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INTRODUCTION

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It hardly needs to be said that 2020 was a difficult year for the world. COVID-19 has infected over 120 million people and killed over 2 million as of March 2021 (Johns Hopkins). At the same time, police violence against people of color continues, even as communities engage in long-overdue reckoning initiatives. Across the globe, researchers, governments, and communities needed quick, open, up-to-date information on testing for, treating, and preventing COVID-19. Our increased dependence on technology during lockdowns provided some with safety and continuity, while others experienced the widening of the digital divide. There is no greater urgency than the work of identifying and addressing issues of inequality and lack of equity and inclusivity.

Although the results remain to be seen, the field of scholarly communications experienced disruption in 2020. The editorials below discuss these recent changes and imagine what could come out of the pandemic. We hope that these reflections invite conversation and action.

SYSTEM CHANGE IS IN ORDER

Dave S. Ghamandi, University of Virginia

In the spirit of Walter Rodney's guerrilla intellectual, I've tried to dissolve the scholar-activist dichotomy within myself for several years now (Rodney, 2019). I find it increasingly



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impossible (and not even a desirable goal) to divide my personal and professional beliefs. That is why I see a common force affecting the COVID-19 pandemic, the global uprisings sparked by the police murdering Black folks, and scholarly communication—capitalism. I want to briefly explore these three areas using critical theory as a tool to explain and predict. And, because capitalism is responsible for producing (and benefiting from) these major crises, I see system change as the only solution.

Social ecologists, such as Murray Bookchin, have observed that the way humans treat each other is reflected in the way that we treat nature (Amargri & Amargri, 2020). These theorists see domination and hierarchy as a commonality across capitalism, racism, patriarchy, and ecological destruction. They note that relating to nature as something to be dominated and exploited has fragmented landscapes, polluted our air, and made us more susceptible to zoonotic viruses such as the one that causes COVID-19 (Smith, 2020). Social ecologists warn that capitalist agricultural practices will increase the occurrence of these viruses. Sadly, the corporate capture of the U.S. political structure has worsened the pandemic while benefiting the super-rich. Billionaires became 27.5% richer between April and July (Neate, 2020). Amazon's CEO, Jeff Bezos, alone is \$74 billion richer. Relatively few people can accumulate that much wealth when millions of people are made to suffer. Black people in the U.S. have died from COVID-19 at twice the rate of white Americans (Pilkington, 2020). Women have been disproportionately saddled with more childcare and household labor (Chemaly, 2020).

The global uprising sparked by the murder of George Floyd is rooted in the same injustices seen in the pandemic. If George Floyd tried to use counterfeit money, as was alleged, he did so as a victim of a racist economic situation. For several decades, the capitalist system has not needed as many workers in the U.S. as it once had. This has confined large numbers of Black folks to lower paid work, underemployment, unemployment, and/or subjugation to the criminal-legal system. The police, whose roots are in slavery, are an institution designed to enforce social and economic inequalities (Durr, 2015). There is no other reasonable explanation for why they inflict so much violence on Black and Brown people, while prioritizing the safety of the wealthy and private property. While the interminable call for reforms have failed to stop police violence, abolitionist ideas and values reached a level of popularity that few could have predicted. Abolitionists, who often have an intimate knowledge of racist violence, are full of imagination and love for their communities. We are not content with the symbolic painting of "Black Lives Matter" on city streets. The potential implications of abolitionist thought on scholarly communication deserves further elaboration beyond this editorial.

The lesson I am receiving from the pandemic and uprisings is that our economic system leads to social and physical violence, and we can do better. Our structures in scholarly communication are mostly capitalist in nature, which leads to forms of intellectual violence as

well.¹ How else can we describe the profit-making we see in journal pricing? Or e-books that are not licensed to libraries because there is more money to be made by selling individual licenses? Unless we examine, undermine, and replace the underlying ideology, we will continue to be disappointed by whatever happens after the pandemic is over. I do not share the optimism that some of my peers have, especially because we need to brace ourselves for years of austerity—budget cuts, a smaller workforce, increased pressure to be productive, and shrinking paychecks.

Austerity will highlight and increase the unresolved tension between researchers and their employers. Within their institutions, researchers and scholars (employees) are offered little to no decision-making power regarding publishing as an economic activity. The knowledge that we produce is converted by our institutions into revenue and accumulated wealth that is controlled by relatively few people. This is a result of the logic of capital pervading both the private and public sectors. Scholarly communication is shaped in a way that benefits university brands. The higher-ranking institutions are especially wedded to a publishing paradigm based in prestige. This may explain why some of them embrace “transformative agreements,” which do not upset the status quo. It is also more apparent than ever that all open access is not made alike and that capital does not rest. Elsevier launched 100 new open access journals in just 9 months (Abrahams, 2020). As the relatively higher-ranking schools use publishers like Elsevier to increase the value of their brands, the publishing oligopoly will remain well-entrenched. Barring a radical change, scholarly communication will continue to be part of a larger system based on domination, exploitation, and oppression. If scholarly publishing is not controlled by its authors and readers, is it worth having?

SCHOLARLY CONFERENCES AFTER COVID-19: BUCK CONVENTION, AND THE CONVENTION CENTER

Jill Cirasella, The Graduate Center, City University of New York

In 2020, kept apart by the COVID-19 pandemic, we learned to seek and sustain community via videoconference. We, many of us for the first time, learned by videoconference, socialized by videoconference, exercised by videoconference, and, tragically, mourned by videoconference. In scholarly communities, many had another videoconferencing first: entirely online scholarly conferences. (Despite the presence of “conference” right there in the word, most pre-pandemic videoconferences were less ambitious events: small meetings and one-off webinars.)

¹The prosecution of Aaron Swartz and his suicide showed multiple types of violence.

Prior to 2020, those who frequent and enjoy conferences probably would have recoiled from the thought of online conferences, likely imagining them to be unavoidably impersonal, non-interactive, and monotonous.² But what of those who do not or cannot frequent in-person conferences, due to cost, geography, disability, health problems, caretaking responsibilities, concerns about carbon footprint, or other constraints? No matter how rewarding or stimulating in-person conferences can be, they offer only exclusion to those who cannot attend—exclusion from learning, from contributing, from networking, and from seizing knock-on opportunities.

COVID-19 forced conference organizers to choose: go online or cancel. Similarly, would-be in-person attendees had to choose whether or not to give online conference incarnations a try. And, crucially, another group had choices as well: those for whom in-person conferences are not an option. For the first time, they had a wealth of offerings, all of which could be attended from home or work. Inevitably, not all online conferences in 2020 were entirely successful. (Of course, not all in-person conferences are entirely successful!) But improvement came quickly, both in using the technologies and in leveraging them effectively for presentations, discussions, social breaks, etc. Attention to accessibility lagged, but live closed captions are increasingly offered, as are recordings that allow for self-paced review afterward. Costs varied, but, without space rentals and catering driving up organizers' expenses, most conferences were considerably less expensive than in the past, sometimes even free.

And just like that, the scholarly conference, long impervious to the winds blowing through other forms of scholarly communication, yielded. Where previously conference content was available only to those in a certain space, now it is available anywhere there is a sufficiently robust Internet connection. Where previously it was ephemeral, now it is often recorded. (Next step: get those recordings into repositories for long-term access!) Where previously costs were high, now there are no-cost and low-cost offerings. And where previously too many couldn't reach the room, read the screen, or hear the words, now accessibility can be achieved.³ In the course of a single year, the usual ways of conferencing were shown to be outmoded and unnecessarily exclusionary, and the COVID-era ways were recognized as viable long-term replacements. Online conferences are of course not a cure-all to the inequities of scholarly communication, but a thoughtfully organized online conference can bring more voices into conversation, with more perspectives shared and better ideas resulting.

²I admit to imagining their imaginings, as I myself do not frequent conferences outside my own city, for several of the reasons discussed here.

³Videoconferencing platforms with accessibility features do not themselves render a conference accessible: organizers of online conferences still must plan for accessibility (Chautard, 2019; RespectAbility, 2020).

At some point, we will be able to resume in-person conferences. But should we, and again exclude those previously excluded (Niner et al., 2020; Sang, 2017; Walters, 2018)? Again privilege those already privileged (Caesar, 1999; Merton, 1968)? And thereby again short-change our disciplines? Further, should we resume in-person conferences given the known environmental impact of conference travel (van Ewijk & Hoekman, 2020)? Certainly, regardless of what I write here, there will again be in-person conferences. But let us honestly assess what does and does not need to be done in person. And, for each and every conference, let us open up at least part—a core part—to virtual attendees and contributors. To conclude: include.

OUTGOING TIDES, NAKED SWIMMERS, AND ABANDONING THE CHRONICALLY LEAKING BOAT

David W. Lewis, Dean Emeritus, IUPUI University Library

Warren Buffett is widely quoted as saying, “Only when the tide goes out do you discover who’s been swimming naked.” (Buffet & Clark 2006). This is understood to mean that in good times it is easy to look like you are doing well, but in bad times failings are revealed. The coronavirus pandemic will have two impacts on scholarly communication—first, the tide will go out, and second, many naked swimmers will be revealed.

One way or another much of the money in scholarly communications comes from universities, mostly through their libraries. It is clear that the pandemic will cause higher education to take a huge financial hit. A consortium of higher education groups estimated that the cost of lost revenue and for reopening campuses will be \$120 billion (Murakami, 2020). Enrollment is down 4% with a 16% decline in freshman enrollment, and the financial pain will likely persist even after the pandemic eases (Hubler, 2020). Most academic libraries will see their budgets cut, and this will translate into reduced collection budgets as collections are easier to cut than staff (Fredrick and Wolf-Eisenberg, 2020). Even before the pandemic big deals were, with the help of the Unsub tool, being reconsidered (Chawla, 2020 and Poynder, 2020). Many more big deals will be unbundled and there will be many other journal cancellations. It is not surprising then that the stock price for the largest commercial publishers has declined and that the Springer Nature IPO was again pushed back.⁴ Book purchasing will also decline as libraries move to purchase-on-demand for monographic acquisitions, for both print and digital. With this drop in spending on scholarly content the tide will go out.

⁴Between January 1 and December 1, 2020 RELX (Elsevier) stock price declined 6.1%; John Wiley & Sons declined 28.8%, and Informa (Taylor & Francis) declined 36.5%. This compares with a 12.4% increase in the S&P 500 index and a 35.9% increase in the Nasdaq Composite.

The naked swimmers will be the scholarly publishers who have yet to transition their business models and practices so that they take advantage of the nature of digital networked content. Digital content has been around for several decades, but the business models of traditional publishers are still based preserving scarcity and exclusive access. This has been possible because scholarly journals have had inelastic demand. “Essential journals” have been monopoly goods that could not be cancelled. As a result, publishers have been able to relentlessly raise prices. Large commercial publishers have had profit margins of 35% to 40% and many scholarly societies have a 25% surplus from their publishing programs. Purveyors of monopoly goods can take these large profits and as a result feel little pressure to change their business practices. The pandemic changes this. When there is no money, library purchasing behaviors have to change, and they will. Nothing will be “essential”.

The scholarly publishers who survive will be those whose business models take advantage of the nature of networked digital content, which should be, as McAfee and Brynjolfsson (2017) have said “free, perfect, and instant.” That is: a copy can be instantaneously delivered anywhere in the world; a copy is the same as the original, and a copy can be made at zero marginal cost (p. 135-136). Free here is about the marginal cost; the first copy costs still need to be covered, but for much scholarly content, especially articles, these costs can be significantly reduced if the system is reconstructed.

It is useful to look at the music industry, which was forced through a similar transformation beginning in 1999 when Napster blew up established business practices. Krueger (2019) in his book *Rockonomics* describes the music industry during this traumatic period and concludes by saying, “The time we spend listening to music is up, while spending on music is down by 80 percent in real terms since 1999. A great deal has gotten even better” (p. 265-266). Over the two decades between 1999 and 2019, the music industry went from selling albums on physical media to selling individual songs through iTunes and then to streaming services. Costs are now a fraction of what they were and choice and access have expanded exponentially.

The pandemic is likely to be scholarly communication’s Napster, and we should hope that what happened to music will happen to scholarly communications. If we are lucky, scholarly communications will make the transition that took the music industry 2 decades in the next three to 5 years. Movement in this direction began well before the pandemic, but the response to the pandemic has greatly accelerated it. Publishers early on bowed to pressure and made their coronavirus subscription content freely available. The use of preprints has accelerated and new forms of peer review and validation have been explored (Dhar and Brand, 2020; Fraser, N., et al., 2020; Hoban, 2020, and Taraborelli, 2020). “Free, perfect, and instant” inevitably leads to openness. The pandemic has shown that open science, open data, and open access speed the pace of discovery. As Calvert (2020) found in his study for

ARL, CNI and Educause, there is “a strong sense of convergence across all levels of research funding and infrastructure toward assuming openness as a general condition” (p. 16). The attitudes and practices of researchers are changing and there will be no going back.

It is too early to know exactly how the system will be restructured, but that it will be is a certainty. Many of the legacy publishing venues, the naked swimmers, will not survive and many open venues that were largely scorned or ignored will have proven their worth. The restructured system will require investments in infrastructure that operates at network scale and that makes open the default. Making these investments will be difficult, but everyone needs to commit resources. Now is time to make a commitment to investing at least 2.5% of the library’s total budget in open as the accepted standard (Lewis, 2017).

Warren Buffett offers us another piece of advice, “Should you find yourself in a chronically leaking boat, energy devoted to changing vessels is likely to be more productive than energy devoted to patching leaks.” (Buffet & Clark, 2006). We need to abandon the leaking boat of closed legacy systems that have dominated scholarly communications and commit to building a new vessel based on openness, a vessel that will meet our needs, the needs of science and scholarship, and one that will make the world a better place.

AN OPPORTUNITY FOR PREPRINTS AND OVERLAY JOURNALS?

DeDe Dawson, University of Saskatchewan

If there is one thing in conventional journal publishing that has been made crystal clear by the current coronavirus pandemic it’s that the process is not efficient or effective for its main purpose: communicating and progressing scientific discovery. The urgency to find COVID-19 treatments and vaccines requires [unprecedented collaboration and information-sharing](#) at a pace and level of openness not possible with conventional journal publishing processes. As others have argued (see Michael Eisen’s tweet thread from July 13, 2020: <https://twitter.com/mbeisen/status/1282741999544578049>), the technology, expertise, and some of the infrastructure already exists within academia for us to address these issues and completely revolutionize scientific and scholarly communication, but it is the problematic culture of prestige and high impact journals, and the inertia of collegial assessment processes in academia, that holds us back. Could a major shock to the system (like this pandemic crisis) be what is needed to finally advance lasting change?

Although preprint repositories have been popular in some disciplines for decades (e.g., [arXiv](#) in physics, math, computer science, and related fields), they have also been growing quickly in many other areas in recent years. In particular, [medRxiv](#) for the health sciences

and [bioRxiv](#) for biology have exploded in submissions; since the pandemic crisis began these two repositories have [collectively received](#) more than 13,200 preprints on the COVID-19 virus alone (as of mid-February 2021). As Ed Yong states in a recent *Atlantic* article: “Preprints accelerate science, and the pandemic accelerated the use of preprints” (Yong, 2020). Obviously, the authors of these papers recognize the value of rapid dissemination and open access to the results of their research on this topic. They can, and likely will, still submit these manuscripts to conventional journals where they may languish for months or maybe even years in the system before official publication. Meanwhile we need progress in understanding this virus now.

Admittedly, these preprints have not been peer-reviewed by experts in the field yet, and each of these three repositories all now display a prominent notice warning of this. With a global health crisis comes a considerable amount of misinformation and disinformation, and we must guard against this too. Part of this involves educating journalists and the general public about how scientific knowledge evolves, in order to minimize misunderstandings about the findings they may come across in these open repositories (Barbour, 2020), but we also need to find a way to advance the speed and efficiency of peer review and other evaluation processes. The scholarly publishing community is responding. In April 2020 a [cross-publisher rapid review and review transfer initiative](#), endorsed by the Open Access Scholarly Publishers Association (OASPA), was announced to “...maximize the efficiency and speed of the triage and peer review process of COVID-19 research.” And a new model has emerged in [Rapid Reviews: COVID-19](#) (RR:C19), an open access overlay journal that uses artificial intelligence technologies to identify the most promising preprints across repositories, makes use of a network of experts ready to provide expedited reviews, and openly publishes those reviews cross-linked with the preprint on [PubPub](#), an open source publishing platform developed by the Knowledge Futures Group at MIT. Overlay journals piggyback on the existing infrastructure of preprint repositories, thereby significantly reducing operating expenses and making publishing more efficient and economically viable for small scholar-run organizations. Indeed, interoperable open access repositories, overlain by a variety of such services, have the potential to form the entire backbone of a modern, efficient, and financially sustainable community-driven publishing system. The Confederation of Open Access Repositories (COAR) has promoted such a vision of [Next Generation Repositories](#) for years, most recently with its [Pubfair framework proposal](#) and [model for overlay peer-review processes](#). Indeed, this modern publishing system could supplant conventional journals entirely, with all their inherent inefficiencies and inequities, thereby bringing us closer to the primary purpose of publishing: communicating and progressing science and scholarship. This is logistically and technologically possible right now, but it is yet to be seen if this pandemic crisis will be enough to jolt the academy out of its inertia and abandon its addiction to the damaging cult of prestige journals.

REFERENCES

- Abrahams, P. [@paul_abrahams]. (2020, October 22). RELX 9 month trading update. Elsevier underlying revenue growth +2%. Article submissions up 25% [Tweet]. Twitter. https://twitter.com/paul_abrahams/status/1319193921017217024
- Amargi, W., & Amargi, S. (2020). Communalism: a liberatory alternative. <https://www.communalismpamphlet.net/>
- Barbour, V. (2020, July 27). Science publishing has opened up during the coronavirus pandemic: It won't be easy to keep it that way. *The Conversation*. <https://theconversation.com/science-publishing-has-opened-up-during-the-coronavirus-pandemic-it-wont-be-easy-to-keep-it-that-way-142984>
- Buffet, M. and Clark, D. (2006). *The tao of Warren Buffett*, New York, NY: Scribner
- Caesar, T. (1999). Flying High and Low: Travel, Sabbaticals, and Privilege in Academic Life. *Style*, 33(3), 443–461.
- Calvert, S. (August 21, 2020), Future themes and forecasts for research libraries and emerging technologies, edited by Mary Lee Kennedy, Clifford Lynch, and John O'Brien, Association of Research Libraries, Coalition for Networked Information, and EDUCAUSE, <https://doi.org/10.29242/report.emergingtech2020.forecasts>.
- Chawla, D.S. (July 9, 2020), "This tool is saving universities millions of dollars in journal subscriptions," *Science*, <https://doi.org/10.1126/science.abd7483>
- Chemaly, S. (2020, April 20). Coronavirus could hurt women the most. Here's how to prevent a patriarchal pandemic. NBC News. <https://www.nbcnews.com/think/opinion/coronavirus-could-hurt-women-most-here-s-how-prevent-patriarchal-ncna1186581>
- Dhar, V. & Brand, A., (August 11, 2020), "Coronavirus: time to re-imagine academic publishing," *Nature*, <https://www.nature.com/articles/d41586-020-02330-4>
- Durr, M. (2015). What is the difference between slave patrols and modern day policing? Institutional violence in a community of color. *Critical Sociology*, 41(6), 873–879. <https://doi.org/10.1177/0896920515594766>
- Fraser, N., Brierley, L., Dey, G., Polka, J.K.; Pálffy, M., and Coates J.A. (May 23, 2020), "Preprinting a pandemic: the role of preprints in the COVID-19 pandemic," bioRxiv 2020.05.22.111294, <https://doi.org/10.1101/2020.05.22.111294>
- Fredrick, J. & Wolf-Eisenberg, C. (December 9, 2020), "Academic Library Strategy and Budgeting During the COVID-19 Pandemic: Results from the Ithaka S+R US Library Survey 2020," Ithaka S+R, December 9, 2020, <https://doi.org/10.18665/sr.314507>
- Hoban, V. (August 4, 2020), "Will COVID-19 mark the end of scientific publishing as we know it?" Phys.org[blog], <https://phys.org/news/2020-08-covid-scientific-publishing.html>

Hubler, S. (October 26, 2020), "Colleges Slash Budgets in the Pandemic, With 'Nothing Off-Limits,'" *New York Times*, <https://www.nytimes.com/2020/10/26/us/colleges-coronavirus-budget-cuts.html>

Johns Hopkins University. COVID-19 Dashboard. <https://coronavirus.jhu.edu/map.html>.

Krueger, A.B. (2019), *Rockonomics: A backstage tour of what the music industry can teach us about economics and life*, New York, NY: Currency.

Lewis, D.W. (September 11, 2017), "The 2.5% Commitment," <http://doi.org/10.7912/C2JD29>

McAfee, A. & Brynjolfsson, E. (2017), *Machine, platform, crowd: Harnessing our digital future*, New York, NY: W. W. Norton & Company

Merton, R. K. (1968). The Matthew Effect in Science: The reward and communication systems of science are considered. *Science*, 159(3810), 56–63. <https://doi.org/10.1126/science.159.3810.56>

Murakami, K. (September 29, 2020), "Colleges: Financial Toll of Coronavirus Worse Than Anticipated," Inside Higher Ed, <https://www.insidehighered.com/quicktakes/2020/09/29/colleges-financial-toll-coronavirus-worse-anticipated>

Neate, R. (2020, October 6). Billionaires' wealth rises to \$10.2 trillion amid Covid crisis. *The Guardian*. <https://www.theguardian.com/business/2020/oct/07/covid-19-crisis-boosts-the-fortunes-of-worlds-billionaires>

Niner, H. J., Johri, S., Meyer, J., & Wassermann, S. N. (2020). The pandemic push: Can COVID-19 reinvent conferences to models rooted in sustainability, equitability and inclusion? *Socio-Ecological Practice Research*, 2(3), 253–256. <https://doi.org/10.1007/s42532-020-00059-y>

Pilkington, E. (2020, September 8). Covid-19 death rate among African Americans and Latinos rising sharply. *The Guardian*. <https://www.theguardian.com/world/2020/sep/08/covid-19-death-rate-african-americans-and-latinos-rising-sharply>

Poynder, R. (July 30, 2020), "Unbundling the Big Deal: An interview with SUNY's Shannon Pritting," Open and Shut? [blog], <https://poynder.blogspot.com/2020/07/unbundling-big-deal-interview-with.html>

RespectAbility. (2020). *Ensuring Virtual Events Are Accessible for All*. Retrieved from <https://www.respectability.org/accessible-virtual-events/>

Rodney, W. (2019). *The groundings with my brothers*. London: Verso.

Smith, E. G. (2020, March). Coronavirus and the need for a social ecology. Institute for Social Ecology. <https://social-ecology.org/wp/2020/03/coronavirus-and-the-need-for-a-social-ecology/>

Sang, K. (2017, August 31). Without accessible conferences, we lose the voices of disabled academics. *The Guardian*. <http://www.theguardian.com/higher-education-network/2017/aug/31/without-accessible-conferences-we-lose-the-voices-of-disabled-academics>

Taraborelli, D. (August 5, 2020), “How the COVID-19 crisis has prompted a revolution in scientific publishing,” *Fast Company*, <https://www.fastcompany.com/90537072/how-the-covid-19-crisis-has-prompted-a-revolution-in-scientific-publishing>

van Ewijk, S. & Hoekman, P. (2020). Emission reduction potentials for academic conference travel. *Journal of Industrial Ecology*. <https://doi.org/10.1111/jiec.13079>

Walters, T. (2018). A tripartite approach to accessibility, diversity, and inclusion in academic conferences. In R. Finkel, B. Sharp, & M. Sweeney (Eds.), *Accessibility, inclusion, and diversity in critical event studies* (pp. 230–241). Routledge. <https://doi.org/10.4324/9781351142243>

Yong, E. (2020, December 14). How Science Beat the Virus: And what it lost in the process. *The Atlantic*. <https://www.theatlantic.com/magazine/archive/2021/01/science-covid-19-manhattan-project/617262/>