

Review

Ethical international scientific writing collaboration, co-operation and partnerships: Case studies and testimonials

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Different types of collaboration, partnership and co-operation (CPC) exist in science and their possible forms can be different depending on the phase of scientific research when it is applied and consequently, on the common goals of participants. Scientific research can be divided into at least three different phases and the success of a scientific research needs the efficient completion of all these phases to take the findings to an acceptable level of publication. At an initial phase, one or more parties have a basic idea or null-hypothesis, in the second phase these parties, together or with other parties, establish and realize a research project to develop an idea or to prove or reject the null-hypothesis. In the final phase, these parties, alone or together with other parties, write and publish the results that emerged from the two previous phases allowing other scientists to be able to use these results and formulate new ideas or hypotheses and start a new cycle of research and CPC. The goal of an international writing CPC in the third phase of scientific research is to successfully present the results of a research project or that of the literary work to a broader scientific community. Different writing CPCs can exist to tackle different research communications, such as original research papers, reviews, opinion papers, among others. In this review paper we show – through personal real case studies and testimonials of writing CPC accumulated over the past 5 years – how international writing collaboration can enhance the success of publication in a very simple but practical way and how it can promote scientific advancement without any ethical misconduct or barriers.

Key words: Collaboration, partnerships in science writing, English and science writing skills.

INTRODUCTION

Writing collaboration is, without a doubt, one of the strongest tools for enhancing the success of a publication

in the international publishing arena. When conducted within the confines of strict ethical rules and full transparency and open communication (established between all collaboration partners), we believe it is second only to the scientific content of a paper in terms of importance of the scientific publishing process (Teixeira da Silva, 2011a, 2011b, 2011c). Most scientists, independent of their cultural, religious or ethnic background, all share similar values, and one important common goal: to publish their important research in a medium that would expose their findings to as wide an international audience as possible. Collaboration, partnerships and co-operation (CPC) are usually formed at the level of research collaboration, involving exchange of ideas and know-how between two or more parties. Such CPCs involve fairly big investments, large project funding, and fairly complex co-ordination of human and scientific resources across cities or, more and more often, across continents. The CPC that we have formalized as an ethical means of advancing science quickly, efficiently and cheaply involves the establishment of a team, usually with one key member who has ample writing, scientific, editorial and editing skills and experience. The key member should also be a native English speaker to tackle the multiple challenges involved with the publishing process in top peer-reviewed journals, including the paper structure, language, style, scientific content, submission process, edits, rebuttal to reviewers and all the final polishing at each and every stage of the publishing process, from inception to completion. We are of the opinion that even brilliant scientists would benefit from CPCs, but it is usually scientists from developing countries or scientists whose first language is not English that require international writing CPCs.

There is much anecdotal evidence regarding the potential efficiency of such CPCs, often limited to wikis or blogs, but no formal data or study exists in the wider literature that provides details about how such CPCs are formed, or how their success can be measured. This paper outlines a handful of such case studies, each with its own merit and from a range of countries, that gives one, accurate first-hand accounts of how such a CPC was established and step-wise account of how it was fostered, developed, matured and brought to completion in the form of a credible, tangible product: a scientific paper, scrutinized by top-level peers from around the world, and published in recognized, leading peer-reviewed journals. We believe that as long as ethical guidelines are adhered to (as established by Teixeira da Silva 2011b, 2011c), there is no limit to how and who should be allowed to establish an international writing CPC.

WRITING COLLABORATION: BACKGROUND, DEFINITIONS AND EXPLANATIONS

Almost 55 years ago, Smith (1958) observed an increase in the incidence of multiple author papers and suggested that such papers could be used as a proxy measure for collaboration among groups of researchers. However, he warned that only a complete description of the kinds of relationships and activities of all persons in the final product would give an approximation of the amount of effort made by the group in a submitted manuscript. Subramanyam (1983) believed that a holistic perspective was required when evaluating collaboration simply because; 1) the precise nature and magnitude of collaboration cannot be determined easily by usual methods of observation, interviews or questionnaires due to the complex nature of human interaction that takes place between or among collaborators over a period of time and 2) both the nature and magnitude of each collaborator's contribution are likely to change during the course of a research project. Undeniably, only some of the more tangible aspects of a collaborative piece of work can be quantified while others most certainly cannot. Even a qualitative assessment of collaboration is extremely difficult because of the indeterminate relationship between quantifiable activities and intangible contributions. In research CPC, a brilliant suggestion made by a scientist during casual conversation may be more valuable in shaping the course and outcome of a research project than weeks of labour intensive activity of a collaborating scientist in the laboratory. As an extension, in writing CPC, an ethical and productive CPC at the level of manuscript writing can save the recipient CPC partner weeks if not months of hard work, reduced costs and value-added benefits such as higher salary, better position, and augmented professional profile due to the publication in higher level journals. The trend in increasing multiple authorship papers as was being experienced in the social sciences (as discussed in detail by Katz and Martin, 1997) in the former half of the last century was not accompanied by any increase in the biomedical sciences (Clarke, 1964). This trend has completely reversed now (The Royal Society, 2011).

To recognize the importance of writing CPC, one has to first recognize its weaknesses. Honorary co-authorship, the practice of adding other scientist's names to a scientific paper without any significant contribution on the part of that author, simply for social reasons, was rampant up until the end of the 1990's (La Follette, 1992). The new millennium ushered in a desperate attempt by publishers to clamp down on honorary co-authorship and on possible means to quantify authorship and to verify the validity of authors. To a certain extent, these efforts have failed miserably, one of the main reasons being the incongruence between definitions of authorship as defined by publishers and ethical bodies, the failure to recognize that contribution is a non-verifiable parameter

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(at least not yet), and that the term significant can have different interpretations (Teixeira da Silva, 2011c).

There is absolutely no way for an editor, reviewer, journal or publisher to verify, with any level of accuracy, the contribution made by a co-author in a manuscript. In general, however, experimentalists tend to collaborate more than theoreticians, probably because the former increasingly involves the need to solve a problem or explain a mechanism using multiple techniques, whose ability to complete may lie in the hands of different skilled personnel (for example, large molecular biology and sequencing projects that are often the products in top-tier journals such as *Nature*). Each of these personnel would then most likely be included as a co-author within a manuscript. Consequently, there is absolutely no way for an editor, reviewer, journal or publisher to lay claim on who is a valid author, particularly if all the authors agree to the submission of a manuscript and declare no conflicts of interest. Naturally, the danger lies in groups of scientists whose sole purpose is to commit fraud (for example, falsify data, publish the same data set multiple times, falsely add authors, practice honorary authorship, exclude valid contributors (ghost authors), plagiarize or self-plagiarize, etc.). What the writing CPC aims to achieve, among other goals, is to provide a first line of defense against fraud, by open and transparent communication, which is only borne through full trust, the revived concept of the Hardy-Littlewood axioms of collaboration (Teixeira da Silva and Dobránszki, unpublished).

Multiple-author papers, the product of a CPC (research or writing) also has several parallel functions or reasons for its existence:

1. To increase the number of scientific manuscripts; Lotka (1926) showed that the number of authors producing n papers is proportional to $1/n^2$. Thus, the number of researchers producing just one paper in a given period of time is two orders of magnitude greater than the number of researchers producing ten papers in the same time and four orders of magnitude greater than the number producing a hundred papers. Research and writing CPC would break that trend.
2. to change patterns or levels of funding; a research or writing CPC that yields greater returns from any products derived there from (for example, publications, patents, etc.) is a greater “value-for-money” investment in the original research project because the knowledge that the chances of “success” are greater, increase.
3. to increase scientific popularity, mutual intellect, visibility and recognition through networking and through visualization of the final product, the scientific paper, in data-bases; in general it has been shown that larger, more international groups tend to have greater impact (that is, a higher number of citations – Royal Society, 2011; Katz and Martin, 1997 for older citations).
4. To escalate demands for the rationalization of scientific manpower; with increasing costs of labor,

energy costs and a possibly prolonged economic recession, the need to seek cheaper alternatives to find practical solutions to being more productive with fewer resources is increasing in almost every country.

5. to fulfill the requirements of ever more complex (and often large-scale) instrumentation and analyses; as technologies increase in specifications and expertise, research groups are left with only two alternatives: a) to outsource to a specialist company for example, gene sequencing or primer design, or b) to hire specialized labor to deal with different aspects of the research projects' multiple tasks and techniques. Essentially, this would make a researcher who might have only conducted a small (but important) fraction of the entire research project a valid author. However, according to Elsevier's PERK, such an author would be invalid although that author would satisfy the requirements of authorship according to the ICMJE, which will lead to great confusion and possible serious legal issues (Teixeira da Silva, 2011c).

6. to increase specialization in science and professionalize staff and researchers; by advancing a wider range of scientific disciplines implying that a researcher requires increasing knowledge through training in order to make significant advances, a demand which often can only be met by pooling one's knowledge with that of others;

7. to gain novel or higher positions, most likely more possible through CPC than through individual efforts; in many countries, an author that is listed as the first author is more likely to receive greater remuneration for being a first author than for being in another position, even the last position, even though it is generally understood that the last author plays the role of the supervisor. Nonetheless, a stronger manuscript that evolves from a writing CPC can result in publication in high level journals, leading to greater remuneration, improved position or greater research funds;

8. To work in close physical proximity (except for writing CPC) with others in order to benefit from their skills and tacit knowledge.

By recognizing that research and writing CPC has such a wide range of benefits, it is not surprising, then, that to quantify the importance and/or contribution by any one author becomes increasingly difficult as the CPC tea increases. This is because collaboration can take various forms ranging from offering general advice and insights to active participation in a specific piece of research, as in the case of writing and CPC providing an opportunity for cross checking and presubmission of ‘internal refereeing’ (Gordon, 1980). These collaborative contributions can also vary in level from the very substantial to the almost negligible. Sometimes a researcher may be seen as a ‘collaborator’ and listed as a co-author simply by virtue of providing material or performing a routine assay, without which the research could not have been conducted. In other cases, researchers from different organizations may

collaborate by sharing data or ideas through correspondence or discussions at conferences, by visiting each other, or by performing parts of a project separately and then integrating the results. Each of these complexities underlie the need to search for a way to verify the participation of an author in the research and scientific manuscript rather than to seek (by the editor, reviewer, journal or publisher) to quantify the contribution made after the manuscript has been submitted. This is because many definitions of authorship and co-authorship are actually completely contradictory, even within the same pact between editor and ethical body (for example, Elsevier +/vs. ICMJE / COPE / WAME), and because, as stated earlier, there is currently absolutely no way to verify the veracity of claims of authorship and co-authorship by a group of authors, except for signed clauses online and documents (for example, copyright transfers) ((Teixeira da Silva, 2011c; Teixeira da Silva, unpublished). The role of the corresponding author (CA) is another aspect that needs to be clarified, elaborated below. To vilify one or more CPC partners without tangible proof (Teixeira da Silva unpublished) is to set a dangerous precedent that has the capacity to negatively stain science publishing in the long term.

The CA is generally understood to be responsible for all communications related to the submission of a manuscript to a journal. Often, however, the CA is a student or inexperienced scientist, and to lay responsibility in the hands of such a person has potentially disastrous and damaging effects. The most commonly made errors by these CAs include (despite signed declarations to the publisher or journal): submission of a manuscript without knowledge of the co-authors; falsification of data or double submissions; inclusion of false authors or those who should not be authors. Most of these errors could be eliminated if: 1) there were full, open and transparent communication between the CA and the other co-authors and between the CA and the publisher; 2) the CA selected were a senior member of the research group; 3) all key points during the publishing process were shared with all co-authors, including submission, main revisions and acceptance. The choice of the CA should not lie with the journal or publisher, but should be made according to new guidelines and advice (Teixeira da Silva et al., 2011). One of the most valuable aspects of a writing CPC is the ability to assign a suitable CA, to verify that no co-author is a fraud, and to eliminate errors (intentional or unintentional) by virtue of the transparent and open nature of communication (for example, copying all authors each and every communication held regarding that manuscript). It is generally understood that English Language Teachers or ELTs alone should not be valid co-authors in a writing CPC (Teixeira da Silva et al., unpublished), only if they are also specialists in that field of study or hold a minimum level and amount of experience (Figure 1).

SHOULD AN ELT BE A VALID CO-AUTHOR?

The number of non-native English speakers who publish in international, peer-reviewed journals is difficult to quantify. Nonetheless, it is likely that this number may in fact exceed the number of so-called native English-speaking scientists. These non-native English-speaking scientists are at a disadvantage right from the start, and to bridge this linguistic gap, they seek assistance, free or paid, usually from language revision services or from English language teachers, or ELTs. Occasionally, authorship is attributed to the ELT in exchange for language assistance, which may pose ethical hurdles in the scientific community. ELTs, although, offering some advice on sentence structure and grammar, usually fail to significantly improve the manuscript quality, especially the scientific content and accuracy, and ironically, even English expressions and grammar. However, a writing collaboration partner who is both a native English speaker (and/or an ELT) can provide significant improvements to the linguistic and scientific aspects of a scientific paper. An ELT should not be attributed co-authorship unless: 1) they make significant improvements to the linguistic aspects; and 2) they are competent professionals in that field of study. An ELT who fulfills both criteria and not only one could be entitled to co-authorship if at the request of all co-authors, provided that all other publishing ethics are respected. ELTs are usually friends or form part of a formal education body such as a school, university, institute or even a commercial set-up such as a language editing service, to assist in the language improvement of a manuscript. While the knowledge of an ELT maybe good for picking up grammatical errors or perhaps offering broad advice regarding basic/pure English (including sentence structure, punctuation or other more subtle aspects of the language issues), they are in no way qualified to comment on or even assist with the scientific aspects. Thus, an ELT who assists with a school project, a verbal presentation or even touching up on a final version of a scientific manuscript, would most likely fulfill this function competently, and in the latter case, should be acknowledged in the Acknowledgements section. However, unless they are at least BSc, MSc or PhD graduates in a scientific discipline, they are, overall, not competent to deal with the intricacies that are fundamental to scientific English, which go far beyond regular or standard English.

Several issues are in dispute regarding co-authorship: a) who has the right to be a co-author? b) what should the position be of each co-author? c) should each co-author have a different weighting, how is this weighting determined and should a quantitative weighting system be used to discriminate between who should/could be a co-author and who should not? d) when paid language services are provided, should that ELT or ELT + scientist be included as a co-author? e) if a paid language editing

Skills rank

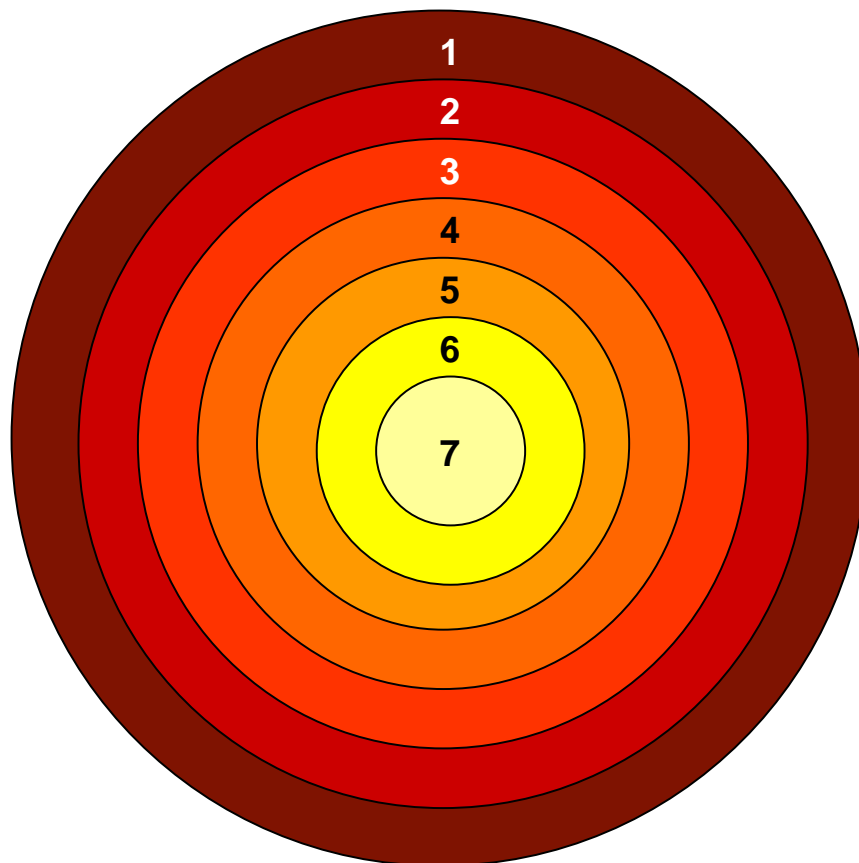


Figure 1. The “bull’s eye” scheme (coined by JTdS) of how to track and identify the ideal international CPC in the plant sciences through seven levels of selection: a self-appraised analysis of why the author would be the ideal candidate. Most likely the supply would always exceed the demand. 1) All scientists. 2) Plant scientist, including experience from multiple fields, including agronomy, agriculture, horticulture, genetics, botany; 3) Scientist with > 20 years research and/or publishing experience. 4) Scientist with over 400 international peer-reviewed publications, including journals and books and with a cumulative IF[®] score > 150. 5) Scientist with multicultural and multilingual (3-5 languages) experience and who is also a native English speaker and/or ELT. 6) Editing and reviewing of > 5000 manuscripts. 7) History of being an Editor in Chief of > 20 journals. Validity = validity (ethically, philosophically and otherwise) of a scientist with all 7 ranked qualifications to become a co-author when providing significant linguistic and scientific support to a research team as an international writing CPC.

service is used to improve the English and/or scientific content, and should that person or entity not be awarded co-authorship, but they are not acknowledged openly, is this considered to be unethical or ghost writing?

To shed light on the actual success of writing CPC in science publications, we present a series of case studies, listed alphabetically according to country, that summarize the efforts made to set up real and practical CPCs with the sole of objective of advancing the publication of scientific data in peer-reviewed, qualified journals. Several aspects we have attempted to quantify to better understand and measure the effectiveness of our 5-year

(2007 to 2011) efforts.

CASE STUDIES AND TESTIMONIALS FROM AROUND THE WORLD

China (Case A)

It is necessary and important that the results of our experiments that lead to new ideas and advances be published in reputed international journals which would allow scientists from around the world to know our work and understand its prospects to other areas of applied

scientific research. By co-operating with international scientists, CJR was able to improve the quality of papers and speed of publishing because international partners often helped him to design some of the experiments, treat experimental data, mould the structure of the manuscript, and perhaps most importantly, improve the English writing. For example, since 2007, JTdS cooperated with CJR to publish their first paper in Journal "Medicinal and Aromatic Plant Science and Biotechnology" (Ruan et al., 2007), publishing 3 papers in 2009, 4 papers in 2010, and 7 papers in 2011, which included 5 reviews published in two high-level peer journals: "Critical Reviews in Plant Science" and "Critical Reviews in Biotechnology". These journal impact factors ranged from 1.106 to 5.281. Through our cooperation, there were rarely requests to make language-related edits and this allowed our CPC to successfully publish new results effectively and rapidly (Ruan et al., 2007; Li et al., 2009, 2010; Ruan et al., 2009a, 2009b, 2010a, 2010b, 2010c, 2011a, 2011b, 2011c, 2011d; Ruan and Teixeira da Silva, 2011a, 2011b, 2011c) (Table 1).

China (Case B)

Publishing in international English language journals is the fastest and surest way of getting our work known to the world. However, writing a paper in English still remains a major challenge for those people whose first language is not English. To meet this challenge, there has been an increasing interest in developing CPC among researchers within science policy circles. Paper collaboration, as a pattern of scientific research cooperation, provides a great contribution for resource integration and science and technology (S and T) innovation (Zheng and Zhang, 2010). Timely and effective paper collaboration can have many benefits: for example, cost-savings and higher impact research. Here, we share with you our collaboration with JTdS and hopefully provide a good example for international exchange and cooperation.

Our writing collaboration goes back to April of 2007 when JTdS invited me to write a review paper about transgenic strawberry for the December issue of *Transgenic Plant Journal*. At that time, I (Y-HQ) was at a loss because it was the first time for me to write an English review. My supervisor and I prepared the review paper in Chinese and then translated it into English. In June, we invited JTdS to join the review paper and to be a co-author. JTdS assisted us in compiling the review and adding information as required. As a co-author, he not only corrected our English, and in general tried to improve on the quality of the manuscript, but also try to add some new ideas, some of which came from his review with Dr. Debnath in Canada. The final version was prepared after correcting six times according to JTdS' advice. Initially, I and my colleagues wanted to submit the review to a journal with a relatively low Impact Factor[®]

(IF[®]), and thought the possibility to be published in *Biotechnology Advances* was very limited for the following reasons: 1) We had not been invited to write a review paper; 2) Usually a review paper is written by a well-known expert in the area; 3) The writing style and structure was not sufficiently good. However, JTdS suggested trying to publish it in Elsevier's *Biotechnology Advances* based the following two reasons: 1) few manuscripts are dedicated to plants, so the chances of acceptance are likely good; 2) there are very few reviews on strawberry, so the publishing space is likely to be under served. JTdS encouraged us not to fear submitting to a high IF[®] journal (the IF[®] of *Biotechnology Advances* was 4.93 in 2007) and to wait until the reviewers' comments were returned. The plan was to re-submit to another lower IF[®] horticultural journal if it was rejected. We submitted the manuscript to *Biotechnology Advances* on the 4th of November, 2007 and received the reviewer's comments on the 3rd of December, 2007. Dr. Brian Dixon (Associate Editor of *Biotechnology Advances*) wrote to me and said that "the reviewers were very positive and therefore our manuscript is accepted on condition that we address the reviewer's comments". We resubmitted the revised version of our manuscript after carefully correcting and it was accepted on the 18th December 2007. The total time from submission to acceptance was 44 days.

Simultaneously, while finishing the above-mentioned review (Qin et al., 2008), I (Y-HQ) and JTdS planned to prepare another research paper in October 2008. I prepared the draft of the manuscript at the beginning of September, 2008. JTdS worked intensively to improve the manuscript in term of data analysis, the discussion, English grammar, structure and style, and spent much effort on correcting references. In total, the manuscript was corrected and edited four times by both parties between October and December before submission. The manuscript was submitted to *Plant Science* (Elsevier) on 8th January, 2009. The reviews of our manuscript were positive and "our observations have merit and could be published after revision". We revised the manuscript as per reviewer comments and re-submitted the revised version of the manuscript on the 10th March and the paper was accepted on the same day (Ye et al., 2009). Recently, three manuscripts were accepted from our writing collaboration (Miao et al., 2011a, 2011b; Qin et al., 2011) (Table 1). Therefore, CPC at the writing level was very good and allowed us to improve the manuscript through interaction and ideas. Drafts could be greatly improved through CPC both scientifically and linguistically and made it possible to publish in high level journals.

China (Case C)

Fifteen years ago, we used to publish scientific articles in Chinese but soon after our institute encouraged us to

Table 1. Breakdown of select activity by JTdS in global writing CPC.

Example number in text	CPC country(ies)	No. revisions ¹ (group: JTdS)	Estimated total time revising (hours) ² (group : JTdS)	Covering letter and rebuttal edited?	Time from submission to acceptance (months)	Target journal ³ : Publisher; IF and 5-year IF
Ruan et al. 2011a	China A	2:2	40-38: 12-20	Yes	5	Plant Systematics and Evolution; Springer; IF ₂₀₁₀ 1.369; IF _{5-year} 1.783
Ruan et al. 2011b	China A	2:2	30-36: 12-18	Yes	4	Critical Reviews in Biotechnology; Informa Pharmaceutical Science; IF ₂₀₁₀ 5.281; IF _{5-year} 6.829
Ruan et al. 2011c	China A	2:2	20-30: 12-15	Yes	3	South African Journal of Botany; Elsevier; IF ₂₀₁₀ 1.104; IF _{5-year} 1.144
Ruan et al. 2011c	China A	2:3	48-72: 24-36	Yes	10	Renewable Energy; Elsevier; IF ₂₀₁₀ 2.554; IF _{5-year} 2.790
Ruan and Teixeira da Silva 2011a	China A	2:2	50-60: 25-30	Yes	2 days	Critical Reviews in Plant Sciences; Taylor & Francis Group; IF ₂₀₁₀ 3.821; IF _{5-year} 6.716
Ruan and Teixeira da Silva 2011b	China A	2:2	48-72: 24-36	Yes	2	Critical Reviews in Biotechnology; IF ₂₀₁₀ 5.281; IF _{5-year} 6.829
Ruan and Teixeira da Silva 2011c	China A	3:2	48-72: 24-36	Yes	9	Critical Reviews in Plant Sciences; Taylor & Francis Group; IF ₂₀₁₀ 3.821; IF _{5-year} 6.716
Ruan et al. 2010a	China A	2:3	50-60: 25-30	Yes	12	Critical Reviews in Plant Sciences; Taylor & Francis Group; IF ₂₀₁₀ 3.821; IF _{5-year} 6.716
Ruan et al. 2010b	China A	2:3	48-72: 24-36	Yes	6	Scientia Horticulturae; Elsevier; IF ₂₀₁₀ 1.045 IF _{5-year} 1.482
Ruan et al. 2010c	China A	2:3	48-72: 24-36	Yes	9	Plant Systematics and Evolution; Springer; IF ₂₀₁₀ 1.369; IF _{5-year} 1.783
Li et al. 2010	China A	2:3	30-40: 12-15	Yes	9	Genome; NRC Canada Press; IF ₂₀₁₀ 1.730
Ruan et al. 2009a	China A	2:3	40-38: 12-20	Yes	9	Plant Systematics and Evolution; Springer; IF ₂₀₁₀ 1.369; IF _{5-year} 1.783

Table 1. Contd

Ruan et al. 2009a	China A	2:3	40-38: 12-20	Yes	6	Scientia Horticulturae; Elsevier; IF ₂₀₁₀ 1.045; IF _{5-year} 1.482
Li et al. 2009	China A	2:3	20-30: 12-15	Yes	6	Scientia Horticulturae; Elsevier; IF ₂₀₁₀ 1.045; IF _{5-year} 1.482
Qin et al. 2008	China B	6:4	30-36: 18-24	Yes	1	Biotechnology Advances; Elsevier; IF ₂₀₀₈ 4.93; IF _{5-year} 9.038
Ye et al. 2009	China B	5:3	25-30: 15-18	Yes	2	Plant Science; Elsevier; IF ₂₀₀₉ 2.05; IF _{5-year} 2.555
Qin et al. 2011	China B	4:3	20-25: 12-15	Yes	5	Plant Growth Regulation; Springer; IF ₂₀₁₀ 1.63; IF _{5-year} 1.833
Miao et al. 2011a	China B	4:3	20-25: 12-15	Yes	3	Plant Science; Elsevier; IF ₂₀₁₀ 2.48; IF _{5-year} 2.555
Miao et al. 2011b	China B	4:3	20-25: 12-15	Yes	7	Journal of Horticultural Science and Biotechnology; Invicta Press; IF ₂₀₁₀ 0.55
Lü et al. 2011	China C	4:3	20-25: 12-15	Yes	2	Scientia Horticulturae; Elsevier; IF ₂₀₁₀ 1.045; IF _{5-year} 1.482
Ma et al. 2011a	China C	5:5	20-25: 12-15	Yes	2	Journal of Plant Growth Regulation, Springer; IF ₂₀₁₀ 2.066
Ma et al. 2011b	China C	4:3	20-25: 12-15	Yes	2	Plant Cell Tissue and Organ Culture Springer; IF ₂₀₁₀ 1.271; IF _{5-year} 1.490
Ma et al. 2011c	China C	5:4	20-25: 12-15	Yes	2	Plant Cell Tissue and Organ Culture. Springer; IF ₂₀₁₀ 1.271; IF _{5-year} 1.490
Wu et al. 2011	China D	3:2	60-72: 18-24	Yes	1	Scientia Horticulturae; Elsevier; IF ₂₀₁₀ 1.045; IF _{5-year} 1.482
Zeng et al. 2011	China D	3:3	36-48: 20-24	Yes	7	HortScience; ASHS; IF ₂₀₁₀ 0.886; IF _{5-year} 0.996
Magyar-Tábori et al. 2010	Hungary; New Zealand	5:4	60-72: 18-24	Yes	9	Plant Cell, Tissue and Organ Culture; Springer; IF ₂₀₁₀ 1.243; IF _{5-year} 1.490
Dobránszki and Teixeira da Silva 2010	Hungary	7:7	72-90: 24-27	Yes	4	Biotechnology Advances; Elsevier; IF ₂₀₁₀ 7.600; IF _{5-year} 9.038

Table 1. Contd

Dobranski and Teixeira da Silva 2011	Hungary	3:3	24-30: 9-12	Yes	2	Scientia Horticulturae; Elsevier; IF ₂₀₁₀ 1.045; IF _{5-year} 1.482
Winarto et al. 2010	Indonesia	7:7	35-42: 24-30	Yes	2	Scientia Horticulturae; Elsevier; IF ₂₀₁₀ 1.045; IF _{5-year} 1.482
Winarto et al. 2011a	Indonesia	6:6	30-36: 18-24	Yes	2	Plant Cell, Tissue and Organ Culture; Springer; IF ₂₀₁₀ 1.243; IF _{5-year} 1.490
Winarto et al. 2011b	Indonesia	5:5	25-30: 15-18	Yes	4	Plant Growth Regulation; Springer; IF ₂₀₁₀ 1.63; IF _{5-year} 1.833
Winarto and Texeira da Silva 2011	Indonesia	5:5	25-30: 15-18	Yes	2	Plant Cell, Tissue and Organ Culture; Springer; IF ₂₀₁₀ 1.243; IF _{5-year} 1.490
Tanaka et al. 2011	Vietnam	3:1	72-90: 18-24	Yes	2	Biotechnology & Biotechnology Equipment; IF ₂₀₁₀ 0.503
Van et al. 2011a	Vietnam	4:2	72-90: 18-24	Yes	4	Scientia Horticulturae; Elsevier; IF ₂₀₁₀ 1.045; IF _{5-year} 1.482
Van et al. 2011b	Vietnam	3:2	72-90: 18-24	Yes	4	Journal of Horticultural Science and Biotechnology; Invicta Press; IF ₂₀₁₀ 0.55
			*Pro bono cost savings for CPC partners by JTdS (average per manuscript) = ¥69,000 (~ €627)	Average No. months per manuscript from submission to acceptance = 4.57		Average IF per manuscript = 2.021 (= 3.120 for IF _{5-year})

¹Number of revisions until the accepted version of the manuscript was ready. ²Current professional science moderately-priced consulting rates are €30-45/hour. In most cases, for JTdS, one revision averages between 5 and 6 hours. In 100% of cases, JTdS received no financial remuneration. * Calculated at rates based on word count per manuscript (<http://scirevision.client.jp/index.htm>), number of revisions required and consultant services on an hourly basis; prices in Japanese Yen and Euro (exchange rate = November 1, 2011 at €1 = ¥110). ³Only CPC papers carrying an Impact Factor[®] are listed.

publish articles in Thomson Reuter's Science Citation Index (SCI) and set down some policies regarding publishing. It actually became an employment issue because at least five SCI articles in total were required (independent of the IF) in order to get a better position. For someone with little knowledge of the English language this was an extremely challenging task to achieve and

we usually spent several years to write one English article and the level of the articles was not high. Every time I submitted an article the editors always told me to ask an English linguist to revise and improve the article. At that time, I did not know any foreign experts, so as I wrote the English articles I always felt great difficulty and the percentage of articles that were rejected was very

high. One article usually had many rounds of back-and-forth between me and the editors: what a waste of time for both parties.

Fortunately, I had a chance to go abroad and got to know some foreign scientists who enthusiastically helped me to revise my articles leading to the publication of some articles which could not be published several years ago. I usually

list foreign experts as co-authors as a sign of appreciation because they, in fact, contributed much to my articles even though their main function was linguistic revision.

I met JTdS as Editor-in-Chief of Global Science Books (www.globalsciencebooks.info) having submitted and published three papers to one specialist journal, Floriculture, Ornamental and Biotechnology. Every time I submitted an article to him, he always revised my articles carefully with enthusiasm and a high level of knowledge without co-authorship. After he invited me to co-publish in 2010, I agreed to his proposal without hesitation. Last year, we submitted three articles and all of them were accepted and published. When JTdS revised our article, he always replied to me within 24 h with two versions of the revised articles: one showing where changes had been made and the other showing what still needed to be improved. As a result of this methodology, I could improve my paper writing based on his suggestions. He usually edited each article three to four times, and in one case it was revised nine times. I respect JTdS and admire him even though I have never met him in person or even do not know his appearance. However, I know he is young man with enthusiasm, high efficiency, and specialty knowledge. Our relationship is developed on trust and ethical consideration sharing common ethical grounds, even at a distance.

Now, our international CPC is increasing and is being followed by more projects since we now have more time to prepare new programs and complete our experiments. As a result of this writing CPC, our group has entered a more productive phase with more confidence and efficiency. Our group can now complete several articles within one year, most of which are related to JTdS (Table 1), who serves as teacher and real friend.

China (Case D)

Much time and energy was spent in writing a manuscript (Zeng et al., 2011) that was submitted to HortScience, an international peer-reviewed horticultural journal with an $IF^{\circledast} = 0.914$. We submitted the article on June 14th, 2010 and up to December 17th, 2010; the manuscript was revised three times by me (SJZ) and my Chinese co-authors only to address language and a few scientific questions. The opinion of a reviewer after the third revision and re-submission was that the authors had made a great effort to address the previous reviewers' questions and suggestions, the rewritten manuscript had a much better flow and logic, but was still not easy to read. At this point we did not know how to revise and improve the manuscript to be able to fully address the reviewers' requests. JTdS was then invited to co-author the manuscript provided that scientific and linguistic edits could be made. Following three comprehensive and additional revisions, the addition of scientific aspects that the reviewers had failed to capture, and after thorough re-

revision of the text at least 5 times, JTdS indicated that the manuscript was ready for submission. Of extreme importance was the fact that JTdS also wrote the rebuttal to reviewers/editors and addressed their every request, fully and comprehensively. SJZ re-submitted the manuscript to the journal on December 26th, 2010. The manuscript was accepted within 2 days following re-submission, and the total time required between receiving the invitation and re-submission was 9 days. In addition, another CPC paper (Wu et al., 2011) was accepted by *Scientia Horticulturae* within only one month (Table 1) because of its scientific value and the positive nature of this CPC.

Hungary

In this case study, successful publication of two reviews (Magyar-Tábori et al., 2010, Dobránszki and Teixeira da Silva, 2010) and one research paper (Dobránszki and Teixeira da Silva, 2011), will be presented (Table 1). It will be shown how our co-operation led to the successful publication of reviews and how this co-operation led to the development of common research work and then its successful publication. Through this example we hope to show the reader the importance of such CPC in overcoming language and science writing barriers, bringing publishing dreams of important findings a step closer to reality.

Our writing collaboration goes back to early 2009 when we decided to prepare some reviews or mini-reviews together. At that time, in January, I (JD) and my colleagues in our laboratory had already prepared the first draft of a review paper. In February, we invited JTdS to join this project and to be co-author and asked him to try to improve this draft both scientifically and linguistically to make it suitable for possible publication in a high level journal. According to JTdS' proposals, the structure of the manuscript was modified by the beginning of March; then, during the following month the manuscript was improved, edited and corrected three times by JTdS and by our group. As a result of these actions the final version was prepared and submitted to a target journal (*Plant Cell Tissue Org Cult*; Springer). We received the reviewer's comments on the 14th of August. The editor regarded the manuscript as an important one, and both reviewers found it to be very useful and stated that it could be acceptable but that it should be revised, most importantly, the writing style and English and he requested "to seek the help of a native English speaking scientist to improve the whole manuscript (even if you have to add them to your list of authors, if you so choose)". In this case, Springer explicitly encouraged collaborative CPC as an acceptable (and thus ethically acceptable) solution to the publication of this review. We corrected and edited the manuscript during September; in the meantime, JTdS, on behalf of all authors, invited SMB to being part of our writing co-operation team and asked

him to assist in a thorough revision of the manuscript and also to add any further scientific information if and where necessary that would further enrich the review. After acceptance of our invitation, SMB revised, edited and completed the manuscript further within a week. We resubmitted the revised manuscript at the end of September and it was accepted on the 18th January 2010.

Simultaneously, while preparing the above-mentioned review (Magyar-Tábori et al., 2010), I (JD) and JTdS planned to prepare another review and we discussed its provisional structure in March, 2009. The writing of the manuscript was initiated at the beginning of June with the bulk of the structure and body having been completed by JD. The manuscript was corrected and edited six times by both parties between June and October before submission. It was submitted on 8th October to *Biotechnology Advances* (Elsevier) and we received an answer from the journal that the reviews of our manuscript were very positive and “it is accepted on condition that you address the reviewer’s comments”. After that we have made the revisions and responded to the reviewer’s comments and in the final phase we contacted 10 of our apple colleagues from around the world and incorporated their suggestions, acknowledging those whose ideas could be used productively. The revised version of the manuscript was re-submitted on the 16th February, 2010 and the paper was accepted two days later (Dobránszki and Teixeira da Silva, 2010).

At the beginning of 2010 while we neared completion of the aforementioned reviews, JTdS brought up a thought that we should plan and make tissue culture experiments studying the usefulness of a technique (thin cell layer technology, or TCLs) which had been rarely applied in woody fruit species. We chose the species and planned the experiments together and experiments were immediately conducted in my laboratory. We analyzed the experimental data jointly and from the results we prepared a manuscript, which was edited and modified by both of us twice each during the writing CPC. On the 23rd September the manuscript was submitted to *Scientia Horticulturae* (Elsevier). At the end of October we received the reviews and according to the required revisions we corrected the manuscript and re-submitted it on the 3rd November and two days later we were informed that the paper was accepted. Results published in this paper (Dobránszki and Teixeira da Silva, 2011) were the first ever application of this technique in apple micropropagation.

Indonesia

Background of how we met

PERHORTI Congress and seminar 2009 were a special event for all scientists concerned with researching,

developing and commercializing horticulture products in conjunction to advancing horticulture agribusiness in Indonesia. The congress and seminar was an event to show all recent horticulture products in accordance with new superior cultivars, technologies, important by-products, and agro-inputs to all stakeholders. The event was conducted at the Institute of Plant Biotechnology (IPB) International Convention Center, Bogor, Indonesia from 21 to 22 October, 2009. There were special and international speakers invited to the seminar. The speakers were JTdS, at that time, a principal investigator from the Faculty of Agriculture and Graduate School of Agriculture, Kagawa University, Japan and Editor-in-Chief of *Global Science Books*, UK; and Dr. Zora Zingh, a senior lecturer of Curtin University of Technology, Australia. Both speakers presented and shared their experiences on how to write and publish research results in international journals.

At that time, I was a PhD student in the Department of Agronomy and Horticulture at the Bogor Agriculture Institute. My dissertation was “Androgenesis: A Breakthrough Effort for Preparing Haploid or Double-haploid Plants in *Anthurium*” under a supervisory committee of Nurhayati A. Mattjik, Agus Purwito and Budi Marwoto. To exhibit part of my successful research results, my main supervisor asked me to prepare an article, write it in English, and submit in to The Congress and Seminar of PERHORTI 2009. According to my supervisor, articles both in Indonesian and English would be selected for publication. All selected English articles would be published in international journals based on a supporting fund and following article peer review. Although my scientific writing skills in English were still poor, I prepared an article entitled “Ploidy screening of anthurium (*Anthurium andreaenum* Linden ex André) regenerants derived from anther culture”. October 21st, 2009 was a special time for me at the PERHORTI Congress and Seminar. After registration, all participants were invited to the congress and seminar room to hear special presentations from keynote speakers. It was really a surprise for me to hear a special presentation from JTdS who presented and shared his thoughts about how to improve international publishing. He talked about how to formulate an idea, develop a hypothesis; experimental design and statistical analysis, personal qualities, writing skills, etc. I really admired him after hearing his introduction and experience of international publication. He was younger than me, but had a lot of experience in international publications. He had published more than 200 articles internationally while I did not have any international publications during my then 14 year career as a researcher in the Indonesian Ornamental Research Crops Research Institute. Frankly, I felt ashamed. His presentation and all his success stories gave me spirit to start to have experience in international publication. Since I graduated from my master’s program in the Department of Plant Science at

the Malaysian Putra University in 2002, I had a dream that I could publish research articles in international journals, although my dream was just dream because I did not know what had to do, how to start and who to contact. Who wanted to help me answer all my questions?

At the end of the seminar, I was really surprised because my article was categorized and selected as one of the ten best qualified English articles that would be helped to be published internationally. All authors of the best 10 qualified-English articles were suggested to contact JTdS personally for reviewing purposes before submission to an international journal. That was a key point and objective of the congress.

Actual difficulties of international science publications for researchers from Indonesia

International science publications are a place to expose all research progress from all aspects of science products such as new cultivars, technologies, processes, metabolite secondary products, biological control agents, enzymes, hormones, etc. All authors in international science publications normally come from developed countries. However, it is not easy for authors from developing countries (both researchers and lecturers) to publish qualified research results in high level international journals as it is for authors from developed countries. There are several limitations that are faced by the former group of authors such as language problems, qualified lack of experienced local reviewers, and low supporting budget.

Language is most likely the primary limitation faced by authors in non-English-speaking developing countries preventing them from publishing in international journals since English is in general the language most widely used in science publishing. In developing countries such as Indonesia where English is not the mother language, scientific writing in English is not easy to achieve due to no or limited experience and low self-confidence. Therefore, qualified teachers or reviewers who have more experience are required.

In fact, we have senior researchers, but they also have no or little experience in international publishing compared with their junior partners. Although I worked for the Indonesian Ornamental Crops Research Institute since 1995, I could not find any qualified senior researchers for reviewing help. This is a real-case situation. In addition, to look for qualified reviewers from other countries for the purpose of assisting with international publication is not easy for researchers like me from a developing country, particularly in Southeast Asia. One of the problems is that I do not have personal contacts with them, nor do I have enough money to pay them as I know that reviewing and editing usually requires about US \$ 200 to 350 per paper.

A low budget is also another big and real limitation for

most researchers in a developing country. It is easy to imagine that a typical monthly salary of a researcher in a country like Indonesia is only around US \$ 250 per month. This salary is normally used to cover all needs related to family life. To obtain supporting funding from my institute is also difficult. Therefore, it is difficult for me to gain supporting funds for the purpose of international publication.

These are the real situations and limitations that I and other SE Asian researchers face. Therefore collaboration between researchers or lecturers from developing countries (RLDCs) with researchers or lecturers from developed countries opens an avenue for RLDCs to have international scientific publications. Such CPC (at the level of research and writing) is a tremendous potential solution to develop individual skills in research and in writing manuscripts for scientific journals (OECD, 2011) increasing thus, the chances and productivity of the RLDCs to publish their research results internationally (Katz and Marti, 1997; Gupta et al., 2002; Gupta and Mishra, 2004).

Low international scientific publications from Indonesia and regulation or policy for international scientific publications

I have worked for the Indonesian Ornamental Crops Research Institute (IOCRI) since 1995. The vision and mission of the IOCRI has gradually changed, following National and International developing issues. From 2010 to 2014, IOCRI's vision is "To be world-class ornamental crops research institute in producing innovative technologies to support high competitiveness and sustainability of floriculture industries based on local resources". One of the IOCRI missions is to support, motivate and encourage all researchers to disseminate qualified research results through peer reviewed international science publications. Unfortunately, from 50 researchers at the IOCRI, there are only two that are trying to publish internationally, Mr. Kurniawan Budiarto and myself. This is a great pity because there was a vision and expectation, but no action, compounded by the lack of a spirit to excel and a commitment to improve knowledge blended with low self-confidence.

It is not only my institution that has a vision and expectations with respect to international publications, but also almost all universities and other research institutes in Indonesia. As stated by the Indonesian Department of Education, there are only three universities that are involved in 500 world class universities that is, University of Indonesia (395), Bandung Technology Institute (369) and Gajah Mada University (360). The rank and position is considerably lower due to lower productivity in terms of producing patents and publishing qualified research results in equally qualified international science publications. From the data reported in Elsevier's Science Direct, in 1996

Indonesian research output (as measured by international publications) was approximately 500 papers and until 2007 it was still less than 1000 (that is, a 2-fold increase over one decade) while the Philippines and Vietnam had more than 1000 papers in 1996, increasing significantly up to 5500 papers in 2007 (collective total, that is, a 5-fold increase). Malaysia had 1000 papers in 1996 and produced 3500 papers in 2007 (that is, a 3.5-fold increase over a decade). These data provide rough but relative (to other SE Asian countries) evidence that research output from Indonesia, in terms of international publications is low (Utomo, 2009).

Low productivity of lecturers and researchers in terms of patent creation and publishing research results internationally is primarily due to; 1) low self-confidence to their research ability compared to research results of scientists from developed countries; 2) low capacity to analyze and interpret research results comprehensively, and 3) low support (institutional and financial) and motivation to publish their research results in qualified international journals (Gupta et al., 2002; Utomo, 2009, 2010). Other real problems that are faced are: 1) a lack of coordination among agencies related to broader management practices in government, especially in research and education institutions (Spence, 2008); 2) a lack of fighting spirit/ambition and commitment to improve knowledge and self-confidence, and 3) very few and unavailable reviewers who want to help scientists in developing countries publish *pro bono* (free of charge) (for example, JTdS).

The value of a highly qualified editor or reviewer

In my opinion, finding a high qualified reviewer to assist with international science publications is an important step towards achieving this goal. Truly, after the PERHORTI Congress and seminar in 2009, I was happy because I had a great opportunity to make contact directly with JTdS for the purpose of reviewing my article. Prior to contacting JTdS, the PERHORTI Selection Committee asked all authors of the top 10 selected articles to make revisions, corrections and editing as suggested by PERHORTI reviewers.

After completing the revision, correction and editing of my article, I contacted JTdS. In my first e-mail to him, I introduced my self and explained my goal, why I contacted him and asked for his help to review my article for possible publication in an international journal. I was really surprised because he was really happy and willing to help me. Thereafter we had an intensive communication throughout the reviewing process of my first article. He also stated that (1) he really loved science and science publishing, (2) that he was very willing to help me to increase the possibility of publishing in an international journal free of charge and (3) he wanted me to make sure that there was no personal conflicts

between co-authors, institutes and funding bodies for the act of reviewing. He also reminded me that the term “give up” does not exist, rather “do your best”, to use qualified data as much as possible to improve the manuscript’s quality, not plagiarize or self plagiarize, and never submit a manuscript that has already been submitted elsewhere. These and other guidelines are explained in detail in Teixeira da Silva (2011a, 2011b, 2011c).

All the communication gave me such useful experience due to his valuable corrections, critiques, and advice. My scientific writing became more systematic, specific, and comprehensively researched with regard to appropriate citation of the relevant literature. These were important aspects regarding my collaboration with JTdS.

Success stories in international science publishing

Successful international publications are the main goal of the reviewing and editing processes of a scientific paper. After my first communication, I got so many suggestions, corrections and critiques from JTdS. From the first review, he reminded me to complete and check data and all information as he strictly requested. Afterward I tried to do all the things that I should do even though I realized that it was not easy to revise, check and edit. To complete the first review needed almost one and the half months, which was then re-submitted to him. A week later, the second review from JTdS arrived. Several revisions, corrections and editing were needed and I improved all. The reviewing process was not only in one or two steps, but in my first article there were seven revisions that required 6 months to complete. It was difficult for me as I felt that I had low writing capacity, but finally I was surprised and happy because all our efforts and the long process of reviewing resulted in my article being published in an international journal of repute in my field of study (Winarto et al., 2010). It was truly a great success story and it was my first international science publication under JTdS’s supervision.

The success of my first publication really raised my spirit to publish more. I therefore prepared the draft of my second manuscript for international publication. Learning from my previous experience, I tried to improve all aspects of the second manuscript such as the title, abstract, introduction, materials and methods, results, discussion, and references; consequently, my second paper needed only 5 revisions within about 5 months. The second manuscript was successfully published (Winarto et al., 2011a). The third manuscript (Winarto et al., 2011b) needed 4 revisions within about 4 and the half months. The fourth manuscript (Winarto and Teixeira da Silva, 2011) needed only 4 revisions (Table 1). The fifth manuscript (in re-review) needed only 3 revisions.

I realized that the success stories in international science publication were due to the excellent assistance, guidance, directing and reviewing of JTdS on all four

papers. With patience he taught, assisted, guided, encouraged, and supported me, and because of him, my dream in international publication came true. Such collaboration in science publication should be maintained forever.

The right track for collaboration in international science publications

Success in international science publication is not the main goal of authorship and science collaboration. Since I sent my first manuscript to JTdS, he reminded me that he would help me under strict guidelines, that there should be no personal or professional conflicts of interest between all co-authors, institutes and funding bodies. Therefore, before he started with his review process, he always asked me to contact and discuss our collaboration with all co-authors, institutes and funding bodies to ensure that there were absolutely no ethical or other problems to involve and invite him as a co-author in my four manuscripts. If there were conflicts between co-authors and/or institutes and/or funding bodies, he stated clearly that he would be unable to help me; however, if there were no conflicts, he would gladly help me. It is evident from this that a high ethical attitude in scientific writing was ensured because all co-authors, institutes and funding bodies were honored and their existence and role was acknowledged. At that time, I did exactly as he suggested. After I contacted and discussed with all co-authors, institutes and funding bodies and confirmed that there was no problem, I then informed him and he continued the review and editing process.

The capacity to build human resources is the second main objective in co-authorship and science collaboration. In a reviewing process under strict personal guidelines, JTdS showed me to which aspects I should pay high attention to in all parts of science publication, in terms of structure and process. How to justify the best title, how to prepare the best introduction with appropriate justifications; a comprehensive, clear and understandable materials and methods section; a clear, complete and interesting set of data and results; qualified data analysis and discussion; complete references in suitable style and order were among some of the facets learnt throughout this international writing collaboration. Therefore, not only did my scientific writing capacity increase, but so too did my scientific knowledge.

Increasing experience in different science publications is the third advantage obtained from our co-authorship and collaboration. Each peer reviewed international journal has its own rules and ethical guidelines; therefore submitting manuscripts to different high level journals has different consequences. To effectively manage such a situation, I had to study each journal in more detail prior to manuscript submission. This was my chance to gain more experience such that in the future I could also be an expert of sorts in international science publication.

The experience of sharing with other young scientists is another important point in our international writing collaboration, which could benefit so many young scientists in Indonesia. Such experience can take the forms of assisting, guiding, directing, and reviewing their papers. In this case I will now share all my experiences with them. At this moment, in fact, I am applying these activities with my colleagues and I have become a reviewer for two qualified Indonesian journals aiming for increased international authorship.

Finally, I can state that our authorship and collaboration was on the right track. There were never any conflicts of interest and differences were solved by mutual communication and understanding, always by e-mail. No rules or regulations were ever broken, nor were any ethics violated. Several advantages eventually resulted. The capacity to build human resources can be widely applied to scientists in developing countries such as Indonesia. Excellence in science writing and a simple but effective international writing collaboration were ensured through the highest possible ethical attitude and a highly constructive way of advancing good science through open communication and constructive criticism.

The risks and future of co-authorship and international collaboration in science publishing for authors and publishers

No matter how big or small, each activity has a risk involving authorship and collaboration both for authors and publishers. Negative effects will emerge when (1) the authorship and collaboration stimulates conflicts of interest between co-authors, institutes and/or funding bodies; (2) there is no human resource capacity building and (3) there is no improvement of experience and/or knowledge; (4) independent characters are not built. However, should these at least four important indicators be respected, they would result in authorship and collaboration that would lead to an increase in the number of international science publications emerging from scientists in developing countries by increasing high quality research results, experiences and knowledge, and resulting in better manuscript preparation, content and organization.

Increasing the number of manuscripts suitable for high level international scientific publications will lead to increasingly higher competitiveness and availability of the manuscripts received and selected by international publishers. The higher the number of manuscripts that are received and selected from scientists in developing countries for publication in journals published by international publishers, the higher and greater is the competition with scientists from developed countries. This not only increases the risks and challenges, but also forces publishers to select and determine the quality of science publications. When there is an increase in the number of highly qualified scientific publications accepted

by international publishers that are produced in and have emerged from developing countries, there is automatically a reduction in the relative number of science publications from scientists in developed countries. If this condition continues for a long period of time, increasing high competition and jealousy (syn. competitiveness) of scientists (and society) in developed countries will take place. Therefore, on occasion, scientists are discriminated (purposefully or unintentionally) based on ethnic or cultural origin, resulting in a slower response, a higher standard of selection, a double or multiple review process, doubt in research results, or an underestimation of their value or ability. In short, there tends to be marginalization towards scientists from developing countries by international publishers. The same treatment may also be faced by international collaborators who help them, that is, discrimination by association.

Science needs evaluation and criticism by all stakeholders. Novel research results not only from scientists in developed countries with high quality facilities and tools, but can also be produced by scientists in developing countries, despite all their limitations. Co-authorship with an international writing collaborator is an important step to bring more highly qualified research results from developing countries to scientists internationally. Therefore, international publishers need to adopt new guidelines to value, appreciate and consequently recognize the importance, validity and ethical nature of such international writing CPC.

Vietnam

For a scientist, the final outcome of days, weeks, even months working in the laboratory, greenhouse or field is a scientific paper. No matter how much we research, how interesting or important our study is, without a published paper, our work is not recognized, is unknown and is thus worthless.

According to a report in 2008 (Vietbao Journal 1), Vietnam has about 6640 professors. However, less than 100 papers were published in international journals. This means that on average not more than 60 professors could publish only 1 international scientific paper per year, or one professor needed 60 years of working to publish 1 paper per year in international scientific journal. Besides the limits in government policy, Vietnamese scientists in general lack publishing experience in international scientific journals and have limited English writing skills. With an average income per month less than 100 US \$ for scientists holding a PhD (Vietbao Journal 2), it is almost impossible for Vietnamese scientists – including myself – to pay for English revision and editing services.

As a PhD student (in Japan), we require at least 2 papers published in international academic journals in order to graduate. We have 2 years for experiments and

to publish the required papers, so time is limited, although we usually continue the work from our MSc, so we have the opportunity of accumulating a total of 4 years of data. As a new, young scientist, I (PTV) faced many difficulties and had many questions when I initially started to write my first scientific paper:

1. English writing skills: Although my English ability is qualified by TOEFL[®] (Test of English as a Foreign Language, Educational Testing Service - ETS, USA), writing a scientific paper is not like writing an English essay. There are very different problems related to vocabulary, grammar and specific style of writing for scientific publications.

2. Scientific content of the paper: Many questions arose such as how should I structure the paper? How does one go about organizing a paper? What information should be in each part of the paper? How to interpret the data? How to join and separate a large data set into meaningful papers suitable for an international journal?

3. Submission process: Even after having a manuscript ready, other questions emerged: Among hundreds of journals, which journal is suitable for my study and what journals and publishers should and can be trusted? What is the submission process and what is needed to submit a manuscript? For example, I never knew that I needed a cover letter to accompany a manuscript when submitting a paper to a journal.

4. Review process: Following the review process and satisfying reviewers' requirements were extremely difficult when I felt that I reached my own personal limit and felt that my paper was "perfect". This is one of the most important stages that mostly likely decide the success of a submission. Once again, English writing skills, knowledge and the ability to effectively and eloquently provide a rebuttal to the reviewer(s) and/or editor(s) were ultimately judged to decide whether the paper could be accepted for publication. As much as one poorly answered query can result in a final "rejection", despite 99% of all other edits having been addressed. It is very infrequent to be able to have a fair and unbiased challenge on such a decision in such a case, and thus, a CPC that is able to also provide assistance at this stage of the peer review process maximizes the chances of acceptance from start to end.

Facing these multiple, complex difficulties and limited personal ability to perhaps overcome them efficiently, I understood that I had no time to learn, no one to teach me (even my supervisor) and thus I needed someone to resolve my weakness and who could meet my needs. Our laboratory (Applied Advanced Biology in Horticultural Science, Kagawa University, Japan) works in co-operation with JTdS. I had read his CV and publications, had a talk with him about my project and research and decided to ask for his help, from his rich experience in scientific writing skills and also his deep knowledge about my field – horticultural science. With his guidance about

how to separate data sets, formulating appropriate titles, interpreting data, and how to organize a paper, within 2 months (April to June, 2010), I wrote 4 draft manuscripts and sent them to JTdS to revise.

After several revisions, JTdS would always say “The paper is now ready to submit”. From what he did and how he did it, I felt that we had worked very carefully, honestly and in a dedicated manner to make significant improvements in the scientific quality and English writing in each and every manuscript I sent to him and because of his important role in our collaboration. As a result, with the agreement of my senior supervisor, we decided to invite him as our co-author to each paper in which he played an equally important role.

JTdS helped me to write cover-letters and guided me in the submission process of manuscripts. After submission, following the review process was another big challenge for me. Once again, as a co-author of the paper, we discussed the reviewers’ comments and requirements. JTdS was in charge of writing the reviewer rebuttal which is the most important factor to decide if the paper is qualified to be published or not. The co-authors would then double-check his rebuttal and manuscript edits. As so on, we worked together until the papers were finally published (Wang et al., 2010; Tanaka et al., 2011; Van et al., 2010, 2011a, 2011b, 2011c) (Table 1).

This kind of collaboration is exactly what I as a PhD student needed, in which each author plays their part, with their strong points and supplementing other co-authors’ weaknesses. Furthermore, the most important thing is through this collaboration, through JTdS’s guidance and revisions and through the entire submission process, I learnt how to write and submit a scientific paper. In doing so, many questions were answered and several deficiencies were improved.

The native English speaker’s (SMB) point of view

Our world of nearly seven billion people is an intensely unequal one where millions eke out on existence is next to nothing whilst on the other hand; millions are at risk from obesity-related diseases. Such is the irony of the world that we live in and Science is no exception. The field of Science is incredibly fast moving and it is becoming ever more apparent that with our planet’s projected human population and the aspiration of all to live the energy-intensive ‘developed’ world lifestyle, that science and technology (as well as, behavioral modification) will be central to supporting civilization as we know it. I do not believe I am overstating the seriousness of the situation.

The examples provided by my co-authors paint a grim picture of the reality they faced before they were given the tools and opportunity of which the CPC process afforded them. It is evident that there is a large group of scientists who are isolated and thus marginalized, mainly due to them being unable to communicate properly in the

current mainstream language of Science publication that is English. Often these scientists work in countries which require science and technology solutions for sustainable development the most. This is dangerous and does a disservice to them, as well as their compatriots, because they can feel frustrated, worthless and ignored. This leads to continued under-investment and marginalization of Science in those countries. Thankfully, their accounts have shown that we can start to break this most un-virtuous of situations, not by dropping standards but by giving them the tools and experience which we in wealthier countries take for granted. In political speak the CPC process gives a ‘hand up’ not a ‘hand out’.

From my point of view the two major difficulties faced by developing country scientists are insufficient English language ability/experience coupled with fewer resources, by which I mean money for consumables, travel, and scientific infrastructure. Scientific infrastructure not only includes access to experimental equipment but also includes many support services which we in developed world science institutes generally take for granted such as access to information technology services and literature databases (for example, electronic journal subscriptions). Clearly knowing the current research knowledge landscape is crucial to writing Science articles and devising new experiments. The language problem is uncomfortable to broach because there are many English as a second language (ESOL) speakers who have forged impressive Science publishing records. In many cases these individuals have gained their English writing skills by leaving their country of origin to live and work in English speaking countries. But what about those who do not? Are they lazy or incompetent? This may be true for some but I think for the vast majority it comes down to the lack of opportunity. I was recently fortunate enough to have an extended research stay in Germany at a Max-Planck Institute courtesy of the Alexander von Humboldt Foundation. One of the things I took away from my stay (aside from great data and a love for German beer) was an extreme admiration for multi-lingual ESOL colleagues who have to communicate in English. My difficulties in learning German gave me an idea of what it is like for ESOL speakers and as a consequence I have become a lot more patient and forgiving with the English of my ESOL colleagues! Therefore for me, while CPC writing is a good way to help in a positive manner it is the chance it affords for developing new research collaborations and developing the science that I do that is the main attraction. I have been willing to join the CPCs that I have because firstly they did not appear to be ethically challenged, and most importantly, they were in the area of my scientific expertise and I could offer additional input rather than just proof reading. I would not be comfortable in joining a CPC project where I only proof read and correct English, and in such a case I should, and would decline. There has to be a science contribution and I have to feel

qualified enough to contribute. That means publications far removed from my area of expertise are out of bounds.

Consequently, if one wants to recruit a native English speaker I would recommend looking around at people who work in your area and pitch it in a way that fits with their research programs. That way they may even be willing to perform additional experiments or share experimental data. This can but only enhance the quality of the final publication and may lead to new and longer term research relationships (I for example, am keen to develop research collaborations in tropical crops regarding ascorbate). Obviously it may take some time to find someone and you quite possibly will be rudely knocked back, but hang in there, someone will respond. I would not necessarily approach heads of department as these people are extremely busy and your request will be at the bottom of their lists of things to do. More likely bets are the younger researchers who have publishing experience in areas of interest and whose publications you respect. They also tend to have more energy and more to gain from forging new collaborative efforts.

CONCLUSIONS AND FUTURE PERSPECTIVES

International writing collaboration or CPC is and ever-growing essential tool for the success of survival of research groups in the world of science publishing. The manner in which a writing CPC is established, developed and executed must follow strict ethical guidelines that are established by and between the CPC partners and not by the journal or the publisher, although they should also encompass the ethical guidelines that are set out by the publisher. CPC is a win-win situation for science and technology, for the scientific community and for the CPC partners. Possibly the only intangible benefit might be on the part of the CPC donor, JTdS, in this case, where benefit is measured in terms of duty and satisfaction. Not only is science advanced through the enrichment of unique data and perspectives which might otherwise be lost to local and unknown journals, but it is also fortified by multiple perspectives and analyses, which can benefit not only the parties already mentioned above, but also the journal and the publisher. Ethically conducted CPC, which is also open and transparent in all its forms of communication, should be embraced by publishers as a new and effective way of forming partnerships in science with valid co-authorship (Teixeira da Silva, 2011c). In summary, CPC is a useful way to reveal more scientific results, to inspire new research collaborations, and to inhibit the marginalization of scientists from developing or ESOL countries.

REFERENCES

Clarke BL (1964). Multiple authorship trends in scientific papers. *Science*, 143: 822-824.

- Dobránszki J, Teixeira da Silva JA (2010). Micropropagation of apple - a review. *Biotechnol. Adv.*, 28(4): 462-488.
- Dobránszki J, Teixeira da Silva JA (2011). Adventitious shoot regeneration from leaf thin cell layers in apple. *Sci. Hortic.*, 127(3): 460-463.
- Gordon MD (1980). A critical reassessment of inferred relations between multiple authorship, scientific collaboration, the production of papers and their acceptance for publication. *Scientometrics*, 2: 193-210.
- Gupta BM, Lal K, Zainab AN (2002). India's collaboration in science and technology with South East Asian countries. *Malaysian J. Library Infor. Sci.*, 7(2): 69-86.
- Gupta BM, Mishra UMMPK (2004). Regional collaboration in S&T among South Asian countries. *Ann. Library Infor. Stud.*, 51(4): 121-132.
- Katz JS, Martin BR (1997) What is research collaboration? *Res. Policy*, 26: 1-18.
- La Follette MC (1992). *Stealing into Print*, University of California Press, pp. 97-101.
- Li H, Ruan CJ, Teixeira da Silva JA (2009). Identification and genetic relationship based on ISSR analysis in a germplasm collection of sea buckthorn (*Hippophae* L.) from China and other countries. *Sci. Hort.*, 123(2): 263-271.
- Li H, Ruan CJ, Teixeira da Silva JA, Liu BQ (2010). Associations of SRAP markers with dried-shrink disease resistance in a germplasm collection of sea buckthorn (*Hippophae* L.). *Genome* 53(6): 447-457.
- Lotka AJ (1926) The frequency distribution of scientific productivity. *J. Washington Acad. Sci.*, 16: 317-323.
- Lü JF, Teixeira da Silva JA, Ma GH (2011). Induction of adventitious shoots and roots from *Primulina tabucum* Hance petioles. *Sci. Hort.* in press
- Ma GH, Teixeira da Silva JA, Wu GJ (2011a). Direct adventitious shoot formation from apical shoot explants of *Euphorbia tirucalli*. *J. Plant Growth Reg.*, 30: 114-116.
- Ma GH, Lü JF, Teixeira da Silva JA, Zhang XH, Zhao JT (2011b). Somatic embryogenesis and shoot organogenesis from leaf and shoot explants of *Ochna integerrima* (Lour). *Plant Cell Tiss. Organ Cult.*, 104: 157-162.
- Ma GH, Teixeira da Silva JA, Lü JF, Zhang XH, Zhao JT (2011c). Shoot organogenesis and plant regeneration in *Metabriggsia ovalifolia*. *Plant Cell Tiss. Organ Cult.*, 105: 355-361.
- Magyar-Tábori K, Dobránszki J, Teixeira da Silva JA, Bulley SM, Hudák I (2010). *In vitro* shoot regeneration in apple - role of cytokinins. *Plant Cell Tiss. Org. Cult.*, 101(3): 251-267.
- Miao HX, Qin YH, Teixeira da Silva JA, Ye ZX, Hu GB (2011a). Isolation and differential expression analysis of self-compatibility-related genes from mature pistils of 'Shatangju' mandarin (*Citrus reticulata* Blanco). *J. Hortic. Sci. Biotechnol.*, 86: 575-582.
- Miao HX, Qin YH, Jaime A. Teixeira da Silva, Ye ZX, Hu GB (2011b). Cloning and expression analysis of *S-RNase* homologous gene in *Citrus reticulata* Blanco cv. Wuzhishatangju. *Plant Sci.*, 180: 358-367.
- OECD (2011). Opportunities, Challenges and Good Practices in International Research Cooperation between Developed and Developing Countries. Organisation for Economic Co-operation and Development (OECD), Global Science Forum pp. 20.
- Qin YH, Teixeira da Silva JA, Bi JH, Hu GB, Zhang SL (2011). Response of *in vitro* strawberry to antibiotics. *Plant Growth Regul.*, 65: 183-193.
- Qin YH, Teixeira da Silva JA, Zhang -X, Zhang SL (2008). Transgenic strawberry: state of the art for improved traits. *Biotechnol. Adv.*, 26(3): 219-232.
- Ruan CJ, Teixeira da Silva JA, Jin H, Li H, Li DQ (2007). Research and biotechnology in sea buckthorn (*Hippophae* spp.). *Medicinal Aromatic Plant Sci. Biotech.*, 1(1): 47-60.
- Ruan CJ, Mopper S, Teixeira da Silva JA, Qin P, Zhang QX, Shan Y (2009a). Context-dependent style curvature within flowers offers reproductive assurance under unpredictable pollinator environments. *Plant Syst. Evol.*, 277(3-4): 207-215.
- Ruan CJ, Zheng X, Teixeira da Silva JA, Qin P (2009b). Callus induction and plant regeneration from embryonic axes of *Kosteletzkya virginica*. *Sci. Hort.*, 120(1): 150-155.
- Ruan CJ, Teixeira da Silva JA, Qin P, Lutts S, Gallagher JL (2010a).

- Halophyte improvement for a salinized world. *Critical Rev. Plant Sci.*, 29(6): 329-359.
- Ruan CJ, Teixeira da Silva JA, Li Q, Li H, Zhang J (2010b). Pathogenicity of dried-shrink disease and resistant evaluation in a germplasm collection of sea buckthorn (*Hippophae* L.) from China and other countries. *Sci. Hort.*, 127(1): 70-78.
- Ruan CJ, Teixeira da Silva JA, Qin P (2010c). Style curvature and its adaptive significance in the Malvaceae. *Plant Syst. Evol.*, 288(1):13-23.
- Ruan CJ, Chen SC, Li Q, Teixeira da Silva JA (2011a). Adaptive evolution of context-dependent style curvature in some species of the Malvaceae: a molecular phylogenetic approach. *Plant Syst. Evol.*, 297: 57-74.
- Ruan CJ, Teixeira da Silva JA, Shao HB (2011b). A critical review on improvement of carbon fixation in plants using genetic engineering. *Crit. Rev. Biotech.* in press DOI: 10.3109/07388551.2010.533119
- Ruan CJ, Qin P, Teixeira da Silva JA (2011c). Relationship between reproductive assurance and mixed mating in perennial *Kosteletzkya virginica*. *South Afr. J. Bot.*, 77(2): 280-291.
- Ruan CJ, Xing W-H, Teixeira da Silva JA (2011d). Potential of five plants growing on unproductive agricultural lands as biodiesel resources. *Renewable Energy* in press DOI: 10.1016/j.renene.2011.10.022
- Ruan CJ, Teixeira da Silva JA (2011a). Adaptive significance of floral movement. *Crit. Rev. Plant Sci.*, 30(4): 293-328.
- Ruan CJ, Teixeira da Silva JA (2011b). Metabolomics: Creating new potentials for unraveling mechanisms in response to salt and drought stress and for biotechnological improvement of xero-halophytes. *Crit. Rev. Biotech.*, 31(2): 153-169.
- Ruan CJ, Teixeira da Silva JA (2011c). Evolutionary assurance vs. mixed mating. *Crit. Rev. Plant Sci.* in press.
- Smith M (1958). The trend toward multiple authorship in psychology. *Am. Psychol.*, 13: 596-599.
- Spence R (2008). Research Councils and Support Organizations in Southeast Asia: Institutions, Issues and Collaboration. International Development Research Centre (IDRC). IDRC Regional Office of Southeast and East Asia, Singapore, p. 42.
- Subramanyam K (1983). Bibliometric studies of research collaboration: A review. *J. Inf. Sci.* 6: 35.
- Tanaka M, Van PT, Teixeira da Silva JA, Ham L (2011). Novel magnetic field system: Application to micropropagation of horticultural plants. *Biotech. Biotechnol. Equip.*, 24(4): 2160-2163.
- Teixeira da Silva JA (2011a). Who owns science, owns society. *Maejo Intl. J. Sci. Technol.* 5(1): S1-S10.
- Teixeira da Silva JA (2011b). Weaknesses in publishing: Identify, correct and strengthen. *Maejo Intl. J. Sci. Technol.*, 5(1): S11-S20.
- Teixeira da Silva JA (2011c). The ethics of collaborative authorship. *EMBO Reports* 12: 889-893.
- The Royal Society (2011). Knowledge, Networks and Nations: Global scientific collaboration in the 21st century. RS Policy document 03/11, DES2096, London, UK, p. 114
- Utomo SHT (2009). Technical Guidelines in Accelerating International Science Publication for Competitive Research Grantee. General Director of High Education, Indonesian Department of Education. p. 12.
- Utomo SHT (2010). Guidelines of International Research Collaboration and Publication. General Director of High Education, Indonesian Department of Education. p.15 .
- Van PT, Tanaka M, Teixeira da Silva JA (2010). Gelling agent affects hybrid *Cymbidium* plantlet growth. *Floriculture Ornamental Biotechnol.* 4(Special Issue 1): 45-47.
- Van PT, Teixeira da Silva JA, Ham LH, Tanaka M (2011a). Effects of permanent magnetic fields on the proliferation of *Phalaenopsis* protocorm-like bodies using liquid medium. *Sci. Hortic.*, 128(4): 479-484.
- Van PT, Teixeira da Silva JA, Ham LH, Tanaka M (2011b). The effects of permanent magnetic fields on *in vitro* growth of *Phalaenopsis* plantlets. *J. Hort. Sci. Biotech.*, 86(5): 473-478.
- Vietbao Journal 1 (in Vietnamese): <http://vietbao.vn/Giao-duc/50-giao-su-VN-moi-viet-duoc-1-bai-bao-quoc-te/65119159/202/>
- Vietbao Journal 2 (in Vietnamese): <http://vietbao.vn/Xa-hoi/Hon-88-nha-khoa-hoc-thieu-dieu-kien-lam-viec/40035277/157/>
- Wang HY, He SL, Tanaka M, Van PT, Teixeira da Silva JA (2010). Effects of 2,4-D on callus formation in tree peony (*Paeonia suffruticosa*) under different light conditions and light quality. *Floriculture Ornamental Biotechnol.* 4(Special Issue 1): 99-102.
- Winarto B, Mattjik NA, Teixeira da Silva JA, Purwito A, Marwoto B (2010). Ploidy screening of anthurium (*Anthurium andreaeanum* Linden ex André) regenerants derived from anther culture. *Sci. Hortic.*, 127(1): 86-90.
- Winarto B, Rachmawati F, Pramanik D, Teixeira da Silva JA (2011a). Morphological and cytological diversity of regenerants derived from anthurium anther culture. *Plant Cell, Tiss. Organ Cult.*, 105(3): 363-374.
- Winarto B, Rachmawati F, Teixeira da Silva JA (2011b) New basal media for half-anther culture of *Anthurium andreaeanum* Linden ex André cv. Tropical. *Plant Growth, Reg.* 65: 513-529.
- Winarto B, Teixeira da Silva JA (2011) Microspore culture protocol on Indonesian *Brassica oleracea*. *Plant Cell, Tiss. Organ Cult.*, 107(2): 305-315.
- Wu KL, Zeng SJ, Teixeira da Silva JA, Chen ZL, Zhang JX, Yang YS, Duan J (2011). Efficient regeneration of *Renanthera* Tom Thumb 'Qilin' from leaf explants. *Sci. Hortic.* (accepted).
- Ye WJ, Qin YH, Ye ZX, Teixeira da Silva JA, Wu XY, Lin SQ, Hu GB (2009). Seedless mechanism of a new mandarin cultivar 'Wuzishatangju' (*Citrus reticulata* Blanco). *Plant Sci.*, 177(1): 19-27.
- Zeng SJ, Chen ZL, Wu KL, Bai CK, Zhang JX, Teixeira da Silva JA, Duan J (2011). Asymbiotic seed germination, induction of calli and protocorm-like bodies, and *in vitro* seedling development of the rare and endangered *Nothodoritis zhejiangensis* Chinese orchid. *HortScience*, 46(3): 460-465.
- Zheng RQ, Zhang Y (2010). Effects and strategy of the international scientific research at Peking University. *Acta Scientiarum Naturalium Universitatis Pekinensis*, 46(5): 851-854.