Social science APPlied to Healthcare Improvement Research (SAPPHIRE) Group
University of Leicester, Department of Health Sciences

Principles of Authorship and Good Practice Tips

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Contents

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Foreword

As researchers in all fields are well aware, authoring academic papers is a vital part of our academic currency – one of the ways in which employers, funders and those involved in national research assessment exercises (the Research Excellence Framework, or 'REF' in the UK) assess our academic 'worth'. For this reason, allocation of authorship is often a contentious issue – and not infrequently the source of dispute. Unlike the natural sciences, where there is a long history of papers having multiple (often numerous) authors, the tradition within the social sciences has been to prize single-authored publications. But this is changing for many social scientists, not least because social science research increasingly involves collaborations with multiple others, often in other disciplines and even other professions. This is particularly the case for social scientists involved in applied research – in SAPPHIRE's case, applied health research.

While such collaborations bring many advantages, they can also intensify dilemmas about how to allocate authorship fairly. In SAPPHIRE, most of our papers arise from large research projects, where social science is applied to a real world health or healthcare problem. Even when not collaborating with external researchers or organisations, these projects involve multiple researchers (academic staff and contracted research associates and assistants) in different roles – as principal investigators, co-investigators, data collectors, data analysts and project managers, not to mention all the other tasks involved in the actual drafting and re-drafting of reports and academic papers. In this research environment, single-authored papers are quite rare: almost every paper we produce has, quite rightly, multiple authors.

We like to think of ourselves as fair-minded and supportive of our immediate colleagues and collaborators elsewhere, but as in so many academic centres around the world, the course of (true) authorship does not always run smoothly. We have on occasion found ourselves in situations where, for instance, junior researchers and senior academics were in disagreement over who deserved to be an author in which position. Junior researchers – often fresh from the singular pursuit of a social science PhD and given careers advice that chances of a permanent job rested on proving their academic mettle through single-authored or first-authored papers – saw the data they had collected and coded, or sections of painstakingly written paragraphs, feature in submitted manuscripts, but felt they were not given sufficient credit in the authorship list for this work. More senior researchers sometimes felt that junior researchers did not recognise the significant amount of work that went into making a large research project happen in the first place (often before junior researchers had been recruited), or the time and expertise that went into turning interesting data into a high-quality academic paper that would be accepted by a highly ranked international journal. Being social scientists, there was also plenty of awareness on all sides of the scope for power asymmetries to prevail – or be thought to have prevailed – in these decision-making processes.

Keen to avoid the anxieties and potential for discord such disagreements could generate, we recognised the need, as a research group, to have a more transparent and consistent approach to reaching decisions about authorship. While a number of relevant authorship codes of conduct exist, including our own University's Research Code of Conduct, we felt that as group we would benefit from developing more detailed guidance for operationalizing such codes in a transparent, robust and ethically defensible way. So, we embarked on a process of developing a set of 'Authorship Principles' and accompanying 'Good Practice Tips', both of which are set out on the following pages for anyone who has experienced a dispute, or wants to avoid one.

The process of developing SAPPHIRE's Principles of Authorship

The process of developing the Authorship Principles may be of interest to those who wish to develop their own set of guidelines which, for example, better reflect the particular demands of their disciplinary and institutional context. In addition, our experience was that the process itself was perhaps as valuable as the end product. Developing the guidelines collectively allowed everyone in the group – regardless of career stage or experiences – to appreciate the many different potential contributions to the production of a paper, and provided an opportunity to explicitly reflect on the logics we were using to decide who merits authorship and in what position. We designed the process with the aim of making it participatory, allowing everyone, as far as possible, equal voice. Generating guidelines based on group consensus helped establish a sense of collective ownership and buy-in. Thus, in addition to sharing the outcome of this process, we first describe the development process.

We developed the Authorship Principles, and accompanying Good Practice Tips, between May 2012 and February 2013. The process we describe was coordinated by one group member, but depended crucially on the involvement of all SAPPHIRE members.

1. Reviewing and synthesising existing guidelines

We began by reviewing and synthesising existing guidelines, including authorship guidelines from the British Psychological Society (BPS), the British Sociological Association (BSA), the American Psychological Association (APA), the International Committee of Medical Journal Editors (ICMJE), the Committee on Publication Ethics (COPE), and those provided by the University of Leicester.

We identified a number of principles that existing frameworks had in common, such as that all authors should agree on authorship, and that all authors should approve the manuscript before submission. There were also some principles which some of the guidelines (but not all) had in common, such as specification of contributions which, on their own, did not merit authorship – for example, acquisition of funding alone, general supervision of research or contributing research but not helping with the publication itself (APA, IMCJE, University of Leicester).

The clearest point of consensus was that to merit authorship, each person had to have made a 'significant' or 'substantial', 'intellectual' or 'scientific' contribution to the research. What was far less clear, however, was exactly what constituted a 'significant' contribution – precisely the point at which our own dilemmas had begun. In addition, many of the existing frameworks had important omissions – e.g. most lacked guidance on authorship order – another common point of contention in our experience. Similarly, few explained how 'open discussion' should be ensured or disagreements resolved. Clearly, just synthesising existing guidelines was not going to be adequate to meet the needs of social scientists involved in multi-authored paper writing.

2. Authorship decision-making scenarios and group discussion

Our next step was an exercise involving the whole SAPPHIRE group. In small groups, we went through a set of scenarios, each of which described a situation where authorship allocation was not straightforward; each group was asked to decide on an appropriate allocation of authorship for each scenario, and then articulate the logic they had used to reach that decision. These scenarios were based largely on experiences that members of the group had had.

One of the things that came out of discussions at this stage was that having a set of guiding principles (articulating what form of contribution would merit authorship and how this was to be decided) would not be sufficient to address the challenges of multi-authored papers; we also needed a set of Good Practice Tips to make these principles workable in practice. For example, it became apparent that discussion of authorship needed to begin early on in a research project, that we needed systems for tracking contributions and for notifying all potential contributors of papers in development. Some of these Good Practice Tips extended to the management of research projects themselves: we identified the need for discussion about potential authorship at a project level, not just on a paper-by-paper basis. For example, there might be an early career researcher who is particularly efficient, organised and tech-savvy, who then gets lumped with all the project administration, thereby never having the opportunity to make what would qualify as a 'contribution' worthy of authorship on a particular paper.

3. Drafting, circulating and re-drafting the Principles

The next step was then to draft an initial set of Authorship Principles and Good Practice Tips. We discussed these at a second meeting, and further drafts were circulated and comments were collated and integrated (the final time by a different person to ensure there was no bias from the person coordinating the process). While no doubt imperfect, we tried to ensure a participatory and 'fair' process in a number of ways: we decided it would be best if the process was not coordinated by very senior group members, as this might inhibit junior members from speaking up; comments could be (and sometimes were) sent only to the coordinator and then re-presented anonymously for discussion. Another valuable part of the process was that for the final versions, all group members were asked to complete an entry on a table which specified that they had reviewed the draft and had either given comments or had no further comments to add.

4. Final agreement on the Principles and their use

The final step was a third group session where outstanding issues (mostly around wording) were presented, discussed and agreed on by the group. We also discussed strategies to promote their use, both within the group and in collaborations with external researchers – for example, giving a copy to all 'new starters' and making them available on the SAPPHIRE website. While Authorship Principles and Good Practice Tips will not, of course, be able to overcome all interpersonal conflicts or empower every junior researcher to speak up about their concerns, for us they have proved an important starting point for the kind of transparent decision-making that social scientists need in the contemporary academic climate.

Principles of Authorship

1.   Guiding principles

1.1. These Principles are designed as a guide to the process of determining authorship; they are principles, not hard-and-fast rules designed to cover every eventuality and possible exception. Reflecting the spirit of this intention, the principles should be used to support a constructive process of discussion with the aim of reaching a consensus on authorship.
These Principles are not intended to replace the University of Leicester's Research Code of Conduct (which can be found here: http://www2.le.ac.uk/offices/researchsupport/research-code-of-conduct), or the requirements of any specific journal. Rather, they are designed to support the operationalization of the common tenets of such codes of conduct.

1.2. The principles of fairness and openness should guide decision-making surrounding authorship. Operationalising these principles relies on open and inclusive discussion with the project team and/or all potential contributors on an on-going basis.

1.3. Ensuring that these principles underpin the decision-making process is the responsibility of the Project Lead, with advice from the Research Group Lead if required.

1.4. What constitutes 'fair' allocation of authorship needs to be considered at the project and Research Group level, in addition to the level of individual papers. For example, research assistants working on multiple projects simultaneously may remain under the threshold for authorship on all papers, due to the nature of their workload. It is the responsibility of the Project Lead, and/or the Research Group Lead, to intervene by identifying papers where this person may be able to do more work in order to qualify as an author. The individual involved may also identify relevant opportunities and discuss them with Project Lead and/or Research Group Lead as appropriate; this requires that the Project Lead ensure such individuals are included in paper discussions at a sufficiently early stage to be able to identify relevant opportunities.

2.   Criteria for authorship

2.1. Authorship credit should be based on both:

    2.1.1. A substantial contribution to at least two of the following :

- Conception and design of the research
- Data collection and/or basic data coding
- Analysis and interpretation of data
- Drafting the article or revising it critically for important intellectual content

    and

    2.1.2. Approving the final manuscript to be submitted.

2.2. All authors included on a paper should fulfil these criteria.

2.3. No one who fulfils these criteria should be excluded from authorship credit (unless they wish to be—see 2.4 below).

2.4. Any person who merits authorship has the right to choose not to be an author.

2.5 Any one of the following, for example, does not justify authorship where it is the only contribution made by a team member: obtaining funding; general supervision of research; collecting data; clerical support; basic coding; reviewing a manuscript draft.

3. Order of authorship

3.1. The value of different positions within the authorship order (including first and last author spots) will vary according to the target journal/disciplinary field. Different positions may reflect a leading contribution to a specific paper and/or to the project overall.

3.2. Agreement about the size of each person's contribution to the paper should be determined using the criteria listed in 2.1.1: i.e. assessment of an individual's contribution reflects the sum of that individual's contribution to conception and design of research, data collection, basic coding, analysis and interpretation, drafting or revising the paper. The relative weight of each of these different types of contribution should be discussed in the context of the specific paper in question.

3.3. The person who is identified as having made the major contribution to the paper (according to the process described in 3.2) is entitled to take first choice of authorship position.

3.4. The opportunity to select the next authorship position should be given to the individual who made the next largest contribution (determined as per 3.3), and so on in descending order of contribution size until all author positions have been determined.

3.5. If all the authors feel that they have contributed equally to the paper, this can be indicated in a footnote.

4. Responsibility for final decisions on authorship

4.1. Decisions about who should be an author, the order of authors and those included in the acknowledgements should be made through a process of discussion and negotiation, coordinated by the guarantor (see 5.3), until consensus is reached.

4.1.1. Where consensus cannot be reached, refer to section 6.

5. Responsibilities for project management

5.1. Each project team member is responsible for keeping a record (ideally written) of the contribution s/he has made to the project, and to specific outputs.

5.1.1. In large projects, extending over long periods, it may also be necessary to keep a record at project level of the various contributions.

5.2. In light of principles 1.2 and 1.4 (fairness at group and project levels), different responsibilities need to be exercised at individual paper level, project level or Research Group level.

5.3. The guarantor of the paper (who may or may not be the lead author) is responsible for:

- Ensuring that all those who merit authorship are included / invited to be authors on the paper

- This includes previous members of the Research Group who may have since moved on to another post, and individuals who may be on maternity or paternity leave.

- Ensuring that no one who does not fulfil the authorship criteria is given authorship credit

- Co-ordinating the authorship decision-making process

- Taking public responsibility for the paper.

5.4. The Project Lead is responsible for:

- Ensuring that discussions about authorship are started early on in the research process.

- Encouraging team members to keep a log of their contribution to the project.

5.5. The Research Group Lead is responsible for:

- Ensuring that all team members are aware of these Principles of Authorship.

- Ensuring that—at Research Group and/or project level—junior researchers have appropriate opportunities to qualify for authorship (see Principle 1.3 above).

5.6. The Lead author should usually be the corresponding author. This decision needs to be agreed. The corresponding author is responsible for ensuring that all authors have approved the final manuscript.

6. Procedure in case of serious disagreement

6.1. All team members are encouraged to use the accompanying document, Good Practice Tips, which is intended to help project teams avoid serious disagreement or in cases where authorship decisions cannot be agreed.

6.2. In cases where authorship disagreements cannot be resolved:

6.2.1. Decisions about authorship for a specific paper may be referred to the wider Project Team for further discussion.

6.2.2. Potential authors may engage trusted colleague(s), supervisor(s) or independent person(s) to mediate, investigate and make a recommendation. All parties should agree on who this person (or persons) should be.

6.2.3. Junior researchers have the same right to request the input of an independent third party (or parties) as senior researchers.

6.2.4. Potential authors have the right to seek the advice of colleagues (including more senior colleagues) external to the paper-writing group on a personal basis should they so wish. Researchers may also consult the Chair of the University of Leicester Research Policy Committee for advice, as per guidance in the University of Leicester Research Code of Conduct.

6.2.5 If the dispute cannot be resolved internally, or concerns have arisen post-publication, the Committee on Publication Ethics (COPE) offers guidance and advice: http://publicationethics. org/about

7. The influence of 'pragmatic' demands

7.1. It is acknowledged that, in certain cases, some potential authors may seek to bring pragmatic demands to bear in the authorship decision-making process. Examples may include:

- Those included in the REF versus those who are not

- Role-specific demands (e.g. professional development opportunities/requirements)

- Demands of different disciplines (e.g. value of single-author/fewer-author papers on social sciences)

- Demands of different journals (e.g. limits on number of authors)

- Demands of funders

- Differences for projects internal to SAPPHIRE and those involving collaboration with external groups

7.2. Pragmatic demands should NOT under any circumstances lead to:

7.2.1. The exclusion of authors who qualify for authorship under the principles listed above (principle 2),

7.2.2. The inclusion of someone who has not merited authorship under the principles listed above (principle 2), or

7.2.3. Principle 3 being overridden in determining the appropriate order of authorship.

7.3. Through open and inclusive discussion, early on in the process, it may be agreed that, where contributions have been equal, pragmatic demands may guide authorship decision making. Similarly, where contributions are yet to be made, pragmatic demands may guide the subsequent contribution of different project team members, so long as principle 8.2 is not breached.

7.4. The influence of pragmatic demands needs to be considered at project level and Research Group level, and not solely at the level of individual papers.

Good Practice Tips

Begin the process of deciding authorship EARLY

- Include authorship as a recurring item on the agenda of all study investigator meetings (i.e. from the outset of the project). Draw up a provisional plan/agreement about authorship during one of the first few investigator meetings, return to this and revise/update as appropriate at subsequent meetings.

- For each paper, agree a provisional list of authors at the start
    You may want to provisionally agree a lead author who may or may not end up being first author on the final manuscript, and a list of other authors without order.

- Make clear that the provisional list may be refined and will only be finalised near to submission, reflecting contributions to both the paper and the project.

- Make the conditions for authorship explicit – these may be conditional (e.g. requiring a particular kind of input to the paper from certain members).

- For each paper, agree at the start who will coordinate the process of discussing and deciding on authorship, and on what that process will consist of.

Make sure all potential authors are aware of and understand the criteria/conditions for authorship

- New people joining the group should be alerted early on about the authorship principles. This is the formal responsibility of the Research Group Lead, but others can help.

- Make these criteria explicit up front at the beginning of projects and paper development.

- Being explicit about the criteria from the start means that you can ask potential authors later on whether they feel they have met these criteria – and to explain how they have met them.

    Example: In a recent paper we had a couple of people who could potentially claim to be authors due to their involvement in the study, but who hadn't contributed to writing the paper despite being on the provisional list of authors. Pre-submission I sent them the conditions of authorship and asked if they felt they qualified as authors (this would require them to sign to say they had made a significant contribution to the paper) – both said no, which solved my uncomfortable dilemma of whether to tell them they were off the list! So, asking people themselves to justify their inclusion/position against explicit criteria can be very useful. This can be a good way of avoiding pressure to give authorships when people don't merit them.

Make explicit use of the criteria when drawing up author lists and refining final decisions

- There must be no 'gift' authorships, even in the face of pragmatic demands (e.g. REF) to be considered.

- Again, the order of authors or corresponding author status may be relevant if an author is funded by any of the Research Councils (UK), as this may affect access the University of Leicester Library open access article processing charge fund.

Ensure adequate systems for notifying all potential authors of papers in development

- This should include individuals who may no longer be working in the group or who are on parental or sick leave.

  Example: Circulate an abstract of the paper to all project team members to ask who might be included.

- Have ongoing, open discussions about papers with the project team. This can involve an ongoing and regularly updated list of planned and completed papers, and a standing agenda item at any project team meetings. This provides the opportunity for people to indicate if they want to contribute to a particular paper, and the opportunity for having an open and honest discussion about it.

- Ensure that an identified individual has clear responsibility for this process.
  The project lead is formally responsible for ensuring that discussions about authorship at project level begin early; the lead author on a given paper should take responsibility for ensuring that all relevant people are included in discussions about a specific paper.

Ensure that individuals have appropriate opportunities to meet the criteria for authorship

- Ensure there are systems for recording who has been involved in the project at different stages so that, e.g. staff who leave or move to work on other projects are not forgotten or excluded.

- Consideration should be given to allowing those 'at the margins' of eligibility according to the criteria a chance to discuss what they would be required to merit authorship, and how they might ensure they have appropriate opportunity to make the necessary contribution.

Keep an ongoing record of each person's contribution to the project

- This would form a kind of continually updated 'contributorship' statement for each team member

- Each member is responsible for keeping a record of her/his contributions to a project, but a central record for the project as a whole is likely to be helpful, especially for large projects

- This can be used to make decisions on authorship, to give responsibility to potential authors themselves for demonstrating their contribution, and to feed into acknowledgements and contributorship paragraphs where appropriate

  Suggestion: Have a document for each project that includes a list of everyone who has been involved with the project, detailing what their involvement was (with explicit reference to the agreed guiding principles). This document can then serve as a starting point for discussions about authorship on each paper that is written. It can be regularly updated.

  Suggestion: Ask project team members to record and update their own statement of contribution.

All team members must recognise the importance of teamwork, the need for flexibility, continual (re)negotiation and give and take

- Be aware of different politics and different understandings within other groups, and that as a result negotiations about authorship may be more difficult than they are within a single group. Sometimes in these situations you may need to accept that you will not be entirely happy with your position in the author list. Influencing factors will include your ongoing relationship with that group, the capacity in which you were invited to be involved with the project, and so on.

- Where there will be a number of outputs from the same project, make sure that all potential authors are involved in discussions about how authorship may be distributed across the range of outputs.

  Example: When working with clinicians etc., one approach is to write one paper targeting a medical journal with all the project team as authors, and a second paper for a social science journal about which may have a smaller authorship. Some clinicians are perfectly happy with this.

Ensure there is an agreed process for resolving disputes

- The principles document sets out steps for doing this

  Suggestion: Have an independent panel with the authority to render final decisions about authorship (perhaps including a person or two from another research group), especially if the approach set out in the principles document proves difficult in practice.

- Tools and further information available to support the authorship decision-making process include:

  The free software Authorder
  - http://www.authorder.com/index.php?option=com_content&view=frontpage&Itemid=53

  The Committee on Publication Ethics
   - http://publicationethics.org/about

Ensure that institutional requirements for authorship affiliation and open access are adhered to

- Note that the University of Leicester (in accordance with HEFCE guidance) requires the accepted paper to be made open access ('Gold' or 'Green') if permitted by publishers

- If the publication derives from research funded by certain funders and the corresponding author is from the University of Leicester, the University Library will fund article processing charges for 'Gold' open access. Further information is available at:
  - http://www2.le.ac.uk/library/for/researchers/publish/oa-policy-in-a-nutshell

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