Authorship Controversies: A Call for CBE Standards

Mary D. Scheetz

Authorship disputes often appear to reflect a misunderstanding of the definition of plagiarism or cultural differences regarding authorship criteria. The persistence of these controversies signals a need for universally endorsed standards. A recommendation is made that CBE develop or adopt authorship standards that may help prevent disputes that lead to putative allegations of scientific misconduct.

Prior arguments have addressed the need for standards, guidelines, and authorship accountability (1-3). Yet despite the continuing recognition about their merits, authorship standards that are universally endorsed do not exist.

The Office of Research Integrity (ORI) is responsible for protecting the integrity of biomedical or behavioral research funded by the Public Health Service (PHS). One of its responsibilities includes monitoring investigations into alleged or suspected scientific misconduct by institutions that receive PHS funds. Among the wide range of allegations that the ORI has received are those that are ultimately determined to be authorship disputes. While ORI does not consider authorship disputes to fall within its regulatory definition of scientific misconduct, the occurrence of these allegations points to an important problem. This article will report on some of the authorship controversies that have surfaced at ORI, present one way in which the disputes could be addressed, and recommend that CBE adopt the "Uniform Requirements" or comparable authorship standards that may help prevent some of the authorship disputes that lead to putative allegations of scientific misconduct.

Authorship Controversies

Authorship disputes comprised approximately 35% of the 244 allegations that ORI received in 1995. Typically, a complainant submits an allegation of scientific misconduct believing it to be one of plagiarism; however, upon review, ORI often determines that the alleged misconduct is better characterized as an authorship dispute, rather than plagiarism. One reason for this confusion may be that ORI's interpretation of plagiarism under the PHS definition of scientific misconduct has a more narrow scope than the term "plagiarism" as used more casually in the nonregulatory context.

As a general working definition, "ORI considers plagiarism to include both the theft or misappropriation of intellectual property and the substantial unattributed textual copying of another's work. It does not include authorship or credit disputes. The theft or misappropriation of intellectual property includes the unauthorized use of ideas or unique methods obtained by a privileged communication, such as a grant or manuscript review" (4).

As noted in the ORI Newsletter, "many allegations of plagiarism involve disputes among former collaborators who participated jointly in the development or conduct of a research project, but who subsequently went their separate ways and made independent use of the jointly developed concepts, methods, descriptive language, or other products of the joint effort. The ownership of the intellectual property in many such situations is seldom clear, and the collaborative history among the scientists often supports a presumption of implied consent to use the products of the collaboration by any of the former collaborators" (4). Because institutions are the recipients of PHS funds, ORI considers it the institutions' responsibility to manage the funds they receive and mediate disputes that may arise over authorship controversies.

Many of the "plagiarism" allegations submitted to the ORI are found to be authorship disputes between collaborators or former collaborators. Examples of authorship disputes include misappropriation of collaborators' ideas, disagreements over who may publish, duplicate publishing, disagreements over who should be an author, or the order of authorship. Other nuances of this issue include questions of whether consent must be obtained in order for a collaborator to publish independently from his or her research team and whether a member of a research team can publish conflicting analyses.

These disputes often involve persons in some form of training who challenge the mentor over the ownership of research ideas, which results in arguments over authorship priority and status. Although these situations are not considered by ORI to fall under the PHS definition of scientific misconduct (4), their existence highlights the lack of generally accepted standards regarding the mentor-trainee relationship in the research training environment. In addition, these conflicts are often personal. Establishing explicit standards that require each author to take responsibility for the co-authorship listed on the manuscript could prevent misunderstandings before they escalate into caustic and lengthy legal disputes.

Another type of authorship dispute brought to ORI's attention relates to the issue of "inventorship." Controversies linked to proprietary benefits stemming from inventions of drugs, vaccines, biologic agents, or chemical syntheses have evolved into expensive and time-consuming investigations at institutions. These types of disagreements should not be mediated by journal editors or the federal government. Usually they are referred to the author's institution for resolution. Yet inventorship disputes can pit 1 institution against another, or an institution against its employees, so that it is particularly hard to convince a complainant that an institution can be fair when it has a perceived financial conflict of interest in the matter.

Some researchers are not aware of the expectations and standards of the journals,
professional societies, or even their own institutions. In their 1993 publication, ORI investigators Fields and Price noted that "academic politics or cultural bias about appropriate roles based on age, gender, or position in the departmental hierarchy sometimes enter into authorship decisions. With more and more attention to written guidelines, it may be that some of the less valid claims would not be made if a process of rational discussion and negotiation was a recognized step in publication decisions" (5). It is easy for an author to plead ignorance when generally accepted standards do not exist. However, such a plea does little to appease those who are party to an authorship dispute. To avoid such conflicts, it is highly advisable to address authorship issues prior to writing the initial draft of a manuscript, or even prior to initiating a collaborative research effort. To do so should promote a clearer understanding among coauthors about their authorship responsibilities and thereby reduce the possibility of future conflicts.

Cultural Considerations
The United States is a training ground for scientists from around the world. Thus, misunderstandings can arise when there is no global consensus about acceptable criteria for authorship. Cultural misunderstandings that may be at the root of some plagiarism allegations can be particularly contentious. For example, the research culture in the United States does not condone copying of anyone's published works without proper attribution. Yet in some cultures, "copying" a mentor's work is a form of respect. Conversely, there may be cultural differences regarding a mentor's right to use the student's data. Thus, cultural differences can add to confusion about what constitutes plagiarism versus what is an acceptable practice in an international academic research laboratory (6).

In addition to differences among scientists' attitudes, publishing has changed dramatically in the last decade because of technologic innovation. Publishing is now more accessible to individuals. Even so, there are no uniform standards in the publishing industry that address authorship accountability. In her book *Stealing Into Print*, Marcel La Follette maintains that

The same technology that makes life easier for the honest researcher may also assist the dishonest one. Rapid and easy dissemination will facilitate plagiarism, the fabrication of data (including databases), and attempts to obscure authorship or authenticity. In addition, the increased use of computers to mechanize team written reports may influence how teams assign and accept responsibility for the integrity and accuracy of the entire text. (7)

Today's information technologies are capable of crossing international boundaries and highlight the need for publishing standards that address the accountability and responsibility that come with authorship. Thus, the challenge for ensuring the integrity and quality of publications increases as the technology of managing and transmitting information improves.

What Standards Achieve
Publishing and endorsing authorship standards are important because they establish enforceable criteria within the scientific community. One of the many definitions the dictionary uses for the word "standard" is "an accepted measure of comparison for quantitative or qualitative value: criterion" (8). The absence of authorship standards decreases quality and professionalism and increases the possibility of misunderstandings among authors that lead to disputes. Furthermore, the absence of standards makes legal interpretation more difficult and open for misinterpretation by those outside of the field.

Having standards in place could have deterred some of the authorship controversies previously cited. In addition, authorship standards would make it easier to resolve the disputes discussed above.

Possible Solutions
Fortunately, guidelines exist that can provide an important and strong framework for the publishing community. Specifically, the "Uniform Requirements", promulgated by the International Committee of Medical Journal Editors and adopted by close to 500 journals, are an excellent example of how written authorship guidelines can make a difference (9). Individual journals have also printed reminders to authors regarding their responsibilities. The continued endorsement of the "Uniform Requirements" is one way in which the publishing community can take a unified stand on acceptable publishing practices.

A complementary approach to the "Uniform Requirements" would be to have authors sign a form with a statement certifying that they meet formal criteria for authorship. One such form, titled "Authorship Criteria and Responsibility, Financial Disclosure, Assignment of Copyright, and Acknowledgment" (10), is currently in use by the American Medical Association for its published journals. An author's signature serves as a public attestation to accountability for work being submitted for publication and should leave little room for misinterpretation of who is and is not an author.

The Council of Biology Editors should consider formally adopting or endorsing the "Uniform Requirements", together with the AMA "Authorship Criteria" form, because they represent established authorship frameworks from which CBE constituents could benefit. The endorsement of pre-existing standards would send a valuable message to CBE constituents by establishing a minimal threshold required for authorship determination without precluding journals from setting additional or higher authorship publication standards. The sanctioning of these pre-existing documents could be referenced and disseminated easily on the CBE Website and linked to journals that subscribe to the "Uniform Requirements" or the AMA "Authorship Criteria" form.

Some of the disputes presented to the ORI as allegations of possible scientific mis-
Conduct might have been avoided if authorship standards were universally accepted. Having standards in place would help to identify those practices that are deemed to be appropriate and acceptable by the scientific and publishing communities. Even if authorship disputes arise, their resolution would be facilitated by having standards to which all parties can refer. Finally, promotion of clear standards by a journal may give it a marketable advantage in today’s competitive environment. Thus, such standards are in the practical interest of scientists, the government, and publishers.

Conclusion
Publishing enables the scientist to disseminate new knowledge, gain membership in an academic community, and achieve professional recognition. However, the integrity of the publication can only be as credible as the norms adopted by the participating community. Universally endorsed authorship standards may serve to clarify requirements and responsibilities for authors and thereby deter those allegations of scientific misconduct presented to ORI or scientific journal editors that are characterized as authorship disputes. Because CBE’s mission is to foster education and improve communication in biology and related fields, it is in a unique position to promote and endorse authorship standards. The CBE has the potential of enhancing its mission, increasing its visibility among the biological publishing community, and playing a vital role in educating the publishing community about the value of authorship standards.

References

Authorship Standards: Progress in Slow Motion

Edward J Huth

Abuses of authorship in the biomedical literature began to get the attention of editors early in the 1980s. These concerns led to the authorship standards of the International Committee of Medical Journal Editors. By the early 1990s, some medical schools and research institutes had developed their own standards. Editors should consider helping to speed attention to standards in more schools.

How far have we come in biomedicine toward standards for authorship widely accepted and applied in its academic community? How far do we have to go? What has been the progress in other scientific fields?

Edward J Huth, Editor Emeritus, Annals of Internal Medicine, is a long-time member and past-president of CBE.

A search of MEDLINE for references relevant to issues of authorship does turn up evidences of concern before 1982 about authorship practices. But it was in that year that several apparently unrelated calls for attention to standards for authorship came from quarters likely to get potentially influential attention. In the preceding few years, many instances of fraud and other misconduct in medical research had come to public attention through congressional hearings (1) and other government settings and raised the odds that effective attention to standards for authorship as well as for other aspects of research would begin. An ad hoc committee of the Association of American Medical Colleges (2) asked “that institutions examine their policies on authorship of papers and abstracts to ensure that named authors have had a genuine role in the research and accept responsibility for the quality of work being reported” (3). In a paper read at a meeting of the Council of Biology Editors (4) concerned with the ethics of publication, Eugene Garfield, the publisher of the widely used Science Citation Index, raised his concerns:

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