The Open Access Landscape among Business and Management Journals: Current status and alternative paths forward

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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 H2O2O 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).



EKONOMI OCH SAMHÄLLE ECONOMICS AND SOCIETY



MEASURING OPEN ACCESS

STUDIES OF WEB-ENABLED INNOVATION IN SCIENTIFIC JOURNAL PUBLISHING MIKAEL LAAKSO





1. The general open access landscape

2. Profiling business and management journals

- » What makes them different?
- » What is the current status of open access among business and management journal articles?

3. Alternative paths forward

- » Who should act? Should anyone act?
- » What could libraries do?

The uphill starting position of open access



» 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 (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.





The OA Spectrum (OAS)



Access	Reader Rights	Reuse Rights	Copyrights	Author Posting Rights	Automatic Posting	Machine Readability	Access
	Free readership rights to all articles immediately upon publication	Generous reuse & remixing rights (e.g., CC BY license)	Author holds copyright with no restrictions	Author may post any version to any repository or website	Journals make copies of articles automatically available in trusted third-party repositories (e.g., PubMed Central) immediately upon publication	Article full text, metadata, citations, & data, including supplementary data, provided in community machine- readable standard formats through a community standard API or protocol	OPEN ACCESS
	Free readership rights to all articles after an embargo of no more than 6 months	Reuse, remixing, & further building upon the work subject to certain restrictions & conditions (e.g., CC BY-NC & CC BY-SA licenses)	Author holds copyright, with some restrictions on author reuse of published version	Author may post final version of the peer-reviewed manuscript ("postprint") to any repository or website	Journals make copies of articles automatically available in trusted third-party repositories (e.g., PubMed Central) within 6 months	Article full text, metadata, citations, & data, including supplementary data, may be crawled or accessed through a community standard API or protocol	
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http://sparcopen.org/our-work/howopenisit/

Chen and Olijhoek (2016)

The current landscape of OA is complicated

HANKEN



Piwowar et al (2018)



0%

Articles published (millions) Percent of articles

25%

50%

75% 100%

Publisher differences





2

0



Discipline differences

Biomedical Research (n=11,360) Mathematics (n=3,303) Clinical Medicine (n=27,066) Health (n=2,121) Earth and Space (n=5,975) Biology (n=6,327) Physics (n=9,547) Psychology (n=2,257) Social Sciences (n=3,143) Professional Fields (n=2,418) Engineering and Technology (n=14,831) Chemistry (n=10,397) 0% 10% 20% 30% 40% 50% 60% 70% hybrid bronze gold closed green

Piwowar et al (2018)

80%

90%

100%

Open access in Scopus

Articles



Publication Year

Pricing levels of OA journal articles published 2016







Profiling business and management journals

Profiling the general landscape of journals within business and management journals



- » Part of the social sciences, availability and impact of external research funding not as strong as in within other disciplines.
- » Heavy presence and focus on outlet-based journal ranking systems (e.g. Financial Times 50, Academic Journal Guide). Accreditations and external rankings re-enforcing existing landscape and behavior.
- » Journals form very strong communities and have respected hierarchies.
- » Generally "slow science", long review times, multiple revision rounds, long time to submit revision.
- » One or two articles in the right journal can make or break an academic career.

		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

Unpublished preliminary results

OA Journals			Subscription Journals				OA Journal % Across SNIP Quartiles					
	SNIP	SNIP	SNIP	SNIP	SNIP	SNIP	SNIP	SNIP	OA % in	OA % in	OA % in	OA % in
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1	SNIP Q4	SNIP Q3	SNIP Q2	SNIP Q1
Life Sciences	205	321	338	178	485	763	1057	871	29,7 %	29,6 %	24,2 %	17,0 %
Agricultural and Biological Sciences	89	185	146	59	171	383	429	287	34,2 %	32,6 %	25,4 %	17,1 %
Biochemistry, Genetics and Molecular Biology	81	111	124	88	169	292	437	401	32,4 %	27,5 %	22,1 %	18,0 %
Neuroscience	24	21	44	22	43	55	129	130	35,8 %	27,6 %	25,4 %	14,5 %
Pharmacology, Toxicology and Pharmaceutics	30	37	47	24	116	101	158	100	20,5 %	26,8 %	22,9 %	19,4 %
Social Sciences	425	286	166	99	1766	1588	1448	1763	19,4 %	15,3 %	10,3 %	5,3 %
Arts and Humanities	199	65	28	12	953	490	378	337	17,3 %	11,7 %	6,9 %	3,4 %
Business, Management and Accounting	28	28	20	4	195	233	228	317	12,6 %	10,7 %	8,1 %	1,2 %
Decision Sciences	9	11	10	10	31	50	55	121	22,5 %	18,0 %	15,4 %	7,6 %
Economics, Econometrics and Finance	29	27	19	8	122	179	153	239	19,2 %	13,1 %	11,0 %	3,2 %
Psychology	39	38	26	6	138	205	248	327	22,0 %	15,6 %	9,5 %	1,8 %
Social Sciences	280	197	109	74	992	991	919	1071	22,0 %	16,6 %	10,6 %	6,5 %
Physical Sciences	216	393	298	198	875	1434	1483	1863	19,8 %	21,5 %	16,7 %	9,6 %
Chemical Engineering	15	26	18	12	77	102	105	122	16,3 %	20,3 %	14,6 %	9,0 %
Chemistry	15	49	20	16	74	187	191	166	16,9 %	20,8 %	9,5 %	8,8 %
Computer Science	32	47	54	51	103	215	226	509	23,7 %	17,9 %	19,3 %	9,1 %
Earth and Planetary Sciences	40	67	51	33	126	194	218	205	24,1 %	25,7 %	19,0 %	13,9 %
Energy	12	11	10	10	61	60	60	96	16,4 %	15,5 %	14,3 %	9,4 %
Engineering	75	99	77	41	363	470	400	594	17,1 %	17,4 %	16,1 %	6,5 %
Environmental Science	44	63	61	36	164	224	236	244	21,2 %	22,0 %	20,5 %	12,9 %
Materials Science	25	44	29	27	126	224	217	234	16,6 %	16,4 %	11,8 %	10,3 %
Mathematics	21	62	53	30	64	221	330	423	24,7 %	21,9 %	13,8 %	6,6 %
Physics and Astronomy	20	51	30	27	89	220	226	262	18,3 %	18,8 %	11,7 %	9,3 %
Health Sciences	437	366	384	244	1502	1002	1213	1189	22,5 %	26,8 %	24,0 %	17,0 %
Medicine	386	311	353	233	1385	881	1099	1088	21,8 %	26,1 %	24,3 %	17,6 %
Nursing	21	14	12	9	116	120	107	79	15,3 %	10,4 %	10,1 %	10,2 %
Veterinary	18	30	11	2	29	38	41	22	38,3 %	44,1 %	21,2 %	8,3 %
Dentistry	21	6	16	4	29	19	29	32	42,0 %	24,0 %	35,6 %	11,1 %
Health Professions	17	19	12	9	75	72	76	81	18,5 %	20,9 %	13,6 %	10,0 %
General	7	13	9	4	23	30	9	6	23,3 %	30,2 %	50,0 %	40,0 %
Total	1290	1379	1195	723	4651	4817	5210	5692	21,7 %	22,3 %	18,7 %	11,3 %
% APC Journals	25,5 %	35,4 %	56,6 %	66,4 %								
% Born OA Journals	37.8 %	34.3 %	50.5 %	68.0 %	,							

Low relevance of Megajournals







PeerJ





Questionable / predatory journals





Alternative paths forward



Need for collective action



» The Dilemma of Collective Action (Wenzler 2017)

» "For academic libraries to continue to achieve their traditional role of storing, organizing, preserving, and providing access to the scholarly record, they increasingly will have to take responsibility for the entire cycle of scholarly communication from publishing and editing through preservation, but it is unlikely that they will succeed in doing so through the uncoordinated actions of individual institutions and will require new experiments in cooperation and coordination."



Use of consortia/collective action







SCOAP³

Knowledge Unlatched



APC funds



- » 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.





http://repository.jisc.ac.uk/6665/1/ Financial_and_administrative_iss ues_around_APCs_for_OA_June _2017_KE.pdf



Offset agreements between universities/libraries and publishers



- » Paying increasingly high subscription fees with per-article fees on top is unsustainable.
- » "Offsetting" is the emerging practice of including APC waivers (commonly only hybrid OA) or discount agreements as part of institutional subscriptions with large publishers.
- » At least Springer, Wiley and Elsevier have offered such arrangements to various European institutions.
- » Increases competition among publishers for high-quality author manuscripts.

dash.harvard.edu/handle/1/27803834







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https://treemaps.intact-project.org/apcdata/openapc/#institution/country=SWE

Ways through which journals have converted to open access



APC-funded scenarios	Non-APC-funded scenarios
• Submission fees in addition to or instead of APCs	 Society subsidy
 Changing focus and services during the conversion Rebranding/re-scoping journal Spinning-off a section of a journal 	 Low cost infrastructure and volunteer effort Joining regional journal platform
 Gradual conversion scenarios Through hybrid OA Bundling APCs with subscription licenses Through delayed OA 	 Joining consortium or library partnership subsidy Other non-APC sources of funding
 Same or new publisher after the conversion Staying with the same publisher Switching to a different publisher Partnering with a low-cost external publisher Partnering with global major publisher 	

Solomon, Laakso & Björk (2016) https://dash.harvard.edu/handle/1/27803834

» "Declaring independence"

- » Editorial board of Lingua requested that the publisher (Elservier) would convert the subscription-based journal to a reasonably-priced OA.
- » Elsevier refused.
- » The editor-in-chief and the entire editorial board resigned and founded the new OA journal Glossa.
- » Long-term funding provided by the Open Library of Humanities.



The perspective of (independent) individual journals for converting to open access





What can usually be made available as green OA?



HANKEN

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 discuption is academic publishing are Academic Social Networks (ASN), i.e. we by platferms such as ResearchGate and Academia eds that have provided new ways for researchers to disseminate, search for, and entricve research articles. ASNs are still a gray area in terms of implications for involved stakeholders, and research on them has to far been scatter. Is an effect to map our factors related to ASN use this article prevides an unit-method case study of one business school (Haken School of Economics, Finlard) that is corporates 11 a bibliometric ansistics and the transformed to the studies of the studies of the studies of the studies with faculty active in publishing in order to gain a studies with faculty active in publishing in order to gain a studies monitoris 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 order streamed output, outputs and distor 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 to major stakeholders in academic publishing.

Introduction

Academic publishing is an increasingly crowded field where authors compete for attention and scientific inpact. The volume of articles published in academic journals has been increasing standily at gase of 3-3.5% smanlay incose all least over two centuries ago, and tody 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 harmessing the braefits of interactive web technologies like open peer review, more taused authorhily and acknowledgement systems, and open access (Ponte and Simon 2011). However, these kinds of innovations have not yet been able to compete with the careerboosting weight that is still associated with publishing in prestigions subscription-based journals that make up the top reacked outlets within many research disciplines.

Accepted manuscript

(i.e. final draft)

Research output availability on ac implications for stakeholders in ac	ademic social networks: cademic publishing
Mikael Laakso 🍋 - Juho Lindman ¹ - Cenyu Shen ¹ - Linus Y	vyman ¹ - Bo-Christer Björk ¹
Received: 29 February 2016 / Accepted: 22 December 2016 © Institute of Applied Informatics at University of Leipzig 2017	
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 researchen to dissemiante, search for, and retrieve research anticles. ASNa are still a prey area in terms of impli- cinging for imployed tracket/blums and meanwho and them have no	JEL Classification 12 Education and Research Institutions - Research and Development - Technological Change - Intellectual Property Rights - L5 Regulation and Industrial Policy
entent for involved sukabelders, and research on them has so far free benarce. In an Effort to may on their related to ASN sus this anticle provides a multi-method case study of eeu business subconf (Transmiss Social of Toconscript, Falland) that a substates subconf (Transmiss, Falland) that a substate study of the substates of the substates and the substates of the substates of the substates and the substates of the substates of the substates and the substates of the substates of the substates substates and the substates of the substates and the substates of the substates and the substates and the substates of the substates and the substates and the substates and provide the substates and the substates and the substates of the substates and the substates and the substates that the current substates of the substates the substates the substates and the substates and the substates the substates the substates and the substates that the substates the substates the substates and the substates that the substates the substates the substates and the substates the substates the substates the substates and the substates the substate the substates the substates the substates and the substates the substates and the substates the substates the substates the substates and the substates the substates the substates and the substates the substates the substates and the substates and the substates the substates and the substates the substates and the subst	<text><text></text></text>
Published online: 10 January 2017	오 Springer

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



"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."





Figure 1 - Result of bibliometric analysis of web availability of peer-reviewed publications published by Hanken-affiliated authors 2012-2014 (N=587, each publication represented by 0-3 observations)

 Academic social networks are not platforms for providing sustainable open access













OA benefits are colorblind



- » 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.







- » The environment for increasing gold open access among business and management journals is among the hardest among any research discipline.
- » Co-ordination is needed to make change happen, if open access is to be increased it needs to be reflected in the merit and reward systems.
- » With everything else unchanged, offset agreements seem like the most promising way forward. However, more disruptive initiatives would be preferable.
- » In the meantime the route of green open access is available and most immediately implementable.

Thank You!





Davis, P. M., & Walters, W. H. (2011). The impact of free access to the scientific literature: a review of recent research. Journal of the Medical Library Association: JMLA, 99(3), 208–217. <u>http://doi.org/10.3163/1536-5050.99.3.008</u>

Laakso, M. (2014) Measuring Open Access: Studies of Web-Enabled Innovation in Scientific Journal Publishing; Edita Prima: Helsinki, Finland, 2014. http://hdl.handle.net/10138/45238

McKiernan, E. C., Bourne, P. E., Brown, C. T., Buck, S., & Kenall, A. (2016). How open science helps researchers succeed. Elife. <u>http://doi.org/10.7554/eLife.16800.001</u>

Piwowar, H., Priem, J., Lariviere, V., Alperin, J. P., Matthias, L., Norlander, B., et al. (2018). The state of OA: a large-scale analysis of the prevalence and impact of Open Access articles. *PeerJ*, 6(4), e4375–23. http://doi.org/10.7717/peerj.4375

Suber, P. (2012). Open Access. MIT Press. https://mitpress.mit.edu/books/open-access

Teplitskiy, M., Lu, G.,&Duede, E. (2016). Amplifying the impact of open access: Wikipedia and the diffusion of science. *Journal of the Association for Information Science and Technology*. http://doi.org/10.1002/asi.23687

Tennant, J. P., Waldner, F., Jacques, D. C., Masuzzo, P., Collister, L. B., & Hartgerink, C. H. J. (2016). The academic, economic and societal impacts of Open Access: an evidence-based review. F1000Research, 5, 632–54. <u>http://doi.org/10.12688/f1000research.8460.1</u>

Chen, X., Olijhoek, T. (2016). Measuring the Degrees of Openness of Scholarly Journals with the Open Access Spectrum (OAS) Evaluation Tool, Serials Review, DOI: 10.1080/00987913.2016.1182672

Crawford, W. (2017). Gold Open Access Journals 2011-2016. https://waltcrawford.name/goaj2.pdf

Laakso, M. (2014) Measuring Open Access: Studies of Web-Enabled Innovation in Scientific Journal Publishing; Edita Prima: Helsinki, Finland, 2014. <u>http://hdl.handle.net/10138/45238</u>

Piwowar et al. (2018), The state of OA: a large-scale analysis of the prevalence and impact of Open Access articles. PeerJ 6:e4375; DOI 10.7717/peerj.4375

Suber P (2012) Open Access MIT Press https://mitpress.mit.edu/hooks/open-access

Three recommended reads

🚮 eLIFE

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

Philip M. Davis, PhD: William H. Walters, PhD, FCLIE

See end of article for authors' affiliations.

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 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

INTRODUCTION

A principal argument in support of open access publishing rests on the belief that the subscriptionpublishing rests on the belief that the subscriptor-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 and the general public in developed and developing

The review assesses impact in terms of reading, citation, and related forms of use. It does not evaluate channon, and remark to this or use it uses 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. publications in the neural 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.

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.

Supplemental Tables 1 and 2 are available with the online

Davis & Walters (2011)

increases the number of article downloads, altho its impact on article citations is not clear. Recent studies indicate that large citation advantages an simply artifacts of the failure to adequately contro confounding variables. The effect of free access or

DOI: 10.3163/1536-5050.96

eral public's use of the primary medical lite not been thoroughly evaluated.

Conclusions: Recent studies provide little evide support the idea that there is a crisis in access to

scholarly literature. Further research is needed

scholarly interature. Further research is needed investigate whether free access is making a diff in non-research contexts and to better understa

dissemination of scientific literature through pe peer networks and other informal mechanisms.

Researchers in the sciences do not see access tr

scientific literature as an especially important p Authors consider factors such as journal reput

and the absence of publication fees when deci

· While open access has the potential to expand

authorship and readership of the scientific literat

Librarians who encourage scientists to publish open access journals should be aware of the author

priorities and perspectives. Authors in the scient tend to focus on citation impact, reputation,

accessibility to a specialized readership-not brea of readership, copyright, or access status. Journal publishers that charge publication fees n

want to consider alternative sources of reve

Authors' resistance to publication fees is a ma

barrier to greater participation in open acc

The analysis is based on a review of current em

studies (January 2001 through December 2010) attempt to measure—directly or indirectly—acces and use of the scientific literature by acaden

clinicians, and the lay public. Relevant works

identified from several sources: bibliographic

J Med Liby Assoc (900). In

not a significant factor in their submis

that potential has not yet been realized.

where to submit their work. In contrast, free access

Highlights

Implication

initiatives

METHODS

researchers succeed

Abstract Open access, open data, open source and other open scholarship practices are o popularity and necessity. However, widespread adoption of these practices has not yet bee achieved. One reason is that researchers are uncertain about how sharing their work will aff careers. We review literature demonstrating that open research is associated with increase citations, media attention, potential collaborators, job opportunities and funding opportun These findings are evidence that onen research practices bring significant herefits to rese elative to more traditional closed practices

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Introduction

POINT OF VIEW

Recognition and adoption of open research practices is growing, including new policies that and funding opportunities. We addres increase public access to the academic literature myths about open research, such as open access; Björk et al., 2014; Swan et al., about the rigor of peer review at o 2015) and encourage sharing of data (open journals, risks to funding and caree data; Heimstädt et al., 2014; Michener, 2015; ment, and forfeiture of author rights. Stodden et al., 2013), and code (open nize the current pressures on resear source; Stodden et al., 2013; Shamir et al., offer advice on how to practice ope 2013). Such policies are often motivated by ethi- within the existing framework of acade al, moral or utilitarian arguments (Suber, 2012; ations and incentives. We discuss the Willinsky, 2006), such as the right of taxpayers with regard to four areas - publishing to access literature arising from publicly-funded resource management and sharing, a research (Suber, 2003), or the importance of advancement – and conclude with a public software and data deposition for repro- of open questions. sucibility (Poline et al., 2012; Stodden, 2011; Ince et al., 2012). Meritorious as such argu- Publishing ments may be, however, they do not address

researchers' behavior, such as the common per ception that open practices could present a risk clated with higher citation rate to career advancement. In the present article, cock, 2016), For example, Eventhach we address such concerns and suggest that the that articles published in the Proc benefits of open practices outweigh the poten- National Academy of Sciences (PNJ tial costs

McKiernan et al (2016)

lining the benefits of open research practices. three times as likely to be cited 10-1 Researchers can use open practices to their after publication than non-OA articles

McKiernan et al. eLife 2016;5:e16800. DOI: 10.7554/eLife.16800



Tennant et al (2016)

scholarly publishing market. Open Access remains only one of the multiple challenges that the scholarly publishing system is currently facing. Yet, it

