The Current Status of Open Access

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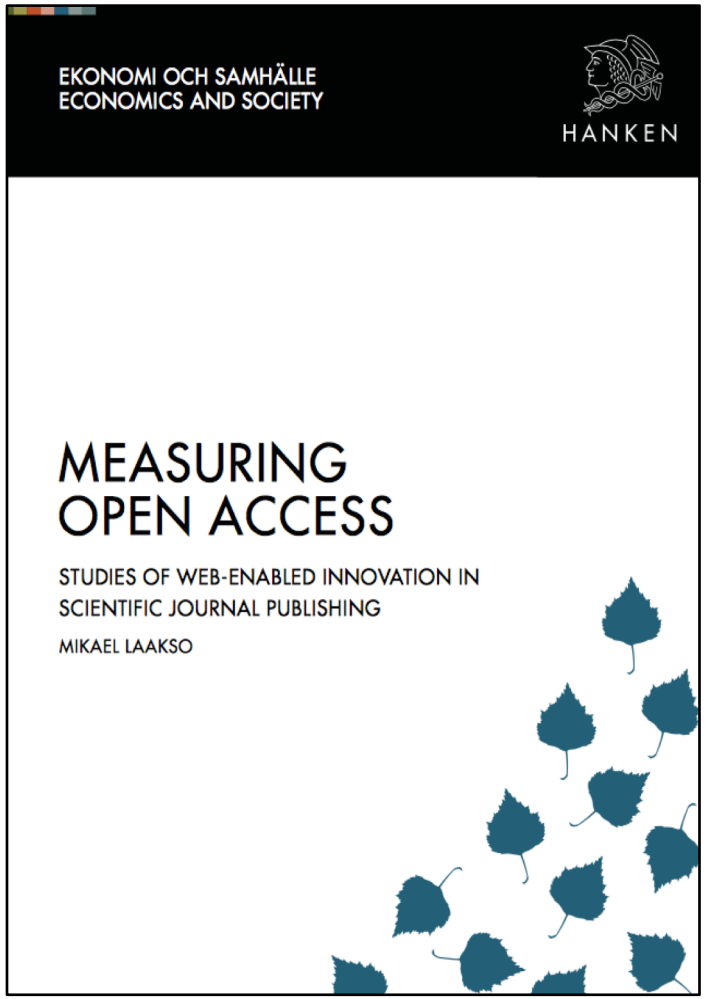
My background and perspective

- Research has been focusing on how open access has been introduced and changed scholarly journal publishing.
- Member of the H2020 Commission Expert Group "Future of Scholarly Publishing and Scholarly Communication (FSP)"
- Member of the strategy group for journal publisher negotiations on behalf of the Finnish university library consortium (FinElib).



Agenda

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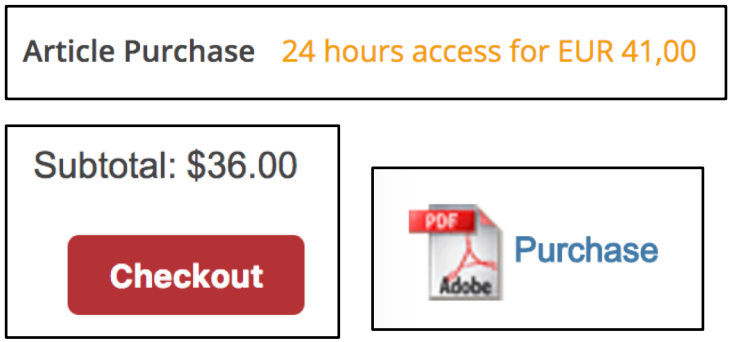
1. Status of open access publishing within the major scientific disciplines.
2. The ongoing shift towards openness both bottom-up among researchers and top-down through science policy.
3. The benefits of Open Access for some major stakeholder groups.
4. Actions that individual researchers can take in facilitating open access to their research, avoiding pitfalls and making the most out of limitless readership to research outputs.

Preamble

Why publish openly?

- You want to unlock the full potential of your research?
- Your research funder/university requires it?

But the better question is perhaps, who whould not want unrestricted visibility, more downloads, more reads, and more citations for their research?



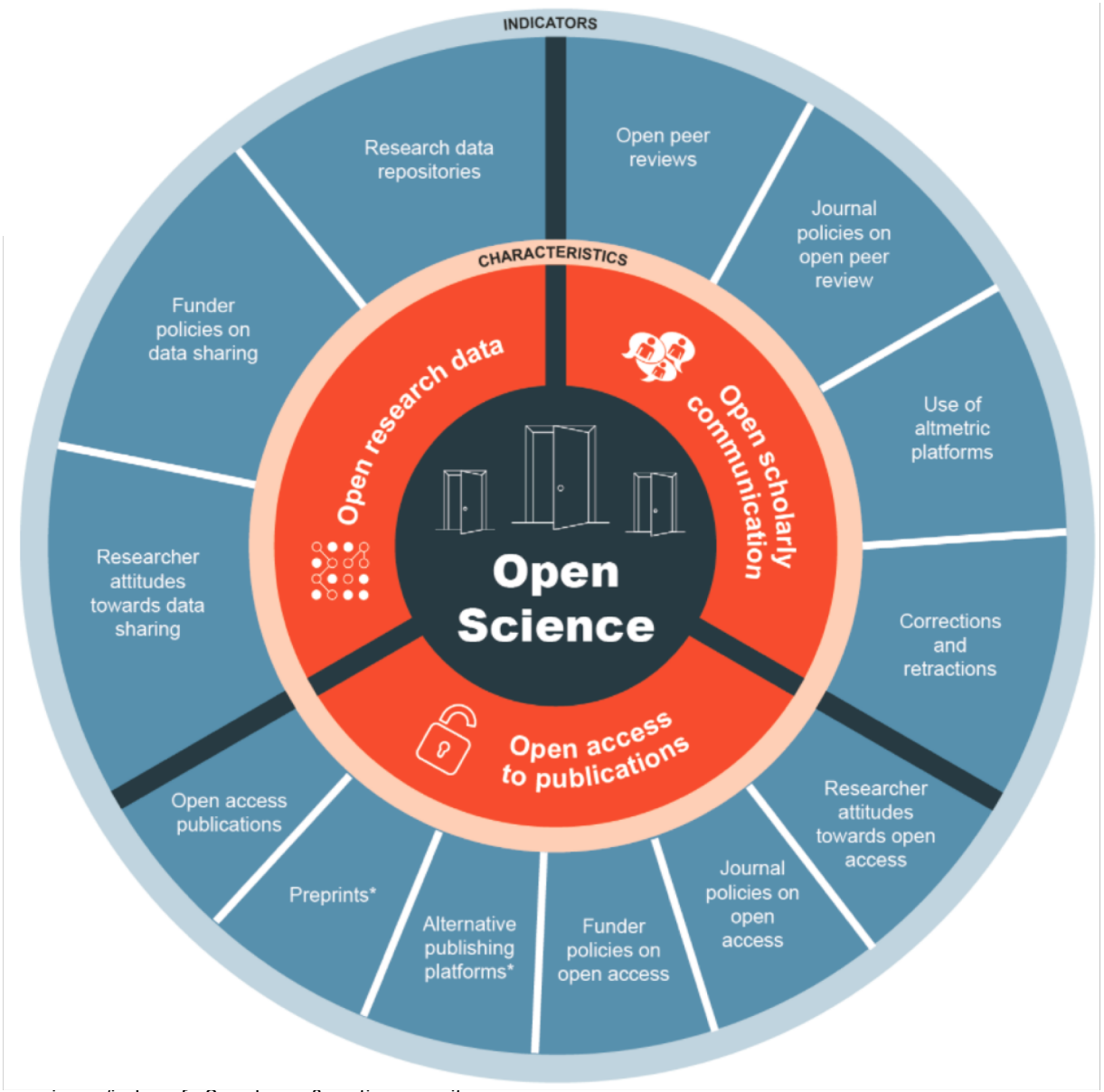


Image: https://ec.europa.eu/research/openscience/index.cfm?pg=home&section=monitor

Open Access

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"Open access (OA) literature is digital, online, free of charge, and free of most copyright and licensing restrictions."

(Peter Suber, 2012:4)

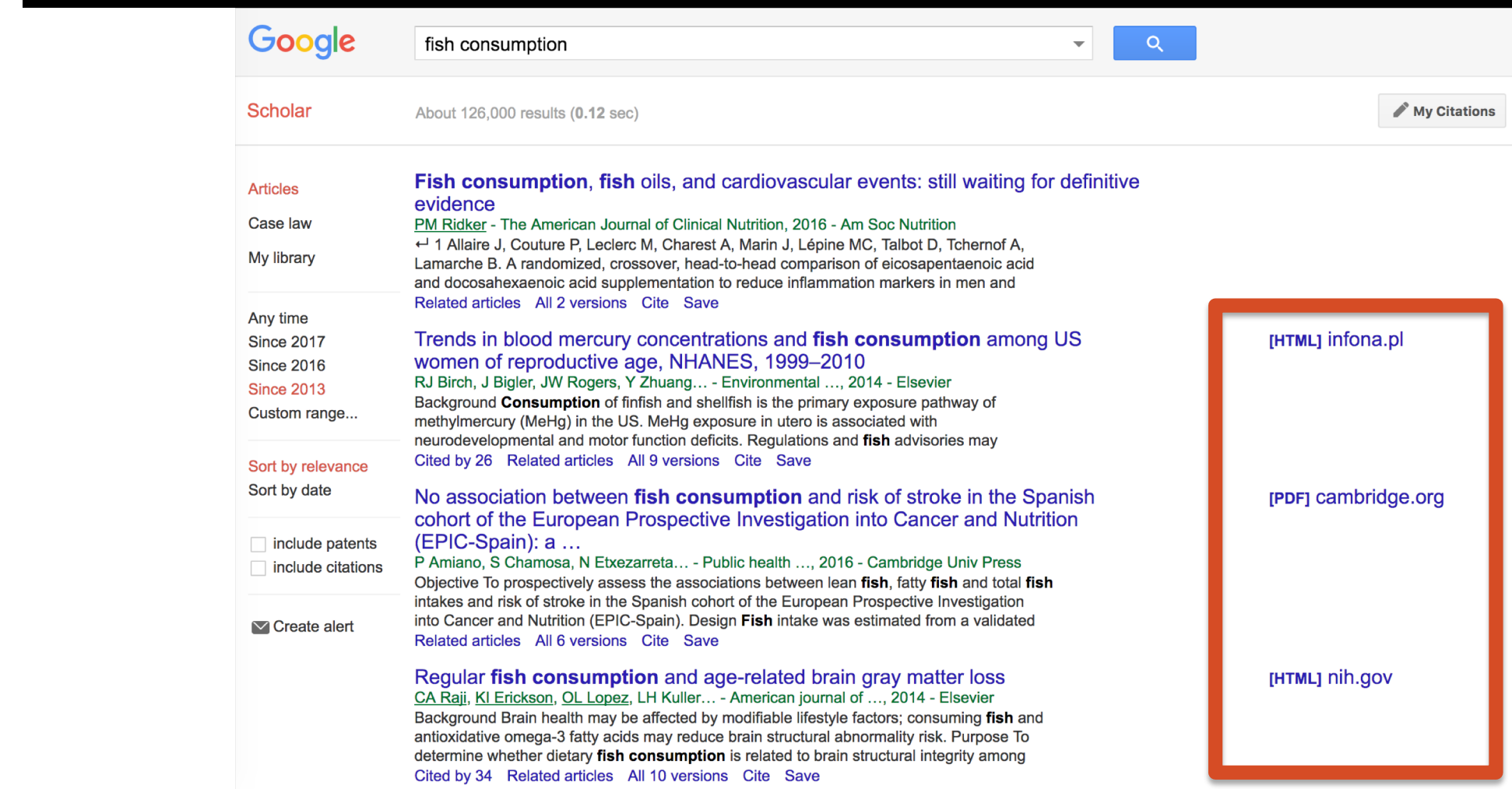
Gold OA

Open Access made available by journals themselves (either in full or part). Free for everyone or enabled by author-side payment.

Green OA

Open Access elsewhere on the web. Often manuscript-versions of published journal articles. Free to authors.

What OA looks like on Google Scholar



OA still has a long way to go

- During 2016, 67 236 cancer news stories linked to 11,523 different journal articles.
- 60% of links to reported research behind paywalls.
- Long embargos not viable for medical publications.

https://medium.com/@lauren.maggio01/can-your-doctor-see-the-cancer-research-reported-in-the-news-can-you-beb9270c301f#.ijeo0f9lq

llegal access is not the solution

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- Provides access to more than **58,000,000** articles and growing.
- The cat-and-mouse game can only last so long.

“Over the 6 months leading up to March, Sci-Hub served up 28 million documents, with Iran, China, India, Russia, and the United States the leading requestors.”

Bohannon (2016)

Status and longitudinal development of open access

The uphill starting position of open access

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- **Major publishers having no reason to hurry**
  - Market-controlling power over journal portfolios
  - Economies of scale in digital publishing
- **Academic merit systems**
  - Academics work hard to get published in prestigious journals & to gain positions on editorial boards
  - Establishing new journals takes time
- **Universities/libraries unable to act aggressively**
  - Subscriptions increasingly expensive, no money left over to support alternative publishing models

Open access accross disciplines

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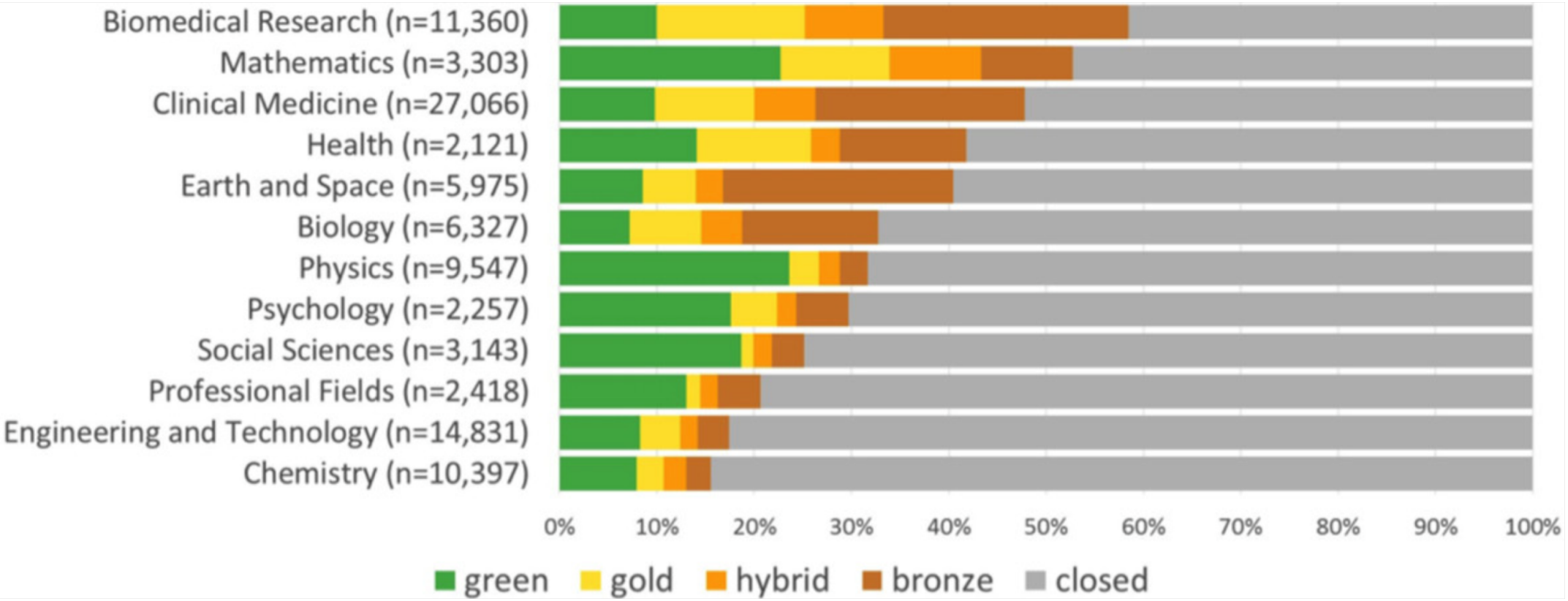
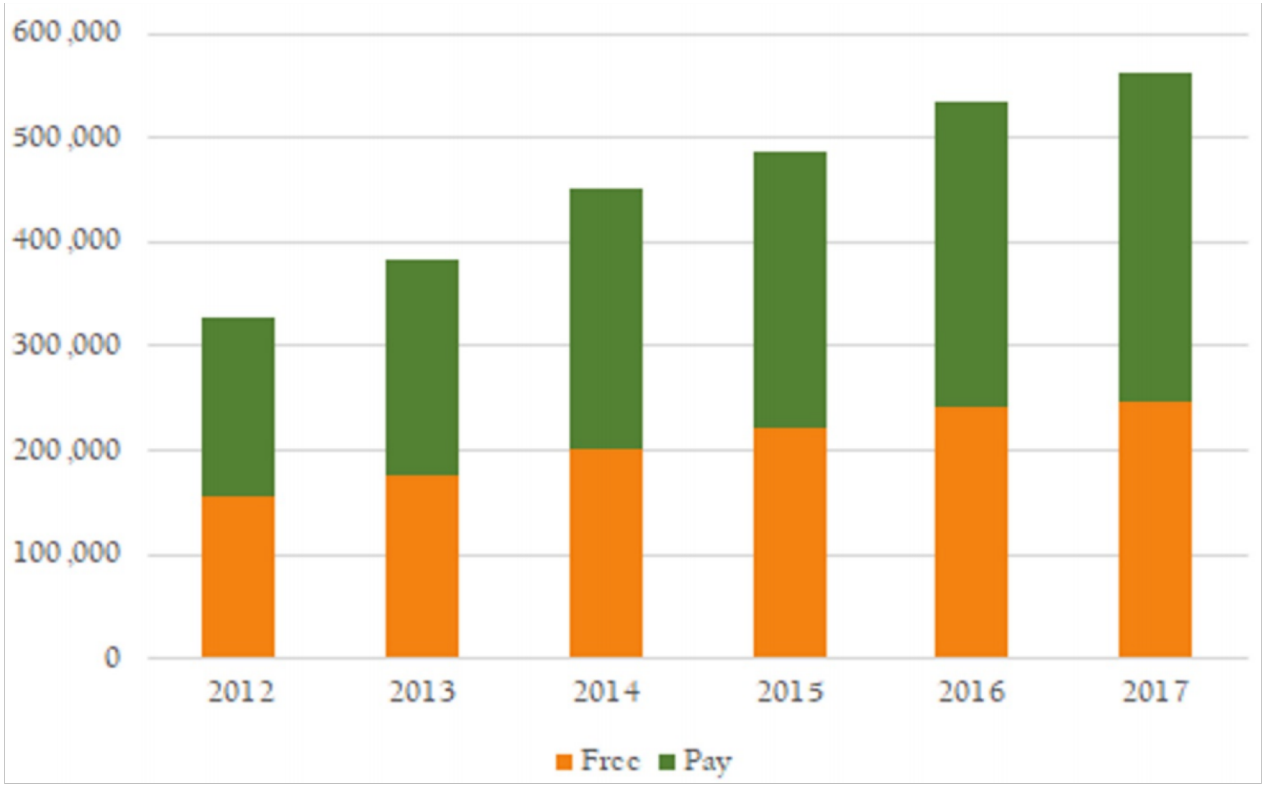


Piwowar et al (2018)

Articles published in Open Access journals 2011-2017



- During 2017 over 560 000 million articles were published in 9668 DOAJ-indexed journals.
- Majority of articles were published in journals requiring payment of an article processing charge (APC).

Crawford (2018)

https://waltcrawford.name/goaj3.pdf

Open access journal articles as % of all articles in Scopus

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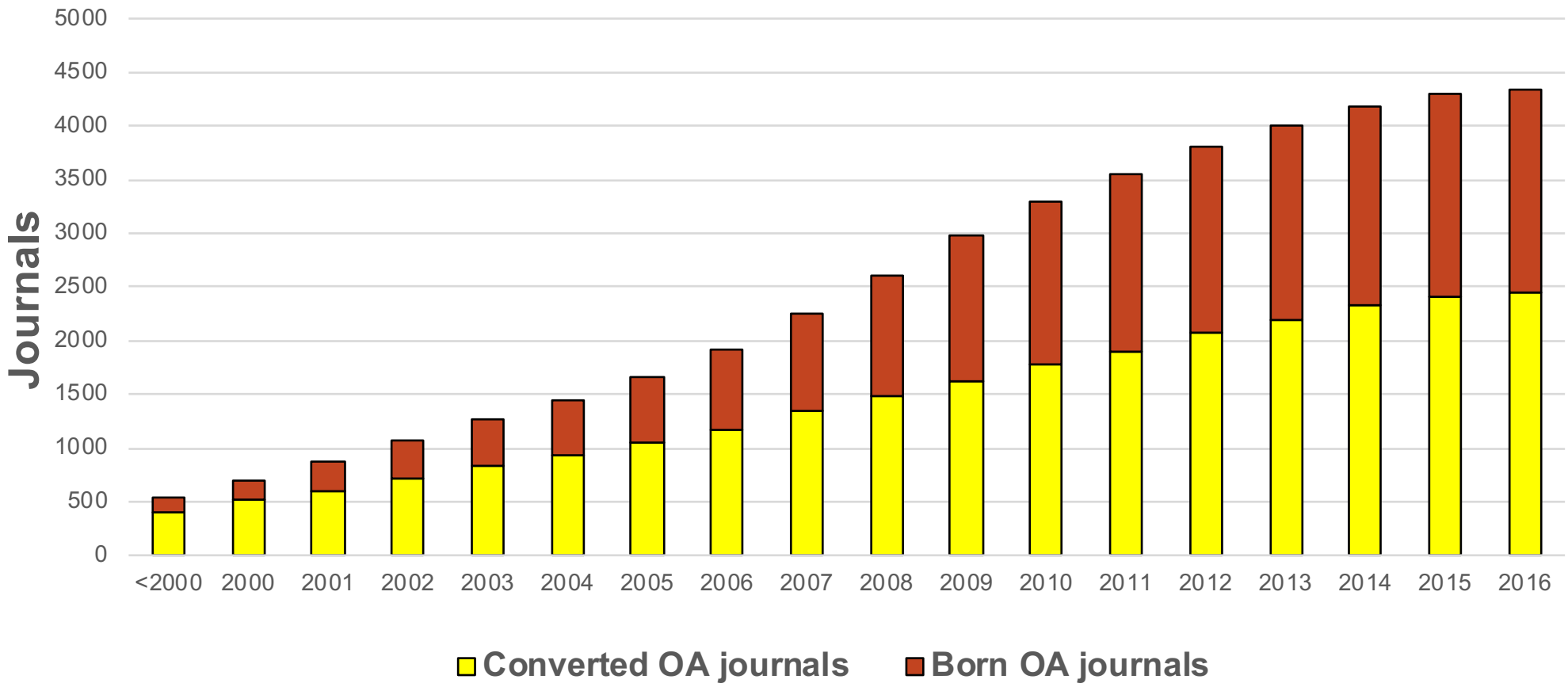
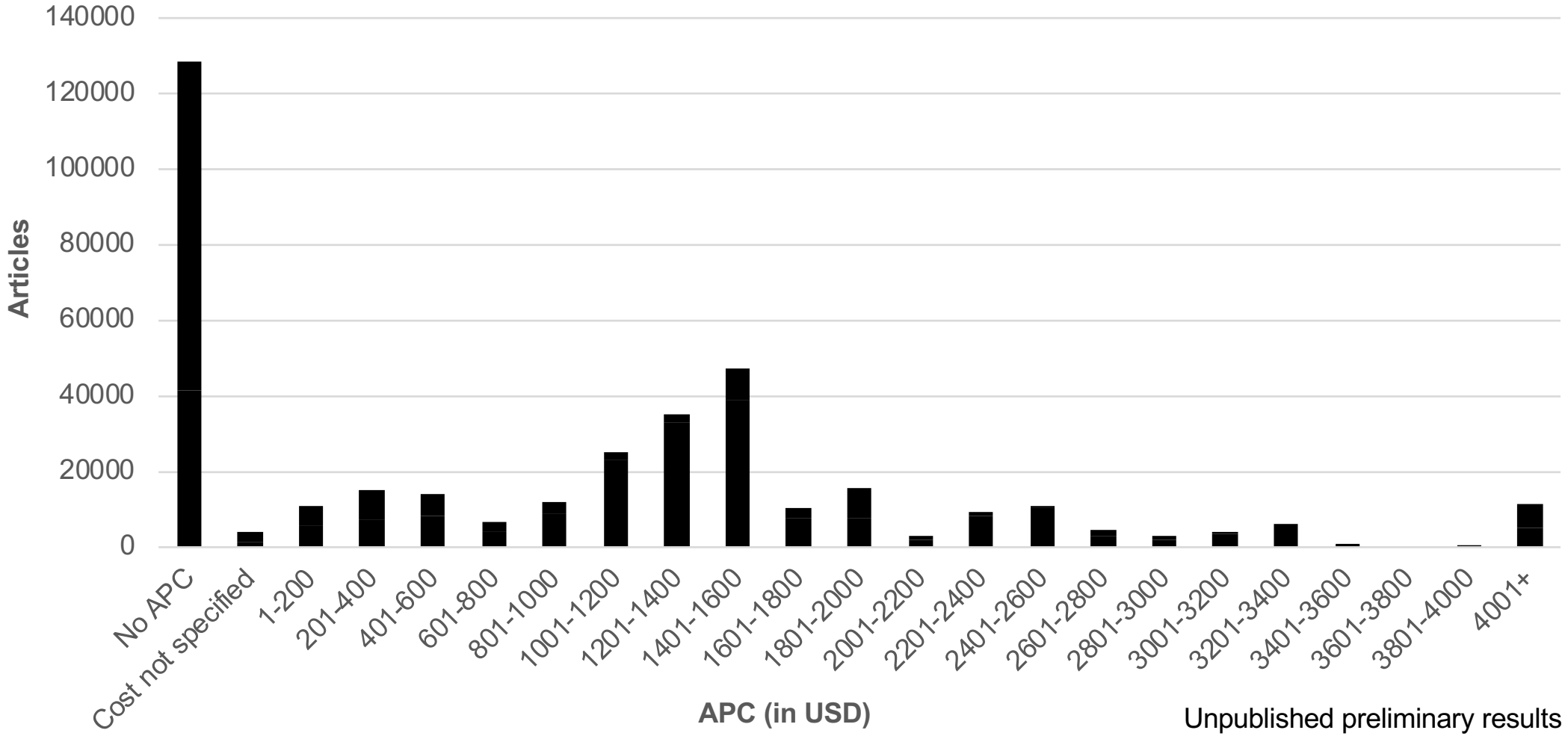
Unpublished preliminary results

		2010	2011	2012	2013	2014	2015	2016
Life Sciences		**14**	**14**	**16**	**19**	**20**	**23**	**21**
	Agricultural and Biological Sciences	19	21	23	25	25	27	25
	Biochemistry, Genetics and Molecular Biology	13	13	15	19	21	24	22
	Immunology and Microbiology	14	14	15	18	20	24	22
	Neuroscience	8	9	12	14	16	18	17
	Pharmacology, Toxicology and Pharmaceutics	12	12	13	15	16	19	18
Social Sciences		**6**	**7**	**8**	**9**	**10**	**11**	**12**
	Arts and Humanities	5	6	7	9	10	12	12
	Business, Management and Accounting	3	3	4	4	4	5	7
	Decision Sciences	4	5	6	6	6	7	7
	Economics, Econometrics and Finance	5	6	7	7	7	8	10
	Psychology	6	7	9	11	12	11	12
	Social Sciences	8	8	10	11	11	13	13
Physical Sciences		**7**	**7**	**9**	**9**	**10**	**10**	**11**
	Chemical Engineering	4	4	5	5	5	6	6
	Chemistry	8	9	9	9	8	9	10
	Computer Science	8	8	10	13	11	13	13
	Earth and Planetary Sciences	8	9	10	10	11	12	12
	Energy	2	3	5	5	5	7	7
	Engineering	3	4	7	7	8	9	10
	Environmental Science	7	8	9	10	11	10	11
	Materials Science	6	6	7	7	7	7	8
	Mathematics	8	9	13	15	16	14	12
	Physics and Astronomy	10	10	11	10	14	16	17
Health Sciences		**13**	**14**	**16**	**18**	**19**	**21**	**21**
	Medicine	13	13	15	17	18	21	21
	Nursing	6	8	8	9	8	9	8
	Veterinary	21	22	24	27	28	27	27
	Dentistry	17	18	21	20	20	23	21
	Health Professions	7	8	10	11	14	16	16
General		**23**	**14**	**16**	**28**	**34**	**49**	**62**

Is the journal landscape shifting or is it just growing? (Scopus OA journals)



Pricing levels of OA journal articles published 2016



Unpublished preliminary results

Open access has enabled new types of journals to exist

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SAGE open

PeerJ

PLOS ONE
A peer-reviewed, open access journal

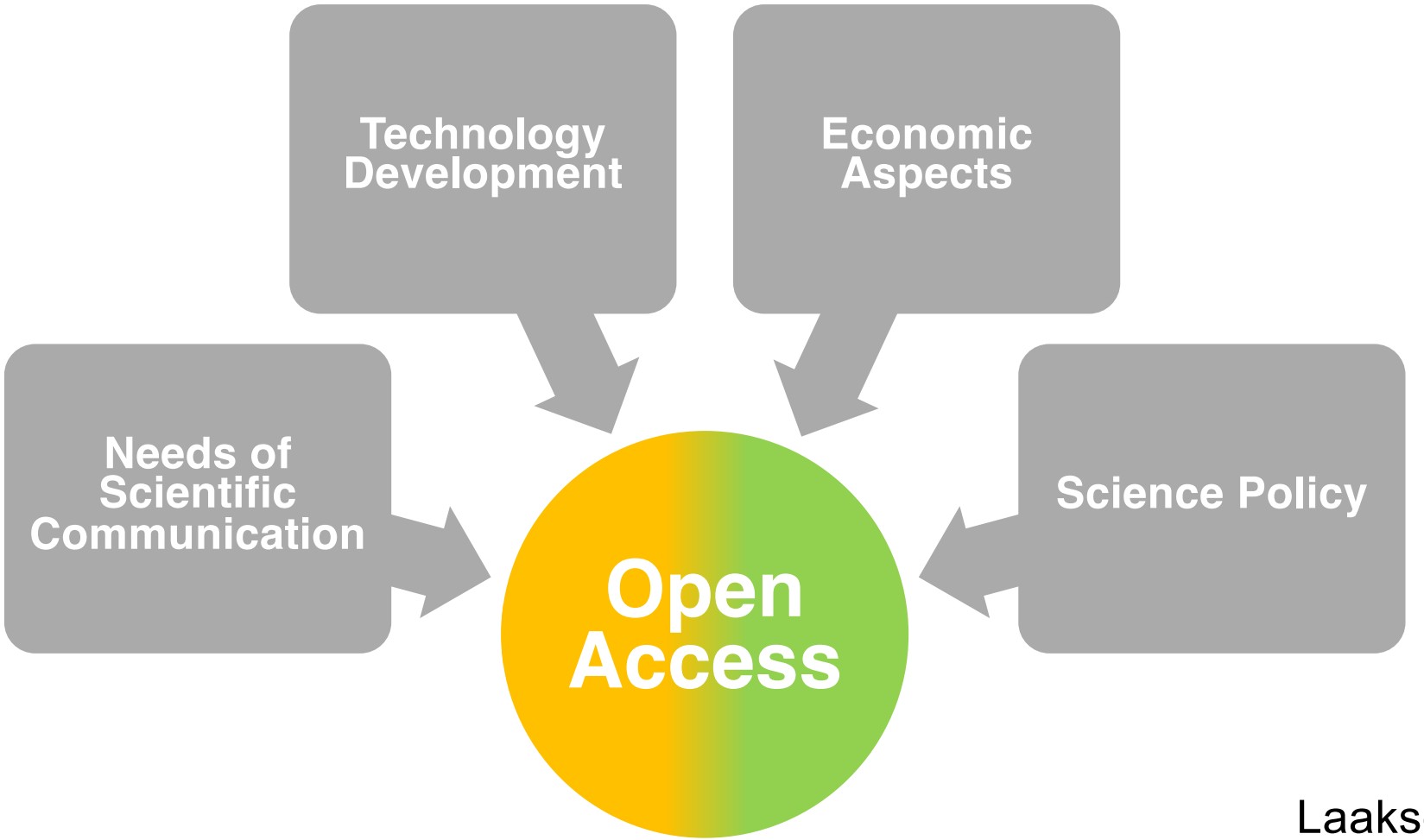
SCIENTIFIC REPORTS

F1000Research
Open for Science

RIO

The ongoing shift towards openness

Open Access has been evolving since the early days of the internet



Laakso (2014)

Guidelines to the Rules on

Open Access to Scientific Publications
and
Open Access to Research Data
in Horizon 2020

3. MANDATE ON OPEN ACCESS TO PUBLICATIONS

Article 29.2 of the Model Grant Agreement sets out detailed legal requirements on open access to scientific publications: under Horizon 2020, **each beneficiary must ensure open access to all peer-reviewed scientific publications** relating to its results.

To meet this requirement, beneficiaries must, at the very least, ensure that any scientific peer-reviewed publications can be read online, downloaded and printed.

Since any further rights - such as the right to copy, distribute, search, link, crawl and mine - make publications more useful, beneficiaries should make every effort to provide as many of these options as possible.

http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf

A transition in 10 years time – realistic & achievable

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> ***"The goal is that a transition to open access to research results, including scientific publications, artistic works and research data, should be fully implemented in a ten-year perspective." (The Swedish Research Bill, 2016/17:50)***

Coordination of Open Access to Research Publications in Sweden (2017)

Academic social networks are not platforms for providing sustainable open access

Hybrid OA

- If the imposed embargo/delay to provide a green OA copy of your article is longer than your research funder accepts you need to see if the journal has an optional OA fee that can be paid t make your article OA on the journal website.
- Cost often in the range of 2500-3000eur per article
- Most research funders do not preference this option since accepted manuscripts can usually b provided for free and the fee for publishing in full OA journals is lower than hybrid OA fees.

Hybrid OA excluded from future research funder policies

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The benefits of Open Access for major stakeholder groups

OA benefits = just research doing what it should

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- OA offers the “normal” way of disseminating research, without artificial barriers to access.
- As such I argue that OA is the default mode for research – the situation we currently are in is due to legacy structures from the paper-based past.
- It would be easier to only focus on the drawbacks and missed opportunities of closed-access instead – however, I will attempt to resist this temptation.

OA benefits are colorblind

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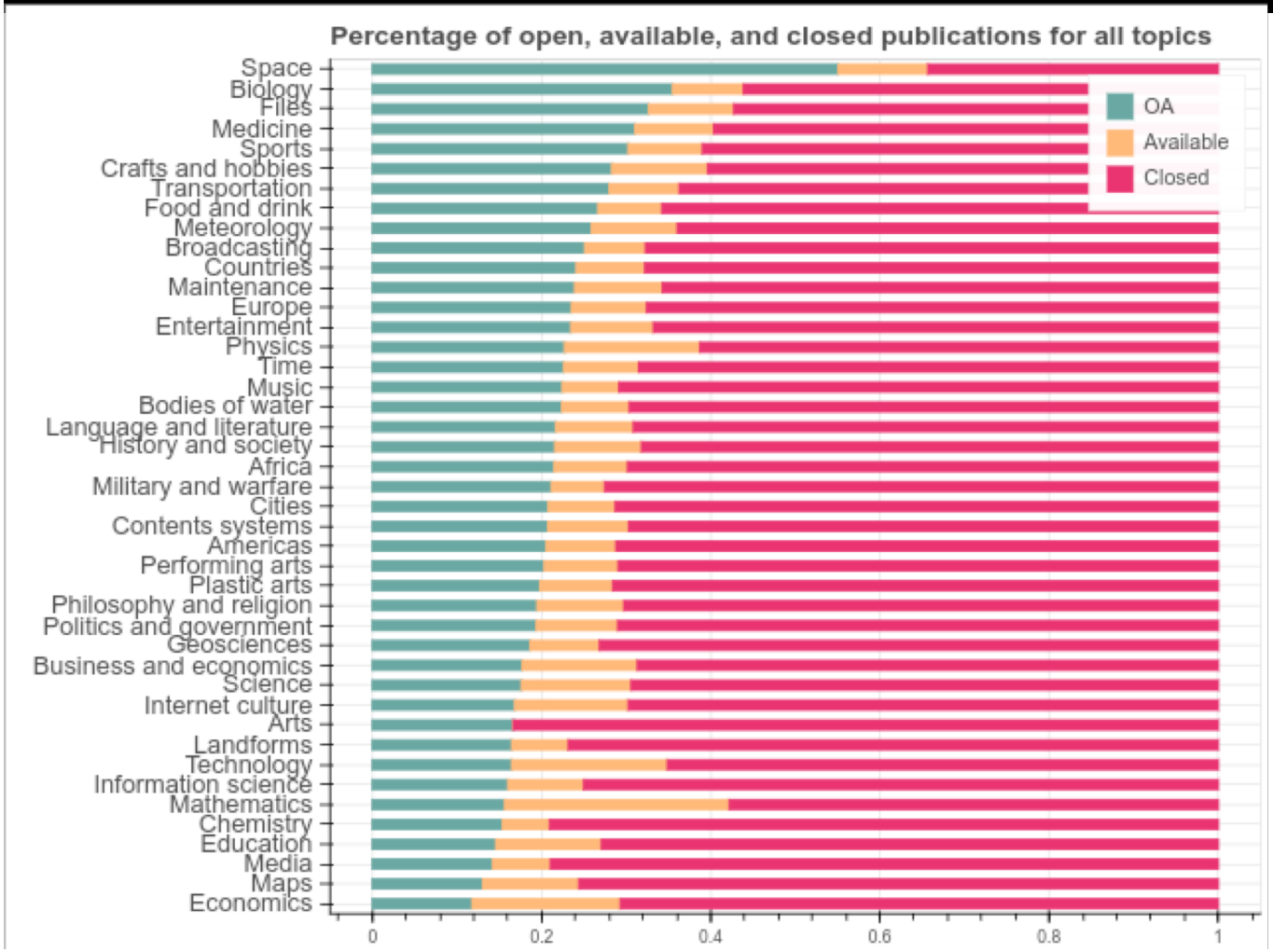
- What matters is that the research publication is discoverable and retrievable without reader-side payment.
- The mechanism through which this happens is not a main concern for gaining benefits.
- However, the earlier OA is provided the better.

Visibility and impact increase

- **Citation advantage** compared to articles only available through subscription-access. (McKiernan et al 2016)
- "[…] the odds that an open access journal is referenced on the English **Wikipedia** are 47% higher compared to paywall journals." (Teplitskiy, Lu & Duede 2016)
- In a study covering over 1700 articles published in Nature Communications**, OA articles received 2.5-4.4 times the interactions on Twitter and Facebook** compared to closed-access articles. (Wang, Liu, Mao & Fang 2015).
- **OA also benefits journals**, it is just that fully embracing the model is currently in tension with maximizing business interests.

On that note, how large a share of article references in Wikipedia are currently OA?



https://wikimediafoundation.org/2018/08/20/how-many-wikipedia-references-are-available-to-read/#content

Readers outside of academia

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- **Citizens and society as a whole benefits**
- Research is not “walled off” from the general public.
- “Those who invest in and benefit from primary research, including the general public, have an interest in improvements to the quality of that research.” (Zuccalá 2009)
- Increased potential for in fostering science literacy.

Researchers looking for information

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- **Ubiquitous access**
  - No logins, no proxies…
  - Easy mobile access
  - No need for publisher-specific search tools
- **All researchers in the world have access to the same scientific information**
- **Use of unified search and discovery services**

Universities

- **Open Access enables universities to:**
- Make works more visible and accessible, thus increasing the impact of all conducted research.
- Retain control and ownership of research outputs that are produced.
- Start collecting an organisational “memory”.
- Facilitate a transition away from ever-increasing publisher subscription fees.

Actions that universities and individual researchers can take in facilitating open access to research

Before submitting your article manuscript to a journal…

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» **Does your funder or university require anything specific?**

» **Is there a suitable OA journal available?** If so, great! Is there an article processing charge that needs to be paid upon acceptance?

» **If you submit to a traditional subscription-access journal**, is there a delay with which you can make your manuscript OA through a repository?

» As a last resort, explore your options for hybrid OA ->

National and university agreements for OA publishing are improving rapidly

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- Open access has become an integrated part of agreements with publishers.
- Usually not fully automatic recognition of coverage on publisher websites, standards on implementation vary a lot.
- Reccomended to check library info pages or ask your library what options you have that have already been paid for.
- Using such options when available is smart and encouraged, indication that money should be used in this way and that OA is something that researchers want.

Should universities set up centralized APC funds?

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- **APC-funds have been found to have two effects**
  - Replacement effect
  - Stimulating effect
- Most APC-funds in continental Europe fund only articles in OA journals and exclude hybrid OA.
- Many APC-funds are managed by the libraries of research organisations but funded (partly or entirely) by research funders via so-called block grants.
- OA factors have an influence on journal selection

http://repository.jisc.ac.uk/6665/1/Financial_and_administrative_issues_around_APCs_for_OA_June_2017_KE.pdf

Author and reader beware: Questionable journals

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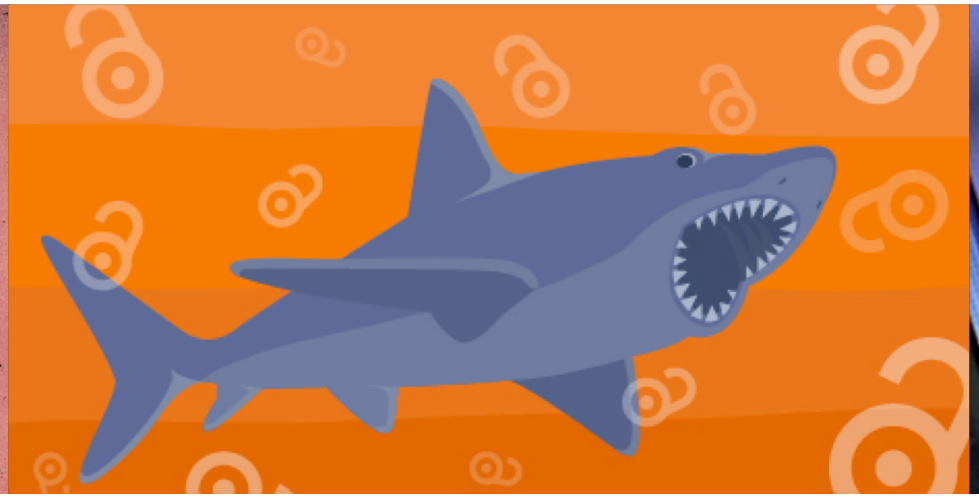
- The adoption of the author-payment model has attracted questionable entrepreneurs to the field of scientific journal publishing space.



Mechanisms for quality control of journals are improving

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- The flooded market can make it hard for legitimate journals to attract quality submissions.
- Initiatives have been started in order to create some form of transparent quality standard.
- With age journals build up credibility and a transparent track record.

DOAJ DIRECTORY OF OPEN ACCESS JOURNALS

OASPA Open Access Scholarly Publishers Association

THINK CHECK SUBMIT

Choose the right journal for your research

http://thinkchecksubmit.org/

https://doaj.org/

What can usually be made available as green OA?

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Research Output Availability on Academic Social Networks: Implications for Stakeholders in Academic Publishing

Mikael Laakso, Juho Lindman, Cenyu Shen, Linus Nyman, Bo-Christer Björk

Abstract

A recent disruption in academic publishing are Academic Social Networks (ASN), i.e. web platforms such as ResearchGate and Academia.edu that have provided new ways for researchers to disseminate, search for, and retrieve research articles. ASNs are still a grey area in terms of implications for involved stakeholders, and research on them has so far been scarce. In an effort to map out factors related to ASN use this article provides a multi-method case study of one business school (Hanken School of Economics, Finland) that incorporates 1) a bibliometric analysis on the full-text availability of research output on ASNs for research published 2012-2014 by Hanken affiliated authors, 2) semi-structured interviews with faculty active in publishing in order to gain insight into motivations for use and use patterns, and 3) a survey distributed to all research-active faculty and doctoral students in order to gain a wider perspective on ASN use. ASNs have for many become the primary way to provide access to one's research output, outpacing all other types of online locations such as personal websites and repositories. Based on the case study findings, earlier research, and recent industry developments, the article concludes with a discussion about the implications that the current trajectory of ASN use has on major stakeholders in academic publishing.

Introduction

Academic publishing is an increasingly crowded field where authors compete for attention and scientific impact. The volume of articles published in academic journals has been increasing steadily at a pace of 3-3.5% annually since at least over two centuries ago, and today there are over 28 000 active journals publishing over 2.5 million articles a year (Ware and Mabe 2015). Many researchers call out for new methods for harnessing the benefits of interactive web technologies like open peer review, more nuanced authorship and acknowledgement systems, and open access (Ponte and Simon 2011). However, these kinds of innovations have not yet been able to compete with the career-boosting weight that is still associated with publishing in prestigious subscription-based journals that make up the top ranked outlets within many research disciplines.

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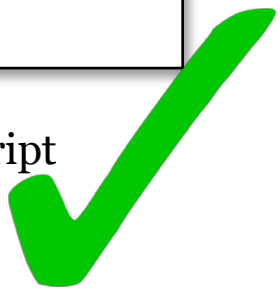
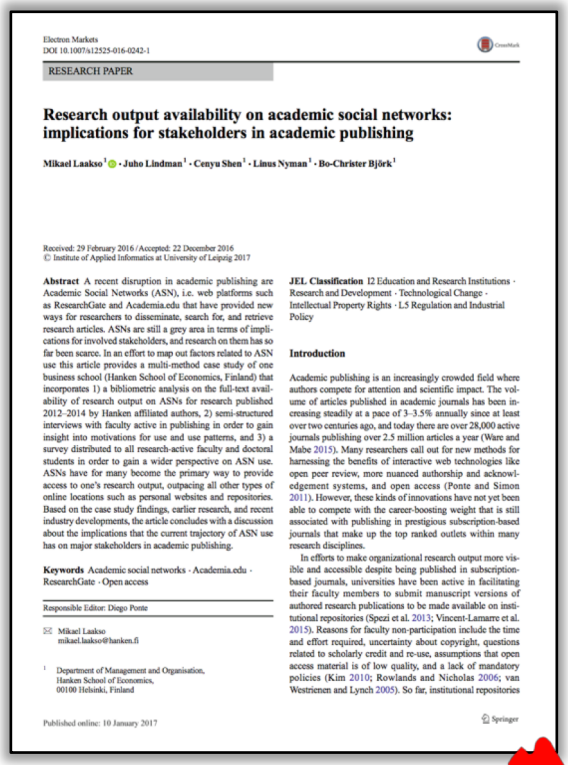
Accepted manuscript

(i.e. final draft)





Electron Markets
DOI 10.1007/s12525-016-0242-1

RESEARCH PAPER

Research output availability on academic social networks: implications for stakeholders in academic publishing

Mikael Laakso[1] · Juho Lindman[1] · Cenyu Shen[1] · Linus Nyman[1] · Bo-Christer Björk[1]

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Abstract A recent disruption in academic publishing are Academic Social Networks (ASN), i.e. web platforms such as ResearchGate and Academia.edu that have provided new ways for researchers to disseminate, search for, and retrieve research articles. ASNs are still a grey area in terms of implications for involved stakeholders, and research on them has so far been scarce. In an effort to map out factors related to ASN use this article provides a multi-method case study of one business school (Hanken School of Economics, Finland) that incorporates 1) a bibliometric analysis on the full-text availability of research output on ASNs for research published 2012–2014 by Hanken affiliated authors, 2) semi-structured interviews with faculty active in publishing in order to gain insight into motivations for use and use patterns, and 3) a survey distributed to all research-active faculty and doctoral students in order to gain a wider perspective on ASN use. ASNs have for many become the primary way to provide access to one's research output, outpacing all other types of online locations such as personal websites and repositories. Based on the case study findings, earlier research, and recent industry developments, the article concludes with a discussion about the implications that the current trajectory of ASN use has on major stakeholders in academic publishing.

Keywords Academic social networks · Academia.edu · ResearchGate · Open access

JEL Classification I2 Education and Research Institutions · Research and Development · Technological Change · Intellectual Property Rights · L5 Regulation and Industrial Policy

Responsible Editor: Diego Ponte

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In efforts to make organizational research output more visible and accessible despite being published in subscription-based journals, universities have been active in facilitating their faculty members to submit manuscript versions of authored research publications to be made available on institutional repositories (Spezi et al. 2013; Vincent-Lamarre et al. 2015). Reasons for faculty non-participation include the time and effort required, uncertainty about copyright, questions related to scholarly credit and re-use, assumptions that open access material is of low quality, and a lack of mandatory policies (Kim 2010; Rowlands and Nicholas 2006; van Westrienen and Lynch 2005). So far, institutional repositories

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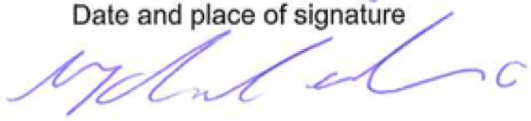

Repositories are the best web locations to self-archive manuscripts

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zenodo

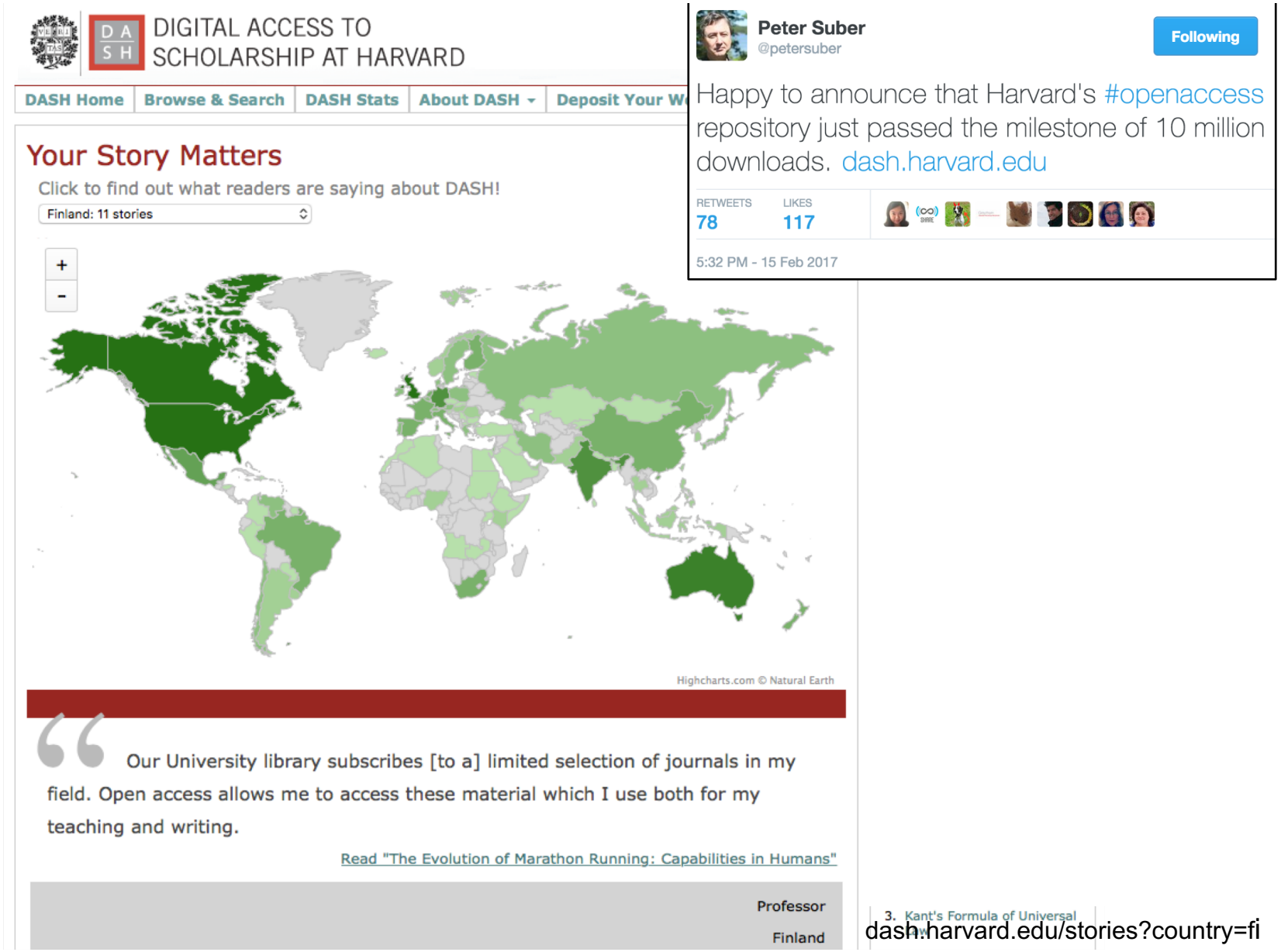
bioRxiv

DiVA

Cogprints

arXiv.org

SOCARXIV
open archive of the social sciences



dash.harvard.edu/stories?country=fi

https://oastats.mit.edu/public.php#ta
bs=2

Explanations for lack of self-archiving manuscripts in the institutional repository

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"I don´t have enough time.

"I co-authored the article, I do not have the most recent manuscript version."

"Publication is enough for me, I do not care about wider dissemination."

"I immediately delete all manuscript files from my computer once the article is published."

"No one would ever find it in the institutional repository."

"I am uncertain about what I am allowed to distribute."

"Manuscript versions are inferior to the published article."

"Readers would be confused about how to cite the article."

"I already use other services to disseminate my research outputs."

Kay takeaways

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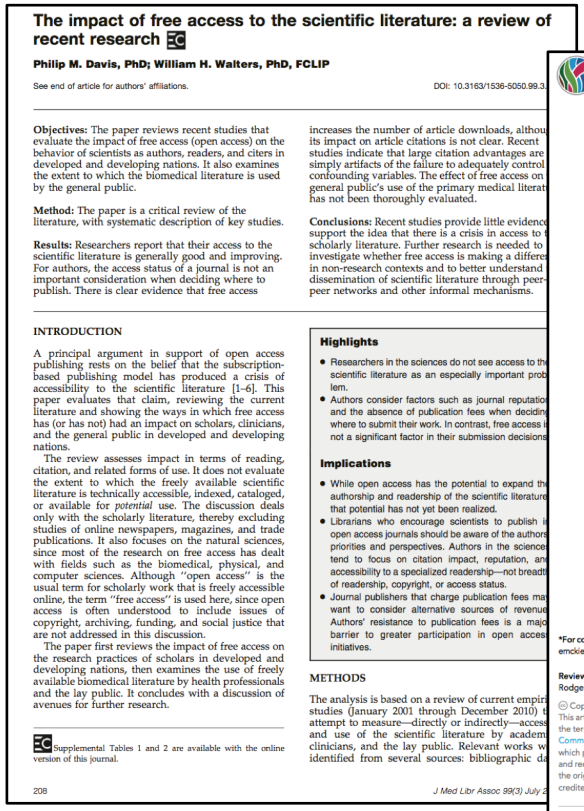
- **Open access is increasingly required** by different stakeholders and can be perceived as an additional burden, however, it is for the good of everyone (particularly for you as an author).
- **The share of open access content has been growing all the time**, currently around half of all recently published research can be found on the web (Piwowar et al 2018).
- In a subscription-based world, **OA carries benefits to researchers and their institutions**.
- **Not using research to its full potential is a waste** – why spend 2 years on work for an article and then not use 20 more minutes to ensure that it is read as widely as possible and permanently open?

Three recommended reads



The impact of free access to the scientific literature: a review of recent research

Philip M. Davis, PhD; William H. Walters, PhD, FCLIP

See end of article for authors' affiliations.

DOI: 10.3163/1536-5050.99.3.

Objectives: The paper reviews recent studies that evaluate the impact of free access (open access) on the behavior of scientists as authors, readers, and citers in developed and developing nations. It also examines the extent to which the biomedical literature is used by the general public.

Method: The paper is a critical review of the literature, with systematic description of key studies.

Results: Researchers report that their access to the scientific literature is generally good and improving. For authors, the access status of a journal is not an important consideration when deciding where to publish. There is clear evidence that free access increases the number of article downloads, although its impact on article citations is not clear. Recent studies indicate that large citation advantages are simply artifacts of the failure to adequately control confounding variables. The effect of free access on general public's use of the primary medical literature has not been thoroughly evaluated.

Conclusions: Recent studies provide little evidence to support the idea that there is a crisis in access to scholarly literature. Further research is needed to investigate whether free access is making a difference in non-research contexts and to better understand dissemination of scientific literature through peer-to-peer networks and other informal mechanisms.

INTRODUCTION

A principal argument in support of open access publishing rests on the belief that the subscription-based publishing model has produced a crisis of accessibility to the scientific literature [1–6]. This paper evaluates that claim, reviewing the current literature and showing the ways in which free access has (or has not) had an impact on scholars, clinicians, and the general public in developed and developing nations.

The review assesses impact in terms of reading, citation, and related forms of use. It does not evaluate the extent to which the freely available scientific literature is technically accessible, indexed, cataloged, or available for *potential* use. The discussion deals only with the scholarly literature, thereby excluding studies of online newspapers, magazines, and trade publications. It also focuses on the natural sciences, since most of the research on free access has dealt with fields such as the biomedical, physical, and computer sciences. Although "open access" is the usual term for scholarly work that is freely accessible online, the term "free access" is used here, since open access is often understood to include issues of copyright, archiving, funding, and social justice that are not addressed in this discussion.

The paper first reviews the impact of free access on the research practices of scholars in developed and developing nations, then examines the use of freely available biomedical literature by health professionals and the lay public. It concludes with a discussion of avenues for further research.

Highlights

- Researchers in the sciences do not see access to the scientific literature as an especially important problem.
- Authors consider factors such as journal reputation and the absence of publication fees when deciding where to submit their work. In contrast, free access is not a significant factor in their submission decisions.

Implications

- While open access has the potential to expand the authorship and readership of the scientific literature, that potential has not yet been realized.
- Librarians who encourage scientists to publish in open access journals should be aware of the authors' priorities and perspectives. Authors in the sciences tend to focus on citation impact, reputation, and accessibility to a specialized readership—not breadth of readership, copyright, or access status.
- Journal publishers that charge publication fees may want to consider alternative sources of revenue. Authors' resistance to publication fees is a major barrier to greater participation in open access initiatives.

METHODS

The analysis is based on a review of current empirical studies (January 2001 through December 2010) that attempt to measure—directly or indirectly—access and use of the scientific literature by academics, clinicians, and the lay public. Relevant works were identified from several sources: bibliographic da

Supplemental Tables 1 and 2 are available with the online version of this journal.

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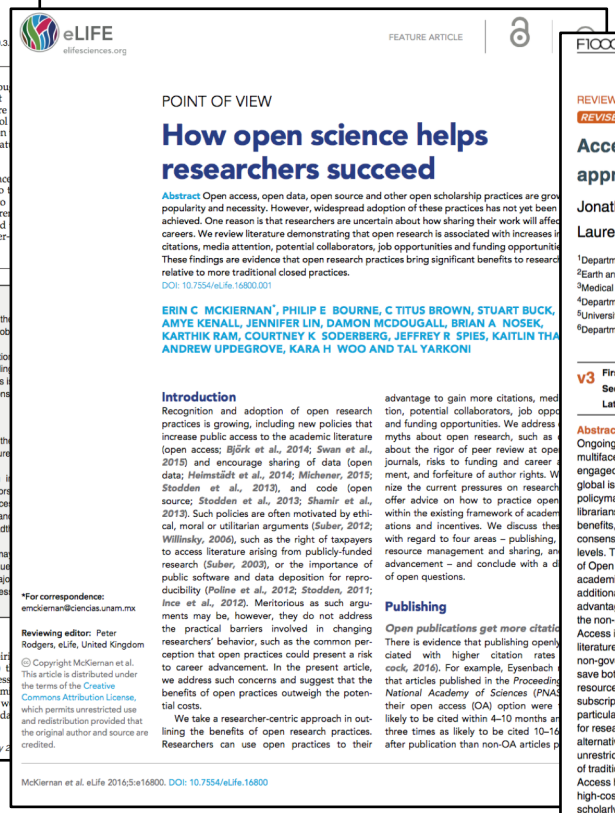
Davis & Walters (2011)



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FEATURE ARTICLE

POINT OF VIEW

How open science helps researchers succeed

Abstract Open access, open data, open source and other open scholarship practices are grow popularity and necessity. However, widespread adoption of these practices has not yet been achieved. One reason is that researchers are uncertain about how sharing their work will affec careers. We review literature demonstrating that open research is associated with increases i citations, media attention, potential collaborators, job opportunities and funding opportuniti These findings are evidence that open research practices bring significant benefits to researc relative to more traditional closed practices.

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ERIN C MCKIERNAN*, PHILIP E BOURNE, C TITUS BROWN, STUART BUCK, AMYE KENALL, JENNIFER LIN, DAMON MCDOUGALL, BRIAN A NOSEK, KARTHIK RAM, COURTNEY K SODERBERG, JEFFREY R SPIES, KAITLIN THA ANDREW UPDEGROVE, KARA H WOO AND TAL YARKONI

Introduction

Recognition and adoption of open research practices is growing, including new policies that increase public access to the academic literature (open access; *Björk et al., 2014*; *Swan et al., 2015*) and encourage sharing of data (open data; *Heimstädt et al., 2014*; *Michener, 2015*; *Stodden et al., 2013*), and code (open source; *Stodden et al., 2013*; *Shamir et al., 2013*). Such policies are often motivated by ethical, moral or utilitarian arguments (*Suber, 2012*; *Willinsky, 2006*), such as the right of taxpayers to access literature arising from publicly-funded research (*Suber, 2003*), or the importance of public software and data deposition for reproducibility (*Poline et al., 2012*; *Stodden, 2011*; *Ince et al., 2012*). Meritorious as such arguments may be, however, they do not address the practical barriers involved in changing researchers' behavior, such as the common perception that open practices could present a risk to career advancement. In the present article, we address such concerns and suggest that the benefits of open practices outweigh the potential costs.

We take a researcher-centric approach in outlining the benefits of open research practices. Researchers can use open practices to their advantage to gain more citations, med tion, potential collaborators, job oppo and funding opportunities. We address myths about open research, such as about the rigor of peer review at ope journals, risks to funding and career ment, and forfeiture of author rights. W nize the current pressures on research offer advice on how to practice open within the existing framework of academ ations and incentives. We discuss thes with regard to four areas – publishing, resource management and sharing, an advancement – and conclude with a d of open questions.

Publishing

Open publications get more citati

There is evidence that publishing openly ciated with higher citation rates *cock, 2016*). For example, Eysenbach that articles published in the Proceedings *National Academy of Sciences (PNAS* their open access (OA) option were likely to be cited within 4–10 months ar three times as likely to be cited 10–16 after publication than non-OA articles p

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McKiernan et al (2016)

F1000Research

F1000Research 2016, 5:632 Last updated: 26 SEP 2016

REVIEW

REVISED **The academic, economic and societal impacts of Open Access: an evidence-based review [version 3; referees: 3 approved, 2 approved with reservations]**

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Abstract

Ongoing debates surrounding Open Access to the scholarly literature are multifaceted and complicated by disparate and often polarised viewpoints from engaged stakeholders. At the current stage, Open Access has become such a global issue that it is critical for all involved in scholarly publishing, including policymakers, publishers, research funders, governments, learned societies, librarians, and academic communities, to be well-informed on the history, benefits, and pitfalls of Open Access. In spite of this, there is a general lack of consensus regarding the potential pros and cons of Open Access at multiple levels. This review aims to be a resource for current knowledge on the impacts of Open Access by synthesizing important research in three major areas: academic, economic and societal. While there is clearly much scope for additional research, several key trends are identified, including a broad citation advantage for researchers who publish openly, as well as additional benefits to the non-academic dissemination of their work. The economic impact of Open Access is less well-understood, although it is clear that access to the research literature is key for innovative enterprises, and a range of governmental and non-governmental services. Furthermore, Open Access has the potential to save both publishers and research funders considerable amounts of financial resources, and can provide some economic benefits to traditionally subscription-based journals. The societal impact of Open Access is strong, in particular for advancing citizen science initiatives, and leveling the playing field for researchers in developing countries. Open Access supersedes all potential alternative modes of access to the scholarly literature through enabling unrestricted re-use, and long-term stability independent of financial constraints of traditional publishers that impede knowledge sharing. However, Open Access has the potential to become unsustainable for research communities if high-cost options are allowed to continue to prevail in a widely unregulated scholarly publishing market. Open Access remains only one of the multiple challenges that the scholarly publishing system is currently facing. Yet, it

Open Peer Review

Referee Status: ✓ ? ? ✓ ✓

Invited Referees

Tennant et al (2016)

Q & A


More exposure for your work
Researchers in developing countries can see your work
Practitioners can apply your findings
Taxpayers get value for money
Higher citation rates
Compliant with grant rules
The public can access your findings
Your research can Influence policy
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