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Clause Complexity in Applied Linguistics Research Article Abstracts by Native and Non-Native English Writers: Taxis, Expansion and Projection

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Abstract

Halliday s Systemic Functional Linguistics (SFL) has stood the test of time as a model of text analysis. The present literature contains a plethora of studies that while taking the clause as a unit of analysis have put into investigation the metafunctions in research articles of a single field of study or those of various fields in comparison. Although clause complex is another unit of SF analysis, by far there has been only one study on research articles where it was the unit of analysis (Sellami Baklouti, 2011). Therefore, the purpose of this study was to put into analysis the taxis , expansion and projection deployed in Applied Linguistics research article abstracts (RAAs) by native (N) and non-native (NN) writers. To this end, 20 Applied Linguistics RAAs (10 by N English writers and 10 by NN English writers on the sub-fields of Discourse Analysis and Language Assessment) were analyzed according to Halliday & Matthiessen s (2013) clause complex framework. The results indicated that there is a significant difference in the use of projection by Ns and NNs, while the distribution of taxis and expansion is the same. The findings also showed what types of taxis , expansion and projection are deployed by Ns and NNs.

Keywords: Systemic Functional Linguistics, research article abstracts, clause complex, taxis, expansion, projection

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Introduction

Over the course of decades, research articles (RAs) have been recognized as a beckoning area of investigation that is vastly capacious of textual knowledge. Researchers, therefore, have bombarded them with various kinds of analysis. As an example, a lot of studies have put into analysis the rhetorical patterns of RA sections in terms of the moves they were composed of (e.g. Holmes, 2013; Lim, 2006, 2011; Ozturk, 2006; Peacock, 2002). The language of RAs also has not passed unnoticed by the curious minds of the researchers (e.g. Hu & Cao, 2011; Martinez, 2005; Ye & Wang, 2013). Although grammaticality and organization of texts are absolutely crucial in academic writing, being able to make meaning in a particular field of study is far more important. The process of meaning making in various disciplines, therefore, began to be more scrupulously attended to within functional frameworks. Halliday sSystemic Functional Linguistics (SFL) is one such framework that enables the text analysts to carry out a microscopic analysis of texts at all levels of lause , low ,above and beyond it. Looking at the clause from above , this article aims to concentrate on the clause complexes deployed by native (N) and non-native (NN) English writers in their quantitative research article abstracts (RAAs) in the field of Applied Linguistics.

Theoretical Background

SFL is one of the main varieties of functional linguistics which was developed in the twentieth century and continues to be developed even in this one. It is a theory of language which aims to explain how humans make meaning. Its chief architect is Michael Halliday, formerly professor of Linguistics at the University of Sydney (Halliday, 1994). The SF approach is progressively being recognized as a very useful descriptive and interpretive framework that considers language as a strategic, meaning-making powerhouse (Eggins, 1994).

One of the prevailing concepts for systemicists is the idea of text. Halliday and Matthiessen (2013) define text as something that we produce when speaking or writing; In fact, as they put it, [a text] is what listeners and readers engage with and interpret (p. 3). The term interpret suggests that the meaning of a text is not absolute. This is

so because each text carries with it, as a part of it, aspects of the context in which it was produced and presumably within which it would be considered appropriate (Eggins, 1994, p. 7). More generally, having taken the idea of Malinowski (1935), SF linguists believe language and context are mutually exclusive. In other words, unless the context is clear, the meaning of what someone says or writes cannot be fully understood. For them, context falls into two categories: context of situation (register) and that of culture (genre).

This brings us to another predominant issue in SFL ˚ the idea of choice. SF linguists believe language is an interrelated system of choices, a network of choices which they call paradigm. They argue that the goal of a systemic grammar should be the study and exploration of why a certain choice is made along text and discourse from the paradigm rather than other choices that could have been made (Halliday & Matthiessen, 2004). In other words, SF linguists focus on paradigmatic relations not on syntagmatic ones ˚ on what you say in relation to what you said and what you are going to say (Martin, 2010).

The two abovementioned issues ˚ that of context especially genre and that of choice ˚ brought on academic reverberations worldwide. Suddenly there was and continues to be a proliferation of studies on comparing and contrasting the language of different genres. Since RAs prevail among other research-process genres (Swales, 1990), multitude of studies has been done on them in terms of the disciplinary differences and their effect on the structural choices in RAs (e.g. Sellami Baklouti, 2011). An exponential increase in the internationalization of academic community also suggests that there are burgeoning numbers of NN speakers of English who attempt to publish RAs in keeping with the English writing conventions, which is interesting enough to encourage research.

SFL is packed with various structural choices, one of which is the clause complex. It is a larger unit that consists of two or more clauses (Halliday & Matthiessen, 2013; Thompson, 2004; Pandian & Assadi, 2010; Martin et al., 1997). It is believed that when creating a text, one can augment the clause either internally by using a circumstantial element or externally by using another clause, thereby creating a clause complex. According to Halliday & Matthiessen

(2004), the decision [basically] depends on 4. how much textual, interpersonal and experiential semiotic weight is to be assigned to the unit (p. 369). They also go on to state that semantically speaking, creating a clause complex leads to tighter integration of meaning (p. 365).

RAAs are an important sub-genre to be investigated mainly because they literally sell the article. There is some literature on the schematic structure of abstracts (e.g. Hyland, 2004). Moreover, other studies exist on linguistic organization of abstracts. For instance, Salager-Meyer (1992) investigated the frequency of modality and verb tenses. In another study, Hu & Cao (2011) carried out a comparative analysis of hedging and boosting in abstracts of Applied Linguistics articles published in English- and Chinese-medium journals, concluding that abstracts published in English-medium journals manifest more hedges than those published in Chinese-medium journals. In the same vein, Pho (2014), while exploring the rhetorical moves of abstracts in the fields of Applied Linguistics and Educational Technology, shed light on their linguistic realizations and elaborated on authorial stance in each abstract move.

Taking a different perspective, SellamiBaklouti (2011) put into analysis the taxis system in RAAs. In this paper, abstracts of six academic disciplines were analyzed. It was found that soft disciplines opt for clause complexes over clause simplexes and that the distribution of hypotaxis in soft disciplines was high. She attributed this frequency to the concise and persuasive nature of abstracts. In this study, Applied Linguistics was not included as the corpus of soft sciences. To fill the gap, the present article aims to analyze the use of taxis, expansion and projection in Applied Linguistics quantitative RAAs by N and NN English writers.

Method

Categories of analysis

In examining the clause complex, we are indeed dealing with the relationship between clauses. The two fundamental systems in this regard are taxis and logico-semantic relation. Taxis refers to the degree of interdependency. Two interdependent clauses can be either of equal status (parataxis) or of unequal status (hypotaxis).

Although most clause complexes are linear, internal bracketing (nesting) can sometimes occur. According to Halliday & Matthiessen (2004) nesting is where what is being linked by a logico-semantic relation is not a single clause but rather a sub-complex ° a clause nexus in its own right (p.376).Though elaborately defined, nesting has not been explicitly mentioned as the third type of taxis. As perceived by the researcher, nesting is qualified to be a type of taxis and in this study it is considered to be so.

Expansion, the first type of logico-semantic relation, occurs when one clause expands another by elaborating its existing structure, extending it by addition or replacement and (or) enhancing its environment. Projection, the second type of logico-semantic relation, happens when the secondary clause is projected through the primary clause. It is of two kinds of idea and locution, which occur when one clause is presented by another as a construction of meaning and wording, respectively. Table 1 illustrates the basic types of clause complex and their notations.

Table 1
sssssss s teeeooo‘‘cluuee eeeeee eennttt hii ooootttt inns

		parataxis	hypotaxis	nesting
expansion	elaboration	1 =2	(=) (=)	The notation depends on what type of sub-complex is nested in the major clause complex.
	extension	1 +2	(+) (+)	
	enhancement	1 ×2	( ) ( )	
projection	idea	1 2	( ) /)	
	locution	1 2	( ) ( )	

Here are some examples taken from the corpus of this study:
(nesting) Abs. 1
1 ||| At the beginning and end of the semester, both groups took a language proficiency test
|| to ensure their homogeneity,

+2 || and completed a questionnaires regarding motivation.|||
(hypotactic ° elaboration) Abs. 11
||| Newly entering students (n=88) completed a Yes/No test,
= ||which measured accuracy and speed of response, and a
school placement battery consisting of grammar, writing,
speaking and listening measures. |||

Some xpansion makers such as and, but, yet etc. can realize either laboration , xtension or nhancement .Analyzing these markers with two or more senses are tricky. According to Halliday & Matthiessen (2013), the best way to analyze them is to investigate their close agnates and categorize them in one of laboration , xtension and nhancement accordingly. Another problematic area is the clauses without conjunctive markers. Here again they suggest finding the nearest agnate clause.

Corpus

The corpus under study comprises 20 Applied Linguistics articles (10 by NN English writers and 10 by N English writers on the sub-fields of Discourse Analysis and Language Assessment) that were mainly downloaded from Science Direct and some open-access global and local journals. The corpus is selected in a way that we have only quantitative research articles, which categorizes the corpus into two groups: NN quantitative and N quantitative. The corresponding authors were emailed in order to make certain that they are N or NN English speakers.

Research questions

1. Are there any significant differences in the frequency of the use of tai in the abstract section of quantitative Applied Linguistics research articles by native and non-native English writers?
2. Are there any significant differences in the frequency of the use of xpansion in the abstract section of quantitative Applied Linguistics research articles by native and non-native English writers?
3. Are there any significant differences in the frequency of the use of pjection in the abstract section of quantitative Applied Linguistics research articles by native and non-native English writers?

4. What types of taxis, expansion, and projection are frequently used in the abstract section of quantitative Applied Linguistics research articles by native and non-native English write

Procedures

After the 20 appropriate articles were gathered, they were electronically stored and manually annotated. To make the abstract sections comparable the number of taxis, expansion, projection and their types were calculated per 100 words. Then in order to do both descriptive and inferential statistics SPSS 20 was run. Since the data were not normally distributed, the non-parametric tool called Mann-Whitney U test was conducted. (The alpha level for this study was preset at $p < .05$).

Results

To address our research questions both inferential and descriptive statistics were conducted. At first, the result of inferential statistics is provided. Then the results of descriptive statistics mainly to answer research question 4 will be summarized.

Inferential statistics

After obtaining per-100-word data, the researcher used Mann-Whitney U test. The results revealed that there is no significant difference in the use of taxis and expansion in Applied Linguistics RAAs by Ns and NNs (see Tables 2 and 3).As for the use of projection, on the other hand, the results showed a significant difference (see Table 3).

Table 2

Mann- Wii tyyy UUsst 'txxi'' iNNnnNNNssss tcccts

	Taxis
Mann-Whitney U	33.500
Wilcoxon W	88.500
Z	-1.248
Asymp. Sig. (2-tailed)	.212
Exact Sig. [2*(1-tailed Sig.)]	.218[b]

a. Grouping Variable: Nationality

b. Not corrected for ties.

Table 3

Mann-Wttt eeytttt e xiiiii iiiiiiiiiiiii i ttttt ttttt

	Expansion
Mann-Whitney U	25.500
Wilcoxon W	80.500
Z	-1.854
Asymp. Sig. (2-tailed)	.064
Exact Sig. [2*(1-tailed Sig.)]	.063[b]

a. Grouping Variable: Nationality

b. Not corrected for ties.

Table 4

Mann-Wttt eey eeee iiNNNNNNNNNNNtttt Nttt

	Projection
Mann-Whitney U	11.500
Wilcoxon W	66.500
Z	-3.110
Asymp. Sig. (2-tailed)	.002
Exact Sig. [2*(1-tailed Sig.)]	.002[b]

a. Grouping Variable: Nationality

b. Not corrected for ties.

Tables 5and 6 display the results of descriptive analysis of the use of the types of taxis , expansion and projection in abstracts of research articles by N and NN writers, respectively. The mean scores in these tables are used to compare these two groups.

Table 5
ee cctttt eeettttt tttxxxxxxxxxxxxxxxxiiiii iiiiii iii 'jjjj eciiyyyyyyyyyyNNNNNN abstracts

	N	Min	Max	Mean	Std. Deviation
Parataxis	10	.00	1.34	.5140	.43983
Hypotaxis	10	.00	2.19	1.1750	.76914
Nesting	10	.00	1.67	.9850	.57324
Elaboration	10	.00	.67	.2510	.28294
Extension	10	.00	.68	.3200	.29803
Enhancement	10	.00	2.19	1.0160	.76674
Idea	10	.00	.52	.0520	.16444
Locution	10	.00	.52	.0520	.16444
Valid N (listwise)	10				

As illustrated in Figure 1, in terms of taxis NN English writers draw on mostly hypotaxis , in terms of expansion they use enhancement and as for projection they deploy locution . In the like manner, hypotaxis and enhancement are deployed as the most frequently used types of taxis and expansion by N English writers. However, they use an equal number of idea and locution when writing quantitative abstracts. Moreover, this figure shows that parataxis , extension and idea are the least frequently used types of taxis , expansion and projection both by N and NN writers.

Table 6

ee cctttt eeettttt ttt xxxxxxxxxxxxxxxxxiiiii iiiii iii 'jjjj eciiyyyyyyyy in NN abstracts

	N	Min	Max	Mean	Std. Deviation
Parataxis	10	.00	1.00	.2870	.41129
Hypotaxis	10	.50	2.70	1.5660	.69175
Nesting	10	.00	.98	.4140	.38382
Elaboration	10	.00	.98	.2560	.36096
Extension	10	.00	.72	.1680	.27844
Enhancement	10	.00	1.94	.4930	.59442
Idea	10	.00	.65	.1180	.25037
Locution	10	.00	1.59	.8180	.45692
Valid N (listwise)	10				

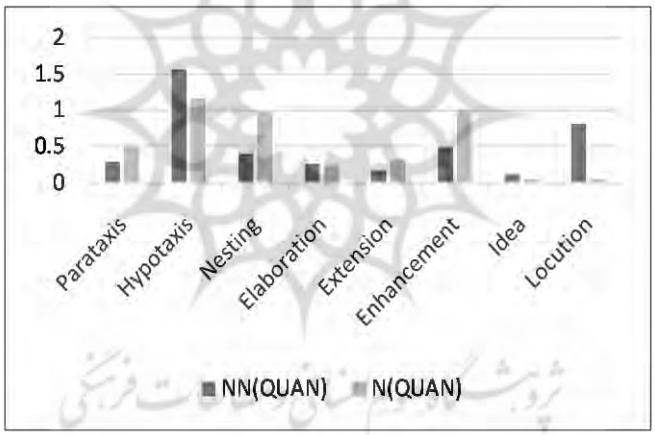

Figure 1. Mean scores of taxis , expansion and projection types by N vs. NN abstracts

Discussion and Conclusion

This study aimed to a) determine whether there are significant differences in the use of taxis , expansion and projection in the quantitative Applied Linguistics RAAs by N and NN writers; b)

discover the most frequently used types of taxis, expansion and projection by Ns and NNs in RAAs of quantitative articles. The results revealed that the distribution of taxis and expansion is the same between N and NN abstracts. The fact that natives and non-natives draw on the same number of taxis suggests that both of them resort to tighter integration of meaning to the same extent (Halliday and Matthiessen, 2004, p. 365).

Based on the results achieved from this study, there is a significant difference in the projection use of abstracts by Ns and NNs. Comparing the abstracts of soft and hard sciences, Sellami Baklouti (2011) stated that in the abstracts of soft disciplines including Linguistics the findings are presented in the form of nominal that-clauses which are projected by act verbs. She attributed this to the fact that in soft disciplines writers need to express their voice and to show the originality of their papers by highlighting their own papers contributions (p. 517). She also pointed out that this is not necessary in hard disciplines since the findings are presented in an impersonal way. The present study further specifies this finding by revealing that in the field of Applied Linguistics as a soft discipline NNs tend to emphasize the findings more.

In the light of the results, within projection, locution is the most typical type used by NNs in abstracts. Ns, on the other hand, deploy an equal number of locution and idea. First of all, these findings are in line with those of Halliday & Matthiessen (2013) that locution is more common type than idea. In other words, verbal quoting and reporting outnumber their mental counterparts. As a logical explanation, due to the persuasive nature of the abstract sub-genre, the findings are mostly the writes own results.

The results also demonstrated that NNs in quantitative RAAs use hypotaxis and enhancement as the most frequent types of taxis and expansion, respectively. The mentioned types are also true for the natives. Sellami Baklouti (2011) stressed that irrespective of the disciplines being hard or soft hypotaxis is the most frequently used type of taxis in abstracts. This study further states that irrespective of the writer s nationality hypotaxis is the most frequent type of taxis used in quantitative abstracts. In RAAs due to their compact nature concise wording is highly needed. In other words, there is a felt need

for writers, N or NN, to include as much information as possible while meeting the conciseness requirement of abstracts. To this end, hypotaxis appears to be a suitable structural choice. Broadly speaking, this finding is not in line with that of Halliday & Matthiessen (2013). While they based on the 6,832 clause nexuses in spoken and written texts from a wide range of registers showed that parataxis and hypotaxis are approximately equally frequent, the findings of this study reveal that hypotaxis outnumber parataxis in written (RA) genre. The variation found may be due to the various genres from which they drew their findings.

Enhancement is the most frequently used type of expansion by both Ns and NNs. Sellami Baklouti (2011) showed that authors of soft RAAs tend more to highlight their results by writing about the cause, the means and the effect. Since enhancement has these three among its categories, it can be concluded that enhancement is used more in soft RAAs. In this regard, the finding that Ns and NNs in the field of Applied Linguistics (as a type of soft science) draw on enhancement is justified. In fact, it can be said that both Ns and NNs follow this convention of abstract writing in soft sciences.

The findings of this study contribute to better understanding of the nature of clause complexes and the justification of their use in RAAs by Ns and NNs in so far as the literature is available. Moreover, it does a lot to encourage further research. For one, the same study can be carried out concerning other sections of RAs. It would also be informative to put into comparative analysis the sections of both quantitative and qualitative RAs.

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