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Perceptions of research misconduct: Pilot data from a national survey

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ABSTRACT

Respondents from the pilot phase of a national survey of biology and social science faculty assessed scenarios depicting questionable research practices and reported how likely they would be to take those actions under the same circumstances. These descriptive results, along with perceptions of resource allocation in universities, are presented.

INTRODUCTION

Studies have shown that serious misconduct in academic research (e.g., data fabrication) is uncommon, whereas questionable research practices (e.g., courtesy authorship) occur on a fairly regular basis (Fanelli, 2009; John, Lowenstein, & Prelec, 2012). Yet limited research has been undertaken to understand why researchers engage in these behaviors (Martinson, Anderson, Crain, & DeVries, 2006; Mumford, Connelly, Murphy, Devenport, Antes, Brown, et al., 2009), in spite of the critical attention that misconduct cases bring from scientists, policymakers, and the public. As in other areas of human endeavor, understanding the complex causes of misbehavior is critical in formulating appropriate prevention structures or remedies.

This study was designed to explore the influences that drive faculty investigators when making the challenging ethical decisions that arise in the course of their research activities. Researchers were invited to share their perceptions of what they would do in certain circumstances, including those that involve high pressure (e.g., when evaluation for tenure is looming and publications are needed to ensure success). Other factors, such as the role of perceptions of organizational justice and external funding expectations, were also explored. In this study, for the first time, masters/comprehensive universities were targeted to allow comparisons with research-intensive institutions on possible differences in research cultures and environments.

The study focuses on four disciplinary fields: biology, psychology, sociology, and social work, the latter of whom have not previously been studied in regard to ethics in research. During the full phase of the survey, social work and sociology faculty will be over-sampled, as will faculty from the masters universities, to allow a more refined analysis of both individual and environmental factors that may drive questionable research behaviors.

METHOD

A total of 240 faculty researchers from 12 universities in the U.S. were invited to complete a 30-minute study instrument requesting their perspectives on six research practice situations. All vignettes depicted a researcher taking actions that were ethically questionable. Respondents shared their perceptions of the likelihood they would take the same action, and rated the likelihood of detection and sanctions for those actions, as well as assessing the wrongness of the actions and their colleagues' likely view of them. In addition, they reported the external funding expectations and fairness of resource allocation in their own departments and universities.

Two survey versions were used, one for the biology sample and one for the other three social science disciplines. The two versions shared one scenario with three of the same vignettes (listed as the first three vignettes in Table 1), slightly modified to reflect the nature of the research being conducted. The other scenario was different between the instrument versions, but did share a similar vignette regarding a conflict of interest in peer review.

The universities were randomly selected from the Carnegie Endowment Classifications for research intensive and masters-large institutions, and one third of the faculty from each of the four disciplines (where present) were randomly selected for the pilot phase of the project. Contact information was drawn from university websites.

Table 1. Perceived Probability of Misconduct [1]

Scenario/Vignette	n	Mean %	S.D.
Biologists			
1a. Agrees student can skip IRB approval for adding sample to study	20	14.2	23.7
1b. Quietly deletes suspicious data received from senior collaborator	20	12.2	18.1
1c. Reneges on promise of student lead authorship	21	5.7	13.8
2a. COI: Encourages hiring of needed collaborator's wife	20	14.2	25.6
2b. Overlooks collaborator's potential overbilling for clinical services	19	9.4	9.9
2c. Writes peer review to personal advantage	21	7.7	13.7
Social Scientists			
1a. Agrees student can skip IRB approval for adding sample to study	48	10.4	23.5
1b. Quietly deletes suspicious data received from senior collaborator	50	20.2	28.4
1c. Reneges on promise of student lead authorship	50	12.4	20.6
2a. Reassigns student, w/ no report to IRB, after identifiable data sent to others	49	9.4	17.6
2b. Writes peer review to personal advantage	50	61.7	36.3
2c. Publishes suspicous data from collaborator	50	9.8	17.5

1. Respondents' estimates of the likelihood they would take the same action as depicted in the scenario

Table 2. Perceptions of Distributive and Procedural Justice

(1=Strongly Disagree up to 7=Strongly Agree)	In your department			In your university		
Resource allocation has reflected:	n	Mean	S.D.	n	Mean	S.D.
your effort in your work	70	4.69	1.77	69	3.87	1.93
your contributions to dept or university	70	4.49	1.86	69	3.75	1.80
accomplishments in career	70	4.59	1.94	69	3.83	1.86
Allocation has been fair	70	4.89	1.69	69	3.71	1.85
Mean of distributive justice items	70	4.66	1.62	69	3.79	1.77
Procedures for allocations have been:	**n**	**Mean**	**S.D.**	**n**	**Mean**	**S.D.**
bias free	70	4.23	1.74	69	3.23	1.52
applied with consistency	70	4.24	1.88	69	3.23	1.65
based on accurate info	70	4.29	1.75	69	3.52	1.54
ethical	70	5.03	1.49	68	4.13	1.36
well managed	69	4.38	1.81	69	3.51	1.54
You had an influence in these decisions	70	3.80	1.89	68	2.57	1.70
You could appeal these decisions	70	3.93	1.97	69	2.80	1.75
Mean of procedural justice items	70	4.26	1.49	70	3.22	1.33

PARTICIPANTS

A total of 72 faculty participated in the study. Response rates across four survey modes ranged from 44.6% for mixed (paper/online) to 13% for email/online only.

About 2/3 of the pilot respondents were from R1 universities (*N*=48, 67%), and 1/3 from Masters Large/Comprehensives (*N*=24, 33%). Mean years since PhD was earned was 15.2 (S.D. 8.8, Range 2-42, *n*=68) The mean % time spent engaged in research was 43.0% (*S.D.*=21.9, Range 0-100, *n*=69)

Disciplinary field:
Biology (*n*=21, 29.2%)
Psychology (*n*=20, 27.8%)
Sociology (*n*=14, 19.4%
Social Work (*n*=11, 15.3%)
Other Social Scientists (*n*=6, 8.3%)

Primary position:
Asst Prof (*n*=16, 22.2%)
Associate Prof (*n*=32, 44.4%)
(Full) Professor (*n*=24, 33.3%)

RESULTS AND DISCUSSION

In this study, two different types of non-compliance with Institutional Review Board requirements were explored. Vignette 1a in both versions depicted a researcher choosing not to request approval from the IRB for a change in age group in a study sample. As shown in Table 1, respondents reported a mean likelihood of 10-15% that they would do this. Similarly, the social scientists reported in Vignette 2a that there was a 9.5% average probability they would simply reassign a student who breached confidentiality by sending an identifiable dataset to another group of researchers. These results have implications for how IRBs develop procedures and monitor researcher compliance with them.

An apparent striking difference between the biologists and social scientists in this sample was the probability they reported that they would write a self-serving peer review for a journal article. While the biology sample only reported on average a 7.7% likelihood they would do what was presented in the vignette, the social scientists perceived there was a 61.8% chance they would do so. However, given the high standard deviation, a larger sample size may produce different results.

In Table 2, respondent perceptions of distributive and procedural justice in their own working environments are presented. It is clear that respondents felt the allocation of resources in their own departments, as well as the procedures for deciding on the allocations, were more fair and reflective of their contributions, compared to university level allocations. Empirical analyses of these results, particularly with the larger full sample, are needed to determine whether these perceptions may or may not be related to the likelihood of research misconduct.

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