

Research Article Abstracts in Two Related Disciplines: Rhetorical Variation between Linguistics and Applied Linguistics

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Abstract

The previous studies on abstracts (e.g., Santos, 1996; Samraj, 2002; Pho, 2008) illustrate that disciplinary variation in research article abstracts is discernible. However, the studies of abstracts from two related disciplines are still limited. The present study aimed to explore the rhetorical moves of abstracts in the fields of linguistics and applied linguistics by investigating 200 abstracts published between 2009-2012. Hyland's (2000) model of five rhetorical moves was chosen as the analytical framework for the rhetorical structure. Findings indicated that there were three conventional moves in abstracts in linguistics, while there were four conventional moves in abstracts in applied linguistics. The findings have significant pedagogical implications for academic writing for novice writers in the two disciplines.

Keywords: research article abstracts, rhetorical structure, abstracts, disciplinary variation, genres

1. Introduction

It is undeniable fact that the abstract is one of the most important sections of any research article. Hyland (2002) states that "the abstract is generally the readers' first encounter with a text, and is often the point at which they decide whether to continue and give the accompanying article further attention or to ignore it" (p. 63). To quote Pho (2008), "acquiring the skills of writing an abstract is therefore important to novice writers to enter the discourse community of their discipline" (p. 231). Writing a good abstract can be challenging to novice writers especially when the writing has to be done in a manner that is acceptable and conforming to the expectation of the target journal. According to Swales (1990), the study of certain types of abstracts can potentially be highly revealing of disciplinary discourse communities but the abstract remained a neglected field among discourse analysts. Therefore, in the past decades, many scholars paid more attention to the abstract genre and proposed patterns to analyze research article abstracts. A number of studies in abstract genre were conducted within particular disciplines (e.g., Salager-Meyer, 1992; Santos, 1996; Lores, 2004; Bonn & Swales, 2007) and across different disciplines (e.g., Hyland, 2000; Samraj, 2002; Stotesbury, 2003; Pho, 2008). These previous studies on abstracts illustrate that disciplinary variation in research article abstracts is clearly discernible.

The structure of research article abstracts and their variation across disciplines and cultures have also been studied quite extensively, mostly in such scientific disciplines as medicine, biomedicine, engineering, physics, and biology. However, the studies of abstracts from two closely related disciplines are still limited. For example, Samraj (2002) studied abstracts from Conservation Biology and Wildlife Behavior and found there to be variation in overall organization and linguistic choices such as tense and modality. Pho (2008) studied the macro-organization of abstracts in applied linguistics and educational technology and found some differences in terms of generic structure.

According to Becher and Trowler (2001), the massive growth of disciplines causes the fragmentations into numerous sub-disciplines. The clear distinctions between the knowledge domains can be beneficial to teaching, learning and doing research because different disciplines have different teaching approaches and different research methodologies. In response, they proposed a four-domain matrix of knowledge: hard-pure, hard-applied, soft-pure, and soft-applied. It is the purpose of the present study to explore the rhetorical moves of abstracts in two closely related disciplines, linguistics, as the soft-pure domain, and applied linguistics, as the soft-applied

domain. The exploration is expected to answer the following questions.

- 1) How are the move structures of the abstracts different or similar in linguistics and applied linguistics?
- 2) What moves do the abstracts share in the two disciplines?
- 3) What differences in moves help to distinguish abstracts in the two disciplines?

2. Methodology

2.1 The Construction of the Corpus

A total of 200 research article abstracts were selected from three journals in the field of linguistics and three journals in the field of applied linguistics, respectively: 35 from *Journal of Phonetics* (JPho), 35 from *Journal of Pragmatics* (JPr) and 30 from *Language Sciences* (LS) in the field of linguistics, making a total of 100, while 35 from *Applied Linguistics* (AL), 35 from *English for Specific Purposes* (ESP), and 30 from *System* (SYS) in the field of applied linguistics, also making a total of 100. According to the Journal Citation Reports (JCR) Social Sciences Edition (2010) provided by ISI Web of Knowledge, the selected journals had high impact factor and they were reputable and representative.

All 200 research articles in the six journals were published between 2009-2012. The 200 research articles were empirical research articles. Thus, all research articles with the conventional section format of Introduction-Method-Result-Discussion (IMRD) were selected, while the conceptual/theoretical studies were excluded. The corpus of the abstracts was also restricted to informative abstracts.

2.2 Approach to the Analysis of Rhetorical Structure / Move Structure

With the three existing models for abstract writing, Bhatia's (1993) typical 4- move model, Santos' (1996) 5-move model, and Hyland's (2000) 5-move model, the question of which model was an appropriate model to employ in the present study can be answered by testing the three models with a smaller sampling of abstracts from both disciplines. Twelve research article abstracts from both disciplines were chosen for a pilot study, six research article abstracts from each discipline, to test the three models. It was found that some sentences did not match any moves in Bhatia's (1993) typical 4-move model as shown in two examples.

Sample extract from research article abstract in the field of linguistics

These prepositions encode locative configurations in which the object being located is in physical contact with the reference object, and/or in which the reference object functions as a supporting surface for the object being located (Coventry and Garrod, 2004; Herskovits, 1986; Vandeloise, 1986; Borillo, 1998). [Tutton, 2011, p. 3431]

Sample extract from research article abstract in the field of applied linguistics

There has been increasing interest in the possible applications of corpora to both linguistic research and pedagogy. [Chang, 2011, p. 222]

The two extracts provided the information on the context and current knowledge about the papers. The first extract provided the knowledge about the prepositions being studied, and the second explained the current status of the corpus-based approach. It is clearly seen that the two extracts do not precisely match the purpose-method-results-conclusions moves in Bhatia's (1993) model.

To solve the problem, Santos' (1996) 5-move model and Hyland's (2000) 5- move model were used to identify the moves. It was found that the two extracts could be put in the 'Situating the research' and 'Introduction move' in Santos' (1996) and Hyland's (2000) model, respectively. That is, the information and details in the two abstracts were related to the context and current knowledge of the paper. It can be assumed that both models were applicable for linguistics and applied linguistics abstracts analysis in the present study. However, Hyland's (2000) 5- move model was chosen because the Santos' (1996) model was derived from 94 abstracts in the field of applied linguistics, while Hyland's (2000) model was obtained from 800 abstracts across 8 disciplines, philosophy, sociology, applied linguistics, marketing, electrical engineering, mechanical engineering, physics, and biology, 100 each. Santos' (1996) model was limited to the field of applied linguistics, while Hyland's (2000) model covered across the disciplines of sciences and social sciences. Hyland's model is therefore more appropriate for the present study to analyze research article abstracts across knowledge domains, as shown in Table 1.

Table 1. A classification of rhetorical moves in articles abstracts (Hyland, 2000, p. 67)

Move	Function
Introduction	Establishes context of the paper and motives the research or discussion.
Purpose	Indicate purpose, thesis or hypothesis, outlines the intention behind the paper.
Method	Provides information on design, procedures, assumption, approach, data, etc.
Product	States main findings or results, the argument, or what was accomplished.
Conclusion	Interprets or extends results beyond scope of paper, draws inferences, points to applications or wider implications.

The unit of coding for research article abstracts was a sentence. Each sentence was given a move label. Because of the condensed nature of abstracts, the possibility of one sentence containing two (dual) moves may be possible. According to Bhatia (1993), it was common in abstracts especially in experimental studies that the two moves, introducing purpose and describing methodology, were often embedded one within the other. In this case, Santos (1996) called it 'move embedding' in which there was a blending of moves into the same statement. Samraj (2005) also asserted that, "a sentence may sometimes be a realization of more than one move" (p. 146). Similarly, Pho (2008) illustrated that a sentence in an abstract can express two or three functions at the same time, so such a sentence is coded as dual or more moves. Thus, if move embedding occurred in the present study, the sentence would be labeled as containing two or more moves. To determine whether a move was optional or conventional, the frequency of particular move was recorded. According to Kanoksilapatham (2005), the conventional move occurred in 60%. If the frequency of a move fell below 60%, the move was considered as optional move.

Like Crookes (1986), Kanoksilapatham (2003) pointed out that lacking explicit rules for decisions on move boundaries reflected the subjectivity of the judgment. To avoid such subjectivity, inter-rater checking was conducted. Following these two studies, one quarter or 25 percent of the research article abstracts from each discipline were given to the selected coder to conduct the individual move identification, yielding high inter-rater reliability rates (over 95%).

3. Findings

3.1 Move Pattern

The most frequent preference patterns among the writers in the field of linguistics were P-M-Pr-C, P-M-Pr, I-P-M-Pr and I-P-M-Pr-C, respectively. In the field of applied linguistics, the writers' preference patterns were P-M-Pr-C, I-P-M-Pr-C, I-P-M-Pr and P-M-Pr, respectively. Although there was variation in varieties of move patterns, the most frequent preference pattern among the two disciplines is P-M-Pr-C pattern.

It was interesting that the I-P-M-Pr-C and I-P-M-Pr were the second and the third preference pattern among the writers in both fields. According to Hyland (2000), the Introduction move establishes context of the paper and motives of the research or discussion. It can be assumed that writers in the both fields had a need to situate their discourse with the Introduction move, which indicated the attempts of writers to acquaint readers with the background to their research. The use of Introduction move might imply the absence of well-defined sets of problems in the soft field domain. The preferences of Introduction move among writers in a soft field might be related to the disciplinary variations. Moreover, Hyland (2004) also suggested that there was an increasing trend of the appearance of Introduction move in abstracts.

The appearance of the Conclusion move was also interesting because it was quite different from the previous research findings. Santos's (1996) findings indicated that all the abstracts contain Presenting the research (Move 2), Describing the methodology (Move 3) and Summarizing the results (Move 4). They were in line with those of Pho (2008) in that almost all the abstract contained Presenting the research (Move 2), Describing the methodology (Move 3), and Summarizing the results (Move 4). However, the result of move pattern in the present study was different from the findings in the study of Santos (1996) and Pho (2008). The most preference pattern of abstracts from both disciplines was the P-M-Pr-C pattern especially in the field of applied linguistics. The appearance of Conclusion move accorded with Hyland's (2004) suggestion that there was an increasing trend of the appearance of Conclusion moves in abstracts.

In conclusion, the findings of an analysis of move pattern in the research article abstracts from both disciplines showed that the P-M-Pr-C pattern was the most frequent preference pattern among the writers from both fields. The appearance of Introduction move and Conclusion move in abstracts were different from the previous study

(e.g. Santos, 1996; Pho, 2008), but it accorded with Hyland's (2004) suggestion that there was an increasing trend of the appearance of Introduction move and Conclusion moves in abstracts.

3.2 Move Frequency

Hyland's (2000) model was applied to analyze the rhetorical organization of research article abstracts. The results of the occurrences of moves are illustrated in Tables 2 and 3.

Table 2. The occurrences of moves in the abstracts from the three journals in the field of linguistics

Journals Moves	Journal of Phonetics (N= 35)	Journal of Pragmatics (N= 35)	Language Sciences (N= 30)	The total of move occurrences (N=100)
Introduction	19	17	9	45 (45%)
Purpose	27	28	24	79 (79%)
Method	29	31	20	80 (80%)
Product	33	34	25	92 (92%)
Conclusion	27	19	11	57 (57%)

Table 3. The occurrences of moves in the abstracts from the three journals in the field of applied linguistics

Journals Moves	Applied Linguistics (N= 35)	System (N= 35)	English for Specific Purposes (N= 30)	The total of move occurrences (N=100)
Introduction	14	16	14	44 (44%)
Purpose	25	32	26	83 (83%)
Method	30	30	26	86 (86%)
Product	28	32	29	87 (87%)
Conclusion	19	31	19	69 (69%)

The analysis of move frequency could tell which moves were conventional and which were optional. Most of the abstracts in the corpus had 3-4 moves. Based on the occurrence frequency, Purpose move, Method move, and Product move were conventional moves because the percent of occurrence was greater than 60 %. (See Tables 2 and 3)

In the present study, Introduction move was classified as optional in both fields because the percent of occurrence was less than 60%. The occurrence of Introduction move was found to occur 45% in the field of linguistics and 44% in the field of applied linguistics. However, the occurrence frequency of the Conclusion move in the field of applied linguistics was 69%, while the frequency in the field of linguistics was 57%. It can be inferred that the Conclusion move was conventional in the field of applied linguistics, which is classified in the 'soft-applied' domain. According to Hyland (2000), the Conclusion move is employed to interpret or extend results beyond scope of paper, draws inferences, or points to applications or wider implications. It could be the relationship between the nature of applied linguistics, which is classified as 'soft-applied' domain, and the function of Conclusion move that had the writers in this field use the Conclusion move as conventional move. The high frequency of Conclusion move could be explained as a disciplinary variation between the fields of linguistics and applied linguistics.

3.3 Move 1: Introduction Move

According to Hyland (2000), Introduction move establishes the context of the paper and motives the research or discussion. Later, Hyland (2004) suggests that there has been an increasing trend of the appearance of Introduction move in abstracts, especially in the soft disciplines where writers have to acquaint readers with the background to their research.

Previous research in soft disciplines (e.g. Santos, 1996; Pho, 2008) similarly find the use of Introduction move to open their abstracts, but it was optional in soft fields. Only 40 occurrences of Move 1 in the field of applied linguistics abstracts were found in the study of Santos's (1996), and Pho (2008) found about half of the abstracts in the fields of applied linguistics and educational technology used the same functional move (called "Situating the research" in Pho's research model). This prompted her to conclude that Hyland's (2004) suggestion was not apparent in her study. In the present study, there were 45 and 44 occurrences of Move 1 in the corpus of

linguistics and applied linguistics, respectively making Introduction move optional in the corpus. It can be inferred that the trend of an increasing appearance of Introduction move in abstracts, as predicted by Hyland, was not apparent in the corpus of linguistics and applied linguistics in the present study. However, nearly half of abstracts in both fields opened with Introduction move which showed that writers in the two fields realized the significance of the Introduction move to acquaint readers with the background to their research.

One interesting characteristics of Introduction move was the presence of gap. The presence of gap in abstracts has been found in previous research. Santos (1996) pointed out that the problem statement was the statement pointing out that previous research has not been thoroughly successful or complete. To Santos, the problem statement or gap was Submove 2 of Move 1 (Introduction move); there were 24 instances of problem statement found in Move 1. The problem statements fell into two categories, the first addressing that previous research was still embryonic, and the second addressing that despite long and intense discussion, there was still a continuing debate in current research. Hyland (2000) pointed out that the ability to identify a problem was a critical step in claiming insider status in all disciplines, but it was crucial in soft fields and that writers represented a problem as something which was unknown or unresolved by the community.

Similarly, Samraj (2005) found that the creating of gap had greater importance in the Conservation Biology than the Wildlife Behavior abstracts. There were six instances of this move in Conservation Biology abstracts, while there were only two instances in Wildlife Behavior abstracts. In Conservation Biology abstract, there were two types of indicating a gap: specifying a gap in previous research and stating a gap in conservation management practices. In Wildlife Behavior abstracts, the gaps pertained to the research world. Abstracts, stated Stotesbury (2006), challenge previous study by pointing out their limitations, controversies or faults. Move 2 or Criticism of Previous Research fell into five categories: criticism of previous research; gap; criticism of theory, method, model, argument, view; innovation in the field; criticism in the discussion or conclusion move.

In the present study, there were 13 instances of gap in abstracts from the field of linguistics, and 14 instances from the field of applied linguistics. On a closer analysis, the criticism of previous research found in the present study fell into two categories: criticism of previous research and gap in research. According to Stotesbury (2006), criticism of previous research contains grammatically or semantically negative verbs such as could not, had not been assessed, failed to, and did not address, etc. and “a gap in research was commonly indicated by quantifiers, such as few, little; by contrasts between, for instance, well known and not well explained; phrases, such as lack of attention or understanding. Similarly, the lexemes urgency, need, or necessity realized a gap for indispensable research” (p. 136).

The excerpts of abstracts in the field of linguistics which contained the criticism of previous research (Category 1) are given below.

- (1) *However, these studies cannot explain* to what extent the developmental timeline is influenced [...]. (JPho 3)
- (2) *Several subsequent studies have been unable to replicate the result for speakers of American English, or have done so only partially.* These studies have largely dealt with the acoustic signal. (JPho 12)

The excerpts of abstracts in the field of linguistics contained the gap in research (Category 2) as follows.

- (1) *The existing literature, however, still leaves us an incomplete picture* of the nature of the relation between pragmalinguistic competence and sociopragmatic competence in the development of L2 learners’ pragmatic competence, [...]. (LS 11)
- (2) *Despite these advances, in our knowledge, the developmental dynamic of the differences still has to be described and explained.* (LS 19)

In the field of applied linguistics, all of the statements of criticism were classified in Category 2 or gap in research. The writers used quantifiers, phrases and lexemes. The excerpts of abstracts in the field of applied linguistics which contained the gap in research (Category 2) are given below.

- (1) While language aptitude has been investigated actively within second language research, *there is a current dearth of research on* the effects of aptitude in cases of attrition. (AL 6)
- (2) *Few studies, however, have examined patterns in* partial word form learning as method [...]. (AL 14)
- (3) Despite the many guidelines for such planning, *there are few accounts documenting* the ways in which these have been used by secondary content teachers. (SYS 15)

The use of tense in Move 1 was also interesting because the distribution of verb tense and aspect was varied. The most frequent tense and aspect used in the abstracts in the two closely related disciplines were present simple,

present perfect and past tense, respectively. The present simple tended to occur with a general topic in the field, while the present perfect referred to previous research or previous studies in general. The past tense tended to be used for a specific researcher, a specific research object or outcome in previous research. The following excerpts illustrated the distribution of verb tenses found.

- (1) The distinction between underlying and excrement stops in pairs like ‘mints’ and ‘mince’ *was convincingly demonstrated* by Fourakis and Port (1986). Several subsequent studies *have been* unable to replicate the result for speakers of American English, or have done so only partially. These studies *have largely dealt* with the acoustic signal. (JPho 12)
- (2) The relationship between language and identity *has been explored* in a number of ways in applied linguistics, and this article *focuses* on a particular aspect of it: self-representation in the oral history interview. People from a wide range of backgrounds, currently resident in one large city in England, *were asked to reflect* on their lives as part of a project to celebrate the millennium, [...]. (AL 10)

In summary, Hyland (2004) suggested that there was an increasing trend of appearance of Introduction move, Move 1, in abstracts, especially in the soft disciplines. However, the findings from other researchers (e.g. Santos, 1996; Pho, 2008) as well as in the present study revealed that the appearance of Introduction move remains optional. Interestingly, the occurrence of Introduction move is nearly half of the corpus. Concerning the presence of gap found in the abstracts from both fields, there were 13 instances of gap in abstracts from the field of linguistics, and 14 instances from the field of applied linguistics. This would be interpreted that the presence of gap was not prominent. Further, the use of tenses of the writers from both fields was similar. The most frequent tenses and aspects used in the Introduction move were present simple, present perfect, and past tense.

3.4 Move 2: Purpose Move

Hyland (2000) defined Purpose move as a way of indicating purpose, thesis or hypothesis, and outlining the intention behind the paper. As shown in Tables 2 and 3, there were 79 and 83 occurrences of Move 2 in the corpus of linguistics and applied linguistics, respectively. It was clearly that Purpose move was a conventional move in both fields. The findings were in line with those of Santos (1996) and Pho (2008).

With a closer look at the Purpose move, there was a clearly predominating formula-like pattern employed by the writers in the corpus to signal their Purpose move, as illustrated in Tables 4 and 5.

Table 4. Predominating formula-like pattern employed in Purpose move in the field of linguistics

Diectic item	Inquiry type or genre	Reporting verb		
this (48)	paper (23)	investigates (10)	offers (2)	provides (1)
the (11)	study (21)	investigated(4)	was designed to (2)	aims to (1)
	article (12)	examines (6)	describes (1)	compares (1)
	research (1)	examined (2)	gives (1)	was conducted to (1)
	experiments (1)	explores (6)	discusses (1)	deal with (1)
		reports (2)	considers (1)	is concerned with (1)
		attempts to (2)	draws on (1)	analyzes (1)
				analyzed (1)

Table 5. Predominating formula-like pattern employed in Purpose move in the field of applied linguistics

Diectic item	Inquiry type or genre	Reporting verb		
this (49)	study (30)	examines (13)	highlights (2)	intends to (1)
the (15)	article (16)	examined (1)	adds (2)	re-examines (1)
	paper (14)	reports (7)	strives to (1)	discusses (1)
	research (1)	investigates(5)	seeks to (1)	were tested (1)
	case study (1)	investigated (6)	argues (1)	draws on (1)
		attempts to (2)	gives (1)	assesses (1)
		describes (2)	extends (1)	aims to (1)
		focuses on (2)	determines (1)	evaluates (1)
		presents(2)	explores (1)	

Santos (1996) explained that the writers’ preference of using “this” (e.g., *This study, This paper, This article*) can presumably be explained that it was the writers’ effort to incorporate the abstract into the body of the paper. On the other hand, the use of “the” (e.g., *The article, The paper*) conveyed that the main article was viewed as

standing apart from the abstract. As shown in Table 4 and 5, the writers from both fields preferred to use “*this*” more than “*the*” by four and three times as many (48/11, 49/15). For inquiry type or genre, the three most common choices were “*paper*”, “*study*” and “*article*”. This was equally true for writers from both fields when they referred to their research in Purpose move.

When taking a closer look at the reporting verbs, it was found that the use of reporting verbs among the writers from both fields was quite similar. The high occurrences of reporting verbs in the linguistics field were “*investigate*,” “*examine*,” and “*explore*”. In the field of applied linguistics, the high occurrences of reporting verbs were “*examine*,” and “*investigate*,” and “*report*”. There was no significant difference in the use of reporting verbs by the writers from both fields. For the tense choices, the occurrences of present tense in the linguistics field were 46, while those of the past tense were 10. For applied linguistics, the occurrences of present tense were 51, while those of past tense were 8. This shows that the use of present tense was equally preferable in Purpose move among the writers in both fields.

Move embedding was also found in Move 2. Because of the condensed nature of abstracts, one sentence can express more than one communicative purpose. Santos (1996) found Move 2 (Presenting the research) and Move 3 (Describing the methodology) sometimes occurred within the same sentence and sometimes with the reversal of syntactic order of Move 2 and Move 3. Pho (2008) found that the Describing the Methodology move (DTM) was sometimes embedded in either the Presenting the Research (PTR) move or the Summarizing the Finding move (STF). In the present study, the Purpose move was found to be embedded with Method move. There was one instance in which Introduction move was embedded with Purpose move. Similarly to Santos’ findings, there was one reversal of syntactic order, specifically in an embedding of Method move and Purpose move.

Embedding of Purpose move with Method move as found in the field of linguistics is illustrated in the following excerpts.

- (1) *This paper reports* an experimental investigation of the prosodic encoding of topic and focus in Mandarin *by examining* disyllabic subject nouns elicited in four discourse contexts. (JPho 7)
- (2) *In this article it is attempted to* quantify the geographical differences in pronominal gender in the southern varieties of Dutch spoken in the Belgian provinces of West and East Flanders, *using* data from a questionnaire survey. (LS 20)
- (3) *The paper explores* the pragmatic realization of monolingual native speakerhood as an idealized abstraction *through* the discourse analysis of a real-life encounter between an English teacher, Marie, and three Japanese undergraduate [...]. (JPr 2)

It was clearly seen that there were three strategies of expressing Method move embedded with Purpose move. The first embedding strategy was using the preposition “*by*” followed by a gerund, e.g. “*by examining*”. The second strategy was using a gerund such as “*using*”. The third strategy was using the preposition “*through*” followed by a noun phrase to describe the method.

Embedding of Purpose move with Method move as found in the field of applied linguistics is illustrated in the following excerpts.

- (1) *To identify* rhetorical characteristics characteristic of student writing, *the introductory sections of master’s theses in the field of educational philosophy are compared with* the introductory sections of journal articles published within the same discipline. (ESP 10)
- (2) *To determine* the extent to which second language learners’ interlanguage relies on collocational knowledge in lieu of precise semantic knowledge, *an experiment examined* the performance of advanced adult English learners [...]. (SYS 6)
- (3) *The present study adds* a new dimension to available work *by analyzing* the influence of the IWB[...]. (SYS 30)

The excerpts of abstracts in the field of applied linguistics were categorized into two strategies of expressing the Method move: using complete sentence and using the preposition “*by*” followed by a gerund.

Most of the instances of move embedding occurred with the Purpose move embedded with the Method move, whereas there was only one instance where the Purpose move was embedded with Introduction move, illustrated as follows.

- (1) Devoted to a prevalent feature of Mandarin Chinese conversation-the switch

of the first person singular pronoun *wo*, “I”, and the second person singular pronoun *ni*, “you”, *this study explores* why and how interlocutors [...] (LS 12)

It would be expected that Purpose move would likely be embedded with the Method move. However, the syntax allows the reversal of syntactic order of the two moves. The excerpt illustrated the reversal of syntactic order of Method move and Purpose move as shown below.

- (1) *Using the academic writing sub-corpora* of the Corpus of Contemporary American English and the British National Corpus as data and building on previous research, *this study strives to identify the most frequently-used multi-word constructions (MWCs)*[...] (ESP 1)

In brief, Purpose move was conventional in both fields, which was in line with the findings of previous study (e.g. Santos, 1996; Pho, 2008). The writers from both fields preferred to use deictic item “*this*” over “*the*”. It was their rhetorical intention to incorporate the abstract into the body of the paper. In addition, they used “*paper*,” “*study*,” and “*article*” as an inquiry type or genre when referring to their research in Purpose move. It was also found that the use of reporting verbs among the writers from both fields was quite similar.

According to the condensed nature of abstracts, the Purpose move was found to be embedded with the Method move. The writers from both fields used various embedding strategies, namely using the preposition “*by*” followed a gerund, using a gerund such as “*using*”, using the preposition “*through*” followed by a noun phrase to describe a method, and using a complete sentence to describe a method. There were no significant differences in embedding strategies used by the writers from both fields. In addition, the writers in both fields preferred using the present tense to using the past tense when they wrote the Purpose move.

3.5 Move 3: Method Move

According to Hyland (2000), Method move provides information on design, procedures, assumption, approach, data, etc. In the present study, Method move was a conventional move for both fields. A closer look at the frequency of occurrence in the corpus revealed that there were 80 and 86 occurrences of Move 3 in the corpus of linguistics and applied linguistics, respectively as shown in Tables 1 and 2.

The previous study by Santos (1996) and Pho (2008) found most move embedding occurred in Method move. In the present study, most of the embedding of the Method move was placed within the Product move as follows.

Method move embedded with Product move found in the field of linguistics

- (1) A linguistics spatial task, *conducted* with five dyads of Sumu-Mayangna speakers *provides* evidence that while speakers have diffuse access to spatial [...]. (LS 9)
- (2) *Based on* the analysis of 354 apologies made in the Israeli public discourse between 1997 and 2004, I *demonstrate* tactics which range on four main categories [...]. (JPr 22)

Method move embedded with Product move found in the field of applied linguistics

- (1) *Using* D as a measure of lexical diversity (Malvern and Richards 1997, 2002; Malvern et al. 2004), *it was found* that D has a statistically significant and positive [...]. (AL 1)
- (2) The texts *analyzed* and the auditors *observed* and *questioned show that*, although the use of templates is widespread, there is, in fact, some original writing involved in drafting the reports, [...]. (ESP 30)

It was observed that when the Method move was merged with the Product move, the amounts of information for the Method move was brief, thereby shortening the data and method. The presence of Method move was seen in three different ways: embedded with Purpose move (P+M), embedded by Product move (M+Pr), and placed separately followed Purpose move (P-M).

If the Method move occurred separately (P-M), it was opened with a syntactic subject recognized by the data, subjects, procedures, materials, and instruments of variables as follows.

- (1) *One hundred-and-fifteen adult speakers* of Australian English aged 17-84 years generated as many tokens of hypocoristics as they could in 10 min. (LS 13)
- (2) *Data came from videotaped outside class discussion* and student interviews over 1 year. (ESP 1)

The writers’ preference for using past tense and passive voice was found in Method move. The purpose of Method move is to retell the story of the research methodology that had already been employed in the study, thus the past tense was used more than the present tense in both fields. Moreover, both the past tense and present tense were accompanied by switching into the passive voice. The reason for this could be explained in that the subjects took both an active role to participate in an experiment; and a passive role when they received the

treatment. With a closer look at the use of voice, it was obvious that the writers preferred to use passive verbs over active verbs in both fields. This preference may be attributed to the fact that writers tried to stay as objective as possible when they presented the methods of their studies. The following excerpts illustrated the switching of active verbs to the passive voice.

- (1) Sixty-six university students *took* part in the experiment. They *were divided* into two groups with the same vocabulary size. (SYS 16)
- (2) Subjects for the study *were* one hundred and ten undergraduate university students in Hong Kong. They *were categorized* as ‘more effective’ or ‘less effective’ learners, [...]. (SYS 19)

As with Pho’s (2008) findings, there were no instances of modal verbs employed in the Method move in the present study. Pho also mentioned that first-person pronouns were hardly found in her corpus. However, there were 17 instances of the use of first person pronoun in the field of linguistics and 9 instances in the field of applied linguistics in the present study. It was clearly seen that the first-person pronoun ‘*we*’ was used more than ‘*I*’.

The excerpts using first-person pronoun in Method move in the field of linguistics

- (1) In this paper, *we* test bilingual Spanish-English 4-and 8- months-olds’ discrimination of vowels. (JPho 1)
- (2) Adopting a qualitative research approach, *I* collected data [...]. (JPr 3)

The excerpts using first-person pronoun in Method move in the field of applied linguistics

- (1) *We* applied multi-group structural-equation modeling [...]. (AL 35)
- (2) Through an analysis of what is said and how it is presented, as text, design and hyperlinks, *I* show how individuals [...]. (ESP 7)

In summary, the Method move was conventional in both fields. There were three different ways that the Method move appeared: embedded with Purpose move (P+M), embedded with Product move (M+Pr), and placed separately following Purpose move (P-M). For the tense choice, the past tense and passive voice were the most frequent. This could be because the writers retold the method used in their studies and they also tried to be objective when describing the research methodology. There were no modal verbs found in this move. Further, some writers from both fields used first-person pronoun “*I*” and “*We*”. The use of first person pronoun was interesting because it was hardly found in Pho’s (2008) findings. There were no significant differences between the two fields in embedding, tense choices, or the use of first person pronouns in the Method move.

3.6 Move 4: Product Move

Move 4 or Product move provides main findings or results, the argument, or what was accomplished. Product move was conventional in both fields. There were 92 and 87 occurrences of Move 4 in the corpus of linguistics and applied linguistics, respectively as shown in Tables 2 and 3. A closer look at the beginning sentence of Product move revealed that there was variation in the lexical items chosen for the opening noun. The more common signals in the field of linguistics, in decreasing order of frequency, were “*result*,” “*finding*,” “*analysis*,” and “*data*”. The more common signals in the field of applied linguistics were “*result*,” “*finding*,” “*analysis*,” and “*study*”. The first three common opening nouns were similar in both fields. For the reporting verbs, the most frequent reporting verbs in the field of linguistics were “*show*,” “*indicate*,” “*find*,” and “*suggest*”. In the field of applied linguistics, the first four frequent reporting verbs were “*show*,” “*indicate*,” “*reveal*,” and “*suggest*”. It is clear that there were no significant differences in the use of reporting verbs among the writers from both fields. Tables 6 and 7 showed the opening nouns and reporting verbs found in Move 4.

Table 6. Source of opening nouns and reporting verbs in Move 4 in the field of linguistics

Opening nouns	Reporting verbs
result (26)	show that (17)
finding (7)	indicate that (7)
analyses (6)	find that (6)
data (5)	suggest that (4)
paper (4)	provide that (4)
	reveal that (4)

Table 7. Source of opening nouns and reporting verbs in Move 4 in the field of applied linguistics

Opening nouns	Reporting verbs
result (24)	show that (15)
finding (19)	indicate that (11)
analyses (9)	reveal that (10)
study (4)	suggest that (7)
it (4)	find that (6)

The use of self-reference words in Move 4 was one aspect which was discussed in the previous studies. Pho (2008) found that the use of self-reference words was negligible in the Summarizing the Findings (STF) move, which contradicted with Hyland's (2003) findings. In the present study, some writers in both fields used first person pronouns in describing the results or claims. The first person plural pronoun 'we' was found more frequently than the singular 'I', and both first person pronouns were used more often in linguistics than applied linguistics. In conclusion, the findings were quite similar to Hyland's (2003) findings.

The uses of self-reference pronouns 'we' and 'I' in Move 4 in the field of linguistics

- (1) *We* found that a first assessment did make a second expectable as a response. (JPr 21)
- (2) Based on the analysis of 354 apologies made in the Israeli public discourse between 1997 and 2004, *I* demonstrate tactics [...]. (JPr 22)

The uses of self-reference pronouns 'we' and 'I' in Move 4 in the field of applied linguistics

- (1) *We* found that, of the items that were difficult though composed of familiar words, [...]. (AP 23)
- (2) In this paper *I* show how a corpus-based investigation of [...]. (ESP 14)

The use of *that*-complement clauses was one outstanding linguistic feature in Move 4. According to Hyland and Tse (2005), the evaluative "*that*" reflected the promotional aspects of abstracts genre as a place where writers could highlight their research in order to hook readers and convince them that their work is valuable enough to continue to read the full paper. Pho (2008) found that a dominant syntactic structure in Summarizing the Findings (STF) move, which was non-existent in the first three moves, was the use of *that*-complement clauses.

Similar to Pho's (2008) findings, in the present study the writers in both fields used *that*-complement clauses to demonstrate their findings as follows.

- (1) *Results indicate that* when the two languages being learned are rhythmically dissimilar, bilingual infants [...]. (JPho 1)
- (2) *This paper finds that* American politicians make use of personal pronouns [...]. (JPr 15)
- (3) *The findings suggest that* academic socialization in the first-years of a doctoral degree occurs in multiples spaces [...]. (ESP 3)
- (4) *The analysis of news text reveals that* although many RCs are retained in unmodified form across the level, [...]. (SYS 4)

According to Hyland and Tse (2005), writers attributed the source of the evaluation to either a human source, including the author or other researchers, to an abstract entity, such as a spectrograph, the data, or the results, or to an un-named originator thereby concealing the source of the evaluation by attributing it to a general subject such as 'it'. In the present study, it was found that most writers attributed the source of the evaluation to the data, the results and the findings more than a general subject 'it'. Concealing the source of the evaluation by attributing it to a general subject such as 'it' was found only few instances in both fields as follows.

- (1) *It was found that* for 29 out of 30 languages the average of the first formant is higher for high back vowel [...]. (JPho 35)
- (2) *It showed very clearly that* Le Monde as a media is not only a place where some public sphere's interaction [...]. (JPr 27)
- (3) *It is suggested that* student writers represent themselves as accomplishing more tasks, [...]. (ESP 10)

Over 90% of "*that*" constructions referred to the writers' own findings by the aspects of human source and only a few of using the ambiguous 'it'. According to Hyland and Tse (2005), the use of dummy "*it*" subjects represented an attempt to generalize the source of the comment and present it as objective in a state of affairs in the world distanced from the writers and so less open to negotiation.

The use of tenses in Product move was another aspect previously discussed. Santos (1996) found a strong preference for past tense in his study because Move 4 (Summarizing the Results) referred to one's own research requiring a narrower claim. Similarly, Pho (2008) found the preference of past tense over present tense in her study. However, in the present study the preference of past tense in Move 4 was not as strong as Santos's (1996) and Pho's (2008) as shown in Tables 8 and 9.

Table 8. The uses of tenses in Move 4 in three journals from the field of linguistics

Journals Tenses	Language Sciences	Journal of Phonetics	Journal of Pragmatics	Total
Present simple	19*	14	19	52
Past simple	2	6	5	13
Both present simple and past simple	2	12	9	23

*Number of abstracts used present tense, past tense and the mixing of present tense and past tense in Product move

Table 9. The uses of tenses in Move 4 in three journals from the field of applied linguistics

Journals Tenses	Applied Linguistics	System	English for Specific Purposes	Total
Present simple	11*	7	20	38
Past simple	12	16	4	32
Both present simple and past simple	7	8	5	20

*Number of abstracts used present tense, past tense and the mixing of present tense and past tense in Product move

In the field of linguistics, the preference of using present simple over the past simple was found in the three journals. In the field of applied linguistics, the preference of past simple was found in Applied Linguistics and System, while the preference of present simple over the past simple was found in English for Specific Purposes. Nevertheless, the overall picture showed the preference of present simple over the past simple in both fields, which differed from Santos's (1996) and Pho's (2008). Moreover, in the present study, both present simple and past simple were found in both fields as follows.

- (1) The results *show* that vowels in final syllables of words *were* less often reduced while the preceding ones *show* reduced durations and centralized formant values. Moreover, vowels *are* more reduced in monosyllabic function words than in monosyllabic content words. Nevertheless, we *did not find* a clear effect of word frequency on vowel durations. [...]. (JPho 17)
- (2) The results *showed* that although over three years of college study Chinese EFL learners *have made* progress in frequency, accuracy and variation of the FSs used in oral production, they still *fall* behind the native speakers. In addition, no significant changes *could be found* in error types and in most- and least-frequently occurring errors concerning FSs in spite of language improvement. The most challenging area for them to tackle *was* the use of FSs containing prepositions and articles. [...]. (SYS 20)

According to Pho (2008), the use of past tense to report the result of the study left the reader with the impression that the writer was being objective and was plainly reporting the findings of the research. The present tense gave the idea that the writer was generalizing beyond the results of the study, which left the impression that the results were widely accepted. For Santos (1996), the using of past tense signified the narrower claim of the research results, while the using of present tense implied that the research results yielded indisputable and established knowledge. In the present study, the writers' preference of using present tense in Move 4 could be understood as an intention to generalize the results of their study to be widely accepted and to yield indisputable and to establish knowledge.

In conclusion, Product move was conventional in both fields. The writers from both fields used similar lexical items for the opening noun and there were no differences in using reporting verbs. The use of self-reference words was found among the writers in both fields. This was similar to Hyland's (2003) findings. The writers

from both fields also used *that*-complements to report their results, and they attributed the source of the evaluation to the data, the results, and the findings more than a general subject 'it'. There was a greater preference for the use of the present tense of among writers in linguistics field than among the writers in applied linguistics. It might be interpreted that the writers may intend to generalize their results to be widely accepted.

3.7 Move 5: Conclusion Move

There were 57 and 69 occurrences of Move 5 in the corpus of linguistics and applied linguistics, respectively as shown in Tables 2 and 3. Thus, Conclusion move was optional move in the field of linguistics, while it was conventional in the field of applied linguistics.

The signal of Conclusion Move (Move 5) was the use of references to the findings or data being reported, such as "*the finding(s)*" and "*the result(s)*". There were 18 instances using "*finding(s)*" and 7 instances using "*result(s)*" in the field of linguistics, and 9 instances using "*finding(s)*" and 5 instances using "*result(s)*" in the field of applied linguistics. The excerpt below illustrated such references.

- (1) *The findings* may have some implications for enhancing communication [...]. (JPr 7)
- (2) *The results* also suggest that the frequency with which Hong Kong [...]. (ESP 26)

Another strategy used to signal Move 5 was the reappearance of reference to the genre like "*paper*" and "*article*". In addition, references to the type of inquiry such as "*experiment*," "*analysis*," and "*study*" were also found. Some examples were given below.

- (1) *The article* concludes with pedagogic implications, for second/foreign language teachers when attempting to create a low-anxiety classroom. (SYS 21)
- (2) As primarily a theoretical piece, *this paper* makes an argument in favor of a rhetorical, [...]. (ESP 10)
- (3) *A qualitative analysis* provides insights into the intuitive approach to simplification highlighting the effects of information reduction, [...]. (SYS 4)
- (4) *This study* contributes to identifying forms and functions of parental accounting strategies on reality TV, [...]. (JPr 12)
- (5) *These experiments* suggest that listeners need some acoustic properties of reduced words themselves, [...]. (JPho 22)

Another option of signaling Move 5 was an overt nominal reference to the function of Move 5 such as "*pedagogical implication of*," "*the implication of*," "*the general conclusion of*," "*the application of*" and "*the discussion of*," etc. Some typical examples used in the field of linguistics are given below.

- (1) *The application of* the proposed framework unveiled fragments of Le Monde's identity, [...]. (JPr 27)
- (2) *An additional contribution of* this paper is the resurrection of the stop-signal paradigm in speech research. [...]. (JPho 11)
- (3) *The discussion* points out that high-frequency words in German mostly end [...]. (JPho 26)
- (4) *The general conclusion* is that high back vowels that are as peripheral as those in German have a high articulatory cost [...]. (JPho 27)
- (5) *Implications of the findings for* Chomsky's mentalist position on speakers' knowledge were discussed. (LS 23)

Some typical examples used in the field of applied linguistics are given as follows.

- (1) *Implications for* teachers of professional ESP training courses are highlighted. (ESP 11)
- (2) *In conclusion*, the authors recommend training for inexperienced engineers and engineering students [...]. (ESP 13)
- (3) *The pedagogical implications of* this study highlight the importance of explicit instruction [...]. (ESP 25)
- (4) *Pedagogical implications* on incorporating small-group discussion to facilitate oral academic socialization are also discussed. (SYS 3)

A closer look at how the writers from both fields used an overt nominal reference to the function of Move 5 revealed a slight difference. The writers in the field of linguistics used general nominal references to the function of Move 5, such as "*conclusion*," "*discussion*," and "*implication*" whereas in the field of applied linguistics, most writers specified the nominal reference to the function of Move 5 such as "*implications for teachers*" and "*the pedagogical implications*". In other words, they seemed to suggest direct applications of their results to

teachers in the field of language teaching. This may be one aspect of disciplinary variation found in Move 5.

Another strategy that writers used in Move 5 was the use of self-reference pronouns. Hyland (2003) found that these instances of self-mention are most likely to occur at the beginning and end of the abstract, indicating for him a goal of self-promotion. Similarly, Pho (2008) found that this strategy was used to make the writers' presence explicit in abstracts. In the present study, there were some abstracts that used self-reference words, as excerpted below.

- (1) *We* argue that the role of the venue as an external characteristic of context is underestimated in the political discourse research. (JPr 15)
- (2) In view of these findings, *we* suggest that language aptitude has a compensatory function in language attrition, [...]. (AL 6)

The use of that-complement clauses was another outstanding linguistic feature in Move 5. The clauses were linked with persuasion verbs like “*suggest*,” “*argue*,” “*recommend*,” “*indicate*,” “*conclude*,” “*demonstrate*,” “*point out*,” “*assume*,” and “*show*” as illustrated below. The use of *that*-complement with verb “*suggest*” was the most frequently used from writers from both fields.

- (1) The findings *suggest that* the proficiency level relates to the way pragmatic markers [...]. (JPr 10)
- (2) *We argue that* the role of the venue as an external characteristic of context is underestimated in the political discourse research. (JPr 15)
- (3) In conclusion, the authors *recommend* training for inexperienced engineers and engineering students *that* develops their problem- solving, relationship-building and communication skills. (ESP 13)
- (4) The pedagogical implications of the findings *indicate that* module design [...]. (ESP 27)

Some verbs used with that-complement clauses were found in both fields such as “*suggest*,” “*argue*,” “*indicate*,” and “*conclude*”. Some verbs were used only by writers in the field of linguistics such as “*demonstrate*,” “*point out*,” “*assume*,” and “*show*”. The whole picture of using *that*-complement clauses showed that the writers in the field of linguistics used more variety of verbs with *that*-complement clauses than those in the field of applied linguistics.

Another distinctive feature of the Move 5 was the dominant use of present simple verbs. In Product move, Move 4, the use of present simple, past simple and the combination of present and past simple were found, while the present simple verbs were used almost exclusively in Move 5. It could be explained that Move 5, which is intended to discuss the meaning of the results or outcomes and make generalizations based on the findings in the previous move, will make greater use of present tense in order to make the statements in Move 5 sound more general and thus more applicable. In the present study, the writers from both fields used present simple verbs in Move 5 as shown below.

- (1) This study *contributes* to identifying forms and functions of parental accounting strategies on reality TV, [...]. (JPr 12)
- (2) The article *concludes* with pedagogic implications, [...]. (SYS 21)

Another feature that made Move 5 different from other abstract moves was the use of modal auxiliaries, especially those referring to *possibility*, *ability* and *obligation* as given below.

- (1) The findings *may* have some implications for enhancing communication [...]. (JPr 7)
- (2) The knowledge gained by this study *can* increase awareness of [...]. (ESP 20)
- (3) Our error categorization scheme *could* be used in helping English learners with metaphor comprehension. (AL 23)
- (4) It is suggested that future ILP studies *should* pay more attention to details [...]. (JPr 29)
- (5) The results also suggest that the frequency with which Hong Kong professionals need to communicate [...]. (ESP 26)

Move 5 was optional for writers in the linguistics field but was conventional for those in the applied linguistics field. The variation between the two fields may be a consequence of the nature of the two disciplines, linguistics belonging to the soft-pure domain, while applied linguistics to the soft-applied domain. In addition, the use of overt nominal reference to the function of Move 5 among the writers from both fields was also different. Those in linguistics used general nominal reference such as “*conclusion*,” “*discussion*,” and “*implication*,” while those in applied linguistics used expressions like “*implication for teachers*” and “*pedagogical implications*”. However,

the writers from both fields used present simple verbs and modal auxiliaries in Conclusion move.

4. Conclusion

The analysis of rhetorical structure of abstracts from six journals of the two related disciplines, linguistics and applied linguistics, showed that the most frequent preference patterns among the writers in the field of linguistics were P-M-Pr-C, P-M-Pr, and I-P-M-Pr. In the field of applied linguistics, the writers' preference patterns were P-M-Pr-C, I-P-M-Pr-C, and I-P-M-Pr. Although there was variation in move pattern, the most frequent preference pattern among the two related disciplines is P-M-Pr-C pattern. In addition, the appearance of Introduction move and Conclusion move were increasing in the corpus which was in line with Hyland's (2004) suggestion.

The analysis of the frequency of occurrence of each move revealed that the Purpose move, the Method move and the Product move were conventional moves in abstracts in both fields. The Introduction move was optional in both fields, but the frequency of occurrence of this move was nearly 50%. The results accorded with Hyland's (2000) conclusion that abstracts from research articles in a soft field tend to provide greater context for the paper and research motivation.

The Conclusion move was optional in the field of linguistics but was conventional in the field of applied linguistics. The greater frequency of occurrence of the Conclusion move in the field of applied linguistics may be a consequence of the nature of the discipline. Linguistics is concerned with developing theories that account for and explain the phenomena of language use (McGregor, 2008), while applied linguistics is defined (Grabe, 2002) as a practice-driven discipline that addresses language-based problems in real world or in practical situations. Applied linguistics has the nature of a discipline which is closely connected to practical issues especially with pedagogical application. Thus, the writers in the field of applied linguistics preferred to add the implications and applications of their results at the end of their abstracts. Moreover, they used such expressions as 'implication for teachers' and 'pedagogical implications' to refer to the information in Conclusion move in order to emphasize the application of their results to ongoing situations.

Move embedding or the blending of moves into the same statement was found in the present study. Weissberg and Buker (1990) suggested the way to reduce abstracts by blending the Purpose move with the Method move (P+M). In the present study, a common form of embedding was the blending the Method move with the Product move (M+Pr). This practice was used by the writers from both fields.

While abstracts are intended to be objective and impersonal, Pho (2008) found that authorial stance existed in abstracts and the extent of the author's involvement varied from move to move. In the present study, authorial stance existed in all five moves too, in the form of self-mention pronouns. The appearance of authorial stance used by the writers from both fields was "we," "our," and "I". The writers from both fields used authorial stance most in Method move, Product move, Purpose move, Conclusion move, and Introduction move, respectively.

The findings of the present study have pedagogical implications. The rhetorical structure and some linguistic features of research article abstracts should be incorporated into academic writing courses for graduate and postgraduate students to prepare them to participate in the research world. In such courses, students need to be aware of rhetorical structure or generic structure and some important linguistic features of the research article abstracts in their disciplines. Such knowledge is essential for them in the course of their study and their academic career. There is an apparent mismatch between recommendations in the technical writing literature and actual practice. Many handbooks on research paper writing only give a very general description of an abstract and provide a sample abstract. In order to provide useful instruction on abstract writing to novice writers, they need to show readers how to structure an abstract and how to realize the structure linguistically. It is very important that the novice writers need to know not only what the prototypical moves of an abstract in their discipline are but also how to organize them and how to compose each move so it is linguistically appropriate. To reach the goal, such information needs to come from corpus-based research findings and address the differences between disciplines.

The samples in the present study are empirical research articles, so the results can only be applicable to the empirical research genre. Other types of research articles such as theoretical papers have different structures and linguistic realizations of rhetorical moves. Thus, further studies of theoretical papers from various disciplines may yield interesting results and give us more pictures of research article abstracts.

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