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Submitting a manuscript for peer review – integrity, integrity, integrity

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Abstract

Publication of a flawed manuscript has significant consequences for the progress of science. When this proves to be intentional, science is brought into disrepute and this puts even more pressure on the shrinking resources that society is prepared to invest in research. All scientific journals, including the *Journal of Neurochemistry*, have witnessed a marked increase in the number of corrections and retractions of published papers over the last 10 years, and uncovered a depressingly large number of fabrications amongst submitted manuscripts. The increase in number of 'spoiled' manuscripts reflects not only the improved methods that journals employ to detect plagiarism in its many forms, but also suggests a measurable change in the behavior of authors. The increased policing of submissions by reviewers, editors and publishers expends time and money. The sanctions imposed by journal editors on authors found guilty of malpractice are transparent and severe.

Never let the truth stand in the way of a good story

Mark Twain

While imagination is the source of vibrant fiction, the 'stories' we offer in manuscripts submitted for publication have to be faithful. With the beginning of a New Year, it seems appropriate to re-state current *Journal of Neurochemistry* policies on submissions and, on behalf of the *International Society for Neurochemistry*, to demand integrity from authors offering manuscripts for scientific review. While the comments here are directed specifically at corresponding authors, the contract entered into with the submission of

any manuscript also demands integrity from reviewers, editors and publishers, who have to be seen to act impartially and promptly in reaching their decisions.

The combination of increased editor awareness and change in author behavior has resulted in an escalation in the number of papers retracted from the scientific literature (Fanelli, 2013; Steen et al., 2013). Misconduct is responsible for more than two thirds of the ~2,000 or so retracted articles indexed in PubMed articles (Fang et al., 2012). Another recent analysis of this collection of papers (~700 published prior to, and ~1,300 after 2002) concluded that the increase in retractions reflects a change in the behavior of both authors and institutions (Steen et al., 2013). Questionable articles appear to overcome progressively lower barriers to publication, as evidenced recently when more than half of over 300 open-access journals accepted the bogus and hopelessly flawed submission from a certain 'Ocorrafoo Cobange' at the 'Wassee Institute of Medicine' (Bohannon, 2013). Plagiarism (in all its forms), once excused as a mistake, is now identified as a misdeed (Sala et al., 2013) and universally considered to be unacceptable (<http://cdn2.hubspot.net/hub/92785/file-318578964-pdf/docs/ithenticate-decoding-survey-summary-092413.pdf>). However, as Adam Marcus and Ivan Oransky of Retraction Watch have pointed out (<http://cdn2.hubspot.net/hub/92785/file-318578964-pdf/docs/ithenticate-decoding-survey-summary-092413.pdf>), many journals and authors still try to avoid using the word 'plagiarism'.

In Section 3 of the latest version of the Instructions to Authors ([http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1471-4159/homepage/ForAuthors.html](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1471-4159/homepage/ForAuthors.html)), it is

Accepted Article

stated clearly that the submission of any ms. to *Journal of Neurochemistry* is to that journal alone and that, if accepted for publication, the data in the manuscript cannot appear elsewhere, in any form or language, without consent. Despite this clear statement, there have been numerous instances over the last few years when reviewers have alerted editors that they have been asked by more than one journal to review the very same manuscript. In a recent case, six manuscripts submitted to *Journal of Neurochemistry* over a period of three weeks were found to contain not only overlapping material, but also data highly similar to papers previously published in other journals. Authorship attribution on this collection of published and unpublished papers was highly suspect, to the extent that some of the email addresses turned out to be fictitious. The efforts that an Editorial Office has to take to ensure research integrity and to uncover fraudulent behavior, e.g. by asking each co-author to confirm their authorship, strains the majority of honest researchers. Notably, while retraction carries a stigma, not all retractions are due to scientific misconduct. To protect scientific integrity and the reputation of honest scientists, retraction notices or corrigenda need to state *explicitly* the reasons and evidence for the action. Since other researchers rely on reported findings, general statements such as “due to an error in the reported data” should be avoided (<http://retractionwatch.com/2013/04/26/a-model-retraction-in-the-journal-of-neurochemistry-for-unexpected-effect-of-a-filter>).

Recycling data and text from one’s own or others’ published manuscripts is not allowed, no matter what language or format the data are presented in. Exceptions are when an author subsequently submits data to an educational establishment as part of a

thesis, or wants to re-use figures as part of a scientific review. If at all in doubt, authors should always request permission from the editor and, as a matter of record, always cite the source in any thesis or review. Identifying cases where previously published text has been re-used has become commonplace with the use of recognition software such as iThenticate®, which *Journal of Neurochemistry* uses to check all submitted manuscripts for similarities to earlier work, and it occurs all too frequently. Repetition of methodological protocols – not considered as plagiarism by many – can be avoided by citing primary sources. As for concepts and interpretation, the English language contains so much redundancy that it encourages originality of expression. This can be challenging for those where English is a second or third language, but copying “standard phrasings” from other publications is not a solution. *Journal of Neurochemistry* advises authors to have such submissions checked by a native speaker instead, or to use one of the numerous editing services available. Attribution of a significant phrase or sentence by the use of quotation marks is acceptable; however, while there is no legal limit on the number of words, this process does break up a text and looks second-rate if used excessively. While it might appear to honor someone by repeating them as closely as possible (Barboza et al., 2013), this contradicts publication ethics unless the original is properly attributed.

Uncovering plagiarism, either in a submitted ms. or in a published paper, results in a penalty. Depending on the severity of the case, in *Journal of Neurochemistry* this can result in a ban on future article submissions for up to 8 years, retraction of the published paper, and a report sent to the authors’ institutions. There is no statute of

limitations. Famously, in 1988, the head of a major US psychiatric hospital was forced to resign over plagiarism in papers published 20 or more years earlier. The US Government's Office of Research Integrity (ORI) records their investigational outcomes in the *Federal Register*. In finding a physician resident guilty of plagiarism in five papers published between 2005-2009, this led to retraction and restrictions on his participation in future research involving federal funds (Grant, 2011).

Image manipulation has become increasingly sophisticated, but it is also more readily identifiable by means of image software. In our own particular scientific field, western blots have become highly questionable currency, as these can be cropped, reversed, duplicated, mislabeled, lightened and darkened. Journals with the highest visibility clearly suffer the most from image manipulation (see www.retractionwatch.com). Journal editors resort increasingly to a request for original data to accompany manuscript submissions and insist that any form of 'improvement' be clearly described. On average, 3-4 such cases arise in *Journal of Neurochemistry* each year. Invariably, the corresponding author's institution is notified, which can result in dismissal, resignation, or non-renewal of a contract.

While image manipulation is quite transparent, data fabrication is much more difficult to detect unless statistical analysis of the distribution of the data points reveals anomalies (Yong et al., 2013). Ultimately, it is a 'failure to repeat' that throws doubt on the veracity of published data. In a clutch of related papers from one laboratory, fictional mouse genotypes generated the data (*Fed. Reg.* 2012-28209). A recent statement of concern in *Anesthesia and Analgesia* reported on an individual at Toho University in

Tokyo who fabricated data in 172 publications, never seeing the 'patients' recorded, failing to get ethical approval, and using colleagues as co-authors without their knowledge. Selective reporting and manipulation of data in pre-clinical (www.apuit.com/apuit60/images/MHRASstatement.pdf) and clinical trials (www.pharmatimes.com) could easily lead to the release of dangerous products and did result in the closure of a research facility. Infamously, altered medical histories of trials' patients in the UK led to a flawed publication questioning the safety of MMR vaccination (Wakefield et al., 1998).

The reasons for plagiarizing text are simple, but what motivates individuals to fabricate data? The answer could be financial (securing a grant award in times of increased competition, or in response to the dubious practice by employers of offering cash bonuses for publishing in high-profile journals), or personal advancement and reputation. Is this only a small minority of individuals? This was addressed in a systematic review by Fanelli (2009); the number is probably somewhere between 2-14%, in that 2% of scientists admitted to have fabricated, falsified or modified data, but reported on 14% of their colleagues for doing the same. A thriving 'authorship for sale' market also seems to be operating (Hvistendahl, 2013). And what happens to those found guilty? It seems that >50% of more senior authors retain careers in science and continue to publish. Younger members of the laboratory are affected more than the senior investigator, publishing an average of only one paper a year after misconduct determinations (Redman and Merz, 2013). However, it is often the senior investigator

who has to take final responsibility when former laboratory members have left the institution and cannot be contacted.

What can journals do to police submissions and pre-empt retraction? Electronic surveillance, eagle-eyed reviewers and editors, and ‘whistle-blowers’ each play a role. It also seems highly likely that editors maintain names on a blacklist. In recent years, journals have become more willing to consider publication of negative findings (Dirnagl and Lauritzen, 2010), to reduce publication bias. Hopefully, this will also remove ‘publication pressure’ on authors to make something more of the data than is warranted.

The consequences of presenting poor data, whether by intent or bad practice, are becoming all too clear. Lack of reproducibility is leading major agencies, such as *National Institutes for Health*, to consider spending some of their dwindling budget on verifying the data that, in many instances, they have already paid for (Wadman, 2013).

While this serves as ‘notice’ for how seriously *Journal of Neurochemistry* takes the issue of scientific misconduct, the point is that manipulating data and text for publication is a self-defeating exercise, as the ensuing post-publication scrutiny guarantees eventual discovery. Simply put, science progresses only through the integrity of all involved, otherwise it becomes merely an (expensive) exercise in futility.

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