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FOR ENGINEERING AND SCIENCE

All in the Interpretation

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Description

A graduate student wrestles with uncomfortable decisions in trying to interpret her research results. She struggles to make un-biased judgments and interact appropriately with the press.

Body

Kate is a graduate student in Professor Brigg's lab. She started a project examining the effects of certain video games in children during her first year of graduate school. She knows that some of the funding for her project comes from a video game manufacturer, but the money does not give the company control over how the research is conducted, and she believes she has been careful not to let the source of funds influence her project design and data collection.

Discussion:

1. Might a researcher’s source of funding create a bias or the perception of bias? How might Kate (and the research community in general) deal with potential bias?

2. In what ways might industry funding influence a researcher and affect his/her research?
3. Even if Kate believes the source of funding will not influence her research, should she be concerned with how the presence of industry funding may affect her credibility with colleagues and the public?
4. What should Kate and her institution do to help preserve her scientific integrity in this case?

Kate has collected all of the data for her project, and she has been carefully examining the trends. Looking back, she might have changed some of her data-collection methods if she could do it over again; but she knows that is the nature of research, and that lessons learned in one project generate new questions to ask in the future. She is excited to see a clear trend in her data that indicates a positive effect of educational video games, but the effect washes out after about a year or two, and she is unsure how to interpret it. She creates a rough draft of a paper that carefully outlines all of her analyses and gives it to Dr. Brigg for review. Later in his office, Dr. Brigg explains that the “Results and Conclusions” section of her paper is very weak. He says that she does not make a strong case for the importance of her research, and that the quality of the journal where her paper will be published depends largely on her ability to interpret the data. “I’m not saying to leave out data,” he says, “but the story you tell about the data is at least as, if not more, important than the data themselves.”

Kate knows that research papers are rarely air-tight. In fact, members of her lab will often spend lab meetings ripping apart a paper from another group in order to stimulate discussion about the author’s conclusions and generate ideas for future research. She feels she must choose a black or white stance in her interpretation of the effects of gaming in order to create a strong paper. She also knows that if she emphasizes the positive effects of the games, she could easily write another grant to the video game manufacturer to study the later wash-out period with a high probability of funding.

Discussion:

5. What is Kate’s responsibility in presenting her research findings? Is Dr. Brigg correct in stating that her story is as important as the data themselves? Is Kate correct in assuming she must choose one side and stick to it?

6. How might the possibility of future funding influence a researcher's presentation of his/her findings? What should be done to minimize the undue influence of funding on the way a scientist interprets and presents his/her findings?

After thinking about it for a few days, Kate decides that the initial trend in her data is interesting enough that it should be emphasized in her paper. She writes another draft that emphasizes this trend and only briefly mentions the wash-out as a subject for further research. When she gives the draft to Dr. Brigg he is very excited. He says the results are very compelling and suggests they submit to a nationally-recognized journal. The paper is published, and Kate receives a great deal of recognition and congratulations from others within the university. She also receives a number of requests from news reporters to discuss her findings. The reporters seem not to notice that the numbers wash out and do not ask about it. Kate knows that all the press is good for her career, but she is also not skilled at giving interviews and she is happy to have Dr. Brigg speak with many of the reporters for her. Dr. Brigg is delighted to receive the publicity for his lab, and each time he is interviewed he is careful to emphasize the value of these games for young children.

Discussion:

7. Knowing that most people will not look up the original article when they hear a news report, does Kate's and/or Dr. Brigg's responsibility to the public change in any way when interacting with the press?
8. How might she approach the situation if Kate feels that the results are not as cut-and-dry as Dr. Brigg's interviews seem to imply?

Eventually Kate's paper is challenged by a competing research group. Their results indicate a deleterious effect of the games over a longer time period. At this point Kate is working in her own lab on another research topic. She is tired of speaking to reporters, and she is still not comfortable giving interviews. She is also a little worried that the interpretation of her research may have encouraged parents to have their children play games that may ultimately be harmful. Some reporters are even suggesting that her interpretation of the data was motivated by her industry funding, although she doesn't think that is true. She decides to adopt a policy of not communicating with any members of the press.

Discussion:

9. Does Kate (or do researchers in general) have a responsibility to communicate with the media?
10. If Kate feels that her research is misrepresented in the press, how might she approach the situation? Is she ultimately responsible for the information that is disseminated to the public?
11. How might the appearance of bias be controlled at this point?
12. This case was inspired by the following articles in **Time** and the **Denver Post**. Consider how the controversy is presented in those articles. Is it presented fairly? Why or why not? How do you think it might affect the public perception of science? What do you see as the responsibilities of the researchers and the reporters and editors in this situation? Does the above case present the same or different ethical issues?

Articles:

- Park, Alice. 2007. Baby Einsteins: Not So Smart After All. *Time*. Posted: Monday, Aug. 06, 2007, http://content.time.com/time/health/article/0,8599,1650352,00.html?iid=sr-link1.
- Auge, Karen. 2011. 'Baby Einstein' DVD creators find redemption in documents suggesting negative study was flawed. *The Denver Post.* Posted: 06/30/2011, http://www.denverpost.com/news/ci_18381772.

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Discipline(s)

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