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Plagiarism As Another Ethical Issue In Scientific Research

OPINION

Lia Gonçalves Pinho[1],
Marcus Rafael Lobo Bezerra[1],
Pietro Martin Danziato[1],
Raquel Caminha Dantas[1],
João de Deus Quirino Filho[2],
Jesus de Sousa Cartaxo[2],
Maria Fernanda dos Santos[2],
Antonio Gilvan Teixeira Júnior[3],
Jucier Gonçalves Júnior[3],
José Saulo Martins de Oliveira[3],
João Marcos Ferreira de Lima Silva[4],
Francisco Antônio Vieira dos Santos[4],
Cícera Janielly de Matos Cassiano[4],
Patrícia Gonçalves Pinheiro[4],
Modesto Leite Rolim Neto[2,3,4]

1 Department of Biochemistry and Molecular Biology, Federal University of Ceará, UFC, Fortaleza, Ceará, Brazil.
2 Pos-graduation Program in Health Sciences, Faculty of Medicine of ABC.
3 Faculty of Medicine, Federal University of Cariri, UFCA, Barbalha, Ceará, Brazil.
4 Faculty of Medicine, Estácio, FMJ, Juazeiro do Norte, Ceará, Brazil.

Abstract

The excessive demand for publications results in high plagiarism and duplicate numbers by scientists who take over existing texts into new publications. In addition to serious ethical problems, this practice hinders the generation of original material. In order to reduce the problem, softwares such as eTBLAST are being used to detect plagiarism and repeated papers. Despite the persistence of fraudsters, these tools have helped to reduce these problems; however, the ideal solution would be the basic ethical establishment principles. Therefore, plagiarism has always been a foible that could lead to fraudulent and dishonorable development of science.

Keywords
Plagiarism; Ethical; Scientific Research

The intense pressure to publish in order to advance in careers and attract grant money, along with decreasing time available for busy researchers and clinicians, can create a temptation to cut corners and maximize scientific output [1]. In some countries, having a paper accepted in a top journal can mean a cash bonus, with Zhejiang University offering a $30,000 payment to an author who publishes in Science or Nature [2, 3, 4].

In 2012, more than 2 million papers were published [2, 5]. They appear in publications ranging from highly competitive and prestigious journals such as Nature, Science, Lancet and the Proceedings of the National Academy of Sciences of the United States of America (PNAS), down to the predatory publishers listed in scholarlyoa.com who will print pretty much anything for a fee 2].

Duplicate publication, in which an article is reprinted in another venue without any clear indication that it has appeared elsewhere, and text recycling, where blocks of text are re-used by an author, are

the two offenses typically lumped into the category of academic misconduct [6].

Several countries, notably the USA and UK, have research ethics guidelines in place. In the USA, during the early 1980s, surveys showed alarmingly high rates of misconduct in science. A 2008 Nature survey by Sandra Titus of the US Office of Research Integrity (ORI) and her colleagues found a rather high number of such incidents. And this despite the fact that there are two major bodies in the USA responsible for dealing with scientific misconduct: the ORI and the Inspector General of the National Science Foundation (NSF) [7].

According to Ferric Fang from the University of Washington, Seattle, WA, USA, more than 2000 published articles have been retracted since 1977. On Oct 1st, 2012, in the PNAS, Fang and colleagues reported the patterns of, and reasons for, retractions over the past 35 years. Findings show that two thirds of all retractions were the result of fraud, which the authors define as including plagiarism and duplicate publication [8].

In addition, as many as 200,000 of the 17 million articles in the Medline database might be duplicates, either plagiarized or republished by the same author in different journals, according to a commentary published in Nature [9, 10].

The evidence that points to plagiarism is most often the illicit copying of text, so plagiarism has picked up the sense of replication of text in any context, even by its original author. The ethics of recycling text could be considered on a spectrum towards duplicate publication. The anecdotal consensus, according to Samuelson, P. Commun, seems to be that when more than 30% of the text is replicated from earlier publications, the article should be treated as a duplicate [6, 11].

There are legitimate and illegitimate reasons for two scientific articles to share unusual levels of similarity. Some forms of repeated publication are not only ethical, but valuable to the scientific community, such as clinical trial updates, conference proceedings and errata. In general, the duplication of scientific articles has largely been ignored by the gatekeepers of scientific information –the publishers and database curators. Very few journal editors attempt to systematically detect duplicates at the time of submission [12].

Retractions are becoming more frequent as a percentage of the total number of articles published, retractions for suspected fraud have increased ten-fold since 1975. Yet the critical and unresolved question is whether the incidence of research misconduct is actually increasing. Optimistically, increased vigilance by editors, and improved means for detecting plagiarism, may have contributed to more frequent retractions [8].

Mounir Errami and Harold 'Skip' Garner at the The University of Texas Southwestern Medical Center in Dallas, used text matching software to look for duplicate or highly similar abstracts in more than 62,000 randomly selected Medline abstracts published since 1995. They hit on 421 possible duplicates. After manual inspection they estimated that 0.04% of the 62,000 articles might be plagiarized, and 1.35% duplicates with the same author. In addition, the scientists have also made their textmatching software, called eTBLAST, available to researchers and editors [9].

The publishers Springer and IEEE are removing more than 120 papers from their subscription services after a French researcher discovered that the works were computer generated nonsense. Over the past two years, computer scientist Cyril Labbé of Joseph Fourier University in Grenoble, France, has catalogued computer generated papers that made it into more than 30 published conference proceedings between 2008 and 2013. Labbé developed a way to automatically detect manuscripts composed by a piece of software called SCIgen, which randomly combines strings of words to produce fake computer science papers [13].

Some of the factors that inadvertently create the conditions that allow for extreme plagiarism to oc-

cur, besides strong academic and financial incentives for publication include the all-pervasive and accessible nature of the Internet, the establishment of websites devoted to assignment assistance, and an educational culture that has perhaps become too permissive in regard to plagiarism [10]. However, plagiarism would matter less if counting articles was less significant than understanding them [2].

ArXiv, an open access archive of papers [12], does not claim to referee submissions; anyone using it knows that they have to read and evaluate the content for themselves. This, of course, transfers the burden of judgment from a small number of referees to the much larger number of potential readers. In addition, many of those readers may be students, or in a different discipline, and be less able to evaluate a paper [2].

Global standards are considered especially important now that research collaborations are frequently international. Furthermore, the increasing use of technology for data-driven approaches in research raises the question of how best to allocate intellectual property rights–an area where misconduct is increasingly noted [5] On Oct 17th, the global network of science academies (the IAP) and the InterAcademy Council published a policy report on responsible science–Responsible Conduct in the Global Research Enterprise. This report attempts to define "global standards of behaviour that reflect the universal values of research" [8].

The IAP and InterAcademy Council stress that the accountability for ethical research does not fall solely with authors. They declare that all those involved in research should be bound by the principles of scientific integrity. Besides the roles of funders and journal editors, publishers are encouraged to ensure that retracted articles are easily visible and cease to be cited; and peer reviewers are reminded of their responsibility to voice ethical concerns and to declare their own conflicts of interest candidly. Institutes are also considered to have a vital role in raising the standards of research integrity-it is their duty to educate staff in ethical research practices, and to facilitate a supportive and effective environment for whistleblowers [8].

Together, these advances enable not only the methodical discovery of individual incidents, but also a means to study broad trends [13].For experimental studies, the move to requiring data availability will be a step forward. If an author did not actually write the paper under discussion, presumably that author does not have the data behind it. The data can be copied as well, but that offers another chance for automated tools to spot the duplication, and one where paraphrasing is more complicated [2]. Data sharing is now an emerging and urgent issue and trial registration and results reporting on registry databases are making important contributions to research transparency [14].

Extreme plagiarism is clearly unsafe and completely unacceptable, specially in subjects that ultimately could have the potential to cause harm in post-study employment such as food toxicology, medicine or civil engineering15. Following several high-profile cases of research fraud, public trust in scientific and medical research has been challenged and experts hope that a universally adopted code of ethics will restore public confidence [8]. We seem complacent about investigating the very institutions–journals and publishers–on which our livelihoods and careers in academia and journal editing depend [14]. We have the responsibility to find solutions for fraud and misconduct. This is what we owe to the new generation of committed young scientists who should have a chance to develop their careers with true research integrity7.

Nature published a discussion on plagiarism in 2013, and in it, Zhang and McIntosh suggested keeping a blacklist of individuals. They note that this should be a multipublisher effort and that it is unclear who would run it or pay for it [2, 16]. It is suggested one further step: identifying departments and perhaps institutions where the problems are arising. Publishers should suggest that

they will blacklist the entire department (or, if need be, the institution). There are very few individual scientists today, and approaching the institutions might be the best way to affect a change in attitude. Intermediate forms of punishment are possible, such as delaying publication rather than denying it entirely [2].

Therefore, as much as current technology might be a gate-opening circumstance for academic frauds due to obtainment of easy information from other sources, it is also a valuable tool for detecting these misconducts. However, it is an ethical duty of each scientist to compromise to their rights and obligations, honoring their service for the general society through academic accomplishments and not the opposite, aggrandizing their curriculums at the expense of the general welfare and of the scientific development integrity. To this end, it is also crucial to give its worth to this arduous profession, which can often be devalued, and rethink the strategies for publication incentives that may lead to intra-professional predation.

References

1. Editorial. Self-plagiarism: unintentional, harmless, or fraud? The Lancet, 2009, 374(9691): 664.
2. Lesk, M. How many scientific papers are not original? *PNAS* 2015, 112(1): 6-7.
3. Davis, P. Paying for impact: Does the Chinese model make sense? 2011, Available at:scholarlykitchen.sspnet.org/2011/04/07/payingfor-impact-does-the-chinese-model-make-sense/. Accessed November 24, 2014.
4. Shao J, Shen H. The outflow of scientific papers from China: Why is it happening and can it be stemmed? Learn Publ, 2011, 24(2): 95-97.
5. Reich, ES.Science publishing: The golden club. Nature, 2013, 502(7471): 291-293.
6. Francl, M. Attack of the clones. Nature Chemistry. 2014, 6(4): 267
7. Beisiegel, U. Getting to grips with biomedical fraud and misconduct. The Lancet, 2009, 373(9669): 1071-1072.
8. Editorial. Promoting research integrity: a new global effort. The Lancet 2012, 380(9852): 1445.
9. Declan Butler. How many papers are Just duplicates? Nature News. 2008.
10. Mounir Errami1, Zhaohui Sun , Tara C. Long , Angela C. George, Harold R. Garner. Dé jà vu: a database of highly similar citations in the scientific literature Nucleic Acids Research, 2009, 37: D921-D924.
11. Samuelson, P. Self-plagiarism or fair use Communications of the ACM. 1994, 37(8): 21-25.
12. Mounir Errami, Harold Garner. A tale of two citations. *Nature*, 2008, (451): 397-399.
12. Richard Van Noorden. Publishers withdraw more than 120 gibberish papers. Nature News. February 2014.
13. Editorial. Are medical journals getting better-or worse? The Lancet. 2009, 374: 950.
14. O'Connor, Z. Extreme plagiarism: The rise of the e-Idiot? The International Journal of Learning in Higher Education. 2014, 22 (1).
15. Zhang Y, McIntosh I (2012) How to stop plagiarism: Blacklist repeat offenders. *Nature*, 2012, 481(7379): 22.