Combating plagiarism: a shared responsibility

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Abstract

Scientific progress depends on the free dissemination of original thinking and research. With the evidence base formed by publication, investigators develop and implement additional studies, and policy makers propose new laws and regulations. The ramifications of this evidence can affect millions of lives and reallocate considerable resources for programmes or research. As such, it is incumbent on investigators to conduct rigorous research, which precludes engaging in scientific misconduct such as falsification, fabrication and plagiarism. This article addresses the causes and consequences of plagiarism and the processes by which plagiarism is discovered. It concludes by considering the responsibilities of members of the research community in preventing and addressing plagiarism.

Introduction

Considered broadly, there are three main forms of scientific misconduct: falsification (altering data), fabrication (creation of data), and plagiarism. The last is defined by the United States Office of Research Integrity (ORI) as "both the theft or misappropriation of intellectual property and the substantial unattributed textual copying of another's work." (1) While instances of plagiarism can be shown to have coincided with the earliest records of the written word (2) recent interest in it as an academic matter has grown immensely. All parties involved in the dissemination of scientific knowledge have a role to play in the prevention, detection, and investigation of plagiarism. Researchers have an interest in claiming credit for their original contributions, but their advances also rely on their peers' formative work being legitimate. Journal editors seek to enhance their impact and prestige. And research institutions, funders, professional organisations and regulatory agencies aim to cultivate a scientific environment defined by integrity, in order to serve the public interest. Whether the offense is a missed citation in a non-integral part of the paper, or self-plagiarism, or wholesale duplication of passages from the work of others, the negative ramifications are not merely that the evidence base is skewed towards plagiarised ideas (3), but also that the public's confidence in the products of scientific research is eroded with each case of misconduct.

As opposed to fabrication and falsification, plagiarism has the characteristic of having direct "victims" in individuals whose work was unattributed, and who should be involved in the review of new material in their field. While in the past plagiarism would be discovered coincidentally, powerful new software technologies can now systematically search through millions of articles available online and select those with matching patterns of text (4, 5). With specificity under 100%, it is still necessary for additional investigation to determine whether plagiarism has actually occurred. These steps can lead to the detection of particularly egregious cases and the discovery of repeat offenders (5, 6). While the overall rate of software-detected plagiarism may be extremely low, surveys of health researchers point to a much larger body of plagiarised work in the literature (5, 7).

Causes and consequences

The reasons why researchers intentionally engage in misconduct are unsurprising: they serve as shortcuts in the infamous "publish or perish" scientific environment. With publication comes greater prestige and opportunities for funding and promotion. When confronted with evidence of plagiarism, "authors" have offered a range of responses. A selection of these include: a legitimate denial that they were involved as a co-author (8); allocation of responsibility to research assistants or associates (9); a desire to use "beautiful sentences from other studies" (10); a "confused mental state" (11); denial of any offense (12); and acknowledgment of guilt, with an apology (13).

The case of Raghunath Mashelkar - one of India's most decorated scientists - is especially informative of the public and personal ramifications of plagiarism. Dr Mashelkar's committee report to the government of India on pharmaceutical intellectual property policy contained language drawn directly from an industry-sponsored paper on the topic, matching its conclusion, seen as favourable to multinational corporations (14). Publicity around the matter (15, 16) preceded Dr Mashelkar's request to withdraw his report, and his resignation from the committee (17). These events coincided with Dr Mashelkar's acknowledgment that a book that he wrote - also on intellectual property - copied directly from another author's paper without proper attribution (9). Although Dr Mashelkar is the recipient of countless honours reflecting his original and significant contributions to science in India and internationally, the media coverage ensures that his professional reputation will now be permanently footnoted by these controversies (9).

A review of 43 individuals with terminal degrees who were found guilty of scientific misconduct by the ORI determined there were significant negative impacts on the offenders' career trajectories. Sanctions included temporary ineligibility for grants, removal from advisory boards, and retraction of papers - though the penalties were more severe for those guilty of falsification and fabrication. Those who continued to publish published less, and 12 ceased publication entirely (18). Separately, as a newsworthy item when a prominent scientist is found guilty of plagiarism, some journals include a notice to

readers with a photo of the offender (9, 11) as a helpful visual reference.

The responsibilities of the scientific community

Clarity regarding responses to suspected plagiarism has increased as guidelines and commentaries have been published by individual journals and organisations such as the UK Committee on Publication Ethics (COPE) (19, 20). The COPE guidelines clearly specify the role of journal editors in responding to allegations of plagiarism. Yet there is evidence that a significant proportion of science journal editors do not perceive publication ethics as an issue for their respective journals (21).

In advance of any action, though, a journal must have published policies for plagiarism, as well as for any form of research misconduct or unethical research practices; examples of such policies are readily available (22). When it is confirmed that an offence has taken place, editors can consider appending a corrigendum or retracting the entire article, as appropriate, along with publishing a description of the process and the decision, for the journal's readership. If the individual's response is inadequate, editors can decide to pursue the matter through other scientific bodies at the institutional or national level.

Less guidance is available for the reader who may come across suspicious text. No code of conduct explicitly defines the obligations, if any, for physicians, epidemiologists, bench scientists, health policymakers and others who rely on the literature to guide their work in their respective fields. I have experienced such a situation when faced with two papers written by different authors that bore remarkable similarity in content and organisation (23, 24). The second paper (published in 2006) referenced the first paper (published in 2001) only once. Though the editors of the first journal did not respond to an inquiry, the editor of the journal that printed the second paper did follow up and concluded that plagiarism had occurred. By this time the offending paper had been cited twice elsewhere (25, 26). An Editor's Note on the second journal's website now informs readers of the paper's retraction (27).

While the editors of the first journal did not respond, each of the other involved parties acted appropriately given the seriousness of the charge and weight of the evidence. When cases of scientific misconduct such as this one arise, it is heartening to see that research integrity remains of primary interest to a diverse set of actors, as has been documented elsewhere in a survey of authors and journal editors implicated in plagiarised works (28). Yet in spite of the development of sophisticated tools for detection, stronger guidance for response to alleged offenses, and clear evidence that such offenses can have long-term consequences, it is disheartening that in the research community original work continues to be plagiarised.

Separate from journal editors and readers, direct observers of offenders play an important role in combating plagiarism through whistleblowing. The intent of whistleblowing policies is not to foster a culture of suspicion but to create a formal mechanism by which allegations must be investigated, in a manner that both protects the whistleblower from retribution and allows the accused to mount a defence (29). Though this intent has not always translated into reality (30), the individual whistleblower with the protection of confidentiality may be the last, best check against misconduct. This is particularly the case for plagiarism, since few actors are involved.

In environments characterised by deference to hierarchies, the acceptance of institutional norms, and an aversion to controversy (which may describe much of academia), whistleblowing may be the only means of mitigating misconduct's negative impact on society. Naturally, it is incumbent on institutional authorities to demonstrate intolerance of misconduct and an interest in transparent investigation, and to codify due process for the accused and accuser (31). Only when these are satisfied will it be possible for the individual researcher to opt out of being a party to misconduct.

Conclusion and recommendations

Plagiarism is not inevitable but its prevention requires a multi-pronged approach. A pro-active strategy is within reach for scientific communities in all settings, and does not require the acquisition of sophisticated software. First, the principles of research integrity must be taught from the time that students learn to extract, summarise and analyse information generated by others. Student researchers must learn that the scientific enterprise is based on trust; they must also learn to appreciate the crucial importance of original thinking as a driver of science, much as patents are for technology. Second, journal editors must reassert their role as stewards of valid and original scientific thought. All journals are potential targets of plagiarised work, in spite of what some editors may believe (21); only those with robust guidelines, backed by demonstrated action, will gain the trust of a global readership. Finally, practitioners within their respective fields must commit themselves - and each other - to the highest standard of conduct. Whether this is manifested through professional guidelines, mentorship or whistleblowing, misconduct should be censured much as achievement is celebrated. Each act of plagiarism casts doubt not only on the overall validity of the offending piece, but also on the offender's career, and even the national scientific systems that produced the offender (17, 32). Therefore, it is incumbent on each individual to recognise their personal responsibility to create and support an environment where science can flourish, in benefit to all.

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Tackling disinterest towards blood donation: need for urgent action

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Abstract

The shortage of voluntary blood donors is a problem in many countries including India. Myths regarding the ill effects of blood donation are common and many precious lives are lost for lack of replacement donations. Urgent measures are warranted to eliminate myths in the community regarding blood donation in order to encourage voluntary donation.

The woman was in great distress. She had been brought to the medical emergency department by her husband. The mother of five, she had been ill for months. Today when her husband found that she could no longer continue to do the household chores, he thought it fit to bring her to the hospital. She was pale and breathless. She needed emergent red cell transfusion.

In most government-run hospitals, blood for transfusion to a patient is made available against the donation of blood by a relative. Of course there is a provision for life-saving transfusion when no donors are available. However, the residents who work in the emergency department are under pressure to release as few units for life saving purposes as possible, and are often asked to justify ordering life saving transfusions. To make matters worse, myths regarding the ill effects of blood donation are so common amongst the general public that making a relative agree to donate blood is no less than a herculean task.

I told the patient's husband that his wife was in desperate need of blood and that he would need to donate for her sake. However, he was not inclined to agree. "How can I donate, sir? I have five children to look after. Who will care for them if something happens to me?" he asked. I explained to him that donation was safe for a healthy person and that he should go ahead to save the life of his wife. He tried to bargain with me: "Can't we buy it? I will pay for it." I lost my temper and asked: "We need human blood; is it available in the market?" He realised that there was no way out. Then he suddenly vanished.