

The culture of mistrust is already with us

In her commentary on the development of eTBLAST and the Déjà vu database [1, 2], Raquel Billions, raises the question in this issue [3] of whether the widespread use of plagiarism detection technology has created a culture of guilt and mistrust within the scientific community. This is a critical issue because, as others have argued [4], if such a climate of mistrust develops within the scientific community, it could undermine the principles of openness and of the free exchange of ideas that are so integral to science. Have we reached this point yet? I believe we are getting there.

Much media attention has been paid to the problem of scientific misconduct in recent years. Moreover, the many cases that have come to light and the various measures that have been taken to address the problem suggest that unethical research practices are not as rare as we used to believe. Consider some of the developments that have occurred within the past two decades in this connection. For example, various national and international entities have now been established for the purpose of investigating misconduct and/or formulating relevant policy (e.g., Committee on Publication Ethics and the U.S. Office of Research Integrity). Many universities now have misconduct detectives (i.e., Research Integrity Officers) whose primary mission is to investigate allegations of scientific misconduct within their own institutions. In addition, there has been a significant expansion of research integrity guidance in professional societies' ethics codes, as well as in journals' instructions to authors. Taken together, these developments are suggestive of a certain level of mistrust amongst scientists. If we also examine the evidence from the burgeoning area of research on scientific integrity, it is not difficult to conclude that a culture of mistrust amongst scientists is already in existence. For example, in one study of health education faculty, the authors reported that more than half of their sample judged two forms of self-plagiarism to be acceptable practices [5]. Even my own research has shown that, under certain conditions, faculty from a variety of disciplines hold paraphrasing criteria that could be easily deemed as plagiarism [6]. Based on this and other evidence, it is not surprising that a search of the PubMed database reveals numerous notices of 'inadvertent duplicate publication' and editorial after editorial cautioning authors against plagiarism and self-plagiarism. Is it any wonder that some editors clamor for an anti-plagiarism system that allows them to easily check suspicious papers?

Not only are scientists' attitudes toward certain forms of misconduct seemingly tolerant, their behavior appears to be largely consistent with those attitudes. The much discussed study by Martinson, et al is a case in point. These authors found that up to 33% of the mid-career scientists surveyed reported to have engaged in some form of misconduct during the previous three years [7]. As one might expect, their results were somewhat shocking and received wide media coverage, but perhaps what is most

alarming is the possibility that because Martinson, et al used survey methodology, their results may actually underestimate the extent of the problem.

Other indicators, such as the problem of scientists' conflicts of interest regarding their ties to the industry, are even more troubling and remain difficult to resolve. For example, a recent study suggested that it was common for authors' to have conflicts of interest and that these were significantly associated with study outcome [8]. In fact, the situation between medical journals and the pharmaceutical industry has become so troublesome that some now see medical journals as the vehicles through which the drug industry peddles its products [9].

Taken together, the bulk of these problems represent symptoms of a dysfunctional enterprise. The fact is that many sectors of science have become high-stake and are now extremely competitive. Most research today is far more complex and expensive than that of a few decades ago and, regrettably, funding for most areas of science has not kept up with the corresponding demands. In addition, institutional and social pressures for researchers to publish and to obtain proper recognition have also increased and all of these factors taken together undoubtedly undermine the integrity of their work [10] and the trust of our peers.

In my view, the current situation is reaching a critical stage. There is a pressing need to fight misconduct and maintain honesty and transparency in science. Educating current, as well as future generations of scientists on all aspects of scientific integrity should be our first priority, but so is the need to uproot instances of misconduct. Thus, plagiarism detection technology and other anti-fraud tools are necessary if we want to regain the trust of our peers and the public, for trust is not something that can be given out for free or be bought; it must be earned.

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