Karen Muskavitch's Commentary on "The Temporary Post-Doc"

Commentary On
The Temporary Post-Doc

Case Overview

An initial reading of this case might lead one see it as "simply" a case dealing with the issue of authorship. However, further reflection reveals that it hinges on the larger issue of the system of responsibility and reward in the laboratory, and how this system is communicated to and understood by all the laboratory members, including the PI. At an even more basic level, the essence of the problem here is a lack of communication.

In discussing the case, it would be very instructive to spend some time exploring the relevant obligations of all the major characters, and if, and how, the fulfillment of these obligations should be linked to rewards such as authorship. For instance, Smith had an obligation to carry out and document careful research that others could build on, and Johnson had a responsibility to supervise Smith's work and to review his results. Both failed in their responsibilities. Now we are asked to determine what happens to the reward, authorship. In Part 2, Johnson asserts that by failing to fulfill his obligation to the lab, Smith has given up his right to a co-authorship.

The responsibility-reward system will vary from lab to lab, yet is central to the scientific enterprise. In the discussion of this case, it will be thought-provoking to have participants share the systems in their labs, if they even know them, and then discuss what the linkage *should* be.

Another interesting aspect of this case is that a graduate student, Jill Green, has been put in the middle of a dispute over appropriate attribution for another's work. My experience indicates that this occurrence is not infrequent, but it is one that we

do not usually discuss. A brain-storming session on what Jill might do, followed by an evaluation of the probable consequences of each suggestion, would be very valuable to graduate students who may find themselves in such a situation in the future. Green has an obligation to communicate honestly with all involved, but she must be savvy enough to do so without harming herself.

The case presents some ambiguous aspects that are interesting to play with. I list a few below.

How novel was the reagent the Smith said he used? What was the probability that any similarly trained chemist would have tried the same reagent? Was it likely that Green would have come up with the idea on her own, and Smith's only contribution was to save her time?

What type of information should Smith have had to "back up his claim?" How much is enough? What are the criteria? Who makes the determination?

Where is Smith now employed? Did he get the job based on a recommendation from Johnson? Is Smith doing research similar to that done in Johnson's lab? Is he in an academic position, possibly training graduate students?

Green noted that "Smith's experimental procedures were poorly written" and that "it was not possible to duplicate his work." Was this problem just sloppiness, or was it sloppiness that crossed the line into negligence by a man who claimed to be a professional scientist? Was there any indication of fraud? How would and should the determination of sloppiness vs. negligence vs. fraud affect the evaluation of other aspects of this case?

In this research group, would a temporary post-doc have been considered an employee or a colleague? It could have been a research group associated with a chemical company at which Green was doing her research and at which Smith was employed. If it was an academic research group, did Smith sign a release form concerning patents?

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Discussion Questions

Phase 1

Question 1. Johnson and Green should have informed Smith of Green's results and their submission of the manuscript not because it is mandated by some professional code, but just as a matter of common courtesy to a colleague, even if he could have been considered an employee. Science depends on communication in all modes, not just the formal, published paper. Avoiding communicating with Smith may have seemed the easiest thing to do in the short run, but it can lead to more unpleasant consequences in the long run and is disrespectful of Smith as a person. If Smith had been listed as a co-author on the paper, he must be contacted. Authorship involves acceptance of responsibility for the contents of the paper, and Smith must be able to choose whether he will take on this responsibility.

Question 2. Smith's contribution could have been acknowledged in a variety of ways other than a co-authorship. Generally today, authorship represents recognition for a significant intellectual contribution to the published work. Some other possible modes of attribution are an acknowledgment, a footnote or a citation as an unpublished result. The criteria for these other forms of attribution are no more clearly formulated than is the definition of a significant contribution, and to make matters worse they vary from lab to lab, and from discipline to discipline. It may be useful to check the instructions to authors for a number of prominent journals in your field to see whether they provide guidelines. A comparative discussion of criteria and standard practice among the discussion participants will help everyone to look more critically at what they have accepted as the norm, and to consider what the criteria should be, and why.

Question 3. Without further information, it is not possible to determine whether Smith should have claimed to have solved the problem. One would need to know what items of documentation were in his notebooks and what the criteria for a solution were. However, among a focused group such as a research lab group or a class of beginning grad students, it would be very beneficial to discuss what sorts of documentation one should have, and how the monitoring of research progress should be carried out. In short, how could this problem have been avoided?

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Discussion Questions

Phase 2

Question 1. Answering this question takes us back to the issues addressed under Question 2 in Phase 1 and in the overview above: What did Smith contribute? What was its the significance of his contribution? What would be the appropriate attribution for what Smith did? Once some of the uncertainties have been clarified by arbitrarily defining a few of the variables in the case, one could begin to discuss the appropriate way to acknowledge his contributions.

For example, let us assume that: 1) The reagent was not one that just any chemist would have thought to try in this situation, but it was not completely unknown. 2) Smith's notes were almost illegible, and included only one NMR analysis run on the products of the critical reaction, but it didn't look as if he had falsified or fabricated anything in his notes. In this situation, I would conclude that Smith's contribution, while not significant enough to warrant an authorship, does require some form of acknowledgment, probably in the form of an acknowledgment at the end of the paper.

Question 2. One might not expect a patent lawyer to raise ethical arguments. However, it would be a good idea to raise the issue of patents, particularly in the field of chemistry. What arguments could be made for including Dr. Smith on the patent?

Notice that in the text of the case, Johnson seems reluctant to acknowledge Smith in any way partly because he feels it would obligate him to include Smith on a patent application. I doubt that that would be the case, but many people worry unnecessarily about the ramifications of their actions on the distribution of royalties from possible patents. Practice concerning patents has varied with time and institution; it is best to consult with those concerned with patents to determine the relevant policy is. Researchers should have some basic information about this issue. In fact, this case provides an excellent opportunity to ask an official who deals with patents to join the discussion.

In either a commercial company or an academic university, the institution is the entity that makes the patent application. Scientists may share in the royalties, depending on the practice of the institution. It is my experience that university scientists sign patent wavers along with other employment papers when they start work; I have observed quite a bit of variation among heads of laboratories in the

royalties distribution concerning inclusion of graduate students and post-docs who worked on the project. It is not unusual for the royalties to be split between the PI and the university. Many PIs feel that they have fulfilled their obligation to others in their labs if they use the royalties to fund further work in the lab.

With regard to the case involving Smith, Johnson and Green, it should be noted that patents are awarded for practical applications, not ideas. Thus, it is the tested machine or the process that is patented, not an unproven idea. Smith's contribution was, at best, an idea of a reagent to use; Green worked out the details of the reaction conditions. Smith does not have a good case for being included on the patent, but Green does.

Question 3. It is difficult for me to see how having Smith leave his place of employment and return to the lab would solve any of the problems in this case, unless he were being invited back to try to replicate results in his notebook and so prove that they were not fabricated. I suppose that one possible compromise that the parties in this case could have reached was to have Smith try to get the other reaction conditions written in his notes to work, document his results and then have them included with Green's in a revised manuscript on which Smith would be a co-author. This strategy seems awkward, but possible.

It might be useful to change this question into an opportunity to brainstorm possible solutions to the problem as it now exists for Smith, Johnson and Green, and then to investigate the probable consequences of each.

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