Genre Analysis of Research Article Introductions across ESP, Psycholinguistics, and Sociolinguistics

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Abstract
Research Article (RA), in particular, its structure, social construction and historical evolution, has been focused upon through a large number of studies on academic writing over the past 20 years. This paper reports an analysis of research article introductions from three related fields, English for Specific Purposes (ESP), Psycholinguistics, and Sociolinguistics, using Swales' CARS model. The corpus consisted of 90 RAs drawn from a wide range of refereed journals in the corresponding disciplines. The results of the analysis, although revealing marked differences across the disciplines regarding Move 2/step 1B, indicate no marked differences in research article introductions across the disciplines in terms of Move 1 and 3 along with their constituent steps. Furthermore, no marked differences are found in terms of the extent of concordance between the CARS model and the move structure of the RAs analyzed. The results also underline the need for further research into the CARS model and provision of a more flexible and open-ended structure, one which is pattern-seeking rather than pattern-imposing and provides the writer/researcher with the necessary options for the inclusion of further steps, one in which free-standing steps are not assigned rigid functions and positions in the overall structure but are multi-functional or multi-purpose and can be shuffled in the overall structure.

Key Words: Genre Analysis, Moves, Sub-moves, CARS model, Research Article, Introduction in Applied Linguistics

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Introduction

Research article, in particular, its structure, social construction and historical evolution, has been explored through a large number of studies on academic writing over the past years. A number of these studies have dealt with the overall organization of various parts of the research article, such as the introduction (e.g. Swales 1981, 1990; Swales & Najjar 1987), the result section (Thompson, 1993), discussion (Hopkins & Dudley-Evans, 1988) and the abstracts (Salager-Meyer, 1992). Various lexico-grammatical features of the Research Article (RA), ranging from tense choice to citation practices, have also been investigated. The social construction of this genre (Myers, 1990) and the historical development of the research article (Salager-Meyer, 1999) have been studied as well.

Introduction, as one of the most researched sections of the RA, has started to attract scholarly attention since Swales' (1981, 1990) work on the move structure of RA introductions, and since then the proposed CARS model has been applied to other sets of texts. The cyclical nature of introductions , the use of references in introductions , the investigation of texts written in different languages and cultures using Swales' model(Fredrickson & Swales, 1994), the analysis of citation practices of "expert" writers (Pickard, 1995), the investigation of citation practices in academic texts (Thompson, 2000), extending Swales' division of citation forms (Thompson & Tribble, 2001), and the investigation of RA introductions from two disciplines (Samraj, 2002, 2005) are among various studies conducted on the RA introduction. In spite of the ever-increasing interest in disciplinary differences in academic writing, there has been less research on disciplinary variation. The adoption of a holistic approach toward disciplinary variation in some recent studies such as Posteguillo's (1999) study of RAs in computer science and Nwogu's (1997) study of medical science highlights the need for further research on disciplinary variation. More importantly, the results of much more recent studies by Samraj(2002), not only revealed disciplinary variation, but also indicated that the constituent structure of the moves in Swales' Create-A-Research-Space

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(CARS) model did not adequately account for the structure and some important features of all introductions, such as the presence of definitions of terms, exemplifications of difficult concepts, and evaluation of the research presented, leaving the applicability of the CARS model open to question, and underscoring the need for a greater degree of modification and embedding in the CARS model to account for the structures found in RA introductions across disciplines.

The current study reports on an analysis of RA introductions across the three disciplines of ESP, sociolinguistics and psycholinguistics. The globalization of English as the world's most dominant *Lingua Franca*, the role of English as a foreign language in host countries, the relationship amongst English and social, political, economical, etc., trends of the host countries, the undeniable connection between language as one of the manifestation of learning and the psychological mechanisms of human being, the ever-lasting scholarly interest to describe this *langu-psycho* link, along with the substitution of the once deep-rooted notion of *A single English for everybody* with the ever-increasing interest to design custom- made *Englishes* for various walks of purposes have underlined the significance of sociolinguistics, psycholinguistics, and ESP, as three of the cornerstones of language teaching & learning, especially in foreign settings. Moreover, considering the booming number of scholars and experts involved in these fields and the general tendency of scholarly circles to rule-bind their academic contacts that characterizes itself in their escalating flow of academic works, gaining a better understanding of the way the generic structures are organized in these disciplines, verifying the existence of any disciplinary variations, distinguishing disciplinary-based variations from genre-specific features, and exploring the applicability of Swales' (1990) CARS model and its concordance with the RA introductions in these disciplines as the main objectives of the current study would contribute to the configuration of academic writing blueprints with specific moves and constituent parts for not only the current members of these communities but also people that seek membership in them and those non-native students that intend to

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communicate with the target community through academic writing. This, in turn, may pave the way for the creation of unanimously agreed discipline-specific norms of address that are comprehensible and acceptable throughout the target community. Moreover, it may enlighten English for academic purposes (EAP) instruction, materials and curriculum development, and provide implications for academic writing instructors through shedding light on textual norms across the disciplines.

Corpus

Having surfed the net, the list of related journals was shared with two experts and the preliminary corpus (consisting of 90 RAs) was drawn form a range of journals refereed by the two experts to be central in these disciplines, and published between 1998-2003. The corpus was restricted to a period of 6 years (1998-2003) to control for potential rapid changes within any of the disciplines. The final corpus, 60 RAs (20 from each discipline), was selected on the basis of stratified sampling procedure. In other words, the RAs were drawn from unequal-sized samples (on a proportional basis) based on the importance and reputation of the journals and the extent to which the journals were research-oriented. Moreover, to qualify for the final corpus, all the RAs had to report original research and had the traditional IMRD (introduction, method, results, discussion) sections of the research article, and consisted of one to seven paragraphs.

The theoretical framework for this study was Swales'(1990) genre-analysis model (CARS model). Analyzing 48 article introductions randomly selected from three main areas of hard sciences, biology and medicine, and social sciences, Swales(1981) posited a four-move structure for a typical article introduction, which he, after some modifications in his later publication (1990), presented as a three-move model called the CARS model (Create a Research Space)(Figure 1). According to this model, RA writer takes three moves to create the RA introduction. In the first move, he establishes the general topic being discussed, then resorting to various steps indicated in Fig. 1, he creates a

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niche within the territory, and eventually, he presents his side of the story by occupying the niche.

Due to the specific nature of the study, an ex post facto design was selected for the study. Since there was no cause- effect relationship between the variables, moves and sub-moves were labeled as dependent variables and the researchers / writers' knowledge of the generic structure was treated as an independent variable. For the purpose of our analysis, the frequency of occurrence of each move and its constituent steps were tallied and summed; and to probe differences, a series of statistical non-parametric tests for nominal data, namely Chi- square test, was conducted.

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Figure 1

The CARS model for RA introductions, Swales (1990, p. 141)

Move 1. Establishing a Territory

Step 1. Claiming centrality and/or

Step 2. Making topic generalizations and/or

Step 3. Reviewing items of previous research

Move 2. Establishing a Niche

Step 1.A. Counter-claiming or

Step 1.B. Indicating a gap or

Step 1.C. Question-raising or

Step 1.D. Continuing a tradition

Move 3. Occupying the Niche

Step 1.A. Outlining purposes or

Step 1.B. Announcing present research

Step 2. Announcing principle findings

Step 3. Indicating RA structure

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Results and Discussion

In order to determine the existence of any variations in the occurrence of moves 1, 2, 3 and their constituent steps in the RAs across the three disciplines, as well as the extent of the concordance between Swales' (1990) CARS model and the move structure of the RA introductions in these disciplines, the observed frequencies of occurrence of each move and its constituent steps were tallied and summed; and to probe differences, a series of statistical non-parametric tests for nominal data, namely Chi- square test, were conducted in the treatment of the collected data. The results of the study reject the existence of any significant differences in RA introductions across the disciplines in terms of moves 1 and 3 along with their constituent steps. Similarly, the findings reveal no significant concordance between the CARS model and the move structure of the RAs analyzed, although indicating significant differences across the disciplines regarding Move 2/ step 1B and revealing some discrepancies and anomaly structures, in terms of the moves and their constituent steps.

Move 1

"Establishing a territory" ,which is the opening move of the CARS model, is considered as a commitment on the part of the writer to the academic discourse community of the relevance of the reported research to issues and propositions agreed upon by the members of that community. By adopting this move, the writer intends to assure the community that the study to be reported is among the concerns of that academic circle and might contribute to their understanding of some of the vague issues which are of interest to that circle. In other words, resorting to this move, the writer attempts to break the ice with the community and create a common ground and then draw their attention to the issues he is going to bring up. The RA writer intends to affiliate and identify himself with the academic circle in the first place and convince them that the study to be presented is of value and interest to the members of that community and lies within the boundaries of their concerns and might pave the way toward their determined objectives. This move is fulfilled through three steps: 1. Centrality claims, 2.

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Making topic generalization, and 3. Reviewing items of previous research (Swales, 1990).

In the current study, step 1, that is, Centrality claims was realized through these strategies: A. Highlighting an increasing emphasis/ interest/ attention B. Expressing a well-established territory C. Expressing recognition and importance D. Expressing interest and attention E. Reference to the central issues of the discipline F. Recency of the research territory. Centrality claims typically occur sentence initially. From among 20 ESP RAs which utilized move1, 13 RAs (65%) used step1; 9 RAs of them deployed this step sentence initially and in the other four this step didn't occur sentence initially. Out of 19 psycholinguistics RAs which used move 1, 7 RAs (36.8%) applied step 1, from which 3 RAs used this step sentence initially and in the other four this step didn't occur sentence initially. From among 17 sociolinguistics RAs which used move 1, 6 RAs (35.2%) utilized step 1, from which 2 RAs had this step sentence initially and in the other four this step didn't occur sentence initially. Some examples of the strategies used for realizing step 1 are presented below**.**

(A) ESP (RA No.11) *The last three decades … of increased emphasis on…*

(B) ESP (RA No.17) *Over the last twenty years, a large number of studies…*

(C) ESP (RA NO.6) *Metaphor plays a central role …*

(D) ESP (RA No.8) *They (conditionals) have often attracted the attention of …*

(E) ESP (RA No.14) *One of the central issues within … is this precarious reader …*

(F) ESP (RA No.15) *It is only relatively recently that the Spanish …*

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In the current study Step 2 and its constituent strategies were fulfilled as mentioned by Swales (1990) through making either A) statements about the knowledge or practice or B) statements about the phenomena. See two examples in this regard below.

(A) ESP (RA No.18) *In Indonesia… university students taught through the medium of the national language,…*

(B) ESP (RA No.8) *Conditionals are widely used to consider option,…*

Minimal reference to the previous work is an obligatory step in move 1. In step 3, the writer/researcher provides the academic circle with an account of previous studies, their findings and their conductors. This is the very moment when the researcher specifically links claims, assertions, and findings with the person who has put them forward. Reference to previous research is fulfilled through three major techniques of (1) Integral citations (2) Non-integral citations (3) Both integral and non-integral citations (Swales, 1990). The following are the examples of these techniques found in the corpus.

(1) ESP (RA No.18) *Nation (1990: 24) states that learners…*

(2) ESP (RA No.7) *There have been previous attempts (Cooper, 1985; Hughes, 1998) to analyze…*

(3) ESP (RA No.4) *In contrast to this Shannon and Weaver's (1963) view… Hedges (Hyland, 1996, 1998),…*

Regarding the position of Move 1, RA writers did prefer to resort to this move introduction initially in 18 (90 %), 17 (89.47 %), and 12 (70.5 %) RAs in the three disciplines of ESP, psycholinguistics, and sociolinguistics respectively. In 8 ESP RAs (40%), 9 psycholinguistics RAs (47.36 %), and 10 sociolinguistics RAs (58.82 %), move 1 was fulfilled through individual application of its constituent steps, while in

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12 ESP RAs (60 %), 10 psycholinguistics RAs (52.63 %), and 7 sociolinguistics RAs (41.17 %) this move was realized through a combination of its constituent steps. The results of the current study indicated that there was no significant difference between the type and frequency of move 1 along with its constituent steps utilized in ESP, psycholinguistics, and sociolinguistics RAs (See Table 1).

Table 1
Chi – square for Move 1 across Academic Disciplines

Disciplines	**Move 1/ Steps**			Total
	Step 1	Step 2	Step 3	
ESP	13 37.1	7 20.0	15 42.9	35 38.0
Psycholinguistics	7 22.6	9 29.0	15 48.4	31 33.7
Sociolinguistics	6 23.1	5 19.2	15 57.7	26 28.3
Total	26 28.3	21 22.8	45 48.9	92 100.0
Chi-square	**D.F.**	**Significance**	**Min E.F.**	**Cells with E.F.<5**
3.04484	4	0.5503	5.935	None

Move 2

In move 2, i.e. Niche-establishment, the researcher adopts a challenging or even dubious stand toward the established territory, previous research and its findings. He attempts to highlight the shortcomings, gaps and unanswered questions regarding the established territory and consequently to emphasize the necessity for further and more profound investigations. In this move, the writer/researcher intends to draw the attention of the academic circle to some vague points in the established territory, therefore gaining the confidence of the academic community is of utmost importance to him. After heating up the discussion and magnifying the shortcomings of the established territory, the researcher seizes the opportunity to present his study as an 'Ace in the hole" to the discourse community. He refers to the promising prospects and

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contributions that his study might bring about in addressing some unanswered questions and solving some unsolved problems. According to the CARS model, the writer/researcher may resort to several functions or steps to fulfill move 2 such as presenting challenging claims (Step 1A. *Counter-claiming*), disclosing gaps or shortcomings (Step 1B. *Indicating a gap*), raising issues, problems, or questions, etc, that have not been dealt with yet (Step 1C. *Question raising*) or stick with a trend or tradition (Step 1D. *Continuing a tradition*) (Swales, 1990).

In the current study, step 1A was realized through these linguistic exponents: A. Contrastive comments B. Verb phrase negation/lexical negation. Out of 17 ESP RAs, 15 Psycholinguistics RAs, and 13 Sociolinguistics RAs which utilized move 2, only 3 psycholinguistics RAs and 1 sociolinguistics RA used step 1A, that is, they counterclaimed the previous research.

(A) Psycho-linguistics *(RA No.14) ...However, recent evidence examining ...has challenged this idea…*

(B) Psycho-linguistics (RA No.10) …he is mistaken that replication of his results among children…

Step 1B was realized through: A. Negative or quasi-negative quantifiers B. Lexical negation C. Verb phrase negation D. Expressed needs E. Contrastive comments. Out of 17 ESP RAs, 15 Psycholinguistics RAs, and 13 Sociolinguistics RAs which utilized move 2, 17 ESP RAs (100 %), 8 psycholinguistics RAs (53.3 %), and 5 sociolinguistics RAs (38.46 %) employed this step.

(A)ESP *(RA No.10)…but there appears to be little if any analysis of …*

(B)ESP *(RA No.14)…there is a notable absence of specific studies…*

(C)ESP *(RA No.16)…, academic research has not caught up with … and it has so far provided no clear…*

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(D)ESP *(RA No.15)…more English/Spanish comparative rhetoric studies …are needed.*

(E)ESP *(RA No.13) Although giving examples is a common…strategy…college-level L2 writers rarely…*

In order to crystallize step 1C, the writer /researcher either implies or poses the question directly to the audience. Out of 17 ESP RAs, 15 Psycholinguistics RAs, and 13 Sociolinguistics RAs which utilized move 2, no ESP RAs(0 %), 1 psycholinguistics RA(6.66 %), and 1 sociolinguistics RA(7.69 %) employed this step, revealing more tendency on the part of psycholinguistics, and sociolinguistics RA writers in including this step in their introductions compared to ESP RA writers.

Psycho-linguistics (RA No.11) Thus the question arises: why do children often fail…

Socio-linguistics (RA No.13) Briefly, there are two questions to be asked…

Out of 17 ESP RAs, 15 Psycholinguistics RAs, and 13 Sociolinguistics RAs which deployed move 2, no ESP RAs (0 %), 3 psycholinguistics RAs (20 %), and 6 sociolinguistics RAs (46.15 %) employed step 1D.

Psycho-linguistics (RA No.5) In pursuing this research question... shed light on a long standing debate in…

Psycho-linguistics (RA No.7) The present study seeks to expand upon this link between…

The constituent steps of move 2 can be ranked (from the most frequent to the least frequent) as follows in terms of the tendency of the researcher to include them in the RA introductions in each of the three

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disciplines: ESP(1B),Psycholinguistics(1B,1D,1A,1C),Sociolinguistics(1B, 1D,1A, 1C). It is noteworthy that ESP RA writers were the only RA writers who avoided resorting to steps 1A, 1C, and 1D, and preferred to present their arguments in a more conservative way, without posing any serious challenge, raising any questions, or even continuing the same line of research. Move 2 was embodied in 85 % of ESP RAs, 75 % of psycholinguistics RAs and 65 % of sociolinguistics RAs through resorting to single constituent steps, and no combination of these constituent steps was observed in the corpus analyzed, which resonates with Swales' CARS model completely. Steps 1B and 1C ranked as the most frequent step and the least frequent step respectively in the corpus analyzed, leaving steps 1D, and 1A as the second and the third favorite choice. This preference for step 1B in most of the RAs analyzed highlights the tendency on the part of the researcher for less direct and challenging approaches toward the established territory and the previous research. Regarding the position of Move 2 in the corpus analyzed, out of 17 ESP RAs which included this move, 16 RAs (94.11 %) utilized this move in the second position, one RA (No.7)(5.8 %) used this move in the third position, and 3 RAs (15 %) did not employ this move at all. Out of 15 psycholinguistics RAs which included this move, 12 RAs (80 %) deployed this move in the second position, 1 RA(No.13) (6.6 %) utilized this move in the initial position,2 RAs (No.3, 14) (13.3 %) used this move in the third position and 5 RAs did not utilize this move at all. Out of 13 RAs which included Move2, 6 RAs (46.15 %) deployed this move in the second position, 7 RAs (53.84 %) utilized this move in the third position, and 7 RAs (35 %) did not use this move at all.

Unlike move 1, which was achieved through various combinations of its constituent steps, move 2 was fulfilled through individual application of its constituent steps. Move 1 as the first encounter of the writer/researcher with the discourse community is more demanding and requires that the writer/researcher present his assertions and claims more cautiously and inflict the most appropriate and lasting impression on the academic circle. That is why the writer/researcher, resorting to various combinations of steps and strategies, does his best to convince the

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academic circle of the worthiness of his study. As a result, in Move 2, having a furnished and paved path ahead, the writer/researcher does not bother to resort to various combinations of steps and strategies to make his point, and seizes the opportunity to put the established territory and previous research under a magnifying glass, revealing some of the propositions that have evaded even sharp-sighted researchers. Taking into account that the frequency of occurrence of some of the constituent steps of move 2 (namely steps 1A, 1C, 1D) in ESP RAs was equal to zero, the results indicated a significant difference between the frequency of occurrence of Move 2 /Step 1B across the three disciplines.

Table 2
Chi-square for Move 2 across Academic Disciplines

Disciplines	**Move2 / Step**		
	1B observed	Expected	Residual
ESP	17	10.00	7.00
Psycholinguistics	8	10.00	- 2.00
Sociolinguistics	5	10.00	- 5.00
Total	30		
Chi-square	**D.F.**	**Significance**	
7.800	2	.020	

Move 3

Through move 1, the writer/researcher attempts to draw the attention of the academic circle to what he is going to bring up, demonstrate its importance, and gain their consensus on his approach. Move 2, as a bridging strategy on the part of the writer/researcher, means to pave the way for the presentation of the current research through highlighting some of the shortcomings, gaps, unanswered questions, and undealt matters in the established territory and the previous research. Move 3, as the last move of the CARS model, serves a justifying purpose to turn the established niche, created by move 2, into the research space that

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validates the present article. In this move, the writer/researcher finds himself on a vantage point to state his side of the story and inform the academic circle of the objectives, procedures, methodology, structure, and possible outcomes of his study. This is the time when the researcher addresses the academic circle face to face. This is the very moment when, on the one hand the writer/researcher comes clean on what he has to declare and on the other hand, the circle gets in touch with what has been concocted by the writer/researcher. This move is fulfilled through the following constituent steps: (1A) Outlining purposes (1B) Announcing present research 2. Announcing principle findings 3. Indicating RA structure (Swales, 1990).

In the current study, step 1A was realized through the following linguistic exponents: (A) In a neutral way (B) Expression of focus and concentration (C) Expressed concern, purpose, aim, objective, intention, and goal (D) Expressed attempts (E) Expressed examination, investigations, and explanations. Out of 20 ESP RAs, 19 psycholinguistics RAs, and 20 sociolinguistics RAS which utilized move 3, 13 ESP RAs (65 %), 14 psycholinguistics RAs (73.68 %), and 16 sociolinguistics RAs (80 %) included step 1A, and 12 ESP RAs (60 %), 8 psycholinguistics RAs (42.10 %), and 16 sociolinguistics RAs (80 %) included step 1B in their introductions respectively. It is worth mentioning that from among 13 ESP RAs that utilized step 1A, 8 RAs (7,19,3,16,18,2,14,9) used this step individually (i.e. without combination with step 1B) and 5 RAs (17,15,5,8,20) deployed this step in combination with step 1B. Out of 14 psycholinguistics RAs that had step 1A,10 RAs (7,5,19,6,14,10,15,18,2,1) utilized this step individually, but 4 RAs (17, 9, 3, 12) employed this step in combination with step 1B.From among 16 sociolinguistics RAs that utilized step 1A, 4 RAs (11,10,19,15) utilized this step by itself while 12 RAs (16,4,7,5,1,2,14,8,17,6,12,13) used this step in combination with step 1B. The following are 5 examples of step 1A and 4 examples of step 1B respectively.

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(A) ESP *(RA No.15) We hope that the study reported here will… contribute to …*

(B) Psycho-linguistics *(RA No.10) It is evidence of this latter type that is the focus of this paper*

(C) ESP *(RA No.7) The aim of this paper is to…*

(D) ESP (RA No.5) I have attempted to make…

(E) ESP (RA No.19) In this study we examine the occurrence…

1. ESP (RA No.12) The study … an analysis of a ten-hour collection of conversation…

2. ESP (RA No.10) … 13 PHD theses were analyzed to see…

3. ESP (RA No.15) … the present research follows… to study …from a historical perspective…

4. Psycho-linguistics (RA No.8) we have empirically illustrated the crucial…

Like step 1, steps 2 and 3 of Move 3 were utilized in the introductions of RAs of the three disciplines in different numbers. Out of 20 ESP RAs, 19 psycholinguistics RAs, and 20 sociolinguistics RAs which used move 3, 1 ESP RAs (5 %), 8 psycholinguistics RAs (10.5 %), and 6 sociolinguistics RAs (30 %) included step 2 while step 3 was used in 3 ESP RAs (15 %), 6 psycholinguistics RAs (31.57 %), and 8 sociolinguistics RAs (40 %). The following are 6 examples of steps 2 and 3 (3 each) respectively.

1. ESP (RA No.17) The results of my analysis reveal differences…

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2. Psycho-linguistics (RA No.7) As will readily become apparent, it does appear that the well-established pattern of …

3. Psycho-linguistics (RA No.11) In this regard, perspective taking plays a great role in … in Japanese.

1. ESP *(RA No.16) … the corpus of the data will firstly be described, followed by…*

2. ESP *(RA No.4) I begin with… then go on to …*

3. ESP *(RA No.10) … the first part of the present study set out to do. Following that…*

In total, Move 3 appeared in 59 out of 60 RAs included in the corpus. This indicates the importance of it among the members of the academic circle and their well-awareness of the significance and concluding role it serves. This move was fulfilled through either individual application of its constituent steps or a combination of them. Step 1, as the obligatory element in move 3 according to Swales (1990, p.159), occurred in 20 ESP RAs (100 %), 18 psycholinguistics RAs (94.73 %) and 20 sociolinguistics RAs (100 %). This step failed to appear in only one psycholinguistics RA (No.11). Step 2 did not appear alone in ESP and sociolinguistics RAs while it appeared individually in only one psycholinguistics RA (No.11). Step 3 did not occur alone in the RAs analyzed in the corpus. In 8 ESP RAs (40 %), 9 psycholinguistics RAs (47.36 %) and 15 sociolinguistics RAs, the writer/researcher did prefer to resort to a combination of steps to convince the academic circle of the worthiness of the current research and the new prospects it was to disclose before the discourse community.

Regarding the position of Move 3 in the RAs analyzed, this move occupied the final position in 18 ESP RAs, and the initial position in only two of the RAs analyzed (No. 7 and 12). In psycholinguistics RAs, this step occurred in the final position and the initial position in 17 RAs

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and 2 RAs (No.9 and 14) respectively. In sociolinguistics RAs, this step did appear in the final position in 13 RAs, and occupied the initial position in 7 RAs (No. 11, 17, 8, 9, 3, 18, 5). Taking into account that the frequency of occurrence of some of the constituent steps of Move 3 (namely steps 2, 3) was equal to zero, the results indicated no significant differences between the type and frequency of occurrence of schematic Move 3 and its constituent steps (1A, 1B).

In order to determine the amount of difference between the RAs regarding the application of the moves, sub-moves and steps of Swales' (1990) CARS model in the assigned order, the move structure of the RAs in the corpus were compared and contrasted against the move structure of Swales' CARS model. The results indicated that from among a total of 60 ESP, psycholinguistics and sociolinguistics RAs, 16 ESP RAs (80 %), 11 psycholinguistics RAs (55 %) and 5 sociolinguistics RAs (25 %) did apply the moves, sub-moves, and steps in the assigned order, confirming the absence of any significant differences in adopting Swales' CARS model across RA introductions in the three disciplines (Table 5).

Table 3
Chi –square for the Frequency of Move 3 across Disciplines

Disciplines	**Move3 / Steps**		Total
	1A observed	1B observed	
ESP	13 52.0	12 48.0	25 31.6
Psycholinguistics	14 63.6	8 36.4	22 27.8
sociolinguistics	16 50.0	16 50.0	32 40.5
Total	43 54.4	36 45.6	79 100.0

Chi-square	**D.F.**	**significance**	**Min E.F.**	**Cells with E.F.< 5**
1.06447	2	0.5873	10.025	None

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Table 4
Move Structure of RAs according to Swales' (1990) CARS Model

Move / constituent Steps	ESP	Psycholing.	Socioling.
Move 1. Establishing a Territory	100 %	95 %	85 %
Step1.claiming centrality *and/or* Step2.Making topic Generalization *and/or* Step3.Reviewing Items of Previous Research	65 % 35 % 75 %	36.8 % 47.36 % 78.94 %	35.2 % 29.41 % 88.23 %
Move 2. Establishing a Niche	85 %	75 %	85 %
Step1A.Counter- claiming *or* Step1B.Indicating a Gap *or* Step1C.Question-raising *or* Step1D.Continuing a Tradition	0 % 100 % 0 % 0 %	20 % 53.33 % 1.66 % 20 %	7.69 % 38.46 % 7.69 % 46.15 %
Move 3. Occupying the Niche	100 %	95 %	100 %
Step1A.Outlining Purposes *or* Step1B.Announcing Present Research Step 2.Announcing Principle Findings Step 3.Indicating RA Structure	65 % 60 % 5 % 15 %	73.68 % 42.10 % 10.5 % 31.57 %	80 % 80 % 30 % 40 %

Table 5
Chi –square for Concordance with CARS Model

Disciplines	Cases Observed	Expected	Residual
ESP	16	10.67	5.33
Psycholinguistics	11	10.67	.33
Sociolinguistics	5	10.67	- 5.67
Total	32		
Chi-square	D.F.	Significance	
5.688	2	0.058	

Discrepancies & Mismatches

Move identification process, based on Swales' CARS model, indicated that there were no marked differences in RA introductions across the disciplines in terms of not only Moves 1and 3 along with their constituent steps but also adherence to the move structure of the CARS model. The only marked difference discovered across the disciplines was related to Move 2/ step 1B. However, it also revealed some

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discrepancies and mismatches with regard to the moves and their constituent steps between the generic structure of the RAs analyzed and that of Swales' (1990) CARS model. These discrepancies and mismatches are presented in the subsequent sections:

Discrepancies in Move 1

As Swales (1990) states, the key role of Move 1 in setting the scene for academic circle obliges the researcher/writer to open the research article introduction with individual application of centrality claim, topic generalization, review of the items of previous research, or a combination of them. This obligatory inclusion of Move 1, especially its step 3, was not observed in one psycholinguistics and three sociolinguistics RAs. Considering the fact that the above-mentioned RAs all started with move 3 (Occupying the niche), it can be assumed that the writers did take moves 1, and 2 for granted and did assume that the centrality, significance and recency of the research territory, and any challenges posed to this territory in terms of counter-claims, gaps and questions are among the propositions that the members of the related academic circles are well aware of. Therefore, mainly due to the well-establishedness of the research territory amongst the members of the academic circle, they did think it better not to mention the ever-repeated and get straight down to the points they were to put forward. Interestingly, Step 1 (Centrality Claim) was included in Move 3 (Occupying the niche) in psycholinguistics RA No. 17 and was reiterated after step 2 in psycholinguistics RA No.6 ,which reveals the extra attempt on the part of the researcher to draw the attention of the academic circle to the importance of his study.

Unlike what Swales (1990) thinks of integral and non-integral citations, in psycholinguistics RA No.16, the name of the researcher not only occupied the subject position, which is typical of integral citations, but was also set off the actual citing sentence, which is typical of non-integral citations. This technique was not accounted for by Swales' CARS model. Considering its rarity in the corpus and the recency of the publication of this RA (Dec. 2003), it might be a new style of making

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citations or merely the editorial preference of the source journal, i.e., System.

Discrepancies in Move 2

The omission or dislocation (occupying the initial or third position) of Move 2 in some of the RAs analyzed, which goes in the face of the assigned order proposed by Swales' CARS model, can be justified through one or a combination of the following reasons:

1. The writer/researcher unfamiliarity with the conventions and formalities of academic discourse and generic structures.

2. The novelty of the topic under discussion, which prevents the writer/researcher from posing any criticism toward the previous research.

3. Generality/specificity of the topic of the study: some topics are either so general or specific that may have evaded the attention of the academic circle or have failed to tease their interest.

4. The researcher is building its current research upon his earlier claims, assertions, or studies (established territory); in other words the research in question is deep-rooted in a longer experience or research by the same very researcher (Swales, 1990).

5. Dislocation for the sake of emphasis: utilizing move 2 in the initial, third or last position (sometimes even after move3) is a strategy adopted by the writer/researcher to emphasize the current research as being innovative, unprecedented, or informative in a way or another compared to previous research.

6. Lack of any notable studies or research which could be referred to, or depended upon.

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Discrepancies in Move 3

Unlike what Swales (1990) claims as the strong and obligatory binding between Moves 2 and 3, the ratio of co-occurrence of these two moves in the RAs analyzed in the three disciplines of ESP, psycholinguistics, and sociolinguistics was 17 to 20, 15 to 19, and 13 to 20 respectively. The inconsideration of this obligatory link between Moves 2 and 3 on the part of some of the researchers, in some of the RAs analyzed, which goes in the face of Swales' CARS model, can be justified on one or a combination of the following grounds:

1. The writer/researcher is unfamiliar with the conventions and formalities of academic discourse and generic structures (specifically Swales' CARS model).

2. The originality of the topic under discussion, which thwarts the writer/researcher from posing any criticism toward the previous research, making them to deliver their side of the story.

3. Generality/specificity of the topic of the study: some topics are either so general or specific that may have evaded the attention of the academic circle or have failed to attract their interest. Therefore, there are no notable studies or research which could be referred to, or depended upon.

4. The researcher is building its current research upon his earlier claims, assertions, or studies (established territory); in other words the research in question is deep-seated in a longer experience or research by the same very researcher (Swales, 1990).

As Swales (1990) puts it, Move 3 is manifested in two dominating forms: step 1A or step 1B. Due to the obligatory nature of Move 3, and thanks to the fact that according to Swales' CARS model, only one of these two steps must be included in the introduction section of the RA, the combination of these two steps in some of the RAs analyzed in the

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corpus runs in the face of Swales' proposed model to some extent and might be because of the writer/researcher unawareness of the orientation of Move 3 and the difference between steps 1A and 1B and the issues presented in each. Also, it might be the result of the writer/researcher tendency to present as much of their research as possible to impress the academic circle, or the writer/researcher belief that the academic circle is entitled to know both the objectives and the methodological issues of his research.

In one sociolinguistics RA (No.8) and four ESP RAs (No.9, 11, 13, 17), the writers/researchers presented the implications, contributions, and applications of their research for future studies. This step was not included in Swales' CARS model. The following are a few examples of this step found in the corpus:

1. Sociolinguistics RA *(No.8) This research thus contributes to…*
2. ESP RA *(No.9) The findings of this study may be useful…*
3. ESP RA *(No.11) Information obtained could be used in the …*
4. ESP RA *(No.13) The findings of this study are intended to help…*

Swales and Najar (1987), analyzing 110 introductions among which only 10 percent had utilized anomaly structures, argued that "an anomaly percentage of 10% is well within acceptable bounds in discoursal and textual studies for, even more than syntax, discourse is phenomena of propensities". Furthermore, Swales (1990, p.145) states that "there are good general and applied reasons for assigning numerical sequence to textual elements that occur in suitably robust preferred orders. In the case of RA introductions, the three moves occur at a high frequency in their assigned order. Discourse generalizations are permeable to exceptions and are not falsified by limited numbers of counter-instance". However, ESP, psycholinguistics, and sociolinguistics writers/researchers utilized anomaly structures in 4 (20%), 9 (45%), and 15 (75%) RAs respectively. Apart from ESP RAs, the number of anomaly structured introductions in psycholinguistics and sociolinguistics RAs falls well beyond what Swales and Najar (1987)

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define as acceptable bounds. Considering the facts that Swales has been on the editorial board of ESP journal, and most of the ESP RA introductions analyzed in the current study were culled from ESP journal, the low rate of anomaly structured introductions in ESP RAs could be justified to some extent. However, the appearance of anomaly structured introductions on a large scale in psycholinguistics and sociolinguistics RAs could be due to the low share of knowledge of the move structure of Swales CARS model on the part of psycholinguistics and sociolinguistics writers/researchers. This phenomenon might also indicate the unwillingness of psycholinguistics and sociolinguistics writers/researchers to stick to rigidly predetermined principles in utilizing and ordering the move structure of Swales CARS model and their tendency for breaking away from what Swales puts forward as "acceptable bounds".

All in all, instead of imposing predetermined bounds on the writer/researcher in utilizing and ordering moves, the CARS model needs to be potentially open-ended and pattern-seeking in including options in the realization of further steps and incorporate flexibility as an integral part to account for those discoursal functions and aspects of the genre that are more free-standing and unstable in their position in the overall organization. The extent of flexibility and the existence of further steps in the CARS model is a proposition that requires further research in interdisciplinary variation and among various trends in individual disciplines.

Conclusion

The current study verified the applicability of the CARS model to the three related disciplines of ESP, psycholinguistics, sociolinguistics. The results indicated that that the CARS model, although providing the writer/researcher with a sound framework for organizing and ordering his RA introduction, does not cater for some significant features of the RA introduction and revealed some flaws in the applicability of the CARS model to these disciplines. Although no significant differences were identified in the RAs across the afore-mentioned disciplines

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regarding the move structure assigned by the CARS model and the extent to which the disciplines adopted the move structure of the CARS model, the existence of some discrepancies and mismatches between the generic structure of the RAs analyzed and that of Swales'(1990) CARS model as well as the existence of anomaly structures underline the need for further research into the CARS model and provision of a more flexible and open-ended structure, one which is pattern-seeking rather than pattern-imposing and provides the writer/researcher with the necessary options for the inclusion of further steps, one in which free-standing steps are not assigned rigid functions and positions in the overall structure but are multi-functional or multi-purpose and can adopt different positions based on the function they fulfill in the overall pattern.

The identification of the move structure and variations of RA introductions across various related or unrelated disciplines and sub-disciplines, the possibility of expansion of the move structure of the CARS model and inclusion of further steps, the verification of the applicability and flexibility of the CARS model at a macro-level (i.e. inter-disciplinary) and at a micro-level to various trends and orientations in individual disciplines (i.e. intra-disciplinary) such as EAP, applied sociolinguistics and applied psycholinguistics are among the issues that enrich our knowledge of the true nature of these genres and sub-genres, and contribute to further modifications in the CARS model and eventually development of a full-fledged and comprehensive model than can account for various aspects of the generic structure of all RA introductions in various disciplines. English for Academic Purposes and English for Specific Purposes instruction and material development will to a large extent undergo change by the analyses of discourses that students need to learn to produce and comprehend, and understanding of textual norms in different disciplines enables researchers to provide instruction that better prepares students for the disciplinary communities in which they are seeking membership (Samraj, 2002).

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This genre-based study offers, to linguistic researchers as well as EFL/ESP teachers, insights which can be used in instruction. Foreign language teaching can benefit from it, mainly because it is an authentic sample of language in use. However, one important point has to be made in order to avoid an over-use or misuse of it. Genre approach is a useful tool if one is looking for a holistic teaching methodology but it has to be understood as a clarificatory description rather than prescription (Swales, 1990; Bhatia, 1993). The findings of this research can be applied in English for Academic Purposes courses for non-native English-speaking researchers or graduate students to contribute to the development of learners' awareness of the grammatical forms and structures that typify the discoursal patterns of the RAs. Learners in such courses may profit from a pedagogical approach that raises their awareness about the structures that exhibit syntactic-semantic distance. This can be achieved through activities that require, within a discoursal framework, discriminating and judgment through alternative evidence provided on the basis of appropriacy. Thus congruent and incongruent structures can be observed or contrasted across the introductions of the RAs or contrasted with other scientific genres, allowing the learner to judge on the basis of appropriacy rather than on the basis of grammaticality.

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