Identifying Taxis and Logico-Semantic Relations in Chinese EFL Writing Samples

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Abstract
In the context of EFL writing in China, there is a prevalent tendency among students to heavily rely on the provided model essays from teachers, leading to a phenomenon known as sameness. This overreliance often results in confusion when it comes to expressing ideas effectively in sentences. To address this issue, this paper adopts an analytical framework based on the theory of Systemic Functional Linguistics (SFL). SFL is a linguistic theory that emphasizes language’s social context and meaning (Halliday, 1985; 1994). Notably, SFL prioritizes meaning over form and examines the organization of texts as well as individual sentences. The theory has been widely applied in discourse analysis and language teaching. This paper offers a brief literature review on key SFL terms, such as language rank, clause, clause complex, taxis, and logico-semantic relation. Additionally, the paper presents examples of identifying taxis and logico-semantic relations using two types of EFL writing samples from SFL perspective. The analysis reveals that the first text, a comparison and contrast essay, predominantly employs the relation of extension, whereas the second text, an argumentative piece, prominently exhibits the logico-semantic relation of enhancement. The paper provides insight into the use of SFL as an analytical tool for analyzing variable text types. Students learning from these analytical tools may have more grammatical awareness in identifying clause boundaries and logico-semantic relations across different writing genres.

Keywords: EFL writing teaching, Systemic Functional Linguistics (SFL), clause, logico-semantic relation, genre

1. Introduction
In China, EFL students often encounter two writing challenges, which can be simplified as “what to write” and “how to write.” “What to write” pertains to the selection of appropriate genres and conveying intended meanings effectively, making it crucial for students to identify and comprehend genres during the writing process. One of the main reasons for this challenge is the compartmentalized approach to teaching English, where grammar, vocabulary, reading, and writing are taught separately, resulting in a disconnect for students from primary school through college. As a result, issues arise regarding organizational patterns, word choices, and flow, particularly in constructing clauses with logical relations in students’ writing. Both teachers and students tend to believe that the logical relations beyond the clause level should be consistent across all genres. However, the language features of clauses do not conform to a uniform structure across different genres.

Grammar is taught separately from the contexts. In language studies and EFL writing instruction, discourse construction is a subject that is relatively neglected. Neglecting discourse construction means too much emphasis on the lexical and syntactic instructions are employed instead of building a context. Most college English teaching in China has been somewhat guided by the college English tests, which put a lot of emphasis on the test of reading comprehension through knowledge of grammar and vocabulary. As a result, both teachers and students ignored grammatical problems in writing, which indicates that grammar is taught separately from the writing parts. In many EFL students’ countries, they will study grammar lessons as a part of in middle school and high school. For many L2 learners even some instructors, learning grammar often means learning the rules of grammar and having an intellectual knowledge of grammar, which lead the grammar instruction is not realized in authentic texts (Abdu and Nagaratnam, 2011). It is important for EFL instructors to have pedagogical knowledge
of how to teach grammar effectively and incorporate it into other language context learning (Wang & Wang, 2014). In China, due to the differences in thinking patterns, writing contents, grammatical structure, lexical and syntactic collocation between Chinese and English writing, teachers may find a way to overcome such problems in the teaching of writing (Peng, 2023).

Overall, this study attempts to show how language functions differently in EFL writing across various genres through logical semantic analysis. Its objectives are as follows:

(1) To establish the conceptual basis for the paper, a brief overview and explanation of the clause, taxis, and logico-semantic relations will be provided.

(2) To show the process and to demonstrate how taxis and logic-semantic are reflected in the authentic EFL writing samples from SFL perspective.

(3) To guide students to develop an awareness of clause construction and understand the logical meaning in their writings.

2. Literature Review

The theoretical framework employed in this study is Systemic Functional Linguistics (SFL), initially developed by M.A.K. Halliday in the late 1950s and early 1960s, which posits that language is a type of semiotic system (Fontaine, 2013, pp. 5). To comprehend the formation of the SFL theoretical framework, several key concepts need to be introduced.

Firstly, SFL places paramount importance on “meaning” as a core concept, often referred to as “Meaning Matters” by Martin (2016). The theory considers language as a semiotic system or a system of “meaning potential.” Secondly, the concept of “system” is understood as a paradigmatic relation, with SFL emphasizing that “system” takes precedence over structure. Structure is viewed as the outcome of choices made within a system or systems (Fang, 2005). Thirdly, SFL adopts a functional perspective when interpreting language. Language can be organized in a structured manner to fulfill various social needs, and its organization is functional in relation to these needs (Halliday, 1973). According to Halliday (1985; 1994), language encompasses three meta-functions: ideational, interpersonal, and textual, which are organized within a system. Finally, the concept of context in SFL is explained from the viewpoint of its social environment, wherein language usage is constrained by context. Context is classified into two types: cultural context and situational context (Halliday & Hassan, 1976). These elements collectively form the four main strata of the Systemic Functional model, comprising phonology, lexicogrammar, semantics, and context, as illustrated in Figure 1.

Systemic Functional Linguistics (SFL) posits that language consists of multiple strata, including semantics, lexicogrammar, and phonology or graphology, as depicted in Figure 1. These strata exhibit a realization relationship, where the upper stratum is realized or manifested in the lower stratum (Fang, 2005). In essence, SFL primarily focuses on how language is employed collectively to facilitate everyday social interactions and how social realities are constructed through language (Kazemian, 2014). Systemic linguistics not only addresses fundamental questions regarding the nature, processes, and common characteristics of language but also explores the practical applications of linguistic principles.
2.1 Discourse Analysis on the Theory of Systematic Functional Linguistics

SFL serves as both a theoretical framework and an analytical tool for discourse analysis, with numerous scholars conducting discourse analysis from the SFL perspective (Yang, 2012). Halliday (2010) suggests that text and discourse are essentially synonymous, representing different viewpoints that mutually define each other. Text can be viewed as the outcome of the language process, while discourse finds expression in the textual manifestations of culture and society. The term “Discourse Analysis” was initially introduced by Zellig Harris in 1952 and has since been developed in various research domains. Given SFL’s focus on the functional aspects of language, discourse analysis within the SFL field is often referred to as functional discourse analysis.

According to Halliday (1994), one of the objectives of SFL is to serve the purpose of text/discourse analysis. In pursuit of meaning in language, SFL identifies three metafunctions: the interpersonal metafunction, textual metafunction, and ideational metafunction. These functions are not confined to specific strata of language but coexist within all texts. Among these functions, the ideational metafunction captures human experiences of the external and internal world, encompassing both the experiential and logical functions. This study primarily focuses on the analysis of clauses and clause complexes at the textual level, employing the perspective of the ideational metafunction.

2.1.1 The Progress of Clausal Analysis in EFL Writing from SFL Perspective

In China, several scholars have conducted discourse analysis on students' writing samples, particularly focusing on the analysis of clause complexes. Lu (2013) observed that Chinese college students' essays exhibited a lower degree of nominalization compared to their Singaporean counterparts. This disparity was attributed to Singaporean students' inclination towards producing complex sentence structures, which contained a higher number of clauses per sentence. Yang (2014) explored the usage of non-finite clauses (a type of clause complex) in academic writing among Chinese EFL students. The study revealed a strong correlation between the use of non-finite clauses and higher levels of English writing proficiency among Chinese EFL students.

Yao (2019) applied the theory of Generic Structural Potential to analyze personal statements written by Chinese students applying to study abroad. The research indicated that Chinese students were inclined to employ mental processes within clauses to convey their emotional perspectives. More recently, Huang and Yu (2021) conducted a comparative study on grammatical metaphors at the clause level in abstracts of Chinese MA theses and expert academic writing. The findings demonstrated that the frequency of grammatical metaphors in research articles was significantly higher than that in Chinese MA theses. Thus, it can be inferred that Chinese postgraduate students still need to enhance their English academic writing skills, particularly in the construction of clauses.

In addition to China, scholars from various other EFL countries have also conducted extensive discourse analysis on clauses in students' writing. Jomaa and Bidin (2019) focused on the literature review chapters of 20 Ph.D. theses written by EFL postgraduate students in a Malaysian university. Their study aimed to explore the logico-semantic relations within clause complexes used in citations. The findings revealed that the most frequently employed logico-semantic relation in the citations was a combination of expansion and projections.

Jutharat (2019) examined the usage of clause complexes (CCs) and their logico-semantic relations in research articles from TCI (Thai Citation Index) and SSCI (Social Sciences Citation Index). The study found that the hypotactic clause type was more prevalent than the paratactic type, suggesting that writers in SCI (Science Citation Index) predominantly employed the hypotactic clause structure. Othman and Al Qutob (2022) adopted a systemic functional linguistics (SFL) perspective and employed a corpus-based methodology to investigate taxis and logico-semantic relations in an Arabic translation of an English text. Their research aimed to assist students in identifying sentence boundaries and understanding logico-semantic relations within the translated text.

2.2 Clause Complex

2.2.1 The Notion of Rank

In order to comprehend the concept of complexity, it is essential to grasp Halliday's rank scale. The rank scale, derived from the structure of lexical grammar, outlines the hierarchical order of linguistic units as follows: morpheme → word → group → clause. Table 1 illustrates the relationships and provides examples of these units.
Table 1. The structural relations of each rank (Bloor and Bloor, 2013, pp. 10)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Structural relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clause</td>
<td>Consists of one or more groups</td>
</tr>
<tr>
<td>Group</td>
<td>Consists of one or more words</td>
</tr>
<tr>
<td>Word</td>
<td>Consists of one or more morphemes</td>
</tr>
<tr>
<td>Morpheme</td>
<td>The lowest rank. E.g. -s, -er</td>
</tr>
</tbody>
</table>

As depicted in Table 1, a clause, being the highest level, is composed of various word groups. In the process of writing, students are typically instructed to construct complete sentences that begin with a capital letter and end with a full stop. However, it is important to note that a clause, as a unit of meaning, is not strictly bound by punctuation marks. According to Halliday (1994), a clause encompasses three dimensions of meaning: textual meaning, interpersonal meaning, and ideational meaning. Within the field of SFL, linguists primarily focus on analyzing clauses as they serve as the fundamental units for grammatical analysis. Clauses enable the expression of meaning, provide insights into events and actions, and offer interpretations of how individuals perceive the world. It is worth mentioning that a clause can consist of one or more word groups.

2.2.2 The Notion of Clause Complex

A clause complex, in literal terms, refers to a grouping of clauses that form a logical-semantic unit. It can be viewed as a larger linguistic expression representing a complex situation when compared to a single clause (Tam, 2013). Table 2 illustrates that the revised rank scale model demonstrates the inclusion of the clause complex at a higher semantic rank within the hierarchy.

Table 2. The improved rank scale model (Yang, 2018)

<table>
<thead>
<tr>
<th>Units</th>
<th>Combinations</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clause</td>
<td>Clause complex</td>
<td>Text</td>
</tr>
<tr>
<td>Word group</td>
<td>Group complex</td>
<td>Clause</td>
</tr>
<tr>
<td>Word</td>
<td>Word complex</td>
<td>Word group</td>
</tr>
<tr>
<td>Morpheme</td>
<td>Morpheme complex</td>
<td>Word</td>
</tr>
</tbody>
</table>

A sentence serves as a constituent of writing, whereas a clause complex holds grammatical significance. Thus, considering function and pragmatics, the clause complex functions not only as a grammatical unit but also as a meaningful unit within a specific discourse. Analyzing the relationships between clauses within a clause complex allows for the examination of textual stylistic features at the clause level, the correlation between clause characteristics and discourse types, as well as the generation of discourse structures. It also sheds light on the thinking patterns and modes of expression across different languages.

To elaborate further, a simple sentence comprises a single clause, with each clause containing a distinct process. These processes may involve individuals, objects, locations, times, and qualities. Consequently, the meaning conveyed by a clause encapsulates a process that encompasses people, objects, locations, times, and qualities. Exploring discourse analysis from various semantic layers holds immense significance.

A single clause is characterized by a single finite verb or Predicator clause, denoted by a double vertical short line. On the other hand, a clause complex is represented by a triple vertical short line, similar to the symbol used for a sentence, and it is terminated by a full stop. In the analysis of texts, the initial step involves identifying clause complexes and specific logico-semantic relations within these clause complexes, particularly in students' writing samples. The reason for this is that different text types exhibit distinct semantic sequences represented by specific logico-semantic relations within the clause complex (Halliday and Matthiessen, 2014).

The provided examples demonstrate the process of identifying clauses within a clause complex:

||| If I have enough money, || I will buy a lot of books. |||
||| When I have many books, || I am going to study well, || and my classmates will respect me. ||| (Halliday and Matthiessen, 2014, pp.428)

In the first example, there are two finite verbs, indicating the presence of two clauses within the clause complex, which concludes with a full stop. The second example contains three finite verbs, signifying the involvement of three clauses within the clause complex. In essence, the clause complex not only expresses the speaker's experiences of the physical and mental realms but also connects semantically interdependent clauses to form a
cohesive whole that conveys a comprehensive concept. Consequently, it allows for the description of more abstract and intricate internal relationships between entities.

2.3 Taxis: Parataxis and Hypotaxis

According to Halliday’s Systemic Functional Linguistics, a clause complex is composed of two or more clauses. From the perspective of interdependency, it can be classified into two categories: parataxis and hypotaxis. The logico-semantic relation between clauses within a clause complex can be further divided into expansion and projection (Halliday, 1994). Halliday and Matthiessen (2014) explain that clause complexes represent semantic sequences of moves as textual messages, relying on specific logico-semantic relations. In this dissertation, two types of relationships between clause complexes were examined: tactic relations and logico-semantic types. Taxis refers to the degree of interdependency between clauses and are associated with the equality of their status. Parataxis, which represents initiation and continuation, is characterized by equal status and denoted as 1, 2, and so on. In the case of parataxis, the first clause is referred to as the initiating clause (labeled as 1), while subsequent clauses are labeled as continuing clauses (e.g., 2). For instance:

||| 1 Tom ate an apple,
+2 and Jane ate a pie. |||

On the other hand, hypotaxis indicates an unequal relationship between clauses within a clause complex, representing dependence and dominance. In the hypotactic relation, one clause is designated as the dominant clause, while the other is regarded as the dependent clause. These are symbolized as α and β, respectively. For example:

||| xβ When I came to the school,
α the class was cancelled. |||

Both two taxic relations can be realized by Table 3

Table 3. Two taxic relations

<table>
<thead>
<tr>
<th>Clause A</th>
<th>Clause B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parataxis</td>
<td>1 (initiating clause)</td>
</tr>
<tr>
<td>Hypotaxis</td>
<td>α (dominant clause)</td>
</tr>
</tbody>
</table>

2.4 Logico-semantic Relation

Various logico-semantic relationships can exist between clauses and clause complexes. Within the realm of logico-semantic relations in clause complexes, two common types are projection and expansion. These relations serve to connect clauses and form semantic relationships of projection and expansion, encompassing different types of processes and circumstances. More specifically, expansion can be further categorized into relations of elaboration, extension, and enhancement.

Elaboration within a clause complex entails expanding on the preceding clause by providing additional details, specifying particular aspects, offering alternative expressions, or giving comments and examples. This relationship is symbolized by the equals sign (=). Conversely, extension involves the introduction of new elements to the initial clause, including exceptions, alternative options, or expanded content. It is denoted by the plus sign (+). Finally, enhancement occurs when the second clause reinforces or adds contextual elements to the first clause, such as time, place, cause and effect, condition, concession, and more.

According to Halliday’s theory of projection (Halliday, 2006), projection is a logico-semantic relation that involves the re-representation of verbal expression rather than a direct representation of non-verbal experience (i.e., the real world). In a clause complex, a projected clause conveys information that has already been expressed elsewhere. This creates a double expression effect: on one hand, the content quoted is distinct from our own words, and on the other hand, it becomes integrated into our information. Projection involves relaying what someone else said or thought at a different time (Thompson, 2000).

Projection can be broadly classified into two types: locution and idea. Locution refers to a clause that is projected through another clause, presenting it as a locution or wording, typically indicated by double quotes. The idea, on the other hand, refers to a clause that is projected through another clause, presenting it as an idea or meaning, typically marked by single quotes (Halliday and Matthiessen, 2014, pp.444). The interplay between the two systems of tactic relation and logico-semantic relation determines the internal relations within clauses.
Table 4. The basic types of clause complex

<table>
<thead>
<tr>
<th>Elaboration</th>
<th>Paraxis</th>
<th>Hypotaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tom didn’t sit down; =2 he ran away (apposition)</td>
<td>α Tom ran away, = β which failed the mission (non-finite clause)</td>
<td></td>
</tr>
<tr>
<td>1 Tom ran away, +2 and John came there. (coordination)</td>
<td>α Tom ran away, +β whereas John came there.</td>
<td></td>
</tr>
<tr>
<td>Enhancement</td>
<td>Tom was scared, x2 so he failed the mission</td>
<td>α Tom ran away, xβ because he was scared. (adverbial clause)</td>
</tr>
<tr>
<td>Locution</td>
<td>1 Tom said: “2 “I’m running away” (direct speech)</td>
<td>α Tom said, “β he was running away. (indirect speech)</td>
</tr>
<tr>
<td>Idea</td>
<td>Tom thought to himself; ‘2 I’ll run away.</td>
<td>α Tom thought ‘β he would run away.</td>
</tr>
</tbody>
</table>

Table 4 illustrates the fundamental types of expansion and projection clauses realized in both parataxis and hypotaxis. However, in real-life language usage, a wide range of tactic relations and logico-semantic relations are often intertwined, resulting in more complex structures of clause complexes.

Three common types of paratactic elaboration found in texts are exposition, exemplification, and clarification. Table 5 demonstrates the strong complementarity between paratactic elaboration and hypotactic elaboration in terms of meaning.

Table 5. Paratactic and hypotactic elaboration (Halliday and Matthiessen 2014, pp.462)

<table>
<thead>
<tr>
<th>Paraxis</th>
<th>Hypotaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meaning</td>
<td>exposition, exemplification, clarification</td>
</tr>
<tr>
<td>Realization</td>
<td>primary + secondary: tone concord</td>
</tr>
<tr>
<td></td>
<td>secondary: often unmarked; may be introduced by i.e., e.g., viz. or other conjunctive marker</td>
</tr>
</tbody>
</table>

Exposition involves the secondary clause restating the main proposition or presenting it from a different perspective, often using conjunctive markers such as “in other words” or “i.e.” For example:

I need a good sleep; || in other words, it is very healthy. ||

Exemplification in paratactic elaboration involves subordinate clauses that develop or exemplify the main clause by providing concrete examples. In written language, conjunctions such as “for example,” “for instance,” and “in particular” are commonly used to express this lexical-cohesive relationship. Here’s an example:

You are too young to do this job; || for example, you couldn’t lift these things. ||

In the case of clarification, the secondary clause explains or provides further information about the theme of the
primary clause. It functions as an explanatory comment. For example:

|| They used to work over there; || that's how they met. || (Halliday and Matthiessen, 2014, pp.463)

Moving on to hypotactic elaboration, the clauses belong to the category of non-defining relative clauses. They can have both finite and non-finite functions. If the secondary clause functions as finite, it takes the form of a defining relative clause with a WH-type antecedent modifying a whole clause or elements beyond a nominal group. For example:

|| He talks down to people, || which automatically puts people's backs up. || (Halliday and Matthiessen, 2014, pp.465)

In hypotactic elaboration, non-finite clauses have a similar semantic relation to finite clauses. They function to modify from a nominal group to an entire clause. Here's an example:

|| It's my own invention || to keep clothes and sandwiches. || (Halliday and Matthiessen 2014, pp.468)

In this example, the non-finite clause “to keep clothes and sandwiches” modifies the entire clause “It's my own invention.” It provides additional information about the purpose or function of the invention.

Paratactic extension and hypotactic extension

The semantic meaning of paratactic extension encompasses addition, variation, and alternation. Regarding addition, the two clauses are not linked by any causal or temporal relationships. Common cohesive expressions of addition include “in addition,” “also,” “moreover,” and “on the other hand.” Here is an example of an additive positive relation:

|| He’d been a medieval history student in college || and I was interested in medieval literature, too. || (Halliday and Matthiessen 2014, pp.472)

In this example, the two clauses are connected through the cohesive expression “and,” indicating an additive relationship. The addition of the second clause provides additional information that complements the first clause.

Secondly, variation in paratactic extension involves the replacement of a clause with a whole or part of a group. There are two categories of variation: replacive and subtractive relation.

For example:

|| They should not be broad statements [[saying || where we hope to be]], || but instead plans [[ specifying || what we want to do next || and exactly how we are going to do it]].|| (Halliday and Matthiessen, 2014, pp.473)

In the example provided, the first clause “saying where we hope to be” exhibits a replacive relationship, wherein the entire clause is replaced by the nominal group “broad statements.” This replacement allows for a more concise and focused expression of the intended meaning.

On the other hand, the second clause “specifying what we want to do next and exactly how we are going to do it” demonstrates a subtractive relationship. In this case, part of the clause is substituted with the nominal group “plans.” This substitution results in a more streamlined and succinct presentation of the information.

By employing replacive and subtractive relations, the variation in the clauses enhances specificity and provides an alternative way of conveying the intended message.

Lastly, in the context of alternation, one clause serves as an alternative to the other clause. Here is an example illustrating this relation:

|| Either you go ahead and take the plunge, or you wait until you think you can afford it, which you never will. || (Halliday and Matthiessen 2014, pp.473)

In this example, the first clause presents one option or course of action (“go ahead and take the plunge”), while the second clause presents an alternative option or course of action (“wait until you think you can afford it”). The conjunction “or” indicates the presence of alternation, allowing for a choice between the two options. This construction highlights the contrast or decision-making between the presented alternatives.

In this example, the clauses “Either you go ahead and take the plunge” and “or you wait till you think you can afford it” demonstrate an alternation relationship. The speaker presents two contrasting options, implying that the decision lies between taking immediate action or waiting until the individual believes they have enough resources. The conjunction “either...or” emphasizes the exclusive nature of these alternatives. By employing this alternation, the speaker achieves rhetorical impact and emphasizes the different possibilities open to the subject.

Hypotactic extension, similar to paratactic extension, encompasses the notions of addition, variation, and
alternation. However, in hypotactic extension, the extending clause is dependent on the main clause and can be either finite or non-finite.

2.5 Genre in SFL

The term “genre” originated from Latin and refers to a “kind” or “class.” In the context of Systemic Functional Linguistics (SFL), genre pertains to the recurring patterns and configurations that shape the meanings conveyed in different types of texts (Martin and Rose, 2012). Genre is defined as a socially oriented process with specific goals, as it unfolds through multiple stages (Martin, 1992). According to Hyland (2003), genre represents abstract and socially recognized ways of employing language. There exists a logical connection between genre and clause complex, as genre serves as its verbal manifestation, which can exhibit varying levels of intricacy, similar to how context can vary (Halliday and Hasan, 2012).

3. Method

3.1 Research Design

The previous section of the paper has given a brief overview and explanation of the clause, taxis and logico-semantic relations to construct a conceptual base of this paper. In order to demonstrate how these concepts are fully applied to authentic EFL writing samples, a qualitative linguistic analysis using SFL is deployed in this paper. One of the main purposes of systemic-functional linguistics is to construct a grammatical framework for discourse analysis (Halliday 1994; Halliday & Matthiessen 2014).

3.2 Data and Context

The two essays selected for analysis were obtained from writing samples in the Test for English Majors-Band 4 (TEM-4). TEM-4 is a national English proficiency test taken by Chinese English majors towards the end of their second year of university (NACFLT, 2004a). During the TEM-4 writing test, students are required to produce various types of texts on given topics. Therefore, the writing samples from TEM-4 can be considered representative of the writing performance of English as a Foreign Language (EFL) students in China. Text A was a comparison and contrast essay highlighting the differences between life in middle school and life in college. Text B, on the other hand, presented an argument advocating for honesty. The analysis in this paper focused on examining the types of taxis (relationships) and logico-semantic relations within the clause complexes of these texts.

3.3 Data Analysis Procedure

The analysis of multi-clause complexes involves several steps. The first step is to break down the complexes into separate chunks, treating each chunk as an individual clause based on its meaning. The next step involves analyzing these chunks and examining their structure and content. Finally, the analysis focuses on identifying the clauses within each chunk based on their logical-semantic relations and taxis. These methodological steps form the basis for the analysis conducted in this paper.

3.4 Clause Complex Identification

In the process of identifying the data, the classification of hypotaxis and parataxis relations in the clause complexes is the second step. As explained in the theoretical framework above, parataxis refers to the relation of parallel structures, where clauses in paratactic relations demonstrate the same semantic level of textual progression. Therefore, the sequence of these clauses can be simply labeled as 1, 2, and so on. All the examples in the data analysis procedure section are clauses selected from writing samples of Chinese students, and the complete texts are provided in the appendix. Here is an example of a parataxis relation:

For one thing, I live on my own, and I wash my own clothes, buy my own food, taking care of myself. This clause complex exhibits a paratactic internal relation connected by the conjunction “and,” with the two clauses being independent of each other. In contrast, in the hypotactic relation, the clauses demonstrate a dependent relationship within the clause complex, identified as “α” and “β.” However, the sequence can be altered, as shown in the following example:

β Although honesty is always believed to be a virtue, α cheating is still rampant in our society.

3.5 Logico-semantic Identification

The next step in clause identification involves marking the logico-semantic relations. Firstly, in the context of projection, locution and idea were recognized as clauses representing verbal and mental processes, indicated by the symbols (”) and (’), akin to direct and indirect speech clauses. Following that, expansion was further categorized into the relations of elaboration, extension, and enhancement, represented by (=), (+), and (x)
respectively. Within the expansion category, elaboration pertains to clauses that convey the same meaning as the preceding clause, extension involves adding more information using phrases like “on the other hand” and “in addition,” and enhancement focuses on causal and temporal relations, among others. Here are examples illustrating the three types within the provided data.

$\alpha$ As every college student would agree,
$\beta$ life in college is different from that in middle school.
$1$ I make my daily decisions of my own will.
$+2$ For another, I depend heavily on myself in my study.
$x\beta$ In order to achieve academic success,
$\alpha$ I can derive as much from the teachers’ lectures

Example 3 illustrates the elaboration relationship within the clause complex. In this case, the $\beta$ clause provides a descriptive explanation of the $\alpha$ clause, highlighting the agreement in college life. Hypotactic elaboration typically employs the word “as” as an elaborating marker. Example 4 represents the paratactic extension relation, where the second clause expands upon the meaning of the first clause by providing additional information about the author’s daily decisions. Hypotactic extension, on the other hand, employs the “$\alpha+\beta$” clause pattern to convey the meanings of addition, variation, and alternation, with a dependent relationship (Halliday and Matthiessen, 2014, p. 474). Finally, example 5 demonstrates the hypotactic enhancement relation, where the author presents a reason to explain why they can achieve academic success. In addition to cause-effect relations, conjunctions such as “when” and “if” are used to convey meanings of time sequence and condition in both paratactic and hypotactic enhancement relations. If we were to formalize the logico-semantic relations of these examples, the formulas would be as follows: $(\beta^=\alpha)$, $(1^+2)$, $(x\beta^\alpha)$.

### 3.6 Quantification of the Data

The preceding section outlined the detailed process for identifying the number of clauses, clause complexes, and logical-semantic relations in the writing data of the students. With all these elements identified, the subsequent step in this study is to quantify them as statistical data using the following formulas and statistical tools. The analysis results of this study will present the frequency of logico-semantic meanings such as enhancement, extension, and elaboration, as well as explicit cohesive markers and logical grammatical metaphors in the writing samples of the students. This analysis aims to highlight the language features present in the data. The frequency calculation is demonstrated as follows:

\[
\frac{\text{Number of clause complex in elaboration}}{\text{Total Number of Clause Complex}} \times 100\% \\
\frac{\text{Number of clause complex in extension}}{\text{Total Number of Clause Complex}} \times 100\% \\
\frac{\text{Number of clause complex in enhancement}}{\text{Total Number of Clause Complex}} \times 100\%
\]

The process of identifying the number of clause complexes has transformed the writing samples into numerical data. By applying the formulated formulas, the calculation of frequency will further convert the writing samples into frequency data, focusing on expansion, explicit cohesive markers, and logical grammatical metaphors. Descriptive statistical tools will be utilized in the analysis to provide basic features of the data and concise summaries about the sample and its measures. The objective of the statistical analysis is to address the research questions related to the distributions of various types of clause complexes and logico-semantic relations in the writing samples of Chinese EFL students. This analysis aims to provide specific statistical data to answer these research questions.

### 4. Findings and Discussion

Based on the analysis of the two texts, the logico-semantic relations were observed within the clauses and clause complexes. The initial finding revealed that parataxis constituted more than 80% of the logico-semantic relations in Text A, which was a comparison and contrast essay. Paratactic relation implies that the clauses possess equal
potential in terms of meaning, suggesting that Text A likely exhibits a parallel structure. An example illustrating this is as follows:

1 For one thing, I live on my own: ||
+2 wash my own clothes, buy my own food, looking myself.

Table 6. Distributions of Logico-semantic Relations in the Text A

<table>
<thead>
<tr>
<th></th>
<th>Elaboration</th>
<th>Extension</th>
<th>Enhancement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parataxis</td>
<td>0%</td>
<td>58%</td>
<td>0%</td>
</tr>
<tr>
<td>Hypotaxis</td>
<td>8%</td>
<td>0%</td>
<td>8%</td>
</tr>
</tbody>
</table>

Table 6 illustrates the distribution of logico-semantic relations in Text A. Based on the findings, it appears that paratactic extension is the prominent feature in Text A. The essay focused on comparing and contrasting life in high school and college, with the author highlighting their independent college life and engaging in various activities. This emphasis on additional information and elaboration contributes to the high frequency of extension. Notably, the comparison and contrast text type demonstrates the highest occurrence of extension, facilitated by cohesive adjuncts such as “and,” “but,” and “while.”

In contrast to Text A, Text B exhibited different results, primarily influenced by its distinct genre, which manifested in different relationships. In general, Text B was characterized by a prevalence of hypotactic relations.

Table 7. Distributions of Logico-semantic Relations in the Text B

<table>
<thead>
<tr>
<th></th>
<th>Elaboration</th>
<th>Extension</th>
<th>Enhancement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parataxis</td>
<td>0%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Hypotaxis</td>
<td>10%</td>
<td>0%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Based on the data of Table 7, it can be seen that hypotactic relations took up 40% in the Text B. In the hypotactic relations, 30% was the enhancement which was all the meaning of cause and effect. For instance, xβ although honesty is always believed to be a virtue, α cheating is still rampant in our society.

In Text B, which focused on the argument for honesty, the author provided supporting details to explain the importance of honesty. This resulted in a prevalent use of causal relations within the text, indicating a high frequency of enhancement. Furthermore, it is worth noting that hypotactic relational clauses outnumbered paratactic relational clauses in the multi-clause complexes. This suggests that subordinated clauses are frequently employed in argumentative essays, according to traditional grammar conventions. It is clear from the literature review that identifying the grammatical features of clauses requires a comprehensive knowledge of logico-semantic meaning. Apart from that, it is also apparent from the results that cohesive markers, serving as connections between clauses, play a significant role in determining the text type and logico-semantic relation. This aspect could be explored as a potential avenue for future research.

5. Conclusion

This paper provides a comprehensive review of the literature on the theory of clause complex in systemic functional linguistics. Subsequently, the study explores the process of identifying taxis and logical semantic relations within clause complexes, utilizing two types of EFL writing samples as illustrative examples for analysis. The findings reveal that students tend to present factual information and provide additional supporting details in comparison and contrast essays, thereby reflecting the extension elements of paratactic relations. Conversely, in argumentative essays, students often offer reasons to substantiate their viewpoints, leading to the utilization of causal relations in their writing. Consequently, it is recommended that ESL or EFL instructors take into consideration the grammatical aspects at the level of meaning, with due consideration to the specific genre, when teaching EFL writing.

In a nutshell, this paper aims to establish criteria for EFL students to effectively address grammatical concerns pertaining to identifying clause boundaries and understanding semantic meaning across different genres. By employing such criteria, students can develop an awareness of clause construction based on their logico-semantic relations, enabling them to express meaning more accurately in their written work, rather than relying on random sentences that are applied universally across all essay types.
Regarding to the limitation of the paper, the small size of the written documents may not generalize the common language features of students’ writings. Therefore, it is recommended that future research expand its scope by analyzing a wider range of text types and involving participants from diverse contexts in China. Pedagogically, the development of a writing module centered around the analysis of taxis and logico-semantic relations among clauses is proposed applying into EFL writing teaching, aiming to assist students in producing more meaningful and coherent clauses in their writing. Future research is also recommended to encompass a wider range of genres, including samples that focus not only on logico-semantic relations but also on cohesive relations. It is anticipated that integrating grammar instruction of writing within genre-based texts, as opposed to teaching grammar in isolation, will shape the future landscape of EFL pedagogy.

References


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