

Promoting Integrity as an Integral Dimension of Excellence in Research

Handling publishing misconduct:

tools used by publishing houses and editors

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1. Summary

Work Package III gathers indicators of the extent of misconduct and analyses how institutions respond to misconduct or deviance in science. Deliverable 3.5 focuses on the protocols and tools used by scholarly and scientific publishers to guard scientific integrity. Aside from an overview of the practices and aids in place at various publishing houses, the report contains a summary of the experiences collected through qualitative interviews with several editors and publishers, as well as an account of the tools themselves.

2. Introduction

Publishers¹ seek to disseminate quality articles and books as part of their role in keeping the record of scientific and scholarly endeavours. This holds true whether a publishing house has a strong commercial drive or is non-profit oriented. Scientific publications serve not only as a means to record results or to foster field-oriented discussions, they are increasingly used as a means of evaluating scientists and organisations.² These diverse functions can lead to conflicting interests and ethical dilemmas during a process that involves many actors: authors, lab technicians, funders, institutions, editors, reviewers, and publishers.

As actors heavily invested in the dissemination of the scientific record, publishers encounter a whole range of ethical issues, from how to deal with honest mistakes and grey cases to addressing instances of clear misconduct. As part of the empirical phase of PRINTEGER, the present deliverable looks into the manners in which publishers deal with scientific misconduct.

During the first section, the policies and tools used by publishers were explored. The aim of this overview was to compare the type of ethical issues that publishers cover on their public online presence. Although many of these issues might be covered in private correspondence between editors and authors, we felt an examination of the information publicly available to be more suitable. Firstly, as players in the dissemination of science, publishers benefit greatly by guarding the integrity of the record and thus their stance on ethical dilemmas should be publicly available. Secondly, comparing this information would allow us to gain knowledge on the similarities and differences in the treatment on ethical issues.

In the second section we sought to consider the specific experiences of editors and publishers concerning ethical dilemmas and the effectiveness of the various policies and tools in place. A total of nine editors and publishers from the humanities, social

¹ In this study, the term publisher is used firstly as a general term for publishing houses, both commercial and non-for-profit. It is also used to refer to the role of publisher inside those organisations. When carrying interviews we have spoken to people in various roles insides these organisations, mainly editors and publishers.

² Fischer, BA, and MJ Zigmond. "Scientific Publishing." In *Encyclopedia of Applied Ethics*, by Dan Callahan, Peter Singer, and Ruth Chadwick, 32–40, 2nd ed., n.d. https://ebookcentral.proquest.com/lib/leidenuniv/detail.action?docID=858617.

sciences, material sciences, pharmacology, data science, chemistry, and medicine were interviewed. The questions centred around the training received, the protocols and tools in place to deal with potential cases, the interpretation of misconduct, the subject of integrity with regards to transparency, and experiences with specific cases.

Lastly, the third section of this report contains a description of the tools and protocols used to prevent misconduct that can happen before or during publication and maintain the integrity of the record. These descriptions as well as the insights gained from the overview and interviews will serve as a basis for Deliverable V.5 on tool recommendations.

3. Policies and tools used in scholarly and scientific publishing

Most players in the realm of scientific publishing share the common goal of presenting research findings in order to foster discussion within its corresponding community and to keep the record of the various disciplines. Understandably, the process to publish these findings varies depending on the size of the publisher, the type of publishing model, the scientific fields covered, and the languages in which the output is published.

Seeking to cover these differences, the policies and tools of 12 publishing houses and organisations were reviewed:

Publisher	Type	Size	Publishing
Brill	commercial	800 books p/y 200 journals	subscription OA options
De Gruyter	commercial	700 journals 1,300 new titles	subscription OA options
Elsevier	commercial	2,000 journals 33,000+ books	subscription OA options
IOP Publishing	non-for-profit	70 journals	subscription OA options
Oxford University Press (OUP)	university	6,000 titles p/y	subscription OA options
Palgrave Macmillan	commercial	200 monographs 57 journals	subscription OA options
Public Library of Science (PLOS)	non-for-profit	7 journals	OA
Redalyc	non-for-profit	1,200 journals	OA repository
Rockefeller University Press (RUP)	non-for-profit	3 journals	OA (after 6 months)
Springer	commercial	2,900 journals 200,000 books	subscription OA options
Ubiquity Press	commercial	25 books 53 journals	OA
Wiley	commercial	1,500 journals 9,000+ books	subscription OA options

Table 1 Publishers reviewed³

Amongst these we find large and small companies as well as commercial and non-for-profit organisations that publish both journals and books on a wide range of scientific fields. The type of publishing mode was also considered and thus a few outlets focusing solely on Open Access are included. Finally, the possible differences between centre and periphery were taken in consideration by exploring Redalyc, a non-English based repository.⁴

An objective of this work package was to explore the current integrity practices developed and used by publishers to ensure quality. Following this, the website of each

³ The data for this table was extracted from the publishers websites between January and March 2017.

⁴ Redalyc (Red de Revistas Cientificas de America Latina y el Caribe, España y Portugal) is a platform which functions as a bibliographical database and digital library for scientific and scholarly production from Ibero-America (Spain, Portugal and Latin America).

organisation was thoroughly searched for policies that cover six common practices of misconduct for both journals and books:

- 1. (Potential) conflicts of interest are authors, editors and reviewers required to provide them? Are these type of conflicts defined or are there examples given? (indicated as *CoI*)
- 2. Access to background data (for readers and reviewers) is it required or recommended to give access to background data? Are there guidelines established to link to background data? (indicated as *Acc data*)
- 3. Retraction of publications are the policies for retracting articles clearly explained? Do they provide reasons for retractions. (indicated as *Retract*)
- 4. Plagiarism and appropriation are there policies in place dealing with plagiarism and appropriation? (indicated as *Plag & app*)
- 5. Duplicate and redundant publication are there policies in place concerning duplicate and redundant submissions? (indicated as *Dupl & red*)
- 6. Compliance with ethical standards are there policies requiring compliance that cover the rights of subjects—such as informed consent, privacy protection, and compliance with human clinical and animal testing ethical guidelines? (indicated as *Stand*)

In addition to these practices, their use of IT tools as well as the visibility of these policies and infrastructures were considered.

Initially, the review looked for differences between policies for book and journal authors, editors, and publishers. However, many publishers do not mention ethics specifically for book authors and some do not publish books at all, hence we have not included these data in the overview. The following table provides an overview of which policies are publicly available on the publishers' websites:

	Guidelines & policies				IT To als		
Publisher	CoI	Acc data	Retract	Plag & app	Dupl & red	Stand	IT Tools
Brill	1/2	No	1/2	1/2	1/2	No	No
De Gruyter	1/2	No	1/2	1/2	1/2	No	n/a
Elsevier	Yes	Yes	1/2	Yes	Yes	Yes	Yes
IOP	Yes	1/2	1/2	1/2	Yes	Yes	Yes
OUP	Yes	No	1/2	1/2	1/2	Yes	1/2
Palgrave Macmillan	1/2	1/2	Yes	1/2	1/2	No	Yes
PLOS	Yes	Yes	1/2	Yes	1/2	Yes	Yes
Redalyc	No	No	No	No	No	No	No
RUP	Yes	Yes	1/2	1/2	1/2	Yes	Yes
Springer	Yes	1/2	Yes	Yes	Yes	Yes	Yes
Ubiquity	No	Yes	1/2	1/2	No	1/2	Yes
Wiley	Yes	No	Yes	1/2	Yes	Yes	Yes

The legend 1/2 refers to issues that are partially covered. This is the case when a publisher refers to the issue but does not define it or give examples of it, or when the full information is scattered through several pages and requires a targeted search. For example, De Gruyter does not have any page on publishing ethics although a document on its policies was found in one of its journals after a targeted search. The explanation for the grading and some notes on each issue can be found below except for De Gruyter's half points, as this has already been given above.

3.1 Guidelines & Policies

Conflicts of interest

Publisher	Conflict of Interest
Brill	1/2
De Gruyter	1/2
Elsevier	Yes
IOP	Yes
OUP	Yes
Palgrave Macmillan	1/2
PLOS	Yes
Redalyc	No
RUP	Yes
Springer	Yes
Ubiquity	No
Wiley	Yes

Most publishers mention in their policies that authors, editors, and reviewers must declare any potential conflict of interest. Of the publishers which were graded as half, Brill only mentions the issue for reviewers and editors but not for authors, and it does not explain to what CoI refers, while Palgrave Macmillan only mentions this issue for authors. Finally, PLOS goes further on this policy, as it requires the role of funders to also be declared.

Access to background data

Publisher	Access to data
Brill	No
De Gruyter	No
Elsevier	Yes
IOP	1/2
OUP	No
Palgrave Macmillan	1/2
PLOS	Yes
Redalyc	No
RUP	Yes
Springer	1/2
Ubiquity	Yes
Wiley	No

Guarantying access to background data is not a standard requirement for the majority of publishers. Although many recommend such practice and some have a general research data policy, only a few offer storage options for datasets (except for research resources journals). For example, some IOP journals offer the opportunity to store supplementary data. However, for IOP, Palgrave Macmillan, and Springer there is no publisher-wide recommendation on background data. Authors are nevertheless expected to retain and record their data and results in an auditable manner for editors and reviewers.

Ubiquity Press's recommendation goes further by covering every object associated with the research such as software, datasets, and bioresources.

Retraction of publications

Publisher	Retractions
Brill	1/2
De Gruyter	1/2
Elsevier	1/2
IOP	1/2
OUP	1/2
Palgrave Macmillan	Yes
PLOS	1/2
Redalyc	No
RUP	1/2
Springer	Yes
Ubiquity	1/2
Wiley	Yes

The manner in which publishers communicate their policies on retractions varies widely. In general all publishers except the repository Redalyc mention the possibility of

an article being retracted when it does not abide by publishing and ethics standards. However, not all of them specify what can be considered a breach, probably owing to the assumption that most authors would know what it entails.

Brill, Elsevier, IOP, OUP, PLOS, RUP, and Ubiquity Press do not state clear policies for documenting and stating the reasons for retraction. Further, some publishers seem to use a standard sentence referring to "established publishing standards and ethics" for justifying retractions, which can obfuscate the difference between errors and intentional wrongdoing. This while the Committee on Publication Ethics (COPE) guidelines—to which most publishers subscribe—clearly states that notices of retraction should "state the reason(s) for retraction (to distinguish misconduct from honest error)".⁵

Plagiarism and appropriation

Publisher	Plagiarism & appropriation
Brill	1/2
De Gruyter	1/2
Elsevier	Yes
IOP	1/2
OUP	1/2
Palgrave Macmillan	1/2
PLOS	Yes
Redalyc	No
RUP	1/2
Springer	Yes
Ubiquity	1/2
Wiley	1/2

Although almost all publishers cover the issue of plagiarism with a clear definition and examples⁶, few cover appropriation by reviewers. On the subject of plagiarism neither Brill nor Ubiquity mention it specifically, with the former stating that articles must be original and the latter that articles are screened by a similarity check. A small sample of Ubiquity's journals (seven) showed that only one treats the subject of plagiarism. On the subject of appropriation, Wiley mentions it as a possible reviewer misconduct for editors to consider but it is not specified on its reviewers guidelines.

⁵ Elizabeth Wager, Virginia Barbour, Steven Yentis, Sabine Kleinert, "Retractions: Guidance from the Committee on Publication Ethics (COPE)," *COPE*, 2 September 2009, accessed 27 June 2017, https://publicationethics.org/files/u661/Retractions_COPE_gline_final_3_Sept_09__2_.pdf. ⁶ These definitions can be found under Appendix II.

Duplicate and redundant publication

Publisher	Duplication & redundancy
Brill	1/2
De Gruyter	1/2
Elsevier	Yes
IOP	Yes
OUP	1/2
Palgrave Macmillan	1/2
PLOS	1/2
Redalyc	No
RUP	1/2
Springer	Yes
Ubiquity	No
Wiley	Yes

Similarly to the issues of plagiarism and appropriation, many publishers cover duplication and redundancy partially, often lacking clear definitions and the consequences of these types of breaches. The subject of duplicate publication is not covered specifically by the guidelines from Palgrave Macmillan, while redundant publications are not comprehensively covered by the online guidelines from Brill, OUP, PLOS, RUP. Finally it is worth noting that not all publishers use the same terminology. For example, Elsevier uses the term duplicate paraphrasing for redundant publication and OUP uses the term duplicate for redundant publication.

Compliance of standards

Publisher	Standards
Brill	No
De Gruyter	No
Elsevier	Yes
IOP	Yes
OUP	Yes
Palgrave Macmillan	No
PLOS	Yes
Redalyc	No
RUP	Yes
Springer	Yes
Ubiquity	1/2
Wiley	Yes

This category refers to policies covering a wide variety of standards, from the rights of human subjects, to compliance with ethical standards on clinical testing (human and animal), and the handling of hazardous substances. It can also refer to a positive advice from an institute's ethical commission. Particular disciplines do not need to deal with some of these, for example animal testing standards for the humanities. However, informed consent and right to privacy are also relevant for the social sciences and some disciplines in the humanities.

For the above overview, the guidelines were searched for policies referring to appropriate standards on the range of subjects covered by each publisher. Ubiquity Press does not cover it as a publisher, however one journal from the sample examined requires authors to have authorisation from their institutional committee for research involving humans. Finally, although De Gruyter cover very briefly the use of hazardous materials, it has no mention of any of the other standards hence the negative punctuation.

3.2 Infrastructure IT tools

Publisher	IT Tools
Brill	No
De Gruyter	n/a
Elsevier	Yes
IOP	Yes
OUP	1/2
Palgrave Macmillan	Yes
PLOS	Yes
Redalyc	No
RUP	Yes
Springer	Yes
Ubiquity	Yes
Wiley	Yes

The majority of the publishers reviewed make use of at least one IT tool for scanning similarity in texts. Elsevier, IOP Publishing, Palgrave Macmillan, PLOS, Springer, Ubiquity Press, and Wiley make use of Crossref Similarity Check (powered by iThenticate). OUP uses a similarity check but this is not a standard for all the journals, however it specifies that every journal must be clear to its authors on how and when the check is run. It is not clear if De Gruyter makes use of a similarity check, they do not inform of this on their website nor on their publication ethics document.

Visibility

The clear visibility of publishing ethic policies and regulations is sometimes lacking. This is particularly the case for large corporations, which have large and complicated websites. Concerning guidelines for book authors, most of the publishers with a dedicated section for these authors do not mention publishing ethics directly.

At Elsevier and Wiley the information is scattered throughout several pages, which sometimes have slightly similar names but refer to different sections. The pages can be accessed through several paths and are not always interconnected. OUP and Palgrave Macmillan have its guidelines grouped in one page but it requires a thorough and complicated navigation to arrive to them.

Brill, IOP Publishing, PLOS, Springer, and Ubiquity Press have an easy to find page where all its ethics guidelines are listed as well as links to more detailed information from other organisations such as the Committee on Publication Ethics (COPE). PLOS also provides quick access to each journal's guidelines. RUP has some general policies under its Philosophy section but the ethical guidelines are to be found per journal.

The ethical guidelines from De Gruyter were extremely difficult to find on the website. Their publication ethics guidelines were found as an article in a journal but only after a targeted online search. Finally, although they are a repository and not a publisher, Redalyc has no clear policies on publishing ethics. They only have a prominent declaration on Open Access.

3.3 Summary

The majority of the publishers reviewed have publishing ethics guidelines available on their website which cover several categories of scientific misconduct in publishing. Given that most are members of COPE (except for Brill, De Gruyter, and Redalyc) it is highly likely that these publishers cover several issues reviewed above through formal or informal communication with the authors, although this is not always clear from the public website.

However, there seems to be a lack of consistency in how the issues are named and handled, with possible misconduct from reviewers not being widely covered. The visibility and accessibility of the policies is another issue worth highlighting, with De Gruyter and the repository Redalyc having a very poor coverage on the subject.

It is worth noting that a few issues, such as plagiarism, are only very briefly or indirectly covered. This stance may suggest there is an assumption that authors will know what is appropriate behaviour or that publishers and editors have trust in scientists, scholars, and their editorial team.

4. Accounts from the work floor: experiences from editors and publishers

After the initial exploration of what publishing organisations state as their guidelines, publishers and editors were interviewed in order to record their direct experiences with the policies on misconduct and the IT tools used to combat it. As with the publishing organisations, the first selection of journals intended to cover different disciplines, sizes of publishing organisations, publishing modes (commercial vs. OA), types of output (articles, books, reviews), and languages. A second criteria for this selection was experience with cases of (potential) misconduct, thus journals which had had cases of retractions or corrections, be it documented in the Web of Science, Retraction Watch, or other websites.

From a total of 19 persons approached⁷, nine editors and publishers agreed to participate in an interview. The disciplines covered are: humanities, social sciences, material sciences, pharmacology, data science, chemistry, and medicine. The main focus of the interviews was to understand how editors and publishers from various disciplines perceive and handle misconduct. Beyond the regulations an organisation has, it was important to hear the kind of steps followed in practice when there is suspicion of misconduct.

4.1 Questions and responses

The subjects discussed during the interview can be divided into five large topics pertaining to the training received, the protocols and tools in place to deal with potential cases, the interpretation of misconduct, the subject of integrity with regards to transparency, and experiences with specific cases. It is important to note that although all the journals approached had at least one case of retraction or correction these cases did not always involved misconduct, nor were those interviewed necessarily the editors or publishers in charge when said case(s) had taken place.

Training

First we inquired about the type of training received, as this moment is when a publisher or journal defines the type of work expected to safeguard a certain level of quality. The level of training provided gives an indirect glance on how misconduct is perceived in different disciplines and publishers. For example, in certain disciplines there might not be formal training on potential misconduct, possibly as the cases tend to be rare and it is assumed everybody working on that field knows what misconduct is.

The type of training received varies greatly depending on the size of the journal and the resources from the organisation behind it. In general, the most common method

⁷ From those 19, five never replied, four declined, one accepted but could not participate due to other engagements, and two forwarded us to their publishers who had more experience in dealing with ethical issues. Aiming to cover differences between centre and periphery, two editors from Latin America were contacted however they never replied. From those who declined, one forwarded us to the journal's guidelines and regulations while two implied they could not allocate time for an interview without some form of remuneration: a faculty member and an independent researcher.

is on-the-job training under supervision of senior colleagues, and for almost all cases except one it includes tutorials on the managing system for manuscripts. In five cases the training period is acknowledged as such and is complemented by presentations on different aspects of the publishing process, while for the rest the training is informal and part of the first months of work.

The average duration of training is one month, with a couple of cases of a sixmonth to one-year period. There is a marked difference between internal editors and publishers working directly for the publishing house and editors-in-chief of small journals. In general, the in-house staff receives more specialised training and detailed presentations covering a variety of subjects. In a few cases the external editors receive webinars and other resources as presentations and handbooks; however this was not the case for four editors. This trend is also observed in the availability for continuous education as it is usually the internal staff which has more possibilities. Exceptions are update tutorials on the manuscript managing system and in a few cases, publishing ethics seminars offered by COPE.

Concerning ethics, the attention given to the subject during the coaching period shows different attitudes which could be partly explained by the incidence of cases and the discipline. The treatment of the subjects varies from specific presentations, to treating it through editorial board meetings or when cases come up, and cases in which there was no mention of ethical issues at all. Interestingly, the latter responses concerned editors from the humanities. The rationale behind this seems to be the assumption that the concept of misconduct is clear and well-known, as well as considering serious breaches of ethics as the domain for the legal department.

Finally, awareness of COPE and its resources was queried. The majority of editors and publishers know of the committee although not all of them are familiar with their resources. There is no apparent relationship between the discipline covered and knowledge of the committee as the two interviewees who were unaware of it worked with subjects from material sciences and humanities. Those who know of and use the COPE resources find them extremely helpful for the subjects covered.

Protocols and tools

The second area covered by the interviews was related to the protocols and tools in place and how these are experienced. All journals and publishers have established a particular workflow for manuscript assessment, whether for invitation-only or open submissions. It is through this workflow that most potential cases are spotted.

Concerning IT tools, the majority of publishers run the manuscripts automatically through a similarity check, with three cases (two journals and one publisher of the humanities) abstaining from doing so. In this particular note, the editors found their workflow more suitable for spotting possible issues for the kind of texts they handle, while the publisher mentioned they are beginning to run trials to see the effectiveness of it. A few publishing houses also run a duplicate-submission check to detect whether the

paper has not been submitted before to one of their journals. In general, for most journals and publishers where the similarity check is run automatically, an editor will review and evaluate the report on overlapping text.

Besides the protocols and workflows covering text, a few publishers have specific workflows in place to assess the quality of images and whether they have been manipulated or not. This type of work is done by in-house editors and is not automated.

On the subject of protocols for handling issues, the majority of those interviewed have formal protocols in place, often modelled after the COPE protocols and with links to the COPE guidelines and flowcharts. In a couple of journals and one publishing house in particular, editors rely rather on informal interaction and have a common sense approach such as discussing issues with the editorial board or the publisher in charge.

When talking about the perceived efficiency of these protocols and tools, the editors and publishers who refrain from using similarity checks find their workflows sufficient for maintaining quality. They trust the work and knowledge of their editors, reviewers, and the scholarly community at large. Those who do run the similarity checks find these useful and helpful. Although the reports require manual evaluation by an editor, the scale of work taken off their hands is such that it would be impossible to assess a very large amount of submissions purely through human work. Some editors perceived however some shortcomings on the similarity tools, specifically pertained to works in other languages than English and formally-unpublished texts, such as graduate students' work.

Finally the editors and publishers shared with us a few wishes for IT tools which could facilitate their work. Concerning similarity scanners, covering a wider range of sources including other languages would be quite useful. A tool which could run similarity checks for figures and images, as well as a tool that could automatically generate a report on possible image manipulation, would also be welcome. On the subject of data and statistics, tools that could identify manipulation and fabrication would aid the publishing endeavour, although the difference in disciplines might complicate a straightforward solution for all of these.

Interpretation and responsibility of misconduct

With regards to the interpretation of misconduct, the interviewees shared their views on what constitutes clear cases vs. grey ones. In general most editors and publishers see the deliberate misrepresentation of research and results as clear misconduct. As examples they mentioned plagiarism, data falsification and fabrication, statistical manipulation, and poor research practices such as lacking informed consent and not providing background data or replication information when it is a standard for the discipline involved. Stressing the intention, the editors see the clear cases as conscious choices to copy, falsify, obfuscate, or ignore standing protocols from their own disciplines.

In contrast, the cases perceived as grey are those deemed less serious whether due to errors or ignorance. As examples, the interviewees mentioned authorship disagreements, data mismanagement, and certain forms of plagiarism. The cases of plagiarism deemed as grey involve self-plagiarism and ignorance on proper citation practices, differences in research cultures being a key point here. In general, there is the view that young researchers and students commit more errors, or errors that scientists and scholars commit less. With regards to copying images and figures, editors felt there is ignorance from the authors on the implications of this action.

Most editors and publishers highlighted the difficulty of defining certain cases as plagiarism given that methodologies and certain descriptions are bound to be repeated across papers and journals. In a particular case the extent of the "damage" done was used as a measure: an editor mentioned a case of a reviewer adding citations to their own work as a grey area because it did not affect directly the work of others, despite the person being still employed by a faculty.

When asked who is responsible for keeping misconduct out of manuscripts most interviewees lay it with the editors and publishers, although the authors are seen as bearing the ultimate responsibility. As one editor confided: a good scientist will carry out their research properly and therefore present a good paper. Another one added that a person with intent to be dishonest will seek to cheat not only the readers but also the editors and scientific community at large. Nevertheless many publishers feel that the fact that they are accountable for the copyright carries a large responsibility for them. Several confided that a good editor and publisher should spot issues with papers before publication. On this last point, a couple of editors highlighted that resources are an element of this equation: for-profit publishers have a larger responsibility than the non-profit ones.

Integrity and transparency

The calls for more transparency and open data are recognised by editors and publishers as a partial response to cases of scientific publishing misconduct. In particular we inquired how their journals and publishing houses see Open Data and potential conflicts of interest.

Given the difference in disciplines covered, not all journals are involved with issues of Open Data. In specific the editors from the humanities feel this issue is not applicable to them: most of the texts handled in papers are already widely available nor are they a literary publisher that could guarantee proper publications of unknown literary works. For social sciences, the editors do not have specific regulations from within the journal and leave this to the requirements of the founding instance.

In contrast, those working on natural and applied sciences are more concerned with the issues of Open Data. For two journals, having Open Data sets is required except for a few cases, while the rest recommends the practice to their authors. Editors and publishers are discussing internally how to deal with storage, accessibility, and

standards issues while reviewing with colleagues from other publications and disciplines details such as sensitive issues and the development of policies.

Concerning potential conflicts of interest, the approaches also differ between the humanities and social sciences on the one hand, and the natural and applied sciences on the other hand. While the former leave these mostly to the authors and to the knowledge of the community of reviewers, the latter request authors to state potential conflicts of interest during the submission. In all journals there is no routine check on the veracity of said statements although several publishers see it as their responsibility to educate authors and reviewers of potential conflicts of interest.

The interviewees see transparency measures such as Open Data as aids towards the improvement of science in general. Making data sets available will not only add to the scientific record but allow for a greater scrutiny of experiments and results, especially if failed trials and experiments are also documented.

These measures can also aid in the prevention of misconduct although several editors raised concerns on how this objective will be implemented, stressing the necessity of having long-term accessibility and proper identification of data sets. Despite Open Data being seen as an anti-misconduct aid, one editor foresees possible future cases where scientists might fabricate whole data sets, albeit such a forgery would be difficult to do and hence to catch. Nevertheless the layer of accountability that an open data set adds will undoubtedly encourage scientists to be more careful with their data and results.

Specific cases

According to the interviewees, misconduct can be found in a very small percentage of publications. Impact however is big as it undermines the trust in science and potential cases require plenty of resources to investigate.

Most cases of potential misconduct are identified through the similarity checks and the work of editors and reviewers, being thus handled during the pre-publication stage. A few of these cases will involve duplicate submissions that a reviewer has read for a different publication. When an issue is identified, the editors will contact the authors to solve this and only involve the publisher when the case gets more complicated. If there is no satisfactory solution and the quality of the work cannot be guaranteed, the paper is rejected.

The majority of the post-publication cases are raised by readers concerning text or image plagiarism and in a few cases by scientists who contest authorship. Similarly to the pre-publication cases, if the issue cannot be solved between the editor and authors the publisher will be involved and in some cases the institution of the author will be notified requesting further aid in solving the mater. However, contacting the institution is not seen as a required step during this process as the conversation involves mainly the authors and editors.

There is only one case experienced by one of our interviewees where the investigation by the publisher found there was deliberate plagiarism. It affected several journals and took place during a large time span. The author involved never replied to the request for information by the various editors and so his articles were eventually withdrawn.

A couple of cases handled by the interviewees merit special mention because they involved potential misconduct by reviewers and editors. In the first, already mentioned above, a reviewer added citations to his/her own work. The editors handling this case were junior editors and the department head was in transition; without clear protocols it was decided to not take further action unless the issue was raised by an author or another more senior editor. In the second, an editor that had been working on a book left to another publisher and published a very similar work at the new house but leaving some authors out. Given the complexities of challenging a non-published work, which is not exactly the same as challenging published work, no further action was taken. This highlights what another interviewee said when defining misconduct: it is what you can prove as misconduct.

Finally it is worth noting that cases of potential or established misconduct are thoroughly discussed at editorial boards and in some cases they result in improvements during the submission process. For example, in one case that resulted in a retraction the editors identified the need to request more detailed information during submission, to ensure all protocols were dully followed.

4.2 Summary

Misconduct in publishing is mostly seen as an extension of scientific misconduct. If researchers do their work properly and are guided by a good editor, the publications should be free of issues. At play thus are not only honesty and integrity but being rigorous both by the scientists and the editors.

Publishers and editors recognise the integral part that their work plays in the scientific endeavour and take their role extremely seriously. They seek to guarantee a certain level of quality on the manuscripts accepted and do so by having an open relationship with their authors, other editors, and publishers. This is why most share the view that trust should be the fundament of scientific publishing rather than policing.

As much as IT tools come in handy for the publication process, the interviewees recognise how vital the human factor is. As part of their work with authors, editors have realised that many issues arise from lack of awareness. In their view, when authors, reviewers, editors, and publishers are knowledgeable on publishing ethics, the system works at its best. Therefore many publishers and editors see it as their role to educate the authors on certain issues such as proper citation practices for both of text and images.

Concerning protocols, many guidelines are shared across publishers thanks to trade-wide discussions. COPE seems to be regarded as extremely useful although some

were not aware of it or what it offers. Others find the guidelines and standards lacking on certain issues such as data management but are confident that these issues will be more generally acknowledged with the call for more transparency on data.

5. Description of the tools

Following the review and interviews, we find three types of tools widely used by editors and publishers to deal with possible misconduct: guidelines and regulations, similarity scanners, and protocols against data manipulation.

5.1 Guidelines and regulations

The guidelines and regulations as established by many publishers under the umbrella of COPE have proven extremely useful to editors and publishers. Through the interviews it became clear that this information provides guidance in most of the cases of suspected misconduct. These documents offer clear definitions and examples of different types of possible misconduct including flowcharts on what type of actions to take and which actors to contact.

The COPE guidelines do not cover all possible cases thus many editors adapt them to their own needs or create new ones on subjects left out, for example on the integrity of datasets. Some international associations have also created their own guidelines based on discipline specific cases. In general, there seems to be very similar definitions throughout the different guidelines available online except for a few cases in which nomenclature is used differently, such as in the case of redundancy and duplication.

The guidelines are not only useful for editors and publishers on being reactive but they work as a prevention tool in the sense of informing and educating researchers on the type of behaviour that is not acceptable. Concerning the language of the guidelines, most of them are in English as this is the language for most international publications. However some publishers have seen the need to better explain some types of common mistakes in other languages. These guides deal often with examples of plagiarism, proper citation, conflicts of interest, salami publishing, etc. As an editor confided, many authors are not native English speakers and giving more clear and detailed examples of misconduct in their own languages can be helpful.

Lastly, given that many cases of possible misconduct involve grey situations, the variety of examples offered and the possibility of discussing with colleagues from COPE or from the international associations aid editors in handling difficult cases.

5.2 Similarity scanners

The similarity scanners are extremely useful tools as some can check a document not only against papers published but also against grey literature and various texts on the web. The scanner will provide information concerned with any sort of text overlap such as references, bibliography, licenses, and quotations. Thus the reports produced still require an editor to check manually the results.

These scanners are extremely helpful for they have automatized a large part of the work. However the coverage seems to be lacking in some areas. Some editors mentioned that for some languages and subjects it is often better to make a Google search.

We ran a few tests with published and unpublished articles with mixed results in iThenticate. Some published articles hosted only in university or regional repositories have very little overlap while a Google search returns a link to the article tested. This was also the case for non-English articles. These results and the comments from editors will be taken into consideration or a next face of PRINTEGER on tool recommendation.

5.3 Data and image manipulation

The types of manipulation that can be found in an article are images, graphs, tables, and statistics. There are no completely automatized tools for tracking these type of misconduct, however many editors and publishers have developed processes for spotting these manipulations.

The main shared problem with image and data manipulation relates to the various formats in which these two elements of scholarly publishing appear. In the case of data manipulations, it is difficult to detect errors, as the data often appear in some sort of spreadsheet format, which actually is a 'second generation' of the data produced in other platforms, such as in Python, MatLab, SAS, SQL, or measured in any other thinkable laboratory measurement tools. Dealing with manipulative actions is possible in spreadsheets, but this requires storage of data spreadsheets at publishers for review purposes, and not all publishers have such facilities implemented. If available, one can detect data manipulations by analysing the sheets by scrutinizing used formulas, and tracing back the graph values to raw data.

When it comes to image manipulation, this relates to processes in which the power of the image is being strengthened by changing aspects such a clarity, and light/dark areas in an image. As with research data, and the issues with detecting manipulations, images come in many various formats. It is important to be able to track size and time-data stamps of images. Similar to research data, storage of images at the publisher is necessary for review purposes. Various software tools are being developed for usage in the publishing industry, but one single standard is not yet developed.

As stated above, comparison of both tables, graphs and images as outcomes of the research process are complicated, as there is not, contrary to text analysis in plagiarism checks, a standard or baseline with which one can compare. Submission of more outcomes of the research process could be helpful, though not a definite solution (as manipulation can take place before submission. In that respect, this issue of detecting data and image manipulation can profit from the current development around open research data. This embodies a more open and transparent process of conducting research, on the outcomes as well as the choices made while conducting research.

6. Conclusions and next steps

As key actors in the dissemination of the scientific record editors and publishers deal with issues pertaining to scientific integrity, some of which are particular to the field of publications. The similarity and difficulty of the cases of potential misconduct have led publishers to establish international guidelines through several organisations, most notably through the Committee on Publication Ethics (COPE). They have also sought to minimise the incidence of specific practices through the automation of part of the editorial processes, specifically for plagiarism. Next to these measures, editors convene with colleagues to discuss specific cases when these arise.

Remarkably, although the issues with potential misconduct in publishing are very similar and most publishers are members of trade-wide organisations, the way of presenting ethical policies on their public guidelines is not uniform in the subjects covered nor in nomenclature. In many cases, the ethical guidelines are difficult to find, and most do not cover all of the common potential cases. The lack of coverage on certain issues might suggest that knowledge of certain problems is assumed as commonplace, yet a more coordinated coverage of ethics guidelines could aid in creating awareness for authors across publishers and disciplines.

Despite the differences in (public) policies, editors and publishers share the view that publishing misconduct is an extension of scientific misconduct, which can result from a lack of rigour or plain lack of integrity. Many interviewees concurred that many potential cases are in fact due to unawareness from authors or honest mistakes. Therefore, they recognise that trust, open communication and human knowledge are a fundament of their trade. Nevertheless, many editors and publishers make use of IT tools such as similarity scanners to ease a few steps of the editorial workflow.

Concerning the tools widely used in scientific publishing, we found protocols and policies for complex issues as well as IT devices for text recognition. As much as the similarity scanners ease the workload of editors, the manuscript reports still require human judgement. The complexity of evaluating certain data such as images, tables, and statistics on a big scale; and the intricacy of potential cases make full automation for certain processes extremely difficult. This only highlights the importance of protocols that can aid the editorial workflow.

The findings of this empirical review will assist in Work Package V, concerned with policy advice and tool development. The experiences from editors and publishers on dealing with misconduct will be considered, as well as their needs without losing sight of the realities of publishing misconduct, its incidence and possible prevention.

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The Committee on Publication Ethics (COPE). Accessed March, 2017. https://publicationethics.org/.

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Newman, Anthony. "The art of detecting data and image manipulation." *Elsevier, Editors' Update*. 4 November 2013, accessed 24 May 2017. https://www.elsevier.com/editors-update/story/publishing-ethics/the-art-of-detecting-data-and-image-manipulation.

Retraction Watch. Accessed March, 2017. http://retractionwatch.com/.

Appendix I

Below is a list of the pages on each publisher's website that deal with publishing ethics. The pages were reviewed between December 2016 and May 2017.

Brill

 http://www.brill.com/resources/authors/publishing-journals-brill/publishing-ethicsjournals

De Gruyter

https://www.degruyter.com/staticfiles/pdfs/140117_Publication_ethics_and_publication_malpractice_FINAL.pdf

Elsevier

- https://www.elsevier.com/about/company-information/policies
- https://www.elsevier.com/about/our-business/policies/publishing-ethics
- https://www.elsevier.com/authors/journal-authors/policies-and-ethics
- https://www.elsevier.com/authors/book-authors/science-and-technology-book-publishing/author-rights
- https://www.elsevier.com/editors/perk
- https://www.publishingcampus.elsevier.com/pages/63//ethics/Publishing-ethics.html

IOP

- http://authors.iop.org/ethicalpolicy
- http://cms.iopscience.org/c3f83404-8d66-11e2-bd23-e50acbc9fd86/introduction.html
- http://cms.iopscience.org/0e45b17e-c6a4-11e1-9609-4d5160a0f0b4/contents.html

OUP

• https://academic.oup.com/journals/pages/authors/ethics

Palgrave Macmillan

http://www.palgrave.com/gp/journal-authors/ethics-policy/10052358

PLOS

https://www.plos.org/editorial-publishing-policies

Redalyc

• no page on the subject

RUP

- http://www.rupress.org/content/our-philosophy
- http://jcb.rupress.org/editorial-policies
- http://jcb.rupress.org/about#reviewer-guidelines

- http://jem.rupress.org/editorial-policies
- http://jem.rupress.org/about#reviewer-guidelines
- http://jgp.rupress.org/editorial-policies
- http://jgp.rupress.org/about#reviewer-guidelines

Springer

- https://www.springer.com/gp/authors-editors/journal-author/journal-author-helpdesk/publishing-ethics/14214
- http://resource-cms.springer.com/springer-cms/rest/v1/content/19862/data/v1/Pubslishing+Ethics+Guide+for+Editors

Ubiquity

• http://www.ubiquitypress.com/site/research-integrity/

Wiley

- https://authorservices.wiley.com/ethics-guidelines/index.html
- https://authorservices.wiley.com/editors/ethical-guidelines/index.html

Appendix II

Below is a list with publishers' guidelines and policies publicly available on their websites concerning each of the points analysed on section 3 of this document. Only the general policies of each publisher have been included.⁸

For some publishers, such as Elsevier, information on the subjects was found under different pages and addressed to different audiences, each statement is properly referenced at the footnotes. Further, in order to be a complete record as possible, the links mentioned in the statements have been included inside square brackets.

(Potential) conflicts of interest

Brill

• Editors9

Disclosure and conflicts of interest

Material from submitted, unpublished manuscripts should be kept confidential and must not be used by others without the express written consent of the author. Editors should not consider reviewing manuscripts in which they have a conflict of interest.

• Reviewers¹⁰

Disclosure and conflict of interest

Material from submitted, unpublished manuscripts should be kept confidential and must not be used by others without the express written consent of the author. Reviewers should not consider reviewing manuscripts in which they have a conflict of interest.

De Gruyter

• Editors-in-Chief¹¹

Disclosure and conflicts of interest

Unpublished materials disclosed in a submitted manuscript must not be used in an Editor's own research without the explicit written consent of the author(s).

Peer reviewers¹²

Disclosure and conflicts of interest

Privileged information or ideas obtained through peer review must be kept confidential and not used for personal advantage. Reviewers should not consider evaluating manuscripts in which they have conflicts of interest resulting from competitive,

⁸ Two exceptions were made. Besides its general policies, PLOS has specific policies listed only under the policies of journals, however these policies apply to all their journals. RUP has no ethics policy under the general website, however their editorial policies are the same in all journals. This exception could not be applied to Ubiquity Press because they have 60 published journals and 7 hosted journals, each with its own guidelines and policies. As mentioned earlier, De Gruyter's website has no page on ethical policies and thus a document found after a targeted search was used.

⁹ "Publishing Ethics," Brill, last accessed August 21, 2017,

 $http://www.brill.com/resources/authors/publishing-journals-brill/publishing-ethics-journals \\ ^{10}\ Ibid$

 $^{^{11}}$ "Publication Ethics and Publication Malpractice Statement," De Gruyter, last accessed August 21, 2017, https://www.degruyter.com/view/j/ejnm.2013.5.issue-4/ejnm-2013-0037/ejnm-2013-0037.xml 12 Ibid

collaborative, or other relationships or connections with any of the authors, companies, or institutions connected to the submission.

Authors¹³

Disclosure and conflicts of interest

All authors should disclose in their manuscript any financial or other substantive conflict of interest that might be construed to influence the results or their interpretation in the manuscript. All sources of financial support for the project should be disclosed.

Elsevier

• Editors¹⁴

Declaration of Competing Interests.

Any potential editorial conflicts of interest should be declared to the publisher in writing prior to the appointment of the editor, and then updated if and when new conflicts arise. The publisher may publish such declarations in the journal.

The editor must not be involved in decisions about papers which s/he has written him/herself or have been written by family members or colleagues or which relate to products or services in which the editor has an interest. Further, any such submission must be subject to all of the journal's usual procedures, peer review must be handled independently of the relevant author/editor and their research groups, and there must be a clear statement to this effect on any such paper that is published.

The editor shall apply Elsevier's policy relating to the disclosure of potential conflicts of interest by authors and reviewers, e.g. the ICMJE guidelines [ICMJE Uniform requirements for manuscripts submitted to biomedical journals http://www.icmje.org].

• Reviewers¹⁵

Standards of Objectivity & Competing Interests.

Reviews should be conducted objectively. Reviewers should be aware of any personal bias they may have and take this into account when reviewing a paper. Personal criticism of the author is inappropriate. Referees should express their views clearly with supporting arguments.

Reviewers should consult the Editor before agreeing to review a paper where they have potential conflicts of interest resulting from competitive, collaborative, or other relationships or connections with any of the authors, companies, or institutions connected to the papers.

If a reviewer suggests that an author includes citations to the reviewer's (or their associates') work, this must be for genuine scientific reasons and not with the intention of increasing the reviewer's citation count or enhancing the visibility of their work (or that of their associates).

Authors¹⁶

Declaration of Competing Interests.

WAME define conflict of interest as "a divergence between an individual's private interests (competing interests) and his or her responsibilities to scientific and publishing activities, such that a reasonable observer might wonder if the individual's behavior or

¹³ Ibid

¹⁴ "Publishing Ethics," Elsevier, last accessed August 23, 2017, https://www.elsevier.com/about/ourbusiness/policies/publishing-ethics

¹⁵ Ibid

¹⁶ Ibid

judgment was motivated by considerations of his or her competing interests" [World Association of Medical Editors (WAME) Best Practice

http://www.wame.org/about/policy-statements]. All authors should disclose in their manuscript any financial and personal relationships with other people or organisations that could be viewed as inappropriately influencing (bias) their work.

All sources of financial support for the conduct of the research and/or preparation of the article should be disclosed, as should the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.

Examples of potential conflicts of interest which should be disclosed include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Potential conflicts of interest should be disclosed at the earliest possible stage.

Competing interests Quick Guide, Elsevier Publishing Campus¹⁷
 https://www.publishingcampus.elsevier.com/websites/elsevier_publishingcampus/files/Guides/2017%20ETHICS/2017_ETHICS_COI02.pdf

IOP Publishing

Authors¹⁸

Conflicts of interest

Articles should include a full list of the current institutional affiliations of all authors, both academic and corporate. We also encourage authors to provide ORCID identifiers for each named author on submission.

All sources of financial support for the project should be disclosed in the article. All authors and co-authors are required to disclose any potential conflict of interest when submitting their article (e.g. employment, consulting fees, research contracts, stock ownership, patent licences, honoraria, advisory affiliations, etc.). If the article is subsequently accepted for publication, this information should be included in an acknowledgments section.

It is difficult to specify the threshold at which a financial or other interest becomes significant. Two practical guidelines are:

- 1. to declare any competing interests that could embarrass you were they to become publicly known after your work was published;
- 2. to declare any information which, when revealed later, would make a reasonable reader feel misled or deceived.

• Referees¹⁹

Conflicts of interest

Referees should contact the editorial office to declare any potential conflicts of interest in advance of refereeing an article (e.g. being a co-worker or collaborator with one of the authors, or being in a position which precludes giving an objective opinion of the work). Minor conflicts do not disqualify a referee from reporting on an article but will be taken

 ^{17 &}quot;Quick Guides," Elsevier Publishing Campus, last accessed August 23, 2017,
 https://www.publishingcampus.elsevier.com/pages/63//ethics/Publishing-ethics.html
 18 "IOP ethical policy for journals," IOP Publishing, last accessed August 23, 2017,
 http://ioppublishing.org/img/landingPages/guidelines-and-policies/ethical-policy.html
 19 Ibid

into account when considering the referees' recommendations. Major conflicts of interest (especially relating to a financial commercial interest of over £5000/year) do disqualify a referee. Referees should act within the spirit of the Principles of Public Life [http://www.public-standards.gov.uk/about-us/what-we-do/the-seven-principles/].

Oxford University Press (OUP)

• Authors²⁰

Conflict of interest exists when an author's private interests might be seen as influencing the objectivity of research or experiment, to the point that a reasonable observer might wonder if the individual's behaviour or judgement was motivated by considerations of his or her competing interests. It is the responsibility of a manuscript's corresponding author to confirm if co-authors hold any conflict of interest. The corresponding author may be required to co-ordinate completion of written forms from each co-author and submit these to the editor or journal administrator prior to acceptance. The following should also be declared, either through the Acknowledgements section of the manuscript or at the point of submission:

- All sources of research funding, including direct and indirect financial support, supply of equipment, or materials (including specialist statistical or writing assistance).
- The role of the research funder(s) or sponsor(s), if any, in the research design, execution, analysis, interpretation, and reporting.
- O Any relevant financial and non-financial interests and relationships that might be considered likely to affect the interpretation of their findings or that editors, reviewers, or readers might reasonably wish to know. These might include, but are not limited to, patent or stock ownership, membership on a company's board of directors, membership of an advisory board or committee for a company, consultancy for a company, or receipt of speaker's fees from a company.

When considering whether to declare a conflicting interest or connection we encourage authors to consider how they would answer the following question: Is there any arrangement that would embarrass you or any of your co-authors if it was to emerge after publication and you had not declared it?

• Editors²¹

OUP expects its journal editors to declare competing interests at the point of agreeing their position and update them annually. OUP's standard editor agreement obliges the editor to declare any potential conflict of interest that might arise during the term of editorship prior to entry into any agreement or position.

Editors are required to recuse themselves from individual manuscripts if they themselves have a potential conflict of interest and to avoid creating potential conflicts of interest through assignment of handling editors or peer reviewers.

• Referees²²

We encourage editors and journal administrators to consider potential conflicts of interest when assigning reviewers. Some journals include wording in their invitation to review stating that acceptance of the invitation implies no financial or competing

 $^{^{\}rm 20}$ "Publication Ethics," Oxford University Press, last accessed August 23, 2017, https://academic.oup.com/journals/pages/authors/ethics

²¹ Ibid

²² Ibid

interest. Where a reviewer declares potential conflict of interest the editor should select alternative reviewers. Failure to declare conflict of interest may result in removal of the reviewer from the journal database.

Palgrave Macmillan

Authors²³

Openly disclose any conflict of interest - for example, if publication were to benefit a company or services in which the author(s) has a vested interest.

Public Library of Science (PLOS)

• Competing Interests²⁴

Authors, reviewers, and editors must declare potential competing interests, or interests that may be perceived as such, as they relate to the research. A competing interest may relate to a person or an entity and may be of a financial, non-financial, professional or personal nature.

• Disclosure of Funding Sources²⁵

Research submitted to PLOS journals must be accompanied by a declaration of all financial support received to carry out the work. The role of the funder in the research must also be declared.

Redalyc

• Nothing on the subject

Rockefeller University Press (RUP)

Conflict of interest²⁶

We take guidance from the National Institutes of Health and National Science Foundation in determining how to define a perceived conflict of interest. Reviewers and editors are asked to disclose any potential conflicts of interest prior to evaluating a manuscript. To avoid potential conflicts of interest, individuals should recuse themselves from evaluating a manuscript if any of the following points apply:

- o The author is at the same research organization or university
- o The author is a recent collaborator or trainee (less than five years), family member, or a close personal friend
- o The reviewer/editor, his/her immediate family, or a close professional associate has a financial or vested interest in the manuscript

https://www.plos.org/editorial-publishing-policies

²³ "Ethics Policy," Palgrave Macmillan, last accessed August 23, 2017, http://www.palgrave.com/gp/journal-authors/ethics-policy/10052358

²⁴ "Editorial and Publishing Policies," PLOS, last accessed August 23, 2017,

²⁵ Ibid

²⁶ "Editorial Policies," Rockefeller University Press, last accessed August 23, 2017, http://jgp.rupress.org/editorial-policies

Springer

Authors²⁷

Disclosure of potential conflicts of interest

Authors must disclose all relationships or interests that could have direct or potential influence or impart bias on the work. Although an author may not feel there is any conflict, disclosure of relationships and interests provides a more complete and transparent process, leading to an accurate and objective assessment of the work. Awareness of a real or perceived conflicts of interest is a perspective to which the readers are entitled. This is not meant to imply that a financial relationship with an organization that sponsored the research or compensation received for consultancy work is inappropriate.

Examples of potential conflicts of interests that are directly or indirectly related to the research may include but are not limited to the following:

- Research grants from funding agencies (please give the research funder and the grant number)
- o Honoraria for speaking at symposia
- Financial support for attending symposia
- Financial support for educational programs
- **Employment or consultation**
- Support from a project sponsor
- o Position on advisory board or board of directors or other type of management relationships
- Multiple affiliations
- Financial relationships, for example equity ownership or investment interest
- Intellectual property rights (e.g. patents, copyrights and royalties from such rights)
- Holdings of spouse and/or children that may have financial interest in the work In addition, interests that go beyond financial interests and compensation (non-financial interests) that may be important to readers should be disclosed. These may include but are not limited to personal relationships or competing interests directly or indirectly tied to this research, or professional interests or personal beliefs that may influence your research.

The corresponding author collects the conflict of interest disclosure forms from all authors. In author collaborations where formal agreements for representation allow it, it is sufficient for the corresponding author to sign the disclosure form on behalf of all authors.

Examples of forms can be found here.

- o COI-all authors form [http://resource-cms.springer.com/springercms/rest/v1/content/20116/data/v3/COI-all+authors+form]
- o COI-corresponding author form [http://resource-cms.springer.com/springercms/rest/v1/content/20130/data/v3/COI-corresponding+author+form]
- COI-ICMJE modified form [http://resource-cms.springer.com/springercms/rest/v1/content/20132/data/v3/COI-ICMJE+modified+form]

²⁷ "Publishing ethics," Springer, last accessed August 23, 2017, https://www.springer.com/gp/authorseditors/journal-author/journal-author-helpdesk/publishing-ethics/14214

ICMJE form [http://resource-cms.springer.com/springer-cms/rest/v1/content/20134/data/v5/ICMJE+form]

Examples of disclosures

The corresponding author will include a summary statement in the text of the manuscript in a separate section before the reference list, that reflects what is recorded in the potential conflict of interest disclosure form(s).

- o Funding, Funding: This study was funded by X (grant number X).
- o Conflict of Interest, Conflict of Interest: Author A has received research grants from Company A. Author B has received a speaker honorarium from Company X and owns stock in Company Y. Author C is a member of committee Z.
- If no conflict exists, the authors should state, Conflict of Interest: The authors declare that they have no conflict of interest.

• Editors²⁸

Undeclared conflict of interest (CoI)

A conflict of interest is a situation in which financial or other personal considerations from authors or reviewers have the potential to compromise or bias professional judgment and objectivity. Authors and reviewers should declare all conflicts of interest relevant to the work under consideration (i.e. relationships, both financial and personal, that might interfere with the interpretation of the work) to avoid the potential for bias.

Recommended action by COPE for Journal Editors:

- o What to do if a reviewer suspects undisclosed CoI in a submitted manuscript [http://publicationethics.org/files/u2/05A_CoI_Submitted.pdf]
- What to do if a reader suspects undisclosed CoI in a published article [http://publicationethics.org/files/u2/05B_CoI_Published.pdf]

Ubiquity Press

• Nothing on the subject

Wiley

<u>Conflicts of Interest</u>²⁹

Editors, authors, and peer reviewers should disclose interests that might appear to affect their ability to present or review work objectively. These might include relevant financial interests (for example, patent ownership, stock ownership, consultancies, or speaker's fees), or personal, political, or religious interests.

The International Committee of Medical Journal Editors [http://www.icmje.org/] definition of conflicts of interest is as follows:

"A conflict of interest exists when professional judgment concerning a primary interest (such as patients' welfare or the validity of research) may be influenced by a secondary interest (such as financial gain). Perceptions of conflict of interest are as important as actual conflicts of interest."

²⁸ "Publishing Ethics for journals," Springer, last accessed August 23, 2017, http://resource-cms.springer.com/springer-

cms/rest/v1/content/19862/data/v1/Pubslishing + Ethics + Guide + for + Editors

²⁹ "Editorial Standards and Processes," Wiley, last accessed August 25, 2017,

https://authorservices.wiley.com/ethics-guidelines/editorial-standards-and-processes.html

Strict policies preventing people with conflicts of interest from publishing might encourage authors to conceal relevant interests, and might therefore be counterproductive.

- o Journal editors, board members, and staff who are involved with decisions about publication should declare their interests. Journals should consider publishing these on their website and updating them as required, as well as disclosing how conflicts of interest were managed for specific papers.
- Editors should clearly explain what should be disclosed, including the period that these statements should cover (for example, 3 years). Editors should ask authors to describe relevant funding, including the purpose of the funding (for example, travel grant and speaker's fees), and to describe relevant patents, stocks, and shares that they own.
- Editors should publish authors' conflicts of interest whenever they are relevant, or a statement of their absence. If there is doubt editors should opt in favor of greater disclosure.
- o If authors state that there are no conflicts of interest, editors should publish a confirmation to this effect.
- Editors should manage peer reviewers' conflicts of interest. An invitation to review a manuscript should be accompanied by a request for the reviewer to reveal any potential conflicts of interest and a request for the peer reviewer to disqualify or recuse themselves when these are relevant.
- When editors, members of editorial boards, and other editorial staff are
 presented with papers where their own interests may be perceived to impair
 their ability to make an unbiased editorial decision, they should withdraw from
 discussions, deputize decisions, or suggest that authors seek publication in a
 different journal.

COPE has published flowcharts [http://publicationethics.org/resources/flowcharts] that illustrate a suitable process for investigations of suspected undisclosed conflicts of interest.

Wiley uses a number of forms to capture conflicts of interest statements in online submission and peer review systems (for example, figure 1 [not included in this appendix]). The International Committee of Medical Journal Editors has created a uniform disclosure form for conflicts of interest [http://www.icmje.org/coi_instructions.html].

Access to background data (for readers and reviewers)

Brill

• Nothing on the subject

De Gruyter

Nothing on the subject

Elsevier

Authors³⁰

Data Access and Retention.

Authors may be asked to provide the research data supporting their paper for editorial review and/or to comply with the open data requirements of the journal. Authors should be prepared to provide public access to such data, if practicable, and should be prepared to retain such data for a reasonable number of years after publication. Authors may refer to their journal's Guide for Authors for further details.

• Research Data principles³¹

- Research data should be made available free of charge to all researchers wherever possible and with minimal reuse restrictions.
- o Researchers should remain in control of how and when their research data is accessed and used, and should be recognised and valued for the investments they make in creating their research data and making it available.
- Expectations and practices around research data vary between disciplines and discipline-specific requirements need to be taken into account.
- Enabling effective reuse of research data is a shared aim and all stakeholders should work together to pursue this collectively, to find efficiencies and avoid duplication of effort.
- o Platforms, publications, tools and curation services can enhance research data by improving their discoverability, use, reuse, and citation.
- Where others add value and/or incur significant cost in enhancing research data to enable its reuse, these contributions need to be recognized and valued.

• Research Data Policy³²

- Encourage and support researchers to share research data where appropriate and at the earliest opportunity, for example by enhancing our submission processes to make this easier.
- o Standardize and align our author data guidelines where this is possible to make it easier for authors to understand how and where they can store and share their data, enabling optimal access and reuse.
- o Make it easier for researchers to comply with data management requirements, for example by supporting data availability statements to enhance transparency.
- Develop tools and services to support researchers to discover, use and reuse data to further their research, for example by encouraging and enabling two-way linking of relevant datasets and publications using permanent standard identifiers.
- Ensure researchers can gain credit and credit others for sharing research data, by encouraging and supporting proper data citation practices.
- Work closely with the scientific community to establish data review practices to ensure that published research data is valid, properly documented and can be reused.

³⁰ "Publishing Ethics," Elsevier, last accessed August 23, 2017, https://www.elsevier.com/about/ourbusiness/policies/publishing-ethics

³¹ "Research data," Elsevier, last accessed August 23, 2017, https://www.elsevier.com/about/ourbusiness/policies/research-data

- Support the publication of research data as a separate, peer-reviewed output, to support reusability and provide additional ways for authors to gain credit for their work.
- Support researchers, research institutions and funders by providing the structure, workflows and technology needed to manage data effectively and make researcher and institutional workflows more efficient, for example:
 - Providing Mendeley Data as a storage and preservation option for research data
 - Integrating HiveBench into the research workflow
 - Enabling the integration of these tools with other open standards and platforms
- Continue to participate in industry initiatives and standards and policy bodies to support more effective discovery, use and reuse of research data, for example through our co-chairmanship of and participation in Research Data Alliance working groups, our engagement with the Scholix initiative, our membership of WDS and Codata, and through our partnerships with DANS, Force11 and others.

IOP Publishing

Source materials³³

IOP Publishing does not require the raw data from an experiment to be submitted for publication, although some of our journals do offer the option to supply this data as supplementary information. However, we expect that all authors follow established best scientific practice and record (and retain) source material of experiments and research results, in an auditable manner that allows for scrutiny and verification by other scientists. Exceptions may be appropriate to preserve privacy or patent protection. There may also be specific instructions from your funding agency or university.

Oxford University Press (OUP)

• Nothing on the subject

Palgrave Macmillan

Authors³⁴

Fully correspond and comply with the editor and publisher in any requests for source data, proof of authorship or originality in a timely manner, providing reasonable explanation for discrepancies or failures to disclose vital information.

Public Library of Science (PLOS)

• <u>Data Availability</u>35

The data underlying the findings of research published in PLOS journals must be made publicly available. Rare exceptions may apply and must be agreed to with the Editor.

³³ "IOP ethical policy for journals," IOP Publishing, last accessed August 23, 2017, http://ioppublishing.org/img/landingPages/guidelines-and-policies/ethical-policy.html ³⁴ "Ethics Policy ," Palgrave Macmillan, last accessed August 23, 2017, http://www.palgrave.com/gp/journal-authors/ethics-policy/10052358 ³⁵ "Editorial and Publishing Policies," PLOS, last accessed August 23, 2017, https://www.plos.org/editorial-publishing-policies

Data should be de-identified where appropriate (see Human Subjects and Animal Research).

Redalyc

• Nothing on the subject

Rockefeller University Press (RUP)

• Materials and data sharing36

As a condition of publication, authors must make protocols and unique materials (including, but not limited to, cloned DNAs; antibodies; bacterial, animal, or plant cells; and viruses) described in our published articles freely available upon request by researchers, who may use them in their own laboratory only. All materials must be made available on request and without undue delay. If researchers are having difficulty obtaining materials from the authors of a published article, they should contact the journal's editorial office.

We encourage all authors to plan for the long-term storage and sharing of all original data underlying their manuscript. All datasets included in the manuscript must be available from the date of online publication, and the source code for all custom computational methods, apart from commercial software programs, must be made available either in a publicly available database or as supplemental materials hosted on the journal website. Numerous resources exist for data storage and sharing (see Data Deposition [http://jcb.rupress.org/data-deposition]), and authors should choose the most appropriate venue based on their data type and/or community standard. If no appropriate specific database exists, we encourage authors to deposit their data to an appropriate publicly available database.

Springer

 Upon request authors should be prepared to send relevant documentation or data in order to verify the validity of the results. This could be in the form of raw data, samples, records, etc. Sensitive information in the form of confidential or proprietary data is excluded.³⁷

Ubiquity Press

Research Data³⁸

All Ubiquity Press journals and books strongly encourage authors to make the research objects associated with their publications openly available. This includes research data, software, bioresources and methodologies. This means that peer reviewers are able to better assess the foundations of claims made, and the research community and wider public are able to similarly validate authors' work, and are more easily able to extend and build upon it.

https://www.ubiquitypress.com/site/research-integrity/

³⁶ "Editorial Policies," Rockefeller University Press, last accessed August 23, 2017, http://jgp.rupress.org/editorial-policies

 $^{^{\}rm 37}$ "Publishing ethics," Springer, last accessed August 23, 2017, https://www.springer.com/gp/authors-editors/journal-author/journal-author-helpdesk/publishing-ethics/14214

³⁸ "Research Integrity," Ubiquity Press, last accessed August 25, 2017,

All journals and books can be integrated with their own repository on the Dataverse Network [http://thedata.org/] as standard, and additional integration with subject-specific repositories such as Dryad [http://datadryad.org/] is implemented on request. Authors also have the option of submitting data or software metapapers to any of our journals, or to a specifically themed metajournal

[http://www.ubiquitypress.com/site/publish#metajournals]. This makes the associated resource more easily citable, and provides an additional incentive for the author to make it available.

Wiley

• Nothing on the subject

Retraction of publications

Brill

• Authors³⁹

Errors in published work

Authors who discover a major error in their own published work, are required to notify the publisher or editor and assist with withdrawal or correction of the manuscript.

De Gruyter

• In cases of alleged or proven scientific misconduct, fraudulent publication or plagiarism the publisher, in close collaboration with the Editors-in-Chief, will take all appropriate measures to clarify the situation and to amend the article in question. This includes the prompt publication of an erratum or, in the most severe cases, the complete retraction of the affected work.⁴⁰

Elsevier

Article retraction⁴¹

Infringements of professional ethical codes, such as multiple submission, bogus claims of authorship, plagiarism, fraudulent use of data or the like. Occasionally a retraction will be used to correct errors in submission or publication.

The retraction of an article by its authors or the editor under the advice of members of the scholarly community has long been an occasional feature of the learned world. Standards for dealing with retractions have been developed by a number of library and scholarly bodies, and this best practice is adopted for article retraction by Elsevier:

 A retraction note titled "Retraction: [article title]" signed by the authors and/or the editor is published in the paginated part of a subsequent issue of the journal and listed in the contents list.

³⁹ "Publishing Ethics," Brill, last accessed August 21, 2017,

http://www.brill.com/resources/authors/publishing-journals-brill/publishing-ethics-journals ⁴⁰ "Publication Ethics and Publication Malpractice Statement," De Gruyter, last accessed August 21, 2017, https://www.degruyter.com/view/j/ejnm.2013.5.issue-4/ejnm-2013-0037/ejnm-2013-0037.xml ⁴¹ "Article withdrawal," Elsevier, last accessed August 23, 2017, https://www.elsevier.com/about/ourbusiness/policies/article-withdrawal

- o In the electronic version, a link is made to the original article.
- o The online article is preceded by a screen containing the retraction note. It is to this screen that the link resolves; the reader can then proceed to the article itself.
- The original article is retained unchanged save for a watermark on the .pdf indicating on each page that it is "retracted."
- o The HTML version of the document is removed.

• Article removal: legal limitations⁴²

In an extremely limited number of cases, it may be necessary to remove an article from the online database. This will only occur where the article is clearly defamatory, or infringes others' legal rights, or where the article is, or we have good reason to expect it will be, the subject of a court order, or where the article, if acted upon, might pose a serious health risk. In these circumstances, while the metadata (Title and Authors) will be retained, the text will be replaced with a screen indicating the article has been removed for legal reasons.

Article replacement⁴³

In cases where the article, if acted upon, might pose a serious health risk, the authors of the original article may wish to retract the flawed original and replace it with a corrected version. In these circumstances the procedures for retraction will be followed with the difference that the database retraction notice will publish a link to the corrected republished article and a history of the document.

IOP Publishing

• If an error occurs⁴⁴

It is, of course, recognised that errors will occur from time to time. When an error is discovered in published or submitted work, the mistake should be admitted and a corrigendum, erratum or retraction should be published. Corrections should be approved by all authors of the original article unless there is a particular reason why this is not possible. In these cases any dissent among the authors should be noted in the published correction.

• Handling cases of misconduct⁴⁵

IOP is not able to actively police the policies and conditions of publication. Our relationship with our authors is based on trust and we publish submitted material in good faith. We believe that employers have the prime responsibility for ensuring their researchers' good conduct and for the provision of ethical training and leadership. However, it is our responsibility to maintain the integrity of the scientific record as far as possible. If a possible breach of this ethical policy, or similar misconduct affecting article(s) in our journals, is brought to our attention, we will ask the authors to respond. Whilst journals do not have the resources or legal legitimacy to fully investigate all allegations of scientific misconduct, we will seek advice from an article's referees and/or the journal's Editorial Board.

If there is then evidence that trust has been significantly compromised by an author's or referee's actions, we will attempt to redress the matter by:

43 Ibid

⁴² Ibid

 $^{^{44}}$ "IOP ethical policy for journals," IOP Publishing, last accessed August 23, 2017, http://ioppublishing.org/img/landingPages/guidelines-and-policies/ethical-policy.html 45 Ibid

- 1. if necessary, contacting editors of any other journals involved;
- 2. publishing appropriate corrections in the printed and online journal (which may include retractions);
- 3. refusing to consider an author's future work, for a given period;
- 4. in rare instances, communications to employers or funding agencies.

In handling corrections to the published record, we follow the STM Guideline for the Preservation of the Objective Record of Science (2006) [http://www.stm-assoc.org/2008_03_01_Preservation_of_the_Objective_Record_of_Science.doc]. IOP Publishing is a member of COPE, and adheres to the COPE Guidelines regarding misconduct and retractions.

IOP reserves the right not to work with authors who are abusive to our staff, referees or editors.

Oxford University Press (OUP)

Article submission⁴⁶

OUP takes every effort to ensure that editors, peer reviewers, and journal administrators treat all submissions respectfully, in confidence, and in accordance with COPE ethical guidelines. OUP expects that all individuals submitting manuscripts to OUP-published journals abide by established publishing standards and ethics. In proven cases of misconduct, the action taken will vary by journal and by context, but could result in one or more of the following:

- Retraction of published work.
- Publication of a correction or statement of concern.
- o Refusal of future submission.
- Notification of misconduct sent to an author's local institution, superior, and/or ethics committee.

Palgrave Macmillan

• Authors⁴⁷

Co-operate fully with the publication of errata and with the retraction of articles found to be unethical, misleading or damaging.

Editors⁴⁸

Be ready and prepared to publish corrections, corrigenda, errata when necessary, as well as retract articles that (the editor and Palgrave Macmillan) deem unethical, misleading or damaging.

What happens if ethical misconduct is detected?⁴⁹

(...) If ethical misconduct is discovered in content that has already been published, we may publish a statement of concern whilst the work is investigated. If we deem it necessary, the paper may be retracted with a statement of explanation. Other consequences may include a submissions ban for any or all authors, and contacting the relevant institution(s).

48 Ibid

49 Ibid

⁴⁶ "Publication Ethics," Oxford University Press, last accessed August 23, 2017, https://academic.oup.com/journals/pages/authors/ethics

⁴⁷ "Ethics Policy ," Palgrave Macmillan, last accessed August 23, 2017, http://www.palgrave.com/gp/journal-authors/ethics-policy/10052358

Public Library of Science (PLOS)

 In cases of suspected or alleged misconduct, we will follow the COPE flowcharts and may also seek advice at the COPE forum. If we find conclusive evidence of misconduct we will take steps to correct the scientific record, which may include issuing a correction or retraction.⁵⁰

Redalyc

• Nothing on the subject

Rockefeller University Press (RUP)

 We investigate all instances of alleged scientific misconduct identified in our published papers (including, but not limited to, plagiarism, inappropriate data processing, and duplicate publication). Depending on the outcome of our investigation, we may publish a correction, ask authors to retract their paper, or publish an editorial statement of concern.

In instances where we are considering revoking acceptance, retracting a published article, or issuing an editorial statement of concern, we will contact the corresponding author's institution during the course of our investigation. As Committee on Publication Ethics (COPE) members, we abide by COPE guidelines in managing investigations of possible misconduct [http://publicationethics.org/resources/guidelines-new/sharing-information-among-editors-chief-regarding-possible-misconduct].⁵¹

Springer

• Authors⁵²

If there is a suspicion of misconduct, the journal will carry out an investigation following the COPE guidelines. If, after investigation, the allegation seems to raise valid concerns, the accused author will be contacted and given an opportunity to address the issue. If misconduct has been established beyond reasonable doubt, this may result in the Editor-in-Chief's implementation of the following measures, including, but not limited to:

- o If the article is still under consideration, it may be rejected and returned to the author.
- o If the article has already been published online, depending on the nature and severity of the infraction, either an erratum will be placed with the article or in severe cases retraction of the article will occur. The reason must be given in the published erratum or retraction note. Please note that retraction means that the paper is maintained on the platform, watermarked "retracted" and explanation for the retraction is provided in a note linked to the watermarked article.
- o The author's institution may be informed.

⁵⁰ "Ethical Publishing Practice," PLOS, last accessed August 23, 2017, http://journals.plos.org/plosntds/s/ethical-publishing-practice

⁵¹ "Editorial Policies," Rockefeller University Press, last accessed August 23, 2017, http://jgp.rupress.org/editorial-policies

⁵² "Publishing ethics," Springer, last accessed August 23, 2017, https://www.springer.com/gp/authors-editors/journal-author/journal-author-helpdesk/publishing-ethics/14214

• Editors⁵³

How to correct the literature?

In some cases it might be necessary to correct the literature in order to maintain the integrity of the research literature. The COPE Retraction Guidelines [http://publicationethics.org/files/retraction%20guidelines.pdf] describe exactly when a nd which option should be used . Summary:

- o Erratum Journal Editors should consider issuing an erratum if:
 - a small portion of an otherwise reliable publication proves to be misleading (especially because of honest error)
 - the author/contributor list is incorrect
- o Retraction Note Journal Editors should consider retracting a publication if:
 - there is clear evidence that the findings are unreliable, either as a result of misconduct or honest error
 - the findings have previously been published elsewhere without proper cross
 - referencing, permission or justification
 - it constitutes plagiarism
 - it reports unethical research

The text for retraction notes can be submitted/written by the author(s), Journal editor, Society or jointly.

Expression of Concern – Journal Editors should consider issuing an expression of concern if:

- there is inconclusive evidence of research or publication misconduct by the authors
- o there is evidence that the findings are unreliable but the authors' institution will not investigate the case
- o it is believed that an investigation into alleged misconduct related to the publication either has not been, or would not be, fair and impartial or conclusive
- o an investigation is under way but a judgment will not be available for a considerable time

Note! In all cases, please contact your Springer Publishing Editor first.

Ubiquity Press

Nothing on the subject under general policies.

Wiley

Retractions and Expressions of Concern⁵⁴
Wiley has published general advice on publishing retractions
[http://authorservices.wiley.com/bauthor/faqs.asp#policy]and answers to frequently asked questions. All Retraction statements published by Wiley are reviewed and approved by Wiley lawyers.

https://authorservices.wiley.com/ethics-guidelines/editorial-standards-and-processes.html

⁵³ "Publishing Ethics for journals," Springer, last accessed August 23, 2017, http://resource-cms.springer.com/springer-

cms/rest/v1/content/19862/data/v1/Pubslishing+Ethics+Guide+for+Editors

^{54 &}quot;Editorial Standards and Processes," Wiley, last accessed August 25, 2017,

COPE has also published guidelines for retracting articles [http://publicationethics.org/files/retraction%20guidelines.pdf].

Retractions should be published when errors could affect the interpretation of data or information, or if work is proven to be fraudulent, or in other cases of serious ethical misconduct (for example, duplicate or redundant publication, failure of all authors to agree to publication, or plagiarism).

Expressions of concern may be published if editors have well-founded concerns or suspicions and feel that readers should be made aware of potentially misleading information. Editors should do so with caution: an expression of concern carries the same risks to a researcher's reputation as a retraction, and it is often preferable to wait to publish a retraction when a definitive judgment has been made by an independent investigation.

• Withdrawal of Articles⁵⁵

Withdrawal or removal of articles is strongly discouraged. This policy is standard industry practice as described by the International Association of Scientific, Technical and Medical Publishers Guidelines on Preserving the Record of Science [http://www.stm-assoc.org/2006_04_19_Preserving_the_Record_of_Science.doc]. The practice of removal, deletion, or obscuring of an article or part of an article should be limited to circumstances such as:

- o Legal infringements, defamation, or other legal limitations; or
- False or inaccurate data, especially those that if acted upon could pose a serious health risk.

Even in these circumstances, a retraction statement must still be published to ensure that bibliographic information about the removed article is retained for the scientific record, and an explanation must be given about the circumstances of removal or withdrawal.

Readers are also directed to the sections in this article which discuss Retractions and Expressions of Concern.

• How to publish Retractions and Expressions of Concern⁵⁶

Guidelines on retracting articles, written by COPE, can be downloaded from their website [http://publicationethics.org/resources/guidelines]. Similar to a Correction or an Erratum, the title of a Retraction or Expression of Concern should include the words "Retraction" or "Expression of Concern" as well as information to identify the article that it refers to. It should be published on a numbered page (print and electronic) and should be listed in the journal's table of contents. It should cite the original article and link electronically with the original electronic publication wherever possible. It should enable the reader to identify and understand why the article is being retracted, or should explain the editor's concerns about the contents of the article. It should be in a form that enables indexing and abstracting services to identify and link to original publications. Finally, it should be free to access.

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⁵⁵ Ibid

⁵⁶ "Wiley's Best Practice Guidelines on Publishing Ethics A Publisher's Perspective, Second Edition," Wiley, last accessed August 25, 2017, https://authorservices.wiley.com/asset/Ethics_Guidelines_7.06.17.pdf

Plagiarism and appropriation

Brill

• Authors⁵⁷

Plagiarism

Plagiarism is unethical. Authors are required to only submit their original manuscripts. In case material – in whatever form – of others is used, it must be appropriately cited or quoted.

Source acknowledgement

Proper acknowledgment of the work of others must always be given. Authors should cite publications that have influenced the content of their work. Information obtained privately, as in conversation, correspondence, or discussion with third parties, must not be used or reported without explicit, written permission from the original source.

Reviewers⁵⁸

Source acknowledgement

Reviewers should identify relevant published work that has not been cited by the authors. Any statement that an observation, derivation, or argument had been previously reported should be accompanied by the relevant citation. A reviewer should also call to the editor's attention any substantial similarity or overlap between the manuscript under consideration and any other published work of which they have personal knowledge.

De Gruyter

Peer reviewers⁵⁹

Acknowledgement of sources

Reviewers should identify relevant published work that has not been cited by the authors. Any statement that an observation, derivation, or argument had been previously reported should be accompanied by the relevant citation. A reviewer should also call to the Editor's attention any substantial similarity or overlap between the manuscript under consideration and any other published data of which they have personal knowledge.

• Authors 60

Originality and Plagiarism

The authors should ensure that they have written entirely original works, and if the authors have used the work and/or words of others that this has been appropriately cited or quoted.

Acknowledgement of sources

Proper acknowledgment of the work of others must always be given. Authors should also cite publications that have been influential in determining the nature of the reported work.

^{57 &}quot;Publishing Ethics," Brill, last accessed August 21, 2017,

 $http://www.brill.com/resources/authors/publishing-journals-brill/publishing-ethics-journals \\ {}^{58}$ Ibid

Fublication Ethics and Publication Malpractice Statement," De Gruyter, last accessed August 21, 2017, https://www.degruyter.com/view/j/ejnm.2013.5.issue-4/ejnm-2013-0037/ejnm-2013-0037.xml
 Ibid

Elsevier

• Reviewers⁶¹

Confidentiality.

Any manuscripts received for review must be treated as confidential documents. Reviewers must not share the review or information about the paper with anyone or contact the authors directly without permission from the editor.

Some editors encourage discussion with colleagues or co-reviewing exercises, but reviewers should first discuss this with the editor in order to ensure that confidentiality is observed and that participants receive suitable credit.

Unpublished materials disclosed in a submitted manuscript must not be used in a reviewer's own research without the express written consent of the author. Privileged information or ideas obtained through peer review must be kept confidential and not used for personal advantage.

• Authors⁶²

Originality and Acknowledgement of Sources.

The authors should ensure that they have written entirely original works, and if the authors have used the work and/or words of others, that this has been appropriately cited or quoted and permission has been obtained where necessary.

Proper acknowledgment of the work of others must always be given. Authors should cite publications that have influenced the reported work and that give the work appropriate context within the larger scholarly record. Information obtained privately, as in conversation, correspondence, or discussion with third parties, must not be used or reported without explicit, written permission from the source.

Plagiarism takes many forms, from 'passing off' another's paper as the author's own paper, to copying or paraphrasing substantial parts of another's paper (without attribution), to claiming results from research conducted by others. Plagiarism in all its forms constitutes unethical behaviour and is unacceptable.

Plagiarism Quick Guide, Elsevier Publishing Campus ⁶³
 https://www.publishingcampus.elsevier.com/websites/elsevier_publishingcampus/files/Guides/2017%20ETHICS/2017_ETHICS_PLA02.pdf

IOP Publishing

• Authors⁶⁴

Plagiarism

Submitted articles must be the authors' own work. Plagiarism constitutes unethical scientific behaviour and is never acceptable. Plagiarism ranges from the unreferenced use of others' ideas to submission of a complete paper under 'new' authorship.

Oxford University Press (OUP)

⁶¹ "Publishing Ethics," Elsevier, last accessed August 23, 2017, https://www.elsevier.com/about/ourbusiness/policies/publishing-ethics
⁶² Ibid

^{63 &}quot;Quick Guides," Elsevier Publishing Campus, last accessed August 23, 2017, https://www.publishingcampus.elsevier.com/pages/63//ethics/Publishing-ethics.html 64 "IOP ethical policy for journals," IOP Publishing, last accessed August 23, 2017, http://ioppublishing.org/img/landingPages/guidelines-and-policies/ethical-policy.html

Plagiarism⁶⁵

OUP journals evaluate submissions on the understanding that they are the original work of the author(s). We expect that references made in a manuscript or article to another person's work or idea will be credited appropriately. Equally we expect authors to gain all appropriate permissions prior to publication. Guidelines on when permissions are required and how to seek permissions are available here

[https://academic.oup.com/DocumentLibrary/journals/pdf-Oxford-Journals-Guidelines-for-Author-Permissions-September-2014.pdf] OUP is a signatory of the STM Permissions Guidelines (detailed here [http://www.stm-assoc.org/permissions-guidelines/]), which may lower any permissions fees.

Re-use of text, data, figures, or images without appropriate acknowledgment or permission is considered plagiarism, as is the paraphrasing of text, concepts, and ideas. All allegations of plagiarism are investigated thoroughly and in accordance with COPE guidelines detailed here

[http://publicationethics.org/files/u7140/plagiarism%20A.pdf]. Many journals now systematically run submitted papers through plagiarism-detection software to identify possible cases. Journals will typically stipulate how they employ such software - whether systematically or selectively - in their submission guidelines.

Palgrave Macmillan

• Authors⁶⁶

(Should) Ensure that all researched work submitted is original, fully referenced and that all authors are represented accurately. The submission must be exclusive and not under consideration elsewhere.

(Should) Expect the editor to scan submissions using plagiarism detection software at iThenticate to check a paper's originality before sending out for review.

Palgrave Macmillan⁶⁷

(Will) Use plagiarism detection software when necessary for any submission to any journal at any stage of the submissions and publication process.

(Will) Investigate thoroughly any suggestion of ethical misconduct detected during any stage of the submissions process. This can include, but is not restricted to, the following: plagiarism, redundant publication, fabrication or misuse of data and authorial disputes. When necessary, request proof of originality/accuracy from the corresponding author of any work submitted to any of our journals.

Public Library of Science (PLOS)

• Plagiarism⁶⁸

Plagiarism is not acceptable in PLOS submissions. Plagiarized content will not be considered for publication. If plagiarism is identified, we will follow COPE guidelines

⁶⁷ Ibid

⁶⁵ "Publication Ethics," Oxford University Press, last accessed August 23, 2017, https://academic.oup.com/journals/pages/authors/ethics

^{66 &}quot;Ethics Policy," Palgrave Macmillan, last accessed August 23, 2017, http://www.palgrave.com/gp/journal-authors/ethics-policy/10052358

⁶⁸ "Ethical Publishing Practice," PLOS, last accessed August 23, 2017, http://journals.plos.org/plosntds/s/ethical-publishing-practice

[http://publicationethics.org/files/u2/02A_Plagiarism_Submitted.pdf]. Plagiarism includes, but is not limited to:

- o Directly copying text from other sources without attribution
- o Copying ideas, images, or data from other sources without attribution
- Reusing text from your own previous publications without attribution or agreement of the editor (read the COPE guidelines on text recycling [http://publicationethics.org/files/BioMed%20Central_text_recycling_editorial_g uidelines.pdf])
 - Exception: Reusing text from the Methods section in the author's previous publications, with attribution to the source, is acceptable.
- O Using an idea from another source with slightly modified language without attribution

PLOS uses Crossref Similarity Check (powered by iThenticate)

[http://www.crossref.org/crosscheck/index.html] to screen submitted content for originality. Each journal screens a proportion of manuscripts. We will do a follow-up investigation if the software raises any concerns.

If plagiarism is detected during the peer review process, the manuscript may be rejected. If plagiarism is detected after publication, we may issue a correction or retract the paper, as appropriate. We reserve the right to inform authors' institutions about plagiarism detected either before or after publication.

We expect that editors and reviewers will be vigilant in their evaluation of PLOS submissions and will notify the journal about any plagiarism identified.

• Confidentiality⁶⁹

(...) We expect that editors and reviewers will not make use of any material or take advantage of any information they gain through the peer review process. We will follow up on any and all breaches of confidentiality. If there are any concerns about misconduct during the review process, we will follow COPE guidelines [http://publicationethics.org/resources/guidelines] in investigating them.

Redalyc

• Nothing on the subject

Rockefeller University Press (RUP)

• Data integrity and plagiarism⁷⁰

All accepted manuscripts will go through a plagiarism and image screening check prior to publication. We use Crossref Similarity Check

[http://www.crossref.org/crosscheck/index.html] to detect for textual similarity with other publications, including instances of self-plagiarism.

Images should be minimally processed and accurately reflect the original data. We understand that image processing may be necessary and is appropriate in most instances. Our screening process examines the following: whether any specific feature within an image has been enhanced, obscured, moved, removed, or introduced; whether dividing lines are added between juxtaposed images taken from different parts of the

⁶⁹ Ibid

⁷⁰ "Editorial Policies," Rockefeller University Press, last accessed August 23, 2017, http://jgp.rupress.org/editorial-policies

same gel or from different gels, fields, or exposures; whether adjustments of brightness, contrast, or color balance have been applied to the entire image and that adjustments do not enhance, erase, or misrepresent any information present in the original, including the background. We also look for duplicated images within the manuscript; any reuse of images, including control data, across multiple figures should be explicitly stated and justified in the legend. Nonlinear adjustments (e.g., changes to gamma settings) must be disclosed in the figure legend or Materials and methods section.

If figure resolution or quality is insufficient for proper image screening, we will request the original data. Failure to locate original data upon request during the editorial or production process will cause delays with your manuscript. In the event that inappropriate image processing is identified prior to publication, our editors will contact the authors to discuss further. In most instances, we can resolve the issue and move forward with publication. In more serious cases where inappropriate image processing obscures or changes the conclusions of the manuscript, we may be forced to revoke acceptance.

We investigate all instances of alleged scientific misconduct identified in our published papers (including, but not limited to, plagiarism, inappropriate data processing, and duplicate publication). Depending on the outcome of our investigation, we may publish a correction, ask authors to retract their paper, or publish an editorial statement of concern.

In instances where we are considering revoking acceptance, retracting a published article, or issuing an editorial statement of concern, we will contact the corresponding author's institution during the course of our investigation. As Committee on Publication Ethics (COPE) members, we abide by COPE guidelines in managing investigations of possible misconduct.

Springer

o Authors⁷¹

No data, text, or theories by others are presented as if they were the author's own ('plagiarism'). Proper acknowledgements to other works must be given (this includes material that is closely copied (near verbatim), summarized and/or paraphrased), quotation marks are used for verbatim copying of material, and permissions are secured for material that is copyrighted.

Important note: the journal may use software to screen for plagiarism.

o Editors⁷²

Appropiation

What to do if you suspect a reviewer has appropriated an author's idea or data [http://publicationethics.org/files/u2/07_Reviewer_misconduct.pdf]

Duplication of text and/or figures (plagiarism)

Plagiarism occurs when someone presents the work of others (data, text, or

cms/rest/v1/content/19862/data/v1/Pubslishing+Ethics+Guide+for+Editors

⁷¹ "Publishing ethics," Springer, last accessed August 23, 2017, https://www.springer.com/gp/authors-editors/journal-author/journal-author-helpdesk/publishing-ethics/14214

⁷² "Publishing Ethics for journals," Springer, last accessed August 23, 2017, http://resource-cms.springer.com/springer-

theories) as if it were his/her own without proper acknowledgment. There are different degrees of plagiarism.

The severity is dependent on various factors: extent of copied material, originality of copied material, position/context/type of material and referencing/attribution of the material used.

Every case is different and therefore decisions will vary per case. Ask yourself the following question: Does it concern an honest mistake or is there an intentional deviation from the scientific norm? Please note there are many grey areas between honest, questionable and fraudulent practices.

Whilst reviewing the case consider the following factors:

- o Author seniority. Junior authors may be asked to paraphrase the copied text if it is believed that they are genuinely not aware that copying phrases is inappropriate. It is expected that a senior author should know better
- O Cultural background could be an indication for potentially different behaviors concerning the amount of copying which could be seen as plagiarism

The following listing is designed to make you aware of the various possibilities concerning plagiarism:

- o Verbatim copying of another's work and submitting it as one's own.
- Verbatim copying of significant portions of text from a single source.
- Mixing verbatim copied material from multiple sources ("patchwork copying").
 This could range from 1 or 2 paragraphs to significant portions consisting of several paragraphs.
- Changing key words and phrases but retaining the essential content of the source as a framework.
- o Rephrasing of the text's original wording and/or structure and submitting it as one's own.
- o Mixing slightly rephrased material from multiple sources and presenting what has been published already as new.
- o The work is cited, but the cited portions are not clearly identified. This can be combined with copied parts of text without citation.

However for review papers the above is not directly applicable. Review papers are expected to give a summary of existing literature. Authors should use their own words with exception of properly quoted and/or cited texts and the work should include a new interpretation.

Recommended action by COPE for Journal Editors:

- Suspected plagiarism in a submitted manuscript [http://publicationethics.org/files/u2/02A_Plagiarism_Submitted.pdf]
- Suspected plagiarism in a published article
 [http://publicationethics.org/files/u2/02B_Plagiarism_Published.pdf]

For more information on this topic; see Avoiding plagiarism, self-plagiarism, and other questionable writing practices: A guide to ethical writing [http://ori.hhs.gov/avoiding-plagiarism-self-plagiarism-and-other-questionable-writing-practices-guide-ethical-writing] by M. Roig (guidelines developed with support from The Office of Research Integrity) and Text Recycling Guidelines [http://publicationethics.org/text-recycling-guidelines] from COPE.

Ubiquity Press

• Anti-plagiarism Checking⁷³

A combination of pre-screening and open access is the best possible defence against plagiarism. All journal articles and book manuscripts submitted to Ubiquity Press are automatically screened for plagiarism by the Similarity Check system from Crossref. This system compares incoming submissions to a large database of academic content, and alerts editors to any possible issues.

Wiley

• Plagiarism⁷⁴

A discussion of plagiarism is provided by the US Office of Research Integrity in its policy on plagiarism [http://ori.hhs.gov/ori-policy-plagiarism]. Included in this discussion is the general working definition:

"ORI considers plagiarism to include both the theft or misappropriation of intellectual property and the substantial unattributed textual copying of another's work. It does not include authorship or credit disputes."

Editors can help educate about and prevent plagiarism (as well as redundant or duplicate publication) by screening submitted manuscripts. Journals should explain in their instructions to authors how submitted manuscripts are screened for duplicated text and possible plagiarism. CrossCheck is one of the screening services available for this purpose. Journals may consider the following text, adapted from the CrossCheck website:

"CrossCheck is a multi-publisher initiative to screen published and submitted content for originality. This journal uses the iThenticate software to detect instances of overlapping and similar text in submitted manuscripts. The 'CrossCheck Deposited' or 'CrossCheck Depositor' logos indicate that this journal has committed to actively combating plagiarism. To find out more about CrossCheck visit http://www.crossref.org/crosscheck.html."

The sample text is here

[http://www.crossref.org/06members/46guidelines.html#Sample_Copy_CrossCheck].

• Sanctions [for duplicate, redundant, and plagiarism]⁷⁵
Wiley has published advice about sanctions
[http://authorservices.wiley.com/bauthor/faqs_copyright.asp#1.25] in which we refer to the COPE guidelines. Journals may, for example, publish a retraction, may inform the author's institution, and may refuse for a time to consider future work from the authors.

- Before considering sanctions editors must consult with their publisher, particularly for legal advice, and also with the journal owner (for example, a scholarly society).
- o Sanctions should be applied consistently and only after careful consideration. Before imposing sanctions, journals should formally define the conditions in which they will apply (and remove) sanctions, and the processes they will use to do this.

75 Ibid

⁷³ "Research Integrity," Ubiquity Press, last accessed August 25, 2017, https://www.ubiquitypress.com/site/research-integrity/
⁷⁴ "Research Integrity," Wiley, last accessed August 25, 2017,

https://authorservices.wiley.com/ethics-guidelines/research-integrity.html

Duplicate and redundant publication

Brill

• Authors⁷⁶

Multiple manuscript submission

Authors should not submit manuscripts with essentially the same content to more than one publication [A journal, book series, edited volume or reference work.], except if expressly communicated and agreed. Otherwise submitting the same manuscript to more than one publication simultaneously is considered to be unethical, unacceptable, publishing behavior.

De Gruyter

• Authors⁷⁷

Multiple, redundant or concurrent publication

An author should not in general publish manuscripts describing essentially the same research in more than one journal or primary publication. Parallel submission of the same manuscript to more than one journal constitutes unethical publishing behavior and is unacceptable.

Elsevier

• Authors (Publishing Ethics) 78

Multiple, Redundant or Concurrent Publication.

An author should not in general publish manuscripts describing essentially the same research in more than one journal of primary publication. Submitting the same manuscript to more than one journal concurrently constitutes unethical behaviour and is unacceptable.

In general, an author should not submit for consideration in another journal a paper that has been published previously, except in the form of an abstract or as part of a published lecture or academic thesis or as an electronic preprint.

Publication of some kinds of articles (e.g. clinical guidelines, translations) in more than one journal is sometimes justifiable, provided certain conditions are met. The authors and editors of the journals concerned must agree to the secondary publication, which must reflect the same data and interpretation of the primary document. The primary reference must be cited in the secondary publication. Further detail on acceptable forms of secondary publication can be found from the ICMJE [ICMJE Uniform requirements for manuscripts submitted to biomedical journals http://www.icmje.org].

Authors (Journal) 79

Multiple, redundant or concurrent publication

An author should not in general publish manuscripts describing essentially the same

⁷⁶ "Publishing Ethics," Brill, last accessed August 21, 2017,

http://www.brill.com/resources/authors/publishing-journals-brill/publishing-ethics-journals
⁷⁷ "Publication Ethics and Publication Malpractice Statement," De Gruyter, last accessed August 21, 2017, https://www.degruyter.com/view/j/ejnm.2013.5.issue-4/ejnm-2013-0037/ejnm-2013-0037.xml
⁷⁸ "Publishing Ethics," Elsevier, last accessed August 23, 2017, https://www.elsevier.com/about/our-business/policies/publishing-ethics

⁷⁹ "Journal Authors, Policies and ethics," Elsevier, last accessed August 23, 2017, https://www.elsevier.com/authors/journal-authors/policies-and-ethics

research in more than one journal or primary publication. Elsevier does not view the following uses of a work as prior publication: publication in the form of an abstract; publication as an academic thesis; publication as an electronic preprint. Information on prior publication is included within each Elsevier journal's Guide for Authors. Note: Cell Press, The Lancet, and some society-owned titles have different policies on prior publication. Information on these is available on the journal homepage.

- Salami slicing Quick Guide, Elsevier Publishing Campus 80
 https://www.publishingcampus.elsevier.com/websites/elsevier_publishingcampus/files/Guides/2017%20ETHICS/2017_ETHICS_SS02.pdf
- Duplicate submissions Quick Guide, Elsevier Publishing Campus⁸¹
 https://www.publishingcampus.elsevier.com/websites/elsevier_publishingcampus/files/Guides/2017%20ETHICS/2017_ETHICS_SS02.pdf

IOP Publishing

Authors⁸²

Duplicate publication/self-plagiarism

Duplicate publication (sometimes called 'self-plagiarism') is the production of multiple papers with the same, or essentially the same, content by the same authors and is viewed as unacceptable. Submitted research articles must be novel and original.

In the case of articles that expand upon previously published conference proceedings, or conference write-ups that discuss work already published in an earlier paper, some limited exceptions to this rule may apply. However, in these cases authors should consult with the journal staff before submission. In all instances, articles must clearly cite their sources and present some new contribution to the published literature otherwise such articles will be rejected.

Multiple publications arising from a single research project should be clearly identified as such and the primary publication should be referenced. Translations and adaptations for different audiences should be clearly identified as such, should acknowledge the original source, and should respect relevant copyright conventions and permission requirements. If in doubt, authors should seek permission from the original publisher before republishing any work.

Parallel submission

It is also unethical to submit the same, or essentially the same, article to a second primary research journal whilst it remains under active consideration by another. To aid us in detecting any submissions that do not meet the above requirements, we regularly use plagiarism-detection software to screen articles.

Oxford University Press (OUP)

• Redundant publication (dual submission or publication)⁸³
OUP-published journals evaluate submissions on the understanding that they have not

^{80 &}quot;Quick Guides," Elsevier Publishing Campus, last accessed August 23, 2017, https://www.publishingcampus.elsevier.com/pages/63//ethics/Publishing-ethics.html
81 Ibid

 ^{82 &}quot;IOP ethical policy for journals," IOP Publishing, last accessed August 23, 2017,
 http://ioppublishing.org/img/landingPages/guidelines-and-policies/ethical-policy.html
 83 "Publication Ethics," Oxford University Press, last accessed August 23, 2017,
 https://academic.oup.com/journals/pages/authors/ethics

been previously published in or simultaneously submitted to another journal. We encourage all OUP-published journals to investigate allegations of redundant publication thoroughly and in accordance with COPE guidelines detailed here [http://publicationethics.org/files/u7140/redundant%20publication%20A.pdf]. We also encourage editors and journal administrators to keep a clear record of all communications between authors, editors, and peer reviewers regarding the submissions they handle. These records are carefully stored and may be used to facilitate investigations into possible cases of misconduct. Where necessary we will contact and/or co-operate with other publishers and journals to identify cases of redundant publication.

Palgrave Macmillan

• Authors84

(Should) Ensure that all researched work submitted is original, fully referenced and that all authors are represented accurately. The submission must be exclusive and not under consideration elsewhere.

• Pallgrave Macmillan⁸⁵

(Will) Investigate thoroughly any suggestion of ethical misconduct detected during any stage of the submissions process. This can include, but is not restricted to, the following: plagiarism, redundant publication, fabrication or misuse of data and authorial disputes.

Public Library of Science (PLOS)

• <u>Author requirements</u>⁸⁶

Upon submission of a manuscript, authors must indicate whether there are any related manuscripts under consideration or published elsewhere. If related work has been submitted or published elsewhere, authors must include a copy of it with their submission and describe its relation to the submitted work.

Prior publication of research as a thesis, presentation at medical or scientific conferences, or posting on preprint servers will not preclude consideration of your manuscript.

PLOS supports the public disclosure of all clinical trial results, as mandated, for example, by the 2007 FDA Amendments Act. Prior disclosure of results on a clinical trial registry site will not affect consideration.

• Editor and reviewer requirements⁸⁷

Reviewers and editors should evaluate any related content and notify the journal of overlap. Editors and reviewers should alert the journal if they identify duplicate submissions or publications during the review process.

• Policy enforcement⁸⁸

If related content is found to be too similar to the PLOS submission, or if a duplicate submission is discovered, we will reject the manuscript.

88 Ibid

 ^{84 &}quot;Ethics Policy," Palgrave Macmillan, last accessed August 23, 2017,
 http://www.palgrave.com/gp/journal-authors/ethics-policy/10052358
 85 "Ibid

⁸⁶ "Ethical Publishing Practice," PLOS, last accessed August 23, 2017, http://journals.plos.org/plosntds/s/ethical-publishing-practice

⁸⁷ Ibid

Duplicate content discovered after publication will be addressed depending on the degree of overlap. The journal may issue a correction or a retraction as appropriate.

Redalyc

• Nothing on the subject

Rockefeller University Press (RUP)

• <u>Duplicate publication</u>⁸⁹

When submitting a manuscript, the authors should affirm that no similar manuscript (including book chapters) is or will be under consideration for publication elsewhere (other than as an abstract that is less than 400 words in length and contains no figures). Any unpublished articles that are related to or could be perceived to overlap with the submitted manuscript must be included for evaluation by the editors and reviewers. Doctoral theses or dissertations are not regarded as prior publications.

Springer

o Authors 90

The manuscript has not been submitted to more than one journal for simultaneous consideration.

The manuscript has not been published previously (partly or in full), unless the new work concerns an expansion of previous work (please provide transparency on the reuse of material to avoid the hint of text-recycling ('self-plagiarism')).

A single study is not split up into several parts to increase the quantity of submissions and submitted to various journals or to one journal over time (e.g. 'salami-publishing').

o Editors⁹¹

Duplicate submission/publication and redundant publication

Duplicate submission/publication: This refers to the practice of submitting the same study to two journals or publishing more or less the same study in two journals. These submissions/publications can be nearly simultaneous or years later. Redundant publication (also described as 'salami publishing'): this refers to the situation that one study is split into several parts and submitted to two or more journals. Or the findings have previously been published elsewhere without proper cross-referencing, permission or justification.

"Self-plagiarism" is considered a form of redundant publication. It concerns recycling or borrowing content from previous work without citation. This practice is widespread and might be unintentional. Transparency by the author on the use of previously published work usually provides the necessary information to make an assessment on whether it is deliberate or unintentional.

Note! Translations of articles without proper permission or notification and

⁸⁹ "Editorial Policies," Rockefeller University Press, last accessed August 23, 2017, http://jgp.rupress.org/editorial-policies

⁹⁰ "Publishing ethics," Springer, last accessed August 23, 2017, https://www.springer.com/gp/authors-editors/journal-author/journal-author-helpdesk/publishing-ethics/14214

⁹¹ "Publishing Ethics for journals," Springer, last accessed August 23, 2017, http://resource-cms.springer.com/springer-

cms/rest/v1/content/19862/data/v1/Pubslishing+Ethics+Guide+for+Editors

resubmission of previously published Open Access articles are considered duplications. Recommended action by COPE for Journal Editors:

- Suspected redundant (duplicate) publication in a submitted manuscript [http://publicationethics.org/files/u2/01A_Redundant_Submitted.pdf]
- Suspected redundant (duplicate) publication in a published article
 [http://publicationethics.org/files/u2/01B_Redundant_Published.pdf]

Ubiquity Press

• Nothing on the subject under the general policies

Wiley

• <u>Duplicate and redundant publication</u>⁹²

The Council of Science Editors incorporates a definition of duplicate or redundant publication into its White Paper on Promoting Integrity in Scientific Journal Publications [http://www.councilscienceeditors.org/files/public/entire_whitepaper.pdf]: "[A]uthors must avoid duplicate publication, which is reproducing verbatim content from their other publications."

Wiley has also published information about duplicate publication [http://authorservices.wiley.com/bauthor/faqs_copyright.asp].

Journals should establish processes to help them avoid duplicate and redundant publication. The Copyright Transfer Agreement, Exclusive License Agreement or the Open Access Agreement, one of which must be submitted before publication in any Wiley journal, requires signature from the corresponding author to warrant that the article is an original work, has not been published before, and is not being considered for publication elsewhere in its final form.

- o Journals should remind authors that duplicate publication is not acceptable.
- Journals should require that any previously published results, including numerical information and figures or images, are labeled to make it clear where they were previously reported.
- Papers, particularly medical research papers, that present new analyses of results that have already been published (for example, subgroup analyses) should identify the primary data source, and include a full reference to the related primary publications.

Journals from different disciplines vary in their approach to pre-print servers. Many biomedical journals would consider posting an article to a pre-print server to render any subsequent journal publication redundant. Thus an article submitted for consideration after having been posted to a pre-print server would be rejected. However, many researchers working in physics, mathematics, computer science, quantitative biology, quantitative finance and statistics post their articles to arXiv before submitting an article successfully to a journal for peer review and publication. Journals should establish a policy about pre-print servers and declare this in their instructions for authors. Any previous publication should be disclosed in the paper.

The following types of "prior publication" do not present cause for concerns about duplicate or redundant publication:

^{92 &}quot;Research Integrity," Wiley, last accessed August 25, 2017, https://authorservices.wiley.com/ethics-guidelines/research-integrity.html

- Abstracts and posters presented during sessions at conferences.
- Results presented at meetings (for example, to inform investigators or participants about findings).
- Results in databases and clinical trials registries (data without interpretation, discussion, context or conclusions in the form of tables and text to describe data/information).
- Dissertations and theses in university archives.

If a paper is published and later found to be redundant, the editor should refer to the COPE Flowcharts [http://publicationethics.org/resources/flowcharts] and should consider working with their publisher to retract the duplicate paper. Text recycling

COPE hosted a discussion about text recycling [http://publicationethics.org/text-recycling-guidelines]. The US Office of Research Integrity has also published on this topic in its document "Avoiding plagiarism, self-plagiarism, and other questionable writing practices: A guide to ethical writing.[http://ori.hhs.gov/plagiarism-13]" Journals may find it useful to establish a policy about how much, if any, and under what circumstances they consider it acceptable to recycle text and results between articles. This may be important, for example, for authors who wish to communicate results from a research project to multiple audiences. In this instance, full or partial results might be recycled for legitimate reasons, although the discussion and conclusions would be different. *Duplicate submission*

Journals should consider how they might detect concurrent or multiple submissions. For example, in cases where journals are part of an editorial group or portfolio with access to internal information for the whole journal family, detection aids or mechanisms should be put in place for editors to use as part of their editorial office system.

If concurrent or multiple submissions are detected, the editor should work with their publisher and refer to the COPE flowchart

[http://publicationethics.org/resources/flowcharts] on redundant publication in a submitted manuscript.

Duplicate information published in translations

Journals may choose to publish materials that have been accurately translated from an original publication in a different language. Journals that translate and publish material that has been published elsewhere should ensure that they have appropriate permission. They should indicate clearly that the material has been translated and republished, and should identify the original source of the material.

- <u>Sanctions</u> [for duplicate, redundant, and plagiarism]⁹³
 Wiley has published advice about sanctions
 [http://authorservices.wiley.com/bauthor/faqs_copyright.asp#1.25] in which we refer to the COPE guidelines. Journals may, for example, publish a retraction, may inform the
 - Before considering sanctions editors must consult with their publisher, particularly for legal advice, and also with the journal owner (for example, a scholarly society).

author's institution, and may refuse for a time to consider future work from the authors.

o Sanctions should be applied consistently and only after careful consideration.

 Before imposing sanctions, journals should formally define the conditions in which they will apply (and remove) sanctions, and the processes they will use to do this.

Compliance with ethical standards

Brill

Nothing on the subject

De Gruyter

• Authors 94

Hazards and human or animal subjects If the work involves chemicals, procedures or equipment that have any unusual hazards inherent in their use, the authors must clearly identify these in the manuscript.

Elsevier

- <u>Patient consent</u> (as a general policy)⁹⁵
 Appropriate consents, permissions and releases must be obtained where authors wish to include case details or other personal information or images of patients and any other individuals in an Elsevier publication
 - Appropriate consents, permissions and releases must be obtained where authors wish to include case details or other personal information or images of patients and any other individuals in an Elsevier publication in order to comply with all applicable laws and regulations concerning the privacy and/or security of personal information, including, but not limited to, the Health Insurance Portability and Accountability Act of 1996 ("HIPAA") and other U.S. federal and state laws relating to privacy and security of personally identifiable information, the European Union Directive 95/46/EC and member state implementing directives, Canada's Personal Information Protection and Electronic Documents Act, India's Information Technology Act and related Privacy Rules, (together "Data Protection and Privacy Laws").

It is the responsibility of the author to ensure that:

Each individual, or the individual's legal guardian or other person with legal authority to act on the individual's behalf who appears in any video, recording, photograph, image, illustration or case report (or in any other identifiable form) is made aware in advance of the fact that such photographs are being taken or such video, recording, photograph, image, illustration or report is being made, and of all the purposes for which they might be used, including disclosure to Elsevier and use by Elsevier or its licensees in any work or product. That individual, legal

 ^{94 &}quot;Publication Ethics and Publication Malpractice Statement," De Gruyter, last accessed August 21, 2017, https://www.degruyter.com/view/j/ejnm.2013.5.issue-4/ejnm-2013-0037/ejnm-2013-0037.xml
 95 "Patient consent," Elsevier, last accessed August 23, 2017, https://www.elsevier.com/about/our-business/policies/patient-consent

guardian or person with legal authority must give his/her explicit written consent. If such consent is made subject to any conditions (for example, adopting measures to prevent personal identification of the person concerned), Elsevier must be made aware in writing of all such conditions. Written consents must be retained by the author and copies of the consents or evidence that such consents have been obtained must be provided to Elsevier on request

- The form of written consent complies with each requirement of all applicable Data Protection and Privacy Laws. Particular care should be taken with obtaining consent where children are concerned (in particular where a child has special needs or learning disabilities), where an individual's head or face appears, or where reference is made to an individual's name or other personal details.
- In the case of a child, if parents or guardians disagree on the use of the images of that child, then consent should be deemed not to have been given and those images should not be used. It is also important to ensure that only images of children in suitable dress are used to reduce the risk of images being used inappropriately.
- Even if consent has been obtained, care must be taken to ensure that the portrayal and captioning of the individual concerned are respectful and could not be seen as denigrating that individual.

Special considerations

- Patients' and research subjects' names, initials, hospital or social security numbers, dates of birth or other personal or identifying information should not be used.
- Images of patients or research subjects should not be used unless the information is essential for scientific purposes and explicit permission has been given as part of the consent. Even where consent has been given, identifying details should be omitted if they are not essential.
- If identifying characteristics are altered to protect anonymity, authors should provide assurances that such alterations do not distort scientific meaning.

Non-identifiable images

- Formal consents are not required for the use of entirely anonymised images from which the individual cannot be identified- for example, xrays, ultrasound images, pathology slides or laparoscopic images, provided that these do not contain any identifying marks and are not accompanied by text that might identify the individual concerned.
- If consent has not been obtained, it is generally not sufficient to anonymise a photograph simply by using eye bars or blurring the face of the individual concerned.

• <u>Authors</u>⁹⁶

Hazards and Human or Animal Subjects.

If the work involves chemicals, procedures or equipment that have any unusual hazards inherent in their use, the author must clearly identify these in the manuscript.

⁹⁶ "Publishing Ethics," Elsevier, last accessed August 23, 2017, https://www.elsevier.com/about/ourbusiness/policies/publishing-ethics

If the work involves the use of animal or human subjects, the author should ensure that the manuscript contains a statement that all procedures were performed in compliance with relevant laws and institutional guidelines and that the appropriate institutional committee(s) have approved them. Authors should include a statement in the manuscript that informed consent was obtained for experimentation with human subjects. The privacy rights of human subjects must always be observed. For human subjects, the author should ensure that the work described has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans [World Medical Association (WMA) Helsinki Declaration for Medical Research in Human Subject]. All animal experiments should comply with the ARRIVE guidelines [Animal Research: Reporting of In Vivo Experiments (ARRIVE) Guidelines https://www.nc3rs.org.uk/arrive-guidelines and should be carried out in accordance with the U.K. Animals (Scientific Procedures) Act 1986 and associated guidelines [the U.K. Animals (Scientific Procedures) Act 1986 https://www.gov.uk/government/uploads/system/uploads/attachment data/file/308 593/ConsolidatedASPA1Jan2013.pdf>], or EU Directive 2010/63/EU on the protection of animals used for scientific purposes [EU Directive 2010/63/EU for animal experiments

http://ec.europa.eu/environment/chemicals/lab_animals/legislation_en.htm], or the U.S. Public Health Service Policy on Humane Care and Use of Laboratory Animals and, as applicable, the Animal Welfare Act [U.S. Public Health Service Policy on Humane Care and Use of Laboratory Animals

<https://grants.nih.gov/grants/olaw/references/phspolicylabanimals.pdf>].
Appropriate consents, permissions and releases must be obtained where an author wishes to include case details or other personal information or images of patients and any other individuals in an Elsevier publication. Written consents must be retained by the author and copies of the consents or evidence that such consents have been obtained must be provided to Elsevier on request [Elsevier policy on patient consent:
<ahttps://www.elsevier.com/about/company-information/policies/patient-consent>].
Clinical Trial Transparency.

Elsevier supports clinical trial transparency. For relevant journals, authors are expected to conform to industry best standards in in clinical trial registration and presentation, for example the CONSORT guidelines, as further set out in the policies of the relevant journal [ICMJE Uniform requirements for manuscripts submitted to biomedical journals http://www.icmje.org/, CONSORT standards for randomized trials http://www.consort-statement.org].

IOP Publishing

• <u>Investigations involving live subjects</u>⁹⁷

All investigations involving humans must be conducted in accordance with the principles embodied in the Declaration of Helsinki

[http://www.wma.net/en/30publications/10policies/b3/index.html] and in accordance with local statutory requirements. Researchers should not generally publish or share

⁹⁷ "IOP ethical policy for journals," IOP Publishing, last accessed August 23, 2017, http://ioppublishing.org/img/landingPages/guidelines-and-policies/ethical-policy.html

identifiable individual data collected in the course of research without specific consent from the individual (or their representative). Articles relying on clinical trials should quote the trial registration number at the end of the abstract. IOP also encourages the registration of such studies in a public trials registry prior to publication of the results in the journal. All investigations involving animal experimentation must be conducted in accordance with the Guiding Principles for Research Involving Animals and Human Beings [http://www.the-aps.org/mm/Publications/Info-For-Authors/Animal-and-Human-Research] as adopted by the American Physiological Society, and with local statutory requirements.

Oxford University Press (OUP)

Promoting ethical research⁹⁸

As a department of Oxford University, it is part of OUP's mission to promote the highest standards of research through its publishing activities. Ensuring that the research we publish is conducted in a fair and ethical manner is integral to this. We publish across multiple research areas, many of which have their own standards and methods of governing research practice.

Wherever appropriate, we expect published research based on human subjects to provide the name of the local ethics committee that approved the study (or confirmation that such approval is not needed) and/or to state how the study conforms to recognised standards (e.g. declaration of Helsinki or US Federal Policy for the Protection of Human Subjects). OUP encourages journals and handling editors to return any manuscripts describing studies not meeting acceptable criteria.

The following list details OUP's approach to the most common areas of research integrity.

a. Patient confidentiality

Journals publishing studies using human subjects should ensure that a patient's right to privacy has not been infringed without prior consent. We encourage journals to follow the ICMJE [http://www.icmje.org/index.html#privacy] guidelines for reporting on human subjects. For publication of material that contains detailed patient information about a living individual, it is compulsory for a signed patient consent to be obtained. Any identifier that might reveal a patient's identity must be removed (i.e., x-rays, MRIs, charts, photographs, etc.). Written informed consent is required from any potentially identifiable patient or legal representative, and should be presented in either the Methods section or the Acknowledgements.

b. Animal experimentation

Where animals are used in research we expect them to have been treated in a humane manner and in line with the ARRIVE [http://www.nc3rs.org.uk/arrive-guidelines] guidelines. The International Council for Laboratory Animal Science has published guidelines specifically for editors and Reviewers on how to handle submissions involving animal research. OUP supports these guidelines and, wherever possible, encourages editors and society partners to adopt them. Authors may be required to provide evidence that they obtained ethical and /or legal approval prior to conducting the research.

⁹⁸ "Publication Ethics," Oxford University Press, last accessed August 23, 2017, https://academic.oup.com/journals/pages/authors/ethics

c. Registering clinical trials

All clinical trials should be registered prospectively in publically accessible databases (e.g. www.clinicaltrials.gov and www.clinicaltrialsregister.eu) and manuscripts should include registration numbers and the name of the register. Some journals may require clinical trials to be reported according to CONSORT [http://www.consort-statement.org/)] guidelines.

Falsification and fabrication

Submitted papers found to include false or fabricated data prior to publication will be returned to the author immediately with a request for an explanation. If no explanation is received or if the explanation provided is considered unsatisfactory, the journal will notify the authors' institution, local ethical committee, or superior. The journal may also refuse to accept further submissions from the author for a defined period.

Examples of data falsification or fabrication include: image manipulation; cropping of gels/images to change context; omission of selected data; or making-up data sets. Some journals employ image manipulation software to detect evidence of falsification in submitted manuscripts. OUP recognises that falsification is not always deliberate and will encourage its journals and publishing partners to consider each case on its terms.

Palgrave Macmillan

Nothing on the subject

Public Library of Science (PLOS)

- Best Practices in Research Reporting⁹⁹
 All research submitted to PLOS journals must be reported according to internationally accepted standards for the study type, with ethics oversight obtained where appropriate.
- Animal Research¹⁰⁰
 Research involving regulated animals must meet internationally accepted ethics standards for the study type, including but not limited to obtaining study-specific approval by the appropriate ethics committee, securing appropriate permits to conduct the research, and providing required details for studies involving non-human primates.
- Human Subjects Research¹⁰¹
 Research involving human participants must meet internationally accepted ethics standards for the study type, including but not limited to obtaining study-specific approval by the appropriate ethics committee, taking steps to protect participant privacy, obtaining informed consent and providing clinical trial documentation.

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• Nothing on the subject

 ⁹⁹ "Editorial and Publishing Policies," PLOS, last accessed August 23, 2017, https://www.plos.org/editorial-publishing-policies
 ¹⁰⁰ Ibid

Rockefeller University Press (RUP)

• Animal and human studies¹⁰²

All animal and human studies must be conducted in compliance with relevant local guidelines, such as the US Department of Health and Human Services Guide for the Care and Use of Laboratory Animals [http://www.nap.edu/openbook.php?record_id=5140] or MRC guidelines [https://www.mrc.ac.uk/funding/guidance-for-applicants/], and must be approved by the authors' Institutional Review Board(s). A statement to this effect with the name of the approving IRB(s) must be included in the Materials and methods section. All investigations with human subjects must be conducted according to the principles expressed in the Helsinki Declaration

[http://www.wma.net/en/20activities/10ethics/10helsinki/index.html] and must include a statement that informed consent was obtained from all subjects. We strongly encourage authors to use the appropriate Reporting Guidelines

[http://jcb.rupress.org/submission-guidelines#reporting-guidelines] for their study type.

Springer

Compliance with ethical standards¹⁰³

To ensure objectivity and transparency in research and to ensure that accepted principles of ethical and professional conduct have been followed, authors should include information regarding sources of funding, potential conflicts of interest (financial or non-financial), informed consent if the research involved human participants, and a statement on welfare of animals if the research involved animals.

Authors should include the following statements (if applicable) in a separate section entitled "Compliance with Ethical Standards" before the References when submitting a paper:

Disclosure of potential conflicts of interest

Research involving Human Participants and/or Animal

Informed consent

Please note that standards could vary slightly per journal dependent on their peer review policies (i.e. double blind peer review) as well as per journal subject discipline. Before submitting your article check the Instructions for Authors carefully.

The corresponding author should be prepared to collect documentation of compliance with ethical standards and send if requested during peer review or after publication. The Editors reserve the right to reject manuscripts that do not comply with the abovementioned guidelines. The author will be held responsible for false statements or failure to fulfill the above-mentioned guidelines.

Ubiquity Press

Nothing on the subject under the general policies

¹⁰² "Editorial Policies," Rockefeller University Press, last accessed August 23, 2017, http://jgp.rupress.org/editorial-policies

 $^{^{103}}$ "Publishing ethics," Springer, last accessed August 23, 2017, https://www.springer.com/gp/authors-editors/journal-author/journal-author-helpdesk/publishing-ethics/14214

Wiley

• Human rights, privacy, and confidentiality¹⁰⁴

For manuscripts reporting medical studies involving human participants, it is suggested that journals require authors to provide a statement identifying the ethics committee that approved the study, and that the study conforms to recognized standards, for example:

- Declaration of Helsinki
 [http://www.wma.net/en/30publications/10policies/b3/]
- US Federal Policy for the Protection of Human Subjects
 [http://www.hhs.gov/ohrp/humansubjects/commonrule/]
- European Medicines Agency Guidelines for Good Clinical Practice
 [http://www.emea.europa.eu/docs/en_GB/document_library/Scientific_guideline/2009/09/WC500002874.pdf]

These standards encourage authors to conduct studies in a way that ensures adequate steps have been taken to minimize harm to participants, to avoid coercion or exploitation, to protect confidentiality, and to minimize the risk of physical and psychological harm.

Across the scholarly disciplines there are variations in practice around privacy and confidentiality, relative to the risks of participation and the reasonable expectations of participants.

In the biomedical sciences, editors should consider only publishing information and images from individual participants where the authors have obtained the individual's free prior informed consent. The International Committee of Medical Journal Editors [http://www.icmje.org/icmje-recommendations.pdf] guidance says:

"Non-essential identifying details should be omitted. Informed consent should be obtained if there is any doubt that anonymity can be maintained. For example, masking the eye region in photographs of patients is inadequate protection of anonymity."

The best policy is for journals to require that authors confirm whether explicit written consent to publish has been received from any people described (for example, in case reports), shown in still or moving images, or whose voices are recorded. In the case of technical images (for example, radiographs or micrographs), editors should also ensure that all information that could identify the subject has been removed from the image. For voices or images of any human subject, permission according to applicable national laws must be sought from research participants before recording. In many jurisdictions it is a requirement that formal copyright clearance is obtained to publish any video or audio recordings. When publishing genetic sequences or family genograms editors may need consent[http://www.nature.com/news/deal-done-over-hela-cell-line-1.13511] from more than just the index case. The CARE guidelines [http://www.care-statement.org/] are useful for editors who publish case reports.

In the social sciences and humanities, there are numerous ethical guidelines for researchers working with human participants. Social science and humanities researchers regularly work with audio and video materials gathered in public places where there is no reasonable expectation of privacy. They also use materials derived from broadcast

¹⁰⁴ "Research Ethics in Journal Articles," Wiley, last accessed August 25, 2017, https://authorservices.wiley.com/ethics-guidelines/research-ethics-in-journal-article.html

sources, as in some political science or cultural studies work, where copyright must be addressed but where consent issues do not arise. However, wherever appropriate, social scientists are also responsible for protecting the confidentiality of human participants, and obtaining informed consent from all participants by openly communicating any and all information that is likely to influence their willingness to participate (for example, sponsorship, purpose and anticipated outcomes, and possible consequences that publication of the research may have for participants). Guidelines include those from the American Sociological Association

[http://www.asanet.org/images/asa/docs/pdf/CodeofEthics.pdf], International Society of Ethnobiology [http://ethnobiology.net/docs/ISE%20COE_Eng_rev_24Nov08.pdf], and American Anthropological Association

[http://www.aaanet.org/profdev/ethics/upload/Statement-on-Ethics-Principles-of-Professional-Responsibility.pdf].

For social research data the Association of Social Anthropologists of the UK and the Commonwealth suggests in its "Ethical Guidelines for Good Research Practice" [http://www.theasa.org/downloads/ASA%20ethics%20guidelines%202011.pdf] that it is not always possible or necessary to gain written consent to publish, particularly when researchers are working with people with limited literacy or in cultures where formal bureaucratic procedures are problematic. However, it remains prudent for journals to ask authors to provide evidence that they have obtained informed consent. The American Anthropological Association's statement

[http://www.aaanet.org/profdev/ethics/upload/Statement-on-Ethics-Principles-of-Professional-Responsibility.pdf] recommends that:

"Informed consent does not necessarily imply or require a particular written or signed form. It is the quality of the consent, not its format, which is relevant." Exceptional cases might arise where gaining an individual's free prior informed consent is not possible but where publishing an individual's information or image can be demonstrated to have a genuine public health interest or to serve an important public need. In cases like this, before taking any action editors should seek and follow counsel from the journal owner, the publisher, and/or legal professionals.

• Cultures and heritage¹⁰⁵

US Office for Human Research Protection has a searchable database [http://ohrp.cit.nih.gov/search/irbsearch.aspx?styp=bsc] of independent community institutional review boards that approve research and publication of culturally sensitive materials. More information is provided in "Principles and Procedures: Conducting Research in a Maori Context" [https://wintecac-

public.sharepoint.com/postgraduate/files/ResearchMaoriContext_PartA.pdf] from Waikato Institute of Technology and "Community IRBs and Research Review Boards: Shaping the Future of Community-Engaged Research"

[http://ccph.memberclicks.net/assets/Documents/FocusAreas/shaping_the_future_of_c enr.pdf] from Albert Einstein College of Medicine.

There is recognition of increasing innovation in the management of joint copyright in relation to intercultural research, to enable appropriate legal acknowledgment of intellectual property in attribution and acknowledgment. This is presented in the section on authorship which follows.

Editors should consider any sensitivities when publishing images of objects that might have cultural significance or cause offence (for example, religious texts or historical events). In addition:

- Editors should be conscious of the ethics surrounding publication of images of human remains, and should recognize that human remains are perceived differently in different cultures. Images of human remains should not be published without consideration of the views of any demonstrated genealogical descendants or affiliated cultural communities, if feasible. In cases where descendants or affiliated cultural communities cannot be contacted, images of human remains should not be published without consultation with and permission from the curating institution or relevant stakeholder. For more information refer to the British Association of Biological Anthropology and Osteoarchaeology Code of Ethics [http://www.babao.org.uk/index/ethics-and-standards].
- Cultural restrictions do exist in some cultures that prevent publication of the names of deceased people [http://onlinelibrary.wiley.com/doi/10.1111/j.1440-172X.2007.00667.x/full]. In Aboriginal Australian culture, this often extends to publication of photographs or film footage of deceased persons. Editors are encouraged to consider any sensitivities and, if necessary, confer with the author about appropriate representation of subjects in published work.

• Registering clinical trials¹⁰⁶

The World Health Organization

[http://www.who.int/mediacentre/news/releases/2006/pr25/en/index.html] and Declaration of Helsinki [http://www.wma.net/en/30publications/10policies/b3/] both suggest that clinical trials should be registered prospectively, before participants are enrolled. The International Federation of Pharmaceutical Manufacturers and Associations [http://www.ifpma.org/] also requires its members to register trials. Legislation varies. For example, the US Food and Drug Administration Amendments Act of 2007 does not require registration for Phase 1 studies.

Medical journals that publish clinical trials should make prospective registration a requirement for publication of such trials. Clinical trial registration numbers should be included in all papers that report their results. A suitable statement about this in journal instructions for authors might read: "We require that clinical trials are prospectively registered in a publicly accessible database. Please include the name of the trial register and your clinical trial registration number at the end of your abstract. If your trial is not registered, or was registered retrospectively, please explain the reasons for this."

• Animals in research 107

Research involving animals should be conducted with the same rigor as research in humans. Journals can encourage authors to implement the 3Rs principles [http://www.nc3rs.org.uk/page.asp?id=7]:

"The 3Rs are a widely accepted ethical framework for conducting scientific experiments using animals humanely: Replacement - use of non-animal methods; Reduction - methods which reduce the number of animals used; Refinement - methods which improve animal welfare."

The International Council for Laboratory Animal Science has published ethical guidelines

¹⁰⁶ Ibid ¹⁰⁷ Ibid

[http://iclas.org/committees/ethics-and-animal-welfare-committee] for editors and reviewers.

Journals should encourage authors to adhere to animal research reporting standards, for example the ARRIVE reporting guidelines [http://www.nc3rs.org.uk/page.asp?id=1357], which describe the details journals should require from authors regarding:

- Study design and statistical analysis.
- o Experimental procedures.
- o Experimental animals.
- Housing and husbandry.

Journals should ask authors to confirm that ethical and legal approval was obtained prior to the start of the study, and state the name of the body giving the approval. Authors should also state whether experiments were performed in accordance with relevant institutional and national guidelines and regulations.

- US authors should cite compliance with the US National Research Council's "Guide for the Care and Use of Laboratory Animals, [http://www.nap.edu/openbook.php?record_id=5140]" the US Public Health Service's "Policy on Humane Care and Use of Laboratory Animals, [http://grants.nih.gov/grants/olaw/references/phspol.htm]" and "Guide for the Care and Use of Laboratory Animals [http://grants.nih.gov/grants/olaw/Guide-for-the-Care-and-Use-of-Laboratory-Animals.pdf]."
- UK authors should conform to UK legislation under the Animals (Scientific Procedures) Act 1986 Amendment Regulations (SI 2012/3039) [https://www.gov.uk/government/publications/animals-scientific-procedures-act-1986-amendment-regulations].
- European authors outside the UK should conform to Directive 2010/63/EU [http://eur-

lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32010L0063:EN:NOT].

Editors may ask authors to describe in their articles how discomfort, distress, and pain were avoided and minimized, and to confirm that animals did not suffer unnecessarily at any stage of an experiment.

Editors may request that reviewers comment on the standard of experimental reporting, experimental design, or any other aspects of the study reported that may cause concern. If concerns are raised or clarifications are needed, they may need to request evidence of ethical research approval or question authors.

• Biosecurity¹⁰⁸

Journals should ask authors to inform them at the time of manuscript submission if their study has potential for both benevolent and malevolent application. This is often referred to as "dual use research."

Journals should ask these authors to conform to the National Science Advisory Board for Biosecurity (NSABB) [http://osp.od.nih.gov/office-biotechnology-

activities/biosecurity/nsabb] guidelines for Dual Use Life Sciences Research. The June 2007 NSABB

[http://osp.od.nih.gov/sites/default/files/resources/Framework%20for%20transmittal %20duplex%209-10-07.pdf] report presents a useful description and discussion of "dual use research of concern."