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An Analysis of Logical Relations in Academic IELTS Sample Essays

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ABSTRACT

The logical structure of clauses indicates the logical connection between experiential events, thus it brings smoothness and coherence to writings. There are two fundamental systems that need to be considered in the analysis of how clauses are related to each other: taxis and logico-semantic (Halliday & Matthiessen, 2014). The theoretical framework used to analyse the logical relations of the clauses employed in academic IELTS sample essays on which the present study is based is the Systemic Functional Theory developed by Halliday & Matthiessen (2014). By focusing on the logical manifestations of the clause complex, particularly the study of taxis and logico-semantic, this paper sheds light on the logical relations demonstrated in IELTS sample essays. This study was designed using descriptive, analytic and inductive research method. Data were 60 IELTS academic essays taken from published books and official IELTS websites with band scores ranging from 7.0 to 7.5. The findings indicate that the writers employ more hypotaxis than parataxis to establish logical connections between states of affairs, proving that the IELTS writers tend to support their arguments using some unequal status. The analysis of logico-semantic relation also reveals that the dominant relationship is expansion. It is expected that the study will enable IELTS candidates to take into account the salient logical features of high-quality essays to produce more effective pieces of writing.

I. INTRODUCTION

In recent years, the International English Language Testing System (IELTS) has been selected as the preferred test to assess the English language proficiency of those who study English as a foreign language or second language in terms of listening, reading, writing and speaking skills. According to the survey published in the official IELTS website (<https://www.ielts.org>), the percentage of Vietnamese who achieved high scores was still low in the distribution of scores gained by different groups of test takers in 2018 with the overall mean band score of 5.98, of which the

writing skills was the lowest with 5.63% in the academic module despite the increasing number of Vietnamese IELTS test-takers. This paper seeks to address an important aspect in formulating the academic IELTS essays, thereby helping to improve the overall band score of the IELTS tests to be taken by Vietnamese candidates.

The Academic Writing Test consists of two tasks namely Task 1 and Task 2. Task 1 requires the interpretation of factual information of at least 150 words provided in the form of graphs, bar charts, pie charts and diagrams while in task 2, test-takers are asked

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to write an essay of a minimum of 250 words in which they have to express their point of view and produce an argument or solve a problem explicitly and persuasively in English. Four criteria including *Task response, Coherence and cohesion, Lexical resource, Grammatical range and accuracy* are employed to evaluate the piece of writing. It is clear that the logical structure of clauses indicating the logical connection between experiential representations gives coherence and cohesion to writings and manifests vocabulary and grammatical range.

Clause relation representing the way clauses relate to each other in a text has been a matter of great concern for linguists and language researchers such as Halliday (1985, 1994) Halliday & Matthiessen (2014, 2004), Gerot & Wignell (1994), Thompson (2014), Butt, Fahey, Feez, Spinks, & Yallop (2000), Eggins (2004). In terms of taxis and logico-semantic relation, a multitude of practical studies have been conducted. For example, Lubis, Ginting, & Suhadi (2018) focused on analyzing the kinds of taxis and logico-semantic relation and the meanings in clause complexes used by Hillary Clinton and Donald Trump in their presidential debates and stated that the clause complexity of these two presidential debates is varied and the strength of their verbal language is proved by the use of different types of taxis, logico-semantic relation and meanings in order to affect the audience's thinking and decision-making in supporting their policies.

Particularly, in writing, Rukmini (2010) conducted a research on clause complexes that the English undergraduates make use in writing abstracts and showed that both parataxis and hypotaxis, and the logico-semantic relations namely elaboration, extension, enhancement and idea projection except the locution projection are employed in the abstracts. In addition, an investigation by Srinon & White (2011) proved that in a longitudinal genre based course, the Thai university students show a positive trend of developments in the use of semantic relations in their later writing compared to the pre-test texts by deploying more the relations of projection, causality and counter-expectation to construe logical relations. Ngongo (2018) examined the undergraduate students' clause relation used in discussion chapters of English theses and found that the use of logico

syntactic and logico semantic relationship is of great significance in determining the coherence and cohesiveness of the text.

The most recent research conducted by Jomaa & Bidin (2019) on the logico-semantic relations in citations from the literature review chapters of 20 PhD theses by EFL postgraduates in a public Malaysian university in two fields: Information Technology and Applied Linguistics. The findings indicate that two major kinds of logico-semantic relations, namely expansion and projection are employed in citations, which reveals the tendency of EFL Arab postgraduates in different disciplines to make use of more than two clauses in one citation.

Based on Halliday's framework, the paper focuses on analyzing the types of taxis and logico-semantics deployed in good IELTS sample essays for the purpose of helping IELTS test-takers to figure out grammatical strategies for guiding the rhetorical development of essays logically, thereby formulating their essays in the best possible light.

Clause complex is the term used by systemicists to refer to the grammatical and semantic unit built up from two or more clauses joined together in certain systemic and meaningful ways to form a larger unit (Eggins, 2004) while the clause simplex consists of a single clause.

A clause complex is a logico-semantic unit. There are two systemic dimensions that need to take into consideration in analyzing the logical structure of the clause: one is in the syntactic dimension or taxis system (how two or more adjacent clauses are linked to each other through dependency and interdependency relations) and the other is logico-semantic system (the types of meanings that allow adjacent clauses to project or expand on each other).

Taxis system is the system that expresses the type of interdependency relation between clauses joined into a clause complex. There are two options within the system of taxis: parataxis (where clauses are equally and independently related) and hypotaxis (where one clause is dependent on or dominates another), which are viewed as 'the two basic forms taken by logical relations in natural language (Halliday, 1994).

Parataxis describes the logical interdependency between elements of equal

status, one initiating and the other continuing. In other words, the elements are independent. Paratactic structures will be marked by a numerical notation (1, 2, 3...).

Contrasting with parataxis is hypotaxis, which is the logical interdependency between

a dependent element and its dominant, the element on which it is dependent. Hypotaxis will be represented by the Greek letter notation and a single slash in which an alpha (α) is used for dominant clauses and a beta (β) or ($\gamma...$) is marked for dependent clauses.

Table 1. Clauses in paratactic and hypotactic clause complexes

| | Primary | Secondary |
|-----------|---------------------|---------------------|
| parataxis | 1 (initiating) | 2 (continuing) |
| hypotaxis | α (dominant) | β (dependent) |

Source: Halliday & Matthiessen (2014)

A logico-semantic system describes the specific type of meaning relationships between connected clauses. There are two fundamental relationships: projection (where one clause is reported or quoted by another clause, which instates it as a locution (where what is projected is speech) or an idea (where what is projected is thoughts) and expansion (where one clause develops or extends on the meanings of another) by elaborating it (by restating in other words, specifying in greater detail, commenting, or exemplifying), extending it (by adding some new information, giving an exception to it, or offering an alternative) or enhancing it (by embellishing it with some circumstantial features of time,

place, manner, cause, or condition).

Expansion:

- elaboration: signified by =
- extension: signified by +
- enhancement: signified by x

Projection:

locution “ (double quotes)

idea ‘ (single quotes)

These symbols combine with those for parataxis and hypotaxis:

=2 = β +2 + β x 2 x β ‘2 ‘‘ β ‘2 ‘ β

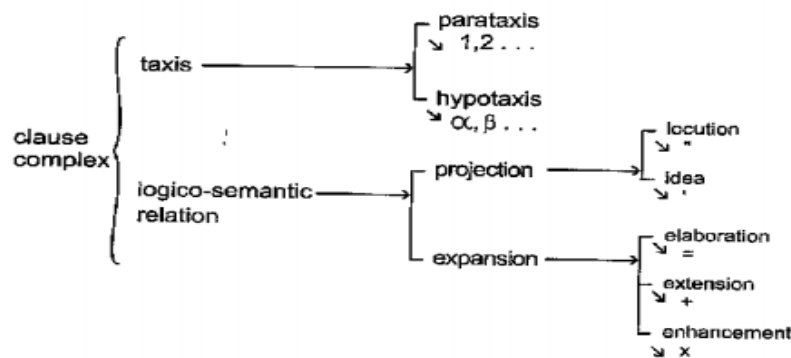


Figure 1. The system of the clause complex (Eggins, 2004)

Referring to the explanation above, this study aims to identify the logical structure of the clause complex, particularly the taxis and logico-semantics. It is hoped that the findings of this research can be a reminder for IELTS test-takers to be well conscious of the salient logical features of high-scoring essays to tactically manipulate the aspects of coherence and cohesion as well as use a wide range of grammatical structures in essays effectively, thus achieving higher scores for their IELTS writing.

II. METHODS

The aim of the study is to investigate the logico-semantic relation between clauses in IELTS sample essays in order to identify the interdependency relations and the specific type of meaning relationships in this type of writing. In order to achieve this aim, we combined three complementary types of research methods: descriptive, analytic and inductive.

60 essays were picked out to build up the data for the study and two criteria for selecting samples were established: 1-IELTS sample essays from published books or official

IELTS websites; 2-IELTS sample essays with the band score from 7.0 to 7.5, equivalent to level C1 according to the Common European Framework for Reference which most candidates, especially English major undergraduates from Vietnam are to achieve as the target outcome required by Vietnam's National Foreign Language 2020 Project.

While the descriptive method was used to give a detailed description of the logico-semantic relation, particularly interdependency relations and meaning relationships in the light of functional grammar, the analytic method was utilized to classify and justify a certain feature or characteristic. In addition, the inductive method was applied to draw out the generalizations from the findings and make conclusions.

III. RESULTS AND DISCUSSION

1. Taxis System

Regarding the length of the selected essays, it is shown that there are 17713 words used in the total of 60 essays, of which the length varies between 252 and 392 words. The average words used per essay is about 295 words. In the IELTS writing Task 2, candidates are required to write an essay of at least 250 words to express a view and produce an argument clearly and persuasively in English. The topics in task 2 are of common interest relating to environment, work, education, media, health, public transport, globalization or traditional culture suitable for and easily understood by candidates.

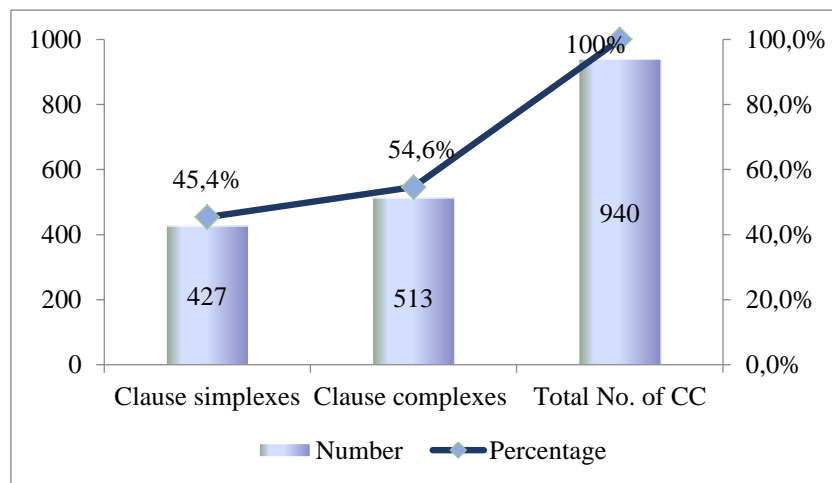


Chart 1. Distribution of clause simplexes and clause complexes

Based on the work of the Prague school of linguistics and Halliday & Matthiessen (2014), the analysis shows that in 60 essays, there are 940 sentences, of which 513 ones, accounting for more than half of the data are the clause complexes, the remainder (427) are clause simplexes. This clearly shows that the writers employ more clause complexes than clause simplexes to establish logical connections between states of affairs, making their essays more cohesive and coherent. Especially, in this study, in spite of being rankshifted clauses, a high percentage of 694 out of the total 2401 clauses are embedded, occupying 28.9%.

The occurrence of embedding realized by the use of clause as a part of group or as a

participant is doing service within a group, which is the reason why they are ranked as embedded. For example,

(1) ||| In addition, employees [[who work in a transparent environment]] tend to have a better bond with their manager. ||| (*clause as a nominal group*)

(2) ||| [[Changing those eating habits]] will dramatically enhance his health || and reduce the diseases.||| (*clause as a participant*)

According to Eggins (2004), the principle behind embedded is compression; that means embedding requires some forethoughts in the construction of the clause associated more with formal, careful written texts. In IELTS writing, the writers tend to employ quite a lot of embedded clauses to

pack more meaning into units, indicating more forward planning in the text construction.

As can be observed in Chart 1, more than a half of the data are clause complexes, enabling the writers to construe logical connections between experiential events, thus giving fluency to writing. Below are some examples for illustrations.

(3) |||The student may have done part of the work for a project, || but it is difficult for the tutor [[to assess the student properly]]. |||

(4) ||| As children can make money at an early age, || they would feel || that it is appropriate [[to spend it on luxury things]]. |||

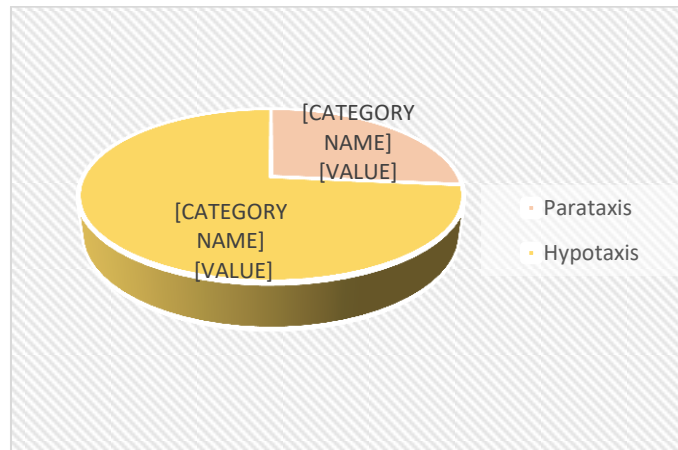


Chart 2. Distribution of taxis

In terms of taxis system, both parataxis and hypotaxis are employed to establish logical relations between clauses in the essays, but there are much more clauses in hypotactic relation with 565 cases than those in paratactic relation with 204 instances, proving that the IELTS writers tend to support their arguments using some unequal status. The following are some examples taken from the sample essays.

(5) ||| There are many different opinions about this issue || and educational systems and financial support to students from states have changed significantly. |||

(6) ||| Also, most children receive some pocket money || when they are in high school. |||

(7) ||| This wouldn't have happened || unless stringent laws were passed. |||

In example (5), the two pieces of information are presented as being of equal weight. The paratactic interdependency indicates the logical relationship between two clauses of equal status that is linked by the conjunction 'and'. The primary clause can stand alone and the second one is continuing.

Some other common conjunctions used in the sample essays include *but, for, so, nor, and, then...* In hypotaxis; however, clauses relate to each other in a modifying or dependency relationship. In example (6) and (7), the second dependent clauses cannot stand by itself, but function to provide some kind of supportive information and have to be combined with the first independent clause to make it meaningful. The hypotaxis clause indicator can be seen from the conjunction 'when' in example (6) and 'unless' in example (7).

2. Logico-Semantic System

With regard to the logico-semantic dimension, projection and expansion are used to show a very wide range of possible logico-semantic relationships between clauses. While a percentage use of expansion, corresponding to relational clauses is quite high (74.8%), the low frequency of projection (25.2%) is found in the data to indicate that the other clauses are locutions or ideas being projected and add contextual information to the projected locutions or ideas. The distribution of logico-semantic relation can be seen in the table below.

Table 1. Distribution of logico-semantic relation

| Logico-semantic relation | Expansion | | | Projection | | Total | Percentage |
|--------------------------|--------------------|------------------|--------------------|--------------|-----------------|------------|--------------|
| | <i>Elaboration</i> | <i>Extension</i> | <i>Enhancement</i> | <i>Idea</i> | <i>Locution</i> | | |
| Parataxis | 10 | 170 | 24 | 0 | 0 | 204 | 26.5% |
| Hypotaxis | 22 | 40 | 309 | 105 | 89 | 565 | 73.5% |
| Total | 32 | 210 | 333 | 105 | 89 | 769 | 100% |
| Percentage | 4.2% | 27.3% | 43.3% | 13.7% | 11.5% | | |
| | | 74.8% | | 25.2% | | | |

In projection, one clause projects another in the sense that it initiates the expression of the role, impact or opinion of some entity. Here are some examples:

(8) ||| I believe || that learning a different language should be [[not only for satisfying our physical

α ‘ β α

needs, like money, but also our moral needs]], because never before had such a big thirst for knowledge been displayed. |||

‘ β x β

(9) ||| I claim || that states cannot pay all extra costs of education for students. |||

α ‘ β

In example (8), the idea is projected through the other clause using the mental process ‘believe’. The hypotactic idea refers to the dependency relationship between clauses of some unequal status. The common range of verbs is used including *think, hope, believe, wish...* In example (9), it can be seen that there are two clauses which is included in the hypotactic clause, of which the dominant clause *I claim* projects the dependent clause *that states cannot pay all extra costs of education for students* with a verbal process in indirect speech, construing the hypotactic locution.

In expansion, the secondary clause builds on the meanings of the first clause, developing them in several ways. The findings of the study also show that the semantic relations are mainly of enhancement and extension with 43.3% and 27.3% respectively. Meanwhile, the use of elaboration is limited, representing only 4.2%. Here are some examples of extension, elaboration and enhancement cited from the IELTS sample essays.

(10) ||| To summarise, children are the future of our society || and adults should raise them with 1 +2

tolerance, patience and love. |||

(11) ||| For example, multiple job requirements are posted online; people [[who are subscribed 1 =2

to such information]] can utilize this information.

(12) ||| In conclusion, although many people consider climate change as bad for their business,

x β

|| in my opinion it is possible [[to gain huge monetary benefits from such changes]]. |||

α

In example (10), the secondary clause expands the meaning of the primary clause by adding the new feature and forms paratactic extension between two independent clauses. Meanwhile, the relation in instance (11) is elaboration, saying the same thing again. In example (12), the conjunction ‘although’ concerning concession is used to enhance the meaning of the independent clause and dependent one.

IV. CONCLUSION

In conclusion, by examining the logical relations of the clauses, particularly the study of taxis and logico-semantics employed in IELTS sample essays, we can explain how logical manifestations of the clause complexes are displayed in an effective text. As shown in the findings, it is suggested that IELTS test-takers should choose clause complexes over clause simplexes as clause complex systems supply them with structural resources to establish logical connections between states of

affairs. In addition, the analysis of logico-semantic relation reveals that the dominant relationship is expansion; therefore, the IELTS candidates can expand the meaning of another clauses by adding some new elements, offering an alternative; commenting, exemplifying; or referring some circumstantial features: time, place, condition, cause, purpose or manner... to make their arguments more meaningful and easier to follow. In spite of the fact that embedded clauses do not form clause complexes, it is a good idea to use embedding to pack more meaning into clause simplexes as embedding is connected with more with formal, careful written text. It is also proposed that IELTS writers should make use of different types of interdependency, namely paratactic interdependency to describe the logical relationship between two-like-elements of equal structural status, and hypotaxis interdependency to state the relation of two elements of unequal status. It is obvious that IELTS candidates with better awareness of taxis, logico-semantic relation can produce more cohesive and coherent IELTS essays, thus gaining higher scores for their test.

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