

Recycling Is Not Always Good: The Dangers of Self-Plagiarism

Plagiarism is an act of academic fraud that implies “taking over the ideas, methods, or written words of another, without acknowledgment and with the intention that they be taken as the work of the deceiver.”¹ If one “borrows” one’s own ideas from one’s own publication(s) without attribution, is the deception still academic fraud? Yes, it is, because it is an intentional attempt to deceive a reader by implying that new information is being presented. Intentional deception is fraud; one of the two definitions of fraud in the Oxford English Dictionary is:

“a person or thing intended to deceive others, typically by unjustifiably claiming or being credited with accomplishments or qualities”²

As a result, recycling old data as new material (the accomplishment or quality), when it is not so, is tantamount to attempting to deceive one’s audience.³

There are a number of serious problems that arise from self-plagiarism that can affect both the scientific community as a whole and individual researchers.

Thankfully, much thoughtful consideration has been given to defining, describing, recognizing, and avoiding self-plagiarism.^{4,5} A number of sources are given here, but an excellent place to start to explore the concept is with a detailed piece by Miguel Roig on the Office of Research Integrity’s Web site.⁶ According to this helpful and scientifically oriented summary of questionable practices in writing, there are a number of serious problems that arise from self-plagiarism that can affect both the scientific community as a whole and individual researchers. The motivation for self-plagiarism is simple and relates back to the overused saying “publish or perish”.^{7,8} The conflict of interest inherent in a highly competitive system that “counts” papers when promotions and grant proposals are being evaluated can lead to dangerous temptation. Self-plagiarism is problematic for a number of reasons as it:

- (i) overworks an already overloaded peer-review and editorial system. When one considers the time taken to carry out careful, thorough, and thoughtful reviews, the handling of the manuscript by one or more journals, and the reading of the manuscript by future readers, recycled data in a self-plagiarized paper can be seen to dilute the quality of science across the board. Time wasted on a self-plagiarized paper is, simply, time wasted, and in research, no one has the luxury of excess time. This aspect bothers us a great deal. As a side note, to date, the majority of cases of self-plagiarism have been caught by referees, but we are adding new tools in our editorial offices to check submissions prior to wasting referees’ time.
- (ii) generates a poor reputation for one’s self and one’s group. When encountering a case of self-plagiarism, one cannot help but feel slighted, angry, and frustrated. We wonder, “Did this person really think, in this day and age with all electronic access and tools, that no one would notice?” and, “If they recycle data/text, how can I trust anything this group publishes?” The negative impact on past, current, and future students, colleagues, and one’s institution cannot be underestimated.
- (iii) may result in copyright infringement. Without explicit permission from the publisher for reuse of material, republication of text/figures could be an infringement of copyright. It is better to be forthright and to ask the editor beforehand to avoid problems later. Previously published data *can* be reused with permission if (and only if) properly quoted and cited.

Published online January 24, 2012
10.1021/nn3000912

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- (iv) may and likely will conclude with getting caught, and, in the most serious cases, manuscripts will be retracted and featured on the Retraction Watch Web site.⁹ Retraction Watch is a Web site set up by two science journalists, Adam Marcus and Ivan Oransky, who have received international attention for tracking high-profile retractions of papers, many of which were for self-plagiarism. In their invited year-end contribution to *Nature* entitled “Science Publishing: The Paper is Not Sacred” (December 22, 2011), Marcus and Oransky remind all authors that “peer review continues long after a paper is published”,¹⁰ as the scientific community continues to read, to reference, and to scrutinize the literature. With over 150,000 views per month, Retraction Watch has a large following of scientists, editors, and journalists who want to keep the record straight.

The negative impact on past, current, and future students, colleagues, and one's institution cannot be underestimated.

At *ACS Nano*, we have seen a number of examples of academic malpractice that fall within the scope of self-plagiarism. How do we judge whether self-plagiarism is, in fact, an issue? It all comes down to the central issue of deception—were the authors trying to deceive the editors, the referees, and the readers into presenting recycled data, text, and figures as entirely new material? We understand that experimental sections may run into difficulties of similar textual descriptions, and while care should be taken with the experimental method descriptions, these have *not* been the source of problems. Examples we have seen include:

- (i) Manuscripts in which several paragraphs were copied verbatim or only slightly rewritten from earlier published papers. If we encounter even a few sentences of identical text, it will now be flagged for a closer look using plagiarism detection software.
- (ii) Identical schematics or figures used in earlier papers. In one recent example, the first (and critical introductory) scheme of a paper was taken from a prior publication without reference—if the paper is presenting new and exciting data and conclusions, as we would expect in *ACS Nano*, then this introductory scheme should also be novel and distinct from previously published work. Together with recycled text and data in the manuscript, we concluded that this was a case of self-plagiarism.
- (iii) Data augmentation. In another recent example, data from a recent paper were augmented with new data and repackaged as an entirely new set of results. While we all understand that science builds upon the work of others before us (and our own!), the authors did not state in their introduction that they were building on their own recent results and buried the prior reference deep in the paper. The reuse of tabular data, images, and text led us to the conclusion of self-plagiarism.
- (iv) In other cases, authors have submitted articles to *ACS Nano* and have simultaneously submitted related, overlapping content to other journals. In these cases, it has been our experience that one or more of the referees may be the same for both journals, as referees are explicitly chosen as experts in their fields, and the referees have alerted us to potential duplication. Without the disclosure of the related manuscripts upon submission to *ACS Nano*, in combination with the redundant text between the manuscripts, we have concluded that this type of deception is also self-plagiarism.

Self-plagiarism comes down to the central issue of deception—were the authors trying to deceive the editors, the referees, and the readers into presenting recycled data, text, and figures as entirely new material?

The responses to the above cases have ranged from retraction to multi-year bans of further submissions, and some cases were referred to the authors' department heads and deans, or

equivalents. We take these issues extremely seriously and work with other journals to adjudicate them strictly and fairly.

To conclude, we end with the Ethical Guidelines from the American Chemical Society, with respect to self-plagiarism. As can be seen, we apply a “reasonable person” standard when deciding whether or not there is a problem. When in doubt, please contact us as we would be more than happy to help make a distinction between acceptable reuse and self-plagiarism. We appreciate your thoughts and the continuing discussion on this topic.

ETHICAL GUIDELINES TO PUBLICATION OF CHEMICAL RESEARCH

The guidelines embodied in this document were revised by the Editors of the Publications Division of the American Chemical Society, December 13, 2011.

“Authors should not engage in self-plagiarism (also known as duplicate publication)—unacceptably close replication of the author’s own previously published text or results without acknowledgement of the source. ACS applies a “reasonable person” standard when deciding whether a submission constitutes self-plagiarism/duplicate publication. If one or two identical sentences previously published by an author appear in a subsequent work by the same author, this is unlikely to be regarded as duplicate publication. Material quoted verbatim from the author’s previously published work must be placed in quotation marks. In contrast, it is unacceptable for an author to include significant verbatim or near-verbatim portions of his/her own work, or to depict his/her previously published results or methodology as new, without acknowledging the source. (Modeled with permission from Society for Industrial and Applied Mathematics: Authorial Integrity in Scientific Publication <http://www.siam.org/books/plagiarism.php>)”¹¹



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