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English 1

9 December 2019

### Tenure Most Foul

Between September 2010 and January 2011, Aaron Swartz—a computer programmer and co-founder of Reddit and Y Combinator—"downloaded 4.8 million articles" ("Overview") from a digital library of academic research. Swartz did this to protest the state of the academic publishing industry. He lamented how the "world's entire scientific and cultural heritage...is increasingly being digitized and locked up by a handful of private corporations" (Swartz). JSTOR, the company that owns the library accessed by Swartz, reached a settlement with him and informed the U.S. Attorney's office that it was not interested in pressing charges. However, federal prosecutors brought criminal charges against Swartz, and eventually indicted him "on felony charges in July 2011" ("Overview"). Swartz ended his life on January 11, 2013 (Cai). His death brought the issue of open access research to the fore.

Swartz embraced the open access, or OA, movement, which advocates for a shift away from publishing in journals locked behind paywalls to making research free for all to read. In a perfect world, every member of the public could have access to the entire body of academic research, but unfortunately that is not the case, as a massive amount of the world's research is kept under lock and key. Swartz represented the branch of the OA movement that he dubbed "Guerilla Open Access" (Swartz). This line of thought places much of the blame for the current system on the publishers of academic journals. However, many OA activists would argue that universities are complicit in perpetuating the unsustainable publishing system. Specifically,

universities rely too heavily on prestige and skewed metrics during their tenure and promotion process, which forces researchers to continue publishing behind paywalls. The academic publishing industry is on an unsustainable trajectory, and previous attempts to enact change have fallen short. Universities need to embrace the OA movement by amending their tenure and promotion committee policies to encourage publishing in journals that are available for all to read; any other course of action would be akin to fixing a leaky faucet in a burning building.

Because there are myriad terms describing the diverse aspects of academic publishing, it is necessary to provide working definitions for terms used in the discourse surrounding the OA movement. Peter Suber—a senior researcher at Harvard and Director of the Harvard Open Access Project—defines OA literature as “digital, online, free of charge, and free of most copyright and licensing restrictions” (“Open”). Furthermore, within the sphere of OA, there is a distinction between OA journals and OA repositories. The main difference between the two is that OA journals conduct peer review, whereas OA repositories do not. For the purpose of this paper, I will be primarily discussing OA journals, as they are most easily comparable to their closed access counterparts. Suber describes the primary difference between closed and open access journals as being “that the bills are not paid by readers and hence do not function as access barriers” (“Open”). Essentially, while closed access journals rely upon a subscription model for recouping their costs, OA journals rely primarily on other sources of funding. To set the stage for the current OA movement, I will briefly lay out some of the key players and historical facts.

According to Brian Resnick and Julia Belluz—two senior writers at *Vox*—the first academic journals cropped up during the 17<sup>th</sup> century from “small scientific societies” distributing information regarding their meetings. These journals had large operating expenses,

in part because they were physically printed and “distributed via mail” (Resnick and Belluz). This model functioned more or less steadily until after World War II. According to Aileen Fyfe, a historian specializing in academic publishing, after World War II, many journals—which were mainly based in Europe—began focusing their efforts across the Atlantic, towards American universities “flush with Cold-War era research funding” (Resnick and Belluz). As the number of journals being published grew, the publishing companies began to consolidate. In the 1950s, publishers began to sweep up journals, which transformed the publishing industry from a ragtag coterie of boffins to the oligopoly that we know today, wherein five companies publish “53 percent” (Resnick and Belluz) of all natural and medical scientific articles.

With the advent of the internet, many envisioned that the academic publishing model would change drastically. Like other industries that relied upon physical distribution of copyrighted works (e.g. the music and literary industries), the academic publishing industry faced an urgent need to adjust to the daunting concept of digital distribution. However, contrary to expectations, the transition to online platforms has allowed publishers to bypass printing costs and bundle electronic journals into subscription packages, which allowed them to increase their profit margins at incredible rates (MacDonald and Eva). Julia Gross and John Charles Ryan—two researchers at Edith Cowan University in Australia—found that “[b]etween 1986 and 2004, print journal prices exceeded the inflation rate by nearly 300%” (66). This finding is problematic, especially considering that as physical costs of journal distribution have decreased, the prices of journals have increased exponentially. Peter Ludlow—writing for *The Chronicle of Higher Education*—attributes this increase in pricing to publishers “taking advantage of their positions to demand fees.” Ludlow’s analysis matches the behavior of many of the publishers of closed

access journals in recent years. As I will discuss later in the paper, publishers partake in closed-door individual pricing schemes for university libraries.

Surprisingly, many of the major publishers of closed access journals have shown that they are open to the concept of OA. In fact, as I learned during my conversation with Peter Suber, many closed access journals have adopted hybrid models, wherein they make research free to read if the author pays what is called an Article Processing Charge (APC). This charge ensures that the published research will be OA, but readers will still need a subscription to the journal to access the other non-OA papers in the journal. Moreover, these hybrid fees can be steep, for example, according to Resnick and Belluz, Elsevier charges “anywhere from \$500...to \$5,000” to make an article in one of their journals OA. By levying APCs and simultaneously charging subscription fees for articles published in the same journals, publishers are essentially double-dipping in university coffers.

This raises the question, what value are publishers of closed access journals adding to justify such steep increases in fees? After all, academics are not compensated for their contributions to journals. Moreover, according to Suber, academics must pay for color printing or articles that are particularly lengthy. Furthermore, peer reviewers—who ensure that scientific standards are met in the research before publication—typically are not paid for their feedback. Publishers of closed access journals say that they add value by managing peer reviewers and employing editors, who “act as quality gatekeepers” (Resnick and Belluz). However, these measures of quality control are no different than how OA publishers run their businesses.

In terms of actual quality, there is little difference between OA and closed access journals. However, there are several misconceptions regarding OA journals that may be contributing to a general chilling effect on OA research. One misconception is the perceived cost

of submission. Many researchers assume that all OA journals charge an upfront fee, whereas closed access journals do not. This turns out to be a complete misconception, as according to Peter Suber, “most OA journals (70%) charge no author-side fees at all. Moreover, most conventional or non-OA journals (75%) do charge author-side fees” (“Open”). Another pervasive misconception is one that emanated from the existence of predatory OA journals, which are journals that might not conduct peer reviews, or charge “unfair APCs” (MacDonald and Eva). The existence of these journals has led to a real image issue that the OA movement must address, as “the perceived quality of OA publications” (Conte) is the most common reason that researchers decide not to publish in an OA journal. However, the perceived quality, or prestige, of a journal should not be confused with the actual quality of a journal. Prestige is mostly just an indication of a journal’s age. As such, generally the oldest publications are the most prestigious, and due to the relatively new concept of OA, OA journals “may not have been around long enough to establish prestige” (Wical and Kocken 116). Furthermore, because prestige is a result of public perception, there is not much that an OA journal can do to match the prestige of established journals such as *Nature* or *Science*.

Within the context of academic publishing, prestige is generally measured by a metric called Journal Impact Factor (JIF). JIF is essentially “a measure of the frequency with which the average article in a journal has been cited in a particular year” (“Measuring”). But JIF may not equal quality. Lars Bjørnshauge, the Managing Director and Founder of the Directory of Open Access Journals—with whom I spoke regarding this issue—said that there is a correlation between the impact of a journal and its retraction rate. There is also empirical data to support Mr. Bjørnshauge’s claim; Ferric Fang and Arturo Casadevall published in *Infection and Immunity* that “the frequency of retraction...shows a strong correlation with the journal impact factor”

(3885). Additionally, Lars Bjørnshauge, David Knutson, and Peter Suber all supported the idea that the impact of a journal is not a measure of its quality. Furthermore, Erin McKiernan and colleagues—who published in *eLife* what they claimed to be the first study of the use of JIF in tenure and promotion committee documents from a representative sample of U.S. and Canadian Universities—stated that journals with high JIFs are often lacking “methodological indicators of quality” (8) and cited to an earlier study which found that JIF is not significantly correlated with “the reproducibility of published data” (8). However, even though JIF is not an accurate measure of a journal’s quality, tenure and promotion committees often favor research published in high impact journals.

McKiernan et al. also noted that the creator of the JIF metric, Eugene Garfield, “made it clear that the JIF was not appropriate for evaluating individuals or for assessing the significance of individual articles” (1). However, contrary to Mr. Garfield’s intention in creating the JIF metric, McKiernan et al. found that in recent decades, JIF has been used as a proxy for a measure of the significance of journals, and in turn, the articles published in those journals (1). This has led to tenure and promotion committees favoring research published in high impact (read: closed access) journals over OA journals. Many researchers conduct their work under the umbrella of a college or university, and their decisions are naturally guided by the tenure and promotion committees that determine the future of their careers at the university. Essentially what this means is that when researchers publish in non-OA journals, they are not simply misreading what is expected of them. In fact, they are reading the situation correctly, as publishing in high impact journals is often synonymous with success, “especially for those on the tenure track” (McKiernan et al. 1).

Even more troubling is that the study conducted by McKiernan et al. was limited to the written policies of the universities, and that they could not gather how tenure and promotion committees actually use “JIF or other citation metrics” (4) during the review process. Essentially, the study was limited to the written policies of universities and could not account for the thoughts and personal biases of the members of tenure and promotion committees who may overvalue prestige and impact.

Because of this overreliance on high impact journals, and a lack of institutional support for OA research, the publishers of closed access journals have been able to set the terms and prices for access to research. Closed access publishers have capitalized on academia’s reliance on high impact closed access journals by selling packages of academic journals, known as big deal bundles, to universities. These bundles offer individualized subscription options to thousands of journals at a set cost, ostensibly eliminating the need for universities to pick and choose which journals they want. Furthermore, publishers sell access to these bundled journals “at prices significantly lower than the sum of their à la carte prices” (Bergstrom et al. 9425). For example, according to Suber, a company like Elsevier will charge a university the same for a subscription to 2,000 journals in a big deal bundle as they would for 1,500 journals selected individually. This may seem like a net benefit to universities, but the prices of these bundles are steep, and due to the nature of the bundles, universities end up paying for access to hundreds of journals that they do not use.

In recent years, universities have rebelled against big deal bundles. For example, this year the University of California system chose not to renew its “nearly \$11 million annual subscription to Elsevier” (Resnick and Belluz). Writing for *The Chronicle of Higher Education*, Lindsay Ellis reported that six other universities “canceled Big Deal bundles for 2018 with

Springer Nature, Elsevier, and Wiley.” Indicating that the backlash from universities are not isolated events, Darrell Gunter, who worked at Elsevier for over a decade, stated that universities need a reprieve from “journal packages sold in bulk by major publishers...because library budgets [can’t] absorb the rising costs of the bundles” (Ellis). However, while some of the larger and better funded universities can afford to cancel their subscription packages, according to Suber, many universities cannot afford to switch to the à la carte model of journal access. In other words, many universities are unable to take direct action against publishers, so advocating instead for an embrace of OA research through policy reform is feasible even for smaller universities.

Alongside universities grappling with the rising costs of accessing research, there have been numerous attempts to encourage publishing research in OA journals, but many of these attempts have backed the wrong horse by not addressing the central issue of tenure and promotion committees. For example, Suber has collected a list of so-called “[j]ournal declarations of independence” (“Lists”). This list notes the times that the editors of closed access journals have unilaterally resigned and began OA journals. For example, in 2015, the editors of *Lingua* (a journal published by Elsevier) resigned and started a new OA journal called *Glossa* (Ellis). Essentially, the editors hoped that by flipping the entire editorial team to a new OA publication, *Glossa* would not be seen as lower quality just because it is OA (Ellis). While declaring independence from the publishers of closed access journals is laudable, the model is simply too difficult to replicate on a large-scale basis (Bjørnshauge).

The independence model also places the onus upon vulnerable individuals—those who are not protected by corporate structures and legal teams. Even Johan Rooryck, who organized the flip of *Lingua*, has advised other editors to proceed with caution when considering flipping

their journals. Rooryck said that a publisher “has much more money than you do and has much better lawyers than you do” (Ellis). Furthermore, boycotting the publishers of closed access journals does not address the central issue of why researchers continue to publish in them. Without adequate protections and assurances for their careers, researchers have little choice but to continue publishing in closed access journals.

Asking individual editors and researchers to reform the academic publishing system is like asking the tail to wag the dog. University systems and research funders hold a much greater degree of power than individuals. However, the OA movement is unique in that many parties involved—funders, universities, researchers, and publishers—have expressed interest in moving towards OA. For example, the National Institutes of Health, which “invests nearly \$39.2 billion annually,” (“Budget”) makes all the “peer-reviewed articles it funds publicly available” (“When”). Additionally, publishers will not resist OA because they will adapt so as to not miss out on their piece of the pie (Knutson). Once proper systems are put into place to reward OA research, publishers will change overnight to meet the demands of the market (Bjørnshauge).

Universities remain the best-suited to enact systematic change to the academic publishing model, which would be to the benefit of all involved. The problem is that, according to Bjørnshauge, over the past twenty years, university administrations have signed countless declarations stating that research should be OA, even as they reward behaviors that run counter to their messaging, like continuing to value prestige in the tenure and promotion process. Essentially, universities have just paid lip service to the OA movement, but have not yet engaged in comprehensive policy reforms.

Some universities have recognized the importance of being earnest in changing their academic atmospheres. An example of a success in this endeavor can be seen at Indiana

University—Purdue University Indianapolis (IUPUI), a university whose shortened name is somehow more difficult to pronounce than its actual name. According to Jere Odell and his colleagues at IUPUI—who published an article in *College & Research Libraries News*—the university has seen success in its efforts to implement comprehensive OA reforms. According to Odell et al., IUPUI was one of the first institutions “to include OA as a value in its [tenure and promotion] guidelines” (322). In addition to changing the tenure and promotion policy from the top-down, the librarians at IUPUI are pushing change from the bottom-up by sharing “success stories of faculty at IUPUI...who have gained tenure and promotion after choosing OA, data sharing, and open science” (Odell et al. 325). This method of information sharing is especially important because researchers should feel confident that their decision to publish in OA journals “will be valued by the [tenure and promotion] committees” (Odell et al. 324). As a result of their policy reforms, IUPUI has seen a massive increase in the amount of OA research published by their faculty. According to IUPUI’s OA Policy Annual Report for 2018, just five years after implementing their policy, the percentage of articles archived in their OA collection jumped from just 22% in 2015 to 79% in 2018 (Odell 4). Although IUPUI is just one university system, it serves as a model of how to successfully implement policies that support OA research.

Universities changing their tenure and promotion committee policies to better embrace OA research will lead to a true revolution in academic publishing. Until recently, comprehensive efforts to reform the system have been limited in scope. However, if universities show a commitment to addressing the perception of OA journals and reward researchers publishing in OA journals, then it is not difficult to imagine a future where the vast majority of academic research is published in a manner that is accessible to all, regardless of university affiliation. In turn, publishers would shift more of their journals to OA, to meet the demands of researchers

backed by their universities. Additionally, university libraries could curb the cost of subscriptions, given that they are only necessary to access closed access journals. What must happen first is for the tenure and promotion committees of universities to take responsibility for the system that they have fostered. For now, to paraphrase my conversation with Lars Bjørnshauge, there are too few decision makers who have the courage to stand up to the large publishers and set the conditions for academic research going forward.

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