

Authorship. Credit and disputes

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As the number of authors per original biomedical research paper has increased, accountability has become dislocated from credit, and disputes and abuses of authorship have increased. This situation led researchers to propose a new system that acknowledges a contributor who has performed important work on a project that resulted in an article, list describing their contributions for the reader, include on the byline the names of those who contributed most substantially, and lists of guarantors of those who can take responsibility for the integrity of the entire work. Science does not exist until it is published, and the idea is to make what is published truly an inscription under oath.¹

In the early 1980s John Darsee falsified studies at Emory and Harvard Universities; many of the papers that were subsequently retracted included as coauthors prominent heads of a department. These people had not fabricated data, but they had allowed their names to appear on work, which they knew too little of. In 1995, Malcolm Pearce, a British gynecologist, was removed from the medical register for fraud, he had published as papers in the British Journal of Obstetrics and Gynecology describing work that had never taken place. Unfortunately but similarly to Darsee affair, a prominent professor and editor was also a coauthor of one of the papers. In other places, this affair would have been brushed under the carpet, and the whistleblower would probably have been hounded out of his or her job. Another important aspect of the Darsee and Pearce affairs, of course besides the research misconduct, is the light it throws on gift authorship, the practice of treating authorship as something that is conferred as a benefit rather than earned through taking responsibility. Many people accept or confer gift authorship, detection is unlikely, and the rewards are obvious, tenure, promotion, research grants, and fame, especially in a society that measures worth by the weight of papers produced rather than their quality. Another reason why gift authorship is so common may be due to the recommendations produced by the Vancouver group, an international group of medical journal editors, are not known, or followed by many researchers and even difficult to understand or to apply.²

In 1985, the International Committee of Medical Journal Editors (ICMJE) also known as the Vancouver group, drew up a set of criteria for authorship to be incorporated into their uniform requirements for manuscripts submitted to biomedical journals. They took this step partly to put an end to the practice of gift authorship and

partly to discourage the inflation in the number of authors listed on biomedical papers. The authorship criteria have expanded following their introduction in 1985. In the most recently published version of the uniform requirements (ICMJE, November 2003), the criteria on authorship credit should be based on 1. substantial contributions to conception and design, 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. Authors should meet conditions 1, 2, and 3. Collection of data, technical help, general supervision of the research group or department chair, alone, does not justify authorship. The order of authorship on the byline should be a joint decision of the co-authors. All contributors who do not meet the criteria for authorship should be listed in an acknowledgment section.³

The ICMJE criteria, though thorough and widely disseminated, were also commonly ignored or flouted. Studies of authorship in science suggest that traditional criteria for authorship no longer reflect the way research is actually carried out. The reality seems to be that definitions of what contributions merit authorship vary from one department to another within institutions, as well as among institutions and scientific disciplines. Goodman⁴ surveyed first authors of multi-authored papers in consecutive issues of a peer-reviewed general medical journal, asking them regarding their contributions and those of their co-authors. He used an expanded list of contributions that included the ICMJE criteria, without so identifying them, and several others such as obtained grant, head of department, referred patients to study, gave statistical help that do not meet the ICMJE criteria. Goodman⁴ concluded that approximately one-third of the 84 authors of these papers had not made substantial contributions, as defined by the ICMJE to the intellectual content of the papers. Eastwood et al⁵ asked in a survey of post-doctoral biomedical research fellows at the University of California, San Francisco, United States of America (USA), to select from a list the criteria they believed warranted authorship of a research paper. The majority of respondents checked designed or collaborated substantially in the design of the study (92%) and analyzed and interpreted the data reported in the paper (85%); 69% checked wrote first draft of the paper and 65% developed or collaborated in developing a testable hypothesis for the study, all of which are consistent with the ICMJE criteria. However, 85% checked performed the experiments or collected the data reported in the paper, 47% checked, was head of the laboratory in which the research was carried out, and 44% checked obtained funding for the research project, which are excluded from ICMJE criteria. More disturbing was the effect on some of these post-doctors of having observed or

experienced what they regarded as authorship abuses. Thirty-eight percent said they had been listed as an author on a paper for which another author did not deserve authorship by the criteria they had selected; 37% said they had been asked to list an undeserving author on a paper; and 20% said they had been excluded as an author when they thought they deserved authorship by their selected criteria. Overall, 32% of the total 324 survey respondents said they would be willing to list an undeserving author if it would make publication of their work more likely or benefit their research career; but of those who had unfavorable experiences with authorship described above, 75% said they would be willing to list an undeserving author ($p < 0.001$). Thus, their perception of the actual practice of authorship assignment in the research environment had apparently made them willing to compromise their own principles.⁵

Can these differing viewpoints and interests be reconciled? How could we answer the vexed question of authorship credit and order? How can researchers decide on who should get credit and for what? What is the proper machinery to control the increasing prevalence of articles with honorary or gifted authors or ghost authors? How could we propagate that misappropriation of authorship undermines the integrity of the authorship system? How could we convince the researchers that gifted authorship is a poisoned chalice? How could we prove the link between gifted authorship and the potential of research misconduct specifically fraudulent claims?

A conference to discuss some of these issues and consider redefining scientific authorship was held in Nottingham, England in June 1996 where the editors of *Lancet* and *BMJ* who were already members of the ICMJE were attending. To follow up on ideas presented at the Nottingham conference, a second conference, sponsored jointly by the *Lancet*, the *British Medical Journal*, and the Council of Biology Editors, was held in February 1998 in Berkeley, California (USA). One idea emerging from these discussions was a plan to require researchers submitting papers for publication to list the contributors to the report, along with a description of what each contributed to the study. The Council of Science Editor's task force on authorship, formed after the Berkeley conference, is working to inform as wide an audience as possible regarding these issues.⁶ The *Lancet* became the first biomedical journal to implement disclosing such contributions at the end of original articles in July 1997. In January 1998, the *BMJ* became the second general medical journal to adopt the proposal but added the requirement that at least one guarantor be designated. Other journals have also implemented versions of the proposal. Yank and Rennie¹ concluded in their study that publication of lists that specify contributions to research articles is feasible and seems to impart important information.

Given the association between authorship credit and responsibility from one side and research misconduct and scientific fraud in the other side, we can not deal with one leaving the other. When formed in 1997, the Committee on Publication Ethics (COPE) major objective was to provide a sounding board for editors who were struggling with how best to deal with possible breaches in research and publication ethics. Most case discussion has taken place during the bimonthly COPE meetings, but some editors have made written submission to the committee and advice has been offered through correspondence. Albert and Wager⁷ prepared some guidelines, which may help researchers handle authorship disputes. They recommend as principles to encourage a culture of ethical authorship where researchers should not simply follow local customs and practice but they need to be aware of the views of editors; start discussing authorship when planning the study, so researchers have to raise the subject right from the start at a face to face meeting and continue to discuss ideas regarding authorship as the project evolves keeping a written record of discussions, and decide authorship before starting each article, as many authorship difficulties arise from misplaced expectations and poor communication. Before starting to write the project, confirm in writing who will do what and by when. Ideally this should be face to face and keep everyone informed of any changes with a written note.⁷

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