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Perils of plagiarism.... Handle with care!

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ABSTRACT

Plagiarism is a serious issue in the world of academia and beyond. This is basically reusing someone else works as your own without proper attribution. Plagiarism is not only unethical, but it can also have serious consequences in the academic and professional world. It can lead to lost job opportunities, legal action, and damage to one's reputation. There are many resources available to help you understand how to cite sources and avoid plagiarism. This short communication is intended as an awareness for medical community, in particular the readers of PJNMed.

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One of the authors (DS) has suffered from plagiarism, at least twice. In the first case, a project proposal to an international agency was copied almost entirely; the proposal went through and was awarded to the plagiarizer. DS suffered both professionally as well as financially. He had little recourse because he found out about it when the project had already been completed. A government department was involved and the plagiarizer was very well connected. More recently, at a national conference, author DS was aghast to see his PowerPoint® lecture being presented by someone else without any form of acknowledgment. Only the presenter's name was changed. It was frustrating and disheartening. He (DS) did get a weak apology from this person when he confronted him and protested but he still cannot bring himself to forgive the plagiarizer.

In today's world what can one say that has not been said earlier, what can one write without building upon what has been written previously. It is almost impossible to do serious research or writing without relying on prior knowledge. But one cannot write what has been written earlier without attributing to, or citing the source. Not citing, citing badly, or citing inadequately opens one to the risk of an allegation of plagiarism. Plagiarism means stealing ideas and words and trying to pass them off as one's own!

Plagiarism is defined by the World Association of Medical Editors as "...the use of others' published and unpublished ideas or words (or other intellectual property)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. The intent and effect of plagiarism are to mislead the reader as to the contributions of the plagiarizer. 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) [1]".

When searching PubMed for plagiarism, over 2,000 articles are found. A steep rise is seen in the annual numbers since the year 2000. The first use of the word plagiarism appears, in PubMed, in a publication from 1850 in the form of a very irate letter in the London Journal of Medicine. This cites two examples, one a French publication where the division of the abductor muscles of the palate is claimed to be a new operation by a French doctor, when it had in fact been already described in 1845 by a British physician. In another case, a new treatment for tropical fever was in fact largely copied and translated into German. Although the original contributor, another Englishman, had been cited, it was as an "occasional contributor" [2]. The hostility of the letter might have something to do with national pride, the fact that in both cases, the plagiarist was non-English, plagiarizing from the English.

Plagiarism has consequences some of which can be academically, professionally, legally and even financially quite unpleasant. Authors must understand what

constitutes plagiarism and the steps that need to be taken to avoid being accused of it.

There are many shades of plagiarism. The most blatant is the outright substitution of one's own name for another's work; then there are very subtle tactics representing a deep understanding of the tools used by editors to detect plagiarism and the methods to defeat these tools.

Of the many other kinds of plagiarism, in the order of increasing deceit and insidiousness, some are:

Verbatim plagiarism. In today's world of word processing software, it is tempting to simply copy-paste part or whole of someone else's work into one's own [3]. When present, this form is commonly seen in the *introduction* and *discussion* portion of the manuscript [4].

Paraphrase plagiarism means rehashing, using similar words or synonyms to say something that has already been published [5]. It is a more sophisticated method of cheating and can be difficult to pinpoint. There is also a difference of opinion between editors as to how many consecutive words must there be to be labeled plagiarized [6]. Some authors believe that paraphrasing when all of the words and format are changed might not be considered plagiarism [7], but the opinion is not universally shared.

In paraphrasing, approximately the same number of words is used as in the original text. Text can also be **summarized** when the number of words is reduced but still convey the same idea [6].

Idea plagiarism. Copying ideas without giving credit [8].

Mosaic plagiarism means copying from one or more sources but also inserting own words to create a creative mixture of copied and original text [9].

Trojan horse plagiarism is a very devious method and in this, the original article is cited on a minor point but major portions of the work are copied or paraphrased without giving credit [10]. The example of the German paper from 1850, quoted at the beginning of the article is a form of Trojan horse plagiarism

Error 404. This means the referred source is either not present, or has been misquoted to become unavailable [5]. This term has been borrowed from the internet when clicking on a broken link leads to the message "error 404, page not found". It might be a deliberate attempt at creating a nonexistent reference to lend greater but false credibility to one's work, or be simply the result of an honest mistake, a typographical error making the reference unsearchable (unintentional plagiarism, see below).

Unintentional or accidental plagiarism. The intent to deceive and lie ought to underlie all allegations of plagiarism but even when the author has no intention of cheating, plagiarism can exist. This is called unintentional plagiarism.

This type of plagiarism might result from a misunderstanding of the rules of the game, a lack of adequate English writing skills, honest mistakes, or simply

intellectual laziness where the authors don't want to trace the exact resource that they ought to. Of the many types of unintentional plagiarism, the common ones are:

Secondary or source plagiarism. This refers to a citation pointing to a reference that has in itself cited to the index source [11]. It might create errors because one is relying on the interpretation of the paper being cited which might be different from the index paper.

Self-plagiarism or duplicate publication. These refer to the reuse of one's own previously published material [2]. It is more of an ethical than legal issue because many journals acknowledge that the authors retain ownership of their text, figures, and data and can reuse these in subsequent publication. But many journals also insist that copyrights be transferred to these journals. So subsequent permissions to copy images, data, etc., have to be obtained from journals. It is a gray area in the discussion of plagiarism, and in some instances, subsequent publications have been withdrawn and the author reported to his or her institutional authorities [12]. This leads to embarrassment and might even have professional consequences like facing ban from publication in the same journal, an announcement that plagiarism has been committed by the author, etc. The degree of overlap between the two publications that constitutes self-plagiarism varies from journal to journal but perhaps 20%-30% is the threshold that should never be crossed [12].

Salami plagiarism. Another form of self-plagiarism is the splitting-up of one's own work for publication, with different aspects of the same work submitted to different journals.

Several combinations and permutations of salami and duplicate publications are possible and have been outlined in detail by Von Elm et al. [13]; these include using the same data, adding to data, reducing data, getting different results from any of these maneuvers, getting the same results from these data, and duplication without citing the original article, etc.

Figures, Public Domain, and Creative Commons Licenses

Reusing figures seem to be interpreted on more exacting standards. Figures can be reused ONLY if specific permission is obtained by the copyright holder; it could be the author, artist, or publisher. The phrase "reproduced by permission" or "used by permission" has to be written below the figure, an adequate citation should be given below the figure to enable the reader to find the original figure AND the appropriate citation must appear with the other references too. The endocrine society has a useful one-page instruction that explains how figures and tables should be used, what modification and adaptation mean, and how to deal with the permissions and citations in each case. This document can be found at the endocrine society website (<https://www.endocrine.org>).

Modifying and redrawing are sometimes used with the impression that copyright infringement has somehow been avoided. Editors and more rarely, courts, will examine such cases on the basis of **access** (if the user could see the original figure in question) and **substantial similarity**. If the two figures are recognizably similar these will be considered plagiarism. The best way is to simply ask for permission. In most cases it is only a matter of making a request and explaining where the figure will be used. If permission is denied, it is best to not use the figure. Copyright will not apply on commonplace generic figures that cannot be traced back to particular sources. These issues become more difficult if the reuse is for commercial purposes.

There is a very large body of figures that are in the **public domain**, these are entirely free of any copyright obligations and can be used without permission but should still be cited if a source is known. There are a few situations where the owner has residual rights and it is always a good idea to check. Related content is that licensed by the company **Creative Commons**. These licenses usually allow reuse with attribution, there are several types of Creative Commons licenses and the user should read the licensing information on each image before deciding to incorporate it into his work. Citation is necessary for figures that are under the Creative Commons license.

Similarity index; a tool widely used to detect plagiarism is to look for similarity, which simply means looking for strings of words that have appeared elsewhere. Many such resources are available online. "Turnitin" (turnitin.com) and "iThenticate" (iThenticate.com), both made by the same company incidentally, are popular paid tools but many free or pay-per-page tools are also available. A small list of popular online tools is given by Ahmed and Anirvan in their editorial [5]. These software have access to an extensive database of published material, dissertations, theses and internet resources and automatically check submitted material against billions of documents and pages. iThenticate, the most expensive tool, can also access material behind paywalls for article repositories like ScienceDirect. Definitions, chemical formulae, names of organizations, etc. are by their very nature exactly duplicated, but every time one mentions this, it is flagged.

Using plagiarism detection tools is important because it is not humanly possible to compare every submitted article against previously published work on the subject but these tools should not be expected to give the final verdict. "The software cannot decide if matching texts represent intentional plagiarism, an honest mistake, or the availability of the same text from two or more different sources for legitimate reasons" [14]. A human is needed to ascertain, analyze, and interpret what has been highlighted.

Cross [15] has elegantly described the current generation of software that does more than just check for the

same string of words appearing in a previous work in the database.

Labeling a piece plagiarized only on the basis of similarity is fraught with complications, for example, a lot of knowledge (established anatomical relations for example) is "common knowledge" and the index publication is not always available to quote from. There are a few proponents of leniency in such cases [16] and are willing to forgive minor transgressions [17]. Many, however, propose a very narrow and rigid definition of plagiarism and insist that all instances of "specific knowledge" be referenced [18].

What to Expect If You Plagiarize

During the last 6 months, one of the authors has received two complaints about plagiarism. In the first case the PowerPoint(r) presentation contained figures and formulae from another source without referring, in the second case there was substantial copy-paste involved in a publication from an article originally published almost a decade back.

Both the publications were withdrawn, letters of apology issued, and supervisors informed. In one case, the author had to face an inquiry. This incidence was shared with many of the author's associates. One can only imagine the shame and stress the author must have felt. It can go further and the scientist can be penalized by losing his or her research funding, damaging his or her professional reputation, and even losing his or her job. Most cases of plagiarism are in the ethical rather than legal domain. It is, however, possible to be taken to court for plagiarism and have to suffer monetarily by paying damages [19]. If copyright infringement is involved and proven, the outcome can be quite catastrophic involving prison terms and huge fines, up to 300,000 Euros in France [20].

Ignorance of rules is often used as a defense, but it is never accepted. Not knowing enough English or having the requisite writing skills to convey with accuracy the ideas and concepts of the author is another common defense. The editors and supervisors usually have very little patience for this defense, and will certainly not in any way mitigate the consequences. While two researchers will sometimes have the same idea, also in temporal proximity, it is unlikely that the two ideas will result in identical or highly similar text; so "wise men think alike" is also unlikely to go down well with editors. "Great men may think alike! But they don't write alike" [21]. Of course, science is full of simultaneous or near simultaneous, but completely independent, discoveries and some of the greatest names have jostled and fought for being called first in the race to a discovery [22].

Avoid Plagiarism

External resources have to be quoted when writing a paper. If the purpose is to use this honestly and to provide context to the current work, this use is permissible provided:

If quoting verbatim (copy-pasting), put the copied material within inverted commas **followed** by the reference in the style of the journal (like in this article). The same applies to paraphrasing. Although the use of quotes (double inverted commas) is not very commonly used by medical authors it remains the strongest defense against an allegation of copying.

The amount of material thus used should not be substantial and should in any case be less than 20%-30%.

If alluding to an idea or fact and paraphrasing or summarizing, quotation marks might or might not be used but a citation is necessary.

What a good thing Adam had. When he said a good thing, he knew nobody had said it before.

Mark Twain

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