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Review Article

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On "Self-Citation" in Academic Publications

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ABSTRACT

This article examines the phenomenon of self-citation which is a widely discussed topic in the broader scientific literature. Self-citation is a natural part of the scientific publishing process as the researchers should cite themselves to avoid plagiarism. In this short review, we examine various aspects of self-citation by considering how authors include their previous work on a specific subject in their bibliography when conducting research on that subject.
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INTRODUCTION

Achieving academic progression, mastering a subject, and gaining recognition in one's field are among the important objectives for those working in the realm of science and art. For researchers and academicians, there are established standards to attain these objectives.

The initial step in achieving these goals is to have studies accepted and published in reputable national or international peer-reviewed journals.

An important factor in enhancing visibility is that these published studies are also indexed by International Field Indices (IFI). International Field Indices, of which there are around 170-180, scan journals that meet specific criteria across a variety of fields including arts, social, biological, health, and engineering sciences. While these criteria may change over time, currently there are around 28 criteria that are evaluated, including the journal's longevity, age, peer-review status, ratio of original articles, editorial structure, language of publication, presence of a clear and concise English summary, funding, relevance of content and titles, the impact factor of the journal, and others. Web of Science, under the name "Science Citation Index Expanded," scans approximately 9200 journals in the world and includes approximately 1.1 billion citations made since 1900. Web of Science is currently managed by the company Clarivate Analytics.[1]

These indices supply bibliographic details of articles, books, and theses and enhance the visibility of relevant publications to researchers, authors, academicians, and artists working in the field by providing them with the necessary information to conduct research and publish. The scanning of journals by the Web of Science also includes measures far beyond just being published. For academics, publishing in journals that are scanned by IFIs is almost essential for enhancing visibility, as studies in non-scanned journals, even if they have significant inherent value, may not be able to demonstrate their worth due to the lack of visibility to the global scientific and artistic community.

The next step for an academic or author to achieve their goals is through citations made to their publications. In

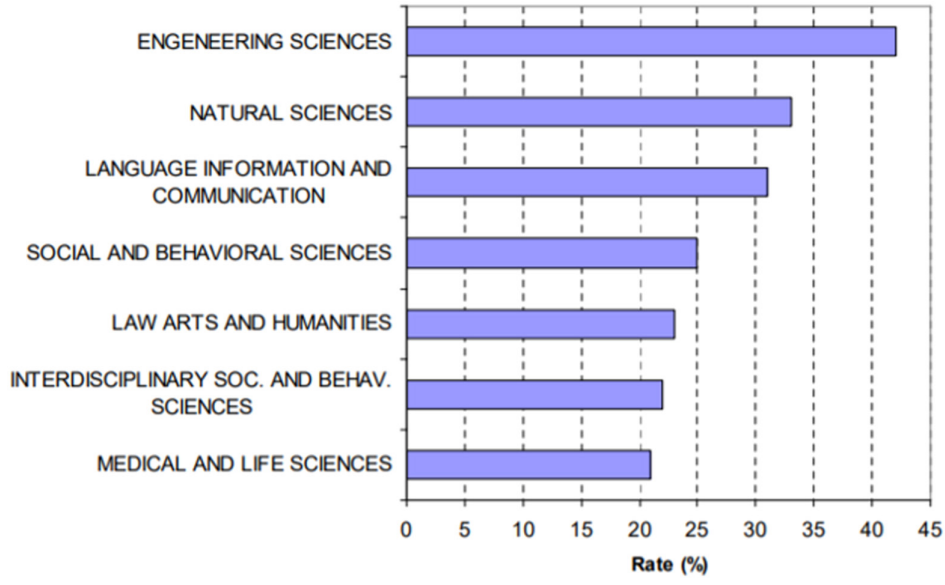

Figure 1. Comparison of self-citation rates of discipline groups.

addition to the inherent scientific merit of a study, determining its value is largely determined by the number of references (citations) it receives from other researchers and authors and the impact factor of the journal in which the citing publication is published. The number of citations is a key contributor to the increase in the impact factor of the journal in which the publication is featured. Therefore, there is a positive feedback loop between the increase in the number of citations and the reputation of the journal. Receiving a high number of citations raises the stature of the author. Having a high impact raises the stature of the journal. Despite this virtuous cycle, it has been observed in the history of science that these measures may be misused or manipulated at times. Citations to the institution and the journal can sometimes be subtly encouraged by the journals and institutions. The fact that the number of citations is an extremely simple and blunt tool requires further development, which led to the development of the *h*-index. The *h*-index, proposed by Jorge Hirsch, a professor of physics at the University of California, San Diego, is a metric that measures the productivity and the impact of a researcher's publications. It is computed by counting the number of publications that have been cited at least *h* number of times, where *h* is the h-index value. For example, if a researcher has an *h*-index of 100, this means at least 100 of their publications have been cited at least 100 times. The *h*-index is a much more comprehensive metric than simple citation count as it considers both the *quantity* and the *quality* of a researcher's publications (Figure 1).

MAIN POINTS

- Many scientists agree that excessive self-attribution is a problem, there is little consensus on how much is too much or what to do about it.
- If there is more than one previous work, it is recommended to select and attribute the best and not to write all of them.
- Self citation is a natural part of the scientific publishing process unless is abused. "Self-reference", a natural practice that should never be contentious if used appropriately, can be at the center of discussions because it is abused from time to time, even by a minority.

BALANCING THE NECESSITY AND EXCESS IN SELF-CITATION

Self-citation, referencing one's own previous work in subsequent publications, is a common practice in academic publishing when done in an honest and reasonable manner and in direct relevance to prior work by the author. It can be a legitimate and an important need for scholarly research and publications, particularly for researchers and scholars who conduct ongoing and related research and publications in their field. Self-citing refers to the practice when an author includes references to their own previous or concurrent work in their current publication. This is typically done in the reference section, where sources used in the work are listed.

For a citation to be considered a self-citation, at least one author name must be common between the citing and cited articles. A more restrictive definition is when the first author is the same in both the citing and cited articles.[2] There are 4 main types of self-citation: when the author cites their own work, when co-authors cite each other's work, when a journal cites articles from its own publication, and when a country cites articles from its own institutions. It is important to note that self-citing can influence the impact factor of a journal or author and should be used with caution.[3]

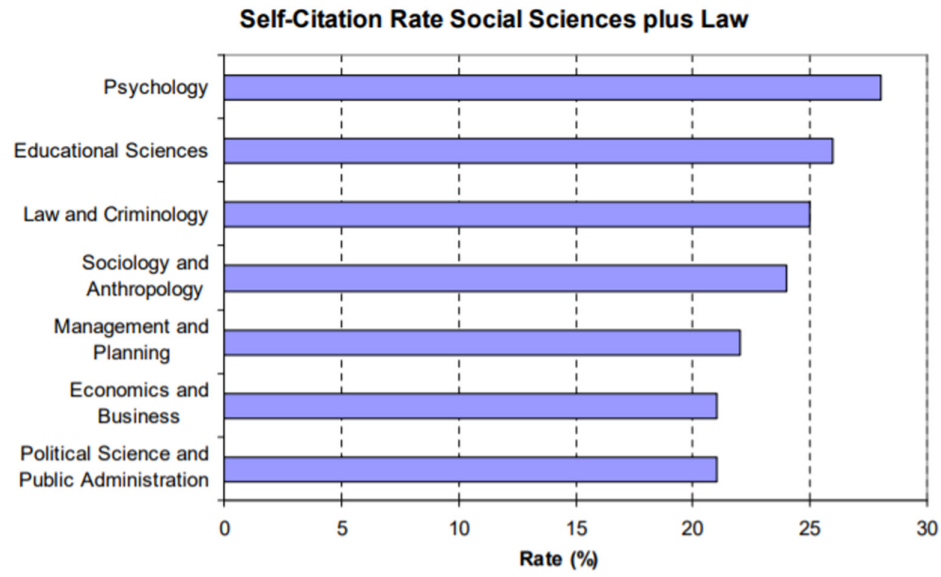

Figure 2. Self-citation rates in social sciences and law.

For some, self-citation is to blow one's own horn and to praise oneself unnecessarily and for others, it is justified as "if I'm not citing myself, that is, if I don't find my work valuable enough to cite, no one else will do it!"[4]

Previous work by an academic or an author can serve as the foundation for their future work. In the field of science, building upon previous data is a natural progression as knowledge accumulates. Therefore, it is crucial for the authors to cite their previous work, as it helps to establish the continuity and progression of research in the field. Even if an author is early in their academic career, a single work they have done may be valuable enough to serve as the foundation for future research. It is unreasonable to expect that a researcher should ignore relevant previous work due to a fear of negative perception from their peers (Figure 2).

For these reasons, self-referencing is a common phenomenon in science and is often unavoidable, especially when previous work forms the basis of current research. As long as it is done reasonably, it is considered an acceptable practice. However, excessive self-referencing can be viewed as unreasonable. The gray area between necessity and excess in self-citation is widely debated in the wider literature and its role, benefits, and risks have been extensively discussed. Self-citation is not inherently good or bad. The way it is perceived depends on the author's intentions and the context in which it is used.[5]

Self-citation is a complex phenomenon that should be evaluated objectively, without bias. When it is necessary and serves a purpose, it should be viewed as "just another reference" and evaluated based on its function. The real mistake is to exclude research and studies that have been conducted in succession, especially when it relates to the development and advancement of a particular subject, solely because the previous work is a self-citation. This practice can lead to the erasure and elimination of previous studies from the scientific literature, which is detrimental to the field. Therefore, it is essential to acknowledge and cite previous work, including self-references, in order to maintain the continuity and progression of research. In the world of science and art, it is not uncommon for authors to exaggerate self-referencing in order to increase their visibility. As a result, the ratio of self-citations to total citations is often used as a metric to evaluate an author's work. However, this ratio is not always a reliable indicator of an author's competence or knowledge in their field. Some official institutions filter out self-citations when evaluating an author's work, while others argue that it is more appropriate to assess an author's expertise based on their actual contributions to the field. Ultimately, the use of self-citations should be evaluated in the context of the author's overall body of work rather than relying solely on a single metric.[6]

It is generally accepted that there is a reasonable limit to the percentage of self-citations that an author should include in their work. Adhering to scientific ethical standards, authors should be mindful of this limit and strive to cite a balance between their own work and that of other authors. Excessive self-citation can raise questions about an author's integrity and lack of regard for the contributions of others. It is important for the authors to be aware of the accepted self-citation rate and consider it when citing their own work to maintain a high level of professionalism and respect for their peers.

In the numerical evaluation of self-citations, rates between 7% and 20%[7] are observed in medical sciences. Various views regarding acceptable rates of self-citations exist that the self-citation level should not exceed 25% for authors and 35% for co-authors, but there are also opinions that this rate

should not exceed 10%-20% and that rates above this should be considered as abuse.[8]

In this Figure 1, it is seen that self-citation rates are over 40% in engineering sciences and 25% and below in social and human sciences.

When the social and legal sciences are compared among themselves, it is seen that the rates are 25% and below, excluding psychology.[4] The varying rates of self-citation, as well as the lack of a clear consensus on what constitutes an acceptable self-citation percentage, highlight the subjectivity and complexity of the issue.

While many scientists agree that excessive self-attribution is a problem, there is little consensus on how much is too much or what to do about it. This is partly because researchers have many legitimate reasons to cite their own work or colleagues. While some organizations use citation numbers as a metric for evaluating research, they may apply a system that filters out self-citations. This approach, which can be unfair to authors who do not abuse self-citation, is a highly debated topic in the scientific community. Even Eugene Garfield, the creator of SCI (Science Citation Index), has stated how complex the issue of citations is and has several drawbacks for making a real assessment of an author's scientific output and value. Garfield highlighted that difficulties in making assessments include excessive amounts of negative citations, self-citations, methodological publications, multi-author articles, and confusion due to authors with the same surname in automated indexing. Further difficulties in assessing self-citation rates include when the data published in a particular field is primarily the work of the researcher or research group, making self-referencing inevitable.[9]

Citations link publications in the scientific knowledge tree and are essential to the growth and advancement of the scientific process.[10] Beyond promoting individual researchers or institutions, excessive self-citations can disrupt this scientific process by confirming an author's or group's conclusions and even suppressing dissenting opinions if other researchers do not challenge what might be perceived as emerging or established concepts. As such, sustained self-citations can be deliberately made for this purpose alone.[10-13]

CONCLUSION

This paper aims to shed light on the complexities of self-attribution and the importance of ethical considerations in the scientific community. Self-citation should be evaluated in a balanced and fair manner, considering the context, purpose, and function of the citation. Researchers should strive to cite their own work appropriately and not excessively, while also being open to and respectful of the work of others.

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