



Shaping Chinese novice scientists' manuscripts for publication

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Abstract

Researchers of scholarly literacy are becoming more aware that a published research article, especially if it is written by an English as an Additional Language (EAL) author, needs to be viewed as a product involving a range of “shapers” who participate in the editorial process (e.g., Burrough-Boenisch, 2003). Drawing on data gathered over a period of several years from doctoral science students and their supervisors at a major research university in mainland China, this paper considers such shapers' roles in this group of novice scholars' international publication attempts. Three main sources of English-language correction assistance are used: supervisors, peers, and language professionals. The strengths and weaknesses of each of these sources are analyzed. In addition, it is noted that professional editorial services are still used rarely in China, although they have the potential to develop if the services become more accessible, financially more affordable, and more reputable. It is concluded that, in the long run, it is in the interest of EAL authors to receive editorial assistance in their local scholarly community from systemized partnerships between language professionals and subject professionals, and that academic journals should join in the efforts of assisting EAL authors to overcome the English-language barrier in international publication.

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Introduction

The disadvantage experienced by scholars who use English as an Additional Language (EAL) in writing for publication has been well documented both in the field of applied linguistics (e.g., Ammon, 2000, 2001; Belcher, 2007; Burrough-Boenisch, 2003; Flowerdew, 1999a, 1999b;

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Gosden, 1995; Kaplan & Baldauf, 2005; St. John, 1987) and that of science (e.g., Benfield & Feak, 2006; Benfield & Howard, 2000; Coates, Sturgeon, Bohannon, & Pasini, 2002; Kirkman, 1996). As well as needing more time to write (e.g., Curry & Lillis, 2004; Flowerdew, 1999a, 1999b; Lillis & Curry, 2006), EAL writers may encounter difficulties with reviewers and editors if their use of English is “non-standard.” While there is some evidence of journal editors’ and reviewers’ tolerance of non-native features in EAL authors’ submissions (Flowerdew, 2001), there are also reports of such gatekeepers criticizing these features. Ammon (2000, p. 113), for example, as a German editor of a book published in English, reports on criticisms of his work on the grounds of its “near unintelligibility [because] the grammatical mistakes are so severe.” Similarly, Curry and Lillis (2004, p. 678) report on a Hungarian psychologist who made the following remarks: “if the style or the form of the paper is not native or not current, reviewers think that ‘this is a stupid man, this is not acceptable material’. They’re [*sic*] [The papers are] not accepted for regional accent, for regional style, absolutely [*sic*] refusal, this is their [reviewers’] attitude.” While commenting on the language of a manuscript is, for reviewers and editors in the field of science, much less of a concern than commenting on its scientific content (Gosden, 2003; Wood, 2001), a high rejection rate of authors from a non-English-L1 background has been ascribed in at least one set of cases to the high proportion of English “errors” in their manuscripts (Coates et al., 2002).

Chinese scientists, like other EAL scientists, face an English-language problem in their attempts at international publication. In an article published in *Science*, entitled “Science and Scientists in China” (1998), its author, Chen-lu Tsou, then president of the Chinese Biochemical Society, commented on the fact that there was still a large group of Chinese scientists who were not publishing in international journals. Concerned that the biggest obstacle facing Chinese scientists attempting to publish their research at the international level might be their “poor English” that could “obscure otherwise good work,” Tsou was particularly referring to those Chinese scientists who graduated from universities before the country’s Reform and Opening-Up policies initiated at the end of 1970s. This concern was borne out by the testimony of a British physician following a visit to China in 1994, as reported in a letter carried in the *British Medical Journal*:

[During a visit to a research unit at a hospital in Beijing] I realized both the high quality and the large quantity of clinical work practiced by Chinese surgeons. Many clinicians in this academic institute were participating in clinical research and also collating material from their wide experience for publication. This was all destined for the Chinese literature. The main reason for these clinicians not submitting papers to Western medical journals was their perceived inability to express themselves clearly and correctly in English. (Hayter, 1994)

A decade or so after Tsou’s remark and this quoted letter, it seems two observations can be made. First, China’s scientists seem to have made considerable strides in English proficiency, as the number of international publications authored by Chinese scientists has increased dramatically over recent years; second, a vast majority of these Chinese scientists who have been writing for publication in English are affiliated with higher learning institutions (i.e., universities) or with research institutes (primarily the Chinese Academy of Sciences, or CAS, which has a network of research institutes across the country). To illustrate this, one needs only consider the following trend: In 2001, 25,889 articles in the Science Citation Index (SCI) database had mainland Chinese authors as first authors, 70.3% of whom were in institutions of higher-learning and 27.6% of whom were in research institutes (Yang, 2003). By 2004, 45,351 of the total articles

included in SCI database had mainland Chinese authors as first authors, 75.7% of whom were in institutes of higher-learning and 22.9% of whom were in research institutes (Yang, 2006). Nevertheless, despite this marked progress, recent studies have shown that writing research papers in English still remains a major problem for Chinese scientists at universities and research institutes (e.g., Cargill & O'Connor, 2006; Flowerdew & Li, *in press*; Li, 2006a, 2006b, 2007). Continued attention needs to be given to the problem if Chinese science is to play its full role in the creation and dissemination of global knowledge in future decades.

It is now understood that a published research article, especially if it is written by an EAL author, needs to be viewed as the product of not just those people who have their names on it, but as a product involving a range of other people who participate in the editorial process (e.g., Burrough-Boenisch, 2003; Kaplan & Baldauf, 2005; Kerans, 2001; Lillis & Curry, 2006; McNab, 1988; Mišak, Marušić, & Marušić, 2005; Shashok, 2001). Burrough-Boenisch (2003) refers to these other people as “shapers” of research articles. They may include authors' colleagues or supervisors, colleagues' Native English speaking (NES) spouses, “correctors” who may work professionally as editors of manuscripts but are not usually specialists in the field, journal reviewers, journal editors, and copy editors. Burrough-Boenisch (2003) presents a study of the roles played by these various shapers by means of a hypothetical case of a Dutch-authored research article. In this paper we will consider the role of some of these shapers in the editorial process of one group of Chinese scholars writing for publication, doctoral science students. Based on empirical data collected from various sources, we will highlight the advantages and disadvantages of supervisors, peers, and language professionals as shapers of these students' research articles, and we will consider the potential of editorial services being employed by Chinese scientists in the future.

Burrough-Boenisch (2003, p. 224) points out that Dutch-speaking scientists are neither excluded from mainstream scholarly publication nor do they suffer the material or financial disadvantages described by Canagarajah (1996) in the case of a group of Sri Lankan scholars he studied. The Mandarin-speaking Chinese science students who are among the research participants in the present study do not suffer from the extreme difficulties reported by Canagarajah for Sri-Lanka, for example, they have access to the online literature, they have access to the internet, and they have good computer hardware and software. Neither, as we shall show, are they endowed with such benefits in terms of editorial assistance as those described by Burrough-Boenisch for the Netherlands.

Methodology

The study to be reported here falls into our project on the scholarly literacy practices of Chinese scholars in Hong Kong and mainland China. The project was initiated in 1996, when one of us started to investigate Cantonese-speaking Hong Kong scholars' publication endeavours (Flowerdew, 1999a, 1999b, 1999c, 2000, 2001, 2005). In following up, we turned our attention to Mandarin-speaking mainland Chinese doctoral science students writing for international publication (Flowerdew, *under review*; Flowerdew & Li, *in press*; Li, 2002, 2005, 2006a, 2006b, 2007). The background of this follow-up work, of which the present study is a part, is this: In many Chinese universities, publication of papers in journals which are indexed by SCI (predominantly published in English) is increasingly a graduation requirement for doctoral science students (Li, 2005), and these students' PhD dissertations tend to be compilations of papers, as has been reported being the case in some other countries, e.g., the Netherlands (Burrough-Boenisch, 2003) and Japan (Gosden, 1995). Being able to produce papers in English is therefore a truly high-stakes game for this group of novice scholars.

The data collection for our study of the international publication scenarios of Chinese novice scientists as specified above began in late 2000 at one major research university in mainland China. In the exploratory stage of the data collection (late 2000–early 2003), the Chinese researcher in this study, across several semesters, distributed (often with the help of several enthusiastic students) questionnaires in the doctoral science students' English classes she was teaching at the university and interviewed some students (who had, as she learnt by asking around, had previous experience in publishing papers in English) as well as several science professors whom she came into contact with mostly through the students. Around 300 students enthusiastically responded to the Chinese researcher's questionnaires from late 2000 to early 2003; and during this time, about two dozen students and professors were interviewed (see Li, 2002). In the following stage of our work (late 2003–late 2006), efforts were made to maintain contact with some students and professors (not all of them had participated in the earlier exploratory stage of the research) who were particularly supportive of our work. Several of these students were approached for case studies, sometimes with their supervisors involved. The research participants in the present study were found in both the exploratory and follow-up stages of our research.

Specifically, the data presented in this study on the issue of Chinese novice scientists' manuscripts being shaped for publication has been collected from twelve students (in five disciplines) and four professors (who are supervisors of three of the physics student participants) from late 2002 to late 2006. All the student participants have, at different points in time, been in the English class of the Chinese researcher at the university which was our site of research, as specified above; the four professors were the supervisors of three student participants who had long-term contact with us. The demographic information of these 16 participants is shown in Table 1.

Table 1
The 16 research participants' demographic information

Participants	Codes	Demographic information
Physics students (5)	PH-S1	Male. A young student, "an excellent researcher but deficient in English proficiency," in the words of his supervisor PH-PROF1. With editorial assistance from PH-PROF1, he published six or seven papers in English upon graduation from his PhD program. He went on to post-doc work at a university in Hong Kong.
	PH-S2	Male. A mature student with previous work experience. Relatively poor in English and deficient in previous research experience, he eventually managed to meet the graduation publication requirement with assistance from his supervisor PH-PROF2 and fellow students (see Li, 2005, for a case study of PH-S2's graduate school experience).
	PH-S3	Male. A mature student with previous work experience. Highly successful during his PhD program, he published around a dozen papers in English, having hardly called for English assistance from others. It is said his subject area, nano-science, which has been a hot topic of research, might have contributed to his record of publication.
	PH-S4	Male. A young student, a novice author and researcher.
	PH-S5	Male. A young student, a novice author but who did excellent research. With important assistance from his two supervisors, he first-authored a paper which came out in a prestigious journal of physics, <i>Physical Review Letters</i> (see Li, 2006a, for an account of this publication story). He went on to post-doc work in the same laboratory after finishing his PhD.

Table 1 (Continued)

Participants	Codes	Demographic information
Chemistry students (4)	CH-S1	Male. A young student, a novice author and researcher (see Li, 2007, for a case study of this student's process of writing a research article). He went to a laboratory in Paris for post-doc work after finishing his PhD.
	CH-S2	Female. A mature student with previous research and publication experience. A labmate of CH-S1's.
	CH-S3	Male. A mature student with previous research and publication experience, having particular expertise in the writing of English papers in his field. For years, led by his supervisor, he served as an editor of the English papers written in his lab. Upon finishing his PhD, he stayed to do post-doc work in the same lab, with his main task being correcting papers for the students in the lab.
	CH-S4	Female. A novice author and researcher, in the same lab with CH-S3 and under the guidance of the latter in paper-writing.
Environmental Science student (1)	ENS-S1	Male. A mature student with previous research and publication experience who described his two English papers during his PhD as the "do-it-yourself" type (while a lot of others' papers were of the "do-it-with-others'-help" type, in his words).
Astronomy student (1)	AST-S1	Male. A young student, a novice author and researcher. Two years into the PhD program, he was praised by his supervisor as having made big progress in research and paper-writing ability.
Computer Science student (1)	CS-S1	Male. A mature student, with previous research and publication experience.
Professors (4)	PH-PROF1	Male. A middle-aged professor of physics, having rich overseas work experience and leading a rather prosperous research group in the field of solid microstructure. PH-S1's supervisor.
	PH-PROF2	Male. A professor of physics near retiring age, having some overseas work experience and leading a research group specializing in nuclear physics. PH-S2's supervisor.
	PH-PROF3	Male. PH-S5's older supervisor, the boss of the research group that PH-S5 belongs to.
	PH-PROF4	Male. PH-S5's younger supervisor who provided more direct supervision to PH-S5 (see Li, 2006a, for details of the mentorship provided by PH-PROF3 and PH-PROF4 to PH-S5 during the latter's writing for publication).

Table 2 summarizes data collection from these 16 research participants over time.

The interviews were almost always conducted in the laboratories/offices of the participants, on campus at the university where they worked. Conducted in Mandarin Chinese, the interviews were mostly tape recorded and later transcribed and translated from Chinese to English; where tape recording of an interview was not possible, detailed notes were written up right after the interview. The emails were exchanged mostly in English between the Chinese researcher of this study and the participants, for the purpose of seeking clarification, initiating questions, or asking follow-up questions. Blogs (weblogs) of the process of writing a research article containing data drawn upon in this study were provided by two students (CH-S1 and AST-S1). Partly as a result of accessing the two students' blogs through the intranet bulletin boards system (BBS) of their university, we tracked a zone in the BBS where information on "academic research" is posted and picked up materials relevant to the issue of concern in this study. The student participants, except the successful mature student writers – PH-S3, CH-S2, and ENS-S1, who were informants

Table 2
Data collection from the 16 research participants over time (early 2003–late 2006)

Time of participation in the study	Research participants	Data collection from the participants	Glossing
Short-term contact (late 2002–mid 2003)	PH-S3, ENS-S1, and CH-S2	Interviews (1–2 times) and emails (2–4 rounds)	PH-S3, ENS-S1, and CH-S2 were approached by the Chinese researcher of this study at the time because they (all mature students) had had the experience of publishing papers in English.
Long-term contact (mainly during mid 2003–early 2006)	PH-S1 (together with his supervisor PH-PROF1), PH-S2 (together with his supervisor PH-PROF2), PH-S5 (together with his supervisors PH-PROF3 and PH-PROF4), CH-S1, CH-S3, and AST-S1	Interviews (many times), emails (many rounds), and blogs (weblogs) (by CH-S1 and AST-S1 only)	The students in this group were all among the potential case participants in the larger scheme of the research; contact with them was maintained through interviews and emails. PH-PROF1 was a supportive and enthusiastic participant in our research over time; PH-PROF2 was frequently approached during the time when a case study of PH-S2 was conducted (see Li, 2005); while PH-PROF3 and PH-PROF4 were interviewed during a case study of PH-S5 (see Li, 2006a).
Short-term contact (mainly during mid 2003–early 2006)	PH-S4 and CH-S4	Interview (once with CH-S4) and emails (three to four rounds with PH-S4)	CH-S4, as CH-S3's labmate, was interviewed once to learn about the latter's activities of correcting papers in their laboratory. PH-S4 approached the Chinese researcher of this study by email to seek editorial assistance on a manuscript, hence several rounds of emailing over the matter.
Short-term contact (late 2006)	CS-S1	Emails (three rounds)	CS-S1 approached the Chinese researcher of this study by email to ask for help in finding an NES to edit a manuscript (to accommodate a journal editor's request), hence several rounds of emailing revolving around obtaining the service of some online editorial service.

in the early stage of the study, and CH-S3, who specialized in correcting labmates' work – were also requested to provide their manuscript drafts and, where possible, journal referees' reports on their submitted manuscripts. The manuscript drafts have from time to time motivated discourse-based interviews (Hyland, 2000) with the students in the study while at the same time allowing us to examine the corrections made by various shapers. It is worth noting that the Chinese researcher of this study, in the process of interacting with the students, corrected manuscripts for several

participants (PH-S1, PH-S2, PH-S4, PH-S5, and CH-S1), at their request or on her own initiative. Her corrections are also included as part of the database of this study.

Since the present study has been part of a larger endeavor which encompasses a wide range of issues, the occasions of data collection from these participants (primarily by interviews and emails) have often not been limited to the issue of concern in the study. Thus, instead of, say, providing an interview protocol used on any particular occasion, we provide (in [Appendix A](#)) some questions that have been posed to the research participants to address our issue of concern in the present study. These questions were asked through interviews and emails.

The data analysis was conducted in a *cyclic* pattern concurrently with data collection ([Davis, 1995](#)). In data analysis, we pored through the building data, both together and independently, teasing out and coding the observations from the interviews, emails, and blogs that address our issue of concern, and referring to textual corrections in student manuscripts, where possible, for *intertextual tracing* ([Prior, 2004](#)). Identifying the four types of correctors that the students may turn to for editorial assistance was relatively straightforward: supervisor, peers, language professionals, and editorial services. Gradually, we also began to see that each of the four has both advantages and disadvantages. Cyclic data collection in the process has served to clarify particular points or test hypotheses we formed in data analysis. For example, while we realized editorial services are rarely used, we hypothesized that there is potential for this approach to develop if these services become more easily accessible and financially affordable, and their usefulness becomes more widely appreciated. We tested the hypothesis by recommending a web-based overseas editorial service (in light of information provided by a BBS post at the university) when CS-S1 turned to one of us for recommending an NES corrector. The successful result of the case lent support to our hypothesis.

In what follows, we will present our findings regarding how Chinese novice scientists' research articles are shaped by correctors as they are on their way to publication, noting the strengths and weaknesses of each type of corrector.

Findings

The following comments taken from journal referees' reports would indicate that at least some of the manuscripts authored by Mandarin-speaking scientists have not been sufficiently edited prior to submission:

- The English needs considerable editing.
- English grammar needs revision.
- The clarity of the presentation is poor. Many times this is due to grammatical errors (too many to enumerate), but oftentimes the wording is just too difficult to follow.
- The manuscript requires considerable editing as many passages are poorly written.
- The quality of the language is far below the acceptable minimum level, to such a point that many sentences are simply not understandable. The paper cannot be published as it stands.

Scientists in mainland China, like other EAL authors, are often urged by the editors/reviewers of international journals to find an NES to help with the editing of their English. However, they generally cannot implement this recommendation for the obvious reason that it is generally difficult to find an NES to participate in the process. This contrasts with the situation in the Netherlands described by [Burrough-Boenisch \(2003\)](#) and also with that in Hong Kong described by [Flowerdew \(2000\)](#).

Correction by the supervisor

It is common for inexperienced doctoral students to hand in a draft of their paper to their supervisor, the “expert” member of the target discourse community (Gosden, 1995), for checking. ASTR-S1 recorded this in his blog when he was writing his first paper in English:

The day before yesterday my supervisor gave the first draft of my paper to me and nearly no remedy [change] but let me adjust the structure. . . . I have finished the second draft yesterday afternoon and gave it to my supervisor again. I don't know when I can get the corrected draft again. (Blog in English, Oct. '04)

From this blog entry, it is clear that the supervisor helped with the first draft of the paper and that the student looks forward to receiving further feedback on the second draft. In another case, PH-PROF1, the supervisor of a physics student, PH-S1, noted that he had had to rewrite the introduction in PH-S1's first few papers, both to correct the language problems and to make this part more effective (Interview, Dec. '03). He actually commented on the lack of skills in writing among science students in general:

I would like to say that most of the graduate students don't know how to prepare the manuscript for research articles at the earlier stage. Some of them may perform well in English writing but may not know how to present. The productivity has been significantly prohibited by their poor training of English writing. (PH-PROF1, Email in English, Jan. '04)

In the case of another physics student, PH-S2, who had particular difficulty with English proficiency and lacked experience in writing papers in English, his supervisor, PH-PROF2, had to correct numerous mistakes for him in grammatical, linguistic, and structural terms. For example, while correcting the Introduction of PH-S2's first paper in English, including moving several sentences to the Results and Discussion section, PH-PROF2 wrote in the margin: “The Introduction should only review previous researchers' work; it should not discuss the present research” (our translation from Chinese). Similar to an English biology professor shaping his PhD student's thesis as reported by Dudley-Evans (1991), this indicates that specialist supervisors, when correcting students' writing, may not only attend to matters of language and content, but may also impart their rhetorical knowledge of the genre in question.

The students usually welcome and trust the supervisor's corrections. PH-S5, for example, in producing the third draft of a paper, admitted that he took almost all of the suggestions from one of his supervisors, PH-PROF4, on his second draft, including accepting completely an introductory paragraph written by PH-PROF4. Then at a later stage, when the paper's publication in a prestigious physics journal (*Physical Review Letters*) became promising, PH-PROF3, who was the senior boss of the research group, rewrote a paragraph near the end of the paper which highlighted the value of the research. Again PH-S5 incorporated the revisions completely. Although the novice, PH-S5, remained the first author by name, the two mentors' contribution has been essential in shaping the manuscript for publication. (See Li, 2006a, a case study on PH-S5, for details.)

Occasionally, however, a student may disagree with and thus may not entirely accept recommended corrections from a supervisor. Talking of a version of his paper which had partially incorporated supervisor's revisions, CH-S1 said:

In sorting it out – most changes [by the supervisor] were accepted, some were not. Now I still don't feel good about it, further revisions are needed. Xiao Wang [pseudonym; a fellow

student] said she felt it was not coherent in some places – this is a problem that is the easiest to occur when a paper has been revised by others. (Blog, Oct. '04, our translation from Chinese)

Whether the students are highly receptive to the supervisors' amendments or less inclined to accept changes, there is no doubt that the supervisors want their students' papers to be published, and often take it upon themselves to do whatever they can for hopeful manuscripts first-authored by their students, as was clear in PH-S5's case. Likewise, PH-PROF1, who goes through almost every paper written by students in his research group, believes that it is a supervisor's responsibility to correct papers for students. One of the reasons for this belief may be that the students' publications are an important contribution to the "research achievements" of the research group led by a supervisor, with the students' publications almost always having to include the name of the supervisor. This is in accordance with the principle of the *Matthew Effect* (Merton, 1973), those who achieve success in academia are likely to continue to achieve success on the basis of their previous achievement. Without such success, winning further grants in competitions with other research groups becomes more difficult.

Based on the comments we collected from the student participants, it seems we can point to two problems regarding the correction of student papers by their supervisors. Firstly, with the increasingly large number of students, supervisors may not be able to check every student's paper carefully. Secondly, supervisors (EAL authors themselves) vary in their competence in making efficient corrections. Those with overseas experience or with particularly rich writing experience are normally better equipped for the correction job than others. In both cases, where a student feels a lack of substantive assistance from the supervisor, he/she may be more likely to turn to other sources of assistance.

Peer correction

Senior doctoral students, often more experienced researchers and writers, may be asked by fellow students to check their papers or, sometimes, urged by the supervisor to check their fellow students' papers. Peer correction may be efficient, for the senior student peer corrector and the junior student author often share a broad or a specific specialist area. In addition, often being in the same research group, they have the opportunity of working face to face on the correction. Some senior students, as experienced paper writers, attach much importance to language and have a high degree of sensitivity to English. This is exemplified in the following email extracts from two mature students who have had some previous research and publication experience, ENS-S1 and CH-S2:

My opinion is that the research work you have done (the results obtained) and the language ability are equally important for a successful paper. (ENS-S1, Email in English, May '03)

To draw an analogy, language is appearance whereas the scientific content (the idea or theme) is the core. Here the appearance of the so called "native and correct English" is equally important as the core in the publication of the papers. (CH-S2, Email in English, May '03)

Some students have such a high level of linguistic awareness that they are able to use linguistic metalanguage to talk about their fellow doctoral students' writing, as exemplified by quotations

from another two mature students, PH-S3 and CH-S3, who both seem to have possessed some insider expertise on paper-writing in English:

One problem of many students is they give much attention to the accuracy of vocabulary, but neglect the use of words like linking words/phrases and prepositions, which are plenty in scientific English and are essential for the coherence of a text. They indicate whether the author is “mature and sophisticated” enough in using the language. (PH-S3, Interview, Jun. '03)

I have read some texts by my lab-mates. I found some passages were hard to understand. One reason is they don't know how to use conjunctions properly. Although conjunctions don't have notional meanings, they can make an article coherent and logical, hence easy to understand. (CH-S3, Email in English, Apr. '03)

In the following interview extract, PH-S3 stresses the importance of emphasizing the “novelty” of research in a paper:

When I revise their papers, I ask them: What is your emphasis? Have you shown it? They would underline something and say: Here it is. But their problem is they didn't repeatedly emphasize the novelty of their research and they didn't express the novelty well. (PH-S3, Interview, Jun. '03)

CH-S3 started to correct his fellow students' papers when he was still a PhD student, and after he finished his PhD, he stayed in the same laboratory as a post-doc fellow, with his main job being to continue with this correction work. In fact, his labmates said that it was perhaps because the laboratory (a large research group, having about 30 students from the undergraduate to the doctoral level) needed him to help with this correction job and give guidance to the younger students in research that he had been urged by the supervisor to stay for post-doc in the first place. CH-S3's labmate, CH-S4, commented appreciatively on his efforts:

We all admire him [CH-S3]. We regard him as being omniscient. He teaches us how to write. Writing this review article, I followed his instructions step-by-step: taking notes by pasting sentences from [electronic versions of] the literature – taking over the references at the same time – then writing my own sentences on the basis of those and sorting out needed references. He then checked and revised my writing, and turned into “green” colour [indicating approval] the passages that were settled. (CH-S4, Interview, May '05)

The above quotations demonstrate the high value that can be placed on the role of the peer corrector. However, in spite of the positive examples provided thus far, the role of the peer corrector is not always welcomed. A contrasting picture was painted by PH-S1, who preferred to turn to a language professional for English correction. To this student, asking a specialist peer to edit his paper might mean that he would have to give co-authorship to that person (see e.g., [Weller, 2001](#), for analysis of the intricacies involved in the construction of co-authorship):

If you ask someone in the field to revise for you, there's a problem – he will want you to add his name [as a co-author]. The paper is your work of a whole year, but 1/5 of it is taken by the one who revises English for you, with a day or two's revision. The price is too big! (PH-Interview, Nov. '05)

So for PH-S1, it is the question of co-authorship that would stop him from seeking peer correction and encourage him to turn to a language professional.

Correction by language professionals

As mentioned earlier, because of the unavailability of NES shapers, when student writers seek the help of language professionals, these will usually be EAL academics themselves. These language professionals may be on the same campus with the novice scientists. PH-S1 explains the positive role that a language professional (in this case the first author of this paper) can play, especially if the language professional works face to face with a student writer:

Asking someone in the English Department to correct English – like you – if we sit together and I explain things to you – you can do it very well; though sometimes perhaps either I can't clearly explain or you don't understand, and of course I must take the responsibility for the logic of the argument. (PH-S1, Interview, Nov. '05)

Indeed, the first author of this paper, as a teacher of English in China, has had no lack of experience being a corrector of doctoral science students' English manuscripts. For example, here is an email that PH-S2 wrote to her, requesting assistance with English correction:

On a paper I submitted to Chinese Physics Letters, we have received the editor's suggestions on revision. I'd like to ask you to help me correct the article's problems in English. I look forward to receiving your help. If you have time, let's set a time and I'll give you the print-out copy. I'm very sorry to bother you. (Email, Apr. '03, our translation from Chinese)

However, the first author of this paper, while doing a lot of such correction jobs, has not found the arrangement totally satisfactory. In most cases, the students would email her their manuscripts or, occasionally give her a print-out copy of a manuscript. Then she would have to work alone, struggling to figure out what a student author wanted to say in particular sentences and what seemed to be the logic between sentences. The difficulty that the language professional corrector finds herself in is derived from the fact that she is outside the discipline of the writer (e.g., Curry & Lillis, 2004; Hyland, 2002). Thus when having to work alone, with some degree of uncertainty, she would replace wording, rectify grammar, and clarify logic where she could. As an example of what this work is like, the following are extracts from her corrections on students' writing (the deletions [crossed through] and additions [in italics] are hers):

- J. Wu et al. ~~persisted~~ *showed* that the electron concentration dependence of the optical absorption edge energy ~~was can be?~~ fully accounted for by the Burstein–Moss shift . . .
- However, the published ~~procedure method was~~ suffered from either ~~troublesome~~ *complicated* after-treatments or poor yields.
- ~~At present working~~ *In the present research*, we attempt to synthesize a new series of . . .
- For some intercalates of *the* iron-containing MPS₃-type, the spontaneous magnetization ~~is this needs deleting~~ probably ~~because of a affecting of~~ *resulted from the change/breaking of* the balance between the in-plane AF and F interactions in favor of the latter . . .
- However, *thus far*, the mechanism of the spontaneous – *a noun phrase is missing here* – is still ~~retained-argument~~ *uncertain*.

Where she is confused, she finds herself making comments without changing anything:

- A sentence in a paper of Environmental Science:

The values of the effective concentrations (EC₅₀) show that the most sensitive to HC Orange No.1 is its development inhibition of Zebrafish embryos in spite of the values of EC₅₀ at different exposure time diversely.

This sentence has a problem.

• A sentence in the introduction of a paper of Physics:

A discussion of the oxidation process depending temperature is put forward.

This sentence is abrupt.

Once in a while, being armed with some knowledge of the genre of the research article, she senses and picks upon rhetorical weakness in a passage (e.g., Benfield & Feak, 2006; Kerans, 2001; Shashok, 2001):

- ~~According to some group's experiments,~~ (be specific here) InN seemed to show an easily oxidizable nature.
- *I guess if you show it to your supervisor, he may suggest you focus on/highlight some important results.*
- *This paragraph should have better coherence – try to make the logic between sentences clear – the introductory paragraphs as a whole need to point to a research gap that your research wants to fill.*

The correction job, this language professional found, is perhaps only rewarding when she works face to face with a student author, with the author explaining his/her intentions in particular sentences, as she did with PH-S1. In any case, though, the role of the language professional is clearly valued. The first author of this paper has from time to time seen good results from her correction efforts. For instance, PH-S4 (in spite of not having a face-to-face meeting for the correction) responded to her corrections as follows:

After revising my manuscript base on your suggestions, I mailed my paper to my supervisor. I think he can give me some advice about my research content. Also according to your comments in every end of paragraph, a few of modifications had been made. And more modifications had been made in the introduction and discussion sections, including highlight the research gap and add some physical explanations to my experiments. . . . Now I am waiting for my supervisor's reply. (Email in English, Jul. '05)

This quotation suggests that the assistance provided by language professionals, as pointed out by Burrough-Boenisch (2003, p. 229), can be “interactive and instructive” to an EAL author, especially when these language professionals have been trained in EAP (hence are equipped with knowledge of the scientific register as well as the genre of research articles).

Using editorial services

Editing, in the form of pre-publication language polishing on EAL-authored manuscripts by a shaper, seems to be common in some areas of Europe, having the support of such associations as the European Association of Science Editors (EASE) and the Society of English-Native-Speaking Editors (SENSE, in the Netherlands) (Burrough-Boenisch, 2003). In tertiary-level institutions in Hong Kong, as is sometimes the case in Europe (see e.g., Ventola and Mauranen's [1991] description of the situation at the University of Helsinki), an editorial service may be

found on campus (e.g., The Hong Kong Polytechnic University has an editorial service). By contrast, in mainland China, although occasionally one may come across local advertisements offering “to edit papers” at a certain price, it seems there is still no professional editorial service commonly available.

A U.S.-based provider of editorial services for scientists, *Könner (1994)*, in describing her thriving business, mentioned a request she received from a Chinese author:

To my surprise, and as a result of word-of-mouth advertising only, I have penetrated major corporations in Japan as well as universities and institutes all over that country, and I also receive work from many parts of Europe, South America, and Asia. I even received a rather moving request for editorial services from a research paediatrician in Shanghai. He asked if I could edit a paper for him at no charge since my hourly charge was equivalent to his month’s salary. I sent my reply with a certain sadness, explaining that if I were just once to work for a Chinese scientist for free I would surely be inundated with requests and have no time to do anything else! (p. 45)

This quotation indicates that cost can be an obstacle for Chinese researchers turning to an overseas editorial service, when domestic editorial service is generally absent. More than a decade after the above testimony regarding Chinese scientists’ possible financial constraints in seeking editorial service, now, with the more recent availability of online editorial services (or services through email transmission), cost may continue to be a problem for Chinese scientists. PH-PROF1 mentioned that their research group had considered hiring an NES area specialist to edit their papers, but eventually the idea was given up because it was estimated that the cost was going to be too high.

Apart from the setback from cost, lack of trust in editorial services – in terms of whether the services are honest and whether one’s manuscript will be read properly and hence edited professionally – may pose another problem. This is seen in PH-S1’s comment in response to the Chinese researcher’s mentioning of such services in an interview:

It seems this [i.e., using such services] is quite rare. There may be a concern that if I send you my paper, you take it to publish for yourself! That’s a concern. And at least there should be someone who can read it without much difficulty. (Interview, Nov. ’05)

Yet despite the doubt, there is already some evidence of Chinese scientists using long-distance editorial services. At the university which is the home-base of the research participants in the present study, the BBS contained the following advice at one point:

Find an English big hand to revise the paper. If you cannot find one, go to OnLine English <<http://www.oleng.com.au>> (this company provides “English correction and improvement, not translation [English in the original post]”). Here I strongly recommend it to those who have money but not time. My colleague only took two months to run from submission to a journal to publication. In the middle he spent [US]\$200 having the English corrected by the company, very quick. (BBS, Feb. ’03, our translation from Chinese)

A quick survey by us among the research participants of this study revealed that they are still generally not quite aware of such web-based editorial services. Nevertheless, when such services are brought to their attention and if the cost is affordable, Chinese scientist authors in need of correction assistance may well want to give it a try. To illustrate, the first author of this paper received this request from CS-S1, a mature doctoral student of computer science:

Attached is a paper submitted to an SCI journal. Though I have asked a few people to correct its English before submission, the editor still said “I urge you to have a native English speaker edit the manuscript . . . before you consider re-submitting.” So can you help to recommend a teacher whose native language is English? I know this is not a very polite “big ask” [“big ask” as English in the original]. I should find a way myself. Nevertheless, Ms Li, I still sincerely hope you can make a recommendation. I should pay for it myself rather than use the department’s money (since I think this is a personal matter). I’m ready to pay somewhere between RMB1000-5000 [US\$125-625]. Do you think it’s appropriate or not? (Email, Nov. ’06, our translation from Chinese)

On receiving the request, the first author of this paper pointed CS-S1 to OnLine English <<http://www.oleng.com.au>>. The rest of the story was good news: CS-S1 contacted the service, negotiated with them, got a reasonable discount, and had his manuscript edited to his satisfaction.

If CS-S1, as a mature working student, could afford an editorial service and was also willing to pay, this is probably not the case for the average doctoral students, who normally cannot freely utilize the research funds of their research group. For Chinese scientists in general to turn to such an editorial service as OnLine English, there would seem to be some necessary conditions such as the following: they need to be aware of such services, they need to have access to and trust the service, and they must be able to afford the payment. Hence, in the long run, it is hopeful that with the increasing publicity and accessibility of such services among Chinese scientists and with the increasing affluence of Chinese science, Chinese scientists will be making more use of these editorial services (assuming, of course, that the services are reliable and do a professional job).

Discussion and recommendations

While NESs seem to be the preferred shapers for EAL-authored manuscripts, we see from this study that the shapers of mainland Chinese novice scientists’ research articles are predominantly EAL authors themselves: the supervisor, peers, and language professionals. It therefore seems reasonable to suggest that these novice scientists (or perhaps mainland Chinese scientists in general) have largely operated on the principle of convenience (accessibility) and economy (incurring little or no expense). The two principles of convenience and economy also explain the hitherto low rate of the use of web-based editorial services by Chinese scientists, although as the foregoing section tried to show, such services may gain a greater market in China in the future, with their increased publicity and accessibility, as well as affordability and reputation of reliability. It is worth noting that one well-known international publishing house, since May 2004, has been implementing a scheme that includes efforts to bring overseas editorial services closer to Chinese scientists. In responding to our query, the person in charge of this scheme stated the following:

Our short term plan is to develop trust in the company through providing better services for Chinese scientists wishing to publish in our journals, including access to language polishing services. Our longer term plan is to ensure that the growing contribution of Chinese science is fully reflected in our services both inside and outside China and that we are able to operate as partners to Chinese scientists in improving visibility, influence and ultimately, also, the productivity of science. (Email, Dec. ’04)

This is indeed an admirable goal that is in the interest of not only Chinese scientists, but also “the productivity of science,” as our correspondent put it (and no doubt, we might add, in the

interest of the profitability of the publishing house in question). By including as part of their plan a scheme for facilitating Chinese scientists' "access to language polishing services," the publisher is channelling for Chinese scientists a much needed and useful source of language support which may become increasingly systematic in the future.

Apart from promoting accessibility to editorial services, what else needs to be done for Chinese scientists or other groups of EAL authors in their local academic community insofar as language correction assistance is concerned? The foregoing parts of this paper have demonstrated that in shaping novice scientists' research articles for publication, the supervisor, peers, and language professionals all have advantages and disadvantages. An obvious solution, then, seems to be a configuration of their strengths, that is the teaming-up of science specialists and language professionals, a long-standing arrangement in EAP/ESP research and practice. In terms of assisting EAL scientists for publication, we see a few recent and exciting fruitful partnerships between language professionals and scientists (e.g., Benfield & Howard, 2000; Benfield & Feak, 2006; Cargill & O'Connor, 2006). The advantage of and necessity for such partnerships is well captured by J. R. Benfield, an emeritus professor of cardiothoracic surgery and a journal editor. In his honored guest lecture at the 14th Annual Meeting of the European Association for Cardio-thoracic Surgery (October 2000, Frankfurt, Germany), he stated the following:

Language professionals can identify patterns of difficulties for NNS authors. Professional peers are better than language professionals in helping NNS authors to convey their messages well. In general, neither peers nor language professionals alone suffice to make the best of NNS manuscripts, and so input from both should be obtained. (Benfield & Howard, 2000, p. 647)

In an EFL context such as China, it is a plus to Chinese scientists' publication efforts to have the support of "language professional-scientist" partnerships from outside China. (One such example is that of Cargill and O'Connor [a language professional and a scientist from Australia] who reported fruitful work with Chinese scientists in China [Cargill & O'Connor, 2006].) However, in the long run, it is in the interests of Chinese scientists in general, including novice scientists such as doctoral science students, to have access to such support in their local scholarly community, with systemized partnerships between Chinese-native EAP professionals and Chinese-native scientists who are experienced EAL authors.

Finally, academic journals need to join in the efforts of helping EAL authors to overcome the English-language barrier. Given that NESs are difficult to come by in China, instead of urging EAL scientific authors to "find a native speaker of English to edit the English of the manuscript," it would be more realistic for the gatekeepers of scientific journals to expect the EAL authors to receive editorial assistance from their compatriots. Where possible, offering of mentoring service or editorial help from the journals, such as that described by Kaplan and Baldauf (2005), Mišak, Marušić, and Marušić (2005), and Yli-Jokipii and Jorgensen (2004), would seem a most welcome source of support for EAL authors on their way to successful publication.

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Appendix A. Questions posed to the research participants through interviews and emails in the present study

General questions

For students:

- Who have you turned to for help in improving the English of your manuscript?
- How would you evaluate the effectiveness of each of the sources of help that you have solicited?

- What does your supervisor usually do to your manuscript? How do you like his revision or correction?
- Are you aware of some web-based editing services? Have you yourself used or are you aware of someone using such a service?

For professors:

- To what extent do you think Chinese scientists need assistance in correcting the English in their manuscripts?
- To what extent do you usually have to revise or correct your students' manuscripts?
- Are you aware of some web-based editorial service? Have you yourself used or are you aware of someone using such a service?

Specific questions

For particular students:

- To what extent did you incorporate your supervisor's revisions for you into your new draft of the manuscript?
- How do you like the corrections I (the Chinese researcher) did to your manuscript?
- What do you see as the main problems in your fellow students' writing (for mature students who have published papers in English and have been correctors for their fellow students' manuscripts)?

For particular professors:

- What changes did you make to that manuscript of the students? And why did you make those changes?
- You mentioned before that your laboratory was planning to hire a native English speaker to edit the papers of your group. What was the result of that?

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