Open Access Publishing

December 4, 2015

1 Part I: Static Analysis - Collective action

Open access publishing is located on the world wide web, accessible anywhere where there is both internet access and a capable computer. Open access publishing is directly related to the digital knowledge commons, which started with the advent of the Internet around the 1950s and spans into present day and catalogues an action situation of over 3 billion people who have active access to the internet. The resource unit is peer-reviewed scholarly information or "high quality" information.

The social dilemma is how to create equal access to peer-reviewed information, which the advent of open access publishing ("author pays" model) helps with, as opposed to traditional publishing ("reader pays" model). Connected to this issue is the dilemma of how to monitor the open access journal articles to make sure that they do not neglect the peer-review process that makes scholarly information credible.

1.1 The Commons Dilemma

The commons dilemma includes providing equal access to peer reviewed information. In the traditional publishing model, where the reader-pays for what they access, peer reviewed information is disproportionally provided to the wealthy. A shift to open access publishing where the author-pays to be published makes all information published in this format equally accessible to anyone with access to the internet and a capable computer.

Potential over appropriation / poor coordination of appropriation:

The author-pays model attracts predatory publishes who abuse the model for profit and tend to overlook the peer review method that is quintessential to the production of the resource: high quality information. The incentive to collect money for each article published encourages journals to neglect the peer review process and publish any article that has a willing paying author. Therefore, monitoring of those journals that neglect the peer-review process must happen in order to maintain the system.

Potential under-provisioning of public infrastructure:

There is under-provisioning of the peer review capacity. This under-provisioning leads to a long peer review process. This delay makes predatory journals that promise quick reviews due to a lack of a review process seem desirable to an author anxious to publish.

Peer reviewing is a voluntary process that relies on the altruism of other experts in the field. Part of being a scholarly publisher means that you agree to peer review other articles in the future from the journals you have published in. However, this is a norm and not a rule with any specific punishments. Lack of participation in peer reviewing is not

something that is visible to other authors.

1.2 Biophysical Context (IAD)

Natural infrastructure (NI):

Natural infrastructure in this case is the intellectual power of the individual to create, analyze and review information. The potential size of the NI encapsulates all of society, however it currently estimated that there are just over 3 billion people in the world with access to internet. Individuals who have access to the internet can regulate and monitor journals that they believe to be predatory and shame them on a public list, such as Beall's list. People are not intentionally excluded, however, without access to a computer and internet, people cannot participate. Generally, wealthier nations have more access to computers and internet than poorer nations.

Hard human-made infrastructure:

There is a combination of private and public hard human-made infrastructure that together create the digital knowledge commons, in which open access journals are hosted. Open access journals host their own private buildings, internet servers, computers, and websites. Additionally they host websites that are available for access by the public. Universities and other academic institutions often contribute financial funds that sponsor research that is the backbone of many articles.

Soft human-made infrastructure:

Articles produced by the journals can be considered soft human-made infrastructure. People working for universities and other academic institutions often contribute decision-making skills for prioritizing what research to fund, which often leads to production of data that is the backbone of many articles.

1.3 Attributes of the Community (IAD)

Those who read and publish scholarly journals tend to have a general interest in the quality of the articles produced. Readers want to be able to trust the information they consume. Authors want to publish in respectable journals.

Social Infrastructure

It is very easy for users to communicate with another as long as they have access to the internet and a computer. Because there is a common interest in maintaining the quality of the information published (i.e., the peer review process), users have self-organized and regulate and monitor the presence of predatory journals. This monitoring and regulation is a free service that users provide based on their common interest for maintaining the quality of the provision of articles. Furthermore, because science builds upon past experiments and learning, it is imperative that the quality of those articles that become published be maintained; the incentive to regulate is strong.

Human Infrastructure

While anyone with a computer and internet access can 1. Submit articles to be published and 2. Offer to review articles, typically both of these actions are done by people who have completed higher education (i.e., have obtained graduate degrees at formal universities). There is a tendency for people who have published in the past to continue to publish again in the future, furthering a selection for highly- and formally-educated individuals to be the main actors in this arena.

1.4 Rules in Use (IAD)

Position Rules: There is no limit to the amount of people that can participate (i.e., submit articles to be published to open access journals). Anyone may submit their articles to be published. Only highly respected academics get offered positions on the boards of journals.

Boundary Rules: Authors can exit and enter as they please; they can submit articles whenever they want and stop submitting whenever they want. The same rules apply to peer reviewing. Repeat publishers or established experts in fields may be offered positions on the boards of open access journals where they have increased decision-making capacity regarding quality parameters for the journals.

Choice Rules: Authors may choose which journals to submit their potential publications too. Authors may choose whether or not to publish in a journal, if accepted. Journals may select which articles they choose to publish. Board members of journals may select quality criterion for maintaining the reputation of their journals. Interested parties may choose to monitor journals for predatory behavior and choose to report the journal to Beall's list, (www.scholarlyoa.com).

Aggregation Rules: A group of peer reviewers decides whether or not an article may be published in an open access journal source. If the journal is predatory, than this process is typically overlooked and any author willing to pay is published.

Scope rules: Each journal has a set of quality criterion that is to be upheld. A robust peer review is often part of the quality criterion, if it is not, the journal is likely predatory. Peer reviewers analyze and judge the soundness of the research process and methodology, the appropriateness of the article for the particular journal, the potential value that this adds to society, etc. If a journal gets listed on Beall's list as being suspected of being predatory, and that journal wants to contest the issue, there is an appeals process.

Information Rules: Beall's list informs authors of suspected predatory journals to create a negative feedback of publishing in them. By having this information available (i.e., which journals to avoid) authors can trust the remaining open access journals.

Payoff Rules: Generally speaking, authors are rewarded by publishing in open access journals (as opposed to traditional journals) as they tend to have higher impact factors, this

is called the "open access citation effect." Furthermore, if a journal is predatory, it is likely to be found out about, and authors who take the easier route to publishing (i.e., no peer review process and less edits before publishing) are likely to not be rewarded with having their article cited if it is in a predatory journal. Those authors who go through a more extensive peer review process and rounds of editing, are more likely to rewarded by having their paper published in a journal that is not listed on Beall's list and to receive future citations.

1.5 Summary

Because those who consume research have a vested interest in the quality of the articles they read and those that produce research have a vested interested in making quality research which builds upon past research and publishing in credible journals, there is a strong incentive to regulate open access journals. Beall's list is a perfect example of self-organization of the users to shame predatory journals and send information signals to future publishers so that research is sent through the proper review channels, leading to a robust collection of published scholarly articles in the open access domain.

2 Part II. Dynamic Analysis - Robustness

This is a currently active case, therefore it is not appropriate at this time to do a dynamic analysis. An update is encouraged to be done in the future to analyze the robustness of the system.

3 Case Contributors

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