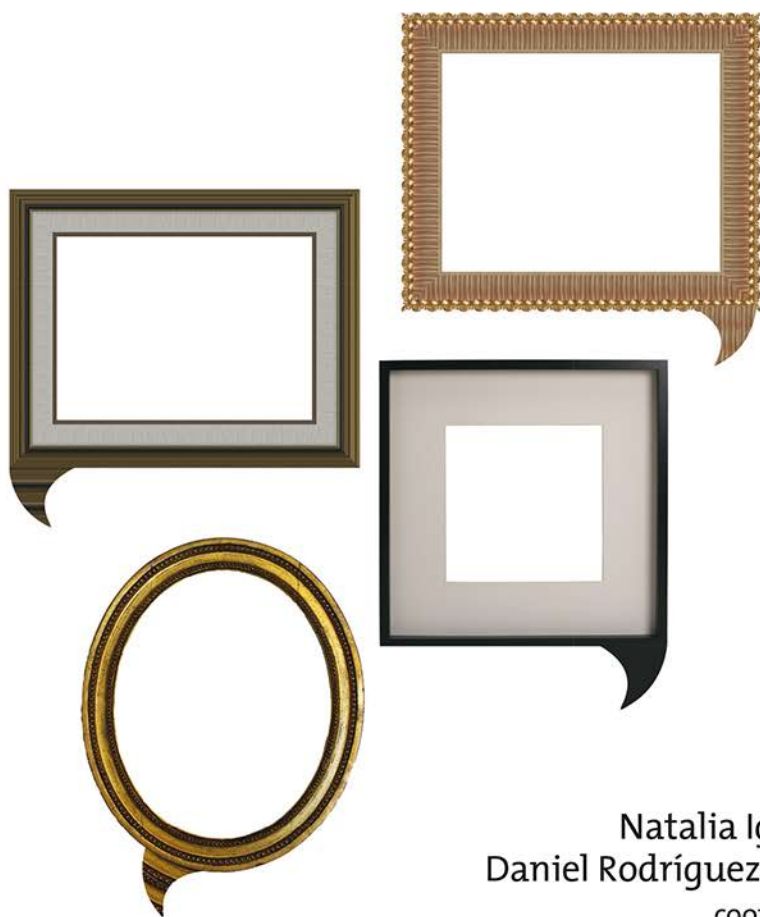# Lingüística Sistémico Funcional en México:

aplicaciones e implicaciones

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Clause Combining in Research Articles in English: Exploring Register from a Probabilistic Perspective

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Introduction

One of the tenets of Systemic Functional Linguistics (SFL) is that language is made up of systems from which speakers choose options in order to carry out social functions (Halliday, 1985, 1994). For example, if English tense is considered a system with three options (present, past and future), then in the register of narration, speakers are likely to choose [past] on a regular basis in order to tell readers stories (Halliday & Matthiessen, 2004). It follows that one way to elucidate the relationship between texts and register, which is one of the principal aims of SFL (see Ghadessy, 1999), is to posit that the probabilities with which language options are chosen in a system vary depending on registerial factors (Halliday, 1991).

Within SFL, register and genre are interpreted in two different but related ways (Matthiessen, 1993; Matthiessen, Teruya & Lam, 2010). In the first and original sense, register is a kind of variation, functional or diaphasic variation, as opposed to diastratic (code) and diatopic (dialect). From this perspective, register is in the middle of language system and instance, i.e. it does not represent the whole language potential (system) nor a single text (instance) but a number of texts that are grouped together by cultures because they share similar characteristics. Registers serve specific purposes within specific institutions in the sense that, whereas a language system (e.g. Spanish) functions within a cultural context (e.g. Mexican) and a single text functions within a situational context (e.g. Literature class), a register (e.g. essay) functions within an institution (e.g. school). For Halliday and Hasan (1985), 'genre' is not a theoretical term; it is «either synonymous with register or used in its more traditional sense within literary studies» (Matthiessen, 1993).

In the second sense, advocated by Martin (1992), register is modeled as the stratum above language, which is also called 'context of situation'. Registers vary in terms of the meanings that contextual factors put at risk. The first factor, 'field of discourse', puts at risk ideational meanings; the second, 'tenor of discourse', puts at risk interpersonal meanings; finally, 'mode of discourse' puts at risk textual meanings. Above the stratum of register is the stratum of genre, also called 'context of culture'. Martin (1992: 505) defines genre as a «staged, goal-oriented social process.» Thus, whereas for Martin the relationship between context of situation and context of culture is stratal, for Halliday, they form a continuum that goes from potential (culture) to instance (situation), where register is a subpotential (Matthiessen, 2014).

In this investigation we follow the first and original sense in order to account for the probabilities found in the system of clause combination within a corpus of research article introductions and conclusions published in Anglophone applied linguistics journals. We decided to analyze research articles because they have a prominent value in the transmission of specialized knowledge (Hyland, 2009; Swales, 1990, 2004). They are the medium through which scholars are able to become part of an academic speech community. In addition, as pointed out by Swales (2004), the role of English as a lingua franca generates pressure to write research articles in that language in order to have greatest impact. Hyland (2009:67) emphasizes the importance of publishing research articles in English by saying that «universities around the world now require staff to present at international conferences and, more crucially, publish in major, high-impact, peer-reviewed Anglophone journals as a prerequisite for tenure, promotion and career advancement.»

Secondly, we decided to analyze introductions and conclusions because they have been stated to possess a more discursive and interpretative nature than methods and results sections, which possess a more recounting and reporting style (Fryer, 2012). In addition, the limits between introductions and conclusions and other sections are easily discerned than those between methods and results; Ruiying and Allison (2003) found that there is not a clear-cut distinction between the rhetorical functions within results and discussion sections. Also, from the perspective of Rosenwasser and Stephen (2009), introductions and conclusions are the most social parts of texts in that they have the func-

tion of bringing readers to the textual world and taking them back to the material one. Hence, those sections have been described as «rhetorically the most relevant parts of scholarly texts» (Gruber & Huemer, 2008: 343) as well as the «two perennial trouble-spots in all kinds of writing» (Rosen-wasser & Stephen, 2009: 349).

Finally, we decided to study clause relations because they determine in part text coherence (Mann & Thompson, 1988) and cohesion (Halliday & Hasan, 1976). Besides, they are likely one of the most important factors that have an influence on the acceptance of native and non-native articles in English (Gosden, 1992). The structure of the paper is as follows. In §2 we present how clause complexing is analyzed from the viewpoint of SFL, taking into account both the grammatical and the semantic level. In §3 we present the methods, including the data collection and the data analysis. In §4 we present the results and discussion, and finally in §5 we close with some concluding remarks.

Clause complexing in systemic functional linguistics

In order to understand the way clause combining is conceived from the systemic-functional point of view, it is important to consider the difference put forward by Halliday (1989) between clause embedding and clause complexing. On the one hand, embedded clauses are rank-shifted clauses that function in the structure of a matrix clause or of a word group. Examples of embedded clauses that function in the structure of a matrix clause are the following:

(1)   [*Learning a word*] *requires the recognition of a word's auditory sound patterns, orthography, syntactic properties...* (Intro_1)

(2)   *...we frame* [[*what we consider a more formally complex learning task for classroom L2 learners.*]] (Intro_30)

As can be observed, the systemic functional convention to mark embedded clauses is with double brackets. In (1) the embedded clause functions as the Subject of the verb *requires*; in (2), it functions as the Complement of the verb *frame*. Now, with regards to embedded clauses that function in the structure of a word group, consider the following:

(3)   *...pedagogical implications* [[*deriving from these findings*]] *call for the design and selection of communication tasks...* (Outro_31)

(4)   *...they were unable* [[*to resolve a problem for themselves...*]] (Intro_9)

In (3) the embedded clause functions as the Qualifier of the noun *pedagogical implications*; in (4), it functions as the Qualifier of the adjective *unable*. As opposed to subject and complement clauses, which are direct constituents of a clause themselves, qualifying clauses modify clause constituents.

On the other hand, clause complexing has to do with the combination of ranking clauses, not embedded ones. According to Halliday (1994), ranking clause nexuses can be of two types, viz. paratactic and hypotactic. In a paratactic nexus, the clauses have the same status, i.e. one clause simply follows the other, without modifying it. However, in a hypotactic nexus, one clause depends on the other, and therefore, the clauses have a different status. It is important to note here that one clause «depending» on another one is different from one clause «contained» on another one; thus, hypotaxis is different from embedding:

(5)   *This is the house* [[*that Jack built.*]] (embedding)

(6)   *This is the house, which was built by Jack.* (hypotaxis)

(7)   *This is the house; it was built by Jack.* (parataxis)

Examples (5) and (6) show the difference between embedding and hypotaxis. The former has a defining relative clause, whose function is to restrict the reference of the the house. One clause is ranking (*This is the house*) and the other is embedded (*that Jack build*), for which reason the two clauses would be spoken on a single tone group (Halliday, 1989). The latter has a non-defining relative clause, whose function is to add secondary information about *the house*. The two clauses are ranking, which means that they form a clause complex and that every clause would be spoken on a different tone group. As a probe of the difference between embedding and hypotaxis, Halliday (1989) states that only clause complexes like (6) can have two replies (*is it? and did he?*), whereas those like (5) can have only one *(is it?)*. As for (6), it is a paratactic clause complex with two, albeit related, independent clauses.

Besides taxis type, which is a grammatical criterion, clause relations can also be classified in semantic terms. Here is where the systemic aspect of SFL comes into play. Whereas typological accounts of semantic clause nexus types tend to be given by means of lists, SFL groups them into systems that show the similarities among the types. For example, consider the list of semantic clause relations given by Dixon (2009: 2) (Table 1). In this list, there are six superordinate types (Temporal, Consequence, Possible Consequence, Addition, Alternatives, and Manner) each with zero, two, three or four subordinate ones. This typology, however, does not account for some facts such as the possibility of a conditional relation to be paraphrased as a purpose one:

(8)   *If you study, you will pass the exam.*
(9)   *You have to study in order to pass the exam.*

We are not claiming here that (8) and (9) are synonymous, but that there is a reason why conditional relations can be paraphrased with purpose ones and not with, say, manner. If we use paradigmatic systems for the description of linguistic categories, as is done in SFL, we can capture the similarities and differences between paradigms which will be reflected once they are used by speakers, i.e. once they become syntagms. To this respect we show here the systemic-functional account of semantic clause relations (adapted from Matthiessen, 1995) in Table 2.

Table 1. Types of semantic clause relations by Dixon (2009)

I Temporal	Temporal succession
	Relative time
	Conditional
II Consequence IIc Cause	Result
	Purpose
III Possible consequence	
IV Addition	Unordered addition
	Same-event addition
	Elaboration
	Contrast

V Alternatives	Disjunction
	Rejection
	Suggestion
VI Manner	Real
	Hypothetical

Table 2. Types of semantic clause relations by Matthiessen (1995)

4th delicacy degree	3rd delicacy degree	2nd delicacy degree	1st delicacy degree
1 exposition			elaboration
2 exemplification			
3 clarification			
4 positive addition		addition	extension
5 negative addition			
6 adversative addition			
7 replacive variation		variation	
8 substractive			
9 alternative			
10 simultaneous extent	simultaneity	time	enhancement
11 simultaneous point			
12 simultaneous spread			
13 later	succession		
14 earlier			
15 spatial extent		space	
16 spatial point			
17 spatial spread			

		manner	enhancement
18 means		manner	enhancement
19 comparison		manner	enhancement
20 reason	cause	cause-conditional	enhancement
21 purpose	cause	cause-conditional	enhancement
22 positive condition	condition	cause-conditional	enhancement
23 negative condition	condition	cause-conditional	enhancement
24 concessive condition	condition	cause-conditional	enhancement

The nexus[1] types in Table 2 are actually presented inversely, i.e. the systemic-functional convention is to go from general to specific, or using systemic terminology, from less to more delicate systems. That means that Matthiessen's 24 nexus types in Table 2 are the 'terminal nodes' in the system of logico-semantic clause relations. Some of them represent the fourth degree in delicacy, and they eventually come down into the three primitive categories in the first delicacy degree, viz. elaboration, extension and enhancement.[2] One of the advantages of this typology is that superordinate categories group subordinate categories that have characteristics in common. For instance, conditional and purpose nexuses (which, as we showed in (8) and (9) above, can be agnate) are part of the sub-system of cause-conditionals, which in turn are part of enhancement.

Halliday's fractal categories elaboration, extension and enhancement[3] (also used in Connectivity Theory by Renkema, 2009) are the three main types of logico-semantic relations that are part of the logical metafunction of language (Taylor Torsello, 1992, 1996). By 'logical' Halliday (1984) does not refer to logic as understood in philosophy and mathematics, but

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1 In SFG, 'nexus' is defined as «any one pair of clauses related by interdependency, or 'taxis'» (Halliday & Matthiessen, 2014: 441).
2 Most primary systems in SFL are binary or ternary. Beyond the most delicate degree (the 5th in the case of Table 2), differences in meaning are lexical, not grammatical [(see Hasan [1987] on lexis as most delicate grammar].
3 These are 'fractal' categories in the sense that they show up not only in the grammar of clause linking but also in other areas such as circumstantial groups within simple clauses (Halliday & Matthiessen, 1999) and text segments (Martin, 1995).

to an aspect of the semiosis in natural languages that allows the linking of events when speakers represent or construe the world. In that sense, the logical metafunction is related to the experiential one since the latter is also used to construe world phenomena, for which reason both meta-functions are grouped into a general one called 'ideational'.

Another peculiarity of SFL is that, besides elaboration, extension and expansion, Halliday (1984) proposes other two different but related types of logico-semantic relations, viz. locution and idea. Thus, the first three types are grouped under the general heading of 'expansion' whereas the latter under that of 'projection'. From the lexicogrammatical viewpoint, projection refers to both (in)direct speech (locution) and to (in)direct thought (idea); from the semantic viewpoint, projection refers to the fact that, by saying or thinking something that someone had already said or thought, one clause projects another to a different order of reality (Halliday & Matthiessen, 1999).

In sum, every category under expansion and projection can be construed in either a paratactic or hypotactic clause nexus, as shown in Table 3.

Table 3. Examples of clause relation types

	Parataxis	Hipotaxis
Elaboration	The emergentist view of language learning that we outlined in the introduction emphasizes that linguistic competence develops through experience ‖ —the more and more varied experiences a learner has with the L2, the more that person will develop a strong and broad communicative repertoire. (Outro_15)	…students had already been unsuccessful in solving the problem raised, ‖ **which** is why they resorted to asking the teacher… (Outro_9)

Extension	Words are not simply referents to objects and phenomena ‖ **and** word learning is not simply learning its definition... (Intro_1)	**While** many existing studies have examined the assignment of information structure to sentences, ‖ a fewer studies have looked at L2 learners' ability to identify and process anomalies... (Intro_10)
Enhancement	This resource, because it is limited, provides constraints on the ability to implement these activities concurrently, ‖ **and therefore**, particularly sets limits on divided attention between tasks... (Intro_11)	**As** new words emerge, ‖ L2 learners also create networks of links between the new words and already learned words... (Intro_1)
Locution	...one was **warned** before he crossed the U.S. border: ‖ 'You better not speak like that (i.e. in Maya) up there or they'll know you're not from there'. (Intro_12)	[Author] **points out** ‖ that there are several limitations in communicative language teaching... (Intro_2)
Idea	...we would have to **wonder**, ‖ what is it that «black» literature renders? (Intro_31)	Basically, I *think* ‖ that IL performance is learning transfer... (Intro_7)

First, in elaboration nexuses, one clause elaborates on the meaning of another by restating, exemplifying, or clarifying it; each of those elaboration subtypes is equivalent to the meanings of Latin locutions e.g., i.e., and viz., respectively (Matthiessen, 1995). Second, in extension nexuses, one clause extends the meaning of another through addition (*and*), variation (*but*) and alternative (*or*). Third, in enhancement nexuses, one clause enhances the meaning of another in terms of time, space, manner, cause and condition. Fourth, in locution nexuses, one clause is projected by another that contains a verbal process such as *say, tell, ask,* etc. Finally, in idea nexuses, one clause is projected by another that contains a mental process such as *think, believe, consider*, etc.

Although all the logico-semantic types can combine with the two taxis types, the frequency with which they combine varies depending on register (Halliday & Matthiessen, 2014; Matthiessen, 2002, 2014; Nesbitt & Plum, 1988). In addition, the options within systems and subsystems vary as well. For example, because projection has only two options but expansion has three, the latter would usually be more frequent than the former; but within taxis type, parataxis and hypotaxis would usually have the same chance to be selected (Halliday & Matthiessen, 2014).

There have been contrastive studies where it has been found that, indeed, different registers show different clause nexus type selection frequency (the pioneer study in this respect was Nesbit & Plum, 1988). Moreover, there is one study by Matthiessen (2002) that tried to show the general probabilities in the English language by collecting and analyzing a registerially diverse corpus of 52 000 words, 6 100 clauses and 2 900 clause nexuses with both 1) oral registers such as interviews, gossip, anecdotes, banter among work mates, and casual conversation in the family, as well as 2) written registers such as news reports, scientific expositions, procedures, and persuasive texts. His results are presented in Figure 1 (the numbers represent percentages).
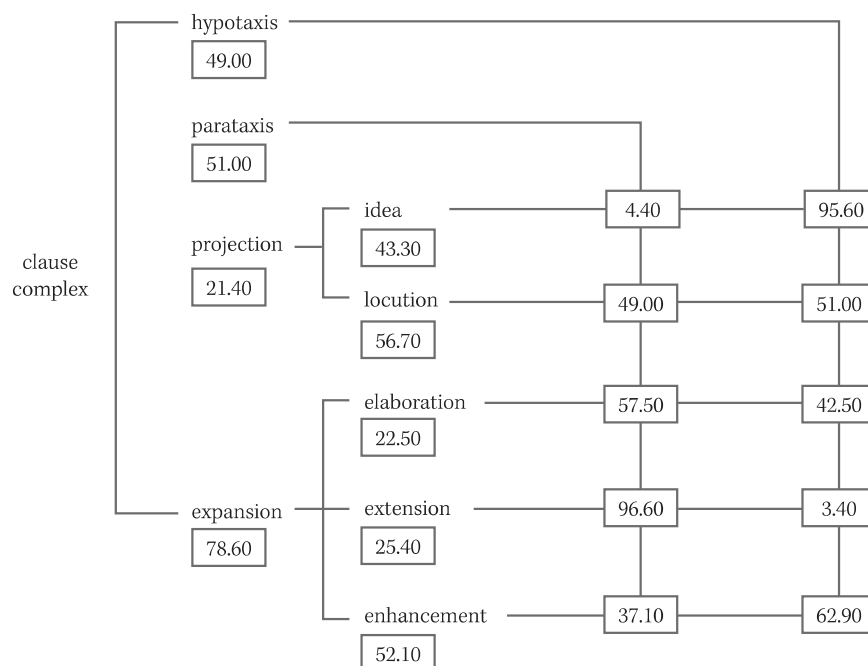

Figure 1. Clause complex probabilities in Matthiessen (2002)

Figure 1 is interpreted as follows. Of all clause nexuses, 49% are hypotactic and 51% are paratactic; also, 21.40% are projective and 78.60% are expansive; of all the projective nexuses, 43.30% are ideas and 56.70% are locutions; of all the ideas, 4.40% are paratactic and 95.60% are hypotactic; and so on. It is clear from these statistics that the frequency with which some logico-semantic types combine with either parataxis or hipotaxis goes from very low (e.g. idea with parataxis) to very high (e.g. extension with parataxis). Also, there are some logico-semantic types that combine roughly equally with both taxis types. In this paper, it will be our purpose 1) to quantify the frequency of logico-semantic and taxis types in our corpus of research article introductions and conclusions published in Anglophone applied linguistics journals and 2) to compare the results with Matthiessen's in order to find out how our corpus varies with respect to that reference corpus.

Methods

Data collection

For the present study, a corpus of 40 research articles in English was collected. The selection of the articles and journals was motivated by the need to control as much as possible the following variables. First, they had to be in electronic format, so that the analysis could be carried out on a word processor. Second, in order to narrow the domain of experience, they had to be published in refereed journals whose title contained the term 'applied linguistics'. Third, they had to be no older than 10 years (i.e. from 2002 on, since the research started in 2012). Fourth, they had to contain an opening introductory section (not necessarily explicitly titled «Introduction») and a closing one necessarily explicitly titled «Conclusion» (in order to discern its limit from other previous sections). Fifth, the articles had to be written by American authors, for which purpose we used Wood's (2001: 79) 'strict' criterion which dictates that authors have to have names native to the country concerned, and work in an institution in that country.

Some of these filters could be set up in an automatic academic database engine search, and some of them had to be checked manually with the results from the automatic search. The articles were taken from four international journals and deal with several topics from the applied linguistics discipline, many of them being about teaching and learning an L2, but also about discourse analysis, sociolinguistics, language acquisition, pragmatics, corpus linguistics, etc. In total, we formed a corpus of 35 538 words (17 770 words in introductions and 17 768 in conclusions), 2 236 clauses, and 1 010 clause nexuses.

Data analysis

Each of the subtexts (introductions and conclusions) was first divided into clause complexes. Following Halliday (1989), who says that «The clause complex is, in fact, what the sentence (in writing) comes from,» the division of the subtexts into clause complexes was made on the basis of sentence limits. After that, each clause complex was divided into ranking clauses. Naturally, some sentences contained only one ranking clause, in which case they are technically not complexes but simplexes that contain no nexus. Later, all ranking clause nexuses were classified according to logico-semantic and taxis type. We quantified the frequency with which the nexus types appeared in the corpus for comparison purposes. In order to compare the significance of the variability between Matthiessen's results and ours, we performed chi-squared tests for the following variables: taxis type (paratactic/hipotactic), logico-semantic type (projection/expansion), projection type (idea/locution), expansion type (elaboration/extension/enhancement), idea taxis type (paratactic/hipotactic), locution taxis type, elaboration taxis type, extension taxis type, and enhancement taxis type.

Results and discussion

We present the results in the same fashion as Matthiessen's (2002), i.e. in

the form of systems whose options contain the probabilities attached (see Figure 2). At first glance, it can be noted that three quarters of all nexuses are hypotactic, which is in contrast with the reference corpus, where taxis type is roughly 50/50. However, the division of labor between projection and expansion is very similar to that of the reference corpus, as well as the expansion types, where, enhancement is the most frequent and elaboration is the less frequent in both corpora. As for projection type, almost three quarters are locutions in our corpus whereas in Matthiessen's, locutions are slightly more frequent than ideas.

In order to be more precise in the comparison of the corpora, we carried out chi-squared tests for the variables that we already commented in the previous paragraph plus those of the combination of taxis type (parataxis/hypotaxis) with logico-semantic type (idea, locution, elaboration, extension and enhancement) (see Table 4). Table 4 contains the chi-squared values (x^2) of each of the dependent variables. Although all the values were found to be significant at the $p < 0.05$ level, we will limit the discussion to only those that are higher than 100 (marked in bold in the table).
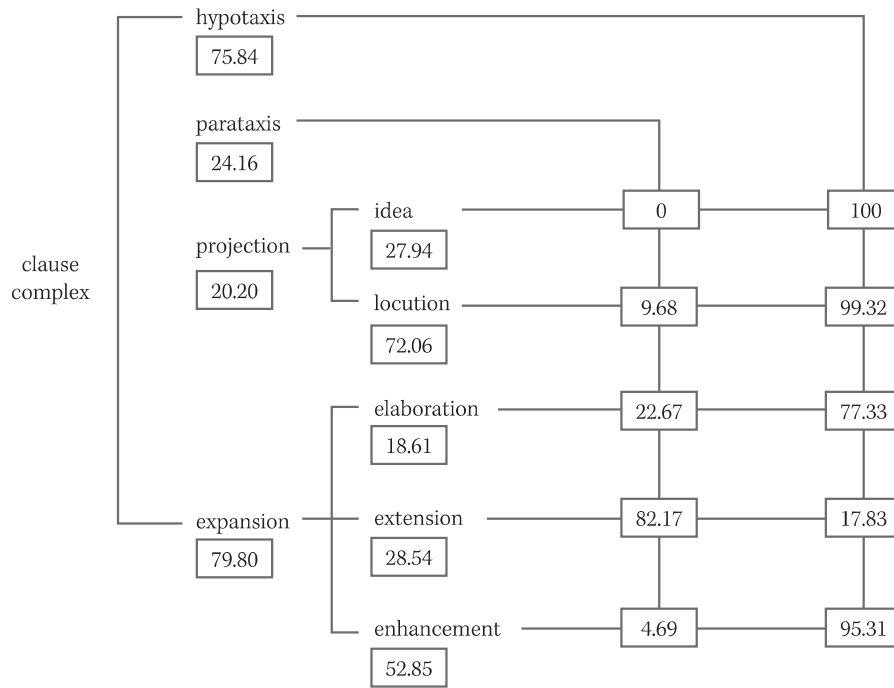

Figure 2. Clause complex probabilities in our corpus

Table 4. Chi-squared values (all significant at the p < 0.05 level)

Independent variable	x^2 value	Independent variable	x^2 value
Taxis type (para-/hipotacttic)	**218.76**	Idea type (para-/hipotactic)	2.63
Logico-semantic type (proj./exp.)	0.70	Locution type (para-/hipotactic)	**106.83**
Projection type (idea/loc.)	15.24	Elaboration type (para-/hipotactic)	56.35
Expansion type (elab./ext./enh.)	6.43	Extension type (para-/hipotactic)	48.89
		Enhancement type (para-/hipotactic)	**161.37**

In the first place, the taxis type value corroborates that the division of labor between parataxis and hypotaxis varies significantly with respect to reference corpus. That means that one significant characteristic of introductions and conclusions of research articles is that they use a particular high degree of hypotaxis. Thus, hypotaxis is likely to have an important role in the composition of our research articles, as shown in another study, Sellami Baklouti's (2011), where she analyzed 120 research article abstracts from Educational Science, Linguistics, Materials Science, Physical Chemistry and Sociology. In her results, 68% of all the nexuses were hypotactic and 32% were paratactic.

In both, hers and our study, hypotaxis seems to be accomplishing at least three important functions. First, with hypotaxis, it is possible to condense information by using (reduced) relative clauses in the context of elaboration, as is shown in the following examples:

With relative clause:

(10) *The study also bases its findings on the Coh-Metrix computational tool,* ***which is freely available and user friendly.*** (Outro_1)

With reduced relative clause:

(11) *Many other measurement challenges and observations deserve serious attention, **omitted here only for the sake of space.*** (Outro_28)

The difference between (10) and (11) is that in the latter, the Subject relative pronoun and the Finite are omitted. By using relative clauses, not only can authors condense information but also give fluency to the discourse development, avoiding what otherwise would be a 'staccato' style (Beaman, 1984). As shown by Sellami Baklouti (2011), it is clear that authors need to condense information in abstracts, where the space is very limited. However, we claim that an entire research article is usually constrained by space limitations (those that are specified in the instructions for authors), including the information contained in the introduction and conclusion.

Secondly, with hypotactic clause nexuses it is possible to manipulate the order of the clauses in the context of enhancement. This is because whereas a secondary clause in a hypotactic nexus can precede or follow the primary clause, in a paratactic nexus, secondary clauses always follow primary ones:

Hypotaxis:

(12a) *Working memory is critically used to **achieve storage in long-term memory.*** (Intro_11)
(12b) ***To achieve storage in long-term memory,** working memory is critically used.*

Parataxis:

(13a) *Working memory is critically used, so storage **in long-term memory is achieved.***
(13b)* ***So storage in long-term memory is achieved,** working memory is critically used.*

We see in the examples that the order of the clauses in (12a) can be reversed as in (12b). However, because (13a) is a clause complex with a paratactic nexus, the order of the clauses cannot be reversed, so (13d) is

not acceptable. As stated by Matthiessen and Thompson (1988), the order of clauses is a result of global discourse needs such as marking the limits between textual sections.

Finally, as pointed out by Sellami Baklouti (2011), writers prefer hypotaxis because it can be used as a persuasion strategy in the sense that the content of the secondary clause usually presents given information, whose veracity is not subject to negotiation (especially in non-finite clauses). For example, in (12b) the fronted clause does not have the Finite element, which is what makes possible to negotiate its veracity. In contrast, in the paratactic version (13a) both clauses have Finite, and thus their veracity can be negotiated. The possibility to negotiate the veracity of clauses can be probed by adding question tags (compare the possibility of Working memory is critically used, isn't it? so storage in long-term memory is achieved, isn't it? with the impossibility of To achieve storage in long-term memory, isn't it? working memory is critically used, isn't it?).

The second aspect that we will discuss from Table 4 is the variability of locution taxis type (paratactic and hypotactic). Whereas in the reference corpus the division of labor between paratactic and hypotactic locution is roughly 50/50, in our corpus almost all locutions are hypotactic. The combination of locution with hypotaxis yields reported speech constructions, whereas paratactic locution construes direct speech. In a research writing context, this means that writers use hypotactic locution to, among other things, cite other authors by paraphrasing, and paratactic locution to cite them verbatim:

Hypotactic locution:

(14) *[Author]* **has suggested that***, in the case of obligatory target language rules, learners move from invariant non-application of target language rules to variable application, to invariant application.* (Outro_5)

Paratactic locution:

(15) *This belief is asserted by [Author], who* **says that** *'the use of low-rise on yes/no interrogatives may indeed sound «patronising», or «ingratiating» to Americans, who are more likely to use high-rise...'* (Intro_37)

Whereas in expansion, clause nexuses are typically marked by conjunction and preposition words and phrases, in projection, verbal processes construe the nexuses. In examples (14-15) the verbal processes are in bold. In (14) the process suggested is used to state an author's research result in a subtle fashion. In that sense, this process is one that implies a possibility, not a clear-cut fact. Hyland (1998) terms those lexical elements that avoid making definite statements in academic writing 'hedges'. In turn, they are also analyzed as a type of expanding heteroglossia within the general system of appraisal (Martin & White, 2005).

The use of the process suggest in our corpus is relevant since it was the most frequent one, with 39 tokens. Of those 39 tokens, 16 appear in introductions and 23 in conclusions. Perhaps the use of this process is more common in conclusions because in this part of articles writers explain the significance of the results, as suggested by Dudley-Evans (1994).

The final aspect that we will discuss from Table 4 is the variability of enhancement taxis type (paratactic and hypotactic). Whereas in the reference corpus more than a third of the enhancement nexuses are paratactic, in our corpus almost all nexuses are hypotactic. The difference between hypotactic and paratactic enhancement is that in the former, subordinating conjunctions are used, whereas in the latter, coordinating conjunctions are used:

With subordinating conjunction:

(16) **Since** *the children are moving beyond bilingualism, future measurement issues would have to address proficiencies in their third, fourth, or even more languages.* (Outro_17)

With coordinating conjunction:

(17) T*his resource, because it is limited, provides constraints on the ability to implement these activities concurrently,* **and** *therefore, particularly sets limits on divided attention between tasks.* (Intro_11)

Research article writers might prefer combining enhancement with hypotaxis because, as we stated previously, in that way it is possible to

manipulate the order of the clauses. Thus the order of the clauses can be reversed in (16) but not in (17). Another thing that we note is that enhancement is the most frequent of the three expansion types. This is perhaps due to the fact that such nexus type is the widest category, since it includes all the adverbial clauses that construe circumstantial meaning in terms of time, space, manner, cause and condition.

Concluding remarks

We have compared the clause complexing probabilities found in a corpus of research article introductions and conclusions published in Anglophone applied linguistics journals and in a reference corpus with registerially diverse texts. We have found that there is significant variation between the two corpora, as the chi-squared tests showed that all values are significant at the $p < 0.05$ level. The three values that showed the greatest variation in the research article corpus were those of taxis type, locution type, and enhancement type. We have claimed that those three aspects play an important role in the composition of research articles. With hypotaxis, writers can condense information, give fluency to the development of discourse, manipulate the order of clauses, and persuade readers; with hypotactic locution they are able to cite other authors (by paraphrasing mainly) and to state research results (mostly in subtle ways); with hypotactic enhancement writers construe circumstancial meaning by linking clauses whose order can be manipulated.

This study has shown how different registers show different probabilities in terms of systemic choices being actualized in discourse. Matthiessen's reference corpus is closer to the potential pole of the continuum since it contains a high number of texts from a high number of registers. His statistics show a trend that could be generalized for the English language. In contrast, we have tried to show the probabilities in a very specific domain from two very specific text types. Although our statistics vary significantly, more research needs to be done in other registers. For instance, in order to have a better understanding of the rhetorics in research articles, clause complexing analyses could be carried out in the parts that we have excluded (methods and results).

Our results could also inform the teaching and learning of academic writing as the composition of research articles is an important part in the life of research communities. Besides, since the research articles that were here analyzed have been published in refereed journals, (non-) native writers of English papers can benefit from the grammatical and semantic account of clause linkage that we have here provided, especially because it tackles the two rhetorically most relevant parts of articles, and one of the aspects that most influence their acceptance in journals.

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