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Open-Access Academic Articles Requires Peer-Review Makeover: Consistency Is the Key

Abstract

The internet has greatly altered the way that people and institutions communicate. One of the most recent changes is the growth of the Open Access (OA) model, where research articles are provided free of charge to readers online. Such changes are having a domino effect on traditional communication. In most cases, articles in professional journals have been evaluated by a strict peer-review system. However, due to the inherent problems with these peer reviews, such as the length of time it takes referees to complete their analysis and the reviewer's personal biases and potential unethical behavior, there is a growing consensus that a different review method needs to be developed for OA articles. In addition, the internet has led to the development of many new professional journals, which range from poor to excellent, based on the articles accepted. Unfortunately, some journals are being published solely for monetary gain from high author fees.

Presently, different review methods are being suggested or implemented for articles, such as ranking systems, online commentaries and crowdsourcing, Also, various institutions are publishing lists that rate academic journals on their quality level. Such experimentation of review models is important. However, after the trial period, the primary OA sources need to agree on using the same review model. Consistency of evaluation is critical for readers to be able to make objective comparisons of scholastic articles from one OA site to another.

Keywords

Open Access model, traditional peer-review process, academic journals, open access peer review, academic manuscript publishing, history of Open Access.

The Open Access (OA) model was significantly promoted in December of 2001 when an Open Society Foundations-sponsored meeting was held in Budapest, which developed a statement of principles concerning OA research literature. Entitled the Budapest Open Access Initiative, it advised researchers to publish the results of their studies in institutional archives. Budapest defined OA as "free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself." At first, this initiative was met with derision by both scholars and academic publishers, because of its radical transformation from the norm.[1]

However, other similar initiatives followed that continued to promote the OA model: The Howard Hughes Medical Institute's Bethesda Statement and the Berlin Declaration of OA. According to both proposals, the author and copyright holder are responsible to place a work in its entirety and all supplemental materials, including the permission statement, "in at least one online repository that is supported and maintained by a well-established institution or organization that seeks to enable open access, unrestricted distribution, inter-operability, and long-term archiving". Users' rights consist of "a free, irrevocable, worldwide, perpetual right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose", in addition to "the right to make small numbers of printed copies for their personal use".

In 2013 under President Obama's administration, the Federal Research Public Access Act was introduced into the United States Senate and House of Representatives that requires eleven government agencies with annual extramural research expenditures above $100 million to make journal articles based on research funded by these agencies publicly available via the Internet to permit free public access, interoperability, and long-term preservation. Each article is to be freely available to users without charge within six months after being published in a peer-reviewed journal. The Federal Research Public Access Act was succeeded by the Fair Access to Science and Technology Research

[1] Cold Spring Harbor Laboratory, *Guide to Open Access*, http://cshl.libguides.com/open_access (21.02.2021).

Act (FASTR) in the 113th and 114th Congresses.[2] FASTR was introduced in the US House of Representatives during the session on July 26, 2017 and the primary difference is that the Senate bill extends the maximum allowable embargo period from six to twelve months.[3]

1999	After studying various peer review models, BMJ starts revealing reviewer names to authors
2000	BioMed Central launches, and soon after that starts including reviewer names and pre-publication history for published articles in all medical journals in their BMC series of publications
2001	Atmospheric Chemistry and Physics introduces a system where manuscripts are placed online as a "discussion paper", which is archived with all comments and reviews, even before approved and peer-reviewed articles appear in the journal.
2006	Launch of Biology Direct, which includes reviewer comments and names with published articles.
2007	Frontiers launches and includes reviewer names with articles.
2010	EMBO journal starts publishing review process file with articles. Editors are named, but referees remain anonymous.
2011	BMJ Open launches and includes all reviewer names and review reports with published articles.
2012	Several journals launch with an open peer review model: GigaScience – publishes pre-publication history with articles and names reviewers (opt-out system) PeerJ – Peer review reports published with author approval, reviewer names published with reviewer permission. (Info) eLife – Decision letter published with author approval. Reviewers anonymous. F1000Research – All peer review reports and reviewer names are public, and appear after article is published online.
2012–20204	In recent years, dozens of subscription journals have "flipped" to an open access model. Many university libraries have established programs to assist in the transitioning of journals from the subscription model to open access. Resources related to university publishing programs include the following: – The Library Publishing Directory (Library Publishing Coalition) – Campus-Based Publishing Partnerships: Browse by Institution (Columbia University Libraries) – Campus-Based Publishing Resources (SPARC)

E. Amsen, *What is post-publication peer review? F1000 Research*, 8.07.2014, http://blog.f1000research.com/2014/07/08/what-is-post-publication-peer-review/#sthash.3KXXIpWb.dpuf (25.02.2021).

[2] SPARC, *Federal Research Public Access Act*, https://sparcopen.org/our-work/frpaa/ (25.02.2021).

[3] SPARC, *Fair Access to Science and Technology Research Act*, https://sparcopen.org/our-work/fastr/ (25.02.2021).

[4] SPARC, *Transitioning your journal from subscription to open access*, https://sparcopen.org/our-work/transitioning-your-journal/ (25.02.2021).

1. Definition of Open Access

OA is any literature on the Internet that is free of charge and of most copyright and licensing restrictions. The primary purpose of OA is to supersede the high cost of journals, which makes them difficult for libraries to afford and users to access. Most OA publications continue to use the traditional peer-review model. To pay for the cost of publication, the majority of OA publishers use the "author-pays" model, where the scholar covers the cost for editing and distribution. In most cases, however, the university or funder pays this fee, and it is not taken directly out of the author's pocket.[5]

Based on the availability of OA materials, academicians, professional organizations, government agencies and publishers have established several OA models. These include: 1) Gold Open Access, which typically refers to the publication's Internet policy that permits immediate OA to the final edited version of a peer-reviewed journal publication, or, after several years, the journal may make the articles OA. The researcher pays the fee to the journal or an institution pays an annual membership; 2) Green Open Access, where the publisher allows the authors to upload an earlier version of their article that may have been edited and peer reviewed, but scholars can also post non-peer-reviewed work. In this case, the author nor the public pays a fee, since the digital repositories are funded through the institution; and 3) Diamond Open Access, the most recent model that is similar to Gold OA that it is immediately available to the public after going through a peer-review, but without the author fee.

2. Traditional Peer-Reviews

The peer review is a traditional professional practice and scholastic publication system where academic articles must go through a formal process of commentary and measurement before being published in an academic journal. The basic process of review is where experts in a specific field measure the professional performance, creativity or level of quality of research conducted by others. There are two typical approaches of conducting the peer review: In most cases,

[5] J. Kelly. *Green, Gold and Diamond: A Short Primer on Open Access*, 27.01.2013, http://www.jasonmkelly.com/2013/01/27/green-gold-and-diamond-a-short-primer-on-open-access/ (25.02.2021).

there is a single-blind where the reviewer's identity is hidden from the authors. In a double blind, both the authors' and the previewers' names are blocked to ensure objective analysis and favoritism or reprisals against certain authors.[6] It is best to encourage impartiality by requesting a third party who is neither affiliated directly with the reviewing establishment, such as the university or academic journal, and one reviewer who submits comments without seeing the other's recommendations. However, in some situations, the reviewers know each other and discuss and compare their evaluations.

Although the peer review has a long-standing history, it is a controversial subject within academia. According to Bornmann[7], supporters of the traditional peer review process argue that such an analysis is a critical tool for continually improving scientific knowledge. With scientific research, peer-review analysis has long been one of the most essential ways of comparing one study to another to know which can be most helpful to another scholar's own study as well as helping journals to determine which articles should be published and judging organizations to decide which works should receive awards.[8] In addition, the peer review process helps researchers build up a portfolio in order to gain additional funding from sources external to their university.[9] Many authors say that the review process gives them the ability to ask follow-up questions and address concerns with the reviewers based on their own experience. A majority of writers say that rigorous, blinded peer review improves their work.

Opponents report that the goals of most peer reviews are poorly defined, so there is lack of evaluation consistency. Other disadvantages include the delay in time from submission to publication, since many of the reviewers are quite busy with their own work; the difficulty of clearly validating the results without having all the raw data; and reviewer biases toward a line of research, the colleague's institution, gender and even assumed race. Even with the single-blind system there may be problems. Anonymous reviewers can be biased against the authors of the paper and lean toward rejection or acceptance for unscientific

[6] C. Lee, C. Sugimoto, G. Zhang, G. and B. Cronin, *Bias in Peer Review*, Bias in Peer Review, "Journal of the American Society for Information Science and Technology" (2013), Vol. 64(1), pp. 12–17.

[7] L. Bornmann, *Scientific Peer Review*, "Annual Review of Information Science and Technology" (2011), Vol. 49(1), pp. 199–245.

[8] J. Ziman, *Real Science. What It Is, and What It Means*, Cambridge 2000, pp. 15–16.

[9] P. Shapira and S. Kuhlmann, *Learning from Science and Technology Policy Evaluation. Experiences from the United States and Europe*, Gloucestershire, England 2003, p. 8.

reasons. Frequently, peers who are reviewing the papers may also be one's greatest competitors. Opponents argue that knowing the name of the researcher makes it more expedient to compare and contrast the most recent manuscript with those that were previously published. Knowing the name of the person submitting the manuscript also encourages reviewers to report conflicts of interest.[10]

Opponents also complain that reviewers almost never are in agreement on which articles are most suitable for a publication, which adds doubt to the reliability of such analyses; the recommendations of reviewers are often determined subjectively and do not promote non-native English speaking writers; there is very little correlation between the reviewers' comments and the usability of the paper for other researchers, as measured by citations; and the comments of the reviewers can be stressful and upsetting to academics at the start of their career. Amsen[11] reports that the information gained through the review process is useful for all researchers, not just the authors and editor. In addition, there is inconsistency of how the process works; in some cases, a reviewer may not accept an article because it does not fit into the overall direction of the publications, even though it is an excellent piece of work; in other cases, a publication may print all scientific topics that get high comments from the reviewers regardless of topic.

3. Open Access Reviews

Most of the articles that are available through open access are still peer reviewed at some time in the writing and publication process. Open peer review describes an academic literature system with increased transparency and disclosure of the people involved with the reviewing process. The method thus is on the other end of the spectrum from the traditional anonymous peer review process. Disciplinary publishing practices vary widely and so do definitions

[10] E. Amsen, *What is Post-publication Peer Review? F1000 Research*, 7.08.2014. http://blog.f1000research.com/2014/07/08/what-is-post-publication-peer-review/#sthash.3KXXIpWb.dpuf (25.02.2021).

[11] E. Amsen, *What is Post-publication Peer Review? F1000 Research*, 7.08.2014. http://blog.f1000research.com/2014/07/08/what-is-post-publication-peer-review/#sthash.3KXXIpWb.dpuf (25.02.2021).

of open peer review. McCormack[12] defines OA peer reviews as a process that does not attempt to mask the identity of authors or reviewers, and Mulligan[13] gives the definition of "Open peer review is where the reviewers' and authors names are known to one another, and often also to the public at large". Ware[14] contrasts these reviews to double-blind peer reviews: "Open peer reviews can mean the opposite of double blind, in which authors' and reviewers' identities are both known to each other (and sometimes publicly disclosed)". Shotton[15] writes that open reviews are completely open to the public. "The whole review process is entirely transparent. Each submitted manuscript is immediately made available on the journal's website. Reviews and comments from readers are welcomed and are considered alongside the formal peer reviews solicited from experts by the journal".

Over the past several years, the phrase "post-publication peer review" has been used in the context of scientific publishing, as either an addition to or a replacement of the traditional pre-publication peer review. Post-publication peer review is a confusing phrase that has been applied in a variety of different ways, sometimes when introducing a new peer-review program with a journal and other times when utilizing a platform to discuss any published articles. It is becoming increasingly noticeable that the pre-publication peer review does not always find all the errors that may occur in an article.

According to Swoger[16], The forms of post-publication peer review include: 1) a formal review by invited reviewers after the un-reviewed article is published. In this case, the manuscript is already printed on the Internet after an editorial check and before the peer-review process takes place. Approved manuscripts are marked as such as placed in the academic databases; 2) a review by volunteers

[12] N. McCormack, *Peer Review and Legal Publishing: What Law Librarians Need to Know about Open, Single-Blind, and Double-Blind Reviewing*, "Law Library Journal" (2009), Vol. 101:1, p. 6

[13] A. Mulligan, *Quality, Certification and Peer Review*, "Information Services & Use" (2008), No. 28(3–4), p. 197.

[14] M. Ware, *Peer Review: Recent Experience and Future Directions*, "New Review of z Information Networking" 16, no. 1 (2011), 23.

[15] D. Shotton, *The Five Stars of Online Journal Articles -a Framework for Article Evaluation*, "D-Lib Magazine" (2012), No. 18(1/2), DOI: https://doi.org/10.1045/january2012-shotton.

[16] B. Swoger, *Post Publication Peer-review: Everything Changes, and Everything Stays the Same*, "Scientific American", 26.03.2014, https://blogs.scientificamerican.com/information-culture/post-publication-peer-review-everything-changes-and-everything-stays-the-same/ (25.02.2021).

after the publication of the non-reviewed piece. Articles are once again published online before peer review, but the publication does not invite reviewers. The publisher uses varied ways to determine the best people to review and whether or not these reviews alter the status of the journal article. In *Science Open*, for example, reviewers must have at least five of their manuscripts published in their profile, while with *The Winnower*, any registered user can leave a review on any published article. This is similar to magazines that allow comments along with a peer review, but publications can also ask their volunteer reviewers to write on certain aspects of the article similar to an invited review; 3) most recently, instead of peer reviews, authors have been relying on the comments of third parties on websites and blogs. For example, PubPeer gives anonymous researchers the ability to make comments on any articles published as preprints, and PubMed Commons provides academicians with one or more of their personal publications listed on PubMed the opportunity to make comments on any other manuscripts in the index. However, in this latter case, they are not able to be anonymous. The purpose of such services is to further discussions about research studies, which is already occurring through social media and blogs, as well as the comments sections.

However, the growing number of articles going online and the debate about the peer-review system, are encouraging other approaches to analysis and commentary. Lee[17] list eight new forms of Internet review characteristics: Five of these describe the openness of the review process-signed review, disclosed review, editor-mediated review, transparent review, and crowdsourced review. Three additional characteristics describe review timing with similarities to traditional peer review-prepublication review, synchronous review, and post-publication review. The signed review consists of submitted reviews that the referee signs, which are published alongside articles at the time of publication or are signed when an author receives them. The disclosed review is when the referees and authors know each other's names during the peer review process, which allows them to discuss the paper. The editor-mediated review, which is found in most open-peer review processes, is all work completed by a journal editor to make open peer review easier, such as editorial pre-selection of papers and/or final choices for approval or non-approval of articles. The editor-mediated aspect of all open peer reviews may or may not be publicly disclosed. Transparent review is defined as the total openness to a specific community or public, permitting the

[17] C. Lee, C. Sugimoto, G. Zhang, G. and B. Cronin, *Bias in Peer Review*, pp. 12–17.

public to observe the process of peer review occur. In this case, the authors and the public know the names of the reviewers, and the referees know the names of those who are submitting manuscripts. All author responses to the reviewers' comments are made public, and anyone is able to read the papers, reviews, public reviews, in addition to the published articles. The crowd-sourced review takes place publicly, where anyone in the community may donate to the article comments. In this review process, there can be an unlimited number of reviews, and there may or may not be editorial mediation. Pre-publication reviews take place before an article is published and in a public location such as a pre-print server. Synchronous commentaries are when reviews occur simultaneously with the article's publication. Finally, post-publication review takes place after the article is made public, similar to a blog or web post.[18]

Poschl[19] emphasizes that the interactive OA publishing concept focuses on the value of freedom of speech and the effective public interchange and analysis of scientific studies based on the principles of critical rationalism and open societies. Thus, journal editors and reviewers are responsible to carefully critique and assess manuscripts to help the academicians enhance their work and to eliminate obvious deficient articles. He adds that, in this case, authors should be encouraged rather than coerced to alter their paper in line with the preferences of the editors or referees. Rather, the readers are the ones who make their own decisions based on the public review and subsequent discussion. Poschl (2009) argues that the OA public peer review and reader discussions can effectively and flexibly be combined with the advantages of the traditional scientific peer review.

In May 2012, the Global Summit on Merit Review[20] was hosted by the U.S. National Science Foundation (NSF) in Arlington, Virginia, where science and engineering experts of funding agencies from approximately 50 nations collaborated to enhance international research cooperation and review the NSF's statement of principles of merit review. They voted to accept the "Statement of Principles on Scientific Merit Review", a core global standard for merit review, which calls for: 1) Reviewers should have the necessary knowledge and experience

[18] C. Lee, C. Sugimoto, G. Zhang, G. and B. Cronin, *Bias in Peer Review*, pp. 12–17.

[19] U. Poschl, *Multi-stage Open Peer Review Scientific Evaluation Integrating the Strengths of Traditional Peer Review with the Virtues of Transparency and Self-regulation*, "Frontiers in computational neuroscience" (2012), No. 6,33.

[20] Global Summit on Merit Review, http://www.nsf.gov/news/news_summ.jsp?cntn_id=124178 (25.02.2021).

to evaluate submissions at the wider context of area of study to which it contributes and its specific objectives and methodology. It is necessary to choose referees with clearly established criteria; 2) The decision to publish needs to be based on succinctly delineated criteria; 3) Immediate feedback must be given to authors on their proposal; 4) Submissions should be critiqued fairly and on their merit, with conflicts of interest noted and managed according to written procedures; 5) Reviews must be based on the research area addressed, the author's investment of time, and the manuscript's complexity; 6) Confidentiality by the reviewers is essential; 7) Ethics and integrity are critical to the review process.

At the end of the Global Summit on Merit Review, the Global Research Council (GRC) [21] was launched as a "virtual organization, comprised of heads of science and engineering funding agencies from around the world, dedicated to promoting the sharing of data and best practices for high-quality collaboration among funding agencies everywhere". It did not take a long time for the GRC to support the OA concept: The 2013 GRC meeting members agreed on an "Action Plan towards Open Access to Publications" that confirmed the need for scientific endeavors to work toward OA online access to research products as – "steadily and as swiftly as possible".

4. Rating Professional Journals

The OA model has led to the rise of many new professional journals. Many of these are high quality and backed by noted scientists. Others are being published solely as a means to make money: taking the authors' fee for publication and then accepting any articles, regardless of quality. In "Open Access Journals: The Good, the Bad and the Ugly", Zuabi and Langdorf[22] warn that the OA movement has led to a "plethora" of counterfeit journals and publishing companies, which have corrupted the positive goals of this publishing model. These bogus journals charge thousands of dollars for hidden submission and publication fees; offer submission-to-publication deadlines in a week or less and thus make peer review impossible; plagiarize high-quality journals; and establish erroneous editorial boards with the names of PhDs who are not even aware their names

[21] Global Research Council, http://www.globalresearchcouncil.org/ (25.02.2021).

[22] N. Zuabi, and M. Langdorf, *Open Access Journals: the Good, the Bad and the Ugly*, AAEM Newsletter (2014), No. 15, p. 36.

are being used. Many of these publications publicize themselves on as being established in the US or UK, with websites that have similar designs of legitimate journals yet low-quality articles and little if any peer review.

As a result, some new publications have been produced that list "good" and "bad" journals. For example, the well-known *Beall's List of Potential Predatory Journals and Publishers*[23] identifies and maintains a list of so-called "predatory" publishers. Beall is a librarian at Auraria Library, University of Colorado Denver, Colorado. On the other hand, one can find publications that only list what are considered high-quality OA journals, such as the University of Oregon Libraries' "Examples of OA Journals". Opponents of such OA lists say that they do not take into account the shades of gray of the various publications' value to the readers. Paul Peters, president of the Open Access Scholarly Publishing Association, severely criticizes such publications, saying that Beall "often relies heavily on analysis of publishers' websites rather than detailed discussions with publishers, and this might lead to incorrect or premature conclusions".[24] Similarly other opponents say that these lists do not give start-up publications an opportunity to get established when they still have problems such as poor website design. In addition, these publications may also reflect the bias of their publisher; in Beall's article, "Open- Access Movement is not really about Open Access"[25], he writes that the "open-access movement is really about anti-corporatism" and "open access advocates think they know better than everyone else and want to impose their policies on others". Peters says such an excessive opinion could clearly shade Beall's view of what is and is not acceptable in OA publications.

5. Conclusion

The internet has provided an excellent opportunity for scholars to share their research across the globe, and every day increasing numbers of scientific studies are being made available online free of charge through the process of OA to a vast

[23] *Beall's List of Potential Predatory Journals and Publishers*, https://beallslist.net (25.02.2021).

[24] D. Butler, *Investigating Journals: The Dark Side of Publishing*, "Nature. International weekly journal of science" (2013), Vol. 495, http://www.nature.com/news/investigating-journals-the-dark-side-of-publishing-1.12666 (25.02.2021).

[25] D. Butler, *Investigating Journals: The Dark Side of Publishing*, "Nature. International weekly journal of science" (2013), Vol. 495, http://www.nature.com/news/investigating-journals-the-dark-side-of-publishing-1.12666 (25.02.2021).

academic network. This free access benefits society by increasing accessibility of information to a greater number of people, including academicians and scientists as well as government officials, policymakers, research institutions, foundations and the general public. However, a problem lies in how to make an assessment of the contributions, which range from high-quality scientific work to manuscripts that do not follow academic criteria and/or are poorly written.

The traditional peer-review process, with undisclosed reviews by a few anonymous referees, has too many inherent problems for it to be used as a model for evaluating these studies, especially given the length of the process. In addition, with the increasing numbers of OA submissions, it is already becoming too difficult to find referees who can devote this much time to the evaluation process. In addition, readers have no way to judge the quality of newly published journals, which also run the gambit to those that are developed by well-known people in the field to others that will print anything if they can receive their desired payment from authors.

Different approaches are being suggested or already implemented that either incorporate some of the benefits of the traditional review process as well as new ways to gain input and feedback on articles, such as online fields for evaluations and comments and rating systems. In addition, various academic institutions and Internet sites are offering ways to determine the quality of a newly published journal. Given the benefits of OA publishing, it is also important to encourage online review with the development of new and better metrics on the quality and impact of the publications, such as citations, number of downloads, commentary, and ranking of readers and endusers. However, consistency that compares apples to apples is key to this process. If sites use different rating systems, for example, it will be difficult for the readers to compare an article on a certain topic in one journal with an article from another. The same is true with the journal listings. It is not helpful if one listing evaluates new publications given one set of criteria and another listing evaluates those publications with another set.

In addition to evaluation consistency, the rating of OA articles and journals requires some form of objective oversight or "a second eye". Bias and unethical behavior is an unfortunate downside of traditional peer-reviews, and procedures must be put into place to ensure that these same disadvantages do not occur with online evaluations of articles and journals. It is too easy for someone to write negative comments for reasons that have very little to do with the actual results or quality of a study. Similarly, it is too easy for individuals to rate new journals

based on their own biases. It is essential that whatever approaches are used to analyze and critique OA publications be accurate and objective. As noted by Richard Price, founder and CEO of Academic.edu, an online community of 151,034,882 academics and researchers[26], about the future of online peer-review systems: "The open access movement is growing; key organizations from governments to universities are behind it, and there are a lot of groups trying out a lot of good ideas. If we let a thousand experiments bloom, hopefully we'll get to where we want to be."[27]

Bibliography

https://www.academia.edu (25.02.2021).

Amsen E., *What is Post-publication Peer Review? F1000 Research*, 8.07.2014, http://blog.f1000research.com/2014/07/08/what-is-post-publication-peer-review/#sthash.3KXXIpWb.dpuf (25.02.2021).

Beall's List of Potential Predatory Journals and Publishers, https://beallslist.net (25.02.2021).

Bornmann L., *Scientific Peer Review*, "Annual Review of Information Science and Technology" (2011), Vol. 49 (1), pp. 199–245, DOI: https://doi.org/10.1002/aris.2011.1440450112.

Butler D., *Investigating Journals: The Dark Side of Publishing*, "Nature. International weekly journal of science" (2013), Vol. 495, http://www.nature.com/news/investigating-journals-the-dark-side-of-publishing-1.12666 (25.02.2021).

Cold Spring Harbor Laboratory, *Guide to Open Access*, http://cshl.libguides.com/open_access (25.02.2021).

Global Research Council, http://www.globalresearchcouncil.org/ (25.02.2021).

Global Summit on Merit Review, http://www.nsf.gov/news/news_summ.jsp?cntn_id=124178 (25.02.2021).

Kelly J., *Green, Gold and Diamond: A Short Primer on Open Access*, 27.01.2013, http://www.jasonmkelly.com/2013/01/27/green-gold-and-diamond-a-short-primer-on-open-access/ (25.02.2021).

Lee C. J., Sugimoto C.R., Zhang G. and Cronin B., *Bias in Peer Review*, "Journal of the American Society for Information Science and Technology" (2013), Vol. 64(1). pp. 2–17, DOI: https://doi.org/10.1002/asi.22784.

McCormack N., *Peer Review and Legal Publishing: What Law Librarians Need to Know about Open, Single-Blind, and Double-Blind Reviewing*, "Law Library Journal" (2009),

[26] https://www.academia.edu (25.02.2021).

[27] J. Marlow, *Incentivizing Peer Review: The Last Obstacle for Open Access Science*, "Wired", 7.11.2014, https://www.wired.com/2014/07/incentivizing-peer-review-the-last-obstacle-for-open-access-science/ (25.02.2021).

Vol. 101:1, pp. 59–70.

Marlow J., *Incentivizing Peer Review: The Last Obstacle for Open Access Science*, "Wired", 7.11.2014, https://www.wired.com/2014/07/incentivizing-peer-review-the-last-obstacle-for-open-access-science/ (25.02.2021).

Mulligan A., Ackerman R., Granier B., Tamber P.S. and Pöschl U., *Quality, Certification and Peer Review*, "Information Services & Use" (2008), No. 28(3–4), pp. 197–214.

Poschl U., *Multi-stage Open Peer Review Scientific Evaluation Integrating the Strengths of Traditional Peer Review with the Virtues of Transparency and Self-regulation*, "Frontiers in computational neuroscience" (2012), No. 6,33, DOI: https://doi.org/10.3389/fncom.2012.00033.

Shapira P. and Kuhlmann S., *Learning from Science and Technology Policy Evaluation. Experiences from the United States and Europe*, Gloucestershire, England 2003.

Shotton D., *The Five Stars of Online Journal Articles – a Framework for Article Evaluation*, "D-Lib Magazine", (2012), No. 18(1/2), DOI: https://doi.org/10.1045/january2012-shotton.

SPARC, *Federal Research Public Access Act*, https://sparcopen.org/our-work/frpaa/ (25.02.2021).

SPARC, *Fair Access to Science and Technology Research Act*, https://sparcopen.org/our-work/fastr/ (25.02.2021).

SPARC, *Transitioning your journal from subscription to open access*, https://sparcopen.org/our-work/transitioning-your-journal/ (25.02.2021).

Swoger B., *Post Publication Peer-review: Everything Changes, and Everything Stays the Same*, "Scientific American", 26.03.2014, https://blogs.scientificamerican.com/information-culture/post-publication-peer-review-everything-changes-and-everything-stays-the-same/ (25.02.2021).

Ware M., *Peer Review: Recent Experience and Future Directions*, "New Review of Information Networking" (2011), No. 16(1), pp. 23–53, DOI: https://doi.org/10.1080/13614576.2011.566812.

Ziman J., *Real Science*, *What It Is, and What It Means*, Cambridge 2011.

Zuabi N. and Langdorf M., *Open Access Journals: the Good, the Bad and the Ugly*, "AAEM Newsletter" (2014), No. 15, pp. 34–43.