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A Lie or Just "a Way of Speaking?"

Author(s): Caroline Whitbeck, Ph.D.

You and Conscientious, your first-year graduate student research assistant, are preparing a paper describing your research. The abstract for this paper was accepted for the Major Conference that is to happen next week. Reading over the paper, Conscientious points out that you have described a certain data set as "a typical data set" and says, somewhat hesitantly, "I thought that was our best data set." You tell Conscientious that calling the data set a typical data set is just a way of speaking, but Conscientious looks at you with doubt and consternation.

What do you say or do now?

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My Data

Author(s): Caroline Whitbeck, Ph.D.

A discussion of data management was part of a research ethics conference at a Prestigious University, where you are a faculty member. In that discussion, one of your postdocs said that at the university where he had done his graduate work, he had been allowed to keep the laboratory notebook in which he recorded his observations. He said that because under the policies of Prestigious U. he was not allowed to keep his notebook, he did not bother to write things up in detail in his lab notebook, but in the evening made notes for himself at home.

What do you tell him?

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Data Acquisition Case Study: Data Handling and Record Keeping

You are a graduate student working in a lab where data are accumulated for the purposes of measuring the optical absorption of a variety of samples. For each sample there is a large data file stored on a computer in the lab. In reviewing a lab notebook from one of your predecessors in the lab and comparing that to data published by the lab, you find a gap. That is, some of the data that were published are not accounted for in the lab notebook. Furthermore, you are unable to locate the computer files for this missing data. You talk to a fellow graduate student about this situation, and he tells you that you should be very concerned about the situation and that it should be reported.

Question

What are some possible situations that could explain the “missing” data, and how should you proceed for each?

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Health & Safety Case Study: Hazardous Materials

A condensed matter experimentalist and his students were conducting experiments on thin films of common metals such as aluminium and tin. They realized that they could substantially enhance their work by switching the samples to the metal beryllium, which is highly toxic and can bring about irreversible poisoning. The procedures that they are employing with aluminium and tin would not be suitable for a toxic material such as beryllium.

Questions

What responsibility does the PI have in considering the new, potentially dangerous material for the research?

What role should the students have in making this decision?

If there is a decision to go ahead with the work, what is the PI's responsibility in terms of providing information and training?

How should he or she proceed with setting up these new experiments in a manner that might ensure the safety of his students?

Case of the Cheap Chemist

Category 4: Cheating, Dishonesty, Plagiarism

Scenario

Professor Parsimony, a chemistry professor who is overheard by colleagues telling his graduate students to not waste their money by registering for the national ACS meeting, since ACS doesn't check registration credentials at the doors to the technical sessions anyway. The students are attending with partial support from departmental travel funds, since the professor has no travel funds to allocate. Professor Parsimony is not attending, but extols the advantages of networking at ACS meetings and encourages these students to make contacts for future post-doc positions.

Which of the following actions do you think SHOULD have been taken?

- A. His graduate students should refuse to go the meeting if they can't pay to register.
- B. The students should follow Parsimony's advice - after all, he understands how things work (and controls their future?).
- C. The students should recognize that what Professor L is recommending is wrong and bring it to the attention of their department chair.
- D. Parsimony's colleagues should talk to him about the ethical implications of his advice.
- E. The colleagues that overheard the conversation should keep it to themselves.
- F. All parties should recognize that it is difficult to have sufficient funding for students during tough economic times.
- G. Admit that no-one else pays 100% of registration to attend meetings, so Parsimony isn't out of line.

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Conflict of Interest Case Study: Confidentiality Scenario 3

A well-known theoretician at Institution A is called by an experimentalist at Institution B to discuss what appears to be a new discovery, based on a highly original approach to the measurements in question. The discovery supports the theorist's highly controversial approach to the problem. However there is a substantial amount of work needed before the results can be submitted for publication. The theorist has been invited to present a seminar at Institution C, where she is a candidate for a position, and where competitors of the experimentalist at Institution B are found. She was not told explicitly that his conversation with the experimentalist at Institution B was privileged.

Questions

What should she do in preparing for his visit?

What are the potential conflicts of interests?

What ethical considerations should the theorist consider in preparing her talk?

Are there other actions that she could or should take in preparing for the visit?

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Who is Where on the Author List?

Graduate Students

A manuscript submitted to a journal was returned to authors with the editor's letter stating that it would only be reconsidered if major changes were made to satisfy the comments of the reviewers. To accomplish this, all the data had to be re-analyzed using a new analysis. On the original manuscript the first author was student, Origen, who was primarily responsible for gathering data and making the analysis. The second author was faculty member, Overview, who was primarily responsible for the method of analysis, supervising Origen, and writing the manuscript. For the revised manuscript, another student, Secundy, re-analyzed the data using another method developed by Overview, who then had the primary responsibility of revising the manuscript. Since student Origen had already graduated and was engaged in another career situation, he could not participate further and his contribution to the revised manuscript was the original data collection.

What, if any, changes can or should (as a matter of fairness) be made in the author list in the revised manuscript?

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Surprise Authorship, Credit, and Responsibility

Author(s): Adapted by Albert R. Meyer and Caroline Whitbeck from a scenario by Giovanni Flammia, Area II (computer science) graduate student at MIT

In your first year as a graduate student, you worked on a research team with two more advanced students and the supervising professor. Two years later, after the other students have graduated, you look through the proceedings of an important research symposium in your area and are surprised to come upon a paper coauthored by all four members of your former group, including yourself. One of the advanced students is listed as the first and corresponding author.

The paper is in two parts. The first part represents some of your group work. The second part concerns a loosely related point of theory. There is no issue of fraud or incompetence: the presentation and conclusions in both parts of the paper appear respectable, though you are not familiar enough with the theoretical background of the second part to be confident about vouching for it.

What, if anything, can or should you do?