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International Perspectives on Plagiarism and Considerations for Teaching International Trainees

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Abstract

In the increasingly global community of biomedical science and graduate science education, many US academic researchers work with international trainees whose views on scientific writing and plagiarism can be strikingly different from US norms. Although a growing number of countries and international professional organizations identify plagiarism as research misconduct, many international trainees come from research environments where plagiarism is ill-defined and even commonly practiced. Two research-ethics educators consider current perspectives on plagiarism around the world and contend that US research-training programs should focus on trainees' scientific writing skills and acculturation, not simply on preventing plagiarism.

Keywords

plagiarism; international trainees; research misconduct; scientific writing; RCR education

The integrity of research publications is essential to the global scientific enterprise. Fostering high ethical standards within research environments likewise requires increasing attention to international perspectives. Across the United States, research universities support investigators engaged in multinational research collaborations; employ large numbers of international faculty and staff; and attract students, residents, and fellows from around the world. In this environment, even local publications can have international impact, particularly through the Internet.

International trainees are central to the global reach of US science. According to the National Science Board's *2010 Science and Engineering Indicators*, one-third of students in US graduate science programs between 1997 and 2007 entered from other nations and 30% of doctorates in the life sciences awarded during that period were earned by trainees on temporary visas [1]. The Institute of International Education reported over 60,000 international graduate students and postdoctoral fellows in US physical and life sciences

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programs in 2008–2009, a rise of 8% over the previous year [2]. The Council for Graduate Schools reported an additional 3% increase in international graduate admissions for Fall 2010 [3]. This growth is driven primarily by rising enrollments from Asia: students from China, India, South Korea, Japan, and Taiwan now make up almost half of the international trainees in the United States [2].

Educators have long recognized that international trainees, especially from developing nations, have particular trouble with US standards of scholarly writing and are at significantly higher risk for committing plagiarism than their US peers [4–8]. Trainees first introduced to research practice in their home countries can be surprised and bewildered by US expectations for responsible conduct of research and have been found less likely to accept US norms of academic science than are their US counterparts [9,10]. Even senior trainees from outside the United States may not know how US policies and standards differ from practices they learned at home [11].

Factors affecting the incidence of plagiarism

A host of factors may make international trainees susceptible to committing plagiarism. Among the most important are: the normalcy of plagiarism in many environments internationally; the lack of formal misconduct policies in many countries and operationally vague policies on plagiarism where they do exist; philosophical arguments against US notions of originality, intellectual property, and authority; and non-native speakers' difficulties in writing in English.

Normalized plagiarism and the effects of corruption

International trainees charged with plagiarism in the United States often insist that they followed practices common in their home countries [12]. Complaints against senior academics in Korea, China, India, Peru, and Iran [13–17] have renewed speculation about widespread plagiarism in these and other nations. Although no data on actual prevalence exist [18], both national surveys and international comparisons document high rates of *perceived* plagiarism and other misconduct in emerging research environments and developing nations.

In 2009 the China Association for Science and Technology (CAST) reported that 43.4% of the approximately 30,000 Chinese researchers they queried described plagiarism in China as “really” or “rather” serious [19]. Over half said that misconduct “surrounds” them [20]. These figures were echoed in a 2010 study of cheating in academic publication that put Chinese expenditure on ghostwritten papers at over \$145 million/year [21,22].

Smaller comparative studies have found that in many countries plagiarism is “deeply rooted” in university environments [23]. A multinational group of economists who compared students in Israel, the Netherlands, Russia, and the United States in the late 1990's observed that country of origin was a strong predictor of students' tolerance for cheating. Among the populations studied, US students were the least accepting of academic dishonesty [24]. A Croatian team that compared four independent studies of students' perception of and attitudes toward plagiarism in Bulgaria, Croatia, Spain, and the United Kingdom also found national differences that, they concluded, could make it hard to harmonize academic standards across Europe [23]. Both projects found that students in former Soviet-bloc countries (Bulgaria, Croatia, and Russia) were more accepting of academic misconduct than were their counterparts in Western Europe or the United States and less likely to report others' cheating when they knew about it [23,24].

Latin America, India, the Middle East, and Africa are “lagging behind” other regions in their concern about misconduct [25], including attention to plagiarism. A 2008 study of faculty in Brazil’s expanding research environment found participants hard-pressed to define plagiarism and concerned less about textual copying than about unattributed use of others’ data [25]. Participants not only claimed that textual plagiarism was often justified but also expressed doubts about whether policies against plagiarism would be effective in Brazil’s “permissive” culture [25].

In India, the editor of *Current Science* found over 80 cases of plagiarism in articles submitted in 2006–2008 – due to “authors’ poor understanding of what they should and shouldn’t do” [15]. Editors of a student medical journal in Peru reported high rates of plagiarism in submitted manuscripts from across Latin America [26] and in a structured review of Peruvian medical-student theses [27]. Their analysis found plagiarism in about 80% of 33 theses, including 20 papers that contained direct copying of others’ work, whereas faculty thesis supervisors seemed to perceive no problems [27].

Academics in developing countries often draw parallels between misconduct in the research community and corruption in society. Universities are not immune to tensions that affect society generally. One of the deleterious effects of pervasive corruption is the distortion of ethical reasoning. A constant search for ways around obstacles imposed by corrupt authorities numbs personal moral judgment to the extent that unethical and even criminal behavior becomes normalized. In the case of students in former Soviet-bloc countries, their tolerance of cheating and antipathy toward informers have been attributed to cultural adaptation to the prevalent corruption and lack of individual moral responsibility seen under authoritarian regimes [23,24].

Magnus et al. developed a “tolerance-of-cheating index” that they linked to Transparency International’s *Corruption Perceptions Index* (CPI), an annual ranking of perceived public-sector transparency and corruption in 180 nations [24,28]. The CPI is a 10-point scale, with higher scores indicating less perceived corruption. It primarily assesses governance, that is, the traditions and institutions by which authority is exercised [29]. In 2009, Transparency International ranked New Zealand with the least perceived corruption with a CPI score of 9.4, Somalia with the most at 1.1, and the United States in nineteenth place at 7.5 [28]. That year, eight of the top ten countries of origin for international students in the United States (India, China, South Korea, Taiwan, Mexico, Turkey, Vietnam, and Saudi Arabia) had significantly lower CPI scores than the US [28]. The complex effects of endemic corruption may help to explain why many international trainees tolerate plagiarism as something less than misconduct.

Absent and operationally vague standards in policy

The formulation and implementation of effective policies is a key element in successful governance [29]. Since the US Congress first addressed misconduct in federally-funded research in the 1980s, most research-intensive nations have developed regulations and procedures for adjudicating charges of fabrication, falsification, and plagiarism [19,30–36]. The European Science Foundation now seeks the harmonization of European national policies on misconduct [19,32], and the Organization for Economic Co-Operation and Development and organizers of two World Conferences on Research Integrity are working to develop a framework of principles on research misconduct suitable for addressing international collaborations [33–35]. Such principles and policies are often core materials in RCR education [36].

Yet many nations still lack official policy on misconduct and authoritative standards on plagiarism [33–35]. Indeed, where plagiarism is normalized, there may be no perceived need

for such policy. Trainees initially educated in environments affected by such conditions may be unaware of others' concerns about plagiarism. Moreover, because formal misconduct policies have been developed primarily to deal with the research misconduct of funded investigators, trainees may presume that policy standards do not apply to them.

International trainees may also have difficulty appreciating US standards due to the very nature of policy language, which is typically both concise and open-ended to cover the range of cases that policymakers anticipate, as well as unforeseen future scenarios. Policy statements thus often rely upon operationally vague rules that provide limited guidance on correct practice. The US Office of Research Integrity's policy on the federal definition of plagiarism [37], for example, does not define such key concepts as "appropriate credit" as they might be modeled in good writing. The ability to interpret and apply policy properly – e.g., determining when an idea is "common knowledge" or how many references to include in a detailed presentation of a complex topic – requires professional judgment that is acquired through education and experience.

Differing conceptions of knowledge, authority, and intellectual property

Discussing US writing standards with international trainees often reveals divergent philosophical approaches to scholarship in their academic communities of origin. For example, trainees from countries where memorization is a common pedagogical technique are sometimes surprised by US expectations that they cite sources for all direct quotations, even those expressing "common knowledge". Many insist that what the US considers plagiarism represents, instead, the writer's expectation that informed readers will be familiar with the original, authoritative source of certain material. This view has also been expressed by established scholars from other nations who claim that plagiarism is a tribute to the person plagiarized [16].

Political ideology and the experience of corruption have led occasional international critics to insist that defining words and ideas as intellectual property is an effort to control and exploit knowledge that properly belongs to society. Such views are also evident in societies where bureaucrats or elites control access to academic and professional research positions, often based on a credentialing system unrelated to the actual value of candidates' written work [14,17,38]. Other critics insist that plagiarism is an administrative issue, denying its importance as a professional or moral transgression [39]. Still others, particularly in developing countries, have condemned US efforts to promote a common ethical standard for scholarship worldwide as "moral imperialism" and "intellectual colonialism" [40] that deny the ethical viewpoints of local cultures. International trainees familiar with any of these perspectives may struggle with US practices of citation and attribution.

English as the international language of plagiarism

Perhaps the most important factor in international trainees' susceptibility to committing plagiarism is the difficulty that many non-native speakers of English face when writing in English. Although English is considered the international language of science, most international trainees have not studied English as part of their university science curriculum [25]. Even those who scored well on the TOEFL may struggle to write scientific manuscripts. When non-native speakers encounter difficulty in academic writing, they may "borrow better English" [41] to express complex ideas. Such trainees often insist that, once they have read better text than they could have written themselves, it is difficult not to repeat it. Like many non-native, English-speaking researchers abroad [25,41,42], they contend that what matters are their original data, not the words that introduce the problem or frame their data.

Teaching international trainees to write, not just to avoid misconduct

International trainees enter US academic research programs eager to become skilled and productive researchers. They may plan to remain in US institutions or return to leadership positions in their home countries [7], but in either case their success depends heavily upon publishing in English-language journals. Trainees' success or failure reflects on the programs that admit and train them, and on the senior investigators who are their mentors. Thus program directors, department chairs, and university administrations have a vested interest in promoting activities that help their trainees to learn to write well.

The goal of instruction in biomedical writing cannot be simply to avoid plagiarism [42]. The primary US textbooks on the responsible conduct of research present the ethical goals and practical aspects of publication in ways that offer a comprehensive grounding for US and international trainees alike [14]. Institutions can foster trainees' acculturation into US science and biomedical publication by providing writing "labs", formal courses in scientific or medical writing, library support, in-house editorial review of manuscripts, and opportunities to practice writing for different purposes. The teaching strategies recommended by Fischer and Zigmond elsewhere in this issue [43] are as important for international trainees as for those educated exclusively in the US.

As part of those efforts, all trainees should be introduced to the international conversation on ethics in biomedical publishing. For over 20 years the International Committee of Medical Journal Editors' Uniform Requirements for Manuscripts Submitted to Biomedical Journals has provided guidance on a range of issues, including authoritative standards for authorship [44]. The World Association of Medical Editors, which includes the editors of almost 1000 journals from 92 countries [45], has a comprehensive policy on plagiarism intended for an international audience, as well as other practical resources. The Committee on Publication Ethics, a British organization with 5200 members worldwide, hosts a website with cases and commentaries, as well as a blog on contemporary issues in ethics in publishing [46]. These online materials are useful as both teaching tools and reference materials for trainees worldwide.

All trainees everywhere begin as foreigners to the world of academic science and research publication, unfamiliar with its rituals and language. Considering others' perspectives on scientific integrity and norms of practice enhances collegial understanding across research environments and offers trainees and their faculty the opportunity to build a truly international research community.

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