

## Preface: Why I Wrote This Book

Back on the morning of September 8, 2010, a normal working day as a journal editor, when I went to open my office e-mail in-box, the title of one particular e-mail—‘Your Correspondence in *Nature*’—suddenly made my heart beat faster. I soon realized that the title of my recent short paper in *Nature* [1]—‘Chinese journal finds 31 % of submissions plagiarized’—might be about to cause trouble. Comments about the paper rapidly accumulated both on *Nature*’s Web site [2] and on China’s ScienceNet [3], and later that day my university principal, Yang, phoned me to ask why I had given my paper such a contentious title rather than the earlier title of ‘Policing plagiarism in China is helped by innovative software’ which he had seen in proof a few days earlier and indeed cited in his presentation at the Shanghai Scientific Journal Development Conference (also, as it happens, attended by *Nature*’s chief editor, Philip Campbell) the previous day. The dramatic title change was suggested at the last minute by a senior editor of *Nature*, who felt that ‘the new title would have more impact and encourage more people to read the letter.’ The outcome was that my normally quiet life was suddenly disrupted by many telephone calls and interviews from both domestic and foreign media; there was also a flurry of online comments [2, 3], which were a mixture of criticism, doubt, support, and understanding.

In those few days, I also received many letters from home and abroad, including one from Professor John Suppe, an eminent geoscientist and a member of the US National Academy of Sciences. The correspondence, and his letter in particular, opened my eyes and made me realize that I was doing the right thing, even though it had got me into trouble. Here is what his letter said:

Dear Helen,

Thank you for writing to me and congratulations for your publication in *Nature*, even if it is causing you some problems ... I still think you should be supported in China at the highest level and congratulated for this contribution. In fact the controversy should ultimately be a good thing for developing higher scientific success in China.

...

I guess part of the problem is that there are a number of somewhat different unacceptable and dubious practices that are combined together and called plagiarism in the title. In your 2010 *Learned Publishing* paper [4] you explain very clearly what these are. Some are much more serious than others. For some types I think there may be legitimate disagreement, particularly in some specific cases. You stated in the abstract of the *Learned Publishing* article that it is important for the community to reach a consensus on these issues. I agree. The scientific and publishing community in China must reach consensus together in a way that promotes high quality in Chinese science.

... It is very important that Chinese science and scholarly publications truly rise to the highest levels, just as China is aspiring to the highest levels in every sphere, such as sports and economic development. Clearly, cheating in sports would be viewed as unacceptable in the international community, even though people and groups in every part of the world attempt to cheat. It is the role, for example, of the Olympics Committee or other such bodies to apply strict standards of enforcement, even though it can lead to big public debate and controversy. In the same way, I am sure that the Chinese National Natural Science Foundation realizes that it must fully support the application of the highest standards of scientific excellence and excellence in standards of publication. The rewards come from true high quality original contributions to knowledge, not from taking shortcuts.

However, there is a temptation sometimes to make a shortcut ... I remember, many years ago there were major problems in Taiwan because of piracy of books, music, software, and other industrial products. It was finally realized that this piracy had to stop—it was not good for economic development in Taiwan. I guess the local authorities worked hard to enforce regulations and this was important for the development of a strong and innovative technical industry, competitive in the world.

The same is true for scientific development. Plagiarism ultimately weakens the quality of the science and is very dangerous. It's a form of corruption. It is well documented that there is an inverse relationship between economic development and corruption. The lack of economic development of the Philippines over the last 50 years is widely ascribed to corruption. The rather weak performance of Italy both economically and scientifically is widely ascribed to corruption, even by the Italians. But it is a matter of degree, Italy does have some very great scientists, but the nation would be world class, at the level of France, Britain, Germany or Switzerland, if it were not for corruption.

So I think it is important to China that some very strong people in China support you in this. It's a very important issue for the success of Chinese science. You might remember I wrote a short article on the growth of science for the 100th anniversary of Nanjing University [5] in which I forecast that the biggest contributor to growth of science worldwide in the 21st century would be China. However, it is equally clear that there are various things that can keep China from tasting the highest success. Plagiarism and other short cuts to a false success can easily weaken Chinese science. I'm sure that the leaders of science in China fully realize this and will give close attention.

The controversy was also reported by both Chinese and foreign media including CCTV-24 (China Central Television), *The New York Times* and National Public Radio (NPR). Here is a flavor of these reports:

Last month a collection of scientific journals published by Zhejiang University in Hangzhou reignited the firestorm by publicizing results from a 20-month experiment with software that detects plagiarism. The software, called CrossCheck, rejected nearly a third of all submissions on suspicion that the content was pirated from previously published

research... The journals, which specialize in medicine, physics, engineering and computer science, were the first in China to use the software...

The journals' editor, Zhang Yuehong (Helen), emphasized that not all the flawed papers originated in China... Some were from South Korea, India and Iran... [6].

For a decade, Helen Zhang has had a dream: to run an international scientific journal that meets international standards... In 2008, when her scientific publication, the *Journal of Zhejiang University-Science*, became the first in China to use CrossCheck text analysis software to spot plagiarism, Zhang was pleased to be a trailblazer. But when the first set of results came in, she was upset and horrified. 'In almost two years, we find about 31 percent of papers with unreasonable copying and plagiarism,' she says, shaking her head. 'This is true.' ...When Zhang published these findings, she was criticized for bringing shame on Chinese scientists, even though she had emphasized that many of the papers were from overseas. China is forecast to become the world's leading innovator this year, overtaking the United States and Japan in the number of patent filings, according to Thomson Reuters. More scientific papers come out of China than out of any other country but the U.S., and Chinese leaders vow it will be a research superpower by 2020 [7].

The uproar caused by this topic in academic and publishing circles all over the world made me think about when it was that we, as academics and publishers, first began to pay close attention to the issue of 'plagiarism.' In my own experience as a scientific journal editor for more 30 years, I have noticed that in the last decade there have been more papers concerned with the topic of plagiarism, possibly because since the 1990s, due to the rise of the Internet, duplication has become easier. The proliferation of articles on this topic has increased since the arrival of tools for detecting plagiarism, such as iThenticate [8] (launched in 2004 and used by the CrossCheck service, which received the Association of Learned and Professional Society Publishers Award for Publishing Innovation in 2008) [9]. The Committee on Publication Ethics (COPE) [10], established in 1997, has focused on a wide range of ethical issues, including plagiarism in all its forms, and in 2008, COPE set up a Research Grant to help editors and publishers to study all aspects of publication ethics and, in particular, how to handle cases of research and publication misconduct.

We trialled CrossCheck with our own journal in 2008, but encountered various problems. This, combined with the above-mentioned background, encouraged us to apply for a COPE Research Grant, which we were fortunate enough to receive in early 2011 (Fig. 1) [11].

Our COPE-funded program, entitled 'CrossCheck guidance: an analysis of typical cases of plagiarism in different disciplines,' was duly carried out in 2011–2012. In our initial investigation, we focused primarily on three important questions:

1. What are journal publishers' and editors' attitudes to, and tolerance of, typical plagiarism in different disciplines?
2. What are the mainstream views and differences between editors in Western countries and non-Western countries?
3. How do journal publishers and editors worldwide use CrossCheck/iThenticate and how do they handle the statistics that it produces?

## THE SCOOP FROM COPE



Y. H. (Helen) Zhang (right) and her research group (above)



## COPE grant awarded for first time to recipients from China

COPE's December 2010 research grant was awarded to Yuehong (Helen) Zhang and Xiaoyan Jia of Zhejiang University in Hangzhou, China, for the project "CrossCheck Guidance: An Analysis of Typical Cases of Plagiarism in Different Disciplines."

Zhang, who is Journal Director in the Journals Department of Zhejiang University Press, and Jia, who is Editor of JZUS-A/B/C, the Journal of Zhejiang University-SCIENCE A/B/C (Applied Physics & Engineering, Biomedicine & Biotechnology, Computers & Electronics), with their editorial group, have already used the CrossCheck plagiarism detection software to identify potential cases of plagiarism in more than 2000 manuscripts submitted to their multidisciplinary journals in the past year. Zhang reported in *Nature* that 692 of 2,233 submissions contained unoriginal material (Zhang Y. *Nature* 2010;467:153).

With the COPE grant, Zhang and her group will select 3–5 representative cases of plagiarism in each discipline, make a detailed characterization of plagiarism in these typical cases, and provide suggestions for dealing with similar

cases of plagiarism based on input from other CrossCheck users.

They plan to compile a handbook listing typical cases for CrossCheck users and authors worldwide.

With this handbook, editors "can learn how to deal with different kinds of plagiarism in different disciplines when using CrossCheck" and authors "can learn more about plagiarism and CrossCheck, and how to avoid being accused of plagiarism."

COPE considers applications for grants twice a year, in June and December. The grants of up to £5000 are awarded to COPE members for a research project in publication ethics (see [www.publicationethics.org/research](http://www.publicationethics.org/research)). The first grant was awarded in 2008, and one of the first year's grant recipients, Ana Marusic, will report on her research at the March 2011 COPE UK seminar (see page 2). 2010 marks the first time that the grant recipients are from China.

**Zhang reported in *Nature* that 692 of 2,233 submissions contained unoriginal material**

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**Fig. 1** COPE Grant Award Report, *Ethical Editing*, Spring issue, 2011 (reproduced with the permission of COPE)

In order to answer these questions, and in an attempt to supplement the available ethical guidance for authors and editors in the scholarly publishing area, we conducted several worldwide surveys. To date, we have already published a few of

English language papers in international journals [12–18]. Our project is described on the COPE Web site [19] as follows:

**CrossCheck guidance: an analysis of typical cases of plagiarism in different disciplines**

Most plagiarism cannot be judged solely by the similarities discovered when using CrossCheck. Based on experience of cross checking more than 2000 manuscripts from approximately 50 countries in different parts of the world per year, this project aims to provide 3–5 typical cases of CrossChecked plagiarism in three different disciplines covered by the *Journal of Zhejiang University-SCIENCE A/B/C* (<http://www.zju.edu.cn/jzus/>) (*JZUS-A: Applied Physics and Engineering*; *JZUS-B: Biomedicine and Biotechnology*; *JZUS-C: Computers and Electronics*). The typical plagiarism case analysis will be made into a list or a handbook that will be classified by discipline. For editors, they can learn how to deal with different kinds of plagiarism in different disciplines when using CrossCheck. For authors, these lists can act as an instruction for authors on plagiarism, from which they can learn more about plagiarism and CrossCheck, and know how to avoid being accused of plagiarism.

The results of part of this research were also presented at the CrossRef 2011 Annual Meeting, USA, 15 November 2011 [20]. The purpose of this survey was to investigate the use of CrossCheck by journal editors in various different disciplines to detect plagiarism, and their attitudes to potential plagiarism, once discovered.

My aim in putting together this book is to gather all the findings from our various surveys of different disciplines in order to help journal editors, authors, and students from different subjects to learn more about plagiarism, including typical problems such as cut-and-paste, duplication of conference proceedings, self-plagiarism, team plagiarism, and review papers with a high level of similarity, and to find out how to detect plagiarism, how to deal with it, and how to avoid it.

Yuehong (Helen) Zhang

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