



ACCOUNTABILITY OF AUTHORS IN MULTIDISCIPLINARY PUBLICATIONS

In recent years, there has been a considerable increase in the number of authors in scientific publications and thus, articles with only one author have become the exception, whereas multi author papers are the general rule. In order to illustrate this point, a recent study of the Spanish Research Council, CSIC, in which 89.000 publications have been analyzed, has shown that only 6% are signed by only one author, whilst the large percentage correspond to 3 or 4, or 5 authors. Articles with 3 or 4 authors add to 18% of the total amount and those with 5 represent 14% of the total. Curiously enough there are publications with 100 authors or more.

This fact, which has been manifested at a global scale, can be accounted for by many reasons. On the one hand, it is undeniable that science is dealing with problems of increasing complexity, requiring highly specialized multi disciplinary teams and which can hardly be tackled by one author only. On the other hand, there is an evident “*pressure to publish*”, as a result of the procedures of evaluation and promotion of scientific personnel, and/or the search for financial support. In addition, we must take into account unjustified authorships, i.e. credit given to mere collaborators or assistants. In the literature, the term “*honorary author*” refers to individuals who do not meet authorship criteria, and the term “ghost author” is used for unnamed individuals who have made substantial contributions that merited authorship or who contributed to the writing of the paper.

It is worth mentioning that the number of authors of a given paper highly depends on the scientific discipline: whilst it is very frequent in some disciplines of physics, this is not usually the case in humanities and social sciences.

After several meetings and workshops dealing with authorship issues held in Berkeley (1998) and Montreal (1999) promoted by the *Council of Science Editors* and in Copenhagen (2000) organized by the *International Committee of Medical Journal Editors (ICMJE)* attempts have been made to define author. According to the ICMJE authorship criteria authorship should be based on 1) substantial contributions to conception and design of, or acquisition of data or analysis and interpretation of data, 2) drafting the article or revising it critically for important intellectual content and 3) final approval of the version to be published. It is proposed that authors in scientific publications should meet the three conditions.



Another important fact that has to be taken into account is the growing increase of multi-author publications as a result of the increasingly multidisciplinary nature of science. Thus, the issue of the responsibility of coauthors is becoming the subject of interesting discussions (e.g. *Science*, 1997, 11-14). In general it is accepted that although all authors should take public responsibility for the content of their articles, the multidisciplinary nature of much research can make this difficult.

In April 1997, Richard Smith, editor of the *British Medical Journal (BMJ)*, after a conference in Nottingham in 1996 suggested that the concept of authorship in science is no longer valid and that it should be replaced by contributors and guarantors.

In September 1977, *BMJ* suggested that authors could use the contributor/ guarantor system or continue with the traditional way. It was suggested that a) are collaborators those who have added usefully to the work and they should agree to explain what each one has done; b) somebody should accept credit and accountability for every part of the process, including having the idea, undertaking a literature search, design, collecting and analysing the data, interpreting the results and writing the paper; c) authors should agree on the relative size of their contributions to decide the order in which they will be listed; d) although each contributor will be fully responsible for his/her contribution, at least one person, the guarantor, needs to accept accountability for the whole work (guarantors organize, oversee, and double check and must be prepared to be accountable for all parts of the completed manuscript, before and after publication).

The Lancet has not adopted a system of guarantors and considers all authors as contributors; the role of the guarantor may be complicated and controversial since it sometimes corresponds to a mere supervisor, someone who checks the integrity of the research and who may have not contributed much to the particular study.

Several journals are beginning to suggest that authors should clearly explain their contributions. When this is not the case readers have complained that acknowledgements are sometimes better specified than contributions.

The *Annals of Internal Medicine* is perhaps the first journal that instead of asking authors to specify freely their contribution, makes them choose among a series of predefined tasks.

According to ICMJE guidelines, it is recommended that each author takes public responsibility for appropriate portions of the content, and that "one or more" authors accept responsibility of the work as a whole.

In the year 2000, the journal *Revista Médica de Chile*, adopted and first published, in Spanish, the ICMJE recommendations. The editors consider that in this language, there is no need to substitute author by collaborator or participant; however, they do require from each author a signature as liability for their contribution, and from the main author a guarantee for the veracity of all the others. In multi-disciplinary publications,



they propose, as in *Nature*, that the senior researcher from each group assumes responsibility for its contribution to the project.

The same year, *Nature* started to encourage its authors to specify their contributions. There have been several editorials and publications dealing with this subject, although some of them have come to the conclusion that this is not enough to avoid frauds.

In an analysis, published in 2007, concerning instructions to contributors from 234 biomedical journals, 100 (41%) gave no guidance about authorship, 68 (29%) were based on the ICMJE criteria, 33 (14%) proposed other criteria, and 33 (14%) said nothing except that all authors should have approved the manuscript. Only 21 of the journals (9%) required individuals' contributions to be described.

Unfortunately, and despite all the above, there is still not a consensus solution. Nevertheless, the trend is to specify in written form the assumption of responsibility of each individual author's contribution and the guarantee of one author who can account for the overall article. In multi-disciplinary publications, the senior author of each group assumes responsibility for their particular contribution.

Under these circumstances, the CSIC Ethics Committee suggests the following recommendations:

- In articles that include very different disciplines, in which not all the authors may be competent to critically analyze every part, the authorship of each contribution should be clearly established.
- In these cases, the author/ authors accountable for the article as a whole should also be clearly specified.
- Authors should take into account that, in any case, signing an article implies that the whole of its contents is known, and that they all share a certain degree of responsibility.