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Nominalization in the Research Article Discussion Sections of Local and International Journals of Applied Linguistics

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Abstract

This study aimed at investigating the tendency of research article (RA) authors for the application of nominalization in RA discussion sections from the perspective of two discourse communities. To this end, 150 RA discussion sections were selected from local and international Applied Linguistics journals.

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Following the rhetorical structure analysis of the corpus and the move tagging, the authors analyzed the vertical and horizontal distribution of the nominalization types within and between the journals. The results demonstrated that international RA authors show a greater preference to use nominalization in certain moves of the discussion sections, and this can be explained by considering the move function and nominalization types. It was also revealed that a large number of nominalizations are located in some moves than others. In other words, authors use nominalization in these moves to ameliorate the style and the language of the discussion sections to sound more persuasive. Finally, fine-grained qualitative analyses are presented.

Key words: Nominalization; Discussion section; Rhetorical structure; Discourse community; Genre

Introduction

Most non-native researchers starting as graduate students are deprived of acquiring the discourse conventions that define an academic genre by means of a formal course in academic writing. It is rather a process of emulating the academic style and genre strategies of already published authors who have achieved status and success within their own discourse communities (Day, 1994). The non-native English researcher who wishes to obtain international recognition through publication will necessarily have to adopt the discourse conventions that characterize scientific writing. Lack of awareness of discoursal, cross-cultural differences in text structures and reader expectations is believed to be the main cause of non-native writers' relative lack of success in the international community (Bitchener & Basturkmen, 2006; Connor, 2002, 2004). Accordingly, it has become the motive for researchers in the area of English for Academic Purposes (EAP) to focus on this area of academic writing (Ozturk, 2007; Posteguillo, 1999).

The quest for international publication endeavor escalates when writers try to justify their findings and convince the target discourse community of the validity and credibility of their research. From different aspects of academic writing studied, there is one, the RA discussion section, which has aroused great interest due to its important role in the scientific community. It could be regarded as the

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most decisive section of RAs, wherein authors seek to establish the significance and relevance of their findings and extend their contributions to the existing body of research (Swales, 2004).

The studies on the discussion section of the RAs have mainly focused on revealing the schematic organizations of different disciplinary texts, and a further step forward has been taken to suggest specific rhetorical moves (Dudley-Evans, 1994) along with their linguistic realizations in these disciplines (e.g., Holmes, 1997; Posteguillo, 1999; Ruiying & Allison, 2003; Martínez, 2003; Pho, 2008). However, the studies on RA sections are by no means exclusive to this area of inquiry. Another functional tradition that mainly revolves around text analysis is the Systemic Functional Linguistics (Halliday & Matthiessen, 2004). One aspect of this tradition that has recently gained great momentum in academic discourse is the idea of grammatical metaphor (GM) (Halliday, 2004a).

Within the framework of SFL, grammatical metaphor accounts for the fact that states and events, normally expressed in certain ways in texts, can potentially be formulated through other linguistic choices to become either more transparent or abstract. This concept is conceived as an "incongruent realization of a given semantic configuration in the lexicogrammar" (Halliday, 1994, p. 55).

Being a form of condensation of information, nominalization is a very economical means of packaging information and consequently an important feature of scientific writing (Banks, 2005, 2008; Halliday, 2004b). According to Halliday (2004a, p. xvii), "GM increases the theorizing power of language and concretizes what can only exist in abstraction." Despite the importance attributed to the concept of nominalization, a quick glance over the recent research, however, shows that the investigation of this phenomenon in academic text analysis remains largely a conundrum.

To the best of our knowledge, apart from Banks (2008) and Biber (2012) who studied the evolutionary changes in the written academic register diachronically from 1700 to 2005, there are just two studies that focus on the use of nominalizations. The general trend found in Banks (2008) and Biber's (2012) findings indicates an increasing use of nominalization in the language of science

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but an unequal decrease in the use of verbs and verbal groups. Studying GM from the standpoint of intertextuality, Clave (cited in Banks, 2008) focused on the nominalization which characterizes medical English articles by treating them as intertextual signs. He concluded that underprepared English for Science and Technology (EST) students can be taught to analyze the apparently static and obscure nominal groups that they face in specialized texts by moving in concrete directions.

In a more recent study by Baratta (2010), the academic writing of six undergraduate students was analyzed throughout each year of their degree course. The participants attended an academic program entitled 'Language, Literacy and Communication' (LLC), part of the School of Education at The University of Manchester. The results demonstrated that nominalizations do not necessarily play a prominent role within the academic writing of this community. It was also found that the students acquiring gradual proficiency did not generally rely on nominalizations to any great extent until the final year when they would write their dissertation.

Though the rhetorical structure and the generic characteristics of the discussion section of the RAs have been addressed in a number of studies (e.g., Bitchener & Basturkmen, 2006; Holmes, 1997; Hopkins & Dudley-Evans, 1988; Peacock, 2002; Ruiying & Allison, 2003), past research has provided little direction regarding how nominalization is realized in this section of the RAs. Although Halliday's contributions have been influential in this area, he has primarily been more concerned with theoretical discussions of nominalization than descriptive discussions. However, as mentioned earlier, recently Banks (2005, 2008) and Biber (2012) adopted the same theoretical framework but undertook an empirical/quantitative analysis of the phenomenon.

Considering the importance of nominalization as a functional means of creating easy-to-get-to meanings in the text, or even as a complex grammatical means, what Ventola (1996) termed 'guild codification', that is formulated to distinguish the outsiders and novices from well-established members of a discourse community, our study, drawing on Halliday and Matthiessen's (2004) characterization of GM and nominalization, aims to:

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a) explore how nominalization is deployed across the rhetorical moves of the discussion sections of the English RAs in the journals published in the discipline of applied linguistics in Iran as a foreign language context and the English RAs published at international level in the same discipline;

b) compare the distribution of nominalization across the rhetorical moves of the discussion sections of the English RAs in the same journals;

c) present an analysis of the semantic/morphological configurations of nominalizations and an analysis of the syntactic constructions containing nominalizations in the international RA discussion sections.

To this end, 150 RA discussion sections were selected from local and international Applied Linguistics journals. Following the rhetorical structure analysis of the corpus and the move tagging, the study embarked on the aims of the study, using Halliday and Matthiessen's (2004) classification of GM and nominalization. Finally, the study provided fine-grained quantitative and qualitative analyses.

Method

Theoretical framework

Grammatical metaphor is produced whenever the realization of a concept steps outside its typical framework (Halliday, 2004a; Halliday & Matthiessen, 1999; Ravelli, 1988). In GM, the grammatical form is altered, but the ideational meaning is the same; that is, ''reduce'' and ''reduction'' both encode the same process. This does not mean, of course, that selection of one rather than the other does not entail a difference of meaning at some other level. Generally, Halliday (1994) classified grammatical metaphor into conceptual metaphor and interpersonal metaphor, in which the conceptual metaphor includes the process and the nominalization. Interpersonal metaphor includes modal metaphor and mood metaphor. Conceptual metaphor mainly uses the form of the noun to express the process or quality which should be expressed by the verbs and adjectives. This is probably the most common example of GM when a process is realized as a noun (e.g., reduction). This is commonly termed as nominalization and is considered as a common feature of scientific writing (Banks, 2003, 2008; Ravelli, 1988). In this study,

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‘nominalizations’’ refers to nouns whose referents are processes, not entities, and ‘‘nominalizations’’ or ‘‘nominalized” processes might be defined as words which semantically encode processes, but have the grammatical function of nouns.

Along the same line, Banks (2003) distinguishes nominalizations functioning as grammatical metaphor from deverbal nouns, that is, nouns derived from verbs. He adds deverbal nouns can encode the process involved, the result of the process, or the instrument or agent involved in bringing the process about. For example, from the verb *paint*; we can derive *painting*, which, depending on the co-text, can be the process, or the result of the process (i.e. a *painted* piece of art), *painter*, the agent of the process and so on. Where a deverbal noun encodes the process, this is a prototypical case of grammatical metaphor. On the other hand, deverbal nouns indicating agents or instruments are not cases of grammatical metaphor and are excluded. Thus, where a noun encodes a process, even though there is no cognate verb (hence it cannot be considered a deverbal noun), it counts as an example of grammatical metaphor, on the principle that the defining characteristic is that of a lexical item which belongs to the word class of noun which semantically encodes a process (Banks, 2001).

Before going any further, it is perhaps useful now to reflect on the usefulness of nominalization. From a grammatical point of view, nominalizing is a process that allows the addition of modifiers and qualifiers. Thus, ‘*the government reduced taxes’* can be nominalized as ‘*the government’s reduction of taxes’*. The former can be considered as the unpacked version of the latter (Ventola, 1996). Adding a new modifier, we might produce something like ‘*the government’s long-awaited reduction of taxes’*. Consequently, nominalization permits the concentration and packaging of information as exemplified above. The second way in which nominalization can be useful is that the nominalized form can be used for any of the grammatical functions appropriate to nominal groups: Subject, Complement, and Prepositional completive. This feature leads to a possibility that is arguably even more important, whereby nominalization can be used in the construction of an argument. Halliday (1988, as cited in Banks, 2005) points out that where a nominalization occurs as Rheme in the thematic structure of the clause, where it

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will be typically foregrounded as the Focalized in the information structure, it can then be backgrounded as Theme and Given in the following clause.

From a semantic point of view, nominalization has a further effect. In taking on nominal form, the process seems to acquire some of the quality of an entity; it becomes more ‘‘thing-like’’ (Halliday, 2004). Banks (2003) has referred to this effect as ‘reification’, a term previously used by Halliday and Matthiessen (1999). Banks also maintains that this effect is (at least partly) what makes nominalization particularly suitable for scientific writing, by giving it an appearance of solidity, stability, and fixed factuality. In this sense, entities are in some way more tangible than processes. This way of thinking and expressing things fits in with the concept of scientific endeavor. Banks (2008) presented a classification of nominalization types, where each type functions differently depending on the linguistic context in which it is used in and the authors’ intentional stylistic use of the congruent or incongruent linguistic form. He defines *conditioned nominalization* as a kind of nominalization that is determined by its surrounding context. Here, the writer is obliged to use nominalization than other forms to meet the requirements of the sentence in which it is included. The second type, *lexical nominalization*, is found in contexts where there is a high frequency of synonyms and words from the same lexical group in the same and preceding paragraphs to fulfill the functionalist thematicity issue (Banks, 2005) and serve as a cohesive device, repeating, and summarizing information. Sometimes, authors use *stylistic nominalization* for no functional or formal reason, but for adding complexity to the text to insinuate the status of the text as a product written by a specific writer with a specific receiver in mind. The last category, *term nominalization*, characteristic of academic discourse, is a cognitive device that provides semantic traces of entity to both processes and entities.

The corpus

To control probable disciplinary variations, the only discipline selected for this study was Applied Linguistics. The corpus for this study consists of the discussion sections of 75 English RAs taken from local Iranian journals in Applied Linguistics and 75 English RAs published in high-status international journals in the same

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field. For the aim of the study, other sections such as introductions, methods, results, conclusions, footnotes, endnotes, and references were left out. Caution was exercised to choose only experimental articles on the assumption that each article should contain all four major sections, namely the Introduction, Method, Results, and Discussion (IMRD) sections. Articles containing merged sections (Result & Discussion, Discussion & Conclusion, or other combinations) were excluded from this study.

To identify the Iranian applied linguistics journals that publish papers in English, we obtained an official list of Iranian journals that are granted the status of academic by the Ministry of Higher Education in Iran. A questionnaire, accompanied by the official list, was distributed among a number of university professors in Applied Linguistics to choose five reputed journals suiting the purpose of this study. We finally chose three of the five nominated journals after negotiation. The same procedure was followed for selecting the international journals. That is, a number of well-known, accessible journals addressing the same audience in the field were chosen based on impact factor and indexing. These international journals are claimed to share the same aims and scopes by and large. Needless to mention, there is no single organization that acts as a judiciary body in deciding on the status of a journal per se. Then, a questionnaire was given to the experts. Finally, three of these journals that bore more consanguinity were selected. Table 1 shows the number of articles chosen based on the year of publication and context (local vs. international).

The reason behind choosing local and international journals was to assess the writers' investment on the nominalized forms in the discussion sections for these two discourse communities. It must be added that the writer status (nationality) was not taken as a variable in the selection of the articles. The assumption was that papers accepted for publication in prestigious international journals must follow the strict regulations for publication and they become nativized before the final acceptance. A word of caution regarding the unequal expertise of the local and international authors as well as their nativeness and non-nativeness seems in order here. Although the style of authorship, volume of audience, and cultural conventions are the determining criteria in distinguishing the local and

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international writers, the very fact of the similitude in the language (in our case, English) and the aims which both communities pursue can moderate the misconception regarding the unequal expertise as a major impeding element in making comparison in this study. Moreover, the terms 'local' and 'international' by no means purport to insinuate the presumable distinction of the native and non-native writers. What is important here is not a comparison between native and non-native corpora, but a comparison of strategies implemented by two discourse communities that have common aims but enjoy disproportionate access to addressees and scientific status in the academic world. The corpus was restricted to empirical studies between 2010 and 2013 because, according to Crookes (1986), the rhetorical structure of RAs may vary in the course of time.

Table 1

The List of Journals and RAs

Context	Journals	Year/Issue Number				Total
		2010	2011	2012	2013	
Local	Iranian Journal of Applied Linguistics	6	7	6	6	25
	Teaching English Language and Literature	7	5	6	7	25
	Iranian Journal of Language Studies	7	7	3	8	25
International	English Language Teaching	6	5	7	7	25
	Language Testing	6	7	5	7	25
	System	5	7	6	7	25
Total		37	38	33	42	150

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Instrumentation

Our purpose was to investigate whether RAs published in the local Iranian and international journals display similar or different preferences for the use of nominalized forms and how the possible differences might help Iranian research writers publish their English RAs in international journals. Accordingly, the analysis of the RA rhetorical structure followed the model suggested by Jalilifar, Hayati, and Namdari (2012). This is an academically recognized modified model originally developed by Dudley-Evans (1994). The model proposes that the discussion section contains eight-move sequences: information move, finding(s) (with or without reference to a graph or table), expected or unexpected outcome (comment on whether the result is expected or not), reference to previous research, explanation (reasons for expected or unexpected results), claim, limitation, and recommendation (for future research or for pragmatic purposes). Furthermore, for the analysis of nominalized expressions, the study employed nominalization framework put forward by Halliday and Matthiessen (2004). The framework was elaborated on in section 2.1.

Procedure

For the identification of the macro-moves of the RA discussion section, as proposed by Holmes (1997), the sentence was selected as the unit of analysis implemented for examining moves, and the identifying feature was the communicative purpose of each move. The criteria for the classification of the moves included the linguistic evidence and formal clues such as explicit lexemes and expressions, verb forms, and text conjunctions. To secure reliability, the classification was validated by testing inter-rater agreement. Three university instructors with a Ph.D. in Applied Linguistic Studies who are familiar with genre studies were asked to rate 30 percent of the corpora independently. Besides, an intra-rater agreement procedure was carried out on 30 percent of the corpora one month after the initial classification. This quantity, in line with some recent studies (Ozturk, 2007; Peacock, 2002), guaranteed the reliability of the research. The resulting intra-rater and inter-rater reliability indices were 0.93 and 0.90 respectively.

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Secondly, the corpus was annotated manually based on SFL descriptions of nominalization (Halliday & Matthiessen, 2004). First, to provide a quantitative estimate of the proportion of nominalized expression to the texts, we calculated the number of clauses. The guideline for the identification of the clauses was based on the original definition put forward by Halliday (1994). Second, the discussion sections were analyzed in terms of the frequency of nominalization use. Thus, in each discussion section all occurrences of nominalization were identified, and the raw number of nominalized expressions was computed for each rhetorical move in both local and international RAs. It should be noted that the analysis of the nominalization was done on vertical and horizontal planes. This means that the researchers first identified and compared the nominalized forms within the rhetorical moves of the local RAs (descending from move 1 to move 8), and then the same procedure was conducted with the international RAs separately to unravel the preponderance and the concentration of the different types of nominalized forms in each move. On the vertical plane, each rhetorical move in the local RAs was compared to its counterpart rhetorical move in the international RAs in terms of the frequency of the nominalized forms. This enabled us to trace possible differences across parallel moves in the two sets of journals. Through horizontal comparison, the relative significance of the nominalized forms in each rhetorical move was made plain in comparison to the other moves. In this way, we could explore the possible relationship between the communication function of the rhetorical moves and nominalized forms in the discussion section.

Results and Discussion

Quantitative analysis of nominalizations

This study is distinguished from similar studies by the move analysis of the discussion sections in the two sets of journals that would inform us more of the function of nominalization, both in terms of the restrictions it imposes and the contributions it makes. Table 2 crosstabulates the frequency of nominalization within the moves of each journal and within move-groups of both journals.

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Table 2

The Frequency of Nominalization in Local and International Discussion Sections

Journal	Move-Group								Total
	1	2	3	4	5	6	7	8	
Iranian									
Count	336	672	21	253	72	336	18	96	1804
% within Journal	18.6%	37.3%	1.2%	14.0%	4.0%	18.6%	1.0%	5.3%	100%
% within Move-Group	42.3%	42.8%	43.8%	41.1%	24.5%	39.2%	25.0%	36.8%	40%
% of total	7.4%	14.9%	.5%	5.6%	1.6%	7.4%	.4%	2.1%	40%
International									
Count	459	898	27	363	222	552	54	165	2710
% within Journal	16.9%	33.1%	1.0%	13.4%	8.2%	19.3%	2.0%	6.1%	100%
% within Move-Group	57.7%	57.2%	56.2%	58.9%	75.5%	60.0%	75.0%	63.2%	60%
% of total	10.2%	19.9%	.6%	8.0%	4.9%	11.6%	1.2%	3.7%	60%
Total									
Count	795	1570	48	616	294	858	72	261	4514
% within Journal	17.6%	34.8%	1.1%	13.6%	6.5%	19.0%	1.6%	5.8%	100%
% within Move-Group	100%	100%	100%	100%	100%	100%	100%	100%	100%
% of total	17.6%	34.8%	1.1%	13.6%	6.5%	19.0%	1.6%	5.8%	100%

* 1) information move, 2) findings 3) expected or unexpected outcome 4) reference to previous research 5) explanation 6) claim 7) limitation 8) recommendation

In the horizontal analysis of the Iranian journals, as Table 2 indicates, it was discovered that moves 2, 1, and 6 incorporated more nominalization respectively, whereas the frequency of nominalization occurrence in the other moves was comparatively lower. In this set of journals, move 2 (findings) had the largest number of nominalizations probably because Iranian authors consider this move as a mere reporting device, and thus they report their findings in the most concise way

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possible. Equipped with nominalization, they could do without getting recourse to the use of verbal phrases and, instead, saving space and avoiding extraneous repetitions. The second most condensed move in terms of clause conciseness by means of the utilization of nominalization in the Iranian RA discussion sections was move 1. The informative nature of this move would normally oblige authors to simulate the introduction of the whole RA in a different way, as Swales (2004) has pointed out the recurrence of this macrosection of the RA in other sections. In the other words, writers would reintroduce the objectives of their studies in a compressed fashion through the use of nominalization. Next is the rhetorical move pertaining to claims (move 6). In this move, assumptions and hypotheses put forth earlier in other sections of the RA would turn into tentative or cautious claims, or possibly theories, in which nominalization plays a crucial role. This is in line with Halliday's (2004) view of the use of nominalization in academic discourse in which he believes that theorizing at the level of ideational GM is often crystallized through nominalization. A pertinent point here is the high frequency of nominalization in the theme position of the sentences in this move, where researchers functionally backgrounded and foregrounded their claims using nominalization in a linear or zigzag fashion (Ghadessy, 1999). An example from the corpus would clarify this point:

> "…. It is expected when this is fulfilled; *learners can skillfully identify diverse arguments, evaluate them against rival ones, and construct their own ideas*. Therefore, the **identification, evaluation, and construction of arguments** would become …." (local excerpt, emphasis added).

As it can be clearly seen in this example, the verbal groups demonstrated by italics in the rheme position of the first sentence have occupied the theme position of the second sentence typed in boldfaced, albeit in the form of nominalized expressions. This type of thematic progression is known as zigzag fashion, and particularly fits in developing theories.

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In the international journals, like the local discussion sections, nominalization in moves 3, 4, 5, 7, and 8 comprised a low percentile, while it was mostly used in moves 2, 6, and 1, in turn as Table 2 shows. The same justifications as the ones given for the Iranian RAs can be broached here too. However, a slight difference was observed in the use of nominalization in move 6, in which writers often employed quantifiers to back up their claims. This could be ascribed to the international authors and the journals gatekeepers' tendency to invest more theorizing function in this move which again could be best realized through the use of nominalization and nominal groups (quantifier plus nouns). Here is an excerpt from the international corpus to address this issue:

> "… learners are more *likely to stretch their own learning style* and develop greater flexibility … **this increased amount of stretching in learning style** will help teachers cater for different learner types…"

Having discussed the use of nominalization separately in each set of journals, we now turn to the vertical (cross-)analysis of the RA discussion sections in Iranian and international journals correspondingly. To delve more into the possible differences across moves and their significance, the observed frequencies were subjected to a chi-square test. The cross-journal comparisons of the local and international journals exhibited that seven out of the eight moves were correspondingly, significantly different, at 1 degree of freedom and .05 level of significance, except for move 3 where the calculated chi-square was .75, indicating no significance at .05 alpha decision level because the expected value (.38) is greater than .05.

Our findings indicated that in the RA discussion sections, especially in the international journals, the weight and the quality of nominalization were overwhelmingly conspicuous in some moves and not in others. These research writers would probably employ this functional phenomenon with implicit or explicit knowledge of the functions of nominalization, and the intended audience in mind. In other words, because of the cognitive perception of nominalization, the diversity of the academic audience in mind, and the expectation of the journal

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reviewers, international authors would heavily rely on using nominalization as an essential resource for constructing academic discourse. On the other hand, the conservative use of nominalization by local authors may imply that they perhaps did not use nominalization because they considered this phenomenon would make their audience confused or they might have a slight idea of the functions of nominalization. This is compatible with what Briones et al. (2003) have argued that nominalization could sometimes lead to vagueness that leads to understanding difficulties. Another possible reason can be traced in the authors' first language effect on writing scientific research. Iranians would rarely fall back on nominalization in their first language writing. This scarcity of reification process and grammar complexity, and the abundance in the tendency for denominalization are typical features of Persian academic discourse (Khodabandeh, 2007).

Nominalizations in rhetorical moves

Move 1

Expectedly, international authors used more nominalization than the Iranian authors in move 1. This significant difference can be explained in light of the international authors' perception of one of the functions of nominalization and the move itself. As indicated earlier, the function of this move is to accouter the readership with the relevant information about the concerned study.

*....**analysis** of main effect and **interaction** was ....*
*.... of these findings and their **implications** will be....*
*.... number of **contributions** by the NS children was ....*

Based on the functionalist view of nominalization presented by Briones et al. (2003), most nominalizations employed in this move of the international RA discussion sections were to achieve lexical density, thus falling in the category of *lexical nominalization*, to use Banks (2008) categorization of nominalization. He asserts that this type of nominalization is found in contexts where there is a high frequency of synonyms and words from the same lexical groups. This function of nominalization summarizes information in order to make it fit in a fine-grained

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context, whereby saving the authors enough space to deal with the other parts of the discussion section. This was evident through detecting the number of content words per sentence. In this section, a few pre-quantifiers and post-quantifiers were witnessed, while nominalized forms were distributed across the move in abundance.

*…. relied heavily on a number of **interviews** as the primary source….*
*…. with the aim of **establishing** the **contributions** of the different....*
*…. to better **understanding** emotions and emotion **regulation**….*

Move 2

In move 2, international writers mainly relied on *term nominalization* (Banks, 2008) because this would facilitate identifying the processes and events that were under study. In addition, *lexical nominalization* (Banks, 2008) played a considerable role in this move. Here, authors are supposedly inclined to pack information into term nominalization for the sake of signifying their results and findings. This implies that term nominalization is utilized to decrease the complexity of verbal groups and, more importantly, to save space and drive the readers' attention from decoding the nominalized terms to consulting the main findings. Needless to say that the term nominalizations represented the key words and/or the words used in the titles of the studies analyzed in our study.

*…. these **affordances** were meaningful and met the learners' needs …."*
*…. reflected the greater use of **subordination** and **coordination** in the …."*
*…. the contention that the **imposition** of a shorter time limit imposed …."*

Move 3

The only move that was not significantly different in the vertical analysis was move 3. The function of this move is to comment on whether the findings are expected or not. It seems that the authors in both groups share the same idea about *stylistic nominalization* (Banks, 2008) that functions as a tool for showing the individual preference of authors to display contradictory or surprising findings addressing a specific community. In other words, writers could have written their sentences in a congruent way, but they implemented nominalization to give the text a sense of novelty in terms of both content and form.

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*…. with the slightest **expectation** to find an inverse relationship….*
*…. contrary to our **expectation** the group-selected topics proved ….*
*…. the **re-evaluation** of the results left us at total **surprise**….*

It also helps the researcher avoid utilizing complex grammatical structures, thereby providing their target audience with more easily comprehensible content as shown in the following example from the corpus:

*….we were filled with **amazement** to see that the results failed to show….*
*…. the specificity of comments on … was a pleasant **surprise** ….*

In these excerpts, the authors could have used 'we were amazed at the results…' for the first one and 'we were pleasantly surprised at the specificity of …' for the second excerpt instead of using nominalization. However, in that case, the meaning nuance of 'being filled' would be lost unless introduced by some other expressions. Here, it also serves a summarization function that makes the information fit in the context created by the researcher.

Move 4

Term nominalization was also characteristic of move 4 in both groups of journals. We speculate that this type of nominalization was more dominant in move 4 of international journals owing to the fact that earlier unpacked ideas of writers either in the introduction section or in the literature were packed in the discussion section to serve as reminders, whereby writers had relied more on shared knowledge they had established in the process of creating the text. However, Iranian authors showed less inclination to use this type of nominalization in this move. This was probably because authors might have deemed that readership needed no refreshing due to the continuity of information in the process of unfolding the academic discourse. In keeping with Biber and Gray (2010) findings, we tend to suggest that Iranian researchers in the field of Applied Linguistics use nominalization in move 4 of their discussion sections to establish an interactive

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rapport with their readership. This means that they can build on whatever relative findings reported in the previous sections of the research and maintain the continuity of reasoning (Halliday & Mattheissen, 1999) without necessarily turning back to the same words or statements, but with shortened form of recurred language, that is to say, nominalization.

Move 5

The archetypal language of move 5 can be seen as extended explanations, exemplifications, and reasoning. Our analyses showed that writers tended to use nominalization to keep up their chain of reasoning (Halliday & Mattheissen, 2004) through advancing what stands in the Rheme position in a clause to be realized as a packed (nominalized) Theme in the following clause. Apart from the textual and interpersonal themes, what is in concern here is the type of topical theme that can be realized in the form of ideational GM. The analysis made the point plain that most topical themes were ideational in nature that would most often pertain to *lexical nominalization* (Banks, 2008). The function of lexical nominalization here was to alleviate the convolutions concomitant with the unpacked language in the theme position. The following excerpt illustrates this linearity at the level of clause constituent:

> "….field independents **reason inductively** and field dependents **reason deductively**. These two **kinds of reasoning** may have effects on the way learners write in a foreign language as **the inductive reasoning** would focus on the process of writing with the emphasis on the development of ideas and **the deductive reasoning** targets at the product and form of writing."

"….field independents **reason inductively** and field dependents **reason deductively**.

These two **kinds of reasoning** may have effects on the …. in a foreign language

as **the inductive reasoning** would focus on ….the development of ideas

and **the deductive reasoning** targets at the product ….."

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The above excerpt is broken down to clauses in order to show the Theme/Rheme linearity fashion and the positions of the topical themes. The bold expressions in the first clause are verbal groups in the Rheme position that are changed into nominal groups in the form of lexical nominalization in the following clause. The nominalized form 'reasoning' in conjunction with its quantifiers undergoes another rearrangement when split into 'inductive reasoning' and 'deductive reasoning' in the subsequent clauses, but still preserving its original place in the clause, that is the Theme position. If these clauses were written in an unpacked form, they would have been much lengthier, tedious, and as pointed out earlier more complicated. The bold print parts in the excerpt below are repetitive for the most part, unnatural, and redundant, thus causing confusion. A more congruent structuring of the excerpt, lacking nominalized forms, could possibly be as follows.

> "….field independents **reason inductively** and field dependents **reason deductively**. **When learners reason inductively** and **when they reason deductively**, it may have effects on the way learners write in a foreign language as **when they reason inductively**, they would focus on the process of writing with the emphasis on the development of ideas and **when they reason deductively**, they would target at the product and form of writing."

Move 6

Move 6 is the locus of theorizing, where according to Biber (2012), the authors can apply nominalization to move from the realm of abstractness to the sphere of tangibility and visibility. That is, claiming implies theorization, and this would obviously necessitate making concepts commonly stated as processes become more accessible to the target audience by means of nominalization. The types of nominalization that found head in this move of the international RA discussion sections were *conditioned nominalization* and *stylistic nominalization*. Here, the writers purposefully formulate their verbal groups in the shape of nominalization to create an academic space for themselves. It is noteworthy to mention that Iranian writers used lexical nominalization with hedging devices as premodifiers and

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postmodifiers supporting the nominalized forms to establish their stance. This case arises due to the fact that Iranian researchers still preserve the tentativeness of their ideas in producing theories even for their limited target audience, that is, mostly Iranian readership.

*… we suggest that **interaction** in the pairs was somewhat less elaborate ….* (local excerpt).

*…. it is now possible to claim that global **corrections** would prove less ….* (local excerpt).

Moves 7 and 8

The last two rhetorical moves of both international and local RA discussion sections contained a few cases of nominalizations of different types. This disparity and scarcity can be attributed to the function of these two moves. When authors want to indicate limitations to their studies and recommend suggestions for further research, they mostly rely on the passivization process. There was little tendency to use nominalization in these two moves, as Table 2 illustrates above.

Qualitative semantic and syntactic analysis of nominalizations

As was noted earlier, nominalizations promote coherence and condensation and save the authors from repeating lengthy descriptions in all kinds of academic, particularly scientific writing. To meet this end, an in-depth qualitative analysis of 30% of the international RA discussion sections was carried out. In so doing, we can pave the way for novice to meet the requirements of the broader target discourse community and its gatekeepers.

Semantic/morphological formulae

The semantic/morphological analysis of the nominalizations in the international RAs showed that the nominalized forms assuming Latin affixes like: -ation, -asion, etc. were more prevalent in moves 1, 5, and 6. Those verb forms converted into nominalized forms by adding -ing, that is, gerund forms, were more or less distributed in all the moves but were more conspicuous in moves 1, 3, 5, and 6 of the international RAs.

Other types of affixations (like -ment, -ance, -ism, -ity, etc.) were also detected. Though most of these affixes were attached to *term nominalizations* (Banks, 2008)

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and were less utilized in the original sentences of the texts analyzed, they comprised a large number of the nominalized forms identified in this study. The detailed analysis of the sample RAs indicated that these types of nominalizations do not demonstrate any recurrent pattern in any of the identified moves of the two sets of journals.

Some deverbal forms indicating a process were also observed in the international and local corpora. This type of nominalization was the hardest to identify because some of the deverbal forms had equivocal implications, i.e. representing thing-like or process-like entities; therefore, they were elusive to be subsumed under any category or moves.

Syntactic constructions

Exemplar-based text analysis, register analysis, and, broadly speaking, genre analysis constitute an important approach to second/foreign language writing and in particular academic writing. The proponents of these trends of text analysis have taken up two different approaches: the bottom-up and the top-down approaches (Askehave & Swales, 2001). Applying the bottom-up approach in conjunction with the functional device, nominalization, in this study, it was intended to shed light on the prototypical syntactic constructions associated with the language of the sample international corpus. It is hoped that exposing the local would-be RA writers to these exemplars would facilitate earning international recognition and publication. The authors in this study, fully aware of the clause domain, analyzed every single clause containing nominalization in the sample. Certain syntactic structures were found in the RA discussion sections that made us propose the following syntactic constructions:

a) Nominalized form in subjective positions and followed by copula verbs or main verbs was one of the most common uses of nominalization which was primarily used to express simple relationships with the predicative elements of the clauses. The most typical verb forms (mainly used in the past tense) were '*indicate, demonstrate, show, imply, suggest, point out, illustrate, confirm, support, substantiate, corroborate, prove, reveal,'* and, to a lesser extent, *'exhibit, denote, entail, involve, relate, refer, and validate'*:

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…. **Improvements** *were* necessary for selection and time allocation ….
Time **reduction** *relates to* pre-task planning and on-line ….”

b) Modified (or unmodified) nominalization in head position of noun phrases prior to verb forms indicated fuller recognition of the need for elaboration on the subjective element than the predicative element. In the following examples the complement of the noun phrase in the subjective position has been underlined. The use of nominalization in this phrase, along with the adjectives preceding it, provides information on the process carried out on the complement to yield the result announced after the main verb of the clause:

Intuitive limited **simplification** of texts *may produce* linguistic features ….
Evaluation of text-books *showed* that exercises were ….

c) Nominalization in complement position of noun phrases in pre-verbal positions of the clause functions as meaning support to the head of the phrase, therefore, taking less process-bearing status than the head of the phrase. In the following excerpt, the noun phrase ‘in interaction’ narrows down the scope of the act of ‘engagement’. It should be noted that the word ‘interaction’ is the complement of the preposition ‘of’, both serve as the complement of the word ‘engagement’. Another example is given to demonstrate this fact clearly.

Engagement in **interaction** *necessitates* minimum levels of basic speaking ….

The process of **assigning** code-switching to internal or external factors was ….

d) Nominalization in preverbal positions of passive construction was also very common in the discussion sections. Unlike the last three categories, nominalized forms in the subjective non-agentive potions serve to manipulate the text-recipient attitudes on the significance of the process carried out. The clause in the following example could have been phrased as, ‘We paired the learners differently during the session to see …’, however, the author might have chosen this structure to both

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take benefit of passivization and at the same time make use of nominalization to detach himself from the intentional act of pairing learners in class activities:

The **pairing** of learners *was altered* during the sessions to see ….
Self-correction *was encouraged* in later stages of acquisition ….

e) Nominalization in predicative positions was also common in the sample corpus. Although other cases were found, most of the nominalized forms in this position functioned as accusative elements, where the authors chose to exhibit a type of treatment done to achieve some effect by the use of the nominalized form:

Learners in subsequent interactions *applied* more **self-reflection** in ….
While the reported Kapa value *demonstrated* **agreement** between ….

f) Nominalization in that-clause post-verbal position was a typical characteristic of discussion section. As the next excerpt demonstrates, the nominalized form 'development' has been used in a that-clause which occupies the accusative position of the entire sentence. In cases like this, the nominalized form functions both as the accusative element of the preceding verb and the agentive element of the verb that follows it. *'Show, indicate, illustrate, demonstrate, conclude, imply, and confirm'* and multi-word expressions like *'the findings lend support to the fact that, the finding led us to the conclusion that, etc,'* are the possible candidate main verb phrases in the independent clauses.

The results *showed that* teacher professional **development** is a matter ….
Our findings *led us to draw the* ***conclusion*** *that* student **empowerment** is ….

It is necessary to maintain that the above constructions containing nominalization do not represent an exhaustive list of possibilities. As noted earlier, this is a qualitative analysis of only thirty percent of the international RAs; hence it is advisable to consider these possibilities with enough caution. There might be

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other ways to consider the syntactic constructions containing nominalizations, for instance, analyzing pre- and post-modifiers of the nominalized forms, as well as analyzing the syntagmatic and paradigmatic patterns of clauses including nominalization.

Conclusion

The results obtained from this study lend further support to Halliday's claims (2004a, 2004b), Banks (2005), and Biber and Gray (2010) who contended that nominalization plays a crucial role in a variety of academic discourse especially the RAs. Authors' tendency from two discourse communities to apply nominalization in the RA discussion section was investigated. It was found that international RA authors show a greater preference to make use of nominalization in certain moves of their discussion sections, and this can be explained by considering the move function and nominalization types, as was discussed and illustrated in the previous section. Another claim can be advanced about the large number of nominalizations in some moves than others. Put other way, if authors had refrained from using nominalization in these moves, the style and the language of the discussion section would have been less persuasive. The use of nominalization was mostly targeted at an academic audience; therefore, this technicality can be best understood as a jargon linking members of the discourse community. Nonetheless, this should not be interpreted as an intentional strategy but as a subliminal effect achieved by the authors' expertise to convince the readers of their own stance. It is conforming to mention that two types of nominalization (term and lexical), put forward by Banks (2008), were more frequently used than the two other (stylistic and conditioned) types. This can be best explained by referring to their semantic and functional qualities. That is, term nominalization was mostly used as a means of theorization mostly in the agentive position of both dependent and independent clauses, and lexical nominalization was used in phrases and clauses surrounded by quantifiers and adjective clauses to function as a summarizing strategy in the text.

The lower use of the nominalization by the Iranian authors could be indicative of their unawareness of the functions of nominalization or perhaps their meager familiarity with the form-function interplay between the congruent and incongruent

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stretches of language. The contention can be made that if functional concepts and means are brought to nonnative authors' attention, they can gain more insight into the covert persuasive linguistic devices, normally perceived in the writing style of international authors. By introducing nominalization, its types, its functions, and doing contrastive analyses, teachers and university instructors could help the would-be researchers achieve not only 'language ability' (Bachman, 1998) but also influential means of persuasive language to win the international reviewers' attention.

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