

A peak through the Looking-Glass



at the curious economics of academic publishing

Ted Bergstrom—Presentation to UNICA, Sept 2018

The workforce...

- Academic journals publish papers written by scholars who are paid by universities to write them.
- Articles are peer-reviewed for journals by university faculty for little or no payment from publishers.
- Most journal editors receive little or no payment from publishers, but are supplied with office space and secretarial assistance by universities.
- Publishers copy-edit and typeset the articles, attach journal titles, and post them on the web.

The “Business Model”...

- Authors sign copyright agreements that give publishers exclusive rights to sell access to online or printed copies of their articles.
- Universities buy back access to the articles that are written, reviewed, and edited by their own employees and employees of other universities.
- Commercial publishers price this access at ``what the market will bear.’’

Revelations from financial reports

- As publicly held corporations, commercial publishers must publish financial reports.
 - Elsevier profits about 40% of revenue.
 - Wiley, Springer, and Taylor Francis about 35% of revenue.
- Comparisons to other industries
 - Apple 22%
 - Pharmaceuticals 12-14%
 - AB InBev breweries 14%
 - General Motors 5%

Secrets of the “Big Deal”

The Fleecing of University Libraries



Publishers' secrets



- Big Deal packages are sold at different prices to different libraries.
 - Most libraries sign contract to keep price they paid secret
- Subscription lists and number of subscribers are kept secret.
- Libraries contract to keep prices and download numbers secret.

Secrets revealed

- Two colleagues and I used Freedom of Information Act requests to find prices paid by a large sample of state universities.
- Elsevier sued to prevent this, but lost the suit.
- Results are published in the PNAS 2014.
- Average price per citation paid by US research universities to large commercial publishers is four to ten times as high as that charged by 80% of non-profit societies.

Publisher Revenue per article

- Estimated Ratio of Publisher subscription revenue* to number of articles published in 2016
 - Elsevier \$6,800
 - Taylor & Francis \$7,300
 - Springer-Nature \$4,400
 - Wiley \$4,200

* Based on publisher financial reports

Monopoly power and prestige

- How can commercial publishers get by with these high prices?
- The source of commercial publishers' monopoly power is the prestige of their legacy journals.
- Authors and editors are rewarded for publishing in and editing in prestigious journals.
- Prestigious journals get the best papers.
- Scholars put high value on access to these journals.

Is Open Access the Solution?



The current equilibrium

- Most articles published by commercial publishers can be accessed only by subscription. These publishers own many of the most prestigious journals.
- Research universities are willing to pay a lot to access these journals and commercial publishers price discriminate in such a way that most libraries subscribe.
- If a university chose to cancel its subscriptions and use the money to pay author fees to make its own work open access, it would lose access to much essential literature and would gain little in readership since most researchers are at universities with subscriptions.
- This is an equilibrium--- No single university has an incentive to switch from subscribing to paying for open access.

This is NOT a prisoners' dilemma

- In a prisoners' dilemma game, the only equilibrium when everyone acts in their self-interest is one that is worse for everyone than if they cooperated.
- The current equilibrium is an inefficient outcome that is stable when universities act independently in their self-interest.
- But in this case, there is a more satisfactory outcome that would be stable if it were reached.

An alternative equilibrium

- Suppose that almost all dropped subscriptions with commercial publishers, but paid publishers to supply open access to papers written by their own authors.
- If almost everybody has open access, it would not pay to subscribe to these journals, since almost all material is available for free.
- If nobody subscribes to journals, the only way for a university to make its' scholars work available in the publishers' prestigious journals is to pay the charges for making them open access.
- So the outcome where libraries nobody else subscribes and all pay author fees for open access is also an equilibrium.

How to get from one equilibrium to the other.

- Could a switch from subscription to open access equilibrium be achieved and if so how?
- Would such a switch reduce the amount of ransom paid to monopolist publishers?

A fundamental problem

- The monopoly power conferred by historic prestige does not disappear with open access.
- Authors and universities are willing to pay large amounts to publish in the most prestigious journal available to them.
- Publishers can charge author publication fees for open access that greatly exceed costs.

Ready for another fleecing?



Hybrid open access journals

- About 80% of expenditures on open access fees goes to pay for publication in hybrid journals.
- These journals contain both open access and subscription-only articles.
- Authors can choose to pay fee so that their article is made available to anyone-subscription or not
- Average fee hybrid open access publishing fee for journals owned by commercial publishers:

About \$3000

Compromising with monopolists?

- Big Publishers are now collecting \$4500-\$7300 per Article with subscription journals.
- Wouldn't it be better to move to open access with publication fees of \$3000, even if costs are much lower than this?
- Maybe, but we need to think carefully about how this is done.

Secrets and double-dipping

- Publishers of hybrid journals get revenue both from author fees and from subscriptions.
- Download statistics provided by publishers include downloads from open access as well as closed access articles. There are no published lists of open access articles.
- Publishers apparently hope that libraries who use download statistics to evaluate subscriptions will not notice that these statistics include articles they could see without subscriptions.

Higher Open Access fees

- Elsevier has 27 journals with author charges \$5,000 or more—all in biomedicine
- Wiley has 14 journals with author charges \$4,500 or more—most in biomedicine, some in materials science, some in chemistry.

What explains these high prices?

- Biomedical research is heavily funded by grants from agencies such as NIH, NSF, Wellcome Trust, and Max Planck Society who encourage open access publication.
- These grants typically pay full author publication charges (APCs) for open access .
- When authors choose they have no incentive to price shop.
- Publishers realize that if most of their customers don't care about price, they can stick it to em.

A possible approach...

- Some university consortia seek a system of “offsets”, where they maintain subscriptions to a publisher’s pay-walled journals at a total price similar to what they currently pay, but allowing their own authors’ articles to be published as hybrid open access with author charges offset against subscription payments.

A likely flaw ...

- The offset system amounts to a subsidy for local authors to submit to the commercial publisher's journals.
- This induces more authors to send their best work to these journals.
- This enhances the prestige of hybrid commercial journals and increase the amount they can charge to authors and possibly also for subscription access.
- Even if universities cap the subsidy they would pay, individual authors have incentives to pay extra on their own for the enhanced prestige, which leads to higher salaries.

Plan S: A glimmer of light?



- Funding agencies in 11 European countries have agreed to require that all research they fund be made open access
 - Not in hybrid journals only pure open access
 - They will pay APC's but with a cap on total payments.
 - They invite other agencies to join them.

The effects of Plan S

- By requiring grantees to publish in fully open access journals, and not hybrid journals, it directly attacks the source of monopoly power.
- The number of articles paid for by these agencies would not be large enough to induce publishers of legacy commercial journals to switch to open access.
- These articles must move to newer open access journals whose average quality will improve. This will reduce the “prestige premium” that commercial publishers can charge.

Advantages

- When implemented by granting agencies, this policy requires no negotiation with commercial publishers.
- The direct effect is to move sponsored articles from behind paywalls to open access.
- The indirect effect is to reduce the relative prestige of legacy commercial publishers and reduce their monopoly power.
- If joined by more agencies, these effects would be magnified.

Can universities do something similar?

- Plan S could work for granting agencies, who can tell their grantees where to publish.
- What about universities?
- Even if they can't order their faculty to publish in open access journals, they could offer to pay author fees for faculty who publish in fully open access journals and not in hybrid journals.
- Where would the money come from? They can bargain for better prices with commercial publishers and be ready to drop subscriptions if no agreement is reached.

Time's up folks....



Don't let the b.....s shear you.



Some Backup material

Publication Fees for open access for some non-profit societies

- Ecological Society of America \$1250
- IEEE \$1350
- Company of Biologists \$1495
- PLOS ONE \$1595
- Optical Society of America \$1942
- American Chemical Society \$2000
- Am Soc for Microbiology \$2300
- PLOS subject journals \$2350
- Physics Review X (APS) \$2500
- PLOS Medicine, PLOS Bio \$3000

- PeerJ (Privately owned small company)
<\$1095

Estimated costs for “no-frills” open access

- Hindawi publishes 22,000 articles at average cost of \$290.
- PeerJ costs are in the low hundreds according to owner, Peter Binfeld
- Ubiquity Press costs \$300
- Some subsist on donated editorial work and academic fumes cost <\$100
 - Journal of Machine Learning Research
 - Theoretical Economics

Cost per Article of Publisher Bundles*

*2010 bundle prices for average Research 1 university

Publisher	Cost per Article
Elsevier	\$4.82
Springer	\$3.64
Wiley	\$10.76
Emerald	\$5.20
Sage	\$9.60
Taylor & Francis	\$8.55
Non-profits (95%)	\$3.00

Cost per Cite of Publisher Bundles*

*2010 bundle prices for average Research 1 university

Publisher	Cost per Citation
Elsevier	\$2.24
Springer	\$3.08
Wiley	\$5.19
Emerald	\$6.94
Sage	\$7.24
Taylor & Francis	\$10.94
Non-profits (95%)	\$0.80