbers game, those who advocate for greater diversity and inclusion in scholarly publishing go beyond numbers, reminding us we need to get more diverse stakeholders to join the scholarly conversation because this will make scientific knowledge better. For example, we have a whole history in science and medicine of either ignoring or devaluing the female body — seeing it as inherently defective, ignoring and/or disbelieving women's narration of their own bodily experiences and symptoms (Koerber 2018). This is because, for many centuries, the only people who could be knowledge producers were white men, primarily in the 'Western' world. Everyone else has automatically been subsumed into the category of 'research subject'. This is not only a social justice problem; it is a knowledge quality problem. We cannot make good scientific knowledge if only one kind of person is sitting at the table where expert knowledge is produced.

Along these lines, one recent initiative is the Coalition for Diversity & Inclusion in Scholarly Communications (C4DISC). This coalition of thirteen organizations states its mission is 'to work with organizations and individuals to build equity, inclusion, diversity, and accessibility in scholarly communications' ('Mission, Vision, and Values' [n.d.]: 1). Membership in the coalition entails a commitment to the organization's joint principles, which emphasize improving the quality of scholarly communication by ensuring broader inclusion of those voices and perspectives that have traditionally been marginalized for a variety of reasons. As expressed in the organization's Statement of Joint Principles, 'The future of scholarly communications will be positively impacted by attracting and retaining a pool of highly talented and creative professionals from diverse and/or historically excluded backgrounds

who possess a wide range of skill sets and viewpoints' ('Joint Statement of Principles' [n.d.]: para. 1).

In many ways, open science and open access are intended to help us move forward in this regard — to create more opportunities for scholars in middle- or low-income nations, where universities have fewer financial resources, to have access to the journals and publications that they need to be successful in their own research. Open access, from this perspective, addresses part of the problem: It gives scholars access to published research. However, it does not solve all the problems because open access often requires authors to pay an article processing charge. These can be cost prohibitive even for some authors in higher-income countries if they do not have grant funding or institutional funding available to cover the costs. It can be completely impossible for scholars in low- or middle-income nations (although some of the larger publishers waive or reduce the fee if an author cannot afford to pay it). Thus, we are starting to see some other economic models as well. For example, PLOS has established something called the 'Global Equity Model'. Their website explains the model as follows:

> We believe scientific knowledge is strengthened by diverse perspectives, and that it accelerates progress faster when it's shared openly. Our Global Equity model removes financial barriers for researchers to participate in Open Access and Open Science by offering affordable, equitable partnership opportunities for their institutions in every region of the world. ('PLOS Global Equity Model' [n.d.]: para. 1)

Along these lines, some experts have questioned whether the economic shift that typically occurs with open access publishing — basically, shifting the economic model so that authors pay for publishing costs instead of readers or consumers — really addresses the problem. From the perspective of one economist, for example, 'economics are skeptical of claims that a change in who pays can give rise to large changes in welfare and efficiency when the underlying costs (including those imposed by providers with market power) are unchanged' (Gans 2017: 13).

These discussions about diversity, equity, and inclusion in scholarly publishing are another reason why one of this book's most important messages is that predatory publishing is not as simple as the term implies. It is not possible to clearly identify who is the predator and who is the prey. Many have argued, for instance, that

it is the large commercial publishers who are the actual predators, in that they are charging exorbitant subscription prices that make their journals increasingly unaffordable to libraries, even in the US, but especially in non-peripheral nations where libraries and universities have far more limited resources. Furthermore, our research revealed that some authors knowingly submit to so-called 'predatory' journals for a variety of reasons — sometimes because they are just desperate to get a publication, or they are employed at a university where quantity of publications is emphasized over quality. Other interviewees indicated they published in 'predatory' journals as a form of defiance and resistance to the perceived monopoly of the mainstream publishers.

Chapter Contents

The book is organized around various themes that have emerged through our extensive research, which has included not only interviews but content analysis, textual analysis, legal analysis, and more. Each chapter summarizes relevant research and offers interactive activities that can be used in the classroom.[4] Reflecting our team's desire to enact open science principles as fully as possible, some of our chapters link to published datasets that allow readers to access the full text of interview transcripts, de-identified to protect the identity of interview participants, and other forms of data that support the analyses in these chapters.[5] It is our hope that readers will find these datasets useful for their own research and teaching purposes and that the availability of these datasets will enhance the credibility and depth of the analyses that the chapters report.

---

4   An important feature of the book is that it is a coauthored book, not an edited collection, reflecting the fact that the research reported in the book has been supported by a National Science Foundation grant awarded to the team in 2019. However, to give credit to the individuals whose independent research endeavors were conducted as part of this larger project, we have named a first author for each chapter. We hope that this approach enables readers to read the book in its entirety, if they so choose, but also allows individual chapters to be used as stand-alone contributions to readers' research and teaching. Along these lines, in accessing some of the published datasets, readers will notice that coding of the forty-eight interview transcripts was completed in multiple phases, with individual authors taking ownership of independent coding initiatives in accordance with their research goals.

5   See Predatory Paradox Dataverse in the Texas Data Repository.

In **Chapter 1, 'Ethical, Legal, and Policy Issues in the Knowledge Creation Paradigm: The Case of OMICS International, Open Access, and "Predatory" Publishing'**, Lyombe Eko explores the ethical, policy, and legal issues brought to the forefront by the so-called predatory publishing and predatory conferences industry, using as a case study the legal actions taken by the United States government agency, the Federal Trade Commission (FTC) against OMICS Group, Inc., and its affiliates in federal court. After providing an overview and legal analysis of the *FTC v. OMICS* Group case, the author invites readers to consider how this litigation might forever transform ethical, legal, and economic dimensions of scholarly publishing. Viewing predatory publishing from an economic perspective, in particular, raises important questions about who profits from predatory publishing and predatory conferences. This presents an opportunity to consider the different motivations at play in this complex game of 'pay to play' or 'pay to publish trash', as the Indian government calls it.

In **Chapter 2, 'Open Science, Open Data'**, Kerk F. Kee takes a broader look at 'openness' as it has been used in conversations about scientific research and publishing. 'Openness' is often touted as an antidote for all the problems that exist in scholarly publishing. The rationale is that if we can achieve greater transparency in publishing practices, there will be no more impetus for predatory publishers to go on. More specifically, the reasoning goes, predatory publishing has been able to thrive because so much of academic publishing occurs in a black box, behind closed doors. We have trusted double-blind peer review for many centuries as the gold standard that ensures the quality of scientific knowledge. But most of the time, in the way peer review traditionally operates, the readers of a scientific article simply must trust in blind faith that reviews are taking place. This practice allows predatory publishing to thrive because it creates the possibility that a journal can advertise itself as a peer-reviewed journal but then publish articles without putting them through the peer-review process. 'Open data' and 'open science' are touted as antidotes because they require researchers to share their actual data so that readers can judge the quality of the science for themselves. 'Open peer review' is another variation on this — this entails publishing the reviewer reports along with the article so, again, readers can see for themselves that peer review did occur. Chapter 2 explores how our interview participants

articulated claims such as these, but also, how some interviewees push back against such claims, pointing out the limitations of openness as a solution to the predatory publishing problem.

In **Chapter 3, 'Research Quality'**, Jesse C. Starkey addresses the deceptively simple notion of quality in scholarly research. This was an important subject addressed by participants in our interview study, and a variety of definitions emerged through these interviews. Some interviewees emphasized the quality or 'rigor' of the research methods, referring primarily to technical aspects of the research, whereas others emphasized the quality of the writing, as indicated, for example, through the transparency of reporting the methods used or results discovered. Additionally, many participants focused on the morals and values of ethical research as an indicator of quality, suggesting a multifaceted approach to conceptualizing quality might be necessary. Participants were also quite adept at pointing out where quality was lacking — or where there were challenges to ensuring and protecting quality in the knowledge production process. For example, the peer-review process was simultaneously lauded as the hallmark of scientific knowledge production and criticized as falling short in ensuring the quality of published content. This chapter offers a deep dive into the various components of scholarly knowledge production, the ways stakeholders conceptualize quality in those areas, and the challenges they face in protecting the integrity of scientific knowledge as it moves through the stages of graduate student training, conducting research, vetting the research, and finally publishing it in an increasingly perilous system.

In **Chapter 4, 'Scientific Hoaxes and the Predatory Paradox: Past, Present, and Future'**, Amy Koerber examines scientific hoax articles with a focus on the weaknesses and flaws that such hoaxes can expose in the larger information ecosystem of scholarly publishing. The chapter thus reveals that scientific hoaxes further complicate any neat distinction between journals that are predatory and those that are not. Hoaxes have, in some cases, exposed specific journals as predatory. But in other cases, they have had effects beyond those that the author anticipated, exposing major weaknesses or fraudulent practices not only at journals or publishers suspected to be predatory but also at the most prestigious and well-respected journals. More importantly, publishing hoaxes have

unintentionally exposed weaknesses in the mechanisms that we have long relied on to ensure research quality. For example, hoaxes have exposed flaws in even the best journals' peer-review systems, and when hoax articles continue to get cited in subsequent literature — sometimes even after retraction — they lead us to question our habit of relying on citation counts as a measure of research quality. Partly in response to hoaxes, industries have emerged around the desire to pin down the legitimacy of a particular author or publication in an environment that makes it increasingly easy for fakes to be mistaken as the real thing. For example, we now have ORCID identifiers to help us establish the identity of authors and Digital Object Identifiers (DOI) to help us pinpoint the location and verify the identity of published texts. These identifiers are becoming commonplace in academic lingo, but it is easy to overlook the fact that each of these markers emerged as a commercial development with its own complexities, nuances, and shortcomings. As we argue, these innovations reflect our desire to pin down something that is certain and real in a landscape where it is increasingly easy for fakes to circulate as the real thing.

In **Chapter 5, 'Avoiding the Pitfalls of Predatory Publishing'**, Karin Ardon-Dryer explores the important question of how emerging scholars become enculturated into the world of scholarly publishing. It has perhaps always been the case that more established scholars are faced with the task of training the new generation, but at the same time, this new generation is facing challenges never even imagined by their senior colleagues. This is one of the 'paradoxes' inherent in the predatory paradox that is the book's central focus. But we argue in this chapter that this situation is intensified today, with so many new publishing trends emerging and the pace of scholarly research increasing so rapidly. There has simply been no other era in which so many changes have occurred so quickly. Our goal in this chapter is to report what our interview research taught us about what it takes to be an effective mentor of junior scholars in this rapidly changing environment and, hopefully, provide both senior and junior scholars with a toolset that serves as a starting place for this challenging endeavor.

In **Chapter 6, 'What's Being Taught about Predatory Publishing?'**, R. Glenn Cummins surveys the content of university-based curricula. For decades, federal funders in the US have required training or instruction

in research ethics to address growing concerns about the responsible conduct of research. Universities have responded to this requirement in a variety of ways, including in-person workshops, classes, or training as well as through online modules. However, systematic review of university training has revealed that efforts to satisfy funder requirements (a) most often rely on modules provided by a sole outside provider (i.e., CITI), and (b) focus on topics such as authorship or plagiarism while ignoring the growing threat to the dissemination of scientific knowledge that is posed by predatory publishers. To identify gaps in extant institutional training on predatory publishing, it is crucial to establish what current resources are available to authors and are most commonly used within scholarly research environments. This chapter provides a comprehensive assessment of the publicly available training materials provided by US universities on the topic of predatory publishing. The chapter also documents the nature and content of training resources, the modality of training materials, and the intended audience for the identified resources.

In **Chapter 7, 'Predatory Paradoxes: What Comes Next?'** Amy Koerber and Jesse C. Starkey conclude the book by summarizing the many complexities that surround the term *predatory*. The authors offer insights and case studies based on our interviews with forty-eight individuals who are stakeholders of various sorts in the game of scholarly publishing — ranging from real-life stories of authors who have fallen 'prey' to predatory publishing practices to people involved in the publishing industry who feel their publications have been wrongly accused of being 'predatory' in some capacity. They examine the misunderstandings and misperceptions that many people have about predatory publishing, and they provide readers with accurate and complete information to combat these misunderstandings and misperceptions. They advocate a view of predatory publishing that emphasizes gray areas and individual responsibility, rather than lists or hard-and-fast distinctions between journals or publishers that are predatory and those that are not. In this final chapter, we hope to leave readers with a set of tools and knowledge that prepares them to succeed in the game of scholarly publishing, and to similarly equip those who come after them.

References

Anderson, Rick. 2018. *Scholarly Communication: What Everyone Needs to Know®* (New York: Oxford University Press). https://doi.org/10.1093/wentk/9780190639440.001.0001

——. 2019. *Issue Brief 3: Deceptive Publishing*, https://doi.org/10.13021/osi2019.2419

'Annual Report'. 2020. *Multidisciplinary Digital Publishing Institute* (*MDPI*). https://res.mdpi.com/data/2020_web.pdf

Asadi, Amin., Rahbar, Nader., Asadi, Meisam., Asadi, Fahime., and Paji, Kokab Khalili. 2017. 'Online-Based Approaches to Identify Real Journals and Publishers from Hijacked Ones', *Science & Engineering Ethics*, 23: 305–08, https://doi.org/10.1007/s11948-015-9747-9

Avery, Oswald T., Macleod, Colin M., and McCarty, Maclyn. 1944. 'Studies on the Chemical Nature of the Substance Inducing Transformation of Pneumococcal Types: Induction of Transformation by a Desoxyribonucleic Acid Fraction Isolated from Pneumococcus Type III', *The Journal of Experimental Medicine*, 79.2: 137–58, https://doi.org/10.1084/JEM.79.2.137

Baldwin, Melinda. 2019. 'Peer Review', *Encyclopedia of the History of Science*, https://doi.org/10.34758/7s4y-5f50

Beall, Jeffrey. 2012. 'Predatory Publishers Are Corrupting Open Access', *Nature*, 489.7415: 179, https://doi.org/10.1038/489179a

——. 2013. 'Predatory Publishing Is Just One of the Consequences of Gold Open Access', *Learned Publishing*, 26.2: 79–84, https://doi.org/10.1087/20130203

——. 2015. 'Is Frontiers a Potential Predatory Publisher? [Tweet]', *Twitter*, https://twitter.com/Jeffrey_Beall/status/659351830132998144?cxt=HHwWgICmkeC_vqYSAAAA

——. 2017. 'What I Learned from Predatory Publishers', *Biochemia Medica*, 27.2: 273–78, https://doi.org/10.11613/BM.2017.029

Biagioli, Mario, and Lippman, Alexandra (eds). 2020. *Gaming the Metrics: Misconduct and Manipulation in Academic Research*. (Cambridge, MA: MIT Press). https://doi.org/10.7551/mitpress/11087.001.0001

Bisaccio, Mike. 2020. *Announcement Regarding Brand-Wide Language Changes, Effective Immediately*, https://blog.cabells.com/2020/06/08/announcement/

Bloudoff-Indelicato, Mollie. 2015. 'Backlash after Frontiers Journals Added to List of Questionable Publishers', *Nature*, 526.7575: 613, https://doi.org/10.1038/526613f

Crawford, Walt. 2014. 'Journals, "Journals" and Wannabes: Investigating the List', *Cites & Insights*, 14.7: 1–24, http://citesandinsights.info/civ14i7on.pdf

Crosetto, Paolo. 2021. *Is MDPI a Predatory Publisher*? https://paolocrosetto. wordpress.com/2021/04/12/is-mdpi-a-predatory-publisher/

Fischer, Joern. 2020. 'Why Not to Publish in "Sustainability" (and You're Welcome to Share This Post)', *Ideas for Sustainability*, https:// ideas4sustainability.wordpress.com/2020/10/30/why-not-to-publish-in-sustainability-and-youre-welcome-to-share-this-post/

'Fostering Integrity in Research: Consensus Study Report'. 2017. *National Academies of Sciences, Engineering, and Medicine* (Washington, DC: The National Academies Press). https://doi.org/10.17226/21896

Gans, Joshua G. 2017. *Scholarly Publishing and Its Discontents* (Toronto, Canada: Core Economic Research). https://www.joshuagans.com/ scholarlypublishing

Gao, Jian., and Zhou, Tao. 2017. 'Stamp Out Fake Peer Review', *Nature*, 546: 33, https://doi.org/10.1038/546033a

Greco, Albert N. 2020. *The Business of Scholarly Publishing: Managing in Turbulent Times* (Oxford: Oxford University Press). https://doi.org/10.1093/ oso/9780190626235.003.0006

Grudniewicz, Agnes., Moher, David., Cobey, Kelly D., Bryson, Gregory L., Cukier, Samantha and others. 2019. 'Predatory Journals: No Definition, No Defence', *Nature*, 576.7786: 210–12, https://doi.org/10.1038/d41586-019-03759-y

'Joint Statement of Principles'. [n.d.]. *Coalition for Diversity & Inclusion in Scholarly Communications*, https://c4disc.org/joint-statement-of-principles/

'Journal Description'. [n.d.]. *Sage Open*, https://journals.sagepub.com/ description/SGO

Kaplan, Sarah. 2015. 'Major Publisher Retracts 64 Scientific Papers in Fake Peer Review Outbreak', *The Washington Post*, https://www.washingtonpost. com/news/morning-mix/wp/2015/08/18/outbreak-of-fake-peer-reviews-widens-as-major-publisher-retracts-64-scientific-papers/

Koerber, Amy. 2018. *From Hysteria to Hormones: A Rhetorical History* (University Park, PA: Penn State University Press). https://doi.org/10.5325/j.ctv14gp859

——. 2021. 'Is It Fake News or Is It Open Science? Science Communication in the COVID-19 Pandemic', *Journal of Business and Technical Communication*, 35.1: 22–27, https://doi.org/10.1177/1050651920958506

Kupferschmidt, Kai. 2020. 'Preprints Bring "firehose" of Outbreak Data', *Science*, 367.6481: 963–64, https://doi.org/10.1126/science.367.6481.963

Lecrubier, Aude. 2020. 'COVID-19: Could Hydroxychloroquine Really Be an Answer?', *Medscape*, https://www.medscape.com/viewarticle/927033

Linacre, Simon. 2022. *The Predator Effect: Understanding the Past, Present and Future of Deceptive Academic Journals* (Ann Arbor, MI: Against the Grain (Media), LLC). https://doi.org/10.3998/MPUB.12739277

Miller, Carolyn R. 1994. 'Opportunity, Opportunism, and Progress: Kairos in the Rhetoric of Technology', *Argumentation*, 8.1: 81–96, https://doi.org/10.1007/BF00710705

'Mission, Vision, and Values'. [n.d.]. *Coalition for Diversity & Inclusion in Scholarly Communications*, https://c4disc.org/main/mission-vision-and-values/

'Multiple #3 – Issue 31'. 2021. *The Brief by Clarke & Esposito*, https://www.ce-strategy.com/the-brief/multiple/

Petrou, Christos. 2020. 'Guest Post – MDPI's Remarkable Growth', *The Scholarly Kitchen*, https://scholarlykitchen.sspnet.org/2020/08/10/guest-post-mdpis-remarkable-growth/

Pinna, Nicola., Clavel, Guylhaine, and Roco, Mihail. 2020. 'The Journal of Nanoparticle Research Victim of an Organized Rogue Editor Network!', *Journal of Nanoparticle Research*, 22.376, https://doi.org/10.1007/s11051-020-05094-0

'PLOS Global Equity Model'. [n.d.]. *PLOS*, https://plos.org/resources/global-equity-model/

'Predatory Publishing: Discussion Document'. 2019. *COPE Council*, https://doi.org/10.24318/cope.2019.3.6

Raoult, D. 2020. 'Coronavirus : Diagnostiquons et Traitons ! Premiers Résultats [Video]', *YouTube*, https://www.youtube.com/watch?v=n4J8kydOvbc

Roberts, Jason. 2017. 'The Scourge of Illegitimate Journals: Becoming Better Informed in a Post-Beall Era', *The Official Publication of the International Society of Managing and Technical Editors*, 10.2: 13–15, http://dx.doi.org/10.18243/eon/2017.10.2.6

Shari, Mona Andoohgin., Jazi, Mohammad Davarpanah., Borchardt, Glenn and Dadkhah, Mehdi. 2018. 'Detecting Hijacked Journals by Using Classification Algorithms', *Science and Engineering Ethics*, 24.2: 655–68, https://doi.org/10.1007/s11948-017-9914-2

Smith, Wendy K., and Lewis, Marianne W. 2011. 'Toward a Theory of Paradox: A Dynamic Equilibrium Model of Organizing', *Academy of Management Review*, 36.2: 381–403, https://doi.org/10.5465/amr.2009.0223

'Springer Nature Continues to Drive OA with Launch of Brand New OA Journal Series'. 2020. *Springer Nature Group*, https://group.springernature.com/fr/group/media/press-releases/springer-nature-discover-journal/18109908

Teixeira da Silva, Jaime A. 2020. 'The Ethical and Academic Implications of the Jeffrey Beall (www.scholarlyoa.com) Blog Shutdown', *Science & Engineering Ethics*, 26: 3465–67, https://doi.org/10.1007/s11948-017-9905-3

Teixeira da Silva, Jaime A., Dobránszki, Judit., Tsigaris, Panagiotis and Al-Khatib, Aceil. 2019. 'Predatory and Exploitative Behaviour in Academic Publishing: An Assessment', *The Journal of Academic Librarianship*, 45.6: 1–8, https://doi.org/10.1016/j.acalib.2019.102071

Watson, J. D., and Crick, F.H.C. 1953. 'Molecular Structure of Nucleic Acids: A Structure for Deoxyribose Nucleic Acid', *Nature*, 171: 737–38, https://doi.org/10.1038/171737a0

Xia, Jingfeng. 2021. *Predatory Publishing, Predatory Publishing* (London: Routledge). https://doi.org/10.4324/9781003029335

Yao, Xueting., Ye, Fei., Zhang, Miao., Cui, Cheng., Huang, Baoying and others. 2020. 'In Vitro Antiviral Activity and Projection of Optimized Dosing Design of Hydroxychloroquine for the Treatment of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)', *Clinical Infectious Diseases*, 71.15: 732–39, https://doi.org/10.1093/cid/ciaa237

Zuckerman, Harriet, and K. Merton, Robert. 1971. 'Patterns of Evaluation in Science: Institutionalisation, Structure and Functions of the Referee System', *Minerva*, 9.1: 66–100, https://doi.org/10.1007/BF01553188