

CHAPTER ONE

INTRODUCTION

Over the last two decades, there has been growing importance placed on research in English for Academic Purposes (EAP), which is a major branch of English for Specific Purposes (ESP) (Hyland & Hamp-Lyons, 2002). The objective of EAP is to cater to the specific communication needs of professionals in various academic contexts. As English has become the lingua franca in the academic world, many non-native English speakers are faced with difficulties in communicating effectively with the academic discourse community. One of the growing concerns of EAP researchers is the plight encountered by L2 researchers aiming to publish their studies in refereed journals, which, so far, are mostly published in English (Tardy, 2004). Because of the great strain of “publish or perish” environment in the academic arena, many L2 researchers strive to gain acceptance in these Anglophone-dominated journals, thereby making their research into certified knowledge. However, previous studies have suggested that L2 researchers, in comparison with their native English-speaking peers, find themselves at a disadvantage in this ratification process owing to their relatively insufficient linguistic proficiency (Belcher, 2007; Flowerdew, 1999a, 1999b, 2007; Gosden, 1995; St. John, 1987). As expected, significantly more time, effort, and patience are required of them to devote to this publication process (Gosden, 1995). Worse yet, linguistic obstacles may hinder an otherwise scientifically-sound study from publication.

Besides linguistic insufficiency, many L2 writers also encounter considerable discourse-level difficulties in writing research articles (henceforth RAs). This is because the scholarly publication process is, in fact, rife with “conflicts over novelty claim” between researcher-writers and journal referees (Li, 2006, p. 458). Writing for

publication requires writers to maneuver through various rhetorical strategies to negotiate knowledge claims and convince their journal “gatekeepers” that their study is of great contribution to their disciplines. Unfortunately, L2 writers often have less facility in using various rhetorical strategies, partly due to their linguistic constraints and limited awareness of the subtleties of Anglophone writers’ practices. These nuanced aspects, such as tense, articles, modal verbs, metadiscourse, etc., carry more than just surface lexical-syntactic meanings in RAs (Burrough-Boenisch, 2003; Kourilova, 1998; Swales, 1990). Furthermore, cultural disparities in what actually constitute appropriate arguments may also make L2 writers’ argumentation incongruent with the expectations of the Anglophone-dominated journal referees (Ahmad, 1997; Mauranen, 1993). Considering these linguistic constraints and rhetorical incongruities, L2 writers seem to be severely disadvantaged in this international publication game.

Nevertheless, an increasing number of non-English medium doctoral programs are adopting the policy that each doctoral student needs to publish in internationally referred journals as a graduation requirement. Such is the case in Japan (Gosden, 1995), the Netherlands (Burrough-Boenisch, 2003), China (Li, 2006, 2007), and Taiwan. L2 doctoral students, being novice researchers, usually are still learning to grasp various writing conventions of RAs in their own disciplines. Lack of experience in journal article writing and insufficient knowledge of this academic genre, they are more likely to encounter greater writing obstacles both linguistically and rhetorically.

Fueled by such urgent needs to publish RAs in primary journals, numerous EAP researchers have adopted a genre-based approach to identifying the conventionalized information structures and linguistic features that are routinely used by the academic discourse community to achieve various communicative purposes of this genre. The aim of genre analysis on RAs is to provide L2 writers and novice writers with some

principles to follow when writing this sophisticated genre (Swales, 1990; Hyland, 2004). Analyzing the structural organization of the RA Introduction, Swales (1990) proposed the seminal Create-a-Research-Space (CARS) model to account for the rhetorical structure commonly used in this section. Ensuing studies have adopted this model to examine Introduction texts in different disciplines (e.g. Anthony, 1999; Posteguillo 1999; Samraj, 2002). Additionally, studies have extended inquiry into other RA sections as well, such as Method (Lim, 2006), Results (Williams, 1999; Thompson, 1993), Discussion and Conclusion (Young & Allison, 2003; Hopkins & Dudley-Evans, 1988). On the other hand, other research endeavors have delved into the communicative functions of micro-level aspects of RAs, such as tense (e.g. Lackstrom et al., 1972; Malcolm, 1987; Oster, 1981), first-person pronouns (e.g. Hyland, 2002; Kuo, 1999; Martinez, 2005), hedges (e.g. Hyland, 1998). This line of research, as Swales (1990) aptly concludes, has found that since each rhetorical section serves its own unique communicative purposes, it thus requires distinctive linguistic and rhetorical realizations.

In fact, writing Introduction is linguistically and rhetorically more complex than other sections of RAs, in that Introduction, as Swales (1990) claims, is a rhetorically crafted section where writers need to skillfully justify and position the present study, and showcase its contribution to the current knowledge, this being the major criterion for publication (Berkenkotter & Huckin, 1995). Accordingly, it comes as no surprise that many L2 writers perceive Introduction to be the most difficult section to write (Flowerdew, 1999b; Shaw, 1991; St. John, 1987; Swales, 1990). Moreover, in Knorr-Cetina's (1981; cited in Swales, 1990) case study, the participant underwent several revisions in Introduction, along with Discussion, before actual journal submission while the other sections remained largely intact since the first draft, thus revealing the complicated nature of composing this section. However, so far, most of

the EAP inquiries concerning difficulties in publication have tended to examine the difficulties of writing RAs as a whole (e.g. Cho, 2004; Flowerdew, 1999a, 1999b; Gosden, 1996; Kuo, 2001; Li, 2006). In the current researcher's knowledge, very few studies have pinpointed the difficulties of writing a particular rhetorical section of RAs (but see Bitchener & Basturkmen (2006), which addressed L2 graduate students' perceived difficulties in writing thesis Discussion). Given that Introduction employs distinctive linguistic and rhetorical realizations to realize its communicative functions, which elements specifically pose great difficulty to L2 novice writers still remain unanswered. Most importantly, although Introduction has been the most researched RA section since Swales proposed CARS model in the 1990s (Flowerdew, 2005), still many L2 writers regard it as the most troublesome section to write. It is thus paramount to identify the particular problematic areas for L2 writers in composing Introduction.

In addition, central to this exploration of writing difficulties is the composing process that L2 writers undergo when writing RAs. Prior L2 process-oriented writing research has offered abundant information about the more cognitive aspects of L2 writers' composing process and tracking their moment-by-moment writing behaviors in various short essay composition tasks (e.g. Boshier, 1998; Raimes, 1985; Zamel, 1983; Victori, 1999). However, such lines of research provide rather limited information to L2 researcher-writers bidding for publication in that the writing context and genres are very different. Also, even though a few EAP studies have investigated the RA writing process (Gosden, 1996; Parkhurst, 1990; Rymer, 1988; St. John, 1987) and writing strategies (Hsu, 2008; Matsumoto, 1995; Okamura, 2006; Sinois, 1995), they did not examine particularly the process of writing Introduction. In addition, specific writing strategies for Introduction may be linked to its rhetorical structure or distinctive linguistic realizations that characterize this section.

To address such gaps in the literature, the present study thus adopts a genre-based approach to examining L2 postgraduate students' writing process of Introduction, aiming to identify their challenges in writing this particularly troublesome section and their writing strategies which facilitate their composing process of Introduction. In detail, the researcher intends to locate specific difficulties during L2 student writers' process of planning, drafting, and revising Introduction, which may be different from those of writing other RA sections. In terms of writing strategies, this study seeks to identify two major types of writing strategies: firstly, the coping strategies employed to deal with the linguistic and rhetorical problems in writing Introduction; secondly, the rhetorical strategies used either to augment their argumentation or to make their presentation of information more effective in this particular section.

Finally, the study also attempts to explore the possible disciplinary variations of L2 novice writers' practice in writing Introduction. Although previous genre analysis has generally identified conventionalized linguistic realizations and rhetorical structures of this section, later studies have suggested that disciplinary variations exist at both macro and micro levels (e.g. Anthony, 1999; Hyland, 1998, 1999, 2005; Posteguillo 1999; Samraj, 2002; Thompson & Tribble, 2001). Of note is that significant contrasts in Introduction texts are found between the hard sciences (i.e. natural sciences and engineering) on the one side, and the soft sciences (i.e. social sciences and humanities) on the other (Hyland, 2005). These disciplinary contrasts, as Hyland forcefully argues, may be attributed to the distinctive argumentation and different nature of knowledge construction between these two arenas. Additionally, as indicated by Casanave & Hubbard (1992), professors in the soft and the hard sciences also expect different academic writing skills from their postgraduate students. Therefore, it is strongly suspected that the hard and the soft sciences may require

different argumentation from their discourse community members, and thus require them to enlist disparate writing skills in writing Introduction. Arguably, L2 postgraduate writers in the soft and the hard fields may encounter different difficulties in writing this section and thereby evoke different writing strategies. In view of these possible disciplinary contrasts between the two fields, the present study recruits L2 postgraduate students from both the hard sciences and the soft sciences, hoping to explore possible disciplinary influences on the student researchers' writing difficulties and strategy use during the process of writing Introduction.

In short, the present study aims to examine L2 postgraduate students' process of writing the Introduction section of RAs, exploring their specific writing difficulties and strategies for meeting the expectations of their disciplinary discourse communities. By gaining an understanding of this critical information, EAP language professionals and L2 postgraduate students' advisors may be better equipped to provide adequate assistance to their students in this writing process, thereby empowering L2 novice researchers to participate more successfully in this English-medium publication game.

To this end, the primary research questions addressed in this study are as follows:

1. What are the writing processes that L2 postgraduate students go through in writing the Introduction section of RAs intended for international publication?
2. What are the writing difficulties that L2 postgraduate students encounter when writing Introduction?
3. What are the writing strategies that L2 postgraduate students employ to facilitate their writing process in Introduction?
4. Do students in different disciplines have disparate writing difficulties and preferable writing strategies?

CHAPTER TWO

LITERATURE REVIEW

As indicated in Chapter 1, the present study intends to adopt genre-based approach to exploring L2 postgraduate students' process of writing the Introduction section of RAs, specifically focusing on their writing difficulties and writing strategies. Special attention is also given to the disciplinary variations involved in writing this particular section. Thus, this chapter will address three major themes: genre analysis of RA Introductions, difficulties faced by L2 writers for journal publication, and their composing process and strategies in writing RAs. In detail, in the first section, an extensive review of genre analysis of the RA Introduction will be first presented. Studies on the rhetorical structure and lexico-grammatical aspects of Introduction will be reviewed respectively. We will also discuss disciplinary variations of this section at both macro- and micro- levels. In the next section, difficulties in writing RAs will be reviewed. We will also examine L2 writers' problems in writing Introduction. In the last section, reviews on studies pertinent to L2 writers' writing process of RAs as well as their coping and rhetorical strategies for writing this genre will also be presented.

Move Analysis of RA Introduction

Swales' (1981) pioneering analysis of 48 RA Introductions from three different disciplines (hard sciences, biology and medical field, and social sciences) rendered a useful four-move structure to describe the schematic pattern of the Introduction section in RAs. According to Swales (2004.), "a move in genre analysis is a discursal or rhetorical unit that performs a coherent communicative function" in a written discourse (p. 228). A move is not a grammatical unit such as a clause or a sentence,

but more as a functional unit used for some identifiable rhetorical purposes. Revision of the earlier four-move structure brings about Swales' later seminal "Create-a-Research-Space model", widely known as the CARS model (Swales, 1990), which is shown in Table 2.1.

Table 2.1 *The CARS Model for RA Introduction*

<i>Move 1</i>	<i>Establishing a territory</i>	
Step 1	Claiming centrality	and/ or
Step 2	Making topic generalization(s)	and/ or
Step 3	Reviewing items of previous research	
<i>Move 2</i>	<i>Establishing a niche</i>	
Step 1A	Counter-claiming	or
Step 1B	Indicating a gap	or
Step 1C	Question-raising	or
Step 1D	Continuing a tradition	
<i>Move 3</i>	<i>Occupying the niche</i>	
Step 1A	Outlining purposes	or
Step 1B	Announcing present research	
Step 2	Announcing principal findings	
Step 3	Indicating article structure	

Using ecological analogy to name this model, Swales postulates that RA Introduction often begins by establishing a territory (Move 1), followed by indicating a niche (Move 2), and finally end the section by filling the niche created (Move 3). In the following, a brief introduction of each move and step in CARS model is provided.

Move 1 is to "establish a territory." Move 1- Step 1 is for claiming centrality of the study in order to draw discourse community members' attention while showing them that the research being reported is part of a significant area and thus worth further reading. This step usually appears first in RAs, and is commonly present in various disciplinary areas, though, as Swales (1990) notes, this step is "somewhat less

common in the physical sciences” (p.144). Compared with Move 1- Step 1, Step 2 represents “a more neutral and general kind of statement” (p. 146) about the general knowledge, practice, or phenomenon in a given field.

Another rhetorical function of Move 1 is its Step 3, reviewing literature related to the study undertaken. From the corpus perspective, Step 3 is the only obligatory step in Move 1 across various disciplines while the other two steps remain discretionary (Swales, 1990). Characterized by high density of citations and reporting verbs, Step 3 is where RA writers ought to show attribution to previous research while at the same time demonstrate their stance towards others’ works or claims. By doing so, the researcher-writers seek to justify that the choice of the field is out of the concerns of its significance, importance, or worthwhileness. Generally speaking, the function of Move 1 could be summarized as “claiming relevance of the field” to the readers (Lewin et al., 2001, p. 40).

After setting the background and creating relevance of the research area to the readers, RA writers then strive to create a research space in the territory of established knowledge. Thus, Move 2, which aptly named “establishing a niche,” is where writers provide justifications for the study by pinpointing the inadequacies or obscurities in the previous literature. Contrary to the other two moves where many steps are embedded, Move 2 only has one step, that is, to create the gap in the literature; yet, it has four options to realize this very rhetorical function, which includes counter-claiming (Step 1A), indicating a gap (Step 1B), question-raising (Step 1C), or continuing a tradition (Step 1D). Despite various options provided in Move 2, some studies have indicated that Step 1C and 1D rarely occur (Anthony 1998; Lee, 1999). In fact, Step 1B (indicating a gap) is the most common option. Moreover, several studies (Cooper, 1985; Crooks, 1986) have observed the cycling of Move 2 (niche-establishment) and Move 1-Step 3 (literature review), this being particularly

noticeable in longer Introductions (Crooks, 1986; Anthony, 1999) and in the discipline of social sciences (Lewin et al, 2001).

Responding to the gap created in Move 2, the last move, “occupying the niche,” is to fulfill the gap by proclaiming writers’ aims in research. Therefore, this move usually ensues right after the occurrence of Move 2, setting the forceful rhetorical flow for the topic being investigated. Based on the results of corpus analysis, Swales outlined three steps in Move 3, among which step 1 (outlining purpose or announcing present research) is the obligatory step whilst the other two are optional and are highly contingent on the convention of various disciplines. For example, Swales and Najjar (1987) observed that their corpus analysis of Introductions between two different areas show different practices of step 2 — announcing principal findings. Around half of the Introductions in physics would report their major findings (Step 2) as a means of appeal to the readers whereas few in educational psychology would do the same.

Triggered by a wave of later studies identifying new steps in different fields (e.g. Anthony, 1999; Samraj, 2002), Swales (2004) incorporated four more steps in Move 3 in his revised CARS model, enabling the model to reflect the rhetorical structure of Introduction of various disciplines more fittingly. These four additions are “presenting research questions or hypothesis,” “definitional clarifications,” “summarizing methods,” and “stating the value of the present research.” These additions, together with former options in Move 3, all seem to share a similar communicative purpose --- providing specific details of the undertaken study. Swales (2004) suggests that providing more details of the study in Introduction at this juncture, particularly showing positive evaluations, justifications, and clarifications earlier could successfully retain the readers’ interest to continue perusing the study. However, similar to Step 2 and Step 3 in the original Move 3, these new additions are also discretionary. More precisely, as Swales explicates, whether RA writers will actually

uptake these steps at the end of Introduction would be influenced by an array of factors, such as the nature of their research, the status of the researchers, the disciplinary practices, and so forth.

Macro-level studies on RA Introduction

Following Swales' (1981, 1990) groundbreaking text analyses on RA Introductions, many more genre-analysis studies have been carried out to explore the rhetorical structures of different sections either in RAs or in other academic genres. Still, RA Introduction has received the most attention from EAP researchers (Flowerdew, 2005). This line of studies have adopted Swales' CARS model to see whether the model fits the rhetorical structures of the Introduction section in different disciplines and contexts. Cross disciplinary variations seem to be the major theme of these studies as they identify several new discipline-specific steps. In the following, studies pertinent to the schematic structures of RA Introduction are reviewed.

Generally speaking, there are two major types of research on macro-level organization of introductions. Earlier studies tend to focus on schematic organization in a single discipline, whilst later research endeavor explores macro organization of this section across disciplines. Studies focusing on a single discipline are reviewed first. Analyzing 40 RA Introductions in computer science, Posteguillo (1999) found that Swales CARS model generally reflect the schematic structure of Introduction in the discipline. However, while Swales argues that reviewing the literature (Move 1, Step 3) is the obligatory sub-moves, Posteguillo found this step to be optional (70%) in his corpus. It is postulated that the comparatively light referencing to the previous research in Introduction in this field might be attributed to the fact that the field is still relatively new. On the other hand, two optional steps in Move 3 were found to be of high incidence in this discipline, that is, Step 2 (announcing principal findings) and

Step 3 (indicating article structure). In the discipline of computer science, it is quite common (70%) to show the major findings of the research in the first section of RAs, comparing with 45% adopting Step 2 in Physics and only 7% in educational psychology (Swales & Najjar, 1986). Moreover, since this newly established discipline has not yet developed a conventionalized organizational pattern of the whole RAs, indicating the structure of the RAs at the end of Introduction is a very welcomed practice to guide the readers.

In a similar vein, Anthony (1999) also adopted CARS model to examine whether it fits the organization of Introduction in software engineering. Analyzing 12 Introduction texts, the researcher observed that some steps are discipline-dependent. For example, in the niche-establishment (Move 2), among the four options outlined in CARS model, writers in software engineering show strong preference of using either “indicating a gap” or “continuing a tradition,” whereas “counter-claiming” and “question-raising” are never used. Contrastively, Swales (1990) noted that social sciences such as education, management, and linguistics tend to favor the latter two options. This seems to indicate that there is a significant difference between hard sciences and social sciences when establishing a niche in an RA. Moreover, Anthony identified a new step, evaluation of research, which plays a central part in Move 3. In fact, he observed that in all the RA Introductions in his corpus, writers devote a substantial amount of space in Move 3 to provide positive evaluation of the research concerning either the applicability or the novelty of the research. This positive evaluation of research can serve as a way to appeal to the readers while persuade them that this is a valued work. Since this step was missing in Swales’ CARS model, Anthony included this new step in his revised CARS model, arguing that this step may be “not only obligatory, but a crucial element in achieving the aims of the introduction” in this discipline (p. 45).

Interestingly, on the issue of referencing to previous studies, Anthony's data seem to be in paradox with a number of previous studies. To begin with, while Posteguillo (1999) indicates that reviewing previous research (Move 1, Step 3) was used 70 percent by the writers in computer science, Anthony's data showed that all the writers in his data utilize this step, thus supporting Swales' argument that reviewing previous research is obligatory. Moreover, the long Introductions in Anthony's data may appear to contradict the views of many scientific writing manuals and guides which stipulate that reviewing literature should be brief (Brusaw et al, 1993; Day, 1977; Harmon, 1989; cited in Anthony, 1999). Anthony thus inquired the specialists about this practice and found that given that the readers to this journal mostly coming from a broad range of different backgrounds, it became essential for the writers to provide detailed description of the reviewed works so as to equip readers with sufficient background knowledge. In fact, besides an elaborated delineation in reviewing literature, writers may assist readers to understand some difficult concepts by providing them with definitions of important terms and examples. Therefore, this seemingly deviation from other prior comparable data or writing manuals suggests that not only do disciplinary conventions play a part in shaping the choices of what to include and what not to include in Introduction, but the nature of the journal as well as the readership might also influence how Introduction should be written.

Macro-level disciplinary variation

Another type of research adopts Swales' model to analyze the overall structure of RA Introductions from more than one field, with results often indicating inter-disciplinary variations or even intra-disciplinary differences. One of the early testing of the model among several disciplines was conducted by Crookes (1986), collecting 96 popular journal articles from three areas in the 1980s: hard sciences,

biology/ medical field, and social sciences for interdisciplinary comparison. The findings showed the four-move structure (Swales, 1981) could generally reflect the organization of Introductions in his corpus. It was noted that in more complex passages, there are many more alternatives than simply the sequential four move structures. In fact, Crookes observed the common cycling occurred between Move 2 (literature review) and Move 3 (niche-establishment). Besides, a few subject-specific practices, particularly those characterized in social sciences, were also observed. To begin with, compared with those in hard and soft sciences, Introductions in social sciences tended to be longer and more complex, which was believed to be related to the iterated cycling of moves. Second, social sciences Introductions demonstrated common topic-specific subheadings, which were rarely found in the Introductions of the other two fields. Lastly, the corpus also indicated that writers in social sciences might occasionally dedicate a long stretch of discourse to delineate a “general, non-referenced theoretical background” of the present study (p. 67).

Samraj (2002) compared the schematic organization of Introduction between two-related fields in biology, Wildlife Biology (WB) and Conservation Biology (CB). A number of differences were found between these two related fields. One interesting finding is that the centrality claims were more emphasized and well-developed in CB Introductions than WB ones. CB writers usually relate the present study to the problems in the real world, attempting to establish the importance of the general research topic. This could be attributed to the fact that CB is an “emerging” field where not much research is available for the writers to pinpoint the inadequacies or defects of previous research. Accordingly, reporting serious problems that happened in reality becomes a forceful rhetorical strategy for later justification of the study, and this needs to be established at the outset of a CB Introduction. The explicit use of centrality claims in an emerging field suggests that writing Introductions requires the

writers to employ necessary maneuvers to create the adequate rhetorical force not only to appeal to the readers but also to convince them of the worthiness of the present study. This seems to support what Swales (1981, p. 179) argued earlier that “the smaller the research space, the greater the rhetorical *work* needed.” On the other hand, the different treatment of the centrality claims between CB and WB further attests to the fact that disciplinary variations is a prevalent phenomenon in the academic arena, albeit the closeness of some disciplines.

While previous studies have demonstrated that considerable disparities exist in the rhetorical organization of RA introductions across disciplines, more recently, Ozturk’s (2007) study points that such organizational variations may even occur within the same discipline. A small corpus was created based on 20 RAs collecting from the two established journals in the field of applied linguistics – *Studies in Second Language Acquisition* (SSLA) and *Journal of Second Language Writing* (JSLW). The findings indicated that most of the SSLA writers tended to follow the Move 1-Move 2-Move 3 sequence as outlined in the CARS model whereas JSLW writers generally showed much deviation from the model in move sequence. It is argued that the contrasts between these two sub-disciplines might stem from the disparities between what Samraj (2002; 2005) termed “the established field” and “the emerging field.” The former is described as the field in which researchers share a clearly identifiable goal for research and could usually precede their studies along a well-defined path. The latter refers to the “fields of inquiry that borrow from more than one parent discipline” (p. 144).

Ozturk postulated that writers in an established field such as second language acquisition may presuppose that their readers share similar background knowledge of research, thereby devoting less amount of space and effort in Move 1. Moreover, writers may also presume that readers share the same “procedure expertise” or

schemata of how an introduction should be developed, which in turn allow writers to simply follow the similar structural organization in their field (Hyland, 1999, p. 353, cited in Ozturk, 2007). On the contrary, given the interdisciplinary nature of the emerging field such as second language writing, extensive use of “topic generalization” and “literature review” become essential practices to enable the potential readers with different backgrounds to clearly understand the study. This seems to be in line with Anthony’s (1999) study, which found that writers may use long and elaborated literature review to orient their diversified readers. Further, distinct from the established field where the area of study is well defined, writers in the emerging fields need more than the normal sequential move patterns to pinpoint the study of inquiry from an array of lively topics and diversifying areas. That is, higher variability in organization and more cyclings of move structures are necessary for writers in emerging fields to justify their studies undertaken in Introduction.

Although the above reviewed studies have pointed out more discipline dependent practices than what Swales might originally have expected, they have indicated that the CARS model is reliable in describing the overall organization of Introduction across various fields. Moreover, these studies also prove that the general sequence of Move 1-Move 2- Move 3 is logical, though more variations should be expected in terms of move combinations and ordering.

Besides attesting the general applicability of the CARS model, these studies have also pointed out that rhetorical organization varies considerably across or even within the same discipline. Of note is that hard sciences and natural sciences seem to differ from social sciences at this macro-level in a number of ways. To begin with, Introductions in hard sciences are mostly short and follow the move sequence of the CARS model; Introductions in social sciences are comparatively longer, thus resulting in various combinations of moves or cycling of moves (Crookes, 1986). In addition,

Swales (1990, p.160) further suggested that how research is perceived may also contribute to the cycling of moves. That is, the cyclicity of the moves is more characteristic of social sciences, where the research tradition is perceived as “branching” – consisting of several loosely-connected topics. By contrast, the research tradition in natural sciences is regarded as “linear and cumulative, then a composite arrangement may work well” (p. 160). Second, hard sciences differ from social sciences in rhetorical options in creating the research space for their studies. It is suggested that hard sciences may prefer using “indicating a gap” and “continuing the tradition” whilst social sciences are more likely to use “counter-claiming” and “question-raising” (Anthony, 1999; Swales, 1990.) Third, disparities also exist between these two fields in terms of the rhetorical strategies used to appeal to the potential readers. While writers in the social sciences may have weighted Move 1 and make efforts to claim the centrality of the study as a way to attract the readers (Hsieh et al., 2006), writers in hard sciences tend to do so in Move 3, using rhetorical strategies such as providing principle findings (Swales & Najjar, 1986; Posteguillo, 1999) or positive evaluation of the model (Anthony, 1999) to appeal to the readers. Last but not least, these two fields also seem to differ in the way how they orient their readers to better comprehend their studies. Crookes (1986) and Ozturk (2007) have observed that subheadings are evident in social sciences Introductions to assist the readers to grasp various topics in relevant works. Hard sciences, on the other hand, may provide definitions and examples to illustrate difficult concepts appeared in the Introduction (Anthony, 1999). Some hard science, such as computer science, where the rhetorical schema for reporting research is not yet established, indication of the RA overall organization at the end of this section appear to be prevalent (Cooper, 1985, cited in Swales, 1990; Posteguillo, 1999). However, the contrasts between these two arenas are only relative. It is dangerous to predict that a particular discipline can

perfectly fit into this dichotomy and presuppose its preferred organizational conventions. As we have seen from a number of studies, the nature of the disciplines, such as whether the discipline in concern is an emerging or established one, the readership is of similar or diverse backgrounds, etc. may complicate the scene of a clear-cut dichotomy.

Micro-level Studies on RA Introduction

Since the rhetorical-grammatical approach to EAP blossomed in the 1970s, research has been exploring numerous lexical-grammatical features of RAs, such as tense and aspect (e.g. Lackstrom et al., 1972; Malcolm, 1987; Oster, 1981), voice (e.g. Tarone et al., 1981, 1998), the article system (e.g. Lackstrom et al., 1972), first-person pronouns (e.g. Hyland, 2002; Kuo, 1999; Martinez, 2005), phraseology (e.g. Gledhill, 1995, 2000; Kuo, 2002; Marco, 2000), and so forth. As Swales (1990) notes, a major conclusion from this line of research is that since RA sections are intended to realize disparate communicative purposes, they thus require different linguistic realizations to achieve these functions. RA Introduction is found to be characteristic of numerous distinctive micro-level features, such as high ratio of that-nominals, reporting verbs, citations, first person pronouns, certain fixed expressions, etc. that can be linked to the communicative functions of this section (Biber and Finegan, 1994; West, 1980, cited in Swales, 1990).

For example, analyzing that-nominal structure in 15 medical RAs, West (1980) suggested that the high frequency of this grammatical structure in Introduction may be associated with the great demand of making claims in this section. Similarly, based on the text analysis of 16 RAs from the field of Phytopathology, Heslot (1982) also indicated the Introduction contains distinctive distribution of voice, tense, and person markers, which may serve for its rhetorical functions. To begin with, contrary to

Method and Results where the use of passive voice is prevalent, Introduction, more similar to Discussion, demonstrates preponderance of active voice. With regard to tense distribution, there is a high percentage of present tense and relatively low percentage of past tense in Introduction. The researcher also suggested that the tense options in Introduction were more than temporal concern. Rather, the use of tenses could reveal the writers' attitude towards the works cited, indicating the degree of generality of a statement or writers' supporting attitude towards a statement. More specifically, when the writer refers to general knowledge that has been widely agreed upon, present tense would be used; when the writer cite recent works which have contributed to the present view on a subject or demonstrated a trend in a specific area, present perfect would be used; the past tense would be used either to indicate that the cited works might only fit in provisionally or to offer criticism to the referred studies. Last but not least, Heslot found that first person forms occurred only in Introduction and Discussion, but not in the other two sections. Here, Heslot contended that the use of first person forms in Introduction serves to signal "the purpose of the research undertaken."

Biber and Finegan's (1994) corpus-based textual analysis of 20 medical RAs also attests West's and Heslot's findings, indicating that Introduction, compared with other sections, showed comparatively higher percentage of *that* verb complements, fairly common use of present tense and notable occurrence of first person pronouns, while showing relatively low occurrences of passive voice. In addition to identifying the linguistic features of each section, Biber and Finegan also compare the linguistic characterizations among the Introduction-Method-Results-Discussion (I-M-R-D) sections. Differences among the I-M-R-D sections were found. For instance, compared with the other three sections, Introductions displayed a smallish propensity to narrative dimension, indicated by the linguistic features such as present perfect

tense, past tense, and public verbs (e.g. *suggest, find*). Yet, the most contrasting feature is that this section was most marked by their elaborated reference, characterized with the linguistic features such as phrasal coordination, nominalization, *wh* relative clauses. This, again, showcases that Introduction encompasses some distinct sub-register features that are very different from the other sections.

In fact, besides the more clear-cut distinction of the lexical and grammatical features of Introductions as reviewed above, genre analysis has also extended research scope into phraseology, pre-patterning of language that is concerned with both lexical words and grammatical words (Marco, 2000). Phraseology refers to lexical-grammatical units that are characterized by high frequency and conventionality. Moreover, these fixed expressions are usually identified to be associated with certain discourse contexts and functions (Kuo, 2002). An indicative study of such was conducted by Gledhill (2000) to examine the phraseology in the Introduction sections from a corpus of 150 pharmaceutical RAs, with the primary focus on how phraseologies of grammatical items are realized in contexts. The results revealed that certain phraseologies were related to the rhetorical functions of Introductions. For instance, compatible with Heslot's (1982) earlier observation, Gledhill noted that the use of *we* in Introductions was to express the rhetorical move "occupy the research gap," as in Swales's (1990) CARS model (e.g. *we have in this article studied cell susceptibility*). Additionally, the present perfect passive structure *has been/have been* was found to be typical of reporting results from previous studies in this section.

To conclude, given that Introduction has different rhetorical functions from the other RA sections, distinctive lexical-grammatical units thus are utilized. These micro-level features not only characterize this sub-genre but also become the conventional practice of the academic discourse community.

Micro-level disciplinary variation

As reviewed earlier, numerous studies adopting Swales' CARS model (1990) have pointed out that although most disciplines conform to the CARS model, still cross-disciplinary variations in macro structures of Introduction could be found. Similarly, while studies have identified specific lexical-grammatical units that characterize the RA Introductions, a number of studies have also revealed a rather systematic disciplinary disparities at the micro level, such as knowledge claims (Kuo, 2006), hedges (Hsieh, et al., 2006; Hyland, 1998), reporting verbs (Hyland, 1999a; Kuo, 2001; Thompson & Tribble, 1991), metadiscourse (Hyland, 1998, 1999b, 2005), lexical bundles (Hyland, 2008), etc. Considering that citation and metadiscourse are two of the most prevalent and important practices in Introduction, a brief review on these two linguistic and rhetorical features across disciplines would be presented in the following.

Citation practice

Analyzing citations in RAs from eight disciplines, Hyland (1999) intended to investigate the discipline-specific conventions of citation practice, including the density of citations, forms of citation, presentation types, and reporting verbs. To begin with, soft sciences (e.g. applied linguistics, sociology, and philosophy) demonstrated twice as many the citation incidences as the hard sciences (e.g. hard sciences such as mechanical engineering, physics, and electronic engineering). It is suggested that linear progression of hard knowledge may contribute to more predictability of the problem, and therefore it is less necessary for writers to point out the relatedness of the current work with the existing knowledge through the means of citation. On the other hand, knowledge-building in social sciences is usually dependent on several strands of development. Further, greater interpretation for the

prior research, coupled with less definite caliber for establishing claims, require writers to elaborate a context through citation so as to strengthen the claims and provide interpretive knowledge to readers.

As for the forms of citations, Hyland also identified sharp contrasts between the soft and the hard fields. Based on Swales's (1990) structural classification of citations, integral citations refer to the citation that has the name of the cited author/researcher appears in the citation sentence as a sentence element. On the other hand, if the author/researcher's name is given in parentheses or is referred to elsewhere such as by a superscript number, it is categorized as non-integral citations. Using one citation form rather than the other can reflect writers' decision whether to foreground the cited authors or the reported information (Hyland, 1998). It was found that writers in soft disciplines were more inclined to use integral citation and to place the cited authors in subject position as a way to underscore the importance that they afforded cited authors. In stark contrast, hard sciences showed strong proclivity to use non-integral citations. Additionally, numerical footnote format was requested by many journals of hard sciences, thus lowering the prominence of the cited authors and remaining the "impersonality" of the scientific discourse. As Hyland (2005) later construes, "removing the agent helps remove the implication of human intervention and the possible subjectivity and distortions this might introduce, maintaining instead the authority of scientific knowledge as built on non-contingent pillars of replication, falsification and induction" (p. 160).

Hyland also identified community-based preferences of using reporting verbs. In fact, the choice of varying reporting verbs in making reference can signal author's position toward the cited works. In general, the soft disciplines favor "discourse reporting verbs" such as *discuss* and *state*, whereas hard sciences are characterized with the use of "research reporting verbs" such as *observe* and *analyze*. Furthermore,

evaluation verbs (e.g. *argue*, *suggest*) were found to be more commonly used in soft fields, suggesting that writers in the soft disciplines are more inclined to review previous studies more critically either to lend reliability to their arguments or to “elaborate a shared context” in which the relevance and significance of the study with the existing knowledge is created (Hyland, 1998).

To summarize, such various disciplinary citation practices reveal that each discipline has its preferred way of forming persuasive and effective argumentation, so writers should follow such citation conventions lest they should invite unwanted objection from the disciplinary discourse communities.

Metadiscourse

Besides examining the cross-disciplinary differences in citation practice, Hyland (1998, 1999) also conducted a number of studies on metadiscourse from eight disciplines, intending to shed light on the discipline-specific metadiscoursal practice in RAs. Metadiscourse is often simply considered as “discourse about discourse” (Hyland, 2000, 2005; Swales, 2000). It serves an important rhetorical function for academic writers – contextualizing their argument and claims in academic discourse. The idea of metadiscourse is based on the assumption that writing is a way of social and communicative engagement through which writers project themselves into texts to manage their communicative intentions. That is, writers need to always have their readers in mind and “intrude” whenever adequate in the discourse to guide readers in some ways to “organize, classify, interpret, evaluate, and react to such material” (Vande Kopple, 1985, p. 83; cited in Swales, 1990, p. 188). In fact, metadiscourse is one of the vital linguistic resources that researcher-writers can exploit to influence readers’ response to claims in RAs (Hyland, 1998). Given that the RA Introduction is where writers need to contextualize their research within the relevant field and

negotiate novelty and contribution claims, while, at the same time, establish solidarity with their readers, an adequate dose of metadiscourse into this highly argumentative section thus becomes a pivotal practice for researcher-writers.

Hyland's (1998) taxonomy of metadiscourse provides a useful glimpse of the various types commonly used in RAs. His taxonomy comprises two broad categories with more specific functional types within these two, which is shown in Table 2.2 overleaf. The two categories of metadiscourse are textual metadiscourse and interpersonal metadiscourse. Textual metadiscourse refers to linguistic devices which primarily serve the function of organizing the propositional content in a coherent way. On the other hand, interpersonal metadiscourse is used to inject a writer's persona into the text, forming a unique writer-reader relationship and directing the readers to interpret a discussed topic of cited work following the writer's conviction.

Hyland's (1998, 1999) text analysis of metadiscourse in RAs across disciplines attests that metadiscourse is utilized to aid effective community-specific interactions in the knowledge-making process. This metadiscoursal practice, similar to citation practice, generally reflects the marked contrast between social sciences/ humanities and natural sciences/ engineering. It was found that writers in the soft disciplines utilized much more interpersonal metadiscourse, whereas writers in hard disciplines showed relatively low incidence of interpersonal metadiscourse and yet had a strong affinity to textual metadiscourse (Hyland, 1998, 1999). Such disparities of metadiscourse practices, as explained by Hyland, could be attributed to the different conventions of field-specific argumentation and distinct knowledge-making processes among academic disciplines.

According to Hyland's (1998) explication, knowledge construction in science and engineering is characterized by relatively steady cumulative growth, predictability of problems and clear criteria of acceptability. On the contrary, knowledge-building in

Table 2.2 *Functions of Metadiscourse in Academic Texts*

Category	Function	Examples
<i>Textual metadiscourse</i>		
Logical connectives	Express semantic relation between main clauses	In addition/ but/ therefore/ thus/and
Frame markers	Explicitly refer to discourse acts or text stages	Finally/ to report/ our aim here/ we try
Endophoric markers	Refer to information in other parts of the text	Noted above/ see Fig.1/ table 2/ below
Evidentials	Refer to source of information from other texts	According to X/ Y, 1990/ Z states
Code glosses	Help readers grasp meanings of ideational material	Namely/ e.g./ in other words/ such as
<i>Interpersonal metadiscourse</i>		
Hedges	Withhold writer's full commitment to statements	Might/ perhaps/ it is possible/ about
Emphatics	Emphasize force or writer's certainty in message	In fact/ definitely/ it is clear/ obvious
Attitude markers	Express writer's attitude to propositional content	Surprisingly/ I agree/ X claims
Relational markers	Explicitly refer to or build relationship with reader	Frankly/ note that/ you can see that
Person markers	Explicit reference to author(s)	I/ we/ my/ mine/ our

the social sciences and humanities is less definite and involved with more authorial interpretations and evaluations. This is because the research inquiries in soft fields are usually concerned with how human actions influence events, and thereby more variables are involved and more tenuous causal relationships could be made. Given such differences in knowledge construction, the argumentation in RAs reflects such phenomena as well. For instance, when writing RA Introductions, writers in hard sciences usually present their research topics following a linear development of existing research. Evidentials thus become one of the primary metadiscourse devices to create “a recognized gap” in the existing knowledge (Hyland, 2005, p. 150).

Writers in more discursive soft fields (e.g. sociology, philosophy), on the other hand, employ consecutive attitude markers (e.g. a neglected area, limitations, lack of systematic analysis) to augment “the negative tone of the introduction to create a rhetorical effect which constructs a problematic issue worthy of research” (Hyland, 2005, p. 150). As expectedly, more personal positions could be observed in soft-knowledge papers.

Moreover, Hyland (1998) also notes that readers of scientific RAs are more likely to be of specialized backgrounds and probably engaged in a similar type of experimentation. Therefore, fewer metadiscourse devices, particularly interpersonal ones, are required to fill the gap in readers’ knowledge or direct them to the preferred interpretations. On the other hand, comparatively more diversified readership demands writers in the soft fields to orient readers more often and negotiate claims by means of metadiscourse.

Thus, metadiscourse is an important means for RA writers to present themselves, negotiate claims, as well as engage their readers, all of which is to ensure that their propositional content can be understood and accepted. Various linguistic realizations of metadiscourse offer writers an array of choices to orient their readers. Nevertheless, in order to have effective arguments, writers need to deploy their discipline-specific metadiscourse devices to meet the norms and expectations of their discourse communities.

The foregoing genre-analysis studies on the Introduction section have indicated that the Introduction is a highly conventionalized part-genre in which distinctive linguistic features and rhetorical organization are present to realize its communicative functions. Yet, disciplinary variations within this section also abound at both macro and micro levels. These variations are especially apparent between the hard fields and the soft fields, which may be reflective of the distinctive argumentation and

knowledge-construction process between these two fields. It is thus suggestive that these two contrastive fields may also require their disciplinary community members to construct their argumentation differently in the Introduction and they may encounter disparate difficulties in writing this section. Therefore, the next section, we will first review the difficulties in writing RAs, and then move on to the possible difficulties of writing Introduction.

Difficulties of L2 Researcher Writers

It is well-documented in the literature that a great number of L2 writers are at a disadvantage than their native peers to publish their scientific research in internationally-referred journals (e.g. Belcher, 2007; Flowerdew, 1999a, 1999b, 2007; Gosden, 1995; St. John, 1987), which remain mostly English-medium (Tardy, 2004). Due to L2 writers' linguistic insufficiency, their incomprehensible written texts might possibly inhibit scientifically rigorous studies from publishing in the Center journals. Moreover, the "non-standard" English might also test reviewers' and editors' tolerance of acceptance. While some studies (Flowerdew, 2001) found that journal editors and reviewers do not hold biased attitude towards "accented" written works, a few studies indicate otherwise (Curry & Lillis, 2004; Coates et al., 2002; Gibbs, 1995). For example, Coates et al. (2002, cited in Li & Flowerdew, 2007) reported that a high rejection rate is related to the language "errors" identified in the manuscripts written by L2 authors. Moreover, Gosden's (1993) survey with journal editors in English-speaking countries further revealed that as journal editors are looking for reasons to reject ever swarming submitted works, "linguistic grounds are as good a reason as any for rejection" (p. 129). The above-mentioned reports seem to suggest that many L2 scholars are caught in this predicament due to their relative linguistic insufficiency.

Some common linguistic handicaps indicated in previous literature could be broadly categorized into three major levels — local surface problems, discursal problems, and rhetorical problems. On the surface level, a limited range of vocabulary is one of the major common difficulties perceived by L2 scholars (Flowerdew, 1999b; Gosden, 1996; Okamura, 2006). Moreover, some other local surface problems identified include using false cognates (Sionis, 1995), choosing words with multiple meanings (Flowerdew, 2000), selecting words that is suitable for the formal written style (Parkhurst, 1990; Powers & Nelson, 1995; Sionis, 1995; St. John, 1987) , using terms or expressions that are either too verbose or imprecise (Cooley & Lewkowicz, 1995), and so forth. These surface problems, though evident in the written products by L2 writers, could be fixed relatively easily by experienced language professionals and, more importantly, are less frowned upon by journal editors or reviewers for these problems usually may not obscure intended meanings (Li & Flowerdew, 2007). Yet, it is possible that insufficient repertoire of lexis may engender more serious problems, such as poorly developed ideas or arguments, which are more concerned by the international gatekeepers.

Another common surface problem stems from L2 scholars' poor command of English grammar, ranging from grammatical correctness to structural variety to more nuanced grammatical aspects such as tense or modality (Gosden, 1995; Kourilova, 1998; Okamura, 2006; St. John, 1987). For example, Kourilova (1998) examined the peer reviews (PRs) of the Slovak medical researchers' works and found that a few serious criticisms offered by journal reviewers are in fact related to the "hidden grammar" of the English language (p. 112). It was pointed out that Slovak scholars generally lack appropriate modality in their writing to hedge excessive assertive claims. Furthermore, other grammatical misuses in the study include inadequate applications of the generic article (e.g. the), which may signal "unsubstantiated

generalizations” as well as the overuse of present and present perfect tense in which “the neutral simple past was required to leave the knowledge claim open to negotiation by the scientific community” (p. 112). These examples indicate that the grammatical aspects such as tense, modality, and article may exert distinct rhetorical functions of RAs that are central to Anglophone discourse community and that it is these tacit grammar that could pose greater challenges to L2 writers, rather than the general English grammar per se.

While sentential surface lapses are notable in L2 writers’ manuscripts, discursal problems, in fact, seem to have more detrimental effects on journal publication in that the latter could distract the referee’s attention from judgment on the scientific contribution of the RAs (Gosden, 1992). Unfortunately, since language service providers usually do not share the same content expertise with the authors, they are less capable to identify or tackle the discursal problems (Flowerdew, 1999b; St. John, 1987). Consequently, discursal problems are prone to persist in the L2 writers’ manuscripts till final submission. These problems exist in various forms and could obscure intelligibility to different degrees. Prior research has indicated that L2 writers generally have less facility for handling logical development of ideas or arguments over a long stretch of discourse, resulting in incoherent reference or jerky flow of presentation (Cooley & Lewkowicz, 1995; Gupta, 1995; Matsumoto, 1995; Swales, 2004). As in Matsumoto’s (1995) study, one Japanese professor incisively commented that “a sentence is itself a perfectly well-formed one, but it stands somehow independently from the previous or the next one” (p. 24). Additionally, sentence or paragraph connection is often weak, which, in turn, not only causes confusion to readers but also seriously weakens authors’ arguments (Shaw, 1991).

In fact, besides the above-mentioned macro and micro level problems, a number of studies have also indicated that many L2 writers are baffled by rhetorical issues. It

was found that L2 writers encounter considerable difficulties in making claims about the news value or contribution of their research (Flowerdew, 1999b; Lillis & Curry, 2008), which, critically, is the major criterion for international publication (Berkenkotter & Huckin, 1995). In detail, weighing when to put forward assertive claims, and when, less assertive often perplexes L2 writers. They tend to put forward overassertive claims without using the appropriate hedged language to indicate caution expected by the academic discourse community (Flowerdew, 1999b; Kourilova, 1998). Worse yet, to some L2 scholars, particularly those in the social sciences and humanities, choosing either to background the local national context or foreground the “exotic” context is a serious issue that L2 scholars need to tackle with care. While Flowerdew (2001) noted that many Center journal editors criticized many periphery writers for being too “parochial” (p. 134), Lillis & Curry’s (2008) case studies of scholars writing from Central Europe found that it is this localness that could be attributed to the value of the periphery works (see also Cho, 2004). This stark contrast seems to be an issue of making the right type of knowledge claims. L2 writers thus need to strike a balance between asserting for the contribution from the perspective of a unique local context while showing the study’s relevance to the readers in a more global community. Although this conundrum faced by L2 periphery writers may be related to sociopolitical issues, it should also be considered as a rhetorical complexity that many L2 writers ought to deal with using their constrained linguistic proficiency.

In sum, studies have indicated that numerous L2 writers are plagued with language deficiency in writing for English-medium scholarly publication. It appears that local surface problems are quite evident in the NNS’ manuscripts, and yet they are comparatively less concerned by journal editors and referees. On the other hand, discursal and rhetorical problems, which are inextricably linked to the success of

journal publication, seem to pose even greater obstacles for L2 writers.

In the next section, difficulties in writing Introduction are discussed, with a special focus on L2 student researchers' possible difficulties in writing this particular section.

Difficulties in writing RA Introduction

Introduction at the level of published text, as Swales (1990) aptly puts it, is “a crafted rhetorical artifact,” serving the function of convincing readers that the study is of great contribution as well as relevance to the research field (p. 157). This invariably requires writers to maneuver skillfully to achieve such rhetorical functions. It comes as no surprise that this section is often perceived by L2 writers to be particularly more troublesome than the other more formulaic sections of Method and Results (Flowerdew, 1999b; Shaw, 1991; St. John, 1987). Considering that L2 postgraduate students, being novice scholars in research and academic writing, may still cultivate their academic literacy and may lack the necessary rhetorical strategies to write a well-crafted Introduction, they are more likely to encounter more serious challenges than other more experienced scholars.

In writing this rhetorically demanding part-genre, numerous crucial yet tough decisions need to be made (Swales, 1990). First and foremost, writers need to decide what type and what level of knowledge claims should be made in Introduction, for this being the principle criterion for publication. Swales (1990) notes that “high-level claims are likely to be important but risky, whilst low-level claims are likely to be trivial but safe” (p. 117). In detail, even though higher level of knowledge claims could produce the higher news value or greater contribution to the current knowledge that gatekeepers are specifically looking for, these claims may contradict with a large body of related previous works or fundamentally important assumptions, hence

inviting criticisms and suspicions from the research communities. On the other hand, low-level claims, though are seldom questioned by journal referees or academic peers, may lack the news value necessary for publication. Accordingly, weighing the right amount of claim is very crucial yet difficult. This complicated claim-making practice undoubtedly requires high skills of rhetorical work, and, expectedly, it is reported to be troublesome for L2 scholars (Flowerdew, 1999b). Conceivably, given L2 student researchers' limited experiences of writing RAs for publication, they are inclined to encounter more obstacles in choosing the right amount of claims in Introduction.

Secondly, while more experienced writers do not seem to experience considerable difficulties in dealing with previous literature such as incorporating existing literature or weighing the value of literature (Flowerdew, 1999a), it seems to be particularly troublesome for novice writers to select from a wealth of related literature and, more importantly, using citations to contextualize their study in the existing knowledge. Moreover, they appear to be less able to use citation to develop forceful arguments to convince their readers that their studies are sound, significant, and worthy of publication (Dong, 1996). A study reflecting L2 student writers' difficulty in reviewing literature can be drawn from Liu's (2007) study, which investigated one MA applied linguistic student's process of writing thesis literature review (LR). Interviews and text-analysis of the participant's written drafts revealed that due to his less proficiency in critical reading and evaluating previous works, this student was unable to decide what study should be included in his thesis LR. As a consequence, this student writer provided detailed description of each study, hoping that his advisor could help him identify the important information. Further, incoherence and irrelevance among studies reviewed only rendered the whole LR harder to grasp the author's stance and argument. It is possible that L2 student researchers may be still forming the critical insights necessary to evaluate previous

research and are still learning various highly sophisticated rhetorical citation practices through situated learning. They thus may need extra help from more experienced researchers, such as their advisors or journal referees (see also Dong, 1996).

In addition to choosing literature to support their claims, L2 novice scholars may encounter obstacles in deciding the adequate amount and type of background knowledge to be included so as to bridge the gap between the potential reader's knowledge base and the present study. Two reasons might be attributed to this difficulty (Shaw, 1991). For one thing, compared with senior or more experienced researchers who may write to target at specific audience of RAs, junior researchers tend not to think about their potential readers (Okamura, 2006). Therefore, it seems plausible that this limited awareness of intended readership contributes to their difficulty in providing adequate amount of background information in Introduction. For the other, the difficulty of providing adequate background information may be related to the writers' overwhelming attention given to local ongoing development of the written texts while overlooking the overall structure, thereby providing unequal proportion to each study or topic reviewed, with some sections being over specific whilst others too general (Gupta, 1995). More specifically, Gupta (1995) pointed out that this disproportionate review of previous works could be attributed to L2 student writers' fixated "concern with linear structuring, which leads them to ignore the overall hierarchical structure" in Introduction (p. 62). Therefore, given limited experience in writing RAs, particularly those for publication, L2 student writers may be in lack of the specific readership and awareness of their overall hierarchical structure, it seems that they would be more likely to provide inadequate amount of background information in this part-genre.

As reviewed so far, L2 novice scholars are imposed with several thorny decisions such as in choosing the right level of knowledge claims, selecting suitable literature to

support their arguments or to provide sufficient background knowledge, their comparatively less proficiency in L2 reading further compounds their difficulty in writing this section (Dong, 1996; Okamura, 2006). For starters, perusing over copious literature is a required yet painful process. However, poor academic reading proficiency in English constrain L2 writers to read much less of the prior research than that of their native counterparts, thus leading to unsubstantiated claims or limited reference to previous studies, which may not be representative of the current knowledge (Dong, 1996; Okamura, 2006). Moreover, misunderstanding or misinterpretation is prone to happen in reading L2 written texts (Liu, 2007), contributing to wrong interpretation or even false claims in their writing. It is postulated that the effect of poor reading on writing may be more apparent in the more discursive disciplines of humanities and social sciences in that the texts tend to be longer and more complicated. In addition, such texts may not have “mathematical language” (Sinois, 1995) as those in the science and technology, which could possibly facilitate L2 scholars’ comprehension. Therefore, to L2 novice researchers, writing a good Introduction takes more than just good command of academic writing. Rather, academic reading proficiency, particularly in the softer fields, may also play a critical part in writing this particular section.

Finally, in addition to the above-mentioned language hurdles and difficult rhetorical options, L2 writers may also need to overcome the cultural barrier in writing Introduction. Cultural disparities may make the Introduction written by non-Anglophone writers to be incongruent with the expectations of the Anglophone readers, which critically include most of the journal referees and editors (Mauranen, 1993). A case in point, while Swales (1990) suggests that indicating a gap in previous research is an important rhetorical practice to justify one’s research, a few studies have revealed this practice might be too face-threatening in some non-Anglophone

cultures (Ahmad, 1997; Bolch & Chi, 1995; Taylor & Chen, 1991). For example, from a contrastive rhetoric approach between Chinese and English RA Introduction texts, Taylor and Chen (1991) observed that Chinese writers have the tendency to avoid exposing “gaps” in previous research as a way of motivating their own research. Similarly, Bolch & Chi (1995) found that Chinese writers when writing Chinese RA Introduction tend to be less argumentative and employ fewer direct criticisms of the reviewed studies than their English counterparts, adding another prove that disparities may exist between these two cultures when creating a research space. Arguably, L2 novice researchers who have been raised and educated in EFL contexts and who are less aware of the genre conventions of English-medium journals may have the proclivity to produce “anomalous,” or even “illogical” Introduction to the eyes of Anglophone gatekeepers, thereby loosing the chance for international publishing in the first place.

Although previous research has anecdotally recorded the multiple challenges of writing Introduction faced by L2 writers, comparatively few studies examined this issue systematically or in-depth. More specifically, it is still unknown whether some subcomponents or linguistic realizations of Introduction are more difficult to write than those in other sections of the RAs, and why such difficulties are caused, in particular, the writing difficulties of L2 writers in relation to generic features of RAs as a whole and communicative purposes of the Introduction section.

L2 Writers’ Composing Process

In light of the above mentioned difficulties thwarting L2 researchers from writing RAs effectively, it seems all the more critical to understand these writers’ writing behaviors during their composing process, which could provide insights to their writing problems and how they cope with them. Central to RA composing

process is the composing strategies that writers brought with them from their former experience either in L1 or L2 writing as well as their coping and rhetorical strategies to match the demands and expectations of the target academic discourse community. In this section, studies related to researchers' writing process for RAs are reviewed first; coping strategies utilized by L2 writers to overcome their difficulties or disadvantages are also presented; lastly, we also review previous literature concerning the rhetorical strategies adopted by L2 researcher-writers either to get their ideas across to the intended readers more effectively or utilize such strategies to enhance the acceptance by journal referees.

During the past three decades, there has been a dramatic proliferation of research concerned with L2 writers' composing process. One important thread of this process-oriented research has investigated the writing behaviors of skilled and less skilled L2 writers during their composing process and shown marked difference between them in planning, composing, and revision (e.g. Boshier, 1998; Raimes, 1985; Zamel, 1983; Victori, 1999). To begin with, unskilled writers generally spend little time on planning yet stick to the original plan or outline rigidly; skilled writers tend to spend more time on planning but are willing to change their plan once a new or better idea has come up during their composing process (Raimes, 1985; Zamel, 1983). Further, these two groups contrast significantly during the revision stage. Less proficient writers rarely revise and tend to revise only at the surface level such as spelling, punctuation, and grammar, rather than the overall flow of meaning or logic. Proficient writers, on the other hand, concern more about the development of ideas and revise globally to ensure discursual coherence while postponing editing surface level relatively later at the revision stage (Zamel, 1983). Finally, another distinction lies in how these two groups go about their writing. Contrary to unskilled writers who generally treat writing as mere expansion of an original plan, skilled writers regard

writing as “a nonlinear, creative, and generative process” (Matsumoto, 1995, p.17) where they discover new ideas and incorporate these developing ideas into their composition. Thus, it seems that writing a good composition involves having an organized yet flexible plan, undertaking not only local-level but also global-level revisions, discovering and adopting new ideas whenever writers deem adequate.

The composing process and writing behaviors of L2 researchers writing for publication is more similar to that of proficient L2 writers as mentioned above (Matsumoto, 1995). Similar to general L2 composing behaviors, L2 researchers also undergo comparable stages in writing, that is, planning, composing, and revising. Additionally, they utilize many similar composing strategies, such as generating ideas by first thinking in L1, making an outline before writing, refining words and modifying structures, etc. (Rymer, 1988). This may be in part due to the fact that L2 researchers do not need to discard all the strategies gained from former experience either in L1 or L2 writing. Rather, many of the L1 and L2 general/academic writing strategies could be naturally transferrable to writing for RAs in L2, though some modifications need to be made (Matsumoto, 1995; Riazi, 1997). More importantly, comparable to L2 proficient writers’ composing process, writing for research in L2 is also a “recursive” and “heuristic” process (Swales, 1990, p. 220). Recursive because researchers seek perfection for their writing, so they usually undergo careful planning, laborious composing, multiple revisions and going through these processes back and forth for each draft (Matsumoto, 1995; Mu, 2007; Rymer, 1988). This non-linear writing process generally characterizes academic writing process of many L2 researchers. In addition, the process of writing RAs is also characteristic of its heuristic nature in that through writing process per se researchers discover “connections” among what may be originally scattered in notes or in researchers’ mind, gradually gaining a more comprehensive picture of the study content (Swales,

1990, p. 220). Through the process of writing, L2 researchers may also form new ideas and make these ideas more precise and accurate (Matsumoto, 1995). For many researchers, writing RAs thus becomes the means to further explore ideas and refine meanings.

Despite the seeming similarities of the composing process between L2 proficient writers and L2 researchers, much more complexity and disparities could be noted in the writing behaviors of L2 researchers. This is because L2 researchers are engaged in a much more sophisticated and demanding writing task than general essay writing. Much more complicated issues are involved in writing for publication, such as integrating from various sources, orienting readers, making cogent and appropriate arguments, organizing complex information, and so forth (Li, 2006). Therefore, in addition to considering their internal mental cognition process in writing, it seems equally important, if not more, to explore L2 researchers' strategies to tackle the external demands made by the academic discourse community. These strategies are one of the research foci of the present study, which can be categorized into two major types: the coping strategies adopted by L2 writers to tackle the difficulties or disadvantages encountered in writing for publication as well as the rhetorical strategies utilized by L2 writers to help them express their ideas more effectively. In the following section, various types of coping strategies that have been documented in the previous literature will be presented first; then, research focusing on the rhetorical strategies will also be reviewed.

Coping strategies

The use of L1

Writing RAs is an extremely complicated and challenging task where L2 researchers need to juggle not only the cognitive demand of turning experimental data

or ideas into persuasive and valid content but also the linguistic burden of writing coherently in a language that is not totally under their control. Mental overtaxing makes these L2 researchers turn to their L1 for help in different stages of writing process. Thinking first in their L1 enables L2 researchers to discard momentarily the linguistic burden of L2 writing, thus focusing on generating ideas or sharpening meanings. With ideas clarified, some L2 writers can start to write directly in English (Matsumoto, 1995; Li, 2007; Shaw, 1991). However, other L2 researchers may not only think in their L1 but also write first in their L1 and then translate the texts (St. John, 1987; Gosden, 1996). For example, Gosden (1996) found that the majority of Japanese novice researchers reported writing their first draft of the Introduction in Japanese and later translated it into English, for they thought Introduction contains complicated rhetorical functions. Similarly, St. John (1987) observed that her Spanish researchers shifted to thinking and writing in Spanish first, then translating the text into English when writing more difficult areas of RAs such as Introduction and Discussion.

Interestingly, these two studies also reported distinctive translation strategies utilized by these two groups of L2 researchers writing in EFL contexts. In Gosden's study, novice Japanese researchers were found to use "discourse features" that are distinctive to English RAs in their Japanese drafts. For instance, they incorporated "overt transition markers than might normally occur in a Japanese text" (p. 117). Such practice was perceived to be beneficial for later translation. Similarly, for the same purpose of efficient translation, St. John observed that some Spanish writers used a very specialized variety of Spanish consisting of concise and short expressions, as opposed to the conventional Spanish writing, which is "less precise, longer, and more variable in structure" (p. 116). It thus seems that translation strategies become a notable interim strategy between L1 and L2 RA writing for some L2 researchers. To

conclude, whereas some L2 researchers may simply count on their L1 for brainstorming or clarifying ideas, others may use their L1 for the whole process of thinking about and writing their drafts while also employing strategies for the ease of translation.

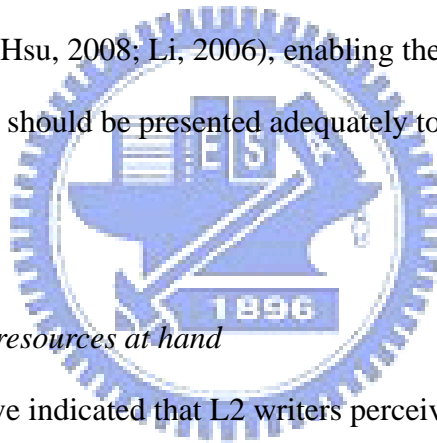
Using previous literature as models

Prior studies concerning academic literacy has well-documented that examining and imitating successfully completed texts, such as mimicking the format and style, or borrowing fixed phraseology or formulaic expressions, is commonly practiced by L2 graduate students writing for their course assignments (Leki, 1995; Riazi, 1997) or for their theses (Shaw, 1991). When writing RAs for international publication, L2 novice researchers also adopt this coping strategy to overcome their linguistic inflexibility as well as their unfamiliarity with the written task at hand. As reported in Okamura's (2006) and Flowerdew & Li's (2007) studies, many L2 researchers perceive that the academic language for RAs is highly "codified," meaning that writers can use a specific set of highly conventionalized expressions to achieve their intention.

Therefore, they suggest that it is this codified nature of academic writing that enables them to "borrow" linguistic expressions from published texts. Accordingly, many L2 novice researchers take previous works as a major reference to imitate both their language and rhetorical structure so as to produce the type of texts that are expected from the discourse community, such are the cases in Gosden's (1996) and Li's (2005, 2006 a, b, 2007) studies. However, it should be noted that even experienced L2 researchers may adopt the so-called "language reuse" (Flowerdew & Li, 2007) or "textual borrowing" (Casanave, 2004) from published works, and this could possibly result in unwanted "textual plagiarism" (Flowerdew & Li, 2007).

Notwithstanding the serious plagiarism issues, collecting and utilizing formulaic

expressions from published texts seems to be a prevalent and useful coping strategy for L2 researchers writing for international publication. L2 novice researchers, in particular, may still grapple with the rhetorical structure and rhetorical purposes of each section. Therefore, apart from imitating the surface linguistic structures and formulaic expressions, novices are reported to benefit from analyzing and imitating rhetorical organization from previous published works, especially those written by the “big hands” in their fields (Li, 2007, p. 67). In other words, this strategy appears to be more than just a coping strategy for them to produce the type of texts that are required by the discourse community. It also serves as a developing strategy for L2 novice researchers to acquire the advanced academic literacy of a specialized discipline (Flowerdew & Li, 2007; Hsu, 2008; Li, 2006), enabling these novice writers to gain insights to how the study should be presented adequately to readers on both linguistic and rhetorical grounds.



Exploiting the linguistic resources at hand

Previous studies have indicated that L2 writers perceive that they should keep to a simple style of writing (Flowerdew, 1999b; Okamura, 2006). Many L2 researchers in Flowerdew’s (1999b) study noted that they should use simple language to express themselves since they thought they would never be able to write “flowery phrases” as naturally as their native peers (p. 257). In a similar vein, Okamura (2006) found that many Japanese researchers preferred to write their arguments in simple English. They expressed that they have little time to polish up their English given the highly competitive nature of the international publication game. Most importantly, they thought that the purpose of publishing studies was to get their message across to the intended readers, copying complex sentence structures or patterns from NSs’ texts that they can not fully integrate with their intentions may not work to their advantage.

They thus opted to write in a simple style. Accordingly, while some researchers will use “language reuse” strategy of using useful sentence patterns or phrases from the published manuscripts, some other L2 researchers may relegate to take up a simple style of English writing due to the constraints of time and insufficient linguistic prowess of integrating complicated patterns from others’ with their own.

Consulting resource material

Besides examining the textual models from the published works, L2 writers also resort to resource books to compensate for their language problems. The resource books include dictionary, thesauruses, grammar usage books, writing manuals, etc. (Gosden, 1996; Hsu, 2008; Shaw, 1991). In general, the use of such resource materials appear to be more commonly reported in studies of L2 student researchers, which may be attributed to the fact that they are still grasping various linguistic conventions of the research genres. So far, in the literature, it seems that the most documented resource materials by L2 writers is the use of dictionary, indicating L2 writers’ prevalent difficulty of vocabulary in writing English-medium research genres. For instance, Shaw (1991) found that L2 graduate students in a British university used dictionaries, particularly bilingual ones, as thesauruses either to look for words “on the tip of the tongue” or to maintain “elegant variation” in writing thesis (p. 196). More recently, Hsu (2008) noted that her L2 graduate students in Taiwan would also consult bilingual dictionaries in writing RAs, though for a slightly different reason – most often to find the correct word choice.

Interestingly, even though few studies have documented the use of dictionary by more experienced L2 writers, such as professors, they seem to vary significantly with the use of this resource material. Some professors such as those in Matsumoto’s (1995) study, expressed they can solve basically all the vocabulary problems from reading

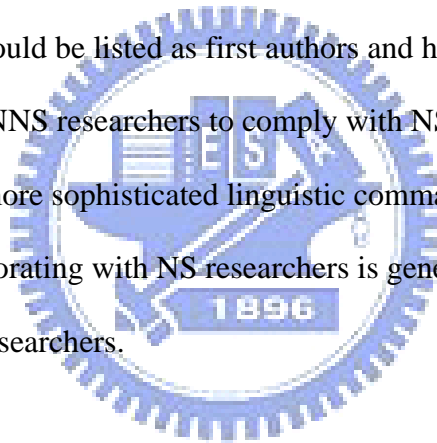
the referenced materials, commenting that “because the vocabulary used in research paper writing in a specific field is actually very limited, it is not even necessary to consult a dictionary, although I might have to do so in other types of writing” (p. 22). On the stark contrary, the L2 Japanese professors in Okamura’s (2006) study noted they needed to use dictionary to check for some problematic word usage because of their limited vocabulary repertoire. In fact, a few professors also explicated that their difficulty with this linguistic handicap may be related to the discipline. For example, they mentioned that the discipline of biology required them to use a variety of vocabulary items “to describe the shape, size, and color of an item in English, and could not highlight subtle differences” (p. 72). They thought that writers in some other fields, such as chemistry, where researcher-writers can use mathematical formulae to present their findings, may encounter fewer such linguistic constraints.

Seeking external help from NSs

To overcome various linguistic hurdles, L2 researchers may turn to NSs for help during their publication process (Casanave, 1998; Cho, 2004; Flowerdew, 1999a; Okamura, 2006). Flowerdew’s (1999a) large-scale survey with L2 researchers in Hong Kong found that one of the major strategies is to seek co-authorships with NS researchers, including their former overseas supervisors, overseas colleagues, or local NS peers. Also, Cho (2004) discovered that all of her student researchers received NS’s assistance, at least in their final drafts. These L2 doctoral researchers were assisted via two major channels: firstly, seeking help from language editors or professionals in university writing centers; secondly, collaborating with NS researchers in the same field, including their peers or advisors. However, the former is not perceived by these L2 student researchers to be as beneficial as they might have expected, mostly because the NS language professionals did not share the same

disciplinary knowledge with them. This condition is exacerbated by the limited time and energy that language professionals can provide to each student researcher. Not surprisingly, editing and suggestions provided by NS staff at writing centers were restricted to linguistic surface levels, such as grammatical and stylistic changes. Collaborating with NS advisors or peers seemed to solve the above-mentioned problem. Moreover, NNS's collaboration with NS researchers is also conducive to exchanging ideas, giving feedback, or sharing the workload.

Yet, as revealed in other studies (e.g. Casanave, 1998), unequal power in coauthoring or collaboration between NS and NNS could be problematic, especially when one is a NS supervisor and the other is a NNS subordinate. Political issues arise such as deciding who should be listed as first authors and how to settle disagreements on content. Not just for NNS researchers to comply with NS counterparts simply because the latter have more sophisticated linguistic command. Albeit for the potential power disparities, collaborating with NS researchers is generally regarded as a useful coping strategy for L2 researchers.



Opting for certain types of research

In the field of social sciences and humanities, a few previous studies have indicated that L2 researchers may resort to choosing quantitative research over qualitative research as a strategy to get their papers published in internationally referred journals. Flowerdew (1999b) found that many Cantonese-speaking researchers in Hong Kong perceived that it is better for L2 researchers to publish quantitative research in primary journals, given that this type of research contains more fixed steps and formulaic expressions of which L2 writers have better command. Likewise, Cho (2004) noted that all of her four doctoral researchers in the U.S. opted to publish quantitative research and that at least two averred that they avoided

choosing qualitative research owing to their limited linguistic facility in L2 writing. Therefore, for L2 scholars, choosing a certain type of research to publish may not be merely out of the concerns of knowledge contribution or research values; linguistic consideration may also play a critical role in swaying their research and publication decisions.

To summarize, from the above reviewed, it suggests that many difficulties and coping strategies may be related to the writers' experience with the genre. L2 novice writers may encounter greater linguistic difficulties due to unfamiliarity with the genre, so they may turn to use resource materials, textual mentorship from the published texts, etc. more often. On the other hand, while most coping strategies may seem to be universal across disciplines, a few coping strategies reported here are discipline-dependent. It seems that some disciplines may require more linguistic ability than others; thus, for those L2 writers, they may be confronted with more difficulties, which, in turn, require them to enlist different coping strategies to overcome these problems. However, previous studies did not specifically tap into the specific coping strategies that L2 writers can employ to write up a particular section, such as Introduction. Given that each section has its own communicative purposes, it is possible that the use of strategy may be related to the distinctive textual features or rhetorical functions of the Introduction section.

Rhetorical strategies

Writing RAs for scholarly publication is more than just a mere impersonal narrative account of research procedures and data presentation. Rather, this type of writing involves researchers' ingenious rhetorical construction, which, at the same time, also needs to be conformed to the values and expectations of the discourse

community (Berkenkotter and Huckin, 1995; Flowerdew, 2000; Myers, 1990). Specifically, in order to gain acceptance in this highly competitive publication game, researcher-writers need to skillfully employ various rhetorical strategies so as to convince their specialist readers that their research is of great news value, their claims are well-founded and adequate, and their perspective is fittingly-contextualized within the current disciplinary knowledge (Hyland, 2000). Therefore, as suggested by Latour and Woolgar (1979; cited in Hyland, 2000), “modern research lab devotes more energy to producing papers than to making discoveries, and that scientists’ time is largely spent in discussing and preparing articles for publication in competition with other labs” (p. 3). Some L2 researchers even stated that in such a competitive publication game, “with less impressive data, they would need good written English to persuade their readers” (Okamura, 2006, p.74). This “good written English” in persuasion thus implies the heavy rhetorical work involved in composing this sophisticated academic genre.

Skilled L2 researcher-writers seem to have more awareness of their intended readership, and thus employ various rhetorical strategies to have interaction with their readers. In writing, these skilled RA writers anticipate the readers’ possible interests, backgrounds, reading purposes, and reactions to their claims, etc. (Hyland, 2005; Li, 2006; Okamura, 2006). In fact, the use of numerous rhetorical strategies seems to be the embodiment of the writers’ concern for readers. For example, Okamura (2006) found that more experienced Japanese professors have a clear awareness of their intended readers and thus evoke a few writing strategies to address their readership. Since these experienced professionals sought to make a substantial impact on their readers and their studies, these writers were meticulous in choosing the suitable wording in the written works, which is also similar to the practice of more experienced writers in Rymer’s (1988) study. In addition, in order to draw their

readers' interests, they cite possible readers' works for the reason that "people would read an article more carefully if their work was cited as an important contribution" (p. 72).

By the same token, Li's (2006) case study of a L2 doctoral student writing for publication in China also reflects the rhetorical strategies aimed at swaying readers' reaction. Unlike most of the student writers documented in the literature, who tend to restrict the readership to only their advisors (e.g. Gosden, 1996; Liu, 2007), this doctoral student, surprisingly, demonstrated a strong awareness of his intended readers in a more global context of the research community. A few noteworthy rhetorical strategies were utilized to address his readers. To begin with, this doctoral student purposefully highlighted the "bright points" of his Abstract, such as adding "precisely positioned," "finding the optimized distance," "a powerful tool," etc. In his words, these additions were used literally to "attract the eye-balls of the referees" (p. 70). Also, he used self-citation of the earlier work from his home research team as a way of self-promotion. The practice of self-citation, as the student writer believed, served to demonstrate to the referees the contributions that their team has made to the field, thus hoping that the journal gatekeepers would view his present work in a more favorable light.

Furthermore, keenly aware of the problem that some concepts in his study might be foreign to the general readership and, possibly, to some journal referees, this student researcher deliberately lay out the basics of the background knowledge with "plain wording" (p. 70). Such additional explication and semantic simplification practices have reflected the writer's concerns for his readers, thereby avoiding any unwanted negative reactions such as misunderstanding, lost of interests, or even rejection from his readers. From these studies, it seems that numerous rhetorical strategies reviewed here are related to the writers' anticipation of the critical readers,

such as the journal reviewers, and their general readership.

Equally important in this journal writing, however, is to create the rhetorical work that conforms to the norms and expectations of the discourse communities. For instance, Flowerdew's (2000) case study with a Chinese doctoral student writing for publication revealed his initial oversight of constructing rhetorical work in showing the news value that his method and subject matter is appropriate for readers of the submitting journal. It is after going through the process of publication, particularly after journal reviews' and in-house editor's suggestion, that the student writer started to understand how this rhetorical construction could play such a critical role in journal publication. In fact, even professional writers who ignore to create the rhetorical conventions would be seriously punished for not playing the hidden rhetorical rules in this publication game. Such are the cases in Birkenkotter and Huckin's (1995) and Myers's (1990) studies. These researcher-writers initially did not follow the rhetorical convention to "create the gap" within the previous studies, and thus their submissions were rejected. It was not until they conformed to the rhetorical expectations from the discourse community to create the rhetorical winsomeness in the literature review did their studies finally get into print.

To sum up, the reviewing studies have indicated that the rhetorical construction is integral to the success of journal publication. The deployment of various kinds of rhetorical work and strategies appears to be largely dependent on the writers' awareness of the intended readers and understanding of the rhetorical conventions of the discourse community. In other words, researcher-writers need to construct the rhetorical work that should be aimed at catering to readers' reactions towards their claims and statements; writers should also conform to the schemata expected from the discourse community. However, partly due to L2 writers' insufficient linguistic command and limited awareness of various nuanced aspects of Anglophone writers'

practice (e.g. metadiscourse, hedges, tense, etc.), L2 writers' may be more likely to have difficulties with such rhetorical construction and could have less facility in using various rhetorical strategies. This might be more noticeable in less skilled writers, particularly for those novice writers such as L2 doctoral students, who have limited experiences in writing this advanced genre and confined understanding of how the publication game works. Without acute awareness of how the rhetorical work is constructed, L2 novice writers' submitting papers may not achieve the rhetorical intentions that the journal gatekeepers expect, so they stand higher chances of being rejected from the international discourse communities.

In order to help these novice writers to overcome various difficulties in writing RA Introductions, it seems pivotal to understand what coping and rhetorical strategies they can use or learn to use so as to meet the demands from the international discourse communities. Despite the fact that Introduction is perceived to be the most difficult section, insufficient attention has been paid to the correlation between strategies and the distinctive textual features and rhetorical functions of Introduction. The present study thus intends to fill up such gaps by specifically tapping into L2 doctoral students' difficulties and their writing strategies during their process of composing Introduction.

CHAPTER THREE

METHOD

The present study seeks to understand two L2 postgraduate students' writing process of RA Introduction in an EFL context bidding for international publication, specifically concerning their difficulties or disadvantages in writing this particular section and the writing strategies they employ to facilitate their writing. Therefore, a naturalistic approach of case study was taken to reflect the distinct sociopolitical context of this scholarly publication game as well as the convoluted nature of composing this demanding and sophisticated part genre, thus providing an in-depth account for such complexities.

The major data collection methods consist of three types: questionnaire survey of the student participants, interviews with the participants and their supervisors, and genre analysis of participants' major drafts of Introduction and their complete RAs. Correspondences with the journal editors and reviewers, if any, were also collected. It is hoped that through such multiple sources of data collection, a more comprehensive picture of the student participants' perceptions, difficulties, and strategies during the complicated writing process of Introduction can be presented.

Participants

Two L2 postgraduate students from two different disciplines were recruited by means of convenience sampling in a major research-oriented university in northern Taiwan. These two students assented to participate in the study and signed a consent form (see Appendix A). Numerous genre analyses on RA Introduction have pointed out that disparate writing conventions between the soft fields and hard fields exist at both macro and micro levels (e.g. Anthony, 1996; Hsieh et al., 2006; Hyland, 2000;

Swales, 1990). It is also noted that faculty members in postgraduate programs in hard fields and soft fields value different academic writing skills (Casanave & Hubbard, 1992). However, prior research tended to focus on the scholarly literacy practices of L2 researchers in hard fields, which may not be reflective of the distinctive writing practices and requirements in soft fields. Motivated by this concern, student participants from both hard and soft disciplines were recruited – one postgraduate, Chris, was drawn from the field of hard science (Computer Science) while the other one, Anne, was recruited from the field of social sciences (Applied Linguistics). More specific demographic information is listed in Table 3.1.

Table 3.1 *Participants' Demographic Information*

Participant	Discipline	Gender	Age	Year of Ph. D. study
Chris	Computer Science	Male	31	7
Anne	Applied Linguistics	Female	27	1

Note: All the student participants' names listed here are pseudonyms.

In terms of English proficiency, Chris has never taken any language proficiency test; only Anne has language certificate from TOEFL iBT, scoring 103 (the total is 120), which indicates her high intermediate level in English. This certification was actually a graduation requirement of her master's program, which stipulates that all graduates should pass the score of TOEFL iBT 100. The self-perceived English proficiency in terms of the four skills, as shown in the questionnaire collected from both participants, reveals that both participants rated their English proficiency to be average, or above average (Table 3.2 and Table 3.3). Specifically, they both perceived their academic English literacy to be above average. Chris perceived his academic reading proficiency to be a bit higher than his academic writing proficiency. Anne, however, rated her academic reading and writing proficiency to be fair.

Table 3.2 *Self-evaluated Language Proficiency in General English*

Participant	General Listening	General speaking	General Reading	General writing
Anne	4	3	4	3
Chris	4	2	4	3

Note: On the Lickert scale of 1 to 5, 1 means “very bad” whilst 5 means “very good.”

Table 3.3 *Self-evaluated Academic Literacy*

Participant	Academic reading	Academic writing
Anne	4	4
Chris	4	3

While both participants seem to have confidence in their academic literacy, it was found that because Anne’s background is Applied Linguistics, she had more chances of writing academic English. In fact, she had to turn in all her academic reports in English during both her master’s program and doctoral program. Her master’s thesis was written in English as well. Chris, by contrast, seldom needed to turn in English reports, and his master’s thesis was written in Chinese. Moreover, since Anne’s background is in Applied Linguistics, she received formal instruction on how to write English academically and some theories related to writing. On the tertiary level, Anne’s formal instruction about academic writing includes one course in the bachelor’s program (*TOEFL Writing*), two courses in the graduate institute (*Second Language Writing*, *Thesis Writing*), and one course currently in the doctoral program (*Second Language Writing*). Contrary to Anne’s early exposure, Chris did not take any academic writing courses until his doctoral program. After taking the first course of *Academic Writing for Science and Technology*, he found the course was beneficial; therefore, he continued taking a few related writing courses, inclusive of advanced-level *Academic Writing for Science and Technology* and *Thesis Writing*.

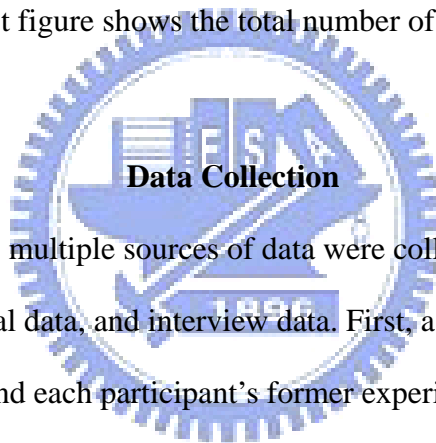
Finally, as Table 3.4 shows, both participants did not have any experiences of

writing English-medium journal articles until their doctoral programs. The present study intends to document these doctoral students' writing practices of their first journal article scrambling for international publication.

Table 3.4 *Participants' English-medium Scholarly Publication Experiences*

Participant	Journal article published/ submitted* in master's program	Conference paper published in master's program	Journal article published/ submitted in doctoral program	Conference papers published in doctoral program
Anne	0/0	2	0/1	0
Chris	0/0	1	1/4	3

Note : * indicates the total number of papers that student participants submitted to journals; the first figure shows the total number of papers that finally got into print.



As indicated earlier, multiple sources of data were collected, including questionnaire data, textual data, and interview data. First, a questionnaire was administered to understand each participant's former experiences of academic writing and their problems in writing RAs. Then, semi-structured interviews were conducted with these student participants to understand their various practices in writing their first journal article, especially understanding their perceived difficulties and strategies in writing Introduction. Each interview generally lasted from one hour to two hours. For each participant, more than one interview was needed since in-depth understanding of the complete composing and revising process of RA Introduction was aimed. After these interviews, genre analysis of the participants' Introduction drafts was conducted, identifying the possible problematic areas and strategies. Following genre analysis, discourse-based interviews with the student participants were arranged to understand their motivation behind various textual changes and to

further clarify how they formed and used their strategies. Finally, interviews with the participants' advisors were also conducted to provide references of the student participant's writing performance. In the following, each type of data is described.

Questionnaire

A four-page questionnaire comprising mostly close-ended questions (see Appendix C) was first administered to all the student participants. It is used to gather each participant's personal background information, former English learning information, previous English academic writing experiences, and self-report of the problematic areas in writing RAs in English. The information garnered from this questionnaire, particularly those relating to difficulty areas in writing RAs, can serve as the basis for the researcher to guide later interviews or to interpret the textual data.

Textual data

The textual data, including the participants' major drafts of Introduction and complete submitted manuscripts, were carefully examined to pinpoint their problematic areas in terms of both rhetorical structures and lexico-grammatical aspects. Major textual changes in each major draft were also identified. Motivation of such textual changes was further clarified in the discourse-based interviews with the participants.

In addition, advisors' written comments and correspondences with journal editors and reviewers, if available, were also collected. These critical comments provided an alternative source of student participants' writing problems that might not be self-perceived. Also, student participants might employ an array of strategies so as to meet the demands made by the expert readers of their disciplines. Such incidences of strategy use, particularly those of rhetorical strategies, might be reflective in the

participants' modifications in their latter versions of Introduction.

Interviews

In the present study, in-depth interviews with the student participants and their advisors were another major data collection method. Each student participant received two types of interviews, first semi-structured interviews, and then, discourse-based interviews. The purpose of the semi-structured interviews is to understand each participant's writing process of Introduction, specifically focusing on their writing process, writing difficulties, and coping/ rhetorical strategies in composing this rhetorically complicated and demanding sub-section. An interview guide consisting of four sections was designed (see Appendix D). The first section dealt with more general issues such as perceptions of academic writing and international publication, description of general RA writing process, and understanding of disciplinary practice in writing Introduction. The second section asked about their process of writing Introduction, demarcated into three stages: before writing, during writing, and after writing. The third concerned about their specific difficulties in writing Introduction at different levels, ranging from lexico-grammatical aspects to rhetorical functions, and then to discursal aspects. The last section of the semi-structured interviews tapped into the student participants' writing strategies, inclusive of two types: coping strategies to overcome various obstacles during their writing process, and rhetorical strategies to make their argumentation more effective so as to be accepted by their readers. During the interviews, the researcher tried to give participants "thinking space" to recall their writing experiences. Additionally, while being interviewed for the specific writing difficulties and strategies, participants first reread their manuscript, which served as a form of "stimulated recall" to help them reflect on their composing process. With manuscripts at hand, they could also refer to specific parts of text to

provide examples and account for their description whenever they deemed appropriate.

After the textual changes among various drafts were analyzed and - the writing problems were identified based on genre analysis, discourse-based interviews were conducted with the student participants (Flowerdew & Li, 2007; Hyland, 2000; Riazi, 1997). The interviews were intended for tracing the tacit knowledge that writers applied to the composing process. Put differently, the aim of this approach was to understand “why writers write the way they do” (Flowerdew & Li, 2007, p. 447), in our case, to elicit additional explanations for the difficulties the participants had and how they managed to overcome them in the process of planning, drafting, and revising Introductions. Different from the semi-structured interview, the researcher did not use preconceived interview questions in this type of interview. Rather, interview questions with each participant would be somewhat different considering that the drafts and textual data from each participant were disparate. Questions were raised, such as “what motivated such textual changes from one draft in relation to another,” “did you try to get any help in reaction to journal gatekeepers’ comments,” “did you use any strategies to revise this section.”

Lastly, as a number of studies have indicated that postgraduate students’ perceived problematic areas are sometimes different from what their advisors have observed (e.g. Bitchener & Basturkmen, 2006), it thus seems necessary to gain perspectives from the participants’ advisors concerning their advisees’ actual writing performance. More importantly, information gained from their advisors can also offer expert informant’s perspective of the possible distinctive disciplinary practice of writing up this section. Accordingly, these two student participants’ advisors were invited to be in a semi-structured interview at the end of data collection (see Appendix E). Both of these student participants’ advisors acceded to be the informants by

signing a consent form (see Appendix B). Both advisors are at the status of full professors and are experienced in supervising postgraduate students. Anne's advisor, Professor Liu (pseudonym), has supervised students for more than five years. Chris' advisor, Professor Shen (pseudonym), has even supervised postgraduate students for around three decades. Further, it should be pointed out that these two faculty have numerous articles published internationally, establishing an enviable professional reputation in their respective specialized fields. It is hoped that with their prodigious experiences in supervising students and journal publication, their comments can reveal valuable disciplinary practice in journal article writing.

All the interviews with the student participants and their advisors lasted from one hour to two hours and were audio-taped with the interviewees' consent. In total, four interviews were conducted with Chris (total: 9 hour 15 minute), while two with his advisor, Professor Shen (total: 3 hour 31 minute). As for Anne, she received five interviews (total: 5 hour 45 minute); the last two interviews were conducted via Skype to solve the distance problems. Two interviews were also conducted with her advisor, Professor Liu (total: 2 hour 10 minute). In order to fully enable the participants to express their opinions, interview instruction and questions were delivered in the participants' mother tongue, in this case, Mandarin. On the other hand, all the interviewees were allowed to use whatever language they felt comfortable to respond, but they tended to respond the interview questions in Mandarin.

Data Analysis

In treating the survey questionnaire, given that information gathered from the questionnaire is mostly close-ended and quantitative, data were grouped into preconceived four categories, that is, demographic information, former English learning experiences, and difficulties in writing RAs. These quantitative data were

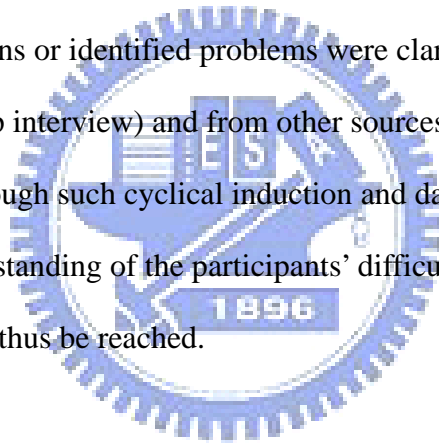
used to triangulate the qualitative data collected later.

As for the textual data, a genre-based text analysis of the participants' manuscripts on both macro- and micro-level of Introduction was undertaken, providing additional information to know their potential writing problems. For the rhetorical structure of Introduction, the combined model of Swales' two CARS models (1990, 2004) was adopted (see Appendix F) to identify each rhetorical move and step in the students' written works. In detail, by identifying each rhetorical move and step from the manuscripts, the researcher could assess the participants' generic knowledge of how the rhetorical purposes of Introduction were realized through various linguistic devices and whether a particular move or step was missing or ill-formed. Furthermore, analyses of various micro-level textual features that have been reported by previous studies to be problematic to L2 research writers were also conducted, such as tense, article, and modal verbs. (Burrough-Boenisch, 2003; Kourilova, 1998). Moreover, considering that citation and metadiscourse are two of the important strategies which writers can employ to influence readers' reactions to texts (Hyland, 2005) and of which L2 novice writers have poor command (Dong, 1996; Swales, 1990), analyses of citations and metadiscourse were also performed. Consequently, the purpose of this genre analysis is two-fold. On the one hand, such macro and micro level analyses could identify the possible problematic areas that affect students' writing. On the other hand, comparison of the participants' earlier versions of Introduction with the later ones could reveal not only their revision process but also their use of specific writing strategies to overcome various linguistic and rhetorical problems.

To enhance inter-rater reliability of the genre analysis, a teacher from the discipline of TESOL, who has the expertise and experience of doing genre analysis on RAs, was invited to conduct the analysis separately and then compared the results

with those from the researcher. Differences in analysis between the researcher and the second rater were discussed to reach a consensus.

Lastly, the interview data were recorded. The most pertinent sections of the interview were then transcribed for analysis. Transcripts pertinent to the research questions were first organized into various themes and then emailed to the interviewees for confirmation. Translation of the excerpts was further checked by another rater, the same as the one in the previous genre analysis. The analysis of the transcribed interview data followed analytic induction (Leki, 1995; Flowerdew & Li, 2007), which means that the researcher carefully read over the transcripts to identify notable or recurring themes, which leads to creation of interpretations, and then the researcher's interpretations or identified problems were clarified in further data collection (e.g. follow-up interview) and from other sources of data (e.g. textual data, questionnaire data). Through such cyclical induction and data triangulation, it is hoped that a fuller understanding of the participants' difficulties and strategies in writing Introduction can thus be reached.



CHAPTER FOUR

RESULTS

Adopting the qualitative approach of case studies, the present study aims to shed light on the complicated writing process that novice scholars go through in writing the Introduction section of their first journal article. Two cases of doctoral students from two disciplines are presented, with the research foci placed on their process, difficulties, and strategies in writing the Introduction section. The case of a doctoral student from the hard science is presented first, followed by the second case of a doctoral student from the social science. Each case consists of three major sections: background of the case, the student participant's perceived difficulty of writing each RA rhetorical section, and the student participant's process of writing Introduction. Since the study intends to reflect these novice scholars' process of writing Introduction as well as the distinct context of international publication, the presentation of the results is demarcated into a few major sequential stages, such as drafting by the student participants, revising by their advisors, and/or negotiating with the journal referees. Within each stage, specific difficulties and strategies of writing Introduction are presented.

Case 1

Background of Case 1

Chris' research was under the realm of Artificial Intelligence (AI), which is a major subfield in Computer Science. His research for international publication was concerned about location estimation in robotic vehicles. Research on this topic, according to Chris, had been very fruitful in using traditional, or the so-called standard camera, to assist autonomous vehicles to navigate in a room. The purpose of his study was to adopt a new type of camera called omni-directional camera to assist a

robotic vehicle to move around in a room without hindrance from other moving objects. Simply put, his research focused on the application of a new type of camera in the context of robotic vehicle navigation.

Since April 2004, Chris had spent a year writing his paper, undergoing several drafting before turning it in to his advisor. The advisor’s revised version was then submitted to *IEEE Transactions on SMC*, the top journal in the field of Artificial Intelligence; the first submission was rejected unfortunately. Based on the reviewers’ and journal editor’s comments, Chris and his advisor revised the manuscript and then submitted it to *Mecha Tronics*, an SCI-index journal ranking one of the second best journals in the field. However, the editor could not find suitable referees to review the submitted paper and suggested Chris to submit it to other journals. Chris then submitted the paper to *Journal of Robotics and Autonomous Systems (JRAS)*, another key SCI-Index journal in his field. The paper, after a second revision, was finally published in December 2008. Therefore, as indicated in Table 4.1, the manuscript underwent a prolonged and complicated process of reviews and revisions.

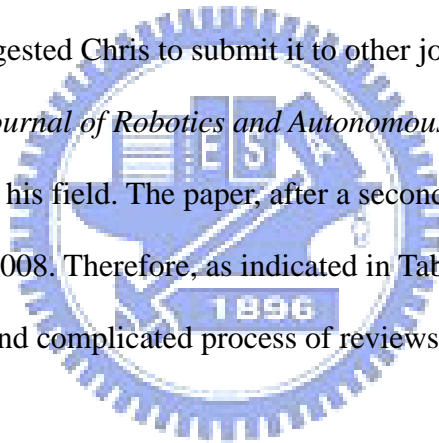


Table 4.1 *A Timeline of Chris’ Scholarly Publication Process*

Apr. 2004 – Mar. 2005	Writing the early drafts
Mar. 2005	Revised by Professor Shen
May 2005	Submission to SMCB
Jul. 2005	Rejection by SMCB with reviews
Aug. 2005	Submission to Mecha Tronics (revised version)
Nov. 2005	Editor’s suggestion of submission to other journals
June. 2006	The first submission to JARS
Sep. 2007	A request of revision
Feb. 2008	The second submission to JARS
Aug. 2008	Acceptance with a request of minor revision
Sep. 2008	The third submission to JARS
Oct. 2008	Publication in JARS

Perceptions of Writing Major Rhetorical Sections

Table 4.2 demonstrates Chris' perceived difficulty levels of writing each rhetorical section of the RA. Generally speaking, it was found that writing Introduction and Method are more challenging to Chris whilst it is comparatively easier to write Results and Discussion/ Conclusion.

Table 4.2 *Chris' Perceived Difficulty Level of Each Rhetorical Section*

	Abstract	Introduction	Method	Results	Discussion/ Conclusion
Difficulty level	3	5	4	2	2

Note: On the Lickert scale of 1 to 5, 1 means “not difficult at all” whereas 5 means “extremely difficult.”

As a matter of fact, he felt that writing Introduction was the most difficult mainly because of the significant challenges of effectively presenting his study's contributions. As he explicated, while it was difficult to indicate the values and merits behind the technical content (e.g. mathematical formulas, specific techniques), showing readers these merits within a very limited space further exacerbated the difficulties of writing this section. Furthermore, he felt that he usually could not present the contribution claims in a clear and impressive manner, which seriously inhibited his readers from understanding and from appreciating the values of the study. Specific problems of and reasons for composing this section would be described and discussed in greater detail later.

The Method section was ranked as the second difficult section to write. He explained that the language required for writing this section was actually not very difficult in his discipline, and he could even use mathematical formulae as well as charts and figures to support his English writing. Moreover, as opposed to writing Introduction which requires writers to present information in more abstract terms

within a rather limited space, he could expound his technical content and procedures in Method without constraints. Nonetheless, the difficulty of writing Method lay in its organization – organizing and presenting technical content in a reader-friendly and easily comprehensible manner – since, in Chris’ explication, readers were very “forgetful” in reading long technical content. This is especially true for writing a “fat Method” (i.e. his metaphor of describing the Method section as extremely lengthy). He noted that his advisor helped him a lot in “creating links” among these lengthy descriptions so that readers could easily grasp the presented technical content.

Contrastively, writing Results and Conclusion was less of trouble to him. In terms of writing experimental results, Chris noted that researcher-writers in the field would usually claim that they have produced satisfying and promising results, but since “numbers talk,” one can easily know whether the results of the design are actually that satisfying based on reading the numerical data. Reporting these factual data was perceived to be simple. Also, Conclusion was easy to write mainly because he felt that by the time of writing this section almost everything that needed explaining or reporting had been put into words in the preceding sections. He thus only needed to restate and summarize what he had previously written, in particular the Introduction and Results sections.

In sum, the perceived difficulty of writing the rhetorical sections of RAs and the major contributing factors to these difficulties seem to be different. It is noteworthy that for the two most troublesome sections, that is, Introduction and Method, the difficulty of writing the former lies largely in concisely and forcefully presenting contribution claims of his study whereas the latter lies in organizing and presenting lengthy technical content of his study.

Process of Writing Introduction

In the following, Chris' process of writing Introduction is presented in terms of three major stages: his drafting process of Introduction, advisor's revision on Introduction before journal submission, and the revision of his Introduction based on journal referees' comments. At each stage, specific difficulties and strategies of writing this section are presented.

Drafting process

Difficulties in early drafting process

After discussing with his advisor about the possible topic worth researching, Chris devoted considerable time in the lab, coming out with design and trying to make his design and equipment work. With some preliminary results, he started to write his first journal article. In fact, Chris spent about a whole year writing his first journal paper aiming at international publication. He first borrowed a paper from his lab mate, which had been published in a first-tier international journal in a related field. He modeled on the article and tried to follow the form and the information structure of the RA, thinking that he knew everything about what to write. From his former experience in reading journal articles and now with a "perfect" model at hand, he knew that the Introduction should begin with a short paragraph of problem-definition, followed by a review of related works, his proposed method, merits of his method, and finally end with a short paragraph indicating the structure of the remaining RA. Confident and promising, he embarked on his first journal paper writing.

However, once he got down to actual writing of Introduction, he found that there were so many uncertainties and he kept rewriting almost everything that he had written. As he painfully recollected, he spent considerable time generating sentences, deleting sentences, adding new references, and alternating sequences, yet such

recursive and extensive revisions were of little avail. He said that the reason why he was being so inefficient was mainly because he was juggling writing Introduction with doing experiment and forming mathematical formulae all at the same time. Uncertain about his method and many mathematical formulae, he did not know what the “selling points” of his study were. He therefore was not sure specifically what type of studies he should review and in how detailed a manner he should write about each study. Even more troublesome was that he did not know how to make appropriate claims when comparing his proposed method with others’ in the literature review.

Ascertaining the method before writing Introduction

After this painful experience, one important lesson he learned was that only when the design of the technique was complete should he start to write a research article. “A little bit of preparation can actually save a lot of time in writing,” he said. He thought that the first step of writing RAs in this field was to first make sure all the mathematical formulae and the procedures of the adopted techniques are feasible. These mathematical formulae and technical procedures, Chris believed, “sets the tone” of the overall RA; otherwise, he would need to change his Introduction constantly. Put differently, he learned from the experience of this first stage of RA writing that confirming and outlining the Method section probably should go before the actual writing of Introduction. As soon as all the mathematical formulae and programming language were certain, he could get the sense of direction and become more confident in the merits of his study, thus more capable of writing Introduction.

Difficulties in summarizing and paraphrasing previous studies (Move 1, Step 3)

One major difficulty in reviewing literature came from his lack of ability in

summarizing the method of a study in a concise and yet precise manner. Prof. Shen mentioned that his students are often not competent enough to summarize. As shown in the following excerpt from Prof. Shen, postgraduate students often can not grasp the main points of a paper; also, they are not able to concisely and clearly summarize the major technical content of a study in two or three self-explanatory sentences.

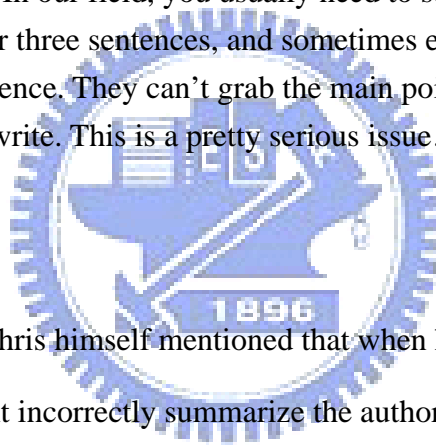
Interviewer: Are there any problems that your students have in reviewing literature?

Prof. Shen: They can't summarize.

Interviewer: They can't summarize? Too many papers to cite?

Prof. Shen: No, a single paper. (You) have to summarize in a very concise manner. In our field, you usually need to summarize the whole paper in two or three sentences, and sometimes even have to do so in only one sentence. They can't grab the main points, and they don't know how to write. This is a pretty serious issue...

(March 19, 2009)



At the same time, Chris himself mentioned that when he reviewed a study, he often feared that he might incorrectly summarize the author's ideas. This seems to bother him a lot when he wrote the part of literature review in Introduction.

Summarizing others' methods based on published texts (Move 1, Step 3)

A few coping strategies, however, have been developed by Chris to tackle this summarizing problem. One of the strategies is to use the author's own words from the first sentence of the Conclusion section in the cited paper and then to make some modifications. For example,

- Chris: A trump card is like this – copy the cited author’s own words, like “Tsai showed...” Then copy a bit of his sentence.
- Interviewer: Would you do some modifications?
- Chris: First, change the tense; second, change the sentence patterns. To do it (summarization) right is actually very difficult, you have to read the whole article to know what to write. An easy way is to delete some words and copy some words.

(March 16, 2009)

Very often the rhetorical function of the first sentence of the Conclusion is to summarize the whole study; it is usually written in a general yet concise manner, reporting the most important techniques utilized in the study. Therefore, the application of “copy the first sentence from the Conclusion section” becomes a useful strategy for him to summarize or paraphrase others’ study or method.

A similar strategy is to consult what other RA authors write about a particular paper. With the advent of academic search engines, Chris noted that “You can simply key/type in the title of the paper in the search engine (e.g. Google Scholar or Cite Seer), and then see how that paper is usually cited by others.” Although employing these two strategies may run the risk of committing “textual plagiarism” (Flowerdew & Li, 2007), they seem to help when he wrote his paper. In fact, the part of “Reviewing items of previous research” (Move 1, Step 3) (Swales, 1990) did not undergo significant revisions after he finished his first draft. The content of the review basically remained intact in the process of several submissions and revisions.

The success of using these two coping strategies may be related to the fact that the type of research he was doing is more “application-oriented” (Li, 2006). More specifically, his research focused on a wide variety of applications of techniques in vehicle location estimation. Summarizing the methods from other studies was the most important thing. Moreover, as Chris said, research in his lab usually involved the

incorporation of various types of new techniques or equipment, rather than being based on a particular study. Therefore, a brief summary of each related method would suffice. If he based his study on a method from a particular study, he mentioned, he would need to read the cited paper very thoroughly, summarize it in more details, and even have to make very critical evaluations of that study in his own words.

Using integral citations to arouse readers' interest (Move 1, Step 3)

Besides the coping strategies in writing the literature review, Chris also developed a few rhetorical strategies in writing literature review, which showed his special consideration of his readers, particularly the journal referees.

Knowing that journal editors may sometimes choose reviewers from the reference list, he made some citations deliberately. Similar to Okamura's (2006) more experienced Japanese scientists who chose to cite possible readers' works to entice them to read, Chris also did so in his literature review to draw his readers' attention, though his target was more specifically the possible reviewers. Not only did he cite these possible critical readers' works on purpose but he also cited the researchers' name (e.g. Menegatti [4] simplified...). In other words, using integral citations (or author-prominent citations) was one of his strategies to attract the possible reviewers' attention and to show respect for them. As he explicated, "this is human mentality. If people are set like everyone, then they don't feel like they are very special, but if you set them apart from others, then they will feel 'wow, you picked me among those people.'"

Interestingly, Hyland (1998) notes that writers in the hard science are more inclined to use non-integral citations and that through this they create the "impersonality" of scientific discourse; Chris, by contrast, deliberately chose to use integral citations to exert "the effect of affections" on his potential critical readers.

Being cautious about negative evaluations (Move 2, Step 1A)

While the previous reviewing practice intends to evoke interests from his reviewers, the following practice is to avoid engendering any negative emotions in the readers. In order not to enrage these possible reviewers, he avoided criticizing their works bluntly. Although Professor Shen mentioned that he often needs to remind his postgraduate students to soften their tone and to choose carefully appropriate words when pointing out the gaps or defects of others' studies. Chris, however, seemed to be very aware of this. He learned the concept that he needs to hedge the claims from the course of *Academic Writing for Science and Technology* which he took in school. He thought that the best approach was to accentuate the importance or the merits of his own study rather than criticize other's work when reviewing literature.

Therefore, in contrast to Swales' (1990, 2004) view that gap-indication (Move 2, Step 1A) can create the rhetorical forcefulness needed to justify the present study, Chris' concern with the reactions of the journal reviewers shaped his presentation of this step, putting more emphasis on the contributions of his study rather than pointing out how previous studies "suffer from some limitations" (Swales, 1990, p. 154).

That being said, examination of his version of the literature review shows he also used negative evaluations, such as "However, it might be difficult to find natural landmark...." "However, it might take square times of reference memory storage...." When being asked how he generated these evaluations, he said that if he needed to do more critical evaluation of a study, unless the gap was very obvious, he would search that paper in the academic search engine to check what other RA writers had commented on that paper, so as not to go overboard in making negative evaluation. From this, it seems that, Chris, as a novice scholar in the field, may not feel comfortable to challenge the established disciplinary community members in

“creating a niche.” Checking the comments in published texts seems to provide him confidence in writing this more evaluation-oriented rhetorical move.

Difficulties in summarizing his method in Introduction (Move 3, Step 4)

According to Swales (2004), RA Introduction in some fields may provide a brief summary of the method adopted (Move 3, Step 4), which is especially common “in papers whose principal outcome can be deemed to reside in their methodological innovations” (p. 231). This is common in the field of Computer Science; thus, to Chris, showing his “technical content” is very important in the Introduction section. Despite his coping strategies, as mentioned earlier (p. 64), the problem of summarization continues to hunt him in reporting his own technical content in Introduction. It is no easy task for him to summarize his own technical design in a succinct and clear manner. He described this part as “writing a user guide of a computer,” assisting a layman to understand how to use the computer within a very short period of time. In the case of summarizing his own design in Introduction, the difficulty lies in how to assist a reader to understand his design in a very limited space. Knowing his own design very well and knowing his readers’ gap would be the keys to writing this part.

The more specific difficulty here, as he mentioned, was weighing what details he should provide about his method at this juncture so that he could attract the reader’s interest but did not reveal too much specifics which should belong to the Method section of the paper. The following excerpt depicts his conundrum and anxiety in summarizing his own technical design in Introduction.

When you write Introduction, you need to do a systematic summary of your technical content, writing down the most important points of your method, but

you can't write in a too detailed manner. If you give too many details, then you are writing the Method section. But you can't write it too vaguely, either. If you don't write your method clearly enough here, readers will lose their interest in reading on. How to keep his (the reader) interest within a limited space is the difficult part of writing Introduction.

(March 10, 2009)

Gupta (1995) indicates that L2 graduate students have difficulties in writing Introduction from general to specific, and that they oscillate between providing sometimes over-specific and yet sometimes too general description of the various reviewed studies in Introduction. To Chris, a similar problem happened to him in writing Introduction, but his difficulties of providing information at an appropriate level of generality is more specifically concerned with his own research design rather than literature review.

To summarize this subsection, Chris' early ineffective writing and revisions of Introduction seem to result from not knowing his own technical content and values of his own design. Later, in writing Introduction, he also encountered grave difficulties in precisely and succinctly summarizing the methods of previous studies. A few coping strategies have been developed, such as copying the first sentence from the Conclusion of the cited study, or use academic search engine to know how the paper was cited by other researchers. Besides the difficulties in summarizing designs of cited studies, he also had difficulties in summarizing his own technical design in terms of how detailed it should be. On the other hand, his concern for critical readers (that is, possible reviewers) led to a few rhetorical strategies in the use of citations when doing literature review.

Advisor's revision before journal submission

After a long struggle with recursive composing of Introduction, Chris finally

managed to turn in the first complete version of Introduction to his advisor.

Comparisons between Chris' first version and Professor Shen's revised version show the problematic areas in Chris' Introduction and the rhetorical strategies that his advisor employed in this revision. In the first place, Professor Shen helped Chris correct many grammatical mistakes as well as revise a lot of sentences so as to make them more concise and comprehensible to readers. Although Prof. Shen mentioned that Chris' English proficiency is above average among his advisees, these local errors span the whole Introduction.

Adding a clear illustration of the model (Move 3, Step 4)

Also, readability level was greatly improved by adding a clear picture of their design in the first paragraph right after the special equipment used in the study was mentioned. According to Chris, providing a clear and large figure of his design was a very useful and effective strategy to help readers quickly understand the design. Perhaps even more interesting is that Chris also mentioned that the addition of a quality figure is a highly valued practice by his advisor; this is because a good figure can pique reviewers' interests in reading the paper. As Chris explained, "When reviewers received your manuscript, as human beings, they also mount resistance to read a heavy manuscript." A clear picture, especially at the outset of Introduction, can lure them into reading. Further, the larger the size and the higher the resolution of the picture, the more likely that journal reviewers will have good impression on your submitted work, thinking that your paper is of high quality as well. In his own words, "while people often judge a book by its cover, reviewers would somehow unintentionally judge your work by its layout and particularly how clear your picture is."

To sum up, the addition of a quality picture of the design means more than just

assist readers' overall comprehension. This strategy is also used to arouse readers' interests in reading the manuscript and charm them into thinking that the design is as good as they can see.

Adding more specific information in positive justification and principal findings

Furthermore, in the first paragraph of the revised version, arguments were greatly bolstered by adding “providing positive justification” (Move 2, Step 2) (Swales, 2004) of the proposed solution to a problem, as indicated by the boldface in Table 4.3. Specific merits, instead of the vaguely “unique advantages” as underlined in Chris' version, were spelled out for the readers.

Table 4.3 *Addition of Specific “Positive Justification” of the Proposed Method*

Chris' version	... To address this problem, an omni-directional camera for the location estimation has unique advantages used in the navigation systems.
Advisor's revised version	... A feasible solution to this problem is to use an omni-directional camera, which has the unique advantage of providing wide-angle views . In this study, we propose further to set up the omni-directional camera to view upward the ceiling of the indoor environment, on which are attached circular shapes as landmarks for the purpose of vehicle navigation guidance. In this way, fewer objects around the vehicle will appear in the field of view of the upward-looking camera, thus reducing the guidance error coming from the influence of the surroundings of the vehicle, like landmark occlusion and noise creation...

In addition to the changes made by Professor Shen in the first paragraph, other notable changes, however, were made in the last part of Introduction. More significant additions were Swales' (2004) rhetorical Move 3, particularly “announcing principal outcomes” (Move 3, Step 5) and “stating the values of the present research” (Move 3, Step 3). Again, similar to the additions of “positive justification,” the claims about

principal findings and contributions were made in a more specific and forceful manner. For example, as shown in Table 4.4, an emphasis structure was used to emphasize *the first time*, thus pinpointing the contribution. In terms of showing principal findings (marked with italics by the researcher), *a constant, stable, and precise relative location can be used for navigation* is changed to *the perspective circular landmark shape, which is complicated in geometry with no known shape descriptor, may be well approximated analytically by an ellipse...*; notice that *no known shape* can now be *approximated analytically by an ellipse*, thus exuding rhetorical forcefulness by highlighting how the technique was specifically improved in the study.

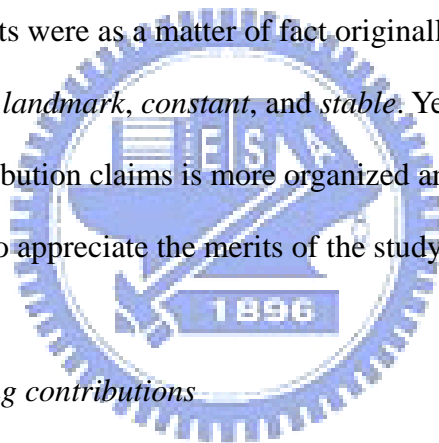
Table 4.4 Addition of Specific Information in “Principal Findings” and “Contributions”

Chris’ version	<p>A contribution of this study is that the circular landmark information is utilized for the first time in omni-directional vision. By the estimation of this landmark on the ceiling, a constant, stable, and precise relative location can be used for navigation. This application is important for intelligence household robot such as a cleaning robot or robot pet, which must work with human in a close distance.</p>
Advisor’s revised version	<p>This is <i>the first time</i> for circular landmark information to be utilized in omni-directional vision. Furthermore, <i>it is found in this study that the perspective circular landmark shape, which is <u>complicated in geometry with no known shape descriptor</u>, may be <u>well approximated analytically by an ellipse</u></i> whose parameters can then be utilized for landmark location estimation. In this way, stable and precise relative vehicle location can be achieved for navigation. This application is important for intelligence robots such as cleaning robots, pet robots, or tour guide robots, which must work in humans or objects at close distances.</p> <p>In summary, merits of the proposed method include:</p> <p>(1) Use of circular landmark information in omni-directional vision.</p> <p>(2) Use of ceiling images to provide suitable constant scenes for</p>

	<p>image processing.</p> <p>(3) Guarantee of providing stable location information by use of upward-looking cameras.</p> <p>(4) Straightforwardness to detect the landmark from the acquired image.</p> <p>(5) Provision of analytic location estimation formulas for fast computation to meet real-time applications.</p>
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Making “itemized” presentation of the contribution claims (Move 3, Step 6)

The contribution claims in Chris’ draft were expanded from one sentence into five “itemized” (as in his advisor’s term) merits (in boldface in Table 4.4) in the advisor’s revised version. Looking closely at these two versions, we can find that three out of the five merits were as a matter of fact originally indicated by Chris himself, such as *circular landmark*, *constant*, and *stable*. Yet, the “itemized” presentation of the contribution claims is more organized and provides more information for readers to appreciate the merits of the study.



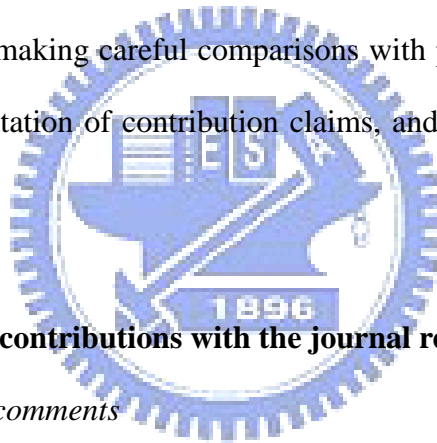
Difficulties in proclaiming contributions

Chris mentioned first in the questionnaire and several times later in the interviews that he did not know how to present his contribution in an impressive manner. From his publication experience, he noted that reviewers often questioned his originality and contributions even though he thought he had pointed them out clearly in Introduction.

Professor Shen explained that postgraduate students often fail to point out their contributions owing to the following three reasons. Firstly, lack of a comprehensive survey of previous works may hinder these postgraduate students from understanding the merits of their studies through comparison with others’ works. That is, being unfamiliar with what has been done and what has not been done on a research topic,

they may lose sight of the true values of their own designs. Another reason stems from students' incompetency to clearly delineate the advantages of their studies such as generating a listing of the concrete contributions. This actually requires deep thinking and considerable time. Lastly, even if some students manage to perceive the values of their studies, their poor academic English writing ability may inhibit them from successfully showing contributions to the readers in an impressive way. Concise writing, as Professor Shen stressed, is the key to clear presentation of the contribution claims.

To conclude, writing contributions seems to pose a great difficulty to many novice scholars such as Chris when writing Introduction, which demands a few critical skills, including making careful comparisons with previous works, generating clear and concise presentation of contribution claims, and highlighting the values of one's own study.



Negotiating knowledge contributions with the journal referees

Dealing with reviewers' comments

Unfortunately, the submission to a first-class journal, SMCB, was rejected with reviewers' comments, even though a few additions and clarifications had been made by Chris' advisor. The following excerpt is taken from the letter from the associate editor of SMCB, summarizing the critical points made by the three reviewers.

Associate Editor comments for Authors:

- 1) Location estimation of an indoor mobile robot is *not a new problem*. It is *not difficult* to do this via objects in ceilings.
- 2) How does the depth variation of the mobile robot movements with respect to the landmark affect the estimation? The discussion of the paper is not so complete.
- 3) *Why should a circular object be used* in the location estimation?

(Review letter, November 15, 2005)

The comments seem to pinpoint the need for some clarification and justification, particularly “the news value” of the study. Despite this submission failure, Chris thought that the reviewers’ comments were beneficial, showing the reviewers’ concerns from a critical reader’s perspective. Chris explained, except for the second comment, which was related to the clarification/discussion of a specific mathematical problem in Method, the other two comments were, in fact, directly related to the Introduction section. Specifically, the first comment noted that the topic is “not a new problem” and that the method is “not difficult,” suggesting that the reviewers thought the study lacked academic originality and contributions worthy of publication. The third comment was concerned about why the circular object landmarks, rather than the other geometry shapes, were adopted in the design, a point that Chris thought was their distinctive advantage but failed to bring about the expected affirmation.

After discussing with his advisor, Chris found that two major issues needed to be solved: (1) though location-estimation of an indoor robot is a well-researched topic, the use of the new type of camera (omni-directional camera) is not; (2) the use of circular objects have several advantages over other geometrical shapes which cannot produce comparable results in location estimation. Simply put, it seems that the two issues can be boiled down to a single issue – providing justifications for the study’s design: the use of a new type of equipment (omni-directional camera instead of the standard camera) and the geometrical shape of the landmarks (the use of a circular object instead of other shapes).

Foregrounding contribution claims

Having these two goals in mind, Professor Shen and Chris revised the submission version, making great changes in the arrangement of information related

to contribution claims. Comparisons between the first submission version and the final publication version show sophisticated rhetorical maneuvers in the Introduction section. Notably, contribution claims (Move 3, Step 6) and principal findings (Move 3, Step 5), which originally appeared in a much later part in Introduction, were fronted to the very beginning of Introduction. More specifically, the itemized contribution claims and principal findings were moved to the first two paragraphs. The rest of his Introduction remained largely unchanged.

The arrangement of informational structure in the revised version is very different from Swales' (1990, 2004) move sequence in that a few steps of Move 3 now precede Move 1 and Move 2. Yet, for the rhetorical effect of emphasizing contribution, the fronting strategy was employed, as suggested by Professor Shen. It was expected that fronting could highlight both the major findings and contributions of the study and thus show clearly to these critical reviewers the values of the study. However, Chris mentioned that foregrounding the study's contributions was difficult given that no specifics about the study were presented at this early part of Introduction. Yet, as Chris lamented, "since it is hard to sell, it thus requires a salesperson to sell in a specific way," demonstrating his awareness of using such a deliberate rhetorical deployment.

Justifying and providing sufficient background information for new terms

Since reviewers questioned the use of the omni-directional camera and circular shapes in his design, Chris decided to provide further justification. As shown in Table 4.5 overleaf, while the first paragraph of the submitted version provides the overall design and the adopted method and equipment, the first paragraph in the published version is devoted solely to the advantages of using omni-directional camera and the added second paragraph attends exclusively to the advantages of using circular shape

as landmarks.

Table 4.5 *Focused Presentation of the “Omni-directional Camera” and “Circular Landmarks”*

<p>Advisor’s revised version (first submitted version)</p>	<p>Paragraph 1 (<i>Overall design</i>)</p> <p>... A feasible solution to this problem is to use an omni-directional camera, which has the unique advantage of providing <i>wide-angle views</i>. In this study, we propose further to set up the omni-directional camera to view upward the ceiling of the indoor environment, on which are attached <u>circular shapes</u> as landmarks for the purpose of vehicle navigation guidance. In this way, fewer objects around the vehicle will appear in the field of view of the upward-looking camera, <i>thus reducing the guidance error coming from the influence of the surroundings of the vehicle, like landmark occlusion and noise creation</i>. An illustration of the navigation environment, including the vehicle, the ceiling, and the landmark, is shown in Figure 1.</p>
<p>Published Version</p>	<p>Paragraph 1 (<i>Focused presentation on omni-directional camera</i>)</p> <p>...A feasible solution to this problem is to use an omni-directional camera [1-6] which looks upward at certain target shapes, called <i>landmarks</i> usually, attached on the ceiling [7]. This solution has the unique advantage of providing <i>wide-angle views with fewer objects appearing in the field of view, thus reducing the guidance error coming from landmark occlusion, noise inference, etc.</i> This is important for applications of intelligence robots such as cleaning robots, pet robots, tour guide robots, etc., which must work among humans or objects at close distances. On the other hand, even though obtaining the distance and orientation of the circular landmarks on the ceiling can be easily realized with a standard camera [8-9], a well-designed single omni-directional camera system may be used to replace several standard cameras so far as the image taking range is concerned.</p>
	<p>Paragraph 2 (<i>Focused presentation on circular landmarks</i>)</p> <p>In this study, the landmark is selected to be a circle. Analysis of circular shapes in omni-directional images is not well studied so far. It is found in this study that a circular shape, which becomes an irregular shape in an omni-directional image with no known shape descriptor, can be well approximated analytically by an elliptical shape. Consequently, it is appropriate to guide a vehicle equipped with an upward-looking</p>

	<p>omni-directional camera using a circular shape attached on a ceiling as a landmark, as is done in this study. Several merits can be identified in this approach, including: (1) the circular-shaped landmark attached on the ceiling is identically observable from every direction; (2) the circular shape, being elliptical when imaged, is easier to detect in low-resolution omni-directional images; (3) the elliptical shape provides more precise parameters for location estimation; (4) the elliptical shape does not get mixed up easily with other shapes found in the environment. Owing to these merits, stable and precise relative vehicle location estimation can be achieved for navigation. An illustration of the experimental navigation environment for this study, including a vehicle, a ceiling, and a landmark, is shown in Figure 1.</p>
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According to Chris, an important lesson gained from this revising experience was that when mentioning any term (e.g. omni-directional camera, circular shape), he should be careful about whether the explanation of the term is clear enough to readers because he noticed that when readers encounter a new term, particularly one closely related to the research design or method, they would want to fully understand the term before they continue reading. Therefore, he thought that writers should predict reader's possible problematic areas and provide necessary background information. For example, in the submitted version, the characteristic of the omni-directional camera was mentioned. However, the advantages of using this special type of camera were not explained until his overall design was presented. From the comments provided by reviewers, he observed that even though the reviewers understood that omni-directional camera had the characteristic of wide-angle views, they might not know that this characteristic could bring about several advantages such as *reducing the guidance error coming from the influence of the surroundings of the vehicle, like landmark occlusion and noise creation*, when used in his design, as shown in italics in Table 4.5. Chris also indicated that he used too many terms without explaining each, baffling readers from understanding the values of his study. In the published version,

he showed readers that this camera has the distinctive feature of wide-angle view, and then indicated a few advantages. Thus, providing sufficient information for new terms, including justification, seems to be one of the concerns of reviewers or readers.

Closely related to term explication, he also noted that he should provide more explanations of the terms shown in the titles, especially at the outset of Introduction. As a matter of fact, “omni-directional camera” and “circular shape” both appear in the title of his paper. In computer science RAs, researchers usually indicate the research methods or equipment in the title. Therefore, “as soon as readers read your title,” he said, “they will form various questions (regarding your design).” If these questions are not properly answered as they start reading the paper, that is, in Introduction, he believed, chances are readers would feel very confused or even hold strong reservations against the study all the way.

Furthermore, to Chris, term explication at the outset of Introduction was of particular importance to studies involving complicated designs or to studies whose topic has been well-explored; the latter happened to be his case. As there had already been a wealth of related studies, if he could not pinpoint what was distinctive in his study, his readers would not be able to appreciate the values of his study. In a word, the reviewers’ comments have helped raise his awareness of reviewers’ and readers’ rhetorical concerns in relation to the information structure in Introduction.

In summary, this sub-section has shown that through revising with his advisor, Chris learned that he could reorganize the informational structure by fronting the principal outcomes and values of his technical design, thereby thrusting these critical points into limelight, despite severe difficulties in doing so at the early part of Introduction. Further, through interpreting and responding to the reviewers’ comments, Chris formed the increasing awareness that he should be careful with and, possibly, predict critical readers’ reaction, especially when using terms that are relevant to his

technical design. Such terms need sufficient explanation and justification, so that his design could be fully understood and thus appreciated.

The story goes on

So far, Chris' primary difficulties and adopted strategies during the stage of writing Introduction for the first journal article have been presented. Yet, as indicated in the background of the case, the whole process of Chris' first journal article publication spanned more than four years. In fact, there are some overlapping academic publishing experiences within this period of time; he continued to write his other three journal papers. The following sub-sections briefly present a few strategies that he mentioned in the interviews, which indicates his ongoing process of developing new strategies and learning to write academically.

Citing the lab's works (Move 1, step 3)

As he gained more experience in international publication, he developed other new strategies in doing citations. For example, after observing that his advisor would cite his own previous works when reviewing previous methods, Chris also adopted this practice. Instead of citing his own work, he intentionally cited his lab's studies in his three other RAs. He had two major intentions of citing his lab's works. Firstly, the "self-citation" practice can help expose his lab's works in the international academic arena, which, in turn, can promote high reputations of his lab. More importantly, according to Chris, the practice was also meant to show the journal referees that his lab has the credibility, experience, and expertise of doing research in this field, thus increasing the possibility of being accepted. This is, coincidentally, similar to Li's (2007) case study in which a Chinese doctoral student of Chemistry purposefully cited the homegroup's work to impress the "snobbish" referees (p. 70).

Citing the works from the target journal (Move 1, Step 3)

Besides using self-citations, Chris also developed another, what he called the “unorthodox” strategy – citing papers from the journal where you aim to have the work published. The awareness of using this unorthodox strategy actually came from the experience of submitting his manuscript to the third journal.

Recently, I submitted my paper to a journal; the editor rejected my submission the very next day, saying that the journal’s impact factor is 2.2. Right there, I got his implied meaning. So I cited papers from that journal and then resubmitted my work. The paper is now at the reviewing stage.

(March 16, 2009)

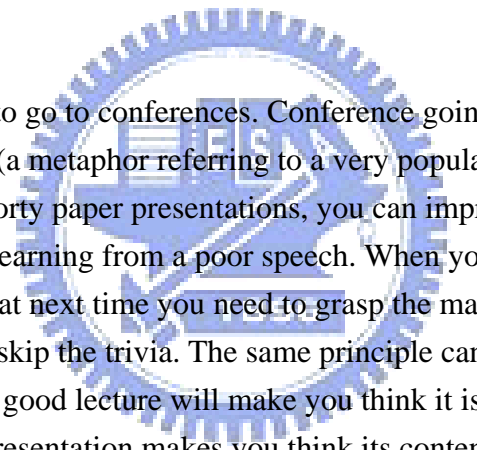
Because of this submission experience, he deliberately employed this strategy in his fourth paper writing. In fact, so many were his citations of the papers published in the journal which he intended to submit his work that his advisor called it “flattery.” Chris thus removed a few references from the manuscript. As he explained, a journal is usually concerned a lot about their impact factor, and citation rates would contribute to the growth of the journal’s impact factor. As a result, Chris thought using this strategy may win favor with the editors in the first place. Further, he construed that if he cited papers in the target journal, it is very likely that journal reviewers would not reject his study simply on the grounds that his submitted work is not related to the journal’s focal area of research. In other words, using this citation strategy can create the impression that his work is closely related to the journal’s research interests.

Learning to grasp main points from various academic generic experiences

As mentioned previously, difficulties in grasping main points and weighing how to underscore these points have been a writing problem for Chris. Nevertheless, Chris indicated that the reviewers’ comments are extremely helpful for him to grasp the

main points. That is, journal gatekeepers' reservations or questions showed him that it is these critical points that he should present with more clarification, explanation, and justification. He thought that the whole publication experience had helped him become more aware of the importance of highlighting critical points such as distinctive features of the research design and contributions of study in writing papers for academic publication.

In fact, besides this publication process, he mentioned a few learning strategies for grasping main points. For instance, he thought that going to an array of presentations in conferences raised his consciousness of grasping main points in writing papers, as shown in the following interview excerpt.



One effective way is to go to conferences. Conference going could be regarded as “visiting temples” (a metaphor referring to a very popular activity.) After listening to thirty to forty paper presentations, you can improve a lot. You enjoy a good speech while learning from a poor speech. When you suffer from a bad lecture, you realize that next time you need to grasp the main points, mention the important things, but skip the trivia. The same principle can be applied to writing journal papers. And a good lecture will make you think it is very easy to understand. A good presentation makes you think its content is very important yet simple.

(March 16, 2009)

Another strategy in journal writing is to sprinkle “technical content” with “his struggles to come up with such designs.” This strategy came from his recent experience of presenting the doctoral proposal. After his presentation, one of his committee members suggested that he should not only explain “how” the study was done but also “why” it was done in this way. If he showed his design directly to the audience without indicating his trial and error in the designing process, chances are audience could not appreciate his choice of design and “feel” the significance of his

study. In other words, indicating only “how” the design would work without explaining why, and without describing the struggles in the process of finding the most suitable research method cannot “move” the audience, convincing them of the values of his study. Chris found this advice extremely beneficial and it struck him that in journal writing such as in writing his technical content in Introduction and Method, he should do the same thing. Instead of writing all the “hows” (technical design and equipment), he should at some points write down the “whys,” justifying and highlighting these main points, thus enabling readers to “feel” the values of his study.

Last but not least, while examining his submitted version and the published version of the Introduction section in a discourse-based interview, Chris suddenly came to this epiphany that as a writer, three types of contribution claims should be clearly shown to readers in Introduction – progress claims, application claims, and novelty claims. The concept of these three claims was first learned in a class about filing technical patents. In fact, the three criteria are used to evaluate whether a work deserves filing a patent. Yet, it was during the examination of his two versions of Introduction that he related the concept of patent criteria to writing Introduction. Not only did he realize that he could evaluate an Introduction based on these three claims but he could also write his other Introductions based on these three claims. Even more surprisingly, in the interview, he analyzed his published version of Introduction based on these three claims; for example, certain sentences have manifested certain claims, how more emphasis should be put on certain claims because of the nature of his study.

The above-mentioned strategies seem to demonstrate Chris’ increasing critical awareness in relating different academic generic experiences to RA writing. Additionally, the formation of these strategies further suggests that the learning of academic writing is not confined to formal instruction such as taking academic writing classes. Incidental academic learning and different generic experiences,

whether written or oral, could contribute to the learning of academic writing if one has awareness. To sum up, triangulation of data from questionnaires, interviews and discourse analysis of the first case reveals Chris as a surprisingly highly reader-conscious and genre-aware novice researcher in the process of writing Introduction in the hard science. Next, I will move on to the exploration of writing for scholarly publication from another novice scholar in the field of social science.

Case 2

Background of Case 2

Anne is now a first-year doctoral student in Applied Linguistics. Even though she had numerous English conference paper writing experiences back in her master's program, this is her first time to write and publish a journal article based on her master thesis. Being a corpus-based study, Anne's thesis explored a set of specialized academic vocabulary that is commonly used in the discipline of Computer Science. Moreover, her study was aimed to link multi-word sequences, or the so-called lexical bundles, to the rhetorical functions of moves in RA Introduction. In other words, the purpose of her master thesis is twofold: firstly, compile a wordlist for a discipline based on a specialized corpus; secondly, integrate genre analysis with corpus analysis to explore possible relationship between words and their rhetorical functions in the generic context of RA Introduction.

After careful discussion with her advisor, Professor Liu, Anne decided to narrow down the scope of her paper and focus on word list and lexical bundles, which, they both agreed, are one of the current research trends in their field; that is, Applied Linguistics. In writing this paper, Anne did not need to write from scratch, since her paper is based on her master thesis, which encompasses a comprehensive review, detailed presentation of results and elaborate explication of data analysis. However, as

Anne pointed out, given her much focused scope of this journal paper for international publication, she could not simply copy and paste text from her thesis, nor could she summarize the complete text into a journal paper, hence considerable rearrangements and modifications were required. The act of rearrangement, reorientation, and rewriting was especially pronounced in the section of Introduction, which happened to be the focus of this current research. For example, it should be more geared towards the more rigorous requirements of journal publication in terms of appropriate literature review and value of the study. More importantly, as Anne mentioned, since she started to write this journal article one year after she had completed her thesis, a number of related studies had sprawled up; she, therefore, had to review these newly published studies, and rearrange the presentation of the information. As a matter of fact, she needed to rewrite basically all her Introduction. After two weeks of reading sources, planning, and writing, she finally finished writing her Introduction; she sent it to her advisor, who helped Anne revise the section before she went on to write the other sections. In the current analysis, Anne's first version of Introduction, together with her advisor's revised version, would be presented and analyzed.

Perceptions of Writing Major Rhetorical Sections

Anne wrote her first journal paper following the sequence of I-M-R-D. That is, she started with Introduction, then Method, Results, Discussion and Conclusion. Finally, she wrote Abstract. She commented that this writing sequence was natural and common, either in writing her thesis or other research genres (e.g. conference papers, term papers). As shown in Table 4.6, among all these rhetorical sections, she felt that it was easy to write Method, Results, and Abstract whilst it was quite challenging to write Introduction and Discussion. For instance, in Anne's opinion, she only needed to "report facts" in the Results section, indicating and describing results

and findings from data analysis, following the framework of her research questions.

Table 4.6 *Anne's Perceived Difficulty Level of Each Rhetorical Section*

	Abstract	Introduction	Method	Results	Discussion/ Conclusion
Difficulty level	2	4	2	1	4

Note: On the Lickert scale of 1 to 5, 1 means “not difficult at all” whereas 5 means “extremely difficult.”

On the other hand, Introduction and Discussion were more troublesome to Anne, which confirms Flowerdew's (1999b) findings from the study on the Hong Kong-based L2 researcher writers. In fact, she perceived Introduction as the most difficult section to write as it would leave the first impression on readers, which in turn would critically affect readers' willingness to continue reading her paper. Thus, she felt enormous pressure to write this section effectively, trying to demonstrate not only the ideas of the study but also forceful arguments and linguistic exquisiteness. Contrastively, the problem of writing the Discussion section, ranked as the second difficult section to write, stemmed more from idea constraints in interpreting data rather than on unsettling linguistic presentation. In other words, to Anne, the difficulties of writing Introduction were both conceptual and linguistic in nature whereas the difficulties of writing Discussion were more conceptual.

Process of Writing Introduction

Drafting Process

Making a detailed outline and using her mother tongue to plan

Before writing this RA Introduction, Anne commenced with careful reading of the Introduction and Literature Review in her thesis. She highlighted important information she would like to write in her RA Introduction. After that, she searched

for more references, read the newly published studies, and categorized these references into various sub-topics of her study. Then, Anne spent considerable time planning and outlining what she would write for the Introduction section. “I would plan in a very detailed way because I think writing up a research article requires a lot of planning;” she said, “this is, in particular, because we are still students.” During this planning stage, she used her native language, Chinese, to think about what kind of arguments she should put forward, what paper she would cite, the sequence of each cited study and information, and even transitions among various topics and arguments. They were all deliberately planned out. She outlined these ideas primarily in Chinese as well.

Anne felt that thinking and outlining in Chinese at this stage, considering the more abstract nature of Introduction, played an important role for her later writing in that using her mother tongue not only allowed her to “think and write at the same time” but also enabled her to have smoother and deeper thinking. With detailed outlines, she would only need to focus on transforming these ideas into “beautiful English,” rather than painstakingly languish for both ideas and linguistic expressions simultaneously.

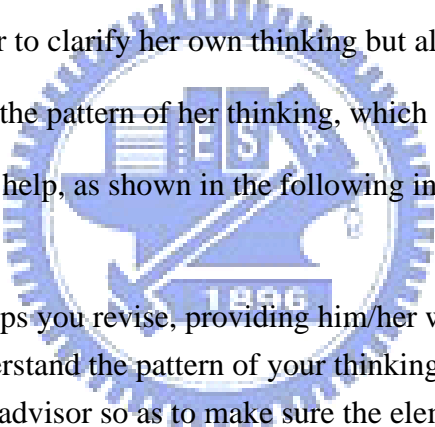
In fact, this planning and outlining stage, according to Anne, was the most challenging process she needed to struggle through in writing. She even felt that more time and effort were devoted to this stage than the actual writing or revising stage.

Difficulties in sequencing and making transitions

During the planning stage, a lot of difficulties, she noted, stemmed from her problems with sequencing arguments and making transitions among different topics. Making transitions was very difficult for her, especially in Introduction. As the research topic of her study involved a number of seemingly different research fields,

namely, EAP, genre analysis, RA and vocabulary learning, she had to introduce each of them and make transition from one to another, and finally link and incorporate all of them into her specific topic. Links, or relationships, between topics or propositions must be conceived before writing in order to make the flow of text smooth and argumentation logical. Sequencing posed a similar problem to her because in her thesis she had a whole chapter to review literature while she had to not only select the most relevant studies for citation but also rearrange them concisely and logically.

After generating an outline for Introduction, she discussed the outline with Professor Liu, making sure the sequencing as well as the transitions among topics was logical. As Anne mentioned herself, having such a detailed outline at hand was beneficial not only for her to clarify her own thinking but also for her advisor to have a better understanding of the pattern of her thinking, which would assist Professor Liu to offer more appropriate help, as shown in the following interview excerpts.



When your advisor helps you revise, providing him/her with an outline can enable him/her to understand the pattern of your thinking. So I would give a Chinese outline to my advisor so as to make sure the elements (that I am going to write) are correct. Another important thing is sequencing; my advisor would help me check the order of information. As a result, I think making an outline is good for me to know exactly what I have in mind; it is easier for my advisor to make sequencing rearrangement, too. Therefore, I think having an outline is a very good practice for non-native speaking students.

(January 10, 2009)

Using CARS model as outlining scheme

Learning Swales' CARS model (1990) in her *Thesis Writing* class during her master's program, Anne used this model to plan the overall structure of Introduction. Keenly aware of each rhetorical function of the Introduction section, she put important references under the major rhetorical moves and steps as a rudimentary

outline. Such an acute awareness of the CARS model could also be related to the topic of her study, which focuses on exploring vocabulary and lexical bundles in relation to the rhetorical functions of Introduction. It is of interest to observe that the CARS model or the rhetorical functions of Introduction are frequently reflected in Anne's metacognitive awareness, which has substantial impact on her planning and writing of Introduction.

Using “purpose statements” to generate her outline

Besides the CARS model, Anne also used “purpose statements” (Move 3, Step 1) to generate deductively what to write. More specifically, she used purpose statements as the foundation from which she derived arguments for making appropriate claims for her study. The derived arguments, in turn, helped her identify what kind of citations and topical background information she should provide. Thus, it seems she used the strategy of “backward deduction” to generate what and how to write her Introduction so that all the claims, propositions, and information could be properly arranged and gradually led to the purposes of her study in the end. This rhetorical strategy reflects her deliberate rhetorical construction of Introduction at the planning stage for a logical organization and presentation of Introduction based on her generic knowledge of Introduction.

*Difficulties in providing general background knowledge at the outset of Introduction
(Move 1, Steps 2)*

Despite lengthy and deliberate planning and outlining as mentioned above, Anne maintained that introducing the research topic and providing background information for the research topic at the beginning of Introduction remained the most difficult part for her when writing Introduction. This is the part that corresponds to what Swales

(1990) called “making topic generalizations” (Move 1, Step 2) in which “statements about *knowledge* or *practice*, or statement about *phenomena*” of the researched area are provided in a general way to readers (p. 146) (Italics are Swales’ original emphasis). According to Swales’ (2004) later explication, such topic generalizations will gradually increase its specificity through “possible recycling of increasingly specific topics” (p. 230). That is, the Introduction section usually develops from a general area and then gradually narrows down to more specific areas that are closely related to the writer’s own study. However, it should be noted that Anne said her difficulties of writing this part were not related to the specific topics of her study. She thought she knew what to write about these specific parts very well since these parts were directly related to her topic, her purposes, and research questions. Rather, her difficulties lay in selecting appropriate background information interesting and rhetorically forceful enough to attract readers. Especially, it was difficult for her to decide on the level of generality of the background information she needed to provide. She felt a strong sense of unease in writing this part. Linguistic expressions were a second source of her unease. She was not very sure how to make her propositions in this part rhetorically effective. The following interview excerpt reveals these two major causes of her high-anxiety when writing this rhetorical step.

I know the important ideas in this area, but I don’t know which idea I should use for the background information so that it could be a great lead-in to my article, and could be appealing enough to readers, yet not off-topic. That is, the difficulties of writing this part stem from “information selection” on the one hand; then, linguistic expression is also problematic. For instance, if I have selected an idea to be the background information, I still don’t know what kind of sentence patterns I should use so as to present this idea in an appealing or forceful way.

(March, 1, 2009)

From the above, these two reasons were in fact related to her concern about “leaving a good impression on readers.” For the first reason, Anne also further explicated that she was afraid of providing something that might be too common, and thus unprofessional to readers, who are peer researchers in this field, such that they would lose interest in reading her study. Another reason comes from her self-perceived lack of language proficiency. In her own words, “since English is not my mother tongue, I do not know whether the sentences I wrote are forceful or interesting enough.” Such uncertainty in information selection and language presentation brings about her specific difficulties in writing the very beginning of Introduction.

The coping strategy she developed is to look at the beginning part of Introduction in some published papers, including her advisor’s. Anne said she would carefully examine how the published texts developed their lead-in to a topic, and then she would try to form her own. Although she was still uncertain whether such a close examination of others’ work really helped her write effective topic generalization, she at least dared to write this anxiety-provoking rhetorical step after employing this strategy.

Dealing with local development of text with confidence

During actual writing, Anne transformed ideas in her outline into full-fledged English sentences, concentrating on the local development of text. Word choice, stylistic changes, and sentence variety were the concerns at this stage. For instance, Anne noted that she tended to overuse adverbial participial construction in her academic writing or repeated using some reporting verbs; consequently, she spent some time finding other ways to express her meanings.

When encountering difficulties in expressing ideas during writing, she would

first think about whether the expression in question was commonly used in papers. If yes, she would use the concept of the CARS model to assist her to locate the particular expressions; that is, she would find the expressions that were commonly associated with a particular move or step from the Introduction of the published texts as references. This further shows her strong awareness of the rhetorical structure of Introduction, particularly the CARS model. In other words, besides using the model to plan her outline, she used it to locate expressions in published papers for reference in her own paper writing.

On the other hand, if the expression problem was unique to her own study, two ways were usually adopted. One way was to first write the sentence in a more “roundabout” manner in English, and then left it there for a while; later when she came back for revision, she might come up with a better expression to replace it. The other way was to look up the words or expressions in a number of on-line resources such as dictionary, thesaurus, and even corpus and concordancer. For the purpose of convenience, however, she sometimes used Google as a big corpus to check whether the word combination was widely used.

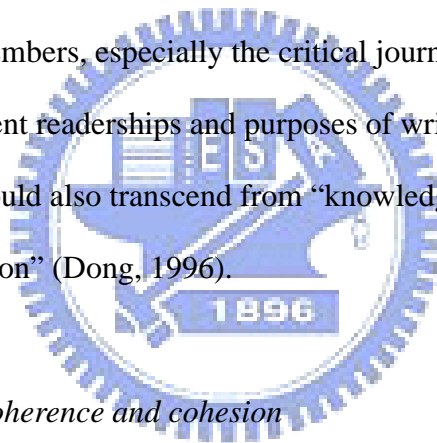
Commenting on these local problems, she said that as long as they could be found or looked up in reference materials, they would not be problematic to her; this shows her confidence in dealing with the local, linguistic part of academic writing.

Using her advisor's published works as stylistic models

When writing her articles, Anne said she did not specifically think of any target readers. “Perhaps I should reflect on this issue,” she said. “I thought about whether the vocabulary and sentence patterns I used are academic or not, but I did not think of specific readers.” “If any, I only thought of my advisor as the sole audience.” In fact, before writing each section of the RA, she would read her advisor’s published works

and imitate the style, thinking that in this way her article could conform to the “academic conventions.” Another reason stemmed from her concern with her advisor’s efforts. Since her advisor would help her revise, she thought if she looked up to her advisor’s published texts as stylistic models, her advisor would not have hard time revising her RA.

Shaw (1991) also found that postgraduate students tend to restrict their dissertation readership to their advisors only, partly because the frequent interactions between the two and partly because of the confusion with the “pseudo-communicative nature” of the work (p.194). However, in terms of writing for international publication, it seems especially important for novice researcher writers to be aware of the global discourse community members, especially the critical journal gatekeepers. Moreover, with awareness of different readerships and purposes of writing, writing RAs for scholarly publication should also transcend from “knowledge display” into “knowledge transformation” (Dong, 1996).



Forming awareness of coherence and cohesion

During writing, as mentioned above, she was concerned more about local development of the text at this stage. More global issues such as coherence and cohesion, she said, would be her primary focus in the revision stage.

After writing a part or a paragraph, she would then reread sentences several times to check for cohesion, coherence, as well as the flow of text. According to Anne, she was not aware of the concepts of cohesion and coherence until she learned them and related theories in the course of *Second Language Writing* in her master’s program. More interestingly, since she had been teaching some classes in the extension program of her university as she was a master student, she realized that grading her own students’ compositions made her become even more aware of the

importance of checking the “logic” linking the text. From her observation of students’ submitted written works, she found even though some students might not make serious grammatical mistakes in their writing, it was still difficult to understand their meanings due to the lack of cohesion and coherence in their compositions. As a result of these experiences and observations, she said she would always check cohesion and coherence of her writing during the revision stage.

In fact, regarding local development, Professor Liu commented that her students usually do not make serious grammatical mistakes or show difficulties in general language use in their writing, although occasionally they still have incoherent flow and cohesion mismatches, which will be delineated in the later section of advisor’s revised version.

Making notes as reminders for herself and for her advisor

During her writing and revising, Anne wrote marginal notes indicating her problems or questions. She mentioned that these notes were originally only meant to serve as reminders for herself to tackle the problematic and uncertain parts in the text. Because of the self-reminding nature of these notes, the tone was directed to herself. For example, “think about whether the transition here is too weak or should I use non-native speakers’ learning difficulties as transitions,” “cite recent studies on lexical bundles,” “think about how to make this transition smoother,” “the transition here is a bit weird... have to think about this...,” etc. At her revision stage, if the issues had been taken care of, she would delete these electronic notes. A few, however, still remained unsolved.

Fortunately, Professor Liu often responded to these notes and helped her solve these problems. Therefore, as Anne commented, the note-making practice became more than just a reminder for herself; rather, it functioned as a communication

channel for her advisor to notice where she might be in need of help. Meanwhile, as shown in the excerpt below, Professor Liu commented that this note-making practice showed that Anne was a careful and conscious writer.

I think she is a learner with keen awareness; maybe it's because she is in our discipline (Applied Linguistics). I think this (making notes) shows her self-awareness; during her writing, it's good for her to remind herself (of these points), then think about (these points), not just write in a very intuitive manner. Of course, this is a good practice.

(March 6, 2009)

Using integral and non-integral citations for different purposes (Move 1)

As noted earlier, Anne's research intends to identify genre and discipline-specific multiword sequences, or lexical bundles, linked with the rhetorical functions of RA Introduction. She thus needed to review existing studies on both genre analysis, particularly on Introduction, and lexical bundles. However, given that genre analysis on Introduction has been known to most EAP researchers, she decided not to devote much of her review to this topic. As a result, Anne mentioned, although she had cited quite a lot of studies on genre analysis, she mostly cited these studies with non-integral citations. In other words, comparatively shorter, more general discussion of various previous RA studies was presented for the purpose of indicating RA as a distinctive genre. On the other hand, when reviewing lexical bundles, being a more recent research trend in Applied Linguistics, she only reviewed a number of existing studies, but with more detailed and in-depth discussion of each cited work, such as the specific aspects of lexical bundles investigated in the study, or specific results of the study. The more detailed review of lexical bundles, of course, might also be due to the fact that lexical bundles were her focused topic. Thus, integral citations, as she noted,

were used in the review of lexical bundles.

The type of citations that she chose and the length of the review to which she devoted seem to indicate her generic knowledge and awareness of using appropriate citations in literature review (Move 1, Step 3). That is, rather than repeating certain types of citations or providing proportional review of each study, she consciously distinguished non-integral citations (information prominent) from integral (author prominent) citations. Perhaps, more significant of these choices is that although she set her advisor as the perceived reader of this written work, she might, as a matter of fact, unconsciously consider the background knowledge of general readership of professional journals, or at least that of general peer researchers in the field of EAP. Consequently, less detailed review was provided on the well-explored area whereas more details were given when reviewing the newer and less well-known academic realm.

Making arrangement of the reviewed studies to lead to her research aims (Move 1, Step 3)

Besides using different types of citation and weighing the amount of space in doing literature review, the arrangement of the sequence of the reviewed studies reflects her rhetorical consideration. For instance, the review of studies on lexical bundles was situated at the last part of the literature review since these studies were more closely related to Anne's own research than other reviewed studies. As a matter of fact, the citations were used to prepare readers for her purpose statement.

In particular, Anne mentioned that she cited Hyland's study in the last part of her review because this helped her make an easy transition from literature review to her own study. In reviewing lexical bundles, her attempt was to first link lexical bundles to research articles as a distinctive genre, and then to different disciplines. Therefore,

as shown in Table 4.7, the less relevant studies were reviewed first (such as Cortes, 2004), followed by studies related to register and genre (Biber, 1999; Biber et al., 2004), and then ensued by the research indicating disciplinary variation (Hyland, 2008).

Table 4.7 *The sequence of the cited studies in the review of lexical bundles*

-
1. Cortes (2004): the use lexical bundles can distinguish **novice writers** from expert writers
 2. Biber (1999), Biber et al. (2004): lexical bundles can reveal the distinctiveness of a given **register**
 3. Hyland (2008): preferred use of lexical bundles of different **disciplines** in EAP
-

According to Anne, this sequence of presenting citations was logical and deliberate, as indicated in the interview.

I will use my research purposes to sequence and group (the reviewed studies). I think such deliberate sequencing is a way of arranging citations. You will notice that in the same research area researchers usually review similar studies. However, since every writer wants to direct the review to his/her research goals, the view he/she holds in addressing these cited works is quite different from others. That's why I put lexical bundles used by "expert and novice" at the very beginning of the review while put Hyland's study closest to my study. It is easier to make a transition from Hyland's study to my own study as his study is the most relevant to my study.

(March 16, 2009)

In conclusion, the above subsection indicates that Anne encountered great difficulties in the planning stage – sequencing and making transitions among various sub-topics. Enormous effort was spent at the planning stage to generate detailed and well-thought-out outline, specifically using her mother tongue in outlining, using the CARS model as well as her "purpose statements" to generate a logical outline, and

discussing the outline with her advisor. Despite such a detailed and effortful planning, she was still uncertain and highly anxious about how to present general background information as suitable and appealing lead-ins to her research topic. During her writing stage, with the outline at hand, her major focus was to transform the outline into stylistic English. In order to meet the conventions of her discipline and in consideration of her advisor's effort in helping her revise, she further used her advisor's published texts as stylistic models. After writing, she would further reread sentences several times so as to ascertain the texts she produced were coherent, cohesive, and smooth. Uncertain parts were marked with notes to remind herself and her advisor for revision. Moreover, the amount of space she devoted to each review, the type of citation she used to review, and the sequence of the cited studies demonstrate her rhetorical and generic concerns for writing the Introduction section.

Advisor's revision before journal submission

After writing the Introduction section, Anne sent it to Professor Liu, who helped her revise before she went on writing the other sections. Comparisons between Anne's drafted version with her advisor's revised version, together with Professor Liu's explication, reveal Anne's problems in writing Introduction as well as some rhetorical reconstruction of Introduction made by her advisor.

A genre-based analysis of these two versions shows that they show similar sequence in terms of overall macro structure. That is, no significant information re-arrangement was made in the revised version concerning the macro structure. This could result from Anne's detailed planning as well as checking her outline with her advisor before writing. Nevertheless, a number of revisions were made by her advisor: incoherence among ideas was fixed, irrelevant information was deleted whilst relevant details were added, and, more importantly, arguments were bolstered within

Move 1 (Establishing a territory) of the CARS model. In particular, these revisions seemed to be more notable in the literature review (Move 1, Step 3). In addition, Move 2 (Establishing a niche), authored by Professor Liu, was cogently put forward by presenting positive justification (Move 2, Step 2) and then followed by gap-indication (Move 2, Step 1A). Move 3 (Occupying the niche), by contrast, received very few revisions, which seemed to confirm Anne's perceptions that purpose statements (Move 3, Step 1) and general pedagogical implications (Move 3, Step 6) were the easiest parts in writing Introduction as she was both familiar with her research purposes and the relatively formulaic linguistic realizations of these two rhetorical steps.

The following presents Anne's specific problems in writing Introduction and her advisor's involvement in shaping her Introduction text before journal submission.

Difficulties in presenting logical and coherent arguments

Professor Liu commented that although her students in this discipline generally have a good command of L2 writing, they lack appropriate generic knowledge and writing skills for a sophisticated academic genre such as journal articles. Moreover, writing Introduction in this discipline, stressed by Professor Liu, demands persuasive and logical argumentation. Lack of support and roundabout presentation of information may weaken the force of argumentation.

For example, the goal of the first paragraph of Anne's Introduction is to introduce the realm of EAP (Move 1, Step 2) and argue for the centrality of EAP research (Move 1, Step 1). Her study is generally set in this research area (that is, EAP), which will in succeeding paragraphs gradually narrow down to the more specific research topic of genre analysis as the most promising research method for EAP, and then concentrate on the RA as a key genre in EAP. In the original draft by

Anne, the rapid development of EAP research is indicated in the very beginning; the flow of text then moves towards the need for and goals of EAP pedagogy. It finally comes to the conclusion that an analysis system is needed to “offer a pedagogically informed description of academic discourse.” Table 4.8 presents Anne’s version and her advisor’s revised version of the first paragraph of Introduction.

Table 4.8 *Difficulties in Making Logical and Coherent Presentation*

<p><i>Anne’s version</i></p>	<p>Research in English for Academic Purposes (EAP) has rapidly developed ever since 1980s as a result of English as the lingua franca in the academic world. This irresistible trend has forced both native and non-native English speakers in higher education to acquaint themselves with the English language use conventions shared within the specific discourse community. <i>EAP instruction, in particular, aims at equipping students with effective communication skills to actively participate in the academic milieu.</i> Therefore, an analysis system that can offer a pedagogically-informed description of academic discourse is needed <i>in order to provide students with a better understanding of the social and linguistic demands in EAP</i> (Hopkins & Dudley-Evans, 1988).</p>
<p><i>Advisor’s revised version</i></p>	<p>English for Academic Purposes (EAP) has rapidly developed ever since the 1980s as a result of the predominant role of English in the academic world. Academic competence is defined in terms of not only specialized knowledge and skills but also academic English proficiency. Both native and non-native English speakers in higher education must acquaint themselves with the major academic genres and English language use conventions shared within this specific discourse community. To non-native scholars, in particular, such professional conventions often pose a great challenge and must be explicitly taught. EAP pedagogy, therefore, should be research-informed, as indicated by Flowerdew (2002) and Hyland (2002), based on analysis and description that that can account for both the communicative purposes and rhetorical structures of academic discourse (Hopkins & Dudley-Evans, 1988).</p>

However, Professor Liu pointed out that such centrality claims and topic generalization of EAP research as lead-ins to genre analysis (in Anne’s version) suffer

from two weaknesses. First, the arguments seem to focus more on EAP pedagogy than on EAP research, although the paragraph starts with EAP research. In particular, the conclusion, as mentioned, suggests that research should be informed by EAP pedagogy; this implies a wrong logical relationship between the two. In other words, it is EAP research that is needed to inform EAP pedagogy, not vice versa. Thus, the centrality arguments are not well grounded.

In the revised version, after indicating the predominant role of English in the academic world, a brief definition of academic competence was added to highlight the importance of academic English proficiency, which was then linked to the challenge of EAP for non-native speakers. Arguments about non-native scholars' challenge and EAP pedagogy were used to demonstrate the compelling need for EAP pedagogy to be informed by research. The centrality of EAP research was further supported by citing two well-known scholars in this field, Flowerdew (2002) and Hyland (2002), as shown in boldface in Table 4.8.

According to Professor Liu, the second weakness in Anne's paragraph lies in the fact that coherence in text is not explicit. Two sentences in this paragraph were thus deleted in the advisor's revised draft: "*EAP instruction, in particular, aims at equipping students with communication skills to actively participate in the academic milieu*" and "*...in order to provide students with a better understanding of the social and linguistic demand*" since they are not related to the main theme of indicating the centrality of EAP research. They, in fact, blur the focus and logic of the main arguments in this paragraph.

As mentioned in the last section, Anne experienced severe "writer's block" at the outset of writing Introduction, concerning whether the information selected is appropriate and whether the language she used is both forceful and appealing. Interestingly, Professor Liu did modify this part, but indicated Anne's problems with

this part of Introduction, such as poor logical presentation and incoherence.

Difficulties with citations to support knowledge claims (Move 1, Step 3)

A few notable changes were also made by Professor Liu in the review of literature (Move 1, Step 3), particularly in reviewing “lexical bundles.” Specifically, Anne’s problems with this part of review were identified in a number of ways, including lacking support for knowledge claims, providing insufficient review or sometimes over-specific review of a theme, and shifting topic that breaks discourse coherence. These problems will be presented in the following.

To begin with, as shown in Table 4.9, Anne’s intention was to link vocabulary with academic genres, specifically with the genre of RAs, for this was her research distinctiveness. She thus made the knowledge claim that “*it is of importance for EAP learners to know how these words are actually used in the context of specific types of texts, or genres.*” However, her review of Schmitt (2000) directed her theme of generic vocabulary to “words go beyond the level of single words,” rather than “multiple word uses in the genre of RA,” which is more closely related to her research purpose. That is, although the flow may seem logical by citing Schmitt’s study (because lexical bundles suggest vocabulary learning beyond single words), as Professor Liu mentioned, the review lacks a more direct support to the previous claim about how words are used in the context of a specific genre.

Professor Liu thus deleted the citation of Schmitt and cited Gledhill’s (2000) and Howarth’s (1998) studies, which are particularly pertinent to the research aims of Anne’s study, and more importantly, could better support her knowledge claim put forward earlier in the paragraph. Also, by citing appropriate studies, the flow of text could be directed towards her research focus – lexical bundles in the genre of RAs – in the following paragraphs.

Table 4.9 *Difficulties in Supporting Knowledge Claims*

<p><i>Anne's version</i></p>	<p>... In addition to knowing the kinds of words that frequently occur in academic discourse, <u>it is of importance for EAP learners to know how these words are actually used in the context of specific types of texts, or genres</u>; that is, to relate target vocabulary to its context, i.e., the <u>generic environment</u> where it occurs as well as to examine how some special vocabulary may play a role in information structuring of a genre or contribute to conventionalized, recurrent lexico-grammatical patterns related to generic structure, as indicated by Swales (1990). Since the knowledge restricted to individual words may not be enough in that words are always used in context. As a result, to explore how words connect with the larger discourse, the examination of vocabulary needs to <u>go beyond the level of single words</u> (Schmitt, 2000).</p>
<p><i>Advisor's revised version</i></p>	<p>... In addition to knowing the kinds of words that frequently occur in academic discourse, it is of importance for EAP learners to know how these words are actually used in the context of specific types of texts, or genres; that is, to relate target vocabulary to its context, i.e., the generic environment where it occurs and to examine how some special vocabulary may play a role in information structuring of a genre or contribute to conventionalized, recurrent lexico-grammatical patterns related to generic structure.</p> <p>In fact, efforts have been made on exploring the distinctive <u>lexical features of RA</u>. For example, Gledhill (2000) explored the rhetorical functions of collocation in research article introduction, indicating that recurrent lexical-grammatical patterns may be characteristic of a particular genre. The identification of the phraseological expressions particular to a genre is also of help for understanding the conventions. Howarth (1998) analyzed lexical collocations of non-native academic writing, and indicated that even advanced non-native writers may fail to communicate effectively and conform to the expectations of the academic community as a result of a lack of phraseological competence.</p>

Adding citations strategically (Move 1, Step 3)

Another significant revision of the review of lexical bundles is adding more background information to this topic. In Table 4.10 overleaf, Professor Liu added a long list of related terms in the form of non-integral citations right after the definition

of “lexical bundles.” According to Professor Liu, these citations had two functions. On the more surface level, they served as a kind of general review of the research field in concern, attributing credits to previous related studies spanning two decades as well as providing background information indicating that although lexical bundles are more recent development, similar research topics have already been explored with different terms. Furthermore, Professor Liu pointed out, mentioning these terms was a good way to demonstrate to readers that the researcher-writers are familiar with the specific field. In other words, under the guise of a general review with non-integral citations, writers demonstrate that they have a thorough understanding of the research context, which further suggests that the research topic of the present study is well-founded. This actually shows that Professor Liu, as a more experienced writer, not only helped Anne to fix the rhetorical and linguistic problems but used citations strategically to position the writers as insiders of the academic discourse community.

Table 4.10 *Insufficient Review and Irrelevant Review*

<i>Anne's version</i>	Lexical bundles are multi-word sequences that statistically co-occur in a given register (Biber & Barbieri, 2007; Cortes, 2004). Instead of being accidental, lexical bundles occur repeatedly in a register, serving important discourse function unique to a particular register. Although most of lexical bundles do not have complete structural units, they usually occur at the beginning of a clause or phrase, bridging two phrases and providing a setting for new information. Thus, they are regarded as important elements in the construction of discourse (Biber, 2007). In the past, the identification of lexical bundles is based on intuition. The impressionistic view of selecting bundles, however, often leads to the ignorant of some unnoticed bundles out of idiosyncrasy. Recent studies, though with arbitrary frequency cut-off points, empirically selected high-frequency lexical bundles from corpora of different registers or genres using software programs such as N-Gram Phrase Extractor, kfNgram, or Wordsmith Tools. <i>Although the</i>
Theme 1	
Irrelevant	<i>large amount of corpus data leads to findings that are statistically significant, corpus-based methodologies still received criticisms for not</i>

<p>Theme 1'</p>	<p><i>taking contextual features of text into consideration (Widdowson, 1998, 2002; Hunston, 2002). L. Flowerdew (2005) argued for an integration of corpus-based and genre-based approaches to text analysis in EAP/ESP to level against criticisms toward corpus-based approach. The attraction of such a combined approach to analysis of lexical bundles lies in the potential for a corpus to reveal statistically significant recurrent patterns using computer software. On the other hand, it enables researchers to examine whether these high-frequency bundles are meaningful in a particular genre or the extent to which these bundles relate to the communicative purposes of a genre.</i></p> <p>The importance of lexical bundles can, in fact, be revealed from a number of perspectives...</p>
<p>Advisor's revised version</p> <p>Addition of related terms</p> <p>Theme 1</p> <p>Theme 1'</p>	<p>Lexical bundles are multi-word sequences that statistically co-occur in a given register (Biber & Barbieri, 2007; Cortes, 2004). <u>A number of similar terms have been used in related research: phraseology (Howarth 1996; Cowie 1998), lexical phrases (Nattinger & DeCarrico 1992), formulaic language (Myles, Hooper & Mitchell 1998; Weinert 1995; Wray 1999), prefabricated patterns or prefabs (Howarth 1996; Granger 1998), word combinations (Howarth 1996; Benson 1986), collocations (Sinclair 1991; Gledhill 2000), fixed expressions (Moon 1998), and formulas (Vihman 1982).</u> However, in the past, the method of identifying these recurrent word sequences was often non-empirical or non-statistically valid. This often leads to the ignorance of some unnoticed bundles out of the researcher's own idiosyncrasy. Recent studies on lexical bundles, with the help of computer programs such as N-Gram Phrase Extractor, kfNgram, or Wordsmith Tools, have identified statistically meaningful lexical bundles from corpora of different registers or genres.</p> <p>Instead of being accidental, therefore, meaningful lexical bundles should occur repeatedly in a register or genre, usually serving specific discourse functions. Although most lexical bundles do not have complete structural units, they usually occur at the beginning of a clause or phrase, bridging two phrases and providing a setting for new information. Thus, they are regarded as important elements in the construction of discourse (Biber, 2007).</p> <p>The importance of lexical bundles can, in fact, be revealed from a number of perspectives....</p>

Irrelevant review breaks the coherent flow of the review theme (Move 1, Step 3)

In the revised draft, some less relevant information was deleted and information was rearranged so that coherence could be maintained in the literature review. For instance, after indicating lexical bundles as important elements of discourse and the derivation of lexical bundles from corpora using software programs, Anne devoted a long stretch of review discussing corpus-based methodologies before she went back to the theme of the importance of lexical bundles (see Table 4.10 above, marked with italics by the researcher). This part of review causes a breakdown of coherence.

Professor Liu thus rearranged the information: first describing briefly the method issue; then indicating the nature of lexical bundles in a discourse, which leads the discussion naturally towards the importance of lexical bundles from a number of perspectives. Notice that this rearrangement not only allows each reviewed theme to develop fully but also creates better coherence of text.

Difficulties in making forceful and concise propositions

The above-mentioned problems suggest Anne has a few problems with macro level management in Introduction, such as providing suitable and sufficient review, making coherent presentation, and providing well-grounded support for various types of knowledge claims, all of which are related to rhetorical construction of argumentation in Introduction. However, linguistic problems could also debilitate the effect of forceful argumentation. Professor Liu noted that her postgraduate students, though having no problems with sentence constructions, may sometimes produce long sentences that only cause ambiguity or fail to convey the intended ideas. This, as Professor Liu explained, may be attributed to students' incompetence in using specific types of sentence patterns to create highlight or forcefulness. Put differently, clear, concise, and forceful writing is of great importance in this highly argumentative

rhetorical section, and yet students may not have adequate linguistic resources to produce strong and telling arguments.

Meanwhile, Anne mentioned that she found that her advisor also helped her refine words for clarity and succinctness, which she would not be able to do by herself. Additionally, Anne said she was unable to detect whether the writing she produced was forceful enough, and she did not know how to underscore important information through various types of structures. She lamented that, as a non-native writer of English, very often she was not sure whether her English sentences are of appropriate force or could create the expected highlight. The problems of gauging the forcefulness of propositions and underscoring information seem to perplex her.

Difficulties in indicating a forceful gap (Move 2, Step 1A)

Closely relevant to the problems of forceful language presentation is her difficulty with gap-indication (Move 2, Step 1A). Anne noted that pointing out a gap has always been a difficulty to her when writing Introduction. In fact, when she was still languishing for this rhetorical move and left it blank in her paper, Professor Liu helped Anne write this troublesome move. On more linguistic grounds, Anne mentioned that she was not confident in using strong words to indicate a gap. In detail, she mentioned in the interview, “I could not use very strong words, such as ‘we strongly suspect’ used by Professor Liu.”

In fact, Anne is not alone in feeling the problem of managing appropriate force in writing RAs. Even more experienced L2 researcher writers, as those in Flowerdew’s (1999b) study, also perceive difficulties in making claims for their research with appropriate amount of force. Nevertheless, the difference is that these L2 faculty participants in Flowerdew’s study tend to be “overassertive”, as opposed to Anne’s lack of confidence in putting forward strong claims. Such an attitude seems to be

related to her status as a novice scholar in the field, thus making her less confident in putting forward strong negative evaluations of others' studies in gap-indicating, as noted in the following interview excerpt.

I am not experienced. So far, I never intend to criticize (previous studies); I feel I am not that knowledgeable, so it would be less likely for me to create a gap by criticizing other researchers' studies.

(March 6, 2009)

On the other hand, Professor Liu mentioned that it is vital to provide more concrete arguments in creating gaps for one's study. She noted that a lot of students tend to vaguely mention scarcity of relevant research as the motivation for doing one's own research; however, more details as to specifically what aspects of scarcity and what limitations these previous studies have should be pointed out so that the niche created could be rhetorically more forceful and academically more significant. In other words, if researcher writers want to convince their readers the necessity or importance of the study, or create the "research space" in Swales' words, they should construct forceful and concrete arguments for the gap, Professor Liu pointed out.

To sum up, the original draft by Anne, who is conscious of the information structure of Introduction, careful with word choices and stylistic concerns, and cautious about coherence and cohesion, still receives quite a few revisions from her advisor in Move 1, showing difficulties in managing macro level discourse of RA Introduction (e.g. unsupported claims, incoherence among themes, and insufficient review). The less control of argumentation at the macro level, unfortunately, could undermine the forcefulness of her Introduction. On the other hand, as pointed out by her advisor and Anne herself, she seemed to have a good command of the information structure of Introduction, suggesting her familiarity with the CARS model.

In this chapter, two cases of doctoral students' writing process of Introduction were presented, specifically centering on their difficulties and strategies. Comparisons between these two cases and possible contributing factors resulting in such differences will be presented and discussed in the next chapter.



CHAPTER FIVE

DISCUSSIONS AND CONCLUSIONS

In this study, two cases of doctoral students' writing process of their first journal articles were presented, specifically focusing on their process, difficulties, and strategies of writing the Introduction section. Multiple sources of data were collected to account for such complicated writing and publication processes, including interviews with these student participants and their advisors, major drafts of their journal articles, and, if any, correspondences with the journal referees. In this chapter, I discuss and compare the two cases in terms of their disciplinary writing practice of Introduction, perceived writing difficulties of Introduction, coping as well as rhetorical strategies they used or developed during the process of writing Introduction. Furthermore, a few important themes pertinent to novice writers' publication are also discussed, such as reader awareness, academic generic awareness, and advisor's involvement. Finally, pedagogical implications and suggestions for future studies are provided.

Summary of the Findings

Disciplinary writing practice of Introduction

The two cases were drawn from very different disciplines: Computer Science and Applied Linguistics. Despite some possible individual variability in writing, their distinct practices in writing Introduction seem to suggest possible disciplinary variation between the hard science and the soft science. The discipline-distinct practices of writing Introduction are manifested in a number of ways, inclusive of when to write the Introduction section, planning focus, space devoted to various rhetorical moves in Introduction, and even primary difficulties and strategies in

writing Introduction.

Firstly, it is found that the sequence of when to write Introduction among all the other rhetorical sections is different between these two cases. On the one hand, Chris learned that he should write his Introduction only after making sure that his mathematical formulae are feasible and after fully understanding the features as well as merits of the adopted techniques. Put differently, ascertaining and outlining the key components of Method should go before Introduction. On the other hand, Anne noted that it is common and natural for her to write Introduction first, reviewing related studies and indicating purposes, and then follow the sequence of I-M-R-D of a typical RA. Although in writing this particular journal article, Anne was actually rewriting and revising some parts of her thesis for the purpose of journal publication, she still started with Introduction.

The difference in writing sequence indicates the different nature of these two disciplines. Chris mentioned that Method actually “sets the tone” of the whole article. It seems that in the discipline of Computer Science inventing a novel design that can produce better results than previous studies is the most critical part of a study; in other words, making knowledge claims seems to lie in showcasing to readers their innovative design. Thus, method decides the what and how to write in Introduction. This writing sequence seems to be functional and deliberate. On the other hand, the discipline of Applied Linguistics seems to place more value on the exploration of issues or phenomena that are still in lack of clear or definite answers, thus appropriate topic generalization and literature review become a useful way to indicate a “gap” (e.g. obscurities and scarcities) that motivate the study or to create a “niche” for the study. Knowledge construction in Applied Linguistics thus starts with writing Introduction that establishes the whole setting of the study.

The planning for writing Introduction further reflects this possible contrast

between the two disciplines. Chris learned the lesson that outlining his technical content (that is, the design/method of his study) should go before writing Introduction since this enables him to have the sense of direction including what to review and, more importantly, what type of knowledge claims he could put forward in the Introduction section. Anne, on the other hand, spent considerable time in planning and outlining what she would write in Introduction. In particular, she used “purpose statements” to generate what to review and what arguments she should form. She also spent considerable time in sequencing arguments, making arguments more forceful, and making transitions among different sub-topics. These seem to show that the discipline of Computer Science is more method-oriented while Applied Linguistics is discursive and argument-oriented.

This difference in focus is also reflected in how much space to which these writers devote. Chris devoted a lot of space to delineating his technical design and its contributions, and even shifted the sequence of presentation to highlight such technical values. Notice that these are the steps of Move 3 (Occupying the niche) in Swales’ CARS model. By contrast, Anne took up ample space in reviewing relevant fields, narrowing down discussions to the more specific topics, and finally gradually and intentionally linking them to her research aims. Thus, the Introduction in Applied Linguistics seems to put much weight on Move 1 (Establishing a territory). In other words, while Chris spent a lot of space in emphasizing and describing his technical design and its values, which is primarily Move 3 (Occupying the niche), Anne used a large amount of space in making topic generalizations and reviewing literature, which is Move 1 (Establishing a territory). This is in parallel to Heieh et al.’s (2006) move analysis of the Introduction texts in Computer Science and Applied Linguistics: the former provides more method-related descriptions whilst the latter has a longer literature review.

In addition, it is noteworthy that the two student participants' problems in writing Introduction also reflect possible disciplinary variation. Chris' major difficulties in writing Introduction include: proclaiming his contribution claims in an impressive manner, summarizing his own technical design, and summarizing methods in others' studies in a precise and concise manner, most of which are method-related. Anne's problems of writing Introduction, on the other hand, include: making appropriate topic generalization, making logical sequencing and making natural transitions, forming forceful arguments, and weighing different linguistic realizations to reflect her focus. All of the above-mentioned problems by Anne seem to be closely related to the overall argumentation that is underscored in the discipline of Applied Linguistics. Advisor's revisions also provide a channel to look at the different focus, with Chris' advisor emphasizing and providing more detailed values and justification of their design as opposed to Anne's advisor pinpointing logical and coherent arguments as well as concrete and direct support for claims. To sum up, while Chris encountered more problems in summarizing methods and proclaiming the values of his design, Anne encountered more difficulties in information selection, proposition organization that critically construct the overall argumentation.

The strategies these novice writers deployed also reflect disciplinary differences: Chris' efforts were more on summarizing his designs and other researchers' designs (for reviewing) as well as highlighting the values and features of his technical designs; this stands in contrast with Anne' endeavors on sound and logical argumentation. For instance, to provide succinct summary in literature review, Chris copied the first sentence in the Conclusion section of the reviewed paper or checked how other researchers summarize that particular study. To present his contribution claims more forcefully, he acquired the strategy, from his advisor, of "itemized presentation" which can point out his values of the design in a more specific and impressive manner. As

for Anne, in order to have sound and logical argumentation, she spent considerable time using her mother tongue to plan so as to come up with detailed and well-thought-out outline, which includes sequencing of topics/propositions and transitions among these topics/ propositions. In order to make sure such organization is logical, she further discussed these outlines with her advisor, which tactically helped her advisor understand her thinking and reasoning before actual writing.

In a word, the distinct nature of each discipline seems to play an important role in shaping the practice of constructing Introduction in many aspects, ranging from planning to drafting and revision.

Common difficulties and strategies in writing Introduction

While the above indicates a few distinct disciplinary practices between the two cases, there are in fact also a few similarities between them in composing Introduction. To begin with, while both student participants were indicated by their advisors that they have fairly good command of academic writing in terms of local aspects (i.e., grammar, vocabulary, sentential aspects), putting forward forceful propositions is still lacking in both student participants' Introductions. Chris mentioned several times he had problems showing contributions in an impressive manner; Anne, similarly, expressed she did not know how to present information in a more forceful manner. In addition, although Chris' difficulties are more specifically about making "value/contribution claims" of his technical design and Anne's propositions are more associated with providing suitable support for "centrality claims" of the researched area and "purpose claims" of her study (Kuo, 2006), these claim-making difficulties are indicative of the fact that novice writers may have problems with constructing evaluative propositions. Moreover, concise writing is also related to forming various types of propositions, as both advisors indicated the importance of concise

propositions to their student writers. It thus seems that novice writers are still in lack of sufficient linguistic resources to develop forceful argumentation, as expected by the academic discourse communities.

Another related problem lies in their problems with making negative evaluations after reviewing previous related studies, particularly in “establishing a niche” (Move 2) of the CARS model. Both participants seem to hold reservations or encounter problems in writing this rhetorical move. As Chris indicated, his preferred way of writing this part is to highlight the values of his proposed design, rather than pinpoint the defects or problems of previous studies. Anne experienced great difficulties in writing this rhetorical move, partly because she thinks she is only a junior researcher and thus may not have sound thinking and partly because she would feel unease with strong evaluative language in writing this particular move. Similar to Chris’ attitude, she also expressed that she would promote her own study rather than criticize others’ studies. Both cases suggest that novice researchers have less confidence in negotiating with the established or certified knowledge. Therefore, interestingly, while Swales indicated a few important practices for researcher-writers to “establish a niche” in Introduction, such as “counter-claiming” (Move 2, Step 1A), “Indicating a gap” (Move 2, Step 1B), “question-raising” (Move 2, Step 1C), and “continuing a tradition” (Move 2, Step 1D) (in order of the strength of knowledge claims), the participants in this study, as novice writers, chose to avoid making a niche. Instead, they chose to accentuate the values of their own studies as a way of motivating their studies.

Moreover, both student participants seem to have some awareness of the sophisticated nature of academic writing for publication, which is embodied in their various kinds of deployment of coping and rhetorical strategies in writing Introduction. For instance, with her background in Applied Linguistics, Anne used the

CARS model to plan and organize her Introduction. Likewise, Chris used his lab mate's published text and did the "implicit" genre analysis to understand the organization of his disciplinary Introduction. Also, their various coping and rhetorical strategies reflect their concern for readers, though with different degrees of awareness. Learning that journal editors may choose reviewers from his reference list, Chris formed awareness of the journal gatekeepers, that is, the members of target discourse community on a global scale. He became keenly aware of the citations he used. His deliberate use of integral citation (author-prominent) aimed to arouse these possible critical readers' interests whereas he was extremely cautious about negative evaluation of the cited studies. Through the revision and journal reviewing process, a great number of strategies were formed by Chris, such as adding a quality figure of the design, explaining the terms that appeared in his title, citing the works from the target journal, to name just a few. Meanwhile, Anne's awareness of readership also shaped her various deployments of strategies in writing. Compared with Chris' acute readership awareness of the global discourse communities, Anne's was less explicit, and particularly confined to her advisor; that is why she adopted the strategy of looking at her advisor's published texts as models. Therefore, while a number of studies indicate that L2 student writers will seek "textual mentorship" from published texts (Leki, 1995; Li, 2007; Riazi, 1997), Anne examined her advisor's, in particular, to meet "the academic conventions," as she put it. However, she still showed some concerns for her readers, at least more general readership. This was manifested in her deliberate reading of the first few sentences from some published texts so as to formulate appealing lead-in to her researched topic. Further, in reviewing less well-known topics or more recent development of the researched area, Anne devoted more space and used more integral citations so as to provide more detailed background information for her readers.

Advisor's involvement in students' produced text

The whole publication process of these two cases demonstrates not only student participants' efforts in the gate-entering publication game but also their advisors' influence and assistance for the game. In the first place, the advisors' involvement has shaped their Introductions to different degrees at different junctures of the publication process. To Chris, before journal submission, Professor Shen helped him clear local linguistic mistakes, clarify meanings, and provide more specific information about the merits and contributions of the proposed method. Later, in responding to the reviewers' negative evaluations, Professor Shen discussed with Chris to interpret reviewers' reservations, identified possible problems, and even reorganized the rhetorical structure, such as fronting the contribution claims, providing focused presentation, and justifying adopted equipment/design. Through such rhetorical reconstruction at different points, Chris' paper was finally made into print. Likewise, Professor Liu also helped reconstruct Anne's Introduction in a number of ways. Even before writing, Professor Liu assisted Anne in deciding the scope of the paper as well as checking the overall presentation outline of Introduction. After Anne's writing, Professor Liu also revised her Introduction, making her claims and reasoning well-founded and fixing illogical and incoherent argumentation. Notably, when Anne expressed difficulties in writing "gap-indication," her advisor authored this part. Thus, advisors, being more experienced researcher-writers themselves, shouldered great responsibility and helped reshape the Introduction text immensely.

In fact, the advisors' direct involvement provided ideal opportunities of "situated learning" to these novice writers, reshaping their understanding of and practices towards international publication. Through various interactions with advisors, these junior researchers gradually gained access to the academic writing and publication practice in their respective discipline. For instance, Chris seemed to learn quite a few

important rhetorical practices from his advisor through revising (e.g. adding a quality picture), discussing (e.g. reorganizing presentation of contribution claims), and observing (e.g. citing the lab's works). Therefore, the advisors' own practice, explicit or implicit, seemed to affect or facilitate the incremental development of the novice writers' generic writing ability, particularly how Introduction of an RA should be constructed and reshaped to meet the standards and expectations of target discourse community. This academic enculturation therefore illustrates the concepts of "apprentice scholarly writing" (Belcher, 1994; Li, 2007) or seems in line with the tenets of "legitimate peripheral participation" (Flowerdew, 2000; Lave and Wenger, 1991).

Also, novice writers' deployment of certain coping strategies can enable the more experienced or capable others such as their advisors to understand their writing difficulties so that adequate and timely help could be offered. It can be noted that Anne provided an outline to her advisor before writing so as to enable her advisor to understand her pattern of thinking, thus making sure the transitions and sequencing in Introduction are logical and smooth. After writing, Anne also kept electronic notes for to indicate her problems. Though, as noted by Anne, these textual organizers and reminders were originally meant to assist herself in drafting and revising her Introduction, they became facilitating tools, making her problems explicitly known to her advisor, an insider-reader. This indicates the importance of developing strategies to interact with advisors, thus inviting and receiving suitable feedback at different points of writing this sophisticated genre.

On the other hand, it seems important for advisors to discuss the disciplinary writing practices and revision decisions with their advisees lest they should miss the opportunities of learning various rhetorical practices. A number of incidents from these two student participants seem to illustrate this point. As noted in the last chapter,

Anne's citation of Schmitt's work diverged her knowledge claim (the importance of examining generic vocabulary) to another theme (words go beyond the level of single words), rendering her knowledge claim unfounded and argumentation less forceful. Instead of citing Schmitt's, Professor Liu provided more suitable citations so as to provide support to Anne's knowledge claim. Reading and deciphering these revisions, however, Anne merely thought that the replaced citations helped make "great" transitions to "words go beyond the level of single words," without realizing the real problem behind her writing. Anne, as a novice researcher writer, might also fail to capture the more sophisticated rhetorical strategies her advisor used. For example, using non-integral citations, Professor Liu provided a number of related terms of "lexical bundles," incorporating studies for two decades, for various rhetorical functions: accrediting previous related studies, providing readers with sufficient background information and, more tactically, demonstrating familiarity with the topic and thereby having the expertise of doing the study. However, when being inquired about her advisor's term addition, Anne only noted that "it is great to cite a number of related studies." It seems that more tacit rules of gate-entering practice fail to pass on to Anne.

Therefore, it appears that it is important for advisors and advisees to keep good communication with each other during the publication process. On the students' part, they need to make their difficulties more explicitly known to their advisors such as marking the text with notes, discussing writing progress, or asking for help. On the advisors' part, they can hold writing counseling, explaining and discussing the reasons behind revisions and rearrangements. They could also explain more explicitly the rules or strategies of playing the publication game, particularly using their own experiences or texts as exemplars.

Another related point is that advisors, being more experienced in writing and

researching, could also lead their apprentices to better participate in the process of knowledge ratification. For instance, even though Chris took his lab mate's published texts as models, he had undergone recursive and yet ineffective drafting and revising practice at the early stage of writing his Introduction, which caused tremendous frustration in writing. Such ineffectiveness and frustration could have been avoided if he had discussed with his advisor about the timing of writing Introduction and about what to accentuate in Introduction. Therefore, it is better for advisors to discuss with their advisees about disciplinary writing practices, thereby making writing for publication a more conceivable and less frustrating process.

Pedagogical Implications

To quote Paltridge (2004, p. 99), "Case study research which provides us with 'literacy autobiographies' and 'portraits' of our learners' experiences (Casanave, 2002; 2004) can help us better understand these issues, and how we might respond to them." It is thus hoped that these two case studies of doctoral students in different disciplines can shed light on the complicated nature of composing Introduction, distinctive difficulties in writing this demanding sub-genre, and strategies used and formed during the process of international publication. With the critical information at hand, it is hoped that EAP language professionals as well as advisors can be aware of and reflect upon these issues and thus provide more suitable help for L2 junior scholars in participating in the publication game. A few pedagogical implications can be drawn based on the results presented in the study.

The two case studies show that some of the difficulties and strategies are closely related to the rhetorical functions of Introduction. Therefore, it seems vital for language professionals as well as advisors to pinpoint such functional aspects. That is, instead of viewing academic competence as general writing ability, more attention

should be paid to the rhetorical functions of each major section of RA as a genre, which is distinctive in its communicative purposes and schematic structure (Swales, 1990). In addition, to the researcher's understanding, while it is common for language professionals to instruct various types of useful sentence patterns and formulaic expressions, some critical skills such as concise writing, making evaluative propositions, and highlighting information through different sentence structures and organization. could be stressed in EAP class, as these points seem to be problematic to novice writers.

Moreover, our case studies also reflect discipline-distinct writing practice of Introduction, suggesting that the writers from the hard science may encounter different difficulties and thus employed different strategies from those from the soft science. Therefore, while it is commonly advocated that EAP students can perform genre analysis in class, it is highly suggested that, besides identifying major moves and steps in a section, raising student researchers' awareness of how knowledge is constructed and disseminated in a particular discipline should be emphasized. In detail, language professionals can form students into various discipline groups and discuss why certain rhetorical moves and steps manifested in the RAs in various disciplines in different ways, and how they are related to the author's research foci and purposes.

On the other hand, it seems that EAP language professionals could also help to raise L2 novice writers' awareness of various distinctions among academic "genre networks," that is, the sets of genres which postgraduate students need to be able to produce and participate in (Swales, 2004). Through understanding their distinctive purposes, audience, rhetorical functions, and conventions (such as the differences between thesis and journal), novice researcher writers could be better prepared and perhaps develop suitable strategies to cope with their target genres or to form tailored strategies to be successfully engaged in various types of academic participation.

Besides examining and highlighting the differences, it should be important to explore the similarities and interrelatedness among these academic genres. From Chris' amazing academic generic experience in relating oral presentation and patent filing to the writing of Introduction, it seems that various types of academic genres do have something in common, in terms of rhetorical construction and knowledge dissemination. Novice researcher writers may tap into their various academic generic experiences, whether the experience is explicit or implicit, whether the genre is oral or written, whether the learning is formal or informal, to reflect on the implications they learn and thus become more successful academic discourse community members.

Lastly yet critically, although students may have access to published texts and use them as models to write, these finished "products" do not show the process of writers' rhetorical maneuverings as well as the interactive and negotiating nature of the revising and reviewing process. Put differently, much of the planning, drafting, revising, and negotiating process do not manifest themselves on the published texts. Accordingly, it is recommended that, besides using published texts, EAP practitioners may collect the various versions of a journal article as well as the "occluded genres" (Swales, 2004) such as review letters, submission letters, list of revisions – the whole documentation of the text gestation and reformulation. Through comparing various versions, identifying possible problems, pondering and reacting to journal gatekeepers' reservations and suggestions, novice researcher writers may more clearly comprehend these various dimensions of the gate-entering practice of scholarly publication. For more experienced researcher-writers such as advisors or seniors in the lab, personal anecdotes of the publication process could be shared and discussed with these novice writers, which could be very enlightening. Through such interpersonal sharing, the torch of knowledge construction may be passed down to the next generation.

Limitations of the Study

Doing this qualitative study, much more time and effort have been invested than I originally could have envisioned: finding participants, contacting and arranging meetings with participants and their advisors, recording and transcribing tons of interview data, and organizing and comparing multiple sources of data. Being an L2 novice researcher-writer myself, all of these add up to the painful and prolonged process of my thesis study. Yet, I am convinced that I have learned a few strategies along the way. A case in point, I am using Chris' strategy (sprinkling the technical content with personal struggles) so as to promote the values of my study, hoping that the following limitations presented could somehow be forgiven.

The present study aims to record two cases of doctoral students writing their first journal article for publication. Methodologically, the present study intends to analyze the rhetorical structures, or the macro level, of RA Introduction; more local aspects (e.g., vocabulary, phraseologies, grammar) are not specifically examined. In addition, the study is limited to the time allowed for documenting the comprehensive publication process of Anne. Anne's publication process is still on-going; she has not yet received any comments from the journal gatekeepers and thus the data from her may not be comparable to that of Chris', which had undergone the whole publication process but notice that it spanned for more than four years. Further, Anne's writing of this journal article is based on her master thesis, thus the nature may be different from that of writing a journal article from the very beginning, as in the case of Chris'. Also, these two cases may not be fully reflective of the "typical" novice postgraduate students in general. Chris' senior years (7th year) in the doctoral program may have contributed to his academic generic experiences, which in turn may possibly affect his generic as well as disciplinary knowledge. Anne's background of Applied Linguistics

as well as her study's focus on rhetorical functions of Introduction may partially account for her awareness of how to write Introduction, or at least how to explicate her practice of Introduction writing in jargons (e.g., integral citations, CARS model, coherence and cohesion). That being said, since the nature of case studies does not aim for generalizability, it is hoped that our distinctive cases can reveal a few issues and thus make some contributions to the field.

Suggestions for Future Research

While the present study centers on the composing process, difficulties, and strategies of writing Introduction in two contrastive disciplines, future studies can extend the scope into other RA sections as well as different disciplinary contexts, such as exploring writing RA Discussion in soft science and Method in hard science. It is also suggested that researchers can examine the interrelationships between RA sections, examining how particular skills or difficulties in one section could be related to writing other rhetorical sections. Furthermore, future studies can prolong the documentation of generic learning of student participants, thus examining how they transform from novice scholars into more seasoned scholars, and how they encounter different difficulties, foster disparate strategies along the international publication process in their academic studies or careers. Finally, it is suggested that future researchers can explore the issue of "genre networks" from the perspectives of doctoral students' continuous disciplinary acculturation. That is, how different academic genres interact and affect the enculturation of postgraduate students. For instance, exploring how oral presentation in the conference could exert impact on the learning of academic writing, or vice versa.

REFERENCES

- Afros, E. & Schryer, C. F. (2009). Promotional (meta)discourse in research articles in language and literary studies. *English for Specific Purposes*, 28, 58-68.
- Ahmad, U. (1997). Research article introductions in Malay: Rhetoric in an emerging research community. In A. Duszak (Ed.), *Culture and Styles of Academic Discourse* (pp. 273-304). Berlin: Mouton de Gruyter.
- Allison, D., Cooley, L., Lewkowicz, J., & Nunan, D. (1998). Dissertation writing in action: The development of a dissertation writing support program for ESL graduate research students. *English for Specific Purposes*, 17, 199-217.
- Anthony, L. (1999). Writing research article introductions in software engineering: How accurate is a standard model? *IEEE Transactions on Professional Communication*, 42, 38-46.
- Atkinson, D. (1999). Language and science. *Annual Review of Applied Linguistics*, 19, 193-214.
- Belcher, D. (1994). The apprenticeship approach to advanced academic literacy: Graduate students and their mentors. *English for Specific Purposes*, 13, 23-34.
- Belcher, D. (2007). Seeking acceptance in an English-only research world. *Journal of Second Language Writing*, 16, 1-22.
- Berkenkotter, C. & Huckin, T. (1994). *Genre knowledge in disciplinary communication: Cognition, culture, power*. Hilldale: Lawrence Erlbaum Associates.
- Berkenkotter, C., Huckin, T. & Ackerman, J. (1988). Conventions, conversations, and the writer: Case study of a student in a rhetoric Ph.D. program. *Research in the Teaching of English*, 22, 9-44.
- Biber, D. & Finegan, E. (1994). Intra-textual variation within medical research articles. In N. Oostdijk & P. de Haan Atlanta (Eds.). *Corpus-based Research into Language* (pp. 201- 221). Atlanta: Rodopi: BV.
- Bitchener, J. & Basturkmen, H. (2006). Perceptions of the difficulties of postgraduate L2 thesis students writing the discussion section. *Journal of English for Academic Purposes*, 5, 4-18.
- Bley-Vroman, R. & Selinker, L. (1984). Research design in rhetorical/ grammatical studies: a proposal optimal research strategy. *English for specific purposes*, 3, 37-46.
- Bosher, S. (1998). The composing processes of three southeast Asian writers at the post-secondary level: An exploratory study. *Journal of Second Language Writing*, 7, 205-241.
- Braine, G. (2002). Academic literacy and the nonnative speaker graduate student.

- Journal of English for Academic Purposes*, 1, 59-68.
- Bunton, D. (2002). Generic moves in Ph. D. thesis introductions. In J. Flowerdew (Ed.), *Academic discourse* (pp. 55-75). London: Pearson Education.
- Burrough-Boenisch, J (2003). Shapers of published NNS research articles. *Journal of Second Language Writing*, 12, 223-243.
- Canagarajah, S. 1996. "Nondiscursive" requirements in academic publishing, material resources of periphery scholars, and the politics of knowledge production. *Written Communication*, 13, 435-472.
- Casanave, P. C. & Hubbard P. (1992). The writing assignments and writing problems of doctoral students: faculty perceptions, pedagogical issues, and needed research. *English for Specific Purposes*, 11, 33-49.
- Cheng, A. (2006). Analyzing and enacting academic criticism: The case of an L2 graduate learner of academic writing. *Journal of Second Language Writing*, 15, 279-306.
- Chimbganda, A.B. (2000). Communication strategies used in the writing of answers in biology by ESL first year science students of the University of Botswana. *English for Specific Purposes*, 19, 305-329.
- Cho, S. (2004). Challenges of entering discourse communities through publishing in English: Perspectives of Nonnative-speaking doctoral students in the United States. *Journal of Language, Identity, and Education*, 3, 47-72.
- Connor, U., & Mayberry, S. 1996. Learning discipline-specific academic writing: A case study of a Finnish graduate student in the United States. In E. Ventola & A. Mauranen (Eds.), *Academic writing: Intercultural and textual issues*. Amsterdam: John Benjamins. 231-253.
- Cooley, L., & Lewkowicz, J. (1995). Developing awareness of the rhetorical and linguistic conventions of writing a thesis in English: Addressing the needs of ESL/ EFL postgraduate students. In A. Duszak (Ed.), *Culture and styles of academic discourse* (pp. 113-140). Berlin: Mouton de Gruyter.
- Crookes, G. (1986). Towards a validated analysis of scientific text structure. *Applied Linguistics*, 7, 57-70.
- Cumming, A. (2001). Learning how to write in a second language: Two decades of research. *International Journal of English Studies*, 2001, 1-23.
- Curry, M. & Lillis, T. (2004). Multilingual scholars and the imperative to publish in English: Negotiating interests, demands, and rewards. *TESOL Quarterly*, 38, 663-688.
- Dahl, T. (2004). Textual metadiscourse in research articles: a marker of national culture or of academic discipline? *Journal of Pragmatics*, 36, 1807-1825.
- Dong, Y. (1996). Learning how to use citations for knowledge transformation:

- nonnative doctoral students' dissertation writing in science. *Research in the Teaching of English*, 30, 428-457.
- Dong, Y. (1998). Non-native graduate students' thesis/ dissertation writing in science: Self-reports by students and their advisors from two U.S. institutions. *English for Specific Purposes*, 17, 369-390.
- Duszak, A. (1997). Cross-cultural academic communication: A discourse-community view. In A. Duszak (Ed.), *Culture and Styles of Academic Discourse* (pp. 11-40). Berlin: Mouton de Gruyter.
- Flowerdew, J. (1999a). Writing for scholarly publication in English: The case of Hong Kong. *Journal of Second Language Writing*, 8, 123-145.
- Flowerdew, J. (1999b). Problems in writing for scholarly publication in English: The case of Hong Kong. *Journal of Second Language Writing*, 8, 243-264.
- Flowerdew, J. (2000). Discourse community, legitimate peripheral participation, and the nonnative-English-speaking scholar. *TESOL Quarterly*, 34, 127-150.
- Flowerdew, J. (2001). Attitudes of journal editors to nonnative speaker contributions. *TESOL Quarterly*, 35, 121-150.
- Flowerdew, J. (2005). A multimethod approach to research into processes of scholarly writing for publication. In P. K Matsuda & T. J. Silva (Eds.), *Second language writing research: Perspectives on the process of knowledge construction* (pp. 65-77).
- Flowerdew, J. (2008). Scholarly writers who use English as an additional language: What can Goffman's "Stigma" tell us? *Journal of English for Academic Purposes*, 7, 77-86.
- Flowerdew, J. & Li, Y. (2007). Language re-use among Chinese apprentice scientists writing for publication. *Applied Linguistics*, 28, 440-465.
- Gledhill, C. (2000). The discourse function of collocation in research article introductions. *English for Specific Purposes*, 19, 115-135.
- Gosden, H. (1992a). Research writing and non-native speakers: From the editors. *Journal of Second Language Writing*, 1, 123-129.
- Gosden, H. (1992b). Discourse functions of marked theme in scientific research articles. *English for Specific Purposes*, 11, 207-224.
- Gosden, H. (1995). Success in research article writing and revision: A social-constructivist perspective. *English for Specific Purposes*, 14, 37-57.
- Gosden, H. (1996). Verbal reports of Japanese novices' research writing practices in English. *Journal of Second Language Writing*, 5, 109-128.
- Gosden, H. (2003). 'Why not give us the full story?': functions of referees' comments in peer reviews of scientific research papers. *Journal of English for Academic Purposes*, 2003, 87-101.

- Gupta, R. (1995). Managing general and specific information in Introductions. *English for Specific Purposes, 14*, 59-75.
- Halliday, M. A. K., McIntosh, A., & Stevens, P. (1964). *The linguistics sciences and language teaching*. London: Longman.
- Hawes, T. & Thomas, S. (1997). Tense choices in citations. *Research in the Teaching of English, 31*, 393-414.
- He, T. (2005). Effects of mastery and performance goals on the composition strategy use of adult EFL writers. *The Canadian Modern Language Review, 61*, 407-431.
- Heslot, J. (1982). Tense and other indexical markers in the typology of scientific texts in English. In Hoedt et al. (Eds.): 83-103.
- Holmes, R. (1997). Genre analysis and the social sciences: An investigation of the structure of Discussion sections in three disciplines. *English for Specific Purposes, 16*, 321-337.
- Hseih, W. M., Tsai Y. C., Lin, M. C., Liou, H. C., & Kuo, C. H. (2006). Exploring genre sets: Research article sections in two illustrative humanities and science disciplines. *Proceedings of the 23rd International Conference on English Teaching and Learning in the Republic of China* (pp. 349-361). Kaohsiung: Kaun Tang.
- Huang, H. T. & Liou, H. C. (2005). An action study of an academic English writing course for graduate students in Taiwan: Students' needs, perception, and register features in the writing. *English Teaching and Learning, 30*, 45-73.
- Knorr-Cetina, K. D. 1981. *The manufacture of knowledge*. Oxford: Pergamon.
- Kourilova, M. (1998). Communicative characteristics of reviews of scientific papers written by non-native users of English. *Endocrine Regulations, 32*, 107-114.
- Hewings M. & Hewings A. "It is interesting to note that ...": a comparative study of anticipatory "it" in student and published writing. *English for Specific Purposes, 21*, 367-383.
- Hsu, Y. P. (2008). Teaching and researching writing: focus on writers. *Proceedings of Seventeenth International Symposium and Book Fair on English Teaching* (pp. 118-129). Taipei, Taiwan.
- Huang, H. & Liou, H. (2005). An action research study of an academic English writing course for graduate students in Taiwan: Students' needs, perception, and register features in the writing. *English Teaching & Learning, 30*, 45-73.
- Hyland, K. (1998). Persuasion and context: The pragmatics of academic metadiscourse. *Journal of Pragmatics, 30*, 437-455.
- Hyland, K. (1999). Disciplinary discourses: Writer stance in research articles. In C. Candlin and K. Hyland (Eds.), *Writing: Texts, Processes and Practices*. London: Longman, 99-121.

- Hyland, K. (2000). *Disciplinary discourses: Social interaction in academic writing*. London: Pearson.
- Hyland, K. (2004). *Genre and Second Language Writing*. Ann Arbor: The University of Michigan Press.
- Hyland, K. (2004). Disciplinary interactions: metadiscourse in L2 postgraduate writing. *Journal of Second Language Writing, 13*, 133-151.
- Hyland, K. (2005). *Metadiscourse*. London: Continuum.
- Hyland, K. & Tse, P. (2004). Metadiscourse in academic writing: a reappraisal. *Applied Linguistics, 25*, 156-177.
- Hyland, K. (2008). As can be seen: Lexical bundles and disciplinary variation. *English for Specific Purposes, 27*, 4-21.
- Johns, A. M. (2008). Genre awareness for the novice academic student: An ongoing quest. *Language Teaching, 41*, 237-252.
- Kuo, C. H. (1999). The use of personal pronouns: role relationships in scientific journal articles. *English for Specific Purposes, 18*, 121-138.
- Kuo, C. H. (2001). Academic competence: Designing an EAP course for Ph.D. students. *Proceedings of the Eighteenth Conference on English Teaching and Learning in the Republic of China* (pp. 131-144). Taipei: Crane.
- Kuo, C. H. (2002). Phraseology in Scientific Research Articles. *Proceedings of the Eleventh International Symposium on English Teaching/ Fourth Pan Asian Conference* (pp. 405-411). Taipei: Crane.
- Kuo, C. H. (2006). Knowledge Claims in Academic Research Articles. *Proceedings of the 23rd International Conference on English Teaching and Learning in the Republic of China* (pp. 625-636). Kaohsiung: Kaun Tang.
- Kwan, B. S. C. (2006). The schematic structure of literature reviews in doctoral theses of applied linguistics. *English for Specific Purposes, 25*, 30-55.
- Kwan, B. S. C. (2008). The nexus of reading, writing, and researching in the doctoral undertaking of humanities and social sciences: Implications for literature reviewing. *English for Specific Purposes, 27*, 42-56.
- Latour, B. & Wenger, E. (1991). *Laboratory life: the social construction of scientific facts*. Beverly Hills: Sage.
- Lea, M. R. (1994). "I thought I could write until I came here": Student writing in higher education. In G. Gibbs (ed.), *Improving student learning: theory and practice*. Oxford: Oxford Centre for Staff Development, 216-226.
- Lee, S. (2001). A contrastive rhetoric study of Korean and English research paper introductions. Unpublished PhD Thesis, Manoa, University of Hawaii, United States.
- Leki, I. (1995). Coping strategies of ESL students in writing tasks across the

- curriculum. *TESOL Quarterly*, 29, 235-262.
- Lewin, B. A., Fine, J., & Young, L. (2001). Expository discourse: a genre-based approach to social science research texts. Continuum.
- Li, Y. (2005). Multidimensional enculturation: The case of an EFL Chinese doctoral student. *Journal of Asian Pacific Communication*, 15, 153-170.
- Li, Y. (2006a). Negotiating knowledge contribution to multiple discourse communities: A doctoral student of computer science writing for publication. *Journal of Second Language writing*, 15, 159-178.
- Li, Y. (2006b). A doctoral student of physics writing for publication: A sociopolitically-oriented case study. *English for Specific Purposes*, 25, 456-478.
- Li, Y. (2007a). Apprentice scholarly writing in a community of practice: An intraview of an NNES graduate student writing a research article. *TESOL Quarterly*, 41, 55-79.
- Li, Y. & Flowerdew, J. (2007b). Shaping Chinese novice scientists' manuscripts for publication. *Journal of Second Language Writing*, 16, 100-117.
- Lillis, T. & Curry, M. (2008). Professional academic writing by multilingual scholars: Interactions with literacy brokers in the production of English-medium texts. *Written Communication*, 23, 3-35.
- Lim, J. M. H., (2006). Method sections of management research articles: A pedagogically motivated qualitative study. *English for Specific Purposes*, 25, 282-309.
- Liu, P. C. (2007). Learning how to write good MA thesis literature review: A case study of one Taiwanese graduate student. Unpublished MA thesis, University of Yuan Ze University, Chungli, Taiwan.
- Marco, M.J.L. (2000). Collocational frameworks in medical research papers: a genre-based study. *English for Specific Purposes*, 19, 63-86.
- Manchon, R. (2001). Trends in the conceptualization of second language composing strategies: A critical analysis. *International Journal of English Studies*, 1, 47-70.
- Martinez, I. A. (2005). Native and non-native writers' use of first person pronouns in different sections of biology research articles in English. *Journal of Second Language Writing*, 14, 174-190.
- Martinez, I. A. (2008). Building consensus in science: Resources for intertextual dialog in biology research articles. *Journal of English for Academic Purposes*, 7, 268-276.
- Matsumoto, K. (1995). Research paper writing strategies of professional Japanese EFL writers. *TESL Canada Journal*, 13, 17-27.
- Moore, T. (2002). Knowledge and agency: a study of 'metaphenomenal discourse' in textbooks from three disciplines. *English for Specific Purposes*, 21, 347-366.

- Mu, C. (2007). An investigation of three Chinese students' English writing strategies. *TESL-EJ*, 11, 1-23.
- Mu, C. (2005). A Taxonomy of ESL Writing Strategies. In *Proceedings Redesigning Pedagogy: Research, Policy, Practice*, pp. 1-10, Singapore.
- Okamura, A. (2006). Two types of strategies used by Japanese scientists, when writing research articles in English. *System*, 34, 68-79.
- Orr, T. (1999). Genre in the field of computer science and computer engineering. *IEEE Transactions on Professional Communication*, 42, 32-37.
- Ozturk, I. (2007). The textual organization of research article introductions in applied linguistics: Variability within a single discipline. *English for Specific Purposes*, 26, 25-38.
- Parkhurst, C. (1990). The composing process of science writers. *English for Specific Purposes*, 9, 169-179.
- Paltridge, B. (1997). Thesis and dissertation writing: Preparing ESL students for research. *English for Specific Purposes*, 16, 61-70.
- Paltridge, B. (2000). Genre knowledge and teaching professional communication. *IEEE Transactions on Professional Communication*, 43, 397-401.
- Paltridge, B. (2004). Academic writing. *Language Teaching*, 37, 87-105.
- Petric, B. & Czarl, B. (2003). Validating a writing strategy questionnaire. *System*, 31, 187-215.
- Petric, B. (2007). Rhetorical functions of citations in high- and low-rated master's theses. *Journal of English for Academic Purposes*, 6, 238-253.
- Pickard, V. (1995). Citing previous writers: What can we say instead of "say"? *Hong Kong Papers in Linguistics and Language Teaching*, 18, 89-102.
- Posteguillo, S. (1999). The schematic structure of Computer Science research articles. *English for Specific Purposes*, 18, 139-160.
- Powers, J. & Nelson, J. (1995). L2 writers and the writing center: A national survey of writing center conferencing of graduate institutions. *Journal of Second Language Writing*, 4, 113-138.
- Riazi, A. (1997). Acquiring disciplinary literacy: A socio-cognitive analysis of text production and learning among Iranian graduate students of Education. *Journal of Second Language Writing*, 6, 105-137.
- Rowley-Jolivet, E. & Carter-Thomas, S. (2005). The rhetoric of conference presentation introductions: contexts, argument and interaction. *International Journal of Applied Linguistics*, 15, 45-70.
- Ruiying, Y. & Allison, D. (2004). Research articles in applied linguistics: Structures from a functional perspective. *English for Specific Purposes*, 23, 264-279.
- Rymer, J. (1988). Scientific composing processes: How eminent scientists write

- journal articles. In D. A. Jolliffe (Ed.), *Advances in writing research, Volume Two: Writing in academic disciplines*. (pp. 211-250). Norwood, NJ: Ablex.
- Samraj, B. (2002). Introductions in research articles: Variations across disciplines. *English for Specific Purposes, 21*, 1-17.
- Samraj, B. (2004). Discourse features of the student-produced academic research paper: variations across disciplinary courses. *Journal of English for Academic Purposes, 3*, 5-22.
- Samraj, B. (2005). An exploration of genre set: research article abstracts and introductions in two disciplines. *English for Specific Purposes, 24*, 141-156.
- Samraj, B. (2008). A discourse analysis of master's theses across disciplines with a focus on introductions. *Journal of English for Academic Purposes, 7*, 55-67.
- Shaw, P. (1991). Science research students' composing processes. *English for Specific Purposes, 10*, 189-206.
- Shaw, P. (1992). Reasons for the correlation of voice, tense, and sentence function in reporting verbs. *Applied Linguistics, 13*, 302-319.
- Sionis, C. (1995). Communication strategies in the writing of scientific research articles by non-native users of English. *English for Specific Purposes, 14*, 99-113.
- St. John, M. (1987). Writing processes of Spanish scientists publishing in English. *English for Specific Purposes, 6*, 113-120.
- Swales, J. M. (1981). *Aspects of article introductions*. Birmingham, UK: The University of Aston, Language Studies Unit.
- Swales, J. M. & Najjar, H. (1987). The writing of research article introductions. *Written Communication, 4*, 175-191.
- Swales, J. M. (1990). *Genre Analysis: English in academic and research settings*. New York: Cambridge University Press.
- Swales, J. M., & Lindermann, S. (2002). Teaching the literature review to international graduate students. In A. Jones (Ed.), *Genre in the classroom* (pp. 105-120). Mahwah, NJ: Lawrence Erlbaum.
- Swales, J. M. & Feak, C. B. (2000). *English in Today's Research World: A Writing Guide*. Ann Arbor: The University of Michigan Press.
- Swales, J. M. (2004). *Research genres: Exploration and applications*. Cambridge: Cambridge University Press.
- Tardy, C. (2006). Researching first and second language genre learning: A comparative review and a look ahead. *Journal of Second Language Writing, 15*, 79-101.
- Thompson, D. K. (1993). Arguing for experimental "facts" in science: A study of research article results sections in biochemistry. *Written Communication, 10*,

106-128.

- Thompson, G., & Yiyun, Y. (1991). Evaluation in the reporting verbs used in academic papers. *Applied linguistics*, 12, 365-382.
- Thompson, P. (2000). Citation practice in PhD theses. In L. Burnard & T. McEnery (Eds.), *Rethinking Language Pedagogy from a Corpus Perspective* (pp. 91-101). Frankfurt: Peter Lang.
- Thompson, P., & Tribble, C. (2001). Looking at citation: Using corpora in English for academic purposes. *Language Learning & Technology*, 15, 91-105.
- Torrance, M., Thomas, G., & Robinson, E. (1994). The writing strategies of graduate students in the social sciences. *Higher Education*, 27, 379-392.
- Uzuner, S. (2008). Multilingual scholars' participation in core/global academic communities: A literature review. *Journal of English for Academic Purposes*, 7, 250-263.
- White, H. D. (2004). Citation analysis and discourse analysis revisited. *Applied Linguistics* 25, 89-116.
- Williams, P., 1999. Result sections of medical research articles: Analysis of rhetorical categories for pedagogical purposes. *English for Specific Purposes*, 18, 347-366.
- Yang, R. & Allison, D. (2003). Research articles in applied linguistics: moving from results to conclusions. *English for Specific Purposes*, 22, 365-385.
- Yeon, S. H. (2002). The writing strategies used by graduate students of English as a second language. *Journal of Applied Linguistics Association of Korea*, 18, 127-144.



APPENDICES

Appendix A Consent form for student participants

國立交通大學英語教學研究所

研究同意書

學長/學姊，您好

我是徐昱愷，是交通大學英語教學研究所三年級的學生。目前正在撰寫碩士論文。我研究的題目是「撰寫期刊論文的序論:寫作困難及寫作策略」，內容主要是探討寫英文期刊論文時所遇到的困難，及所使用的寫作策略。因為研究的目的在於了解博士班學生在寫作上所經歷的過程，因此我想要邀請您成為我的研究對象。我會收集而且分析您所寫的期刊論文，包含初稿及主要版本。此外，還需要麻煩您填寫一份問卷。根據資料分析以及問卷的結果，我還會進一步跟您做深度的訪談。訪談的內容將會進行錄音及謄寫。

參與這項研究沒有任何風險。除了研究者之外，沒有其他人會接觸到問卷、稿件以及訪談內容，資料也會在研究分析後立即銷毀。對於您提供的各項資料只提供本研究使用，不做其他用途。您的個人資料將不會公開在研究報告中，而以匿名方式處理。

如果您有任何問題，歡迎與我討論。如果您之後有任何問題、考量，也可以透過電話0910717301或email: louis1681@yahoo.com.tw與我聯繫。您也可以和我的指導教授郭志華老師聯絡，電話為(03)5593142-1286或是email: chk@must.edu.tw。

我誠摯地邀請您參與這次的研究。您的參與將能幫助英語教學工作者進一步了解非母語人士撰寫期刊論文時所遇到的困難，以便能提供更適切的協助。您可以決定是否參與這項研究。研究期間，如果您不願意繼續參與，您可以隨時退出，而您的資料將會歸還給您本人或是逕行銷毀。

最後，如果您已閱讀以上說明，並同意參與本研究，請在下列**參加者**的欄位中簽名。非常感謝您撥冗閱讀此說明。

參加者簽名：_____ 日期：_____

研究者簽名：_____ 日期：_____

Appendix B Consent form for advisors

國立交通大學英語教學研究所

研究同意書

老師，您好

我是昱愷，就讀交通大學英語教學研究所三年級。目前正在撰寫碩士論文。我研究的題目是「撰寫期刊論文的序論:寫作困難及寫作策略」，內容主要是探討博士班學生寫英文期刊論文時所遇到的困難，及所使用的寫作策略。因為希望可以從老師的觀點了解您指導的博士班學生在寫作上所遇到的困難，特別想邀請您為訪談對象。訪談的內容將會進行錄音及謄寫，但是會全程保密。

參與這項研究沒有任何風險。除了研究者之外，沒有其他人會接觸訪談內容，資料也會在研究分析後立即銷毀。對於老師所提供的資料只提供本研究使用，不做其他用途。您的個人資料將不會公開在研究報告中，而以匿名方式處理。

如果您有任何問題，歡迎老師與我討論。如果您之後有任何問題、考量，也可以透過電話0910717301或email: louis1681@yahoo.com.tw與我聯繫。老師也可以和我的指導教授郭志華老師聯絡，電話為(03)5593142-1286或是email: chk@must.edu.tw。

我誠摯地邀請您參與這次的研究。您的參與將能幫助英語教學工作者進一步了解非母語人士撰寫期刊論文時所遇到的困難，以便能提供更適切的協助。您可以決定是否參與這項研究。研究期間，如果您不願意繼續參與，您可以隨時退出，而您的資料將會歸還給您本人或是逕行銷毀。

最後，如果您已閱讀以上說明，並同意參與本研究，請在下列參加者的欄位中簽名。非常感謝老師撥冗閱讀此說明。

參加者簽名：_____ 日期：_____

研究者簽名：_____ 日期：_____

Appendix C Questionnaire

各位研究參與者，您好：

非常感謝您的協助。為了瞭解各位同學英語學習經驗和參與本研究時的情況，故請填寫本問卷，以提供您寶貴的經驗與看法。

本問卷總共四頁，包括四大部分。第一部分為個人基本資料；第二部分為個人英語學習背景；第三部分為學術英語寫作的經驗；第四部分為英文期刊論文寫作時所遇到的困難。本問卷僅提供學術研究使用，不做為任何商業用途，請根據您本身真實情況來回答。

國立交通大學英語教學所碩士班 研究生 徐昱愷
指導教授 郭志華 教授

答題說明：請依您的意見或情況，在框格□中勾選或在空格___上寫下適合的答案。填寫時如對問題有任何疑慮，可在題項前打問號，填寫完畢後會再跟您解說。

第一部分：個人基本資料

姓名：_____

性別： 男 女

年齡：___歲

就讀系所/年級：_____

大學主修：_____

研究所主修：_____

英語文相關認證：

托福：總分___ 聽___ 說___ 讀___ 寫___

雅思：總分___ 聽___ 說___ 讀___ 寫___

多益：總分___ 聽___ 說___ 讀___ 寫___

全民英檢：

初級 中級 中高級 高級

通過初試：閱讀___ 聽力___

通過複試：寫作___ 口語___

其他語言認證：_____

總分___ 聽___ 說___ 讀___ 寫___

無考取任何英語文相關認證

第二部分：英語學習背景

若您幫自己評分，您整體的英語能力及讀寫的表現如何？

(分數為1至5，1表示非常差，5代表非常好)

整體英文能力___

聽力___ 口說___ 閱讀___ 寫作___

若您幫自己評分，您覺得自己學英語學術論文的讀寫能力表現如何？
(分數為1至5，1表示非常差，5代表非常好)

學術論文閱讀____

學術論文寫作____

曾經修過任何英文寫作相關的課程嗎？

有

大學 ____門課 _____ (請寫出課堂名稱)

研究所 ____門課 _____ (請寫出課堂名稱)

博士班 ____門課 _____ (請寫出課堂名稱)

無

曾經修過任何學術英文寫作的課程嗎？

有

大學 ____門課 _____ (請寫出課堂名稱)

研究所 ____門課 _____ (請寫出課堂名稱)

博士班 ____門課 _____ (請寫出課堂名稱)

無

第三部分：學術英文寫作經驗

除了現在正在撰寫的英文期刊論文(journal articles)，是否還有其他投稿期刊的經驗？

有

碩士班 共投過____篇期刊 (中文____篇 英文____篇)

博士班 共投過____篇期刊 (中文____篇 英文____篇)

無

是否有撰寫會議論文(conference papers)的經驗(該全文收入會議論文集)？

是

碩士班 共發表過____篇會議論文 (中文____篇 英文____篇)

博士班 共發表過____篇會議論文 (中文____篇 英文____篇)

否

博士班繳交的課堂論文報告是否需要用英文撰寫？

非常頻繁(75%以上) 經常(75% ~ 50%)

偶爾(低於 50%) 不需要(0%)

碩士班繳交的課堂論文報告是否需要用英文撰寫？

- 非常頻繁(75%以上) 經常(75% ~ 50%)
 偶爾(低於 50%) 不需要(0%)

碩士畢業論文是否用英文撰寫？

- 是 否

第四部分 英文期刊寫作時所遇到的困難

答題說明：

- 請針對您在撰寫英語期刊論文當中，所遇到的各種困難圈選困難程度，分數由 1 到 5，1 表示不具困難，5 表示非常困難。
- 困難項目包含字彙、文法、段落、以及期刊中各個章節，共四大項目。如果還有其他困難沒有列出，請在最末頁中列舉。

字 彙					
1. 一字詞有多種意思	1	2	3	4	5
2. 字彙或詞彙有限	1	2	3	4	5
3. 領域中的專有詞彙	1	2	3	4	5
4. 字詞之間的搭配 (e.g., focus on)	1	2	3	4	5
5. 考量文體的正式程度而選擇適合的字	1	2	3	4	5
6. 使用多樣的字詞來表達意思，以避免重複	1	2	3	4	5
7. 其他_____	1	2	3	4	5
文 法					
1. 時態	1	2	3	4	5
2. 主被動語態	1	2	3	4	5
3. 主詞與動詞的一致性	1	2	3	4	5
4. 名詞的單複數	1	2	3	4	5
5. 定冠詞 (e.g., a, an, the)	1	2	3	4	5
6. 語氣助動詞 (e.g., can, might, should)	1	2	3	4	5
7. 句型結構的正確性	1	2	3	4	5
8. 使用多種不同的句型結構	1	2	3	4	5
9. 其他_____	1	2	3	4	5

段 落					
1. 組織安排文章結構	1	2	3	4	5
2. 組織論點	1	2	3	4	5
3. 句子之間的連結	1	2	3	4	5
4. 段落之間的連結	1	2	3	4	5
5. 其他 _____	1	2	3	4	5
各 章 節					
1. 序論(包含文獻探討)	1	2	3	4	5
2. 研究方法	1	2	3	4	5
3. 研究結果	1	2	3	4	5
4. 討論與結論	1	2	3	4	5
5. 摘要	1	2	3	4	5

如果還有其他困難的項目沒有列出，煩請在下面列舉出來。

—— 本問卷到此結束，再次感謝您撥冗填寫 ——

Appendix D Interview questions with student participants

1. General questions

1.1 Perceptions of academic writing

- 1.1.1 How would you describe your general English proficiency?
- 1.1.2 What do you think about your academic reading proficiency?
- 1.1.3 Do you think reading research articles (RAs) in English is difficult?
- 1.1.4 Do you think writing RAs in English is difficult?
- 1.1.5 What do you think if you can write it in Chinese? Are there any differences?
- 1.1.5 Can you briefly describe the overall organization of the RAs in your field?
What does it include? Such as Introduction, Method, Results, Discussion.
- 1.1.6 Which section in RAs do you think is particularly troublesome to write? Why is it particularly difficult?
- 1.1.7 Which section is the easiest to write? Why?

1.2 Writing RAs for publication

- 1.2.1 Why do you want to publish your research in journals?
- 1.2.2 As a non-native speaker, what do you feel about using English to publish?
- 1.2.3 How do you feel about editors and reviewers' attitude toward non-native speakers?
- 1.2.4 Which parts of the paper do editors/ reviewers most often ask you to revise? Why?

1.3 Knowledge of RA Introduction

- 1.3.1 What do you think are the functions of Introduction?
- 1.3.2 Can you tell me the organization of RA Introduction in your discipline?
- 1.3.3 What do you think is a well-written Introduction in your discipline?
- 1.3.4 What strategies or skills do you think are important for writing RA Introduction in your discipline?
- 1.3.5 Do you think writing Introduction of RAs is the same as writing Introduction for conference papers/ MA thesis?

1.4 Former experiences of writing RAs

- 1.4.1 How do you learn how to write academic English? Please provide examples.
- 1.4.2 What's your typical writing process for RAs?
- 1.4.3 What are your particular strengths in writing RAs in English?
- 1.4.4 What are your major difficulties in writing RAs?
- 1.4.6 What do you usually do to tackle the problems?

2. Composing process of writing this particular paper

- 2.0.1 What's your topic of research?
- 2.0.2 How did you come up with such a topic?
- 2.0.3 How long have you been writing this paper?
- 2.0.4 What is your writing process of writing this paper?
- 2.0.5 When did you write this Introduction? (eg., on the onset of journal article writing, after data collection, after data analysis, go back to Introduction from time to time) Why did you do so?

2.1 Before writing the Introduction section

- 2.1.1 Is there any preparation you do before you write for this section? (eg., reading previous studies, searching for relevant literature, reading guidelines from the journal article, etc) Why do you do so?
- 2.1.2 Do you encounter any difficulties during the preparation process?
- 2.1.3 How do you generate your ideas to write for Introduction? In other words, how do you know what to write for this section?
- 2.1.4 Do you plan the overall organization before you write? If so, how?
- 2.1.5 If so, do you follow your plan step by step or you change your plan as you write?

2.2 When writing the Introduction section

- 2.2.1 After preparation, can you describe your overall process of writing up Introduction?
- 2.2.2 As you are writing, do you think of cohesion/coherence?
- 2.2.3 As you are writing, how do you decide the flow of text? (How do you arrange the propositions/ arguments in a section/ subsection? What's your concern?)
- 2.2.4 Do you think about your audience (such as editor, advisor, peer researchers) when you write this section?
- 2.2.5 Do you constantly reread your sentences or wait until you finish the whole paragraph or a full idea unit?
- 2.2.6 If you don't know how to fully express yourself in writing, what would you usually do? Any examples?

2.3 After writing the Introduction section

- 2.3.1 Do you revise as you are writing, or after you finish writing a part (e.g., paragraph, section)?
- 2.3.2 Do you revise your Introduction? If so, how and what do you revise? (e.g., spelling, punctuation, grammar, ideas)

2.3.4 After writing, would you evaluate your written work?

2.3.5 What do you think are the strengths of the Introduction that you wrote?

2.3.6 What do you think are the weaknesses of the Introduction that you wrote?

3. Difficulties in writing Introduction

3.1 Can you talk about any difficulties that you have experienced in writing this section?

3.2 We have discussed a number of problem areas. Did you experience difficulties in _____? In your opinion, why do these problems occur? If possible, please also think about how serious these difficulties affect your own writing?

3.2.1 Citation Skills

- Citation forms (summary, block quote, quote, generalization)
- Choosing appropriate words (e.g., reporting verbs, nouns) for the cited work
- Choosing tenses (present, present perfect, past)
- Paraphrasing of previous studies
- Summarizing the results/ ideas
- Synthesizing the results/ ideas
- Using reference to previous study to support/ criticize your own argument
- Others _____

3.2.2 Rhetorical Functions

- Showing appropriate stance (how writers position themselves)
- Pointing out the importance of the area being investigated (centrality claims)
- Making topic generalization
- Using previous studies to support, criticize, or provide background
- Making transition from literature review to one's own study
- Pointing out the gap/defects of the previous studies
- Announcing the purpose of the present study (purpose and feature claims)
- Proclaiming values of the study (contribution claims)
- Announcing principal findings
- Indicating RA structure
- Others _____

3.3 Considering writing difficulties, is there anything that you think I should know?

4. Writing strategies

4.1 Coping strategies

- 4.1.1 When you encounter the difficulties mentioned, what do you do to overcome these problems?
- 4.1.2 When you are writing, do you utilize any resources and tools such as dictionary, writing manuals for assistance?
- 4.1.3 Do you use any strategies that you think can help your English to be more comprehensible to your readers? (e.g., using graphs, using quotes from famous researcher in your discipline, eliminating some complicated ideas, etc.)
- 4.1.4 As a non-native English writer, what kind of strategies you have used in writing Introduction that you think would be beneficial for publication?
- 4.1.5 What kind of support do you have from your advisor in writing this section?
- 4.1.6 Is there any help that you expect your advisor could have offered you? (e.g., grammar, language appropriateness, idea development, organization, more literature sources, etc.)
- 4.1.7 In addition to your advisor, do you enlist the help of anyone else when preparing a paper for publication (e.g., writing center, peers, other professors)? If so who and in what capacity?
- 4.1.8 What strategies have you used in developing/ improving your academic English writing?
- 4.1.9 If time and money were not a problem, what would be the best way for you to improve your academic writing in English, (particularly concerning the Introduction section)?

4.2 Rhetorical strategies

- 4.2.1 How do you introduce your research topic?
- 4.2.2 Do you try to highlight certain information in your Introduction? If so, what's your consideration of highlighting the information (why do you want to highlight such information)? Please provide examples and explain how you manage to create the highlights.
- 4.2.3 When do you use citations? (When do you think you should refer to other studies or researchers?)
- 4.2.4 Do you make evaluations of previous study? If so, how?
- 4.2.5 Do your use any self-citation? Or do you cite your research team's previous works? Why do you do so?
- 4.2.6 Do you try to manipulate the citations to work for you? If so, how?
- 4.2.7 Are there any writing strategies that you think would convince your readers that your study has made great contribution to the current knowledge?

4.2.8 Do you predict your readers' reaction, such as resistance to your claims or difficulties understanding your paper? If so, how do you orient your readers?

4.2.9 When do you put forward an authoritative statement and when less assertive one? How do you manage to create such statements respectively? Any examples?

4.3 Considering writing strategies, is there anything that you think I should know?



Appendix E Interview questions with students' advisors

1. Former experience of supervising students

- 1.1 How long have you been supervising doctoral students?
- 1.2 Generally speaking, what do you think of your students' academic English writing?
Are you satisfied with their academic English writing proficiency?
- 1.3 What are the common difficulties that your students have in writing papers for international publication?

2. Disciplinary knowledge about RA Introduction

- 2.1 What's the overall organization of the paper in your discipline?
- 2.2 Which section in journal articles do you think might pose difficulties for your students to write? Why?
- 2.3 Which section do you think are the easiest one for your students to write?
- 2.4 What do you think a well-written introduction in your discipline should have?
- 2.5 What strategies or skills do you think are important for writing RA Introduction in your discipline?
- 2.6 Do you think writing Introduction of RAs is the same as writing Introduction for conference papers/ MA thesis?

3. Concerning this particular student's writing

- 3.1 Do you offer any help to your students for writing this paper? If yes, in what ways?
- 3.2 What's your comment on your students' writing for this paper?
- 3.3 What do you think are the writing problems you have observed in this paper?
(Vocabulary, grammar, paragraph, organization, citation skills, rhetorical strategies)
- 3.4 Among various writing problems you have mentioned, which do you think are particularly problematic and might hinder this paper from publication? (What might be the cause of it?)
- 3.5 What would be your suggestion for correcting these problems?
- 3.6 Do you teach your students any strategies for writing RA Introduction?
- 3.7 Do you correct your student's drafts?
- 3.8 Why did you revise your student's writing in this way?
- 3.9 What do you think are the particular strengths of your student for writing this paper?

4. Concerning reviewers' comments

4.1 What do you think about the comments that the reviewer gave to your student?

4.2 Do you think the comments do your student justice?

4.3 What would you suggest your student to do for the revision?

4.4 Do you teach him/her how to tackle the questions or problems that the reviewer's require to fix?



Appendix F The combined CARS model for data analysis

<i>Move 1</i>	<i>Establishing a territory</i>	
Step 1	Claiming centrality	and/ or
Step 2	Making topic generalization(s)	and/ or
Step 3	Reviewing items of previous research	
<i>Move 2</i>	<i>Establishing a niche</i>	
Step 1A	Indicating a gap	
Step 1B	Adding to what is known	
Step 2	Presenting positive justifications	
<i>Move 3</i>	<i>Occupying the niche</i>	
Step 1	Announcing present research descriptively and/or purposively	
Step 2	Presenting RQs or hypotheses	
Step 3	Definitional clarifications	
Step 4	Summarizing methods	
Step 5	Announcing principal outcomes	
Step 6	Stating the value of the present research	
Step 7	Outlining the structure of the paper	

