

Perspective

Plagiarism: What Is It, Whom Does It Offend, and How Does One Deal with It?

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Academic plagiarism is a thorny ethical and practical problem. Perhaps readers have never personally encountered or recognized a case of plagiarism so its immediate interest and relevance may be obscure. A short case history may provide evidence that the issue of plagiarism is germane to the contemporary academic endeavor. A young university radiologist recognized his own writing in a professional journal under another's authorship, without attribution to himself, and had no idea what to do about it. He finally wrote to the author of the article who answered something to the effect that it was indeed a "remarkable coincidence" and that "great minds think alike." Unsatisfied with the response, he considered reporting the matter to the journal editor, but he was a junior faculty member while the plagiarist was a revered figure in his subspecialty. He chose not to pursue the issue further because he was afraid that the plagiarist would harm him professionally [1].

This story provides a point of departure for an ethical inquiry about the responsibilities of authorship, the values that we hold as professional persons engaged in medicine, and the consequences of one's acts. What constitutes plagiarism, and how is it so judged? What and whom does plagiarism offend, and how does one respond when it is discovered? How does one avoid plagiarism? Most importantly, if one asserts a moral statement such as "under no circumstances should any person plagiarize another's ideas or writing," what rational process could be used to fundamentally determine the ethical validity of this statement?

In any scientific communication, authors are responsible for acknowledging credit in the list of authors and in the bibliography of citations from the literature [2]. These citations serve several important purposes: they acknowledge the work of current and previous investigators; they place the

article in the context of a body of knowledge; they may support the views expressed by the author or acknowledge conflicts with others' work; and they leave a paper trail such that a source of error or inspiration [1] can be traced to its source. Thus, citations assign credit as well as responsibility [2].

What Is Plagiarism?

Although misconduct in science is not a recent phenomenon [3–5], plagiarism has evoked editorial concern over the past decade in the medical literature [5–16]. Editors have voiced this disquiet because plagiarism is the failure to assign credit for ideas, data, or language of one's own or another's writing. Plagiarism encompasses a spectrum of actions wherein credit is misappropriated. It may include direct verbatim lifting of passages without attribution; rewording of ideas from the original in the purported author's own style; naïve (perhaps ignorant), uncredited paraphrasing from another's work, which may not be considered dishonest; noting the original source of only some of what is borrowed; or blatant appropriation of thoughts, ideas, language, techniques, or data from another and the representation of these as one's own original work, including outright theft of entire articles [2, 5, 6, 17–19]. "In many cases [authors are] not aware of what actions constitute plagiarism [and] believe they fulfilled their duty by citing the appropriate reference, and are unaware of the shortcomings of this approach" [12].

A thoughtful consideration of plagiarism, and the obligation to appropriately acknowledge the work of others, raises the interesting and difficult question about what constitutes common knowledge that does not require citation. The pre-

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sumption of common knowledge, which is information in the public domain, may encompass or conceal a multitude of transgressions [1]. Common knowledge in one scholarly arena may not be common in another; thus, citation would be necessary if one is in doubt that an assertion is common knowledge, and generosity in citation may be prudent.

Consider an article that includes the following statements: (1) The primary function of the lung is to exchange gas between inspired air and venous blood. (2) A major cause of arterial hypoxemia is inequality of lung ventilation and perfusion. (3) The normal adult lung contains 300×10^6 alveoli with a total alveolar surface area of 150 m^2 . Statement 1 requires no citation. Statement 2 may require no citation, although citing a basic work on pulmonary pathophysiologic essentials would provide a source of references and further discussion on the causes of arterial hypoxemia. Statement 3 would require a citation, because it is not common knowledge and such numbers are surely the result of somebody's measurement [1]. Omitting a citation here would constitute plagiarism. As another example, if this article stated, "The law looks upon plagiarism as an illegal act and the injured party can sue for specific damage resulting from the act," and the assertion was not referenced, one would likely question whether this assertion is common knowledge [1].

Plagiarism can be difficult to recognize in its protean manifestations. First, all readers are familiar with unreferenced statements that begin, "It is widely recognized that . . ." [1]. Did the author fail to look up the original reference? Did the author commit plagiarism? If the intellectual property of another author is being used without attribution, it is plagiarism; if it is not common knowledge, it is plagiarism [1].

A "blanket reference" is illustrated in the first paragraph of this section: "Plagiarism has evoked editorial concern over the past decade in the medical literature [5-16]." Every specific fact or assertion requires a specific reference; a blanket reference may attempt to lend authority by sheer mass while denying each of its contributors their individual and deserved credit [1]. Blanket references do no harm if all subsequent assertions are cited with references from within the blanket. Moreover, errors can be concealed in blanket references, particularly when the number of references is large and it is doubtful that a reader will look them up [1]. Blanket references can also conceal incorrect citations while relying on another's authority; an intentional example in this article is that reference 10 does not refer to plagiarism per se. In the article cited [10], an international committee of medical journal editors reviewed the requirements for manuscripts submitted to biomedical journals, including the necessity of fully acknowledging the use of data from another source and the author's responsibility to verify references against the original documents.

The distinction between incorrect citations and plagiarism can be difficult to discern. Suppose that one writes: "The carbon monoxide diffusing capacity is decreased in emphysema [37]," even though reference 37 actually asserts that the opposite is true. Theft of another's authority in this incorrect citation amounts to plagiarism, and also constitutes fraud if the author's intent was to deliberately deceive the reader [2]. The same is true if reference 37 does not address the issue of carbon monoxide diffusing capacity in emphysema [1].

An additional and common form of plagiarism related to incorrect citation could be called the "second-generation reference" [1]. In this form of plagiarism, author A, the plagiarist, uses a citation from author B, who has (correctly or incorrectly, but certainly originally) cited author C. Thus, author B may have written: "A substantial number of patients with systemic lupus erythematosus have alveolar hemorrhage [reference C]." Author A, without checking author C's original publication, simply borrows author B's citation: "Many patients with systemic lupus erythematosus have alveolar hemorrhage [reference C]." This sort of plagiarism is often discovered when someone notices that author C stated no such thing, or when a typographical error is noted, and faithfully reproduced, in author B's reference list [1].

Plagiarism can be also committed unwittingly by omission of a reference. Suppose that one uses a commercial computer software program like STAT.EXE to do sophisticated statistical data analysis for the methods section of an article [1]. Should the authors of the STAT.EXE software be credited, or does it suffice to cite STAT.EXE? Such citation is appropriate not only for intellectual honesty but it may also be useful if the software later proves faulty [1]. Failure to cite the software program WordPerfect for the preparation of this manuscript does not constitute plagiarism, but issues surrounding the use of software that affects the content of the article are worth considering. Another common example of omitting the citation occurs with the use of 35-mm slides for displaying data from the medical literature without attributing the source. Persons presenting papers at national meetings often, but not always, provide a citation in the right lower corner of the projected slide (e.g., "Siegelman, *Radiology* 1988;166:278-280," or simply, "Siegelman, *Radiology* 1988"), thus acknowledging credit and avoiding plagiarism in the lecture format. Acknowledgment of credit on slides is particularly important when lectures are recorded and internationally disseminated via videotape cassettes and laser videodisks for educational purposes.

Independent or simultaneous discovery can present difficulty in the attribution of original credit. Has the author who describes a new entity committed plagiarism when it is subsequently proved that the entity was described in an older article published in Europe [1]? That author A is a plagiarist is not in doubt when he or she translates author B's paper from French and publishes it under his or her name in English. Reflection on this issue invariably raises the question about the author's intention. "In a lifetime of reading, theorizing, and experimenting, a person's work will inevitably incorporate and overlap with that of others. . . . However, occasional overlap is one thing; systematic, unacknowledged use of the techniques, data, words or ideas of others is another" [2]. A clear intent to deceive lies at one end of the spectrum, and unintentional plagiarism—perhaps naïveté, ignorance, unsophistication, or cryptomnesia—at the other end [20]:

Cryptomnesia signifies the existence of memories which are hidden from consciousness [and] denotes the presence of phenomena in normal consciousness which objectively are memories, but subjectively are not recognized as such. They may . . . be wrongly experienced . . . as original creations; [thus] cryptomnesia can . . . become unintended plagiarism.

Plagiarism often occurs and remains largely undetected when an author of a peer-reviewed manuscript uses ideas and wording provided by anonymous reviewers who critique submitted manuscripts [1]. Whether or not this circumstance is condoned or encouraged by the academic community or journal editors, should this blatant, but secret, plagiarism be permissible? I suspect that most academic authors have used uncredited contributions to their manuscripts from anonymous reviewers, just as most reviewers see their contributions to published work unacknowledged; the desired anonymity of the process is thus preserved. Notwithstanding its widespread acceptance and the anonymity required by the peer-review process, I believe substantial contributions made to a manuscript by a reviewer should be acknowledged, albeit anonymously. I have done this in the acknowledgments and references of this article. Plagiarism is commonly regarded as an author having copied what someone else has written. However, "copying what one has written himself or herself is the type of plagiarism [seen] most commonly in medical publishing" [12]. The idea that an author cannot reuse his or her own material is foreign to many physician authors [12]:

Most of the time, [writers] breaking these rules have no idea they are doing anything wrong. [Some] may think that because he or she wrote something, the material belongs to him or her and can be repackaged and used again. But, unless a publishing contract says so, this cannot be done.

Thus, it would be an entirely appropriate act, while seemingly trivial, to provide the citation on a slide for a table derived from one's own publication.

Finally, duplicate or repetitive publication, a practice sometimes included under the rubric of self-plagiarism [8, 11, 14, 21], is widely deplored by editors of medical journals [8, 10, 11, 14, 21–25]. Are there circumstances under which it is laudable? Suppose that an investigator makes an important discovery and publishes it in the radiology literature, and suppose too that this discovery would be of significant importance in cardiology as well. Could one argue convincingly that science, the medical literature, and patients' care would benefit if it were also published in the cardiology literature [1]? The question deserves serious consideration and is likely answered by editors after examination of submitted data, disclosure of the circumstances, and evaluation of the author's intention. Such an example is reference 10, which was published in several journals in several languages because of its broad utility and relevance [10].

Whom Does Plagiarism Offend?

If plagiarism is deception and theft of another's intellectual property, what is the effect of plagiarism on trust, how is the victim harmed and wronged, and does plagiarism violate the law?

The Trust

Berk [15] referred to the essential underpinning of trust in the scientific endeavor in a recent editorial responding to the discovery of plagiarism on the pages of the *AJR*:

Plagiarism remains, under all circumstances, a serious violation of *collegial trust* [emphasis added], the fundamental

principle on which the integrity of medical journalism depends. For whatever reason it occurs, it is deception and the theft of intellectual property. Whether petty or not, flagrant or not, intentional or not, it is a breach of professional ethics that must be exposed and unreservedly deplored.

Fundamental to the academic profession is that truth has intrinsic, as well as instrumental, value. There is an overriding concern that statements made in teaching or formulated in research should be as true as possible, based on the most methodically gathered and analyzed evidence [26]. The more specific obligations of the academic researcher flow from this concern for truth about particular things and from the idea of truth in general. The cultivation of truth in teaching and research and the respect for truth in one's professional activities constitute the distinctive underpinning of the academic professional [16].

Publications of scientific and scholarly works must be accompanied by truthful attribution of their authorship. Since careers in the academic profession are oriented towards the recognition and reward of individual achievement, [plagiarism] of the work of others and claiming credit for the work of others infringe on the derivative obligation to acknowledge the achievement of colleagues. The presentations of reports of observations made by others regardless of whether they have been published, as if they were observations made by oneself is a defection of this derivative obligation. [26]

Thus, the author of a scientific communication respects the collegial trust to the extent that he or she accepts personal responsibility for truth telling in the trust and acknowledgment of colleagues' achievements.

Harm as Setting Back an Interest, and Wronging Another

When a colleague's ideas, words, or achievements are not made known with a citation, an author harms the colleague. In this apparently vague and ambiguous concept, how is "harm" understood? Of the several senses of harm that can be distinguished, two are relevant here. The first sense of harm can be conceived as thwarting or setting back an interest [27]. If one has an interest in something, the interest is a kind of risk, a thing in which one has a stake. One certainly has, for example, a major stake in the furtherance of one's professional career, the well-being of one's family, and the prosperity and peace of one's country. That these causes flourish is in one's interest; that which thwarts them is against one's interest. Thus, "a person harms another in the present sense by invading and thereby thwarting or setting back, his or her interest" [27].

A second sense of harm, distinct from the first, is one in which one person treats another unjustly. If A harms B by treating B unjustly, then A wrongs B if A's conduct is morally indefensible (that is, neither justifiable nor excusable) and violates B's rights [27]. In this case, such conduct will also set back the other's interest, and be harmful in the first sense as well. A right is a valid claim that a person can make; a moral right is a "claim backed by valid reasons and addressed to the conscience of the claimee or to public opinion" [27]; a legal right is a "claim against all other citizens to their noninterference and a claim against the state to its protection" [27]. It is the victim who is deceived, cheated, or in

short, wronged. Thus, if A harms B by plagiarizing B (sets back B's interest and wrongs B), B's claim of plagiarism is at once both a moral and legal claim.

The Law

The criminal law system is the primary instrument of the state for preventing persons from intentionally harming one another [27]. In general, state interference with a citizen's behavior tends to be morally justified when it is reasonably necessary to prevent harm to parties other than the person interfered with. "The need to prevent harm . . . to parties other than the actor is always an appropriate reason for legal coercion. This principle . . . can be called 'the harm to others principle'" [27]; it is a convenient abbreviation for a complicated statement that includes a variety of moral judgments and value weightings [27]. Some statutes describe a kind of conduct, place it under interdiction, and threaten punishment for engaging in it; the law against theft, among many others, is a direct prohibition of this sort. Punishment for such conduct is for disobedience, for noncompliance with law, and to discourage the particular antisocial behavior that is forbidden [27].

Under copyright law, the author or creator of a work automatically possesses the initial copyright to his or her work [28]. "At the time of submission or publication of the article, the author usually transfers the copyright to the publisher" [28]. "Before submission of an article to a journal, each author must sign a copyright release form; in so doing, each author both transfers copyright to the journal and assumes full responsibility for the content of the paper" [16]. While violations are subject to both criminal and civil charges, Sadler [29] asserts that, "few cases of plagiarism ever reach the courts." He was successful in recovering damages in his claim against a plagiarist who extensively copied his illustrations. The goal of tort law is to repair damage done by one party to another through payments of compensation [27].

Who Judges Plagiarism

Who distinguishes between deliberate plagiarism, accidental plagiarism, and coincidence? The accusation of plagiarism is a serious one; the repercussions of a false accusation, or the false assumption of plagiarism, could be devastating. For some instances of plagiarism, common sense judgment may suffice; others may be subtle, neither obvious nor straightforward. If an instance of plagiarism is complex or if plagiarism is indeed a major problem, it may be appropriate to have a "supreme court" of journal editors and other scholars adjudicate questionable cases [1]. Such a forum could serve as a legitimate, formalized means for reporting plagiarism and could include safeguarding the victim from professional harm by protecting the victim's anonymity. It could also provide a consensus of editorial authority for the judgment of plagiarism; exposure and censure of the plagiarist, after due process for the accused, by the journal editor on behalf of the involved parties; and advice for the victim regarding a legal claim arising from the instance of plagiarism.

Discovery of Plagiarism

Intrinsic to the academic system are checks and balances useful in the discovery of plagiarism: (1) Authors tend to read about the same subjects they write about and (2) plagiarized material deals with the same subject matter as the original material [1]. As evident from statement 1, if one plagiarizes another's work on high-resolution CT in interstitial lung disease, it is highly likely that the original author, staying current on the relevant literature, will find the plagiarism. Because statement 2 is correct, a third party scanning the literature on high-resolution CT in interstitial lung disease has some probability of examining both articles and discovering the plagiarism. Either or both possibilities can constitute a powerful deterrent to plagiarism [1]. The possibility of plagiarism has reached the collective consciousness of academic institutions and granting agencies as well as publishers, editors, reviewers, and readers [8].

How does one deal with the academic and moral responsibility to avoid and expose plagiarism when it is discovered? To recognize plagiarism is to recognize an ethical problem, and ethical problems typically have two essential elements [30]. The first is the existence of a real choice between possible courses of action, usually more than two. The second is that the person involved in the choice must place a significantly different value on each possible action, or on the consequences of that action [30]. Reflecting on the situation of the young university radiologist who was plagiarized, one could formulate an ethical statement such as, "When plagiarism is discovered, the victim of plagiarism should always notify the journal editor." This statement indicates what is to be done, who is to do it, and the conditions under which the statement is applicable. Clearly, the *should* recommends action; suggests that one, and only one, action has higher value than the alternatives; and that, in theory, that action applies to all persons in similar circumstances. The latter is called the principle of universalizability [30].

The moral admonition, "Don't plagiarize!" represents a level of moral discourse that focuses on moral rules. "I hate plagiarism!" illustrates a lower, expressive level of moral discourse. A higher ethical level requires that some formal reasoning process be used to determine the best course of action in the face of conflicting choices. One such approach, in a morally pluralist decision-making process [30], is to (1) frame an ethical statement, such as the one above; (2) list the alternative courses of action; (3) choose a course of action; (4) examine the possible immediate and long-term consequences of the proposed action and clearly state them; (5) compare each of the consequences with a person's own explicitly stated values; and finally, accepting that one must always take action on the basis of some uncertainty, (6) conclude that the proposed action is ethically valid once all the consequences have been compared with one's values and no inconsistencies have been revealed [30]. Table 1 gives a partial list of consequences confronting the young author for two possible courses of action (many others remain unconsidered). The values held by the author may be moral intuitions, but they can be transformed into language and stated explicitly. For example, one may give highest value to truth telling in a trust relationship and would

not knowingly lie or deceive another; or, one may give greater weight to respecting other's interests (i.e., not harming or wronging another) than to exploiting others for one's own ends. If one puts oneself in the author's situation, explicitly stating one's values and comparing values with the possible consequences, can one conclude that a proposed action is ethically valid? And, if the proposed action is ethically valid, can one so act in the face of other competing values? It may not in fact be possible to show that one alternative is clearly superior to the others both because of uncertainties in predicting consequences and because one is not clear in rank-ordering one's own values. Several alternatives can be shown to be equally good or, more likely, equally bad [30]. Just as difficult can be one's own tolerance of ambiguity in an ethical decision-making process.

How Does One Avoid Plagiarism?

Although it may be impossible to provide sufficient rules or guidelines to guarantee appropriate credit in citations [2], published guidelines for authors' preparation of manuscripts are explicit and helpful [16, 17, 28, 31]. The following guidelines include specific suggestions about how to write and avoid plagiarism [28].

When using information previously published by someone else, if "seven to ten words are taken directly from another source," quotation marks are to be used; that is, "a sentence or more directly copied from another article" must be set off by quotation marks as well as being noted in the references

TABLE 1: Two Possible Courses of Action and Their Possible Consequences for a Young Author When He or She Recognizes That His or Her Work Has Been Plagiarized by a Respected Person in His or Her Radiologic Subspecialty

Course of Action/Possible Consequences
Notifies the editor
Editor examines the claim, agrees or disagrees
Editor notifies plagiarist, who may deny the allegation
Editor seeks other editorial advice to establish the truthfulness of the accusation
If plagiarism is established, editor may publish the fact of plagiarism and expose the identity of the plagiarist
Exposed plagiarist may seek to harm the victim for causing his or her exposure/censure
Author may fear reprisal from the plagiarist
Plagiarist may professionally harm the author
Author is satisfied that his or her claim of plagiarism is substantiated and a wrongful act revealed
Does not notify the editor
Original author is dissatisfied that offense remains unaddressed
Original author is harmed, and wronged
Original author notifies plagiarist, who denies the accusation
Editor, readers, and colleagues have no knowledge of plagiarism or plagiarist
Plagiarist may be dissatisfied by having abandoned his or her principles
Plagiarist may remain undiscovered
Plagiarist may continue to plagiarize others' work
Plagiarist's reputation may be enhanced
Deceit is unacknowledged, truth is betrayed, and law is offended

[6]. An "author must either paraphrase the original, attributed work in substantially different language, or put direct, attributed duplications in quotation marks" [12]. If a person's thoughts or ideas are being paraphrased, the passage should be noted in the references [5]. "Even short quotes from a previously published article should be set off in quotation marks and referenced back to the original. And to borrow extensively from a previously published work that belongs to the publisher, permission must be obtained" [13]. "Many journals or publications simply carry a statement that a certain number of words in any article—usually 300 or 500—can be directly quoted without permission. This is a generally accepted rule of thumb for fair use" [6]. If several sentences are used, they should be set off as a block quotation [6]. If material is directly quoted from another source, meticulous care must be taken to copy the material accurately. Care is also necessary to ensure that all reference details are correct [16].

Self-plagiarism can be avoided by seeking permission to use material from the journal in which it was originally published, and the second article must necessarily carry an acknowledgment of the original publication [13].

If illustrations or large sections of text are reprinted from another article, "permissions must also be obtained for use of published drawings or other illustrations. If you are submitting an article for publication, those permissions should be obtained before the article is sent to the journal. The editor or publisher will usually specify how the work is to be credited" [6]. Original signed letters of permission from publishers and authors of papers or books from which figures, tables, or lengthy quotes are taken must be received by the journal's editorial office before a paper can be scheduled for publication. Borrowed material must be removed from one's article when permission for its use cannot be obtained [16].

When contemplating the use of others' uncopyrighted material, "Special care must be taken when dealing with unpublished materials belonging to others, especially when dealing with grant applications and papers seen or heard prior to publication or public disclosure. Such privileged material must not be exploited or disclosed to others who might exploit it. Scientists also must be extremely careful not to delay publication or deny support to work that they find competitive with their own in privileged communication" [2].

At an ethical level of moral discourse, one could formulate an ethical statement such as the following:

Any fact or assertion that is not obviously the common intellectual property of typical readers should be properly and formally attributed to its discoverer. If the discoverer is the manuscript's author, this should be made clear by context or direct statement. [1]

Similarly, one could assert that, "Under no circumstances should the author of a scientific communication plagiarize another's ideas or writing." A partial list of consequences (for two choices only) to consider when making such an ethical decision appears in Table 2. Again, a sequential reasoning process is necessary, in the face of conflicting choices and intrinsic uncertainty, to ascertain a course of action beyond moral intuitions or rules. This ethical decision-making process essentially requires clearly stated values and clearly stated conse-

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TABLE 2: Possible Courses of Action and Their Possible Consequences for an Author When Considering Whether or Not to Plagiarize the Work of Others

Course of Action/Possible Consequences
Plagiarize Uncredited author will be dissatisfied with you Plagiarist will be personally dissatisfied by having abandoned principles Uncredited author may notify editor Editor may investigate the allegation, verify the claim, publish an editorial condemning the act Professional reputations of plagiarist and his or her colleagues and institution may be harmed Publishers may refuse to publish plagiarist's work Plagiarist may be censured by the academic community, and a career ruined Uncredited author may take legal action against plagiarist
Assign credit Credited author will be satisfied Author has personal satisfaction of following his or her principles Credited author is not deprived of acknowledgment Author is following principles fundamental to the trust in science Acknowledged author will be saved the cost of not receiving appropriate credit Reputations of author, credited authors, editor, and professional colleagues will be preserved Author contributes to the professional role model Author avoids violating the law

quences to which they are compared [30]. Moreover, the process is an arduous one that requires sustained and disciplined thought. If an action involves another person, one may exercise one's moral imagination and ask, "If I were in that person's situation and I were like him or her in morally relevant ways, would I be satisfied in having this done to me?" [30].

The uncovering of deceit, regardless of intent or seriousness, can have a shattering effect on the deceiver and the deceived, particularly editors of journals in which the material was published, and one's professional colleagues [8]. If we are morally accountable to one another, then a consideration of plagiarism provides an opportunity to exercise reflective, critical, and collaborative moral thinking. We deliberate so that we can act justifiably, in a way that we can convincingly account for in moral terms [32]. This process is fundamental to relationships in our professional community.

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