Promoting Integrity as an Integral Dimension of Excellence in Research

***

Policy brief for scientific and scholarly publishers

DOCUMENT DESCRIPTION

Deliverable Number	D 5.3
Work Package	WP5
Task	T 5.3
Type	Policy Brief
Version	Public
Number of Pages	11
Due Date of Deliverable	Month 31, 31/03/2018
Actual Submission Date	Month 36, 31/08/2018
Dissemination Level	Public
Authors	Thed van Leeuwen, Andrea Reyes Elizondo, Sarah de Rijcke, Paul Wouters (Leiden University)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 665926.

Table of Contents

1. Introduction 2

1.1 Research Integrity in Academic Publishing 2

2. Recommendations 3

2.1 Uniform nomenclature 4

2.1.a. Clarity in standard breaches 4

2.1.b. Avoiding ambiguity 4

2.2 Guidelines 4

2.2.a. Standardization and consistency 4

2.2.b. Scope 5

2.3 Shared responsibility 5

2.3.a. Research integrity as part of the organizational culture 5

2.3.b. Involvement of stakeholders 5

2.4 Guidelines , their visibility, and presentation 5

2.4.a. Clarity 5

2.4.b. Visibility 5

2.5 Handling authorship and contributorship 5

2.5.a. Acknowledging contributions 5

2.5.b. Fair credits 5

2.6 Transparency of retractions 6

2.6.a. Openness around retractions 6

2.6.b. Taboo and the shortcomings of the peer review process 6

2.7 Involvement of the wider research community 6

2.7.a. Research integrity issues as part of the system 6

2.7.b. Communication among actors and stakeholders 6

2.8 Open science and scholarship 7

2.8.a. Joining efforts 7

2.8.b Availability of data for peer review 7

2.9 Mindful use of IT tools 7

2.9.a Tools as support for science 7

2.9.b Reflexive on implications 7

2.9.c Evidence based 8

3. Concluding remarks 8

References 9

1. Introduction

This policy brief is based on empirical work undertaken as part of the *Promoting Integrity as an Integral Dimension of Excellence in Research* (PRINTEGER) project which focuses on research integrity and scientific misconduct. The report is based on research carried out specifically for WP 3.5 [*an overview of various policies and tools, as well as interviews with academic publishers and editors*] and the input from WP 6.7 [*a workshop on IT tools in academic publishing*]. The work looked into how research integrity considerations can be integrated in processes of quality control in the scientific and scholarly research system.

This document is meant for academic publishers and editors. Therefore, we focus on breaches of integrity that affect scientific publishing, either before, during, or after publication of scientific and scholarly results. Other aspects of research integrity are dealt with in other publications of the PRINTEGER project.

Research integrity has different meanings for different disciplines, audiences, and stakeholders. Moreover, the concept of integrity is an evolving notion, as is demonstrated by the variation in its use by different actors in the science system (Meriste et al,, 2016; González Fuester and Gutwirth, 2017; Breit and Forsberg, 2016). As outlined by the PRINTEGER project there is an ongoing debate as to what constitutes research integrity. The term can refer to cases that range from falsification, fabrication and plagiarism (FFP), via questionable research practices (QRP), to more in-depth discussions on science ethics. As shown in the study "Promoting virtue or punishing fraud: mapping contrasting discourses on 'scientific integrity'," the discourses of scientists and policymakers are increasingly diverging (Horbach and Halffman, 2016).

Whereas scientists discuss integrity as a broadly defined virtue that should be promoted, with specific attention for authorship issues, policy documents seem to be taking a more regulatory approach, with rules based on narrow definitions and with greater attention for financial concerns. The need to choose between a **broad** and a **narrow** definition of scientific integrity is one of the recurrent topics in the study mentioned above. The narrow definition focuses on the prevention of misconduct, whereas the broad definition tries to identify integrity issues that would not surface if one only tries to prevent misconduct. An important additional choice is the one between policies of **compliance** or **promotion** (concerning research integrity). Publishers and editors are responsible for both: they must comply with research ethics as cogs in the machine, but they must also promote them in their interactions with researchers. Lastly, developing integrity policies also entails the **inclusion and agreement** of all relevant actors in the science system

1.1 Research Integrity in Academic Publishing

The academic publishing sector has gone through extensive changes in the last 30 years. The work flow and distribution of labour between publishers, editors, and authors has seen major shifts as a result of progressively increased web-based interactions, e.g. by

way of electronic management systems. These systems allowed publishers to standardize their manuscript handling procedures, while still enabling journals to have their own characteristics. Nowadays, academic publications are mainly presented in electronic format. In theory, this greatly facilitates accessibility of scientific and scholarly literature.

However, the wide incorporation of IT tools in the research and publication processes has taken place in parallel to important shifts in the governance of science. Many scientific disciplines are currently being structured along market economic principles in order to simultaneously encourage competitiveness and responsiveness to societal needs (Nowotny et al., 2001; Müller, 2012). Recent shifts include significant changes in the funding structures (Whitley, 2010), increasing formalization of scientific work by way of project management (Fowler et al., 2015) and the integration of multiple quality control mechanisms into academic settings (Power, 1997; Whitley & Gläser, 2007; de Rijcke et al., 2016). Central elements of these shifts are engaging in international mobility and global competition, as well as undergoing periodic assessment. Management structures, funding systems, and publication practices are increasingly influenced by pressures to promote only the highest quality science, and by models and incentives that would produce this highest quality. Within this context, national and international scientific bodies have implemented assessment procedures that include integrity as a vital aspect of scientific research. As core players in the process of disseminating research, publishers have followed on the implementation of policies that safeguard the scientific record. Further, the pressures from both public opinion and a constant economisation of costs have led publishers to embrace, and sometimes develop, tools that are intended to counteract questionable research practices. However, it is not self-evident that these, as well as other policies and quality control measures actually promote compliance with normative ideals of research integrity. What is clear, though, is that these key shifts in the research system will continue to (re)define how integrity issues are perceived in the future.

2. Recommendations

A previous phase of the PRINTEGER project (D 3.5 *Handling publishing misconduct: tools used by publishing houses and editors*) focused on practical experiences with tools and protocols used by the academic publishing sector. Based on the outcomes of this research, the following recommendations are proposed on how these instruments can be implemented and improved. The recommendations that focus on improvement are particularly relevant for companies producing these instruments. In addition, the policy brief intends to clarify how future needs for integrity instruments can be discerned, e.g. in the monitoring of research proposals (relevant for both producers and users of such technologies), or in the scrutiny of graphics, statistics, and images in publications

(relevant for both producers and users of such technologies).[1] Thereby we hope to cover a wider sets of aspects or elements involved in academic publishing, which are vulnerable to breaches of research integrity.

Below we present for a number of aspects involved in academic publishing our recommendations first, followed by a short description of the situation that urged for such a recommendation.

2.1 Uniform nomenclature

2.1.a. Clarity in standard breaches

Publishers and editors should strive for having a uniform nomenclature in the publishing process. Currently there exists a wide variety of terminology on aspects of research integrity around. The Code of Publication Ethics (COPE) is clear on what represents a breach of integrity, but it does not define integrity or misconduct in unambiguous conceptual terms. In addition, publishers describe issues of research integrity in very different ways and also vary in the emphasis they place on particular integrity problems. If publishers could avoid using different terminology for the widely accepted cases it would allow authors to better understand what is expected of them.

2.1.b. Avoiding ambiguity

Adopting a uniform terminology is an important step in the further development of creating a more uniform and standardized way of dealing with potential breaches of research integrity. Currently, the diversity and vagueness of terms used makes it difficult for publishers and editors to create an overarching policy on how to deal with breaches of research integrity, while submitting authors do not have a clear perspective on what can happen in case of scientific misconduct.

2.2 Guidelines

2.2.a. Standardization and consistency

Publishers and editors should be consistent in using standardized guidelines with respect to research integrity in general and specific forms of misconduct in particular. The guidelines should be relevant for all scientific or scholarly authors, irrespective of scientific or scholarly domain.

[1] As this policy brief is meant for publishers and editors, we would like to emphasize the possible role of the Code of Publication Ethics (COPE). COPE does not define misconduct as such: instead it has codes of conduct for publishers and journal editors in which it focuses on the integrity of the academic record and on several types of publishing misconduct such as contested authorship, conflicts of interest, improper data management, and data manipulation. COPE outlines responsible research publication standards through definitions from other sources such as US Office of Research Integrity or The Lancet.

2.2.b. Scope

Currently, the guidelines do not seem to apply to some types of authors. For example, book authors in many publisher's websites are not pointed to the research integrity guidelines.

2.3 Shared responsibility

2.3.a. Research integrity as part of the organizational culture

Knowledge and use of research integrity guidelines should be seen as the responsibility of all departments of academic publishing houses.

2.3.b. Involvement of stakeholders

Guidelines should not be left only to the marketing or PR department, but they need the involvement of acting editors and other related departments of the publishers . For example, some publishers we talked to during our research were even unaware of the guidelines, or lack thereof, on their own websites.

2.4 Guidelines , their visibility, and presentation

2.4.a. Clarity

Publishers and editors should present their integrity guidelines in clearly designated areas of their websites.

2.4.b. Visibility

Although most publishers are members of COPE and claim to follow COPE's guidelines, the publisher's publicly available guidelines (for example via the publishers' websites) do not reflect this position. Issues of scientific integrity are sometimes dealt with in the corporate area of the website, and sometimes they seem to be scattered over the website. In addition, the different web pages dealing with research integrity are not always interlinked.

2.5 Handling authorship and contributorship

2.5.a. Acknowledging contributions

Publishers and editors should develop a standardized way to acknowledge the increasing variety of contributorships, either in the form of annotation of author lists or by other means.

2.5.b. Fair credits

Editors are increasingly facing problems with author credits since these can be crucial for researchers' careers. This systemic issue can create conflicts between authors, which may end up being presented to journals for adjudication, or with

requests to take action. Cases may involve the position of an author in the list of authors, honorary and/or ghost authorship, and the recognition of non-writing forms of contributorship. It is advisable that journals prepare for conflicts arising from this type of conflicts of interest. Changing how this phenomenon is measured could require not only a change in how policy makers and scientific bodies measure research but also how academic functions and ranks are recorded. One of our interviewees mentioned the CRediT authors hierarchy from CASRAI as a workable option, if this is accepted by evaluating bodies. It is often suggested to create lists of contributions, in a similar fashion as with film credits. However, publishers and editors should keep in mind that this can only help understanding the individual responsibilities more in-depth, but it does not resolve the issue of collective responsibility of the reported outcomes in submitted manuscripts.

2.6 Transparency of retractions

2.6.a. Openness around retractions

Editors and publishers should be completely transparent when retracting papers.

2.6.b. Taboo and the shortcomings of the peer review process

According to the experiences shared with us by editors, stakeholders, and the PRINTEGER team, some publishers seem reluctant to be transparent about paper retractions. In many cases retraction notices are not available. Furthermore, whenever we found retraction notices, these are not always clear about the reasons for retraction. And while a retraction because of data manipulation or any other type of fraud might be quite damaging to an author, if the system seeks to avoid this kind of behaviour, it needs to be clear and open towards the community.

2.7 Involvement of the wider research community

2.7.a. Research integrity issues as part of the system

Research integrity should be seen as an issue of the whole scientific and scholarly community and as an attribute of the research system in its entirety.

2.7.b. Communication among actors and stakeholders

Often, breaches of research integrity are treated as the result of actions of "bad apples". It rarely involves introspection concerning the wider systemic structures that have enabled or encouraged behaviour such as misconduct. Rather than punishing a particular academic department, integrity policies should be aimed at reducing the systemic stimuli for non-integer behaviour in the publication and career system. In COPE, this issue is only partially addressed, as COPE states that whenever there is no reply from the author on suspected plagiarism in a

manuscript the editor should "*Contact author's institution requesting your concern is passed to author's superior and/or person responsible for research governance*".[2] However, if there is indeed plagiarism detected in a published article, COPE formulates no relevant policies concerning communication with the author's institute. For introspection to take place, all actors and stakeholders involved should be aware of breaches and communicate with each other.

2.8 Open science and scholarship

2.8.a. Joining efforts

Publishers and editors should support open science and scholarship policies as potentially effective measures reducing the risk of breaches of research integrity, as these can increase transparency, and enhance efforts to reproduce previous findings. In particular, publishers and editors should promote data sets underlying scientific and scholarly publishing which adhere to the FAIR principles.

2.8.b Availability of data for peer review

Many editors and publishers are convinced that the availability of datasets during the peer review process would be helpful in the assessment of the robustness and validity of data underlying the research submitted. A similar opinion was expressed in interviews about images. Access to the underlying data enables readers to authenticate the validity of the images, and thereby the whole research product under review.

2.9 Mindful use of IT tools

2.9.a Tools as support for science

Publishers and editors should seek to optimise the processes of reviewing submissions with the aid of IT tools which should promote, rather than hinder, the building of trust within the scientific system.

2.9.b Reflexive on implications

The commercial nature and economic size of some IT tools was discussed during our interviews and workshop. Scientific publishers and editors should be reflexive on the use of IT tools, whether commercial or not, to detect cases of misconduct and the implications of submitting the whole checking process to one single commercial provider. Currently, many IT tools and measures are based on distrust in authors. Such an approach can erode the principle of trust which is a cornerstone of scientific research.

[2] For example, see https://publicationethics.org/files/Full%20set%20of%20English%20flowcharts_9Nov2016.pdf

2.9.c Evidence based

Publishers and editors should make informed choices concerning the introduction of IT tools in the publishing process. These decisions should be based on evidence and not as a result of an "obligatory technology" drive (Chandler, 2012).

3. Concluding remarks

As mentioned above there are many aspects and dimensions to research integrity. The academic publishing community is not unaware of the breaches of scientific integrity that can occur in their trade. As a result they have sought tools that can aid in handling cases, from guidelines and regulations to workflows and IT tools that can deter and detect breaches. However because them being engrained in the system, some reactions to scientific misconduct can generate behaviours and patterns which become institutionalised and might not always reach their intentional goal.

This document signals the main points of attention that academic publishers and editors could consider when dealing with breaches of integrity whether these happen before, during, or after publication of scientific and scholarly results. This summary is an outcome of our research on tools used in the academic publishing sector and interactions with various stakeholders (mainly editors, publishers, and scientists). In general the recommendations highlight the need for openness and transparency, continuous communication amongst stakeholders, placing value on trust as a core ideal of the scientific endeavour, and questioning the effectiveness of a measure.

Finally it must be noted that this document does not seek to add to the normative literature on the handling of research integrity in academic publishing. Rather it seeks to continue a discussion that keeps evolving, one where the roles of publishers, editors, and scientists in the wider subject of research integrity are constantly being (re)defined.

References

Breit, E., and Forsberg, E.M. "Scientific misconduct and integrity: An organizational perspective." (PRINTEGER, D.2.6, Ref. Ares(2016)4349405 - 11/08/2016), http://printeger.eu/wp-content/uploads/2016/10/D2.6.pdf.

Chandler, J.A. ""Obligatory Technologies" Explaining Why People Feel Compelled to Use Certain Technologies," *Bulletin of Science, Technology & Society* 32, no. 4 (2012): 255-264.

Cope . "Code of Conduct." Accessed November 2017. https://publicationethics.org/resources/code-conduct.

Cope. "Flowcharts." Accessed November 2017. https://publicationethics.org/resources/flowcharts.

Fowler, N., Lindahl, M., and Sköld, D. "The projectification of university research: A study of resistance and accommodation of project management tools & techniques." *International Journal of Managing Projects in Business*, 8,1 (2015): 9-32.

González Fuster, G., and Gutwirth, S. "Legal analysis." (PRINTEGER, D.2.4, Ref. Ares(2016)2679005 - 09/06/2016), http://printeger.eu/wp-content/uploads/2017/02/D2.4.pdf.

Horbach, S, and Halffman, W.. "Promoting virtue or punishing fraud: mapping contrasting discourses on 'scientific integrity'." (PRINTEGER, D2.2, Ref. Ares(2016)3721139 - 20/07/2016), http://printeger.eu/wp-content/uploads/2016/10/D2.2.pdf.

Meriste, M., Paarder M.L., Lõuk, K., Simm, K., Lilles-Heinsar, L., Veski, L. , Soone, H., Juurik, M., and Sutrop, M. "Normative analysis of research integrity and misconduct." (PRINTEGER, D.2.3, Ref. Ares(2016)4345271 - 11/08/2016), http://printeger.eu/wp-content/uploads/2016/10/D2.3.pdf.

Müller, R. "Collaborating in life science research groups: The question of authorship." *Higher Education Policy* 25, 3 (2012): 289–311.

Nowotny, H., Scott, P., and Gibbons, M. *Re-thinking Science. Knowledge in an Age of Uncertainty*. Cambridge: Polity 2011.

Power, Michael. *The Audit Society: Rituals of Verification*. Oxford, UK: Oxford University Press, 1997.

de Rijcke, S. et al. "Evaluation practices and effects of indicator uses - A literature review." *Research Evaluation*, 25, 2 (2016), 161-169.

Whitley, R., and Gläser, J. (eds.). *The changing governance of the sciences: The advent of research evaluation systems. Sociology of the Sciences Yearbook, vol. 26*. Dordrecht: Springer, 2007.

Whitley, R. "Reconfiguring the public sciences: The impact of governance changes on authority and innovation in public science systems." In R. Whitley, J. Gläser and L. Engwall (eds.) *Reconfiguring Knowledge Production*, pp. 3-47. Oxford, Oxford University Press,, 2010.