

# Americans Love Competition - Is It Pushing Scientists Too Far

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Serious scientific misconduct that calls the integrity of science into question is only uncovered and reported perhaps a dozen times a year in the United States. This suggests that there isn't much misbehaving taking place in the research arena. Right? Maybe not.

A new study suggests that the competitive nature of research fosters an environment where scientific misbehavior takes place far more often than the misconduct that makes headline news. And because scientific misbehavior involves more mundane decisions and actions, it may be easier for researchers to look the other way.

The study, just published in the premier edition of the *Journal of Empirical Research on Human Research Ethics*, used focus groups and a Web-based survey to find out from researchers what kinds of behaviors they find most troubling, and how often they occur.

"We were a bit surprised when we first heard researchers reporting what they described as rather routine misbehaviors, but as our study went on we kept hearing the same stories, confirming that these kind of things are an everyday part of research," says co-author Raymond De Vries, Ph.D., associate professor of medical education and a member of the Bioethics Program at the University of Michigan.

The study used both qualitative and quantitative measures to ask those who know science best – its researchers – to describe the behaviors they regard as most threatening to the integrity of their work. These common

problems fall into four categories:

- the meaning of data
- the rules of science
- life with colleagues
- pressures of production in science

Examples of misbehavior in these areas include such things as deciding what to do if one's own results can't be duplicated, and manipulation of the review system.

De Vries and his colleagues conducted six focus groups with a total of 51 researchers from major research universities. Participants were recruited from a wide range of academic disciplines, with different focus groups for junior and senior faculty. This allowed the groups to be constructed in such a way that participants were from different academic departments and, therefore, more comfortable in revealing what they've seen and done.

The focus group participants revealed that many of the daily problems scientists encounter are related to the difficulties of working on the frontier of knowledge, where competition, the drive to succeed, and ambiguity reign. The use of new research techniques and the generation of new knowledge create difficult questions about the interpretation of data, the application of rules, and the proper relationships with colleagues, the authors say.

De Vries says results of the focus groups were then used to design the quantitative portion of the study.

"What we learned from the national sample matches perfectly with what we learned from the focus groups," De Vries says.

In the national sample, 4,367 NIH-funded scientists were asked to review a list of 33 behaviors discussed in the focus groups. Respondents were asked to indicate if they had engaged in the specific behavior, or seen a colleague engaged in any of these behaviors in the past three years.

Results of the survey corresponded well to the focus group data, with struggles concerning the meaning of data and the rules of science most common. Again, few acknowledged committing or observing the three most serious types of scientific misconduct: falsification, fabrication and plagiarism, while they did report numerous instances of scientific misbehavior.

De Vries and his colleagues conclude that it is the ambiguities and everyday demands of scientific research that compromise the integrity of research. They are also studying how organizational justice – the fairness of the research work setting – influences the behavior and misbehavior of scientists: their survey data indicates that as organizational justice decreases, misbehavior increases.

"This paper, along with some others, shows that unbridled competition is not good, and we need to think of the conditions of science and to be more public in how we deal with these issues," concludes De Vries. "I also believe scientists across the country are dealing with these issues individually because they don't have any place to go with this information. We need to think about the way we fund science, the way we create new scientists, and work to create an environment that also promotes organizational justice."

In addition to De Vries, the study's authors include Melissa S. Anderson,

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