Neth Heart J (2012) 20:49–50
DOI 10.1007/s12471-011-0235-9

EDITORS PAGE

Fraud and Freud: is there an association in scientific misconduct?

E. E. van der Wall

Published online: 5 January 2012

Recently, the scientific community in the Netherlands was rocked and shocked by the exposure of major scientific frauds at two Dutch universities. In both cases, the well-known (!) scientists have been openly accused of falsifying and fabricating data, and their careers have been publicly finished by sudden death.

How could this happen? Why would someone with intelligence, ambition and talent put everything at risk by committing fraud? Are the fraudulent scientists just hungry for tenure, promotion or grants? Clearly, there are factors that may promote fraud, including a desire for personal fame, financial gain and/or competitive advantage. In addition, some scientists exhibit the hubris of certainty before the results of the study are fully known [1].

An interesting question is whether each researcher is prone to fraud, or whether there is an 'identikit' of the typical research fraudster. This question touches the psychological nature of fraud and the fraudster. The social psychologist Jennifer Crocker from Ohio, USA [2] voices the opinion that there is a fraudster within all of us. She states that, in order to understand fraud, one should first think about how it begins and escalates, not how it ends. According to Crocker, the road to fraud starts with just one first small step. This first minor step—such as removing inconvenient data (mostly outliers), or failing to give credit where it is due—creates a threat to self-image. To avoid the discomfort of this threat, these scientists rationalise and justify their way out, until their behaviour feels comfortable and right. This makes the next step seem not only easier, but even morally correct. Consequently, the first step on the road to fraud has become a highway to publish fabricated papers. Crocker therefore suggests that in principle each scientist is sensitive to committing fraud. This view is more or less supported by Daniele Fanelli from Edinburgh, UK [3], who published in 2009 that an average of 2% of scientists acknowledged that they had fabricated, falsified or modified data at least once—a serious form of misconduct by any standard—and up to 34% admitted other questionable research practices. In surveys asking about the behaviour of colleagues, confession rates were 14% for falsification, and even up to 72% for other questionable research practices.

A recent interesting study by R. Grant Steen from Chapel Hill, USA [4] addressed the question whether authors of retracted papers were more prone to making errors (text plagiarism, scientific mistakes, ethical problems) rather than deliberately committing research fraud (data fabrication or falsification). It was hypothesised that typical fraudulent authors target journals with a high impact factor, have other fraudulent publications, diffuse responsibility across many co-authors, delay retracting fraudulent papers and publish from countries with a weak research infrastructure. To that purpose, the authors evaluated all 788 English language research papers retracted from the PubMed database between 2000 and 2010. Data pertinent to each retracted paper were abstracted from the paper and the reasons for retraction were dichotomised to fraudulent versus erroneous papers. The authors found that the impact factor of a journal was higher for fraudulent papers. More than 50% of fraudulent papers were written by a first author who had written other retracted papers ('repeat offender'), whereas only 18% of erroneous papers were written by a repeat offender. Fraudulent papers had significantly more authors and were retracted more slowly than erroneous papers. Surprisingly, there was significantly more fraud than error among

E. E. van der Wall (✉)
Department of Cardiology, Leiden University Medical Center,
PO Box 9600, 2300 RC Leiden, the Netherlands
e-mail: e.e.van_der_wall@lumc.nl

retracted papers from the USA compared with the rest of the world. The authors concluded that their study provided firm evidence to prove their 'deliberate fraud' hypothesis. Papers retracted because of data fabrication or falsification represent a calculated effort to deceive. Such behaviour is neither 'naive, feckless nor inadvertent'; the perpetrators did so on purpose.

This brings us back to the intriguing question whether there is a common denominator for scientists committing deliberate fraud. Stephen Lock (Editor-in-Chief of the BMJ 1975–1991) and Frank Wells, who edited a book on Fraud and Misconduct in Medical Research [5], made the following observation: 'usually fraudsters are energetic middle-grade researchers, often medically qualified, mostly of male gender (!), and working more than full time in a prestigious institution with a distinguished, if often remote, boss. The yearly number of publications is high, and the pressure to produce positive result intense. Research tends to be into 'hot' topics such as in molecular biology, cancer, and cardiology, with the rewards not only money but prestige, promotion, and prizes'. In addition, pathological narcissism and borderline personality may play a dominant role in professional fraudsters. This goes along with the knowledge that when a 'lower level person' (for instance a research fellow) acts as a whistle-blower, he or she can be sent home and their careers are damaged forever. Yet, a true description of a typical perpetrator is difficult to give and this requires an in-depth psychological study of the deliberate fraudster [6]. In these cases, Sigmund Freud might be of help to unravel 'the unconscious emotional motive' ultimately leading to self-destruction.

It goes without saying that the well-being of science and our society requires that fraud be punished severely. However, our main focus should be on preventing fraud [7]. If we tend to believe in a sliding scale of fraudulent steps, then all (starting) researchers should undersign local institutional rules (and/or follow dedicated courses) in order to prevent violation of the moral codes associated with performance of scientific research. If we tend to believe in a typical fraudulent character, then there should additionally be appropriate local mechanisms to stop the fraudster at an early stage. Peer review such as presently conducted offers no guarantee against fraud and therefore other more stringent institutional measures have to be found in order to timely signal and halt the fraud [8]. Whatever the psychological mechanism of committing scientific misconduct may be, all professional ways of tackling fraud should be exercised [9, 10].

References

1. Jaffer U, Cameron AE. Deceit and fraud in medical research. Int J Surg. 2006;4:122–6.
2. Crocker J. The road to fraud starts with a single step. Nature. 2011;479:151. doi:10.1038/479151a.
3. Fanelli D. How many scientists fabricate and falsify research? A systematic review and meta-analysis of survey data. PLoS One. 2009;4:e5738.
4. Steen RG. Retractions in the scientific literature: do authors deliberately commit research fraud. J Med Ethics. 2011;37:113–7.
5. Fraud and Misconduct in Medical Research. Stephen Lock and Frank Wells, Editors. BMJ Publishing Group 1993 ISBN 0 7279 0757 3
6. van Kolfschooten F. Valse vooruitgang; Bedrog in de Nederlandse wetenschap. 1993. Uitgeverij L.J. Veen Amsterdam/Antwerpen
7. van der Wall EE. Summa cum fraude: how to prevent scientific misconduct. Neth Heart J. 2011;19:57–8.
8. van der Heyden MA, van de Ven T, Opthof T. Fraud and misconduct in science: the stem cell seduction: Implications for the peer-review process. Neth Heart J. 2009;17:25–9.
9. Drenth PJ. Wetenschappelijke integriteit. Amsterdam: KNAW; 2010.
10. A statement on ethics from the HEART Group. Neth Heart J. 2008;16:153–155.