

## The Authorship of Deceased Scientists and Their Posthumous Responsibilities

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“You cannot escape the responsibility of tomorrow by evading it today.”

Abraham Lincoln

### Abstract

There is one thing that we can all be certain of, whether scientists or not, and that is death. The legacy of a deceased scientist thus lies not only with his or her work but with his or her name. Even after death, scientists' ideas and efforts are continuously promulgated and used by others. In death, the scientists and their ideas are remembered, and the legacy of their names and work continues. How to deal with the death of an author is a complex topic, and not one that many wish to address publicly, most likely because the image of death plays into the realm of socially- and religiously-associated emotions. So it is understandable if this opinion piece evokes some emotional responses. However, in recent years, how to treat authorship by deceased scientists has become a minor recurrent topic in science publishing, and is thus a topic that merits greater discussion—despite its uncomfortable nature—simply because there are matters related to death, and the boundary between death and the scientist's living work, that need to be addressed. This opinion paper aims to address two themes related to deceased scientists: 1) who will assume the authorship roles and responsibilities after the death of an author (i.e., posthumously); and 2) how should errors in the literature be corrected and what responsibilities coauthors or affiliations associated with deceased scientists should assume.

**Key Words:** authorship; corresponding author; death; posthumous publications; postmortem publications; responsibilities

### Authorship Contribution and Responsibility: How Are Deceased Authors Addressed?

The authorship guidelines of the International Committee of Medical Journal Editors (ICMJE), which are widely used in science publishing, including by mainstream science, technology, and medicine (STM) publishers, include four clauses:<sup>1</sup> “1) Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND 2) Drafting the work or revising it critically for important intellectual content; AND 3) Final approval of the version to be published; AND 4) Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.”

The authorship guidelines of seven STM publishers, namely, Elsevier Science ([www.elsevier.com](http://www.elsevier.com)), John Wiley and Sons ([eu.wiley.com/WileyCDA/](http://eu.wiley.com/WileyCDA/)), Nature Publishing Group ([www.nature.com](http://www.nature.com)), Oxford University Press ([global.oup.com](http://global.oup.com)), Springer-Nature ([www.springer.com](http://www.springer.com)), Taylor and Francis Group ([taylorandfrancisgroup.com](http://taylorandfrancisgroup.com)), and Walter De Gruyter ([www.degruyter.com](http://www.degruyter.com)), many of which follow the ICMJE authorship definitions, or close derivatives of it, do not specifically address the issue of deceased authors, even though they clearly state that all coauthors must have seen and approved the final, submitted version of the paper and have to be responsible for the work.<sup>2</sup>

It is abundantly evident, in a very practical sense, that a deceased scientist cannot fulfill all of the ICMJE requirements, including approval of the final version, and responsibilities as required by the publishers' guidelines. And it is for this reason that we have written this opinion piece, to provide a wider perspective and allow for greater discussion on this topic. This paper in fact

contends that the importance of recognizing deceased scientists as authors has not been carefully considered, despite the long history of scientific publishing, even by leading STM publishers. Critics who may claim that this assessment is not necessary and that such problems can be resolved reasonably easily by an editor-in-chief or editorial board would do well to examine the case studies highlighted here and to better understand that clear and defined guidelines are required so that postmortem cases related to a published paper or scientific publication can be resolved as smoothly as possible.

### The Argument for Deceased Scientists as Authors

Supporters of this argument say that a deceased scientist should be a valid author listed on a paper submitted or published posthumously. At least 78% of respondents to an online survey conducted at Retraction Watch<sup>3</sup> indicated that a researcher who was involved in a research project but died before the manuscript was drafted should be a valid author. Proponents of this position argue that a scientist who has made a valid contribution to the intellectual base or structure of the paper—namely, ideas on the experimental design, feedback on the experiment, having completed parts of the experiment itself, or even having contributed to earlier versions of a paper—before dying, would be sufficient to merit authorship. Because writing a paper and seeing it published can take place years after the actual experiment was completed and because of the lengthy delays sometimes caused by an imperfect traditional peer review process,<sup>4</sup> death is not a reason to exclude a scientist as a coauthor, even one who has only partially fulfilled responsibilities 1 and 2 of the ICMJE clauses, provided that all other coauthors have collectively approved authorship. Certainly, this seems to be the case of Dipak Das,<sup>5</sup> Thomas M Behr,<sup>6</sup> and Hartmug Beug.<sup>7</sup>

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### **The Counterargument for Acknowledgment of Deceased Scientists**

The counterargument from those who favor deceased scientists as acknowledged entities rather than as valid coauthors of a scientific paper is based on the fact that they do not satisfy criteria 3 and 4 of the ICMJE authorship clauses. Thus, technically, they cannot automatically be considered authors. Members of this camp would also argue that a deceased scientist cannot review, and thus approve, what has been submitted (criterion 3 of the ICMJE clauses for authorship) or eventually published, which is a requirement that frequently accompanies submission to a journal by the STM publishers listed earlier and is found in clauses related to ethics declarations and copyright forms. They also cannot proofread the final published paper, respond to critics of the paper or to queries related to it in postpublication peer review, or assume the responsibility in clause 4 of the ICMJE clauses. Defenders of this argument may assert that data or other aspects of the paper could be manipulated in the absence of the screening by the deceased scientist. However, in this case, surely the living authors would be fully responsible for the submitted manuscript's content, including the responsibility associated with manipulated data or other aspects of academic foul play. There is also the argument that the names of deceased scientists could be fraudulently manipulated as a "fame" factor in false authorship (i.e., including them as guest authors) or even on editorial boards to feign legitimacy.

### **Author Position**

Assuming that a deceased author is considered a valid author, the issue of author position within the group can be tricky. This is because the "weight" of the contribution of each author is usually not easy—and may be impossible—to quantify. Thus, in multiauthored papers, does one insert a deceased author in the final position (traditionally reserved for the senior scientist or principal investigator), the first or sec-

ond position, or the penultimate position? Ultimately, it is the authors who decide on the constitution of a team, and thus, in the extraordinary case of a deceased author, we recommend that this decision be made by the group of authors, who best know that individual and his or her contribution. Such a decision should not be made by a journal or publisher distant from the reality of that individual's contribution to the research or to the paper.

### **Attempts at Resolution**

Because all scientists alive today will one day no longer be with us, the issue needs to be clearly resolved,<sup>8</sup> as assuming responsibility posthumously has not yet even been widely discussed, much less agreed upon by the community.

Several attempts have been made to resolve the topic. The *Journal of American Chemical Society* states:<sup>9</sup> "Deceased persons who meet the criteria for inclusion as coauthors should be so included, with an Author Information note indicating the date of death." The same *Journal of American Chemical Society* document does not, however, indicate that it follows the ICMJE criteria for authorship. Similar solutions were made by the Cochrane Community:<sup>10</sup> "As a general guideline, where an author made a substantial contribution to a protocol or review (sufficient to warrant authorship) but died before publication, and the coauthors feel it is appropriate to include the deceased author on the by-line, then editorial teams could permit inclusion of the author on the by-line until the review is updated." The *British Medical Journals* state:<sup>11</sup> "Deceased persons deemed appropriate as authors should be included with a death dagger (†) next to the author's name, and a footnote stating that the author is deceased and giving the date of their death". The Council of Science Editors declares clearly:<sup>12</sup> "For cases in which a coauthor dies or is incapacitated during the writing, submission, or peer-review process, coauthors should obtain disclosure and copyright documentation from a familial or legal proxy". On

the Online Ethics Center (OEC) website is a proposal for resolving the case of authorship of a deceased scientist who participated in the conceptualization and planning of the research work and was already deceased by the time the paper had been submitted but whose contribution was deemed to be more than adequate to merit authorship.<sup>13</sup> This proposal appears to override the four requirements of the current ICMJE definitions of authorship, although it is unclear (i.e., it is difficult to determine) how widely the Online Ethics Center's guidelines are used. Finally, the Committee on Publication Ethics (COPE) stated:<sup>14</sup> "The case of deceased or incapacitated authors is more straightforward and the Forum would suggest a statement from the corresponding author attesting that to the best of his/her knowledge, the deceased/incapacitated individual met the definition of authorship, and all the other authors agree. In such cases, authorship is given and so the individual remains as an author."

The two most logical ways of resolving authorship of deceased scientists are by addressing the rules and conditions for inclusion of a deceased scientist in the instructions for authors (IFAs) and by indicating the death of the scientist in the paper's footnote, following notarized consent. At first, the publisher and its journal(s) have the responsibility of adding a clause to the IFAs that specifically addresses the authorship of scientists whose death occurs before, during, or after the submission of a manuscript. Moreover, within the broader context of postpublication peer review, the IFAs should also discuss who assumes the responsibilities of the corresponding author if the corresponding author is deceased or dies at some point between the experimental phase and article submission, revision, or publication. The second way to address this pragmatically is by including a footnote, byline, or section separate to or part of the acknowledgments that addresses the circumstance surrounding the death of a coauthor. Such a background would also relieve the concern about who will take over the responsibilities

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associated with the published paper that includes a deceased scientist. For these two potential solutions to work there must be 1) coordinated commitment by the remaining authors to deal responsibly with any post-mortem queries related to the manuscript following acceptance or publication and 2) a platform provided by the publisher within the manuscript and supporting information that describes this situation. The intersection between these two requirements would be a signed document by the remaining authors providing a written guarantee of their remaining responsibilities. To our knowledge, no such document exists yet.

A sector of the scientific community may consider the cause of death to be irrelevant or beyond the scope of ethical consideration associated with authorship-related responsibilities. Thus, the possibility of not including details about the cause of death should exist. In all cases, when a paper is submitted that already includes a deceased scientist as an author, the cover letter or note to the editor or journal upon submission should note the death and preferably provide an explanation as to why that individual is included as a coauthor. If a coauthor should die during peer review or the publication process, then that individual would have already been a valid author at submission, in theory, provided that relevant declarations and guarantees were given to the journal. Thus, the only outstanding decision that needs to be made in the latter case is how to address postmortem responsibilities for the content (intellectual and factual) of the published paper. In such a case, we propose that the deceased author's institution automatically assume all responsibilities regarding public queries or concerns related to that paper. In the absence of a response by the institution, the publisher should have the right to then correct the literature as an erratum, expression of concern, or retraction. Finally, the inclusion of deceased researchers as editors on editorial boards, such as the case of Roger Brumback,<sup>15</sup> also merits further discussion.

## Conclusion

As scientists and as humans, we will one day all encounter death. In science publishing, this topic has not been clearly addressed, possibly for the most obvious reason: sensitivity to the topic. Yet there are cases in which the fact that an author is deceased and, therefore, cannot be accountable for what has been published, is problematic, leaving the problems in a state of impasse. To avoid further cases in the future, it is worth expanding the debate to address the topic, taking into account both sides of the discussion, each with valid and valuable perspectives. The legacy of scientists lies with their names and is one of the greatest motivations behind their efforts to publish. Thus, the use of a name postmortem is sensitive and complicated, as is the responsibility of an individual for errors in the literature postmortem. Guidelines about how editors, journals, and publishers deal with deceased scientists need to be drafted, particularly for the seven STM publishers who mostly claim to follow the ICMJE guidelines for authorship. 

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