

## How many conservation biologists does it take to write a research paper, and do they all know they've written it?

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My colleagues and students are never shy about pointing out my faults, and one that annoys them is my propensity to tell weak, unoriginal jokes and then repeat them. In my defence, the complaint shows that they remember the jokes, which is more than I can say about many of the points I try to make seriously. In that light, the title of this article parrots a weak, unoriginal joke – King (2000); Durani *et al.* (2007); Modi *et al.* (2008); Rahman and Muirhead-Allwood (2010) and no doubt many others have already cracked it, albeit in the context of different disciplines. Having used that to gain attention, I want to transition to the serious point in the hope that readers will remember it along with the bad joke – all authors need to agree to a manuscript's submission, and to all stages of its revision.

The mean number of authors on scientific papers has been climbing since late last century (e.g. Logan 2016 and included references). Reasons include the need for teams of experts with different skills to work on multidisciplinary topics, international collaborations to crack problems of global significance, and an honest desire to include all people who meet the criteria for authorship laid down in guides to research conduct such as NHMRC, ARC and Universities Australia (2007). However, multiple authorship can lead to tensions or even conflict (e.g. Kwok 2005; Tsai *et al.* 2016), including cases where one or more authors are named on papers without their agreement or where revised versions of papers are submitted without the knowledge or input of some of the coauthors (Example 4 in Primack (2014)). Primack (2014) observed that 'This situation of submitting papers without the knowledge and permission of coauthors appears to be happening more frequently now. It is a worrying trend, and it (sic) contrary to professional standards and against journal policy.' Although he was referring to the journal *Biological Conservation* when he mentioned journal policy, the point is true for *Pacific Conservation Biology* and no doubt many other journals too. 'Ghost authorship', where a person with legitimate claims to authorship is left off the authorship list, is another major cause of dispute (Albert and Wager 2003). NHMRC, ARC and Universities Australia (2007) specifically state: 'A person who qualifies as an author must not be included or excluded as an author without their permission. This should be in writing, and include a brief description of their contribution to the work.'

Including authors without their permission or without them having seen the submitted version of a manuscript or a revision is problematic for many reasons, such as:

- it encourages the practice called 'gift or guest authorship' (Albert and Wager 2003), in which people are named as authors as a compliment although they have not met criteria for authorship (i.e. a substantial contribution to project design, analysis, interpretation or writing to the point where the author can take responsibility for components of the work (NHMRC, ARC and Universities Australia (2007))
- authors may be compromised if their name appears on a manuscript where they do not agree with the conclusions reached, or have misgivings about the design or execution of the study
- disagreements between authors may anticipate likely criticisms from peer reviewers, so time spent resolving disagreements before submission may be repaid with interest during review. The late Dennis King once told me about a case where he refused to sign his name to a paper with the opening sentence: 'Sexual reproduction is a formidable problem for evolutionary biologists.' On reflection, his colleagues are probably grateful not to have to live with that statement in print
- if a problem occurs with a paper, all authors will be embroiled, even those who did not know of the content or did not consent to authorship.

Smith (2003) described one case. Two fraudulent papers were published in the same issue of a journal and, after an inquiry, they were retracted together with other publications of the lead author. A 'guest author' on two of these papers was caught up in the scandal and forced to resign from multiple senior posts. This may seem harsh, but given that 'guest authorship' is not permitted and that authors must take responsibility for components of a paper, guest authors are always compromised: either they have responsibility for flawed or fraudulent work, or they agreed to be named on work where they did not meet the criteria for authorship.

Speaking from personal experience, I recall three separate cases where the first I knew of my coauthorship on papers was when I received emails from journals to say that a paper where I was a named author had been submitted. In each case, a zealous

colleague had submitted the paper without ensuring that all named authors had seen and approved the final version. Fortunately, in each case the matter was resolved amicably, but the potential for withdrawal of a submission or long delays was real.

Problems are not restricted to a first submission, but can also occur with the submission of revisions or correction of proofs. I know of one situation where a revised manuscript was submitted without all authors being notified. The revised paper was accepted, at which point one author wrote to say that he had not seen the revision and did not want his name included without the opportunity to check the revision and discuss it with the other authors. The acceptance was rescinded (the paper not having progressed to online publication) and the authors were asked to resolve their differences and submit an agreed version. An amicable solution was reached, but it involved one author withdrawing from the paper because he disagreed with some conclusions to the point where he did not wish to put his name to them. He would have been deeply compromised if the paper was published with him named as an author.

Everyone seems in a rush these days, so submitting a paper may seem too important to delay while waiting for one coauthor's agreement. However, the agreement of all coauthors is taken by editors as being true for all submitted papers, and corresponding authors declare this when submitting. If the declaration is found to be untrue it can be deeply embarrassing for the corresponding author, possibly compromising further dealings with the journal. The same holds true when revised manuscripts are submitted in response to reviews. All authors should check and approve the revisions.

Proofs are a grey area. Often authors agree that only one person will check the proofs, usually under the assumption that changes will be limited to correcting small errors. Furthermore, publishers often request fast turn-arounds when proofs are involved and authors are excited at the prospect of imminent publication. However, if the author checking proofs suspects something beyond a simple typographical error is wrong, despite the delays it is prudent to consult coauthors before making more substantial changes. Once the corrected proofs are placed online in early publication, that online version is the document of record and further changes can only be made as separate errata.

In conclusion, how many conservation biologists does it take to publish a research paper? On average, about five (assuming that conservation biology is following a similar pattern to ecology (Logan 2016)). To keep those coauthors happy and editors onside, corresponding authors should ensure that every author has approved all submissions, including revisions.

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