

Ethics in online publications

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ABSTRACT

Journals have been publishing the results of scientific investigations since the founding of *Philosophical Transactions* in 1665. Since then we have witnessed a massive expansion in the number of journals to the point that there are now approximately 28,000 active, peer reviewed journals collectively publishing more than 1.8 million articles per year. Before the mid-1990s, these journals were only available on paper but by the end of the 20th century, most journals had moved to online platforms. Online publication has also served as the impetus for the move to 'open-access' to the information contained in journals. The fact that a publication is 'on-line' and 'open-access' does not negate the responsibility of the author and the publisher to publish in an ethical way. [1]

The document produced by the IFCC Ethics Task Force (TF-E) on publication ethics states that 'Ethics in Science at its broadest level encompasses research ethics, medical ethics, publication ethics, conflicts of interest, ethical responsibilities as educator, plus many other areas.' Thus publication ethics is a continuum from the first step of research design through to the information being read by the reader.

In general terms 'publication ethics' includes the ethical behaviour of the authors in writing and submitting a scientific manuscript to a publisher for the purpose of publication, thus any discussion of publication ethics must include the role of

the authors, referees, publisher and reader and the issues of authorship (and the use of 'ghosts'), plagiarism, duplicate publication (including in different languages), image manipulation (particularly in the era of digitisation), and conflict of interest [2]. To aid the authors, and others involved in the process of publication, a number of resources are now available particularly those from the Committee on Publication Ethics (COPE) [3] and the World Association of Medical Editors (WAME) [4].

More recently the issue of 'publisher ethics' has also been raised, particularly with the sudden increase of what could be termed 'predatory' publishers utilising the open access model to publish low quality articles, which often do not adhere to the guidelines mentioned above, utilising an author-pays model of open-access publishing for their own profit [5].

INTRODUCTION

Journals have been publishing the results of scientific investigations since the founding of *Philosophical Transactions* in 1665. Before the mid-1990s journals were only available on paper but by the end of the 20th century most journals have moved to online platforms (or a mix of both paper and online). Online publication has also served as the impetus for the move to 'open-access' publication defined as unrestricted online access to peer-reviewed scholarly research. However 'on-line' and 'open-access' does not negate the responsibility of the author and the publisher to publish in an ethical way.

OPEN ACCESS

As mentioned in the introduction open access means unrestricted online access to peer-reviewed scholarly research. There are two general types: *Gratis* or *Libre* open access defined by whether the access is completely 'open' or in the case of *Libre* whether there is additional

usage rights applied. In most cases of *Libre* open access the usage rights are Creative Commons based meaning that they are public copyright licences allowing the free distribution of an otherwise copyrighted article [6]. There are three forms of open access described: Green, Gold and Platinum. Green open access, sometimes known as self-archiving, involves the article being deposited in an institutional repository which is then accessed while Gold open access involves publishing within a journal where the cost of publishing is levied on the author (or authors representative such as their research institution) for the purpose of allowing the article to be then open access. The eJIFCC is an example of a Platinum open access journal where there is no charge levied either on the author (or representative) or the reader with the costs being born by either the journal, or by donations [7].

IFCC TASK FORCE-ETHICS

The IFCC has a particular interest in Ethics and during the Executive Board term of 1997-1999, the IFCC established an Ethics Task Force (TF-E) which is currently chaired by Prof David Bruns of the University of Virginia Medical School. The stated aims of the Task Force are as follows:

- To increase awareness among Laboratory Medicine Professionals of ethical issues
- To encourage the practice of Laboratory Medicine to the highest ethical standards
- To develop position papers on appropriate ethics policy issues
- To provide a voice for Laboratory Medicine on ethics policies
- To link Laboratory Medicine, ethics and the public interest

In response in particular to Aim 3 above the Task Force recently produced a position paper entitled 'Ethics in Science: Background and Resources on Publication Ethics'.

ETHICS IN SCIENCE: BACKGROUND AND RESOURCES ON PUBLICATION ETHICS

This position paper published by the Ethics Task Force, and available for download from the IFCC website (www.ifcc.org), was prepared to bring together a set of resources on publication ethics for use in the field of laboratory medicine. The paper provides background information and advice in the following areas:

- **Research ethics**
 - Human experimentation
 - Animal experimentation
- **Data collection**
- **Publication ethics**
 - Author aspects
 - ❖ Authorship
 - ❖ Plagiarism
 - ❖ Duplicate publishing
 - ❖ Publishing translations of previous work
 - ❖ Image manipulation
 - ❖ Conflict of interest
- **Referee aspects**
 - Plagiarism, duplicate publishing or other ethical violations
 - Conflict of interest
- **Readers aspects**
 - Plagiarism, duplicate publishing or other ethical violations
- **Editor aspects**
 - Plagiarism, duplicate publishing or other ethical violations responsibility
 - Conflict of interest
- **Conflict of interest in general**
- **Responsibility as educator**

THE COMMITTEE ON PUBLICATION ETHICS (COPE)

There are a number of other sources of information related to Publication Ethics among which includes the Committee on Publication Ethics (COPE). COPE was established in 1997 by a group of medical journal editors in the UK and now has over 9000 members worldwide and is open to editors of academic journals and others interested in publication ethics. Their website (<http://publicationethics.org/>) is an excellent resource for those with an interest in Publication Ethics and, in particular, provides guidance on how to handle cases of research and publication misconduct.

THE WORLD ASSOCIATION OF MEDICAL EDITORS (WAME)

Another resource is the World Association of Medical Editors (WAME). WAME is a global association of editors of peer-reviewed medical journals with the aim of improving editorial standards through cooperation and communication. Amongst the resources on its website (<http://www.wame.org/>) are published documents related to Publication Ethics Policies for Medical Journals.

THE INTERNATIONAL COMMITTEE OF MEDICAL JOURNAL EDITORS (ICMJE)

A third group is the International Committee of Medical Journal Editors (ICMJE) which is a small, closed group of general medical journal editors and representatives of selected related organizations whose primary aim is to improve the quality of medical science and its reporting through publication of the *Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals* [8].

PUBLICATION ETHICS

Publication Ethics is a continuum from the first step of research design through to the information being read by the reader and thus includes the ethical behaviour of the authors in writing and submitting a scientific manuscript to a publisher for the purpose of publication but must also include the role of referees, editors, publishers and even the reader in the process.

RESEARCH MISCONDUCT

By definition Research Misconduct means the Fabrication, Falsification, or Plagiarism in proposing, performing, or reviewing research, or in reporting research results. Fabrication is the making up of data or results and recording or reporting them as if they were real while Falsification is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record. Plagiarism is well defined as the appropriation of another person's ideas, processes, results, or words without giving appropriate credit and will be covered in more detail later in this paper. It is important to be reminded that Research Misconduct is purposeful misconduct and as such does not include honest error or differences of opinion which may occur at time to time in research and which can generally be corrected or outlined at the time of publication.

THE AUTHOR

The author(s) of a paper are obviously the 'primary' participant in the publication process as without them there would not be a publication. As such the author(s) are of particular importance to ensure ethical publication across various issues related to authorship including plagiarism, duplicate publication, image manipulation and conflict of interest.

AUTHORSHIP

The first step in the process should be to decide on what basis Authorship credit should be applied to a particular individual. In general terms authorship should be determined by substantial contribution to the research and writing of the manuscript, participation in the critical drafting and/or revision of the manuscript and final approval of the document for submission to a journal. Of particular concern in the area of authorship is the use of 'Ghost' authors or writers.

The term ghostwriting can cover a myriad of scenarios and uses ranging from political speech writing through to the publishing of celebrity memoirs and as such can have a varying degree of 'ethics' associated with it. The major issue with medical ghostwriting is the payment of ghostwriters by pharmaceutical companies to produce papers and then the recruitment of other scientists or physicians to attach their names to these papers before they are published in medical or scientific journals. In response to this issue a number of professional medical writers associations have been formed (e.g. European Medical Writers Association) with the aim of ensuring that professional medical writers are acknowledged for their contribution, if not as an author then as a professional writer, and that they carry out this role in an ethical and responsible manner [9]. As a consequence organisations such as the World Association of Medical Editors and the British Medical Journal now accept this as a legitimate practice [10]

AUTHOR RESPONSIBILITIES

There are a number of General Rules which should be followed by Authors when writing and publishing in the medical literature. The first is to ensure that the work they are publishing is for new and original research. Secondly, all listed Authors must be aware of the

submission and must agree with the content and support the submission otherwise there could potentially be embarrassment all round if an author's name pops up on PubMed or similar against a manuscript of which they have no knowledge! The authors must also agree that the manuscript can be examined by anonymous reviewers as anonymous peer review is critical to the publishing process (and will be discussed more fully later). They must also provide copies of related work submitted or published elsewhere as a protection against the possibility of being accused of duplicate publications (also to be discussed later). They must obtain copyright permission if figures/tables need to be reproduced and more importantly must wait until such permission is obtained before going ahead with the publication process. Finally, the authors need to include proper, multiple if necessary, affiliations on the paper so that the reader is able to discern any potential conflicts of interest, and contact the authors to ask questions etc. if necessary.

PLAGIARISM

The increasing availability of scientific literature on the World Wide Web has proven to be a double-edged sword by allowing plagiarism to be more easily committed by 'cut and paste' of content published on the web but at the same time enabling its simple detection through manual on-line review and/or the use of automated comparative software such as free software 'Plagiarism Checker' or commercial software such as Turnitin. The automated process generally involves the use of a form of document 'fingerprinting' whereby multiple digests of a document are compared to a reference library of document 'fingerprints' and, using a complex algorithm, a 'similarity index' is calculated. This index, and offending passages, can then be reviewed and a final assessment made [11]. It is good practice when plagiarism

is detected that, as well as the author(s), the Editor of the journal where the offending article appeared should be contacted to request retraction as well as the Publisher of the journal in which the original authors article appeared to advise breach of copyright.

IMAGE MANIPULATION

In the era of digital images and the use of software such as Photoshop, image manipulation has become an increasingly concerning ethical issue in publications. More recently this has led to the development of the six Clinical and Laboratory Images in Publications (CLIP) Principles:

1. Report the details of the subject of the image

The author should tell readers what they are looking at and what they should be looking for in particular in support of the claims they make associated with the image in the text of the article.

2. Report the details of the acquisition of the image

The authors also need to explain how the image was acquired including any equipment, special techniques, etc. used in the acquisition of the image.

3. Report the details of the selection of the image

The authors should explain why a particular image was selected, whether it was an image intrinsic to the research or whether it was from an outside source and whether it was indicative of the study or an 'extreme' example.

4. Report the details of any modifications of the image

The authors also need to disclose any manipulation of the image, for any purpose, such as enhancements, modifications or processing of the

image. Where possible the full and unaltered image should be published however there may be occasions where for reasons of clarity to the reader the image may be manipulated which is allowed but only where this manipulation is disclosed to the reader.

5. Report the important details of the image itself

Authors should give as much information as possible to allow the reader to interpret the image and relate it contextually to the information provided in the text. This could include the use of annotation tools such as arrows, circles, etc. and information about magnifications etc.

6. Report the details of the analysis or interpretation and the implications of the image

Finally the authors should include the details of any measurements and or analysis of the image which has occurred and how those measurements or analysis have added to the interpretation and findings of the paper [12].

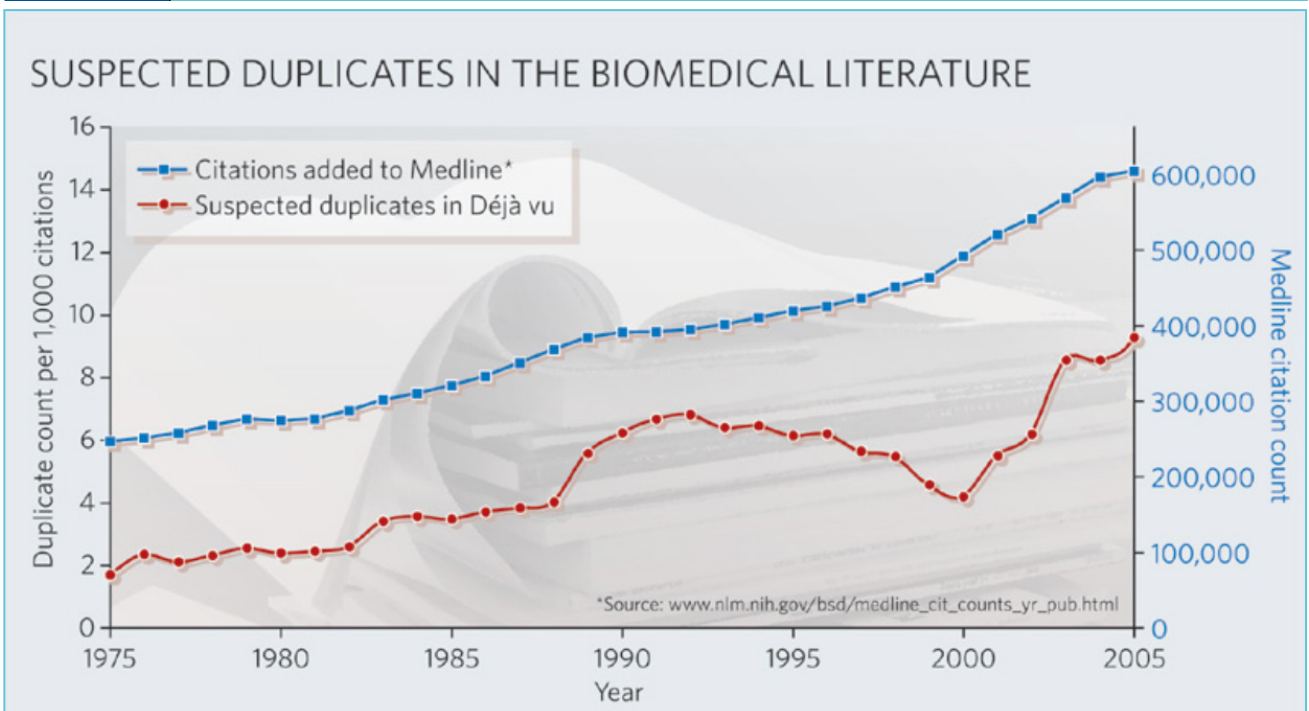
DUPLICATE PUBLICATIONS

Duplicate publication is becoming an increasingly important issue, particularly in the era of globalisation of research and availability of foreign language journals. In general terms, author(s) should avoid publication in duplicate journals and this should include foreign language journals. The size of the problem is indicated in figure 1 which shows the increase in duplicate journals detected by the software *deja vu* with time.

CONFLICT OF INTEREST

Conflicts of Interest arise when authors, reviewers, or editors have interests that are not fully apparent and that may influence their judgments on what is to be published and if revealed would make a reasonable reader feel misled or deceived by their conduct. Such conflicts can arise from relationships, allegiances, or hostilities to particular groups, organizations, or interests and can be public and/or private (i.e. not obvious from knowledge of the individuals involved and/or

Figure 1 Suspected duplicate publications in the medical literature [13]



associated with a significant other). Real or potential conflicts should be declared as soon as possible during the process to alleviate any concerns particularly as it is difficult to resolve such conflicts of interest after the event and as such the conflict will impact on the perception of the publication whether the conflict was real or not.

REFEREES

Referees or peer reviewers are an important part of the peer-reviewed publication process and as such many of the ethical considerations associated with the author(s) should also apply to the referee, in particular issues around conflict of interest discussed above. Therefore the referee should peer-review with impartiality and confidentiality. They must not contact the author directly and should disclose any potential or real conflicts of interest and they should destroy any manuscripts once the peer review process is complete.

EDITORS

Editors are also central to the ethical publication process and their importance is evidenced by the fact that there are at least two organisations which focus on providing guidelines and advice to Editors involved in the publication process (WAME and ICMJE). In addition COPE states that Editors should be accountable for everything published in their journals. ICMJE states that Editors also have the responsibility of following up complaints about specific articles published in their journal and that Editors should avoid selecting external peer reviewers with obvious potential conflicts of interest. Editors should also have the independence and responsibility to retract papers following a breach of ethics.

PUBLISHERS

Publishers have a responsibility to the scientific record to ensure that the journals they publish are as free of publishing ethics violations as they

can be. They also need to respect the privacy and rights of researchers and protect the intellectual property and copyright of the authors. As mentioned above publishers also need to foster the editorial independence of the publishing process by granting Editors with the authority and responsibility to retract papers following a breach of ethics without fear nor favour. More recently we have seen a move towards a form of Predatory Publishing which is worrying many in the academic community. We have all probably received unsolicited e-mails from publishers of journals, often with names very similar to highly respected journals, asking us to submit articles to that journal. Unfortunately once one undertakes some simple investigative work it soon becomes clear that these journals are not what they make out to be and that they are actually utilising an open access model of publishing to publish low quality articles. It is also apparent that many of these journals often do not adhere to the ethical guidelines published by COPE and/or ICMJE and that they are utilising a Gold Open Access author-pays model of open-access publishing for their own profit [14].

READERS

In the modern ethics in publication scenario the reader also has a role to play and should draw any suspected breach of ethics to the attention of the journal's editor by raising specific suspicions or comments, and if possible, supportive evidence. The journal editor should acknowledge this, and then instigate a suitable investigation into the claims and then follow up by advising the reader of the outcome of the investigation whether it is proved or not.

HOW SHOULD JOURNALS HANDLE PROBLEM PAPERS?

Once an investigation is completed there are a number of possible scenarios dependent on the

severity of the breach of ethics and whether the author is a repeat offender or not. If a breach of ethics is proven then the minimal, and expected, solution is withdrawal of the paper from publication and publication of a retraction notice. If the breach was severe and/or the author is a repeat offender then the publisher should consider banning the authors from publication in the journal for 3-5 years and informing the co-authors and editors of related journals of their action. For less serious cases, placing the author on a 'watch list' for careful examination of their submissions prior to requesting reviews may be applicable.

SUMMARY

On-line publication, open access or not, does not negate the need for ethics in publication. All those involved in the process must behave ethically be they Author, Reviewer, Editor, Publisher or Reader. In this way we can look forward to an era of open cooperation and dissemination of information to the benefit of all involved.

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