Good Scientific Practice

Part IV. Authorship/Coauthorship

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“…the cornerstone of the philosophy of science is based on the fundamental assumption that original research must be published; only thus can new scientific knowledge be authenticated and then added to the existing database that we call scientific knowledge.”

Robert Day [1]

“The guidelines stress not only a right to authorship when certain conditions are fulfilled, but also a duty to authorship …The duty to authorship …should be taken as seriously as the right to authorship”.

Daniel Andersen [2]

The word “must” is not used by chance in the first of the above citations: without being communicated, research simply does not exist. The most important way to communicate information is scientific publication. Therefore, to publish the results of research is a working obligation of all scientists. For biomedical researchers, it is also an ethical obligation, since the publication of clinical research is the ultimate basis for treatment decisions and the development of comprehensive guidelines [3].

However, publication is not only the credit for creative work. It is also the most important basis for academic advancement. This close relationship between authorship and academic reward provides ample room for abuses.

Authorship

An author is the originator of a written work. In single-author articles, both credit and criticism are addressed to him. However, in medical sciences multi-authored articles prevail greatly, and the term “author” has additional meanings.

In multi-authored articles, the term “authorship” refers to the listing of names of participants in all communications of experimental results and their interpretation [4]. In either instance, authorship means the attribution of both credit and responsibility. In multi-authored articles the responsibility and accountability are too often obscured and severely diluted, and many ethical problems may arise thereof [5,6].

Multiauthorship

The mean number of authors per article increased steadily in the past century in both large [7,8] and small [9-11] medical journals; at the same time, the single-author papers became extremely rare, especially in such complex and interdisciplinary fields like oncology (Figure 1). In such a situation, a new problem has emerged: the problem of false authorship.

Multiauthorship and false authorship are connected issues: the percentage of undeserved authors increased from 0% in two-authored papers to 74% in papers with seven and more coauthors [12]. The high prevalence of undeserved authorship is confirmed in all studies dealing with this phenomenon [13,14], thus indicating that the assignment of authorship has been, and still is, abused [1].

1 “The expansion in numbers of authors per article has tended to dilute accountability, while scarcely seeming to diminish credit” [5].
2 “There have been too many cases of fraudulent research where nobody accepts responsibility” [6].
False authorship

Many ethical problems involved in publishing biomedical research stem from intense pressure to publish (“Publish or perish syndrome”). Since the credit for one’s research is ultimately allocated through the authorship, it is of extreme importance for a successful scientific career: academic promotion is more dependent on publications than on clinical activity or teaching excellence [12]. It also affects future research funding and recruitment opportunities [15]. This is the main cause for many false authorships, even in articles published in the most reputable medical journals [12-14,16].

Various forms of false authorship are defined:

- **Honorary authorship** is the practice of assigning authorship to persons because of their authority or prestige, in the hope that it might increase the chances for publication.
- **Gratuitous authorship** is including in byline the persons as a gift, or simple courtesy, or because this person is the member of research team (cronyism).

Completely different and equally unethical forms of false authorship are:

- **Ghost authorship**, where the person who actually wrote the article is not included in byline. This person may be hired by someone else who either does not know or does not have time to write the paper. A variant of this practice is some drug manufacturers’ practice to hire academics to communicate the results of research done by their own staff.
- **Denial of authorship** is excluding from the co-authors list the persons that meet the authorship criteria. Most often, the victims of deeding of authorship are the graduate students or junior researchers, which makes this unethical behaviour even more serious.

The specific reasons for conferring authorship to undeserving persons are sense of obligation, fear of offending someone, pressure from another coauthor, or explicit demand-all in hopes of reciprocation, or gaining favor. Such an unethical behavior is motivated primarily by academic promotion policies [12]. The same reasons motivate otherwise honest people to accept such an unearned gift, just to inflate their bibliographies.

“Misappropriation of authorship (i.e., awarding honorary authorship and concealing ghost authorship) is incompatible with the principles, duties, and ethical responsibilities involved in scientific publication” [13]. Authorship cannot be conferred but must be earned. This is why the misapplication of authorship criteria and inappropriate assignment of authorship are classified in the central area of dishonesty [2].

For help to determine how attribution should be acknowledged, several guidelines are available. The most recognized are those of the International Committee of Medical Journal Editors (ICMJE), so-called Vancouver criteria [17] (Table 1).

However, the ICMJE criteria for authorship are insufficiently known [18-20] or ignored [21,22]. A considerable proportion of authors do not fulfil these criteria; the percentage of undeserved authorship increases along with the increase in the number of authors listed on the byline.

Even when aware of the ICMJE criteria, authors often avoid to apply them. These authors think that these criteria are too restrictive [19], and that the strict adherence to them might be unfair, especially to young scientists [21]. Clearly, the ideas of researchers and editors on authorship differ substantially, thus suggesting that a new definition of authorship is warranted.

Illness, prevention, and remedies

The authorship abuses cause steadily increasing disputes among scientists [15,19,20,23,24]. Such an unhealthy atmosphere is dangerous, since it destroys the group harmony and mutual trust, without which the research, being a multidisciplinary and multiprofessional work par excellence, is impossible. Many think that the best way to avoid such conflicts is to address authorship issues prior to writing the initial draft of a manuscript, or even prior to initiating a collaborative research [21,23]. An open discussion among the members of a research group often helps to resolve any conflict or misunderstanding that otherwise might arise [25].

Since it seriously undermines the integrity of the
The opponents think that abandoning the concept of author is too revolutionary; besides, they express their skepticism regarding the prevention of bad habits-abuses of the authorship [28]-anticipating that the authorship problem will not be resolved soon [33].

Both sides agree that the authorship problem, being a real issue, deserves the current attention it is getting. Because of its importance, ethical standards and guidelines for authorship have been developed in many institutions of science [4,34,35], as recommended by an international commission (Table 2) [36].

Finally, let’s finish this text by its very beginning: publishing in the medical profession is simply a must. But when preparing the manuscript, any author should be aware that strict adherence to the principles of publication ethics is also an imperative [37]. Much better than any bureaucratic intervention, the self-restraint of the researchers is the proper prevention of any misconduct including the authorship abuse - the endemic disease called ironically polyauthoritis giftosa [38].

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Table 1. Vancouver Criteria on Authorship [17]

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<td>All persons designated as authors should qualify for authorship, and all those who qualify should be listed. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content. One or more authors should take responsibility for the integrity of the work as a whole, from inception to published article.</td>
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