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Commentary

Both whistle blowers and the scientists they accuse are vulnerable and deserve protection

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Abstract

Whistle blowers play an important role diagnosing research misconduct, but often experience severe negative consequences. That is also true for incorrectly accused scientists. Both categories are vulnerable and deserve protection. Whistle blowers must proceed carefully and cautiously. Anonymous whistle blowing should be discouraged but cannot be ignored when the allegations are specific, serious and plausible. When accused of a breach of research integrity it's important to be as transparent as possible. Sometimes accusations are false in the sense that the accuser knows or should know that the allegations are untrue. A mala fide whistle blower typically does not act carefully and we postulate a typology that may help in detecting them. Striking the right balance between whistle blower protection and timely unmasking false and identifying incorrect accusations is

a tough dilemma leaders of research institutions have to face.

Background

Breaches of research integrity can do serious harm to the validity of knowledge (Interacademy Partnership, 2016; Bouter, 2015). They also undermine trust in science and between scientists. Research misconduct concerns either fabrication, falsification or plagiarism. These major forms of research misbehaviour are the 'deadly sins' of science which are typically committed intentionally and are believed to be quite rare (Fanelli 2009). Minor forms of research misbehaviour may be much more common and do probably on the aggregate level substantially more harm (Bouter et al., 2016). These questionable research practices are often labeled as 'sloppy science' and can be due to ignorance, honest error or dubious integrity. The choice to engage in sloppy science can be intentional, but typically this is not the case. Sanctions for individuals are rarely at issue and the focus should be at quality improvement through education, internal audits, role modeling and discussion of the dilemma's that scientists face. However, the boundary between sloppy science and research misconduct is not very clear. The same holds for the line between sloppy science and responsible conduct of research, as research practices vary between disciplines and may be subject to genuine differences of opinion.

First steps to foster research integrity

There is increasing awareness that early stage scientists have to be trained to recognize not only severe research misconduct but to also avoid questionable research practices (Hiney, 2015). Many universities offer at least some training in research ethics for bachelor, master and PhD students. The topic is often framed in terms of values and virtues and the main purpose is fostering responsible conduct of research and preventing sloppy science. Most national and institutional codes of conduct largely ignore questionable research practices and predominantly focus on detecting and sanctioning research misconduct (Godecharle et al., 2014). Also institutional procedures focus mainly on handling allegations of research misconduct (Drenth, 2015). This sends a message of mistrust and can easily put scientists in a defensive position. This is disadvantageous for open

discussions about putative deviations from responsible conduct of research and scientists may develop the tendency to hide honest errors.

Both on national and institutional level policies and procedures are formulated for handling allegations of research misconduct in a way that respects confidentiality and protects the reputations of both the whistle blower and the accused until the allegations are properly investigated (e.g. Department of Health and Human Services, 2005; Office of Research Integrity, 2017; VU-VUmc, 2016). The development of balanced and generally accepted procedures is complicated by the fact that it is not known which proportion of instances of research misconduct lead to an allegation and which proportion of the allegations is true. We also lack solid data on the negative consequences that bona fide whistle blowers and incorrectly accused scientists suffer, but it is clear that these are not rare and can be quite severe (see below). This puts the accused scientists as well as whistle blowers in a vulnerable position. Therefore, guidance on how to blow the whistle and how to respond to an allegation of misconduct should be part of every scientist's education.

Consequences of whistle blowing

It seems likely that whistle blowers typically play a crucial role in bringing research misconduct to the attention of the responsible authorities. Whistle blowers may experience serious negative consequences and get usually little support from their colleagues (Redman and Caplan, 2015). Blowing the whistle is often framed as the act of a traitor, not of a hero. Potential whistle blowers may correctly fear retaliation and therefore underreporting is likely. They may decide not to voice their suspicions or do so anonymously. Bona fide whistle blowers deserve a fair treatment and formal protection, although in practice this is probably often not the case. There is little evidence but a 1995 survey among US Office of Research Integrity whistle blowers suggests that 75% of the whistle blowers felt stigmatized and two-thirds experienced at least one negative outcome, including health problems and job loss (Research Triangle Institute, 1995).

Under these circumstances it is easy to find excuses to do nothing. And when one finds the courage to voice a suspicion of a breach of research integrity, it is of the utmost importance to act carefully. One should bear in

mind that the motive for blowing the whistle will be questioned and that procedural errors may distract from the content of the allegations. There is an understandable fear for maliciously motivated false charges, although we do not know how often these occur. Of course, if the allegation is true the motivation of the whistle blower may be considered irrelevant. However, a malicious motivation (such as revenge or jealousy) can complicate the process dramatically. Strained relationships and animosity between the whistle blower and the accused scientist are common and in itself no proof of mala fide whistle blowing. It is also important to clearly distinguish between incorrect allegations and false allegations. A whistle blower may be genuinely convinced that research misconduct has been performed, however, the allegations may turn out to be incorrect. In contrast, allegations are false when the accuser knew or should have known that the accusations were untrue. For these reasons it's important to act carefully when having suspicions of a breach of research integrity.

How to blow the whistle?

Sound practical advice on this is provided in two articles entitled 'How to blow the whistle and still have a career afterwards' and 'How to survive as a whistle-blower' (Gunsalus, 1998; Doran, 2016). We agree to most recommendations, but not with the advice of Doran to file your complaints directly with funders and journals. We believe that this option comes in view only if institutional investigations were not undertaken or were unsatisfactory. Briefly, it is recommended to always consider alternative explanations, to ask questions and not to make allegations too early, and to thoroughly look for documentation that supports your concerns. Furthermore, personal and professional issues should be strictly separated and emotions should be kept for your family and friends. Maybe the most important recommendation is to seek confidential advice from someone whom you trust and who has a more senior perspective on the matter. And to listen carefully to what that person tells you, not assuming too quickly that he or she is trying to protect the accused. In addition, you should consider asking an expert (preferably from outside your university) to check your assessment.

If the concerns remain you should get a second confidential opinion, preferably from an ombudsperson or counselor for research integrity issues. When the decision is made to initiate formal steps, Gunsalus recommends to follow the procedures painstakingly, to formulate the charges as neutrally as possible and to

avoid insinuations (Gunsalus, 1998). While giving testimony you can bring a friend or advisor, but avoid bringing an attorney unless this is really needed. The final recommendation for whistle blowers is to cultivate patience and to document the whole process carefully. Internal inquiries may not result in corrective actions although the whistle blower is convinced that serious misconduct has happened. There is considerable debate on how to behave in such a situation. When you are dissatisfied with the progress or outcome of the investigation and when you consider taking a next step, like submitting complaints directly to journals and funding agencies, approaching the media or writing to other authorities, it is important to first go again through the steps outlined above. And first and foremost you should consider the regular appeal options that are available.

What happens when researchers are incorrectly accused of research misconduct?

Mala fide whistle blowers have the intention to damage the reputation of a specific scientist with a false accusation. But also bona fide whistle blowers can inflict great harm when their allegations turn out to be incorrect and for that reason they must proceed very carefully and cautiously (Klotz, 1998). In cases of research misconduct the accused is often considered to be guilty until proven innocent and the burden of proof seems to lie predominantly with the accused (Goldenring, 2010).

The effect on the accused scientist will be dramatic, both for true and for incorrect allegations. Co-authors will be shocked and will hectically start to communicate, may accuse each other of malpractice without knowing all facts, and will often start to panic that their reputation and career is ruined. It typically will take weeks to months to find all original data, lab journals and data files needed to investigate the case thoroughly. Especially, when the data have been generated many years or even decades ago it may cost a lot of effort to reconstruct a complete file. Aggravating factors are problems to find authors who left science or work now in other countries, as well as insufficient data storage policies which make it difficult to find old lab journals and data. It may take further weeks or months to bring all these documents and data in an accessible format for the commission conducting the inquiry. Even if this is done with the greatest care it may be easily interpreted as intentional

delay and an attempt to hide incriminating evidence. During the entire period the accused scientists will be severely stressed. Their career comes to a halt because funding institutions and potential new employers typically wait until the case is cleared. Colleagues may withdraw themselves to avoid being associated with the accused scientist. Finally, the accused may feel betrayed by his or her institution because the responsible authorities and the inquiry committee members may seem to care more for the reputation of the institution than for the reputation of the accused scientist.

Are anonymous allegations eligible?

Whistle blowers may fear retaliation and may consequently want to remain unknown. Typically regulations to protect whistle blowers enable conditional or unconditional identity protection in the sense that only one or a few authorities will learn who filed the accusations. But the whistle blower may not trust this, as most academic institutions are not very good at keeping secrets. These risks can be avoided by filing the accusations in the anonymous mode. Also the increasing public availability of study protocols, digital supplements and data sets enables whistle blowing by anonymous outsiders (Yong and van Noorden, 2016). On the internet anonymous allegations can easily be made, e.g. in blogs or on websites like PubPeer (PubPeer, 2017).

Anonymous whistle blowers cannot be questioned about the details of their allegations and about their motives. This makes it difficult to assess the plausibility of the accusations and to identify false allegations at an early stage. Clearly the norm is that the identity of the whistle blower should be known, at least to one person who has a central role in the proceedings. Therefore anonymous complaints must be discouraged. Having adequate whistle blower protection codes can help to make full anonymity unnecessary. But ignoring anonymous allegations is not a tenable strategy. Detailed and specific suspicions of research misconduct should always be evaluated carefully, also when coming from anonymous sources. These investigations should be confidential with a view to protect the reputation of the accused as good as possible. But when the allegations have already been made public it is important to communicate that an investigation is underway and that its conclusions will be made public. If the allegations turn out to be incorrect, this is the best way to prevent further damage to the reputation of the accused.

In general, institutions have difficulty in striking the right balance between secrecy and openness in communicating about the allegations, the steps taken, the findings of the investigation, the conclusions drawn, and the sanctions, if any, that followed. From the institutional perspective it's not easy to simultaneously protect the reputation of the institution, to protect the whistle blower, to express support for the accused, and to avoid the impression that the allegations are not taken seriously. This is particularly difficult if the allegations are denied by the accused and an inquiry is underway. These inquiries often take a lot of time. When the verdict is guilty there is little room for further secrecy and the relevant documents should be made publicly available. When the allegations were (largely) unfounded it's essential to focus on minimization of damage to the reputation of the incorrectly accused. This usually implies publication of the clearance if the allegations are widely known and no publication if the accusations were successfully kept confidential.

How to detect false accusations?

Accusations that turn out to be incorrect often stick. Typically the original accusation gets much more media exposure than a conclusion after a careful investigation that the allegations were incorrect. This makes scientists so vulnerable for false accusations.

As said before, allegations are false if the accuser knew or should have known that the accusations were untrue. It is not at all easy to diagnose false allegations. But there are signs that should make the responsible authorities suspicious, like allegations that are vague in the sense of being not specific and difficult to verify. Or allegations that are filed much later than the alleged wrong-doing without a valid reason. Or accusations that ignore the role of the co-authors and co-workers in the alleged misconduct and focus exclusively on the person whose reputation one wants to damage. A mala fide whistle blower typically does not act carefully and according to the rules outlined above.

To detect false accusations the following typology of whistle blowers may be helpful (Hendrix, 2014). First there are the honestly concerned colleagues, who are sincere and fact-oriented. Their accusations may be incorrect

but are not likely to be false. Second there are the angry colleagues, who may act partly out of revenge, are often unfair and may be false in their allegations. Third are the Machiavellists who are intentionally abusive and have self-serving motives. And finally there are the crazy people, who can be paranoid, stalking, or insulting and have the habit to write long and confused messages with a lot of capitals and exclamation marks which they send to everyone they can think of. The difficulty in evaluating allegations of misconduct is that even crazy people may be right in the sense that the allegations are true.

What to do when you are incorrectly accused of scientific misconduct?

A guideline on how to handle incorrect accusations has been proposed elsewhere (Hendrix, 2014). Briefly, having all original data and documentation available will help to 'prove your innocence' when incorrectly accused. Arguably the strongest defense comes from transparency. Having a standardized procedure to store your study protocols, data collection log, data sets, data analysis plan and all results shows that you take accountability serious (Bouter, 2016). Unfortunately, standards on how to store the data and documentation of your project have undergone dramatic changes in the last decade and internationally accepted rules do still not exist. In addition, the fast pace of new developments in data storage and in standardized software formats for archiving as well as the increasing number of unreadable software formats from perished companies complicate the development of accepted standards. Scientists may also hesitate to make data and documentation publicly available because it will make them more vulnerable to mala fide accusations (Lewandowsky, 2016).

If you are incorrectly accused you ought to check who is accusing you and to apply the typology of whistleblowers (Hendrix, 2014). If the complaints are not made anonymously, that is. Do not assume too quickly that the accusations are false and refrain from insinuating that the whistle blower is mala fide. Inform your co-authors and your superiors about the allegation immediately and do so again after you have carefully checked in your original data whether the allegations have any substance. Remember that covering up an honest error makes you highly vulnerable for allegations of research misconduct. And if you are cleared by a formal investigation tell everyone about it.

Conclusion

Whistle blowers are essential in the detection of research misconduct. They deserve strong protection, also when they acted cautiously but the allegations turned out to be incorrect. All bona fide whistle blowers deserve praise and recognition. But making false accusations should be considered as an act of research misconduct. Whistle blowers must act cautiously and follow the rules and procedures carefully. Anonymous whistleblowing ought to be discouraged but cannot be ignored when the allegations are specific, serious and plausible. Striking the right balance between whistle blower protection and timely unmasking false accusations is not easy. During the inquiry both the whistle blower and the accused scientist deserves individual support and protection, possibly also in the form of a mentor or a confidential counselor. Institutions ought to extend that support and protection also after the enquiry to bona fide whistle blowers and to incorrectly accused scientists. As inquiries may go wrong and also institutions may misbehave, both whistle blowers and accused scientists should have access to an appeal procedure on a national level.

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