

# Plagiarism and other Types of Publication Misconduct

## A case for teaching publication ethics in medical schools

\*Lamk Al-Lamki

الانتحال وغيره من إساءات التصرف في النشر العلمي  
قضية تستوجب تدريس أخلاقيات النشر في الكليات الطبية

ملك اللمكي

**T**HE WORLD ASSOCIATION OF MEDICAL Editors (WAME) in its publication, *Ethics Policies for Medical Journals*, defines plagiarism as “the use of others’ published and unpublished ideas or words (or other intellectual property) without attribution or permission, and presenting them as new and original rather than derived from an existing source. This applies whether the ideas or words are taken from abstracts, research grant applications, institutional review board applications, or unpublished or published manuscripts in any publication format (print or electronic)”<sup>1</sup> The Office of Research Integrity (ORI) in the USA considers “plagiarism to include both the theft or misappropriation of intellectual property and the substantial unattributed textual copying of another’s work”. ORI goes on to explain, “The theft or misappropriation of intellectual property includes the unauthorized use of ideas or unique methods obtained by a privileged communication, such as a grant or manuscript review.”<sup>2</sup> Plagiarism is the worst offence of all the various forms of publication misconduct. “In its worst form, it is as bad as any other scientific misconduct”. The recent increase in the amount of plagiarism is partly due to the pressure that university faculty is under to “publish or perish”. This mantra not only drives them to publish, but it also leads to an increased incidence of plagiarism and duplicate publications.<sup>3</sup>

The situation is further compounded by the proliferation of electronic publications which make ‘cut and paste’ an easy option. WAME clearly states that plagiarism is scientific misconduct and should be addressed as such. They go further and define “self-plagiarism” as the practice of authors using portions of their previous writings or other publications without acknowledging the original source. Best practice requires full disclosure of all original sources. Therefore when one picks words, sentences or paragraphs from another’s writings, they must be put in “quotes” and referenced immediately at the end of that sentence.<sup>1</sup>

At the recent 4<sup>th</sup> *Regional Conference on Medical Journals in the Eastern Mediterranean Region*, 5-7th November 2008, in Manama, Kingdom of Bahrain, the editors of medical journals in the EMRO (Eastern Mediterranean Region of WHO) discussed publication misconduct extensively.<sup>4</sup> Plagiarism, as well as other forms of publication misconduct, were discussed in the lectures as well as the workshops by speakers from various parts of the world, including the United Kingdom, Croatia, Spain, Austria, Iran and Pakistan. The consensus emerged that plagiarism and duplicate publication are the least acknowledged form of academic misconduct though they pervade many aspects of academic publication.

Many attempts have been made to get to grips with this form of academic misconduct. In a project funded by the National Institutes of Health, Mounir Errami and Harold Garner used the Déjà Vu website,<sup>5</sup> a database that aims to expose duplicate publication by finding passages that are 'extremely similar to Medline citations'. The outcome of this quest was the staggering fact that there are an alarming number of duplicate papers.<sup>6</sup> They reviewed 7 million biomedical abstracts and, with apologies to Charles Dickens, they published "A Tale of two Citations". They point out, "it is the best of times, it is the worst of times" in the world of biomedical publications. The scholarly publication rate is at an all time high. However, there is also a high incidence of scientific misconduct, hence, this raises the question of "how much can we trust these publications". These authors have unearthed duplicate publications from various quarters of the world. Because of the sheer number of publications, the United States, Japan, Germany, China, UK and several Western countries, 'outshine' developing countries in the league of misconduct. The USA was found to have the highest number of suspected duplicates, followed by Japan, but these two countries also had the highest relative contribution to Medline of all countries.

How should we deal with plagiarism? There is no magic bullet against such misconduct. The rule of thumb is that editors should carry the responsibility of trying to detect misconduct and then report it to the culprit's institution and to the authority who funded the author's research. Editors have a responsibility to the producers and publishers of good medical research, to the medical community, and to the public. They have to ensure that the manuscripts that are published are in accordance with the *Uniform Requirements for Manuscripts submitted to Bio-Medical Journals* published by the International Committee of Medical Journal Editors (ICMJE) and updated in 2008.<sup>7</sup> These ICMJE Requirements are further supported by WAME in their publication on ethics policies.<sup>1</sup> Currently, some journals routinely run software that can detect plagiarism or duplication of part or whole of a manuscript.<sup>8</sup> The famous case of repeated plagiarism by an eminent Croatian, clinician and academic, Asim Kurjak<sup>9</sup> has raised a lot of questions about how we deal with plagiarism and the responsibilities of both the editor and the institution.

The ICMJE meets every year and updates their protocols periodically also updating the definition of

plagiarism or other publication misconduct.<sup>7</sup> In fact, there are several types of publication misconduct including "redundant or duplicate publications" which indicates publication of a paper that substantially overlaps with one already published.<sup>1</sup> Other publication misconduct includes "ghost authorship" whereby a name of an author appears on the manuscript but he/she did not actually write the manuscript or contribute to it - typically this is from a drug company; and then there is "photograph manipulation".<sup>10</sup> Another form of scientific malpractice is "data forging" that is inventing data, for example by reporting results of experiments that were never conducted. "Data cooking" entails discarding data that do not support a study's hypothesis so that the study produces 'better' results. "Data trimming" consists of changing data values so that they better fit the predictions made by the research hypothesis. Most disheartening is the phenomenon known as "data torturing" which is the improper exploitation of statistical tests, repeatedly analysing the same data in different ways until something - anything - emerges as statistically significant.

Upon discovering misconduct, editors have a responsibility to avoid publishing such manuscripts. However, they need the help of institutions and funding agencies that support research, in order to halt the apparent rise in this phenomenon. More importantly the authors have to be educated as to what constitutes plagiarism and also about publication ethics in general. This education has to be instilled during the early phase of the career, perhaps earlier than in medical school. Medical schools must ensure that all graduating doctors are well versed in the basics of publication ethics and fully aware of what constitutes academic misconduct. It is quite common for medical students to prepare a project using extensive "cut and paste" without acknowledging the original source and therefore inadvertently misleading the reader as to the source of the text. Thus this has been equated to "stealing and then lying about it". We should also note that plagiarism includes paraphrasing without crediting the source.<sup>11</sup> Skandalakis and Mirilas discussed the motivations for plagiarism and give two striking historical examples of plagiarism.<sup>11</sup> As early as 1991, Dr. Berk, Editor-in-Chief of American Journal of Roentgenology (AJR), asked, "Is Plagiarism ever insignificant?"<sup>12</sup> He pointed out that "Plagiarism is plagiarism, just like theft is theft". However, in a practical sense, the guilt can be mitigated by several factors, intentional or not,

and there are degrees of guilt associated with plagiarism. Dr. Berk concluded that plagiarism is a breach of professional ethics that must be exposed and unreservedly deplored.<sup>12</sup>

In a New England Journal Article,<sup>10</sup> Dr. Laine et al. discuss the registration of clinical trials at the “clinicaltrials.gov” as a means of preventing or reducing publication misconduct. In this part of the world, more appropriate to us is the registration of clinical trials with the World Health Organization’s (WHO) *International Clinical Trial Registry Platform* (ICTRP). This is particularly important as some authors or some investigators try not to publish negative results of their clinical trials - another breach of publication ethics. Registration of a clinical trial before starting it reduces the incidence of publication bias and its illegal counterpart, scientific misconduct. Scientific and publication misconduct includes any form of bias, whether statistical bias, institutional bias, or other. According to Rizk, “Members of the medical profession and the public hence generally agree that there ought to be “zero tolerance” towards academic dishonesty, particularly publication misconduct”.<sup>13</sup> He added that “Medicine is a profession based on trust, integrity, philanthropy and altruism”,<sup>13</sup> and therefore, the profession should maintain expected good practice. The public is becoming more acutely aware of the details of scientific inquiry and often quote the “internet and medical literature”; hence, extra vigilance is essential. This is consonant with the teaching of the father of modern medicine, Claudius Galen (A.D.193-210), that “The true doctor will be found to be a friend of temperance and a companion of truth.”

Dealing with publication misconduct and scientific misconduct is a major dilemma to editors. Help may be found in certain organisations such as the Office of Research Integrity (ORI) part of Public Health Service in the USA, and the Committee on Publication Ethics (COPE) in the UK. These organisations define terms such as plagiarism and scientific misconduct and set guidelines for editors and institutes. The editor can be faced with the dilemma of plagiarism at two different stages and these need different approaches. They may detect plagiarism prior to publication, or after publication of the article. In the first case, the detection is usually a result of the efforts of the editorial team themselves or of reviewers, and the second often arises from a complaint by the victimised author or some other reader of the article. Either way, editors

are obliged to act. How exactly ‘to act’ in each of these cases is not yet well defined nor are specific guidelines yet provided by the medical community or by the professional organizations of medical editors. It is generally accepted, however, that the editor has to inform the guilty author as well as the institution with whom the author is affiliated and also, any funding agency that maybe involved in the research that was conducted. If the article is already published, the editor has to publish a retraction of the article as well as inform all the parties involved mentioned above as well as the editor of the journal where the victimised author originally published his or her work. Further steps are not clearly defined although it is generally recommended that it is not the responsibility of the editors to go into detailed investigation of the case other than establishing that it is a case of plagiarism.

Several journals have spelled out the steps that they take to address plagiarism<sup>8,14-19</sup>. In the BMJ article, Fiona Godlee also discusses the role of COPE. COPE has devised a series of flowcharts that outline what journals should do, but they repeat at the end, “we have to rely on the academic institutions to take the actions”. Unfortunately, there is little evidence to suggest that institutions have mandated policies for dealing with academic misconduct. Many medical journals have taken it upon themselves to carry out a sentence in case of proven guilt. Some journals have elected to bar the guilty author from further publication in their journal for varying periods. The Saudi Medical Journal has elected not to accept future submissions from that author for two years, as well as to send a notification to the head of the author’s institution and a warning to the author with prompt rejection of the submitted manuscript if discovered prior to publication.<sup>17</sup> The Annals of Saudi Medicine has elected to ‘blacklist’ guilty authors for 5 years.<sup>18</sup>

The problem of plagiarism and other forms of publication misconduct will not go away by punishment of the guilty. It needs education of authors. This education has to start as early as high school or perhaps even earlier. When students prepare a project, they should learn how to quote any cut-and-paste. They have to understand that just showing the references that were used, in the bibliography section, is not adequate to exonerate the authors. The reference has to be immediately at the end of the quoted sentence or paragraph. Certainly, in medicine, we need to teach this in medical school. The medical ethics course should be expanded

to include publication ethics. Most medical schools have now started this by adding a short course of medical ethics even though, in some cases, it comprises only a very short series of lectures. Nevertheless, any such course in medical school should include teaching on publication ethics and what constitutes scientific and research misconduct. Medical undergraduate and postgraduate educators must be very vigilant in instilling in young medical minds the importance of exemplary publication ethics and scientific and research conduct. Arab/Islamic history probably presented the precursor of modern concerns about plagiarism. For instance, the *hadith* has been credited with requiring proper acknowledgement of the original source. One of the earliest accusations of plagiarism was in the 11<sup>th</sup> century when Al-Jahiz was accused of and prosecuted for allegedly plagiarising the Greek philosopher, Aristotle, in writing *Kitāb al-Hayawān*.<sup>20,21</sup> Although the accusation was later recanted,<sup>22</sup> it highlights the historical pervasiveness of this phenomenon. The solution to the current critical state of this problem will require a concerted effort from editors, institutions and, most importantly, educators at medical schools, in postgraduate medical teaching and, indeed, at all levels of education.

## REFERENCES

1. WAME Publication Ethics Policies for Medical Journals. From <http://www.wame.org/resources/ethics-resources/publication-ethics-policies-for-medical-journals/> Accessed February 2009.
2. Office of Research Integrity. Plagiarism. From <http://ori.hhs.gov/policies/plagiarism.shtml> Accessed February 2009.
3. Sarr MG, Warshaw AL. Ethical misconduct in publishing: The editors' perspective. *World J Surg* 2006; 30:1374-6. DOI: 10.1007/s00268-005-0646-0
4. The 4th Regional Conference on Medical Journals in the Eastern Mediterranean Region, Manama, Bahrain, 5-7 November 2008.
5. Déjà vu: a database of highly similar and duplicate citations <http://spore.swmed.edu/dejavu>
6. Errami M., Garner H. A Tale of two citations. *Nature* 2008; 451:397-9, Published online 24 January 2008 at <http://www.nature.com/nature/journal/v451/n7177/edsumm/e080124-02.html> DOI: 10.1038/451397a
7. International Committee of Medical Journal Editors. Uniform requirements for manuscripts submitted to biomedical journals: writing and editing for biomedical publication (updated October 2008). From <http://www.ICMJE.org>. Accessed February 2009.
8. Godlee F. Editor's choice plagiarism and punishment. *BMJ* 2007; 335:1014. From <http://www.bmj.com/cgi/content/full/335/7627/maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&fulltext=plagiarism&searchid=1&FIRSTINDEX=0&resourcetype=HWCIT> Accessed February 2009.
9. Chalmers I. Role of systematic reviews in detecting plagiarism: Case of Asim Kurjak. *BMJ* 2006; 333:594-6. Published online: <http://www.bmj.com/cgi/content/full/333/7568/594?maxtoshow> Accessed February 2009.
10. Laine C, Horton R, DeAngelis CD. Clinical trials registration - Looking back and moving ahead. *NEJM* 2007; 356:2734-6.
11. Skandalakis J, Mirilas P. Plagiarism. *Arch Surg* 2004; 139:1022-4.
12. Berk R. Is plagiarism ever insignificant? *Am J Roentgenol (AJR)* 1991; 157:614.
13. Rizk DEE. Publication ethics: science at its best and always informative. *Int Urogynecol J* 2007; 18:715-7. Published online: [www.springerlink.com/index/M13754212402448R.pdf](http://www.springerlink.com/index/M13754212402448R.pdf), DOI 10.1007/s00192-007-0363-3 Accessed February 2009.
14. Sriganesh V, Parvati I. Plagiarism and medical writing. *Ind J Radiol & Imaging* 2007; 17:146-7.
15. Katavic V. Five-year report of Croatian Medical Journal's Research Integrity Editor - Policy, policing, or policing policy. *Croat Med J* April 2006; 47:222-7.
16. Peh WCG, Arokiasamy J. Plagiarism: a joint statement from the Singapore Medical Journal and the Medical Journal of Malaysia - Editorial. *Singapore Med J* 2008; 49:965-6.
17. Al-Deeb SM, Alokaily F. Saudi Medical Journal and the burden of ethic misconduct (Editorial). *Saudi Med J* 2008; 28:5-6.
18. Cathey JT, Al-Jurt M. Duplicate and fragmented publication: the policy of the Annals of Saudi Medicine. *Ann Saudi Med* 2007; 27:1.
19. Handa S. Plagiarism and publication ethics: Dos and don'ts. *Indian J Derm, Venrol & Leprol (IJDVL)* 2008; 74:301-3
20. Syed Aslam. Muslim Scientists and Thinkers - Al-Jahiz Abu Uthman ibn Bahar. From <http://muslimmedianetwork.com/mmn/?p=2356> Accessed February 2009.
21. Wikipedia. Al-Jahiz, Muslim Scholar Medieval era. From <http://en.wikipedia.org/wiki/Al-Jahiz> Accessed February 2009.
22. Wikipedia. List of plagiarism controversies. From [en.wikipedia.org/wiki/List\\_of\\_plagiarism\\_controversies](http://en.wikipedia.org/wiki/List_of_plagiarism_controversies) Accessed February 2009.