Examining Research Integrity[1]

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Abstract

Research integrity issues fill the academic news, and include plagiarism, data falsification and image manipulation. Integrity violations are complex because of the gray zones between where bad practice ends and genuine malpractice begin. No real consensus exists about the boundaries, even though many people have strong opinions. The goal of this panel is to engage in a scholarly discussion about integrity issues using specific examples drawn from the book "Quantifying Research Integrity" (Seadle, 2017).

Keywords: research integrity; plagiarism; data falsification; image manipulation

Proposal

Research integrity issues fill the academic news. The blog "Retraction Watch" tries to record each retraction in major scholarly journals, especially in the natural and medical sciences.[2] In Germany more and more dissertations come under formal scrutiny because of plagiarism (Fischer, 2016). The US Office of Research Integrity has focused especially on tools to uncover

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1 The author wishes to thank the HEADT Centre [Humboldt Elsevier Advanced Data and Text Centre] for finding the research in this proposal

2 http://retractionwatch.com/

image manipulation.[3] Diederik Stapel in the Netherlands admitted that he made up data and gave those data to doctoral students to use in their doctoral dissertations (Budd, 2013). Scandals abound, but not all accusations are true and proof can be difficult to establish. Opinion can also shift over time, as shown in the case of Cyril Burt, who was posthumously accused of falsifying data until Robert Joynson (1989) found inconsistencies in the case for the prosecution.

Integrity violations are complex because of the gray zones between where bad practice ends and genuine malpractice begin. No real consensus exists about the boundaries, even though many people have strong opinions. When, for example, does standardized language used to express a statistical result in a social article become plagiarism? Computerized matching systems will generally flag all overlaps in expression and will add them to a score that triggers an investigation. Outliers can also be a problem in statistical tests. Throwing out some outliers is legitimate, but throwing out too many, even for good reasons, may begin to look like falsification. Cleaning up an image display from a scientific test may only make the results clearer or the manipulation may render the image inauthentic because it exaggerates the results.

The goal of this panel is to engage in a scholarly discussion of these issues like these using specific examples drawn from the book *Quantifying Research Integrity* (Seadle, 2017).

An issue of concern in the scholarly community is how many integrity violations remain to be found, and how seriously do they affect the reliability of research. Replication studies can help (Camera et al., 2016). But many kinds of research are difficult to replicate because details in the descriptions are missing and because circumstances change the database from when the original tests were made (Call et al., 2016). Scholarship, especially the natural sciences, are supposed to build on past results in the expectation that the results are reliable, but applying contemporary standards to past results may give false results, since the standards change over time. Image manipulation is a good example, because the first innocent but careless uses of Photoshop have become associated with deliberate manipulations that change the nature of the image. Plagiarism is the easiest form of integrity violation to uncover, because computing systems today can easily compare texts, but many jour-

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3 Office of Research Integrity [2016], "Forensic Tools". http://ori.hhs.gov/forensic-tools

nals fail to use the standard tools for cost reasons. Much research remains to be done.

A panel discussion similar to this proposal took place at the 2014 iConference in Berlin and produced lively debate in a full room. The proposed members for this panel include people who either have experience analyzing research integrity issues, or have positions where they must deal with the results of integrity problems.

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