

Please cite as:

Herb, U. (2018). Open Access and Symbolic Gift Giving. In J. Schöpfel & U. Herb (Eds.), *Open Divide? Critical Studies on Open Access* (pp. 69–81). Sacramento, USA: Litwin Books.

[DOI:10.5281/zenodo.1206377](https://doi.org/10.5281/zenodo.1206377)

See also this website for more Open Access contributions from *Open Divide*:

<https://www.scinoptica.com/open-divide-critical-studies-on-open-access/>

Open Access and Symbolic Gift Giving

Ulrich Herb

Open access has changed. At the beginning of the millennium, it was portrayed in a romanticizing way and was embedded in a conceptual ensemble of participation, democratization, digital commons and equality. Nowadays, open access seems to be exclusive: to the extent that commercial players have discovered it as a business model and article fees have become a defining feature of gold open access, open access has increasingly transformed into a distinguishing feature and an exclusive element. Scientists are beginning to make the choice of a university or research institution as an employer based on whether or not they can afford to cover the article fees for publications in high-impact but high-priced journals. Surprisingly, this transformation of open access is not the subject of any noteworthy discussion in specialist or journalistic publications, but instead the ideals of the digital commons of knowledge still prevail in these venues. Even so open access is increasingly becoming an instrument that creates exclusivity, exclusion, distinction and prestige. These functions, however, are obscured by symbolic gift giving strategies and presented as altruistically staged, so that in the discourse of the open access community and in media reporting on open access, the both euphemistic and largely obsolete prosocial story-telling of open access dominates. The paper also discusses the question of whether the concept of open access was not overstrained by the hopes placed in it.

Open Access 2002: revolution, romance & idealism

In its early days, open access was mainly driven by altruism. The concept of making scientific knowledge available to everyone at no cost arose out of and was embedded in a morally motivated framework encompassing the idea of a digital knowledge commons, revolution, the levelling of knowledge-based differences, and democratization.

Even 15 years later, this moral impetus can be felt when we read the central passages of the Budapest Open Access Initiative's (BOAI) declaration: "Removing access barriers to (...) [scientific] literature will accelerate research, enrich education, share the learning of the rich with the poor and the poor with the rich, make this literature as useful as it can be, and lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge" (10). Open access was expected to make the world fairer, it was praised as a "democratizing tool that equalizes standards and expectations between lesser and greater institutions of learning, regardless of social rank or geographic location" (2, p. 4). Especially at the beginning of the millennium open access advocates were convinced to live in the era of a radical change: Harold Varmus, co-founder of the open access publisher PLOS (Public Library of Science) declared open access a "Revolution in the Publication of Scientific Papers" (28). Whoever published a paper in PLOS Biology was even lifted into the exalted position of a leader of a revolution: "We hope that you will lead the Open Access revolution by publishing your most exciting research in PLOS Biology" (5). David Prosser, then Director of the Scholarly Publishing and Academic Resources Coalition (SPARC), saw open access as "no less than the next information revolution" (27).

Revolution?

In 2017, this early enthusiasm has given way to a dry pragmatism; open access is primarily defined as gold open access and is, in large part, driven by the well-known players from the subscription business who are now publishing numerous journals which promulgate articles in exchange for Article Publication Charges (APCs). On August 1, 2017, the Directory of Open Access Journals (DOAJ) listed 9,621 journals. Only 32 publishers put out more than 20 journals, which gave them a quantitatively significant influence on open access.¹ These 32 publishing outlets published a total of 2,950 journals, or 31 % of all DOAJ journals. On this day the DOAJ listed 7,474 publishers. This means that 0.43 % of DOAJ publishers bring out 31 % of all journals. Of these 2,950 journals, 1,641 (or 56 %) originate from publishers that dominate the subscription market: Elsevier, Springer Nature (including BioMed Central, Frontiers), Wiley, SAGE, De Gruyter, Taylor&Francis, Oxford University Press, Wolters Kluwer (15). Regarding the number of open access journals, Elsevier is the biggest open access provider (20) and findings from project OpenAPC² reveal that

¹ PLOS is not among those, but nonetheless exerts influence, albeit of a more qualitative nature.

² OpenAPC wants to offer a cost-monitoring for gold Open Access publications.

between 2005 and 2015, the bulk of APC-based articles in Germany were published by Springer Nature (17). These figures indicate that the much-touted revolution for the publishing market did in fact not happen, and maybe we can even conclude that it **could never have happened**, as we shall see later.

Democracy? Levelling Differences?

The early enthusiasm notwithstanding, soon after the inception of open access it appeared more and more questionable whether open access could indeed fulfill the expectations and hopes placed on it, e.g. the assumption that an open availability of scientific information would level social inequalities, optimize education or boost democracy was criticized as being very simplistic and not backed up by Sociology (14). Especially with regard to the cost-free availability of information, it could be doubted as early as 2010 if such free access to information could really achieve a levelling of social inequalities. The possibility of a fruitful application of available information depends first on the extent of a person's cultural capital, or more simply put, on that person's education (14). Open access does not change this reality. Constraints on the ability to use freely accessible information for one's gain and betterment are exerted by a person's cultural, economic and social capital.

The Indian city of Bangalore is a case in point: here, digitized land registry information was made available free of charge to everyone – without observing any ensuing levelling of differences or inequities. Instead, the cultural, economic and social capital as defined by Bourdieu (7) displayed its full force. The beneficiaries were found in the educated and wealthy segments of the population, given that they already had the requisite cultural and economic capital and only needed this newly available information about the real estate market to further increase their economic gain (4). Gurstein (13) sums up the findings: “The newly digitized and openly accessible data allowed the well-to-do to take the information provided and use that as the basis for instructions to land surveyors and lawyers and others to challenge titles, exploit gaps in titles, take advantage of mistakes in documentation, identify opportunities and targets for bribery, among others. They were able to directly translate their enhanced access to information along with their already available access to capital and professional skills into unequal contests around land titles, court actions, and offers of purchase for self-benefit and to further marginalize those already marginalized.” Also, the mere presence and accessibility of technical innovations, internet connectivity and information of all sorts will not - by itself – miraculously do away with social inequalities, uneven distribution of privileges and disenfranchisement (see e.g. 16).

Provisional Conclusion

In 2017 it is clear that open access could not fulfil the expectations and hopes of the revolution placed on it. Nor could the other positive structural effects predicted by open access advocates of 2002 such as a furthering of democracy and cultural and economic levelling be realized. Given that open access was not able to fulfil these promises, we also must ask if there were negative or dysfunctional effects brought on by open access. To answer this question we can again consult French sociologist Pierre Bourdieu and his theories of social fields (especially for the field of science see 8) and distinction (6).

Social Fields and Distinction

Bourdieu's theory of fields says that individuals and institutions are acting in *social fields*. Bourdieu describes fields as universes, encompassing actors and institutions, with more or less specific social rules (14). These fields are mostly vertically stratified and structured areas of competition. The actors within these fields, individuals and institutions, pursue strategies and agendas – mainly to achieve power and distinction, e.g. by accumulating social, cultural, economic or symbolic capital, in order to distinguish themselves positively from other actors in the field.

The different types of accumulated capital structure the different social fields and are used to achieve and obtain distinction and distinctiveness. The structures formed by the distribution of this capital dictate the rules for the various fields, and all three factors -- distribution of capital, structures and rules -- are marked by persistence. These mechanisms are active in all social fields, also in science and academia as well as in academic publishing.

But what do these theories teach us about the instrumentalizations of online publishing and open access? The internet is a condition sine qua non of open access – but it is nothing more than a technical³ infrastructure - and open access is nothing more than an alternative way of publishing. Therefore it might be naïve to think that it could change these inherent characteristics of social action and fields. Even worse: It should be

³ One might add: a hierarchical infrastructure.

expected that open access and the internet are nothing more than new instruments or gadgets that will be utilized by the actors in the field of science in a very well-known way: They will be used “to gain and raise (...) reputations, build exclusive groups and exclude others. No matter how *open* a network or infrastructure [addition by the author: or principle] might be, they are devised, shaped and used by individuals. Consequently, their utilization is subject to human interests and necessities like networks constructed for distinctiveness and power” (14).

Exclusion

As stated before, distinction and distinctiveness are often reached by means of exclusion. But how could a project launched with the expressly stated goal of uniting humanity morph into a program deeply exclusionary in character? A glance at the history of open access helps to understand this unexpected turnaround, which is connected to the definition of political goals.

In its early years, open access was defined, shaped and driven forward primarily by scientists, librarians and research funders; both green and gold open access were seen as being on par with each other. Yet these actors envisioned different aims for open access:

- Research funders were interested in greater impact and dissemination of funded research
- Scientists were aiming for cost-free access to the publications of their peers as well as for greater impact and more dissemination for their own publications
- Librarians were hoping to ease pressure on their budgets posed by the increasing costs for journal subscriptions.

Curiously, one group of actors, the traditional courier of the academic and scientific publication system, was absent from the discussion about open access: the commercial publishers⁴. Their absence had a reason: The BOAI does not mention anything about the profit potential of open access but focuses instead on disinterestedness and altruism⁵ – and was thus of no interest to the publishers.⁶ Furthermore, scientists, librarians and research sponsors also regarded open access as a panacea for the exploding costs, the manifestations of the profit motives of the academic and scientific publishers; both camps, libraries, researchers and research funders on the one hand and the publishers on the other remained in opposition to each other. However, not all scientists embraced open access readily and with open arms. Arguments against green open access included unsettled legal issues about copyright, the toil to deposit a file different from the publisher’s version on a repository as well as the preference for the Version of Record rather than a download from the repository. The chief argument against gold open access was the perceived lack of reputable open access journals. The promise of academic reputation, standing among one’s peers, and advancing career prospects appeared to be more successfully realized by the commercial publishers.

Despite this reluctance within the research community regarding open access, research funders and scientific organizations issued lofty quantitative goals for open access. The European Union’s Competitiveness Council aims to make at least 60 % of publications available in open access by 2020, with the full 100 % of publications envisioned for 2025 (12). Goals as ambitious as these cannot be reached via green open access alone but require the large-scale utilization of gold open access. This is reflected by the fact that research sponsors increasingly pay the (frequently unlimited) APCs for publications in open access journals. This avenue is further strengthened through the issuance of national licenses for subscription journals which allow open access publishing in such journals, as exemplified by the nation-wide licence between the Netherlands and both Springer Nature and Elsevier or between Austria and Springer Nature. Similar agreements of this nature are to be expected for the future.

The outcome of this strategy is three-fold: on the one hand, open access becomes an increasingly lucrative option for commercial science publishers; for reluctant researchers, on the other hand, it is an increasingly attractive publication outlet because they can now publish their work via open access – for a fee – in

4 The declaration of the BOAI mentions publishers only once; *commercial* publishers are even not mentioned explicitly.

5 References to money are stated only in negations („without payment“, „remove the barriers, especially the price barriers“, „without financial ... barriers“) as if there were no place for monetary interests in Open Access. Although there is mention of ‘costs needing to be covered’ there are no references to profits („open access is economically feasible“, the overall costs of providing open access ... are far lower than the costs of traditional forms of dissemination”) (10).

6 Another obstacle: The commercial publishers were in the middle of the digital transformation and fought to bring their sales model into line with the new internet economy. Open access as a principle of free document use overstrained them in 2001; the shift was marked by the years 2006-2008. Springer, for instance, acquired the Open Access publisher BioMed Central in 2008.

prestigious journals of their field.⁷

The third outcome is an increasing exclusivity observed especially at international open access conferences: attendance at the Berlin 12 Conference, for example, a yearly open access conference was an invitation-only affair, and a list of the participants was not made public even after repeated requests (26). The conference website issued only a brief explanation for this: “The 12th conference in the Berlin Open Access Series will be an invitation-only workshop for high-level representatives of the world’s most eminent research organizations. (...) The central theme will be the transformation of subscription journals to Open Access” (8).⁸ The Open Access Amsterdam Conference in 2016 was formally open to everyone, but the target audience addressed in reality by the conference organizers was very different from the enthusiasts of the early open access era: “The venue will be the spectacular building of the Royal Tropical Institute in Amsterdam. Hundreds of scientists, entrepreneurs, publishers and global thought leaders will come together to further the objectives of Open Access and to discuss the importance of free knowledge sharing in the innovation processes of the interconnected world.” (24). The exclusivity of the venue, the selection of the addressees (apart from researchers, publishers and ‘thought-leaders’ and also entrepreneurs – all representing the commercial forces within open access), and finally, the hefty conference fee of 475 € all work in tandem to thwart and foil the original participatory essence and thrust of open access. The privilege of discussing the importance of free knowledge with key players is thus conferred only on actors with deep pockets. In the same vein, the Berlin 13 conference focused solely “on the large-scale transformation of scholarly journals from subscription to open access” (23; this statement is underpinned by the conference’s agenda, see 22).

Symbolic Goods and Symbolic Gift Giving, Excellence and Elitism

The envisioned transition toward widespread gold open access definitely sounds the death knell for the open access revolution, as the market share of the already dominant commercial publishers will be further consolidated. The preference for commercial open access will also introduce an aspect of privilege and excellence into the project: tying open access publication to existing licensing systems turns open access into a privilege since researchers from wealthy nations that can afford to pay for national licenses derive verifiable and tangible benefits from high citation figures in open access documents (see e.g. 3) – whereas less well-heeled countries not only have to pay high subscription fees for journals but also APCs for open access publishing. In practical terms, an open access option underwritten by subscription schemes amounts to a cost rebate for the institutions of nations willing and able to pay for these schemes.

Seen from a sociological perspective, investing in APCs is similar to symbolic gift giving in that an institution – through the payment of these fees – gives the community access to articles published by that institution itself. This kind of exchange is a frequent substitute for a “formal anonymous market” (11, p. 181) in areas where such a market does not exist, as, for instance, in the academic world. Invariably, symbolic gift giving is also a demonstration of one’s own potency and “helps clarify social roles, wealth, or status” (11, p. 181). Making available a lot of (expensive) open access is therefore an effective way for an institution to highlight and underscore their exalted position in the realm of science and research.

In the terminology of Bourdieu (6, p. 66), the privilege of publishing in high-APC open access journals is a symbolic good, and “the manner of using symbolic goods, especially those regarded as the attributes of excellence, constitutes one of the key markers of ‘class’ and also the ideal weapon in strategies of distinction.” Consequently, universities and research institutions capable of creating resource pools for covering the APC fees for open access publishing – sometimes to the tune of more than 9,000 € in APC fees per publication⁹ – distinguish themselves favorably from their competitors and send a clear signal to young and aspiring researchers they want to attract. So open access becomes more or less a “luxury” and will “increase competition in an already highly competitive funding regime” (29, p. 58).

In the mid-term future, this competition can be expected to result in clear cumulative effects such that publications in highly-ranked – and high-APC – journals ensure the high citation rates that are attractive to

⁷ This avenue is further strengthened through the issuance of national licenses for subscription journals which allow Open Access publishing in such journals, as exemplified by the nation-wide licence between the Netherlands and both Springer Nature and Elsevier or between Austria and Springer Nature. Similar agreements of this nature are to be expected for the future.

⁸ On the first day of the following Berlin 13 Conference participation was reserved for the signatories of the OA2020 “expression of the interests” (which consider the described transformation of closed access journals as the way to promote open access) and for observers from scientific institutions. The second day was open to all interested parties; especially representatives of the publishing industry were invited. (19)

⁹ As documented in the data provided by the project OpenAPC (1).

the much sought-after academic stars. At the same time, the positive outcome for the university consists in higher impact scores and resource allocations to their budgets and more project approvals by funders. As this process becomes self-perpetuating, the competition between universities will increasingly be limited to fewer and fewer actors and eventually be closed completely for all but a small number of elite institutions – or as Weller puts it: “Ironically, openness may lead to elitism” (29, p. 58).

This conclusion is reflected in the findings of a study by Jahn and Tullney (17, p. 7 ff.) analyzing the APC fees paid by German universities and research institutions between 2005 and 2015: 39 % of APC-financed articles and 38 % of paid APC fees were generated by the Max-Planck-Society, the most prestigious German research institution. Looking at the numbers of APC-financed articles the following four places were also held by prominent research institutions: Göttingen University, the Karlsruhe Institute of Technology KIT, Regensburg University and Ludwig-Maximilians-University Munich.

Summing up

Of course it can be stated that cost-free or low-fee gold open access or green open access continues to exist. But the agenda of the leading research institutions, the relevant policy-makers, and the conferences receiving the highest media attention by now focus almost exclusively on the commercial version of open access, leading to an ever-greater preference for this type of open access. This unexpected (seen from the perspective of 2002) manifestation of open access as a business model and its instrumentalization for the production of exclusivity and distinction, sadly, is hardly ever discussed.

How is this shift away from the early mission of open access communicated to the world? In truth, hardly at all. Within the open access community, the development is mostly ignored or swept under the carpet; in the interest of maintaining unity, the old open access idealism is taken out and paraded about.¹⁰ This type of romanticism is also used in the external communication to the media, especially when news and magazines’ comments on Sci-Hub criticize commercial publishers dominating the subscription market (e.g. 21): These publishers are blamed for impeding the dissemination of scientific information by charging libraries with sky-rocketing subscription fees whereas gold open access is usually depicted the solution to this financial misery – whereas in actual fact, exactly these publishers are already actively shaping open access. But these romantic illustrations are no more than a rhetorical embellishment of open access policy and devoid of real substance.

Meanwhile, in science policy and media the striving for distinction and exclusivity through symbolic gift giving is staged as an act of selflessness. This selflessness is neither a deception nor is it truly selfless: “...at a subliminal level, the ‘pure’ and unselfish interest is an interest in selflessness, a kind of interest that is characteristic of the economy of all symbolic goods; in this economy, it is the unselfishness which carries the reward. Thus, in a certain way, the strategies of the actors are always two-faced, ambiguous, driven by interests as well as disinterested, inspired by a kind of unselfish self-interest which allows for completely antagonistic but equally erroneous (on account of their one-sidedness) description of motives – one hagiographic and idealizing, the other cynical and reductionist in its denunciation of a scientific capitalist as a capitalist like any other.” (8, p. 24 f. translated by the author).

Summing up we can say that open access did not disappoint all the expectations placed on it. Regarding research efficiency open access is a success: It speeds up scientific communication, makes science more transparent and verifiable, it facilitates the re-use of scientific information, and it generates higher impact scores. Nevertheless, it failed to realize the idealistic hopes connected with it. Maybe the path to that failure was predefined. After all, open access is only one variant of scientific publishing that could not possibly revolutionize the entire system. Besides, we should not forget: No matter whether we think about open or closed access, both are part of the field of scientific publishing that still consists of the same stakeholders with the same power (or without it), playing according to well-known rules and being subject to equally well-known interdependencies. (25).

Even the use of open access to create exclusivity is not really a surprise in hindsight. As Hilbert (16, p. 832) states with regard to other innovations, their use and application is always embedded in “an entire symbolic universe of social status”. It is this embeddedness in social structures and rules that is responsible for the fact that the early idealism surrounding open access fell victim, in large measure, to the very success of open access in the realm of research efficiency. Open access 2018 is primarily defined by attributes such as outreach or impact that can be exploited to produce excellence and distinction – both of which can be bought for a fee from commercial publishers.

¹⁰ Exemplary the motto for events during the Open Access Week 2016 at Brunel University (London) may be quoted: “The Revolution Will Not Be Televised (but it may be tweeted)” (9).

References

- (1) Ahlborn, B., et al. (2017). "Datasets on Fee-Based Open Access Publishing across German Institutions. Release 3.17.12." Bielefeld University. <https://github.com/OpenAPC/openapc-de/tree/v3.17.12>.
- (2) Arcadia Fund (2010). "Academic Knowledge, Open Access and Democracy." <https://www.arcadiafund.org.uk/academic-knowledge-open-access-and-democracy/>.
- (3) Archambault, É., et al. (2016). "Research Impact of Paywalled versus Open Access Papers." <http://www.1science.com/oanumbr.html>.
- (4) Benjamin, S., R. Bhuvanewari, and P. Rajan (2007). "Bhoomi : ' E-Governance ', or , an Anti-Politics Machine Necessary to Globalize Bangalore ?" A CASUM-M Working Papers. doi:10.1146/annurev.anthro.012809.104953.
- (5) Bernstein, P., et al. (2003). "PLoS Biology—We're Open." *PLoS Biology* 1 (1): e34. doi:10.1371/journal.pbio.0000034.
- (6) Bourdieu, P. (1984). *Distinction : A Social Critique of the Judgement of Taste*. Cambridge: Harvard University Press. https://monoskop.org/images/e/e0/Pierre_Bourdieu_Distinction_A_Social_Critique_of_the_Judgement_of_Taste_1984.pdf.
- (7) Bourdieu, P. (1986). "The Forms of Capital." In *Handbook of Theory and Research for the Sociology of Education*, edited by J. Richardson, 241–58. New York: Greenwood. <https://www.marxists.org/reference/subject/philosophy/works/fr/bourdieu-forms-capital.htm>.
- (8) Bourdieu, P. (1997). *Les Usages Sociaux de La Science : Pour Une Sociologie Clinique Du Champ Scientifique*. Paris: Éditions Quae.
- (9) Brunel University (2016). "The Revolution Will Not Be Televised (but It May Be Tweeted)." *Open Access Week Website*. <http://openaccessweek.org/events/the-revolution-will-not-be-televised-but-it-may-be-tweeted>.
- (10) Budapest Open Access Initiative BOAI (2002). "Budapest Open Access Initiative." *Budapest Open Access Initiative Website*. <http://www.budapestopenaccessinitiative.org/read>.
- (11) Camerer, C. (1988). "Gifts as Economic Signals and Social Symbols." *American Journal of Sociology* 94: S180-214.
- (12) Enserink, M. (2016). "In Dramatic Statement, European Leaders Call for 'immediate' Open Access to All Scientific Papers by 2020." *Science*, May 27. doi:10.1126/science.aag0577.
- (13) Gurstein, M. B. (2011). "Open Data: Empowering the Empowered or Effective Data Use for Everyone?" *First Monday* 16 (2). doi:10.5210/fm.v16i2.3316.
- (14) Herb, U. (2010). "Sociological Implications of Scientific Publishing: Open Access, Science, Society, Democracy and the Digital Divide." *First Monday* 15 (2). doi:10.5210/fm.v15i2.2599.
- (15) Herb, U. (2017). "Publishers of Journals Listed in the Directory of Open Access Journals (DOAJ)." *Zenodo*. doi:10.5281/ZENODO.838022.
- (16) Hilbert, M. (2014). "Technological Information Inequality as an Incessantly Moving Target: The Redistribution of Information and Communication Capacities between 1986 and 2010." *Journal of the Association for Information Science and Technology* 65 (4): 821–35. doi:10.1002/asi.23020.
- (17) Jahn, N., and M. Tullney. (2016). "A Study of Institutional Spending on Open Access Publication Fees in Germany." *PeerJ* 4 (August 9): e2323. doi:10.7717/peerj.2323.
- (18) Max-Planck-Society (2015). "Berlin 12 Homepage." *Max-Planck-Society Website*. <https://openaccess.mpg.de/2128132/Berlin12>.
- (19) Max-Planck-Society (2017). "Registration for B13 Open Access Conference is open." *Max-Planck-Digital-Library Website*. <https://www.mpd.lmz.mpg.de/en/about-us/news/408-registration-for-b13-open-access-conference-is-open.html>.
- (20) Morrison, H. (2017). "From the Field: Elsevier as an Open Access Publisher." *The Charleston Advisor* 18 (3): 53–59. doi:10.5260/chara.18.3.53.
- (21) Murphy, K. (2016). "Should All Research Papers Be Free?" *New York Times*, March 12. <https://www.nytimes.com/2016/03/13/opinion/sunday/should-all-research-papers-be-free.html>.
- (22) OA2020 - initiative for the large-scale transition to open access (2017). "13 Th Berlin Open Access Conference - Agenda." <https://oa2020.org/wp-content/uploads/pdfs/B13-agenda.pdf>.
- (23) OA2020 - initiative for the large-scale transition to open access (2017). "B13 Conference - Building Capacity for the Transformation." *Open Access 2020 Website*. <https://oa2020.org/b13-conference/>.
- (24) Open Access Amsterdam (2016). "United Academics Open Access Conference." <http://www.openaccess.amsterdam/>.
- (25) Padula, D., and U. Herb (2016). "Questions Surrounding Affordable OA: Interview with Ulrich Herb."

<http://blog.scholasticahq.com/post/questions-surrounding-affordable-oa-ulrich-herb/>.

(26) Poynder, R. (2015). "The Open Access Movement Slips into Closed Mode." *Open and Shut?*

<http://poynder.blogspot.de/2015/12/open-access-slips-into-closed-mode.html>.

(27) Prosser, D. (2003). "The Next Information Revolution - How Open Access Repositories and Journals Will Transform Scholarly Communications." *LIBER Quarterly* 14 (1). doi:10.18352/lq.7755.

(28) Rankin, J. A., and S. G. Franklin (2004). "Open Access Publishing." *Emerging Infectious Diseases* 10 (7): 1352–53. doi:10.3201/eid1007.040122.

(29) Weller, M. (2014). *The Battle For Open How Openness Won and Why It Doesn't Feel like Victory*. Ubiquity Press. doi:10.5334/bam.