

## AUTHORSHIP

Publication, especially publication in refereed journals, is the major indicator of research accomplishment. The author of a journal article receives, and deserves, credit within the status systems of scholarship. Despite the importance of authorship in the assignment of professional rewards (recognition, professional advancement, etc.), or perhaps because of it, guidelines concerning authorship are not terribly clear. In the case of papers with multiple authors, either the inclusion of some names or the order of authorship may be a matter of considerable debate and concern. I am convinced that errors of omission and commission are common. The problem is one of ethics but not alone of ethics. It is also a problem of the security or quality control over the processes of scientific and other scholarly writing.

The "Vancouver Group" of biomedical editors, which established the "Vancouver style", one of the two editorial styles accepted by this journal, has also established guidelines on authorship and acknowledgements (International Committee of Medical Journal Editors, 1985). Useful discussions also appear in books by Day (1983) and Diener and Crandall (1978). These sources present guidelines which strike me as reasonable and which might profitably be consulted both at the paper-submission stage and at the research-planning stage whenever collaboration is contemplated. Some of these guidelines are summarized here.

The Vancouver group established one basic principle, which is a prerequisite to authorship, and which rests on three components. "Each author should have participated sufficiently in the work to take public responsibility for the content. This participation must include: (a) conception or design, or analysis and interpretation of data, or both;

(b) drafting the article or revising it for critically important intellectual content; and (c) final approval of the version to be published." According to these criteria, individuals would qualify for authorship by designing a study, even if they did not analyse the data or write the first draft, provided they did make an intellectual contribution of importance to the manuscript and provided they approved of the final manuscript. Other individuals could qualify for authorship using the data gathered in a study which they did not design, if they were active in analysis or interpretation of the data, contributed intellectually to the development of the specific paper and approved the final paper. Other variants are possible, based on these criteria, and sorting them out is often difficult.

The Vancouver group goes on to make clear what does not qualify for authorship: "Participation solely in the collection of data does not justify authorship". This principle applies equally to exclude an interviewer, let us say, gathering social survey data, from authorship and to exclude a physician who makes patients available to other investigators for research studies. That is, just gathering the data or serving as a gatekeeper to research respondents does not in itself justify authorship. I emphasize the latter because I know of instances in which clinic directors have required co-authorship on these grounds. This is inappropriate. Of course, if a clinic director who cooperated in securing participation of his or her patients in an investigation also contributed intellectually to the study, co-authorship would be justified. Diener and Crandall (1978:144) also point out that "... lending scientific apparatus and routinely running subjects usually deserve footnote credit, not authorship."

This implies that laboratory directors should not claim authorship on papers written in "their labs" solely on that basis.

The exclusion of those who gather data from authorship is not a question of whether they are paid. Paid research assistants might very well justifiably receive co-authorship, as would unpaid research assistants, if they also made intellectual contributions to the analysis of data. The intellectual contribution is the critical eligibility criterion and it implies that anyone claiming co-authorship should be able to stand on a podium at a scholarly meeting and defend the analysis.

The order of authorship should ideally reflect the relative importance of the individual's contribution to the paper. First authors do receive more recognition than authors listed later. The assumption is made that, unless otherwise stated, the first author has made the most important contribution to the study. Informally, a study with multiple authors often leaves all but the first author referred to anonymously as one of the "et al." When contributions are equal, authors may randomize assignment of first-authorship in a series of papers, or they may choose to list authors alphabetically and to note in a footnote that the contributions of the authors are roughly equal. The power base of various authors, whether based on differences of academic rank, faculty-student differences, gender or anything else, should not be a consideration in assigning order of authorship or in making determinations of who should be listed as an author; nor is authorship to be granted as a reward for hard work (Diener and Crandall, 1978:164-165). The number of hours worked on a project is not necessarily correlated with scholarly contribution.

Ideally, the inclusion and ordering of authorship should be discussed prior to writing

a paper and, in fact, prior to execution of collaborative research. In practice, the relative contributions of various parties frequently change over the course of a project or even over the course of writing a specific paper. Collaborators, especially where there are power differences such as in faculty-student collaboration, should try to openly discuss these dilemmas and may find it helpful to agree on a mediator in the event of disputes arising.

It is appropriate to acknowledge contributions which fall short of authorship. In this journal, such acknowledgments are placed at the bottom of the first page, along with acknowledgement of research funding sources. This can include recognition of research and secretarial assistance and technical assistance but it should also include intellectual contributions such as "advice", "consultation", "critical review of manuscript", which are not of a magnitude to warrant co-authorship.

Failing to include individuals as authors when they deserve it is exploitative. On the other hand, assigning authorship when it is inappropriate is subversive of the reward system which governs scholarship. Giving authorship too readily is, I think, a problem of increasing significance in distorting the scholarly process. It is also unfair to those who have made legitimate contributions to a scholarly paper, in that it diminishes these contributions in the eyes of the readership.

The assignment of authorship is, then, a complex but also a consequential matter. The Vancouver group has established that "Editors may require authors to justify the assignment of authorship". The editorial board of the *Canadian Journal on Aging* reserves the right to do so, and to deny publication of otherwise sound papers if authorship is not justified.