

Some thoughts on authorship

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In a recent science news report [1], it was stated that a physics paper with 5,154 authors, in which the list of the authors and their institutions took up 24 pages, had broken the record for the largest number of contributors to a single research article [2]. In this paper, the authors reported an experiment in the field of high energy particle physics performed by international collaborations involving a very large number of researchers. It has been common for several decades that many papers in that field have several hundred authors. More recently, there have appeared several papers with close to or over 3,000 authors [3-5]. In those papers, the authors are usually alphabetically ordered and no corresponding author is identified. This phenomenon of an extremely large number of authors for a single paper, which has been termed 'hyper-authorship,' can also be observed in biomedical research fields [6]. A recent paper in genomics has over 1,000 authors [7].

This report makes me ponder about the meaning of authorship. A natural question I have is whether all of these 5,154 people made sufficient contributions to be authors. The answer to this question inevitably involves some subjective judgement, even though I am sure that those working in experimental high energy physics would enthusiastically say yes. They would claim that every author made essential contributions without which the project was not possible. It is obvious that the way this kind of big science experiments are prepared and conducted is very different from conventional science research and has some similarity with the operation of big industrial companies.

Being a physicist myself, I can understand the situation and the rationale specific to experimental high energy physics. Nevertheless, I cannot avoid having an uncomfortable feeling about papers with several thousand authors. I think scientific papers are meant to be read not just by professionals in the same field but also by those in other fields and the intelligent general public. They also serve as historical records of important scientific discoveries. What kind of information does an alphabetical list of several thousand names provide to those readers? I would say, almost none. Of course, these authors need to get proper credit and recognition they deserve to develop their professional careers. The value of authorship in this case, however, is clearly different from that for a paper with a small number of authors. Recently in Korea, there has been much confusion when comparing the authorship in experimental high energy physics directly with those in other fields for competitive funding purposes.

I think the concept of contributorship proposed by Rennie et al. [8] makes a lot of sense in the present case. Instead of giving a lengthy author list at the beginning of a paper, they may write down the name of the collaboration as a single author and give a list of the names of con-

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tributors classified by their specific contributions at the end of a paper, or provide it as a separate file in the case of an electronic journal. In that way, the list of names provides meaningful information to the readers and each contributor can get due credit for his or her contribution.

There are several other trends related to the authorship of scientific studies with which I also feel uncomfortable. One is the rise of the number of super-authors who publish an unreasonably large number of papers as co-authors. Another trend which is getting more and more popular recently is what may be called 'co-first' authorship, where the first few authors of a paper are explicitly designated as having contributed equally to the work. These phenomena bear a close relationship with the basic concept of authorship and the way research credits are distributed among participants. I will postpone the discussion of these to another opportunity.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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