Perceptions and predictors of questionable research practices in the biological sciences

Anita M. Gordon
Helen C. Harton

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Participants did not report high likelihoods of misconduct, although they were more likely to report that they would engage in these behaviors (Martinson, Anderson, Crain, & DeVries, 2006; Mumford et al., 2009; Fanelli, Costas, & Lariviere, 2015), 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. In this study, biology faculty from R1 and masters universities (which have especially been understudied) shared their perceptions of what they would choose to 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). We also explored the role of other factors, such as perceptions of organizational justice and external funding expectations.

Also provided information on departmental and university distributive and procedural justice perceptions (α=.92-.94), and various individual level factors such as gender, grant expectations, and research experience

**Results**

- Participants did not report high likelihoods of misconduct, although they were more likely to report that they would engage in research practices. The perceived likelihood of harm also appeared to affect their perceived actions, and more recent PhDs and assistant professors reported a greater likelihood of engaging in questionable research practices (QRPs).
- Contrary to expectations, individuals from R1 institutions did not report a higher perceived likelihood of engaging in QRPs than those from Masters universities. Other institutional variables likewise had little effect on decisions to engage in questionable research practices. Instead, training and intervention efforts may need to emphasize the wrongness and potential harm that can be caused by these practices.

**Discussion**

Moral judgment and potential associated feelings of guilt or shame were the most consistent predictors of biology faculty’s perceived likelihood of engaging in questionable research practices (QRPs). The perceived likelihood of harm also appeared to affect their perceived actions, and more recent PhDs and assistant professors reported a greater likelihood of engaging in QRPs. Contrary to expectations, individuals from R1 institutions did not report a higher perceived likelihood of engaging in QRPs than those from Masters universities. Other institutional variables likewise had little effect on decisions to engage in questionable research practices. Instead, training and intervention efforts may need to emphasize the wrongness and potential harm that can be caused by these practices.