

A Contrastive Genre Analysis of Research Article Abstracts Written by Native and Non-Native Speakers of English

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Abstract. Recently many studies have been done on research article (RA) abstracts, each analyzing them from a different perspective; however, few contrastive studies exist in this regard. The organization of written texts is culture-specific and the same reality is organized by speakers of different languages differently. Thus, this research aims to contrastively analyze the rhetorical structure of two sets of RA abstracts, one written by English native speakers and the other by Persian native speakers. The aim is to discover whether or not the same generic organization is imposed on these abstracts. All RA abstracts analyzed in this study came from applied linguistics. The functional unit of analysis was rhetorical move. Also, the basis of analysis was Samraj's (2005) generic model of RA abstracts. The results showed that five moves in both sets of RA abstracts were obligatory. The results have implications for material developers, teachers, and students, especially those involved in English for Academic Purposes writing courses.

Keywords: Research article abstract, applied linguistics, genre, genre analysis, move

1. Introduction

For a long time, it has been assumed that writing an abstract in English, as compared to completing the whole research article (RA), is a relatively easy task (Lores, 2004). However, this is not necessarily true. The reason is that this “brief and humble part-genre” (Van Bonn & Swales, 2007, p. 95), which occupies the second important place in research

articles after that of the title, is supposed to fulfill several purposes. On the one hand, RA abstracts are “time-saving devices” because they exempt readers from reading the whole article (Martin, 2003 p. 26). On the other hand, given that abstracts are inherently persuasive, they are used to convince readers to read the entire paper. They also have an evaluative function since they are summaries of research articles (Stotesbury, 2003) and serve as tools for managing the massive information flow in academia. (Ventola, 1994, cited in Lores, 2004, p. 281).

Due to this diversity of functions, RA abstracts are of two main varieties: ‘indicative’ and ‘informative’ abstracts. Indicative abstracts act to help readers understand the type and scope of the research article; they only indicate the subject and the main findings of the article and do not clarify the whole research process in detail. Informative abstracts, however, summarize the whole article and briefly display its rhetorical structure. Simply put, they represent research articles in miniature (see Lores, 2004).

Since abstracts are becoming more informative (Ayers, 2008), it is not surprising that there are publications entirely consisting of these text types (Golebiowski, in press). Thus, special attention is to be focused on the way abstracts are organized by different authors, particularly by English writers from various first-language backgrounds.

Emphasizing the importance of writing effective abstracts, Swales (1990) claimed that abstracts have not received much attention in discourse analysis (p. 181). Some years later, Swales and his colleague, Van Bonn, referred to the increased status of abstracts in the structure of RAs and argued that it is interesting that this genre has received attention recently (Van Bonn & Swales, 2007, 94).

Studying linguistic and rhetorical characteristics of RA abstracts can be traced back to Graetz’s research in 1985 (see Swales, 1990). Since then, research into abstracts has taken two stances: discourse-analytic (e.g., Lores, 2004) and evaluative stance (e.g., Salager-Meyer, 1990). While the former stance describes the global features, i.e., the rhetorical components or moves, of abstracts, the latter has an analytical view of abstracts and their functions. Besides, text analysts have studied this genre across disciplines (e.g., Samraj, 2005; Stotesbury, 2003) and cul-

tures (e.g., Martin, 2003) over the past two decades.

There are very few contrastive studies conducted on RA abstracts. These studies, i.e., research by Martin (2003) and Van Bonn and Swales (2007), compared English RA abstracts with RA abstracts written in other languages, Spanish and French. The authors, however, did not investigate the possible differences in the rhetorical structure of English RA abstracts by native and non-native speakers of English.

The organization of written text is culture-specific and speakers of two different languages will organize the same reality in different ways. Thus, the purpose of the present study is to compare the RA abstracts written by English native speakers (ENS) and Persian native speakers (PNS). The aim is to discover whether or not the same generic organization is imposed on these abstracts. These abstracts are in the field of applied linguistics. Through this comparative analysis for each set of abstracts, (a) constituent moves will be extracted based on an established move model, (b) the frequency of all identified moves will be determined, and (c) optional and obligatory moves will be identified using an acceptable criterion.

Before moving to the description of the method of the study, to delve into genre analysis, four key concepts will be examined and defined.

Genre analysis makes use of some key terms and concepts. These concepts, which are central to understanding genre analysis, are as follows: discourse community, genre, move, and communicative purpose. By defining these terms, the concept of genre analysis can be more clearly understood.

Discourse community is a major notion in genre analysis in writing because it connects writers, texts, and readers in a specific discourse (Swales, 1998, cited in Hyland, 2003, p. 23). Li (2006, p. 162) refers to the vantage point of some scholars and suggests that they focus on discourse communities as ‘audiences’ of a text or texts, “whereby academic/professional writers make rhetorical decisions according to their norms.” In addition, discourse community gives particular importance to the social aspect of language. Researchers with a ‘social view’ of the writing process have embraced discourse community as it offers a tool to study the social practices that contribute to students’ writing

(Woodward-Kron, 2004, p. 139).

The definition of the term ‘discourse community’ has been relatively fuzzy for many ESP/EAP researchers. Li (2006, p.61) believes that this definition has a “fragmented, heterogeneous, and multidimensional aspect” and Hyland and Hamp-Lyons (2002) argue that it is not easy to agree on what this term means exactly. Swales (1990) argues that the notion of discourse community needs to be clarified, arguing that, in the present circumstances, it is perhaps better to offer a list of criteria sufficiently precise and narrow to eliminate many of the controversial interpretations of the term. He offers the following defining characteristics to the discourse community: It

1. has a set of common public goals;
2. possesses means for intercommunication among its members;
3. uses its participatory tools mainly to provide information and feedback;
4. uses genres to reach its communicative aims;
5. has lexicon and genres;

Hyland (2002, 121) maintains that discourse community emphasizes the social aspect of genres and clarifies what writers and readers add to a given text; hence, any discourse community represents a degree of inter-community diversity and homogeneity.

The notion of genre cannot be defined readily since genre experts agree that genres are complicated (Johns et al., 2006, p. 239). Even for some others, knowledge of genre is a “skills-related” variable (Nergis, 2013, p.8). As a result, several definitions have been proposed, each viewing this linguistic phenomenon from a different perspective.

Henry and Roseberry (1999, p. 190) believe that genre is “a set of recognizable communicative events, each with a similar purpose and a conventionalized social and schematic structure.” This definition is similar to that of Samraj (2004, p. 6). Samraj considers genre as texts sharing a communicative purpose and discourse conventions, such as general organization and grammatical and vocabulary choices. Some other definitions of genre emphasize the social aspect of genre; for in-

stance, Hyland (2006, p. 46) states that genres are “abstract, socially recognized ways of using language.” Halliday and Hasan (1985, as cited in Henry, 2007, p. 462) stress that genre is a social endeavor where language serves to build relationships to achieve some goals. To Tardy (see Johns et al., 2006, p. 239), genre is “a kind of nexuses among the textual, social, and political dimensions of writing.” Comparing register with genre, Coffin and Donohue (2012, p. 73) state that they are both “representations of recurrent patterns of language used in particular contexts.” Also, under the influence of Kaplan’s view that language users with different cultural backgrounds employ different rhetorical patterns, some researchers maintain that genres are “specific to particular cultures” (Hubert & Bonzo, 2010, p. 520) and “shaped by their cultural purpose” (Gardner, 2012, p. 54). Among this diversity of definitions, the definition by Paltridge (see Johns et al., 2006, p. 235) is quite special since he simply views genres as how people do things using language in contexts. Paltridge’s idea is reminiscent of the view of Bhatia (2004, as cited in Stoller & Robinson, 2013, p.45) that “it is through genres that professional objectives are achieved.”

ESP genre analysts have emphasized the consistency of communicative purpose in their definition of genre. In this tradition, Holmes (1997, p. 322) regards genre as a series of texts having a specific communicative purpose that produces specific structural patterns. “Moreover, emphasizing the importance of genre research in ESP and EAP research, Cheng (2008: 387) suggests that genres are communicative events where discourse communities are involved with communicative purposes.”

All of these definitions emphasize the situational contexts or the settings of spoken or written texts and the texts’ communicative function(s) or purpose(s) in those settings. The vital role that moves play in the schematic structures of genres and generic approaches to text analysis has brought about several definitions for this concept. Genre researchers have looked at them from different and simultaneously overlapping perspectives. Nwogu (1997, p. 122) defines a move as a segment of a text composed of linguistic features which give it a purpose and imply the content of discourse in it. For Holmes (1997 p. 325), it is a segment shaped by a specific communicative purpose. Also, moves

can be regarded as constituent parts that represent the writer's communicative purpose and perform specific functions (Hancioglu, Neufeld, & Eldridge, 2008). However, some other scholars offer brief definitions such as a functional unit, with a clear rhetorical purpose (Connor & Mauranen, 1999, p. 51), a semantic or a functional element (Halleck & Conner, 2006, p. 72), and "a communicative category" (Brett, 1994, p. 47). What comes out of these definitions is that each move possesses two characteristics: (1) it possesses a communicative purpose shaping the central communicative purpose of the whole text type or genre; (2) it has some lexical and grammatical elements which identify it.

Moves are major units in genre analysis but are not the smallest ones. Thompson (1994) maintains these units fall into some sub-functional parts called steps. These subsections (i.e., steps) realize moves (Samraj, 2002) and are concurrent or optional (Posteguillo, 1999, p. 142). Another point about moves is that they are of two types: obligatory and optional (Tambul ElMalik & Nesi, 2008). While the addition of all the obligatory moves in an appropriate order is necessary to achieve the communicative goal(s) of a given genre, the inclusion of optional moves may increase the effectiveness of the genre (Henry, 2007). However, they do not alter the communicative purpose of a text (Henry & Roseberry, 1998). If this change happens, the expectations of the related discourse community are not fulfilled. As a result, the genre loses the acceptance of that community. The concept of genre stresses the importance of communicative purpose (Holmes, 1997). Although other factors, including content, form, intended audience, and medium or channel exist, its main feature is the communicative purpose it was intended to achieve (Bhatia, 1993).

Communicative purpose can function as a new criterion for the identification of genres; it is also "a noble way for categorizing texts" since it distracts researchers' attention from superficial characteristics to the socially situated use of texts with specific aims (Huttner, Smit, & Mehlmauer-Larcher, 2009, p. 102). Furthermore, the communicative purpose forms the schematic organization of the discourse (Swales, 1990: 58) and gives it a "conventionalized internal structure" (Bhatia, 1993, p. 14). Any alteration in communicative purpose may lead to a different genre since it

causes a change in generic structures (Hempel & Degand, 2008). Thus, the main feature of a genre and the “primary criterion” to identify it is its communicative purpose (Askehave & Swales, 2001, p. 195). Genre analysis is the study of the situated linguistic behavior in academic or professional environments (Bhatia, 1997, p. 181). Also, Dudley-Evans and St John (1998: XV) describe it as looking at structural and linguistic patterns of genres or texts and their role in a discourse community. Genre analysis has two main assumptions: (1) the characteristics of a similar set of texts are a function of their social context; (2) they relate a text to others like it and the choices affecting text producers (Hyland, 2002).

In simple terms, genre analysis is the study of a given genre and the moves comprising it, organization of the moves, the linguistic features comprising the moves and the social context of the genre. Genre analysis investigates the order of the moves in a particular genre and the relationship between the linguistic features and communicative purposes at the level of a move. Also, genre analysis explains how the expert members of a discourse community choose specific linguistic structures to serve specific communicative purposes. Genre analysts may also run discussions on underlying communicative purposes, constituent moves, and, to some extent, discriminating lexico-grammatical features (see Bhatia, 1993; Henry & Roseberry, 1999; Swales, 1990).

Concerning this discussion, the communicative purpose of a genre is an important factor in genre identification (Conner, 1996). Since moves follow and partly make up the writer’s overall communicative purpose (Henry & Roseberry, 1999), detection and discrimination of moves also help this identification process. As a result, instead of applying the criterion of communicative purpose to identify genres, it is important to use moves as discriminative elements.

1.1 Corpus

The corpus used in the present study consisted of 120 RA abstracts (60 written by ENS and 60 by PNS). All of these abstracts came from applied linguistics journals published between 2006 and 2011. Wood’s criterion (2001, cited in Peacock, 2002, p. 485) was employed to identify native-speaker authors: authors’ names had to be native to the country. In

addition, they had to work or study in that country. Also, RA abstracts were chosen on a random basis (120 out of 404 abstracts). Table 1 shows the sources of the RA abstracts.

Table 1: Journals providing RA abstracts

ENS RA abstracts	NA*	PNS RA abstracts	NA
System	14	ILI Language Teaching Journal	16
ELT Journal	16	Pazhuhesh-e Zabanha-ye Khareji	16
Journal of Second Language Writing	16	Iranian Journal of Applied Linguistics	14
English for Academic Purposes Journal	14	Roshd Quarterly Foreign Language Journal	14

2. Method

The analytical method of this study was move analysis. The aim was to identify the schematic structures of RA abstracts and compare them with Samraj's (2005) model of gene analysis, as the most recent and developed model of RA abstracts (see part D: the developments of generic models of RA abstracts). These comparisons were made to reveal whether the ENS and PNS abstracts had similar generic models to Samraj's (2005) framework. This procedure was in five phases: (1) identifying the constituent moves of abstracts in each sample, (2) calculating the frequency of the identified moves, (3) distinguishing the obligatory and optional moves in each sample, (4) measuring the similarity of the ENS and PNS sample in terms of employing every single move using Chi-Square test, and (5) comparing the frequency of all moves of ENS sample with that of PNS sample through performing Chi-Square test.

In order to identify moves, all abstracts were read sentence by sentence. While reading abstracts, every communicative purpose was recorded as one move along with the sentence(s) in which it was realized (see part C: move identification method). In addition, to identify possible optional and obligatory moves, the frequency of each move type was determined. The underlying principle to distinguish between optional and obligatory moves was a principle proposed by Li and Ge (2009). They maintain that readers infer moves and their constituent elements from context. This procedure involves a certain amount of subjectivity which is inevitable (Holmes, 1997, p. 325; also see Kanoksilapatham, 2005). This subjectivity raises questions about the reliability of

research. Here, reliability is the ability to show that the procedures in a study can recur with the same results (Yin, 1984, cited in Connor & Mauranen, 1999, p. 50). As a solution to this problem, two steps secure and increase the reliability of the present study, namely intra- and inter-rater reliability (the present researcher re-analyzed all abstracts three weeks after the first analysis; in addition, another researcher familiar with genre analysis separately analyzed all of them). The outcome of these measures presented an almost perfect inter-rater reliability value of 0.90. As for controversial moves, the researchers reached an agreement after discussions with the external rater.

Each rhetorical move is a segment shaped by a specific communicative function (Holmes, 1997, p. 325). This definition is helpful when one wants to identify moves in texts; a move, as a text segment, needs one 'textual unit' of identification; in addition, since it has a communicative function, it needs a 'functional criterion' to help identify it. In the present study, this textual unit is the sentence, and the functional criterion is the communicative purpose-constituting a two-part standard.

When the sentence is considered the textual unit of move identification, a question arises as how to account for sentences that appear to contain more than one communicative purpose and, consequently, more than one move. In response to this question, Holmes (1997) maintains that when a sentence seems to have more than one communicative purpose, the more salient one is considered; and when communicative purposes have equal salience, the sentence is viewed as more than one move, i.e., in the number of all communicative purposes.

Using this method of move identification, the sentence criterion is not final and decisive; that is, the 'ultimate criterion' for move discrimination is the 'communicative purpose' rather than the sentence. As an example, a long sentence serving three communicative purposes of equal salience has three moves. On the other hand, when a communicative purpose is expressed in two sentences, these two sentences express one move.

Most research on the structure of RA abstracts considers the overall structure of the RA as the basis for analysis. Swales's (1990) model, known as IMRD (Introduction-Method-Results-Discussions) model, originally described the macrostructure of the whole RA. Nevertheless, "most

abstracts reflect the IMRD patterns of the RA itself" (Swales, 1990, p. 181). As a result, the IMRD model can be used not only to describe the structure of the whole research article, but also to illustrate the conventional structure of RA abstracts. One decade after the four-part schematic model of RA abstracts proposed by Swales, Hyland (2000, cited in Afros & Schryer, 2009, p. 61-62) offered his five-part model. In this model, Hyland lists the following moves: (1) Introduction (building the context of the study); (2) Purpose (showing the intention behind the paper); (3) Method (Information on design, procedures, assumptions, approach, data, and so on); (4) Product (the findings); and (5) Conclusion. Swales's (1990) moves are almost kept intact in Hyland's model, and the only difference is the addition of move No. 2, i.e., Purpose.

About half a decade later, Samraj (2005) offered her developed model with seven moves. In reality, Samraj (2005) has expanded Hyland's (2000) five-move model by dividing the introduction move into three separate moves: (1) Background information (which informs readers about the general area of study); (2) Centrality claims (which signals the importance of study); and (3) Gaps (which indicates shortcomings and limitations of previous studies). As she claims, these moves emerge in research article introductions. In other words, the structure of RA introductions is briefly reflected in the first three moves proposed by Swales.

Table 2: Swales's (1990), Hyland's (2000), and Samraj's (2005) Models of RA abstracts

Swales's (1990) Model	Hyland's (2000) Model	Samraj's (2005) Model
		Background information
Introduction	Introduction	Centrality claims
-----	Purpose	Gaps
Method	Method	Purpose
Results	Product	Methods
Discussions	Conclusion	Results
		Conclusions

The superiority of Samraj's (2005) model, in comparison with the previous models, are due to these three moves which allow for conducting a more precise analysis of RA abstracts. The reason is that in abstracts

with a long introduction section, it is possible to find more than one communicative purpose; the previous models offered only one move to signal this section, and researchers had to ignore the other communicative purpose and record this section as one move. Table 2 compares Samraj's (2005) model with previous models.

3. Results

The following table shows the results of this study with the frequency results, and the outcomes of Chi-square test of significance. Then, every move type is examined separately, i.e., its purpose is indicated; using two examples it is determined if it is obligatory or optional.

Table 3 presents the obtained frequency results, and the related percentages of moves of RA abstracts written by ENS and PNS. The Chi square test compared the frequency of all move types of ENS RA abstracts with that of PNS abstracts. The results indicated that there was not any significant difference between them. Also, this test compared these two sets of abstracts in terms of employing every move (i.e., all seven moves, between each set, were compared one by one). Again, there was no significant difference. Therefore, in terms of the number of move types employed, ENS and PNS writers wrote RA abstracts almost similarly,

Table 3: Type, frequency, and percentage of moves employed in RA abstracts written by ENS and PNS

RA moves based on Samraj's (2005) Model	ENS RA abstracts		PNS RA abstracts	
	Frequency	Percentage	Frequency	Percentage
Background information	22	36.6 %	34	56.6%
Centrality claims	22	36.6 %	26	43.3%
Gaps	30	50 %	38	63.3%
Purpose	56	93.3 %	54	90%
Methods	42	70 %	46	76.6%
Results	42	70 %	52	86.6%
Conclusions	34	56.6 %	42	70%

As the following examples show, the Background Information move broadly informs the readers about the main theme of research by referring to previous studies, giving definitions, or providing clarifications about the background of research in general. It typically tries to justify the presence of the following three moves: Centrality Claims, Gap, and Purpose.

Tasks offer a structure for communicative performance. Each task has some learning opportunities-potential activities for learning. ENS

Recently, the internet has appeared as an important new technology. The impact of this technological tool emerges in education, business, and economic sectors of our world. PNS

This move was identified as an obligatory move in the PNS sample but optional in the ENS sample. The PNS writers employed this move with a frequency of 56.6% which is above the criterion of at least 50%. As the following two examples show, the Centrality Claims move stresses the importance of the study. It does so by showing that researchers are active in this field. Furthermore, this move demonstrates that the research belongs to the (here, ELT) discourse community and has a leading role in it.

Genre is now seen as an important element of writing, both first and second language studies have focused on the way writers learn genres. ENS

It [i.e., reading comprehension] is an inseparable part of language teaching and is perhaps the most important and irreplaceable skill in learning a foreign language. PNS

This move has a frequency of 36.6% and 43.3% in the ENS and PNS samples, respectively. None of these frequencies exceeds the 50% criterion; as a result, this move is optional in both samples. The basic communicative function of the Gap move is stating the need for the present research; this move points to lack of research in a particular area of ELT and unreliable, weak, or contradictory results; thus, through this move, researchers manage to do their desired realm of research.

Extensive reading is absent in higher educational and English for Academic Purposes settings. ENS

The classroom use and the possible results of the genre-based ap-

proach to writing have not been extensively studied yet. PNS

Regarding Li and Ge's (2009) criterion, this move is obligatory because, in neither of ENS and PNS samples, its frequency is less than 50%. The underlying communicative function of this move is the same as what its name shows; it reveals the purpose of the study and why rather than how it was carried out. Researchers outline the intention behind the study in the Purpose move. They resort to this move in response to the need expressed in the Gap move. The following extracted moves were all identified as the Purpose move.

This study aimed to investigate the intersection of teachers' and learners' perceptions regarding language learning strategies. ENS

The paper attempts to define the theoretical foundations, main features, benefits, and procedures of Reciprocal Teaching (RT). PNS

With frequencies of 93.3% and 90% for ENS and PNS abstracts, the Purpose move is the most obligatory in both samples. The Methods move clarifies how the procedure of the study. It is the summary of the method section of the accompanying RA. Therefore, it aims at providing readers of RA abstracts with information on design, corpus, instrumentation, data collection approach, and data analysis measure(s) of the study. The following two examples elucidate the purpose of this move.

Five intact ESL classes with 43 students from 18 language backgrounds participated in this activity. They worked in pairs to identify pragmatic infelicities in videotaped scenarios, and performed short role plays to repair the infelicities. The student role plays were videotaped. ENS

A sample of 130 EFL teachers teaching at junior high schools, high schools, and private language institutes were randomly selected. The sample consisted of EFL teachers with different degrees, teaching experience, and gender. A grammar belief questionnaire consisting of five main categories (25 items) was given. PNS

This move occurred in more than two-thirds of the abstracts of each sample; therefore, exceeding the 50% criterion, this move is obligatory in both samples. The Results move states the main findings, scientific achievements, and answers to the questions of the study. The examples written below were all identified as the Results move.

The study found the accuracy of students receiving written corrective feedback in the immediate post-test outperformed those in the control group, and that this level of performance was retained two months later. ENS

We found that the students of the experimental group, who experienced task-based principles of teaching speaking, performed remarkably better than those of control group on the final post-test. PNS

The obtained frequencies of 70% and 86.6% for ENS and PNS samples display that this move is obligatory. Commenting on the obtained results is a major communicative function of this move. Here, writers interpret their findings and draw inferences about them. They also point to the applications of their study and discuss the possible implications of it. The following moves are both of this type, i.e., they are Conclusions moves.

Based on this comparative review of research, we suggest future directions for the interdisciplinary study of genre learning. ENS

Therefore, the results show that EQ as an influencing factor in improving the participants' performance on cloze test should receive attention in teaching and testing. PNS

This move was more employed by PNS writers than their ENS counterparts, with 70% vs. 56.6% frequency, respectively. However, in both samples it met the criterion of 50%; as a result, the Conclusions move was obligatory in ENS and PNS RA abstracts.

4. Discussion and Conclusion

The results of the Chi-square test indicated that the RA abstracts written by ENP and PNS were not significantly different in terms of Samraj's (2005) Model. This lack of a significant difference is true while contrastive rhetoricians expect cross-cultural differences in writing styles; that is, although both abstract sets belong to the same discourse community (i.e., applied linguistics), the writers must show variation in the abstract because they have different linguistic backgrounds, namely English and Persian. More specifically, PNS writers are more likely to transfer their L1 textual and rhetorical strategies to the L2 context before

they have fully absorbed the expectations of their L2 audience. However, this was not the case for PNS writers. They showed their mastery of English discourse conventions of RA abstracts. For contrastive rhetoricians, this mastery means awareness of cross-cultural differences, which originate from either different linguistic backgrounds or different readers' expectations; this type of awareness or knowledge is a characteristic feature of expert members of discourse communities by whom research articles are written (Koutsantoni, 2006).

Interestingly, PNS writers excelled their ENS counterparts in terms of employing the moves of Samraj's (2005) Model; the RA abstracts written by PNS enjoyed an average move frequency of 4.86 while those of ENS had an average of 4.13. These average move frequencies were calculated through dividing the total number of moves observed in each sample (292 and 248 for PNS and ENS, respectively) by 60, i.e., the number of abstracts in each sample.

Similar to this study, Martin (2003) conducted a contrastive analysis on RA abstracts. He also reported that the RA abstracts of Spanish writers in the area of experimental social sciences "generally reflected the international conventions based on the norms of the English academic discourse community" (p. 41). However, his findings should be compared cautiously with those of the present study. The reason is that Martin (2003), in his cross-lingual study, compared RA abstracts written in English and Spanish written by different L1 speakers similar to the present study. In addition, the current study is based on Samraj's (2005) model, but his analysis was based on Swales's (1990) generic model of RA abstracts. Another contrastive study on RA abstracts is by Bonn and Swales (2007), who examined some linguistic features, rather than generic conventions, in two sets of abstracts written in English and French. Their findings indicated that linguistic differences between the two sets can be attributed to differences in the stylistic conventions, linguistic resources, and cultural expectations.

Samraj's (2005) Model enjoyed high precision in that frequency of no move was less than 22; that is, each move appeared at least in one-third of the abstracts in each sample (%36.6). The order of moves from the most obligatory one towards the most optional one is like this: (1)

Purpose, (2) Results, (3) Methods, (4) Conclusions, (5) Gaps, (6) Background information, and (7) Centrality claims. The first 5 moves were obligatory and the last one was optional in both samples. The 6th move (i.e., Background information) was obligatory in the PNS abstracts and optional in the ENS abstracts.

This study attempted to meet the relatively immediate need of L2 students in writing abstracts at graduate level. The findings revealed that in RA abstracts of both samples, five moves were obligatory (that is Gaps, Purpose, Methods, Results, and Conclusions), and one move (i.e., Centrality claims) was optional. The seventh move (i.e., Background information) was obligatory in the PNS abstracts and optional in the ENS abstracts. Furthermore, this study elucidated the major communicative purpose of each move type of RA abstracts. The move types of RA abstracts signal the major theme of research (Background information), the importance of the study (Centrality claims), the need for the present research (Gaps), the purpose of the study (Purpose), the procedure of the study (Methods), the main findings (Results), and the comments on the obtained results (Conclusions). Importantly, the move types appear in parentheses following each communicative purpose; moreover, they appear in the same sequence specified in Samraj's (2005) model.

The findings of this study are of value for graduate writing courses where students learn to write research articles. Writing an effective abstract is important in this academic task. Accordingly, material developers may include Samraj's (2005) model in their materials, since this model enjoys high precision. Out of seven moves, five moves were obligatory in both ENS and PNS samples, and the other two moves had relatively acceptable frequencies.

Also, the results of this study showed that academic writing instructors should advise their students to pay attention to Samraj's (2005) model. However, in order to prevent undermining the creativity of students, the models should be presented as potential ones that can be adapted and manipulated for effective abstract writing rather than as overarching standard models. Along with Wingate (2012, p. 27), who rejects the idea of "one-size-fits-all model" to teach writing, Hart (1986, cited in Bhatia, 1993, p. 40) claims that in language teaching, genre

analysis is “pattern seeking rather than pattern imposing.”

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