

A NEW SIDE OF AN OLD PROBLEM: SELF-PLAGIARISM IN SCIENTIFIC PUBLICATIONS

Nova face de um velho problema: o autoplágio no cenário da produção científica

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ABSTRACT

This article is part of a special series that was designed to assist authors in the process of scientific writing and communication. Among the various forms of ethical misconduct in scientific publishing, plagiarism is increasingly common. Plagiarism is defined as the presentation of a work containing parts authored by another person without due credit. One type of plagiarism that has gained prominence in recent years is self-plagiarism, in which authors themselves reuse their previous work without proper referencing. However, active discussion remains in the scientific community about this type of plagiarism, with the term being extended to some specific forms of misconduct in scientific publication. This practice leads to inauthentic work and ultimately undermines the integrity of science. The purpose of this article is to address in depth the definition of self-plagiarism, the underlying motives for this practice and its consequences for the scientific community. To do so, a non-systematic review of the literature was conducted. Guidance is provided on the major types of self-plagiarism, what can be done to avoid it and how to proceed when it is detected. **KEYWORDS:** plagiarism; ethics, research; scientific misconduct.

RESUMO

Este artigo é parte de uma série especial que foi desenvolvida para auxiliar autores no processo da redação científica e comunicação. No cenário da produção científica, dentre as várias infrações éticas, está cada vez mais comum a ocorrência do plágio. Define-se plágio como a apresentação de uma obra contendo partes que pertençam a outra pessoa, sem o devido crédito. Um tipo de plágio que tem ganhado destaque nos últimos anos é o autoplágio, no qual o próprio autor reutiliza seus trabalhos anteriores sem a devida referência. Entretanto, há discussões na comunidade científica sobre esse tipo de plágio, estendendo o termo a algumas má-condutas específicas em publicações científicas. Isso acaba gerando artigos inautênticos e prejudicando a integridade da ciência. O presente artigo tem por objetivo abordar de forma mais detalhada o que é autoplágio, seus motivos e consequências para a comunidade científica. Para tanto, realizou-se uma pesquisa não sistemática da literatura, a fim de também apresentar os principais tipos de autoplágio, o que pode ser feito para evitá-lo e como proceder quando o mesmo é detectado. **PALAVRAS-CHAVE:** plágio; ética em pesquisa; má conduta científica.

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INTRODUCTION AND BACKGROUND

The scientific community has always been the seat of various controversies, *e.g.*, regarding the ethical conduct of investigators. Forms of ethical misconduct in science include fabrication and/or falsification of data, unethical behavior, conflicts of interest between researchers and funding providers or sponsors, and plagiarism.¹ Plagiarism can be defined as the practice of copying a text authored by another, in whole or in part, without proper reference to the original source and authorship.² One subtype of plagiarism that is becoming increasingly notorious in the scientific community is self-plagiarism, also known as text recycling: the reuse of content previously published by the author in a new manuscript without proper reference to the prior work.^{2,3}

Currently, the scope of the concept of self-plagiarism is being debated in academia — specifically, whether it should be applied solely to cases of text recycling. Some authors propose that, instead, self-plagiarism encompasses a spectrum of academic misconduct that would include text recycling, text duplication, “salami slicing,” and updated publication.^{4,5} This spectrum will be discussed in more detail below. Such misconduct also involves the legal implication of copyright violations. Some cases are more serious than others. An article that cites passages similar to those of a paper previously published by the same author, without proper citation, is not as problematic as, say, submitting as new a manuscript that had been published years before in another journal. Nevertheless, those who engage in such practices deceive editors and readers alike by leading them to believe that the text presented is original; furthermore, fragmenting the results of a single study across several publications, often in different journals, can greatly hinder understanding of the subject.^{5,6}

The current scientific output system, in which the maxim “publish or perish” prevails and quantity is practically synonymous with quality, is one of the purported justifications for the practice of self-plagiarism.³ In academia, the scientific merit of researchers and graduate students is usually measured by their number of published articles. Consequently, research projects are increasingly subdivided into small parts with the sole purpose of increasing the number of publications, probably decreasing the quality of the information, which would be better understood if presented as a whole.⁷

Self-plagiarism has come to the attention of the wider scientific community and has been the subject of editorials,⁷⁻⁹ letters,^{4,10} commentary,¹¹ opinion articles,¹² original articles,^{3,13} and reviews.¹⁴ It was one of the driving topics behind the creation of the *Retraction Watch* website ([https://](https://retractionwatch.com/)

retractionwatch.com/), which exposes and criticizes cases of research misconduct, including (self-)plagiarism.⁸ There are approximately 200,000 duplicate publications in databases such as MEDLINE,¹⁵ and this number is likely to continue to grow. Many periodicals and publishing houses, such as BioMed Central (BMC), have clear policies on text recycling and duplicate publication.¹⁶ Seeking better consensus on the topic, the Committee on Publication Ethics (COPE) has created specific guidelines for these practices.¹⁷⁻¹⁹ Although several tools for detecting plagiarism and guidelines on how editors and authors should address this issue are now available, self-plagiarism still constitutes a major ethical and legal dilemma in scientific research.^{12,20}

This brief review will discuss the main types of self-plagiarism, their reasons and consequences for scientific publication, and some alternatives and ways of avoiding this practice.

THE “SPECTRUM” OF SELF-PLAGIARISM

The scope of self-plagiarism includes a series of concepts and definitions. It is essential that these be examined if the construct as a whole is to be understood. These concepts include:

- Text recycling: this is usually the practice that first comes to mind when referring to “self-plagiarism”. As the name implies, text recycling occurs when authors reuse short or long passages from manuscripts they have published in the past without proper reference to the previous work.³ This practice is easily detected by plagiarism detection tools, and is the easiest form of self-plagiarism to avoid. In 2012, Jonah Lehrer, a science journalist trained in neuroscience, was accused of the practice when parts of his bestselling book *Imagine: How Creativity Works* were found to have been previously published on various digital platforms without source attribution.²¹ That same year, Joe Coscarelli, writing for *New York* magazine, reported that Lehrer had been reusing his own work across major media outlets such as *Wired*, *The New York Times Magazine*, *The Wall Street Journal*, and even in blog posts for *The New Yorker*, where he was employed as a staff writer. The *New Yorker* later appended notes stating “We regret the duplication of material” to all work published by Lehrer since he began writing for the magazine;^{22,23}
- Duplicate publication: In this form of self-plagiarism, the information contained in a manuscript (which has yet to be submitted or published) overlaps

considerably with the content of an article by the author that has already been published elsewhere.²⁴ The criteria used to assert duplicity include having the Methods, Results, and hypothesis similar to those of the comparator article; a similar or identical sample size in both publications; both articles having at least one author in common; and containing little or no additional information that would warrant publication.^{25,26} A particular scenario that falls into this category of self-plagiarism is when the authors of an already published article simply translate their work into another language and submit it to a different journal, with no citation or mention of the original text.²⁷ One documented example was the case of Professor Gordana Panova, who wrote and published her original articles in Macedonian and later submitted translated English versions for publication in conference books, without proper review or citation. Dr. Panova has had four retractions to date;²⁸

- **Segmented publication:** Best known as “salami slicing”, this form of self-plagiarism can be harder to detect since it does not involve actual textual plagiarism or text recycling, only duplication of the collected data and results. These cases easily sidestep software verification.²⁹ In order to boost their publication numbers, authors divide their research into smaller fragments and submit them to different journals, as if they were the results of independent studies.^{30,31} It is important to note that, in cases of very long-term longitudinal studies, e.g., the 1948-2014 Framingham Heart Study and the Harvard Nurses’ Health Study, which has been ongoing since 1976,³² publication of findings across several articles is perfectly acceptable, given the immense volume of data produced by such research. To ascertain whether a set of articles corresponds to “salami slicing,” editors analyze if they share the same research question and methodology, the same source population, the same sample, the same control group, and overlapping data and/or results, without a reasonable explanation of the macro context and conditions under which the research was conducted.³²⁻³⁴ In an extreme example of this form of self-plagiarism, in 2017, the *Archives of Iranian Medicine* published the same study 33 times. The study was a descriptive, cross-sectional epidemiological survey on the mental health of the Iranian population as of the year 2015. In March 2017, a manuscript compiling all of the data and findings was published. In November of the same year, 31 articles were published on the same day, all

referring to the same data, the same population, and the same period of analysis. Notably, Iran is divided into 31 provinces. The authors, who were the same across all 31 articles, “sliced” information from the already published article to create 31 “different” papers, describing each of these provinces. Publication is suspected to have been facilitated by ties between some authors and the journal in which the articles were published, supported by the fact that the editor-in-chief of the journal is listed in all articles as having provided “comprehensive support” for the project;³⁵

- **Updated publication:** this form of self-plagiarism occurs when a group of authors submits a report identical to a previously published one, but adds another endpoint or more patients, increases the follow-up period, or even changes the period of analysis in an attempt to pass it off as new research.²⁰ One notable example of updated publication in scholarly work occurred in 2012, when Brazilian philosopher Gabriel Chalita, who was running for Congress at the time, was accused of reusing 75% of his first thesis, submitted in 1994 for a degree in Social Sciences, to complete a second Master of Laws degree in 1997. The only noticeable changes between the two theses were the number of references and two additional chapters; the rest, including the conclusion, was identical. Neither degree was revoked, and the university which awarded them claimed ignorance of the issue.³⁶⁻³⁸

REASONS FOR SELF-PLAGIARISM AND CONSEQUENCES FOR SCIENTIFIC PUBLICATION

Self-plagiarism is generally motivated by one of two major reasons: greed or unintentional error on the author’s part. Authors who engage in this practice intentionally are generally driven by the institutional reward model in which quantity is deemed more important than quality. Self-plagiarism would thus be justified by the prestige and recognition gained by increasing the number of publications attributed to the author, as well as to secure patents, research grants, or funding. In short — “publish or perish” in practice. Unintentional error often affects authors new to scientific publication, who are unaware of the concept of self-plagiarism and its negative consequences; this includes cases in which the author(s) fail to properly cite previous work in a submitted or published article (text recycling) or ignorance or misinterpretation of the guidelines of the journal to which the manuscript is submitted.³⁹ Furthermore, some journals lack clear guidelines and

policies regarding self-plagiarism, and there is still no consensus on the definitions of these dubious practices. This lack of coverage in journal instructions can be considered a source of engagement in self-plagiarism practices.³

The consequences of self-plagiarism are the same, regardless of whether it is intentional or unintentional, and are listed below:^{13,39-42}

- reviewers, editors, and readers have their precious time wasted, as well as being deceived into believing the work submitted is original;
- duplicate publication unnecessarily adds already existing information to the extensive scientific literature on a topic;
- production resources and journal space, which could be devoted to actually original and relevant papers, are wasted;
- the results of meta-analyses are compromised, as duplicate results may lead to overestimation of treatment efficacy, thus biasing the clinical evidence generated by this type of study;
- copyright laws are infringed, which may lead to lengthy and costly legal proceedings;
- the academic and scientific careers of the authors involved may be irreparably damaged;
- the overall quality of the journal declines, as self-plagiarism will usually lead to retractions, and its impact factor is harmed as the possibility of the journal receiving new, high-quality submissions decreases.

HOW TO AVOID SELF-PLAGIARISM

Several measures can be taken by authors, editors, and reviewers to prevent self-plagiarism. Authors must be aware that, if a manuscript contains paraphrased text published in a previous work — for example, to provide context in the introduction or background — the primary source must be cited. Journals should make their policies on self-plagiarism and copyright abundantly clear in their Instructions for Authors. Likewise, authors should familiarize themselves with these policies and, if they have any doubts, contact the editorial team for clarification. Editorials and opinion articles seeking to raise awareness about this issue should also be published in journals.^{5,8,39}

A wide range of plagiarism-detection software and websites — most paid, some free — is also available. These are not only meant for editors and proofreaders; authors should use them as well, whether new to scholarly publishing (and thus subject to inadvertent self-plagiarism) or more experienced, with several published works. Some of these software products and websites are listed in Table 1.²⁰

HOW TO PROCEED WHEN SELF-PLAGIARISM IS IDENTIFIED

Once a manuscript has been written, it is submitted to a journal for appreciation by peer reviewers and editors. If self-plagiarism is suspected, the reviewers and editorial staff should:

Table 1 Electronic plagiarism-detection tools.

Tool	URL	Access model
Turnitin	http://turnitin.com	Paid
iThenticate	http://www.ithenticate.com	Paid
Plagiarism detect	http://plagiarismdetect.org	Paid
CrossCheck	http://www.crossref.org/crosscheck/index.html	Paid
Plagiarism Checker X	http://plagiarism-checker-x.en.softonic.com	Paid
Plagiarisma	http://plagiarisma.net/	Paid
eTBLAST	http://www.etblast.org	Open access
Plagium	http://www.plagium.com	Open access
Plagiarism Checker	http://smallseotools.com/plagiarism-checker	Open access
ArticleChecker	http://www.articlechecker.com	Open access
Dupli Checker	http://www.duplichecker.com	Open access
PlagTracker	http://www.plagtracker.com	Open access
Free Plagiarism Detector by ThePensters	https://www.thepensters.com/free-plagiarism-checker-for-students-online.html	Open access
Google	http://www.google.com	Open access

- determine the type of self-plagiarism;
- contact the authors for clarification, asking them to paraphrase and/or properly cite the affected passages;
- and, in the case of duplicate publication, reject the manuscript immediately.^{3,18,39}

If self-plagiarism is detected after publication of the manuscript, both the authors and the institutions with which they are affiliated should be contacted for clarification. When the self-plagiarism consists solely of recycled text, a correction note should be published with proper reference to the original work. In case of duplicate publication:

- the article is retracted and an official retraction published to make readers aware of the matter;
- the authors and their affiliated institutions are contacted;
- the journal that published the original or primary article is notified.

Readers are the last line of defense against plagiarism in scientific publication, and should contact journals whenever they come across the practice.^{3,19,39}

FINAL CONSIDERATIONS

Self-plagiarism must be addressed, mainly because it calls into question the ethics and integrity of scientific research and of all those involved in the process. This practice brings no benefit whatsoever, except to those authors who act deliberately out of greed. Scientific misconduct will always be present. However, it can be prevented with heightened vigilance, adherence to best practices, and guidelines. A better scientific education, as early as the undergraduate level, could help reduce this and other forms of misconduct.

AUTHORS' CONTRIBUTIONS

Alan Jhones Barbosa de Assis and Cleonice Andrade Holanda reviewed the literature on the subject, wrote the manuscript, and approved the final version. Rivadávio Fernandes Batista de Amorim provided critical revision, guidance on manuscript preparation, and approval of the final version.

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ERRATUM

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