

# The Use of the Connector 'and' in EFL Learners' Texts

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J. J. Strossmayer University of Osijek

Faculty of Humanities and Social Sciences

Double Major MA Study Programme in English Language and Literature –  
Teaching English as a Foreign Language and Croatian Language and  
Literature – Teaching Programme

Katarina Karaula

**The Use of the Connector 'and' in EFL Learners' Texts**

(Master's Thesis)

Supervisor: Dr. Višnja Pavičić Takač, full professor

Co-supervisor: Dr. Gabrijela Buljan, full professor

Osijek, 2024

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## IZJAVA

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## Abstract

Cohesion and coherence are realized through the use of lexical and grammatical structures that imply existing logico-semantic relationship in phrases and clauses. Halliday and Hasan (1976) distinguish between grammatical and lexical cohesion in a text. The focus of this research is on coordination and the conjunctive coordinator *and*. According to Quirk et al.'s (1985) classification, the coordinator *and* can establish various semantic relationships between clausal structures: addition, consequence-result, temporality, similarity, condition, concession, comment/explanation or contrast. The present study of the coordinator *and* is conducted on the non-native speaking (NNS) and native-speaking (NS) corpora compiled in 2020 as part of the project titled *Local Coherence in Texts Written in First and Second Language: Contrastive Analysis of Connector Usage* with the aim of examining and comparing the various semantic relations of *and* in NNS and NS corpora. The expected hypothesis that the NNS learners would show overuse of *and* in their texts has been confirmed. Also, the overuse and specialized uses of complex relationships like concession and similarity showed that the NNS learners rely on the coordinator *and* to express different semantic relations. Neither of the group of learners exhibited a high frequency of errors, contrary to the presupposition. Further research should compare a larger sized NS corpus to the NNS corpus, as well as compare the usage of the coordinator *and* with other cohesive devices that convey similar semantic relations in order to get more precise and relevant results on the different uses of the coordinator *and*.

Key words: coherence, cohesive devices, semantic relations, non-native speakers, coordinator *and*

## Sažetak

Kohezija i koherencija ostvaruje se uporabom leksičkih i gramatičkih struktura koje impliciraju logičko-značenjske veze između fraza i klauza. Halliday i Hasan (1976) razlikuju gramatičku i leksičku koheziju u tekstu. U ovome radu analizirat će se koordinacija kao vrsta gramatičke kohezije, odnosno koordinator *and* koji može ostvariti niz značenjskih odnosa između surečenica: aditivno, posljedično, temporalno, similitivno, kondicionalno, koncesivno, opisno-obrazložno ili kontrastivno značenje (Quirk et al. 1985). Istraživanje o koordinatoru *and* dio je projekta pod nazivom *Lokalna koherencija u pisanim tekstovima na prvom i inom jeziku: Kontrastivna analiza uporabe konektora* u okviru kojega je 2020. godine prikupljen korpus eseja koje su pisali neizvorni govornici engleskoga jezika. Cilj istraživanja bio je ispitati i usporediti uporabu različitih značenjskih odnosa koje ostvaruje koordinator *and* u korpusu eseja izvornih i neizvornih govornika. Rezultati istraživanja pokazuju učestaliju uporabu koordinatora *and* u korpusu govornika engleskoga kao stranoga jezika u odnosu na izvorne govornike. Učestala uporaba, kao i iskazivanje složenih značenjskih odnosa između klauza koordinatorom *and* (kao što su primjerice koncesija i similitivnost) pokazuje da se neizvorni govornici engleskoga jezika oslanjaju na *and* kako bi izrazili složenije značenjske odnose. Buduća istraživanja trebala bi usporediti veći korpus izvornih govornika s korpusom neizvornih govornika engleskoga jezika te napraviti usporedbu drugih kohezivnim sredstvima s koordinatorom *and* kojima se ostvaruje sličan značenjski odnos kako bi se dobili precizniji i relevantniji podaci o različitoj uporabi koordinatora *and*.

Ključne riječi: koherencija, kohezivna sredstva, značenjski odnosi, neizvorni govornici, koordinator *and*



## Table of contents

1. Introduction .....	1
1. Cohesion and coherence .....	3
1.1. Cohesion and coherence as coexisting concepts .....	3
1.2. Writer, reader and context as part of the cohesive process .....	4
1.3. Different types of cohesion .....	5
1.4. Classification of connectors .....	7
1.5. Relevant studies on connectors .....	11
2. Coordination.....	13
2.1. Coordinator <i>and</i> .....	13
3. The present study .....	18
3.1. Aim and research questions.....	18
3.2. Methodology .....	19
3.2.1. <i>Corpora of written texts</i> .....	19
3.2.2. <i>Procedure</i> .....	19
3.3. Results .....	20
3.4. Discussion .....	23
4. Conclusion.....	28
4.1. General conclusive remarks .....	28
4.2. Pedagogical implications.....	29
4.3. Limitations of the study.....	30
4.4. Future research .....	30
5. References .....	31
6. Appendices .....	34

## 1. Introduction

Cohesion and coherence present fundamental aspects of any effective piece of writing. To achieve successful communication between the producer and the receiver of the text, the text should incorporate appropriate cohesive devices to enhance reader comprehension.

The logical sequencing of ideas and thoughts is organized on the “surface-level” of the text with the use of cohesive devices. Semantic relations in the text do not depend on the structural organization of the text. Still, they are realized through lexico-grammatical elements, which make formal connections between parts of the text (Tanskanen, 2006: 7). The linguistic elements that formally bind one piece of text to another are known under different terms: “logical connectors” (Celce-Murcia & Larsen-Freeman, 1983), “clause linkers” (Quirk et al., 1985), “connectives” (Crewe et al. 1985), “cohesive ties” or “cohesive devices” (Halliday and Hasan, 1976; Hartnett, 1986; Tanskanen, 2006; Hoey, 1991) “conjunctive elements” or “conjuncts” (Quirk & Greenbaum, 1973). Those elements logically connect two instances of structure in an attempt to make the text sound coherent.

It is believed that “successful communication depends on both cohesion and coherence, which are simultaneously independent and intertwined” (Tanskanen, 2006: 21). However, not all texts containing cohesive devices will be coherent. The presence of cohesive devices does not necessarily improve the coherence of the text (Hartnett, 1986, Mosenthal & Tierney, 1984: 240). Surprisingly enough, a plethora of cohesive ties can hinder the communicability of the text: “A cluster of dynamic ties can work to contort a topic in too many different ways all at once, making writing appear dense, opaque, or even incoherent to the reader” (Hartnett, 1986: 146). Sometimes, learners abuse the usage of cohesive devices, especially connectors, in order to make the writing sound “professional.” Also, learners tend to overuse the connectors to meet certain evaluation criteria, following the “the more, the better” mindset (Crewe, 1990; Pavičić Takač et al., 2020).

There are other means of realizing cohesion in a text apart from introducing overt markers in the form of connectors (such as *and*, *or*, *but*, *therefore*, *on the other hand*, etc.). Halliday and Hasan (1976) assert that cohesion in a text is expressed through both grammatical and lexical elements, resulting in two types of cohesion: grammatical (including reference, substitution, ellipsis, and conjunction) and lexical (lexical cohesion). In this paper, special emphasis will be placed on the conjunction as a type of cohesive device, specifically on coordination and the coordinator *and*, while other types of cohesion will be briefly discussed.

According to Halliday and Hasan (1976), there are four categories of conjunctives, that is additive (e.g., *and*), adversative (e.g., *but, yet*), casual (e.g., *so*), and temporal (e.g., *then*). The classification of conjunctives is much more complex than the basic four categories mentioned and their prototypical conjunctives.

The coordinating conjunction *and* can express a variety of semantic relations between the structures it connects (cf. Dik, 1968; Halliday & Hasan, 1976; Quirk et al. 1985). “The semantic aspect of *and* does not in itself specify the kind of combination any further, but can give rise to a multitude of different relations in the final interpretation” (Dik, 1968: 271). Quirk et al. (1985: 930) identified eight types of connotations, or semantic relations, that can be expressed within coordinated clauses linked by the conjunction *and*: consequence or result, temporality, contrast, concession, condition, similarity, addition, and explanation/comment. They will be defined and exemplified in the third chapter of the paper.

Many corpus-based studies have been conducted within the field of English as a foreign language (EFL) acquisition to investigate the frequency and the difference of connector usage between native and non-native speakers. Researchers have postulated that connectors are frequently overused in written discourse and are often used incorrectly by EFL learners (cf. Crewe, 1990; Field & Yip, 1992; Milton & Tsang, 1993; Granger & Tyson, 1996; Pavičić Takač & Vakanjac Ivezić, 2018; Pavičić Takač et al. 2020 etc.). However, there is a lack of studies based on coordinators, especially on the coordinator *and*, which this study aims to amend.

The paper is divided into five chapters. Following the introduction in Chapter 1, the next two chapters present the theoretical background on cohesion and coherence, different types of cohesion, the classification and treatment of connectors in relevant studies. The third chapter is about coordination and the coordinator *and*, which is the focus of the study. The fourth chapter details the aims, research questions and hypotheses of the study, methodology, results and the discussion. The fifth chapter of the paper will give general conclusive remarks on the present study, alongside with the pedagogical implications, current limitations of the study and possibilities for future research.

## 1. Cohesion and coherence

### 1.1. Cohesion and coherence as coexisting concepts

The term cohesion typically refers to the “surface -level” connectors that link different parts of the text, and it can be achieved through grammatical and lexical cohesive devices. Coherence, on the other hand, refers to the logical sequences of ideas in a text.

Halliday and Hasan (1976: 4) describe cohesion as a semantic concept because “it refers to relations of meaning that exist within the text, and that define it as a text”. They, also, define cohesion as a relational concept, which means that one element in the text is interpreted only in relation to another (Halliday & Hasan, 1976: 12). The two connected elements form a cohesive tie, which is expressed through grammatical and lexical structures. Hasan (1984: 183) notes that “coherence in a text is the property of hanging together”, that is the unity of a text. “The unity of a text is enabled by *cohesion* in form (achieved by using cohesive devices, such as pronouns, conjunctions, synonyms, parallel structures etc.) and *coherence* in meaning (achieved by repetition, progression and relevance of meaning as well as by non-contradiction)” (Bagarić Medve & Pavičić Takač, 2013: 112).

There are many discussions in linguistics and discourse studies about the concepts of cohesion and coherence. While scholars distinguish between the two concepts, there is an ongoing discussion about whether they are inherently connected or separate concepts.

Halliday and Hasan (1976) claim that cohesion is necessary for the unity of the text, that is, for coherence. However, some researchers take the opposite view arguing that cohesive ties are not crucial in making the text a unified whole. Scholars who see cohesion and coherence as two separate concepts argue that “without coherence, a set of sentences would not form a text, no matter how many cohesive links there were between the sentences” (cf. de Beaugrande & Dressler, 1981; Brown & Yule, 1983; Ellis, 1992; Enkvist, 1978; Hellman, 1995; Lundquist, 1985; Sanford & Moxey, 1995, as cited in Tanskanen, 2006: 17). Enkvist (1978, as cited in Tanskanen, 2006: 17) demonstrates that a text despite having an abundance of cohesive ties, still does not form a unified whole; the text is “pseudo-coherent”. Contrastively, Widdowson (1978, as cited in Tanskanen, 2006: 17) demonstrates that a text devoid of cohesive ties can still be comprehensible, thus concluding that coherence can exist without cohesion.

Many linguists support Halliday and Hasan’s (1976) view that coherence and cohesion are intricately connected, arguing that cohesive devices within a text aid in recognizing its coherence

(cf. van Dijk & Kintsch, 1983; Hoey, 1991; Sinclair, 1991; Willis, 1992). Hoey (1991) argues that lexical cohesion plays a significant role in the coherence of the text. Similarly, Sinclair (1991) and Willis (1992) study the role of lexical cohesion, which contributes to the text coherence. van Dijk and Kintsch (1983) explore the role of cohesion and coherence in the process of “discourse comprehension”.

## 1.2. Writer, reader and context as part of the cohesive process

The coherence of the text does not solely depend on the presence and utilization of the cohesive devices in the text: “cohesion means the coherence of a text with itself, while coherence is the coherence of the text with its context of situation” (Halliday and Hasan, 1976: 23). This implies that coherence can be achieved only with the help of situational knowledge.

Tanskanen (2006: 21) concludes that cohesion and coherence differ in terms of objectivity: cohesion is objective and measurable through the count and analysis of cohesive devices, while coherence is subjective, and it is not easily measurable as it depends on how readers or listeners interpret the text based on their extralinguistic knowledge. Therefore, coherence majorly depends on the role of the writer and the reader of the text: “hearers and readers do not depend upon formal markers of cohesion in order to identify a text as a text...” (Brown and Yule, 1983: 198). For the reader of the text to be able to understand what the writer wants to convey in a piece of writing, they need to have some background knowledge on the topic.

Two sources of information in written communication that aid coherence are, therefore, text and context. Tanskanen (2006: 5) proposes a division of context into linguistic, cognitive and social context. The linguistic context is often referred to as cotext (Brown & Yule 1983). The cognitive context involves the cognitive process, knowledge, and expectations of both the readers and the writers. The writer of the text anticipates who the targeted readers of the text are, and based on that assumption, selects specific cohesive devices they believe will enhance the understandability of the text. In this sense, readers ought to be aware of not only appropriate cohesive devices and the semantic relations they assign to conjoined clauses but also of the stylistic properties of certain connectors and the register of the text.

The social context refers to the exophoric reference to the situation, which encompasses the participants' shared experiences, and general world knowledge. It plays a crucial role in obtaining coherence: “language takes place in social contexts and makes connections with the realities that make up those contexts” (Halliday and Hasan, 1976: 305).

### 1.3. Different types of cohesion

As aforementioned, cohesion is a semantic relation that can be expressed through both grammatical and lexical elements in the text. Those elements are not inherently coherent on their own, but only in relation to preceding or following elements in the text (anaphoric vs. cataphoric reference). The five distinct types of cohesion proposed by Halliday and Hasan (1976) are reference, substitution, ellipsis, conjunction, and lexical cohesion (lexical reiteration and collocation).

“Reference is the relation between an element of the text and something else by reference to which it is interpreted in the given instance” (Halliday and Hasan, 1967: 308). The reference item has a specifying function, meaning that it can be a personal, possessive or demonstrative pronoun or a determiner, and usually refers to the referent previously in the text, i.e., anaphorically. For example, the personal pronoun *them* refers to a noun phrase that can be found in the preceding clause or sentence:

- (1) Surprisingly, people who live in the city often feel lonely because there is so much going on around them.<sup>1</sup>

The second type of cohesive relation can take two different forms, substitution and ellipsis. Halliday and Hasan differentiate between the two by viewing “substitution as the replacement of one item by another, and ellipsis as the omission of an item” (1967: 88). A substitute is the modifying element that carries “information which differentiates the instance in which it occurs from the other instance to which it relates by cohesion” (Halliday and Hasan, 1967: 93). A recurring substitute element in present study’s essays is often the nominal substitute *one*:

- (2) There are numerous advantages of living in a city. The most important one is probably the plenty of opportunities for all its inhabitants from students to workers.”
- (3) Now, choice isn’t only visible in the job department, but also in the entertainment one.

As seen in example (3), the substitute *one* has a premodifier *the entertainment*, which serves as a point of contrast between the presupposed and presupposing element. The nominal phrase in the second clause containing the substitute is never identical to the first nominal phrase.

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<sup>1</sup> For illustration purposes, the example sentences will be extracted from the corpora that will be further analyzed in this paper.

Moreover, there are other plausible substitutes that can occur in discourse, like the nominal substitute *the same*, the verbal substitute *do*, and the causal substitute *so* (Halliday and Hasan, 1967), but they will not be discussed since they are not the focus of the research in this paper.

Related to the cohesive process of substitution is that of ellipsis. Ellipsis is when a part of the sentence is omitted but can be supplied from the preceding evidence in the discourse. Halliday and Hasan refer to ellipsis as “substitution by zero” (1967: 142). Similarly to substitution, there can be three types of ellipsis: nominal, verbal, and clausal ellipsis (Halliday and Hasan, 1967: 146).

Here are some examples of elliptical structures coordinated with *and* from the corpus:

(4) “In smaller centres, people are more likely to know their neighbours *and* have family nearby.”

(5) “Just imagine what we are drinking *and* putting into our bodies.”

Next, lexical cohesion is realized through lexical items in the text, whereby one lexical item relates to another in the text. According to Halliday and Hasan (1976), there are two types of lexical cohesion: reiteration and collocation. Reiteration is “the repetition of a lexical item, or the occurrence of a synonym of some kind, in the context of reference; that is, where the two occurrences have the same referent” (Halliday & Hasan 1976: 318-319).

Lexical items are linked to other items in various semantic relations, including the relations of synonymy (two words are of similar meaning) or hyponymy (one word is superordinate to the other). Also, lexical items can form strings of words that are cohesively related. In the following example (6) *public transportations* is a superordinate, whereas *a bus*, *a tram*, and *a cab* are subordinates. Similarly, in example (7) *nature* is a superordinate, and *forest* is a subordinate.

(6) But what also helps are those *public transportations* like *a bus*, *a tram* or *a cab*.

(7) Moreover, there is no much *nature* in the town, so if you want to for example, go for a walk in *forest*, you usually have to go outside of the town.

Collocation is “a word that is in some way associated with another word in the preceding text, because it is a direct repetition of it, or is in some sense synonymous with it, or tends to occur in the same lexical environment” (Halliday & Hasan, 1976: 319). However, the concept of collocation as articulated in the work of Halliday and Hasan (1976) differs from the contemporary understanding of collocation within the field of corpus linguistics. Collocation refers to the words that frequently occur together in a language. The strategic use of collocations can improve the cohesion of the text, making it more engaging for the reader. However, their overuse can lead to

redundancy and diminishing of the text coherence. The collocations that often occur in study's corpora are exemplified below:

(8) It's hard to have your own *peace and quiet* when there's so many people around you.

(9) Many love to live in the city with *the hustle and bustle* of daily life and society.

(10) All in all, there are many *advantages and disadvantages* of living in the city.

Lastly, conjunction is a semantic relation realized through grammatical elements, but very different and much more complex from other grammatical cohesive relations (reference, substitution, or ellipsis).

Conjunctive elements are cohesive not in themselves but indirectly, by virtue of their specific meanings; they are not primarily devices for reaching out into the preceding (or following) text, but they express certain meanings which presuppose the presence of other components in the discourse. (Halliday and Hasan, 1976: 226).

This suggests that conjunctions (e.g. *and, or, but, because* etc.) do not have solely grammatical purposes in the text, but they express meanings that imply relationships between parts of discourse.

Conjunctions can connect phrases or clauses and exude different semantic relations as exemplified below:

(11) Thus, I advocate on behalf of mid-size cities which both capture the excitement of large cities, *but* retain their charm, familiarity *and* their strong housing market.

#### 1.4. Classification of connectors

There have been numerous attempts at the classification of connectors, aiming to systematically and precisely capture their grammatical, semantic, and discourse-level functions. The classifications aim to account for the complex role of connectors in achieving cohesion and coherence in the text, and for their multifaceted semantic relationships.

Halliday and Hasan (1976: 238) developed a comprehensive classification that divides connectors into four main categories based on the semantic relations they convey in a text:

a. **additive** (used to signal addition, introduction, similarity, etc.)

(12) Still, some people prefer the tranquil, slow-spaced countryside *and* a closely-kind community where all the people know each other.



(13) *In addition*, there is a much bigger distance between city people than those who live at countryside.

b. **adversative** (used to signal conflict, concession, etc.)

(14) Life in the city can really be exciting, *but* also dangerous.

(15) *However*, life in the city garners many faults as well such as stress, security issues, isolation, and pollution - to name a few.

c. **casual** (used to signal cause/effect, reason/result, etc.)

(16) Having more job opportunities, and *therefore* more choice, means that one can be more satisfied with a job they choose.

(17) I agree that it would be easier in the city *because* I could walk or ride a bike to college.

d. **temporal** (used to signal a chronological or logical sequence or simultaneous events).

(18) *After* moving to the city and living in cities for more or less the last 10-ish years I have begun to see things with different eyes.

(19) Mentioning that life in the city is chaotic and very fast, by just doing things, achieving your goals *and, at the same time*, not taking time to breathe in all that is happening to you, you can quickly become alienated in the society.

Halliday and Hasan (1976: 242-243) have divided the semantic categories of connectors into exhaustive subcategories supplying them with examples (Table 1).

**Table 1.** *The division and subdivision of connectors by Halliday and Hasan (1976: 242-243)*

	External/internal	Internal (unless otherwise specified)		
Additive	Additive, simple	Complex, emphatic	Apposition	Comparison
	Additive <i>and, and also</i>	Additive <i>furthermore, in addition, besides</i>	Expository <i>that is, I mean, in other words</i>	Similar <i>likewise, similarly, in the same way</i>
	Negative <i>nor, and...nor</i>	Alternative <i>alternatively</i>		
	Alternative <i>or, or else</i>	Complex, de-emphatic:	Exemplificatory <i>for instance, thus</i>	Dissimilar <i>on the other hand, by contrast</i>

		After-thought <i>incidentally, by the way</i>		
Adversative	Adversative ‘proper’	Contrastive (external):	Correction:	Dismissal:
	Simple <i>yet, though, only, but</i>	Simple <i>but, and</i>	Of meaning <i>instead, rather, on the contrary</i>	Closed <i>in any case, in either case, whichever way it is</i>
	Containing ‘and’ <i>and yet, and though</i>	Emphatic <i>however, on the other hand, at the same time</i>		
	Emphatic <i>however, nevertheless, despite this</i>	Contrastive, avowal <i>in fact, actually, as a matter of fact</i>	Of wording <i>at least, rather, I mean</i>	Open-ended <i>in and case, anyhow, at any rate, however it is</i>
Causal	Causal, general:	Reversed causal:	Internal temporal:	‘Here and now’
	Simple <i>so, then, hence, therefore</i>	Simple <i>for, because</i>	Sequential <i>then, next, secondly</i>	Present <i>at this point, here</i>
				Past <i>up to now, hitherto</i>
	Emphatic <i>consequently, because of this</i>		Conclusive <i>finally, in conclusion</i>	Future <i>from now on, hence-forward</i>
	Causal, specific:	Causal, specific:	Correlative forms:	Summary:
Reason	Reason	Sequential	Summarizing	

	<i>for this reason, on account of this</i>	<i>it follows, on this basis</i>	<i>first...next</i>	<i>to sum up, in short, briefly</i>
	Result <i>as a result, in consequence</i>	Result <i>arising out of this</i>	Conclusive <i>...finally</i>	Resumptive <i>to resume, to return to the point</i>
	Purpose <i>for this purpose, with this in mid</i>	Purpose <i>to this end</i>		
Temporal	Temporal, simple (external only): Sequential <i>then, next, after that</i> Simultaneous <i>just then, at the same time</i> Preceding <i>previously, before that</i>	Complex (external only): Immediate <i>at once, thereupon</i> Interrupted <i>soon, after a time</i> Repetitive <i>next time, on another occasion</i>	Internal temporal: Sequential <i>then, next, secondly</i> Conclusive <i>finally, in conclusion</i>	‘Here and now’: Past <i>up to now, hitherto</i> Present <i>at this point, here</i> Future <i>from now one, henceforward</i>
	Conclusive: Simple <i>finally, at last</i>	Specific <i>next day, an hour later</i>	Correlative forms: Sequential <i>first...next</i> Conclusive <i>...finally</i>	Summary: Summarizing <i>to sum up, in short, briefly</i> Resumptive <i>to resume, to return to the point</i>
	Correlative forms: Sequential <i>first...then</i> Conclusive <i>at first...in the end</i>	Durative <i>meanwhile</i> Terminal <i>until then</i> Punctiliar <i>at this moment</i>		

Some linguists focus on the elements of the discourse structure and therefore label connectors as discourse markers. Logical connectors are, then, categorized according to their discourse functions, as illustrated by Burns and Smallwood (1990: 110-111 cited in Milton and Tsang, 1993: 232).

**Table 2.** *Categorization of logical connectors according to their discourse functions (Burns and Smallwood, 1990: 110-111 in Milton and Tsang, 1993: 232)*

Function	Discourse marker
Giving additional information	<i>besides, in addition, furthermore, moreover, also, as well as</i>
Showing contrast with preceding information	<i>however, yet/and yet, in spite of this, despite this, nevertheless, although/though</i>
Showing logical consequence	<i>therefore, so, thus, because (of)</i>
Generalizing	<i>on the whole, in general, as a rule, in most cases, in many cases, to some extent, mostly, usually</i>
Focusing attention on a topic	<i>regarding, as regards, as far as...is concerned, for</i>

All in all, the classification of conjunctives or logical connectors in a way that captures their multi-faceted meanings and functions in a piece of writing has been a central point of discussion in linguistics and discourse studies. Yet many scholars would agree upon the classification offered by Halliday and Hasan in their seminal work *Cohesion in English* (1976) into additive, adversative, causal and temporal conjunctives (Celce-Murcia and Larsen Freeman, 1983; Quirk et al. 1985; Hoey, 1991 etc.).

Conjunctions are typically classified according to their grammatical role as connectors, falling into three main categories: **coordinators** or coordinating conjunctions (*and, or, but*), **subordinators** or subordinating conjunctions (*before, because, although* etc.) and **conjunctive adjuncts** or linking adverbials (*meanwhile, moreover, therefore, however* etc.) (Biber et al. 1999; Quirk et al. 1985). Similarly, the coordinating and subordinating conjunctions are “sentence-level structural items marking logico-semantic relations between clauses”, whereas conjunctive adjuncts have “a discourse-level, text-building function” (Jones, 2010: 202).

### 1.5. Relevant studies on connectors

Studies on the usage of logical connectors in EFL classrooms have shown that the presence of logical connectors in a text does not necessarily improve it in terms of communicability and coherence (cf. Brown and Yule, 1983; Crewe et al. 1985; Hartnett, 1986; Mosenthal and Tierney, 1984; Milton and Tsang, 1993). Crewe et al. (1985) conducted a study in which they divided EFL

learners into two groups, whereby one group received a text with connectors, while the other received the same text without them. Both groups were able to logically comprehend the text. Additionally, an experiment carried out by van Peer (1989) and suggested by Brown and Yule (1983 in Tanskanen, 2006: 18), demonstrated that even if sentences within a text contain cohesive ties, scrambling their order can render the text incomprehensible to the reader.

Furthermore, learners tend to generally misuse or overuse certain connectors or a whole range of them. Learners add a cluster of conjunctives to the text that may point the argument in the wrong direction in the text, which, as a result, makes the argument illogical. Sometimes, the choice of an incorrect connector “distort[s] the intended message that readers are unable to reconstruct the clausal relationship the author/speaker is attempting to convey” (Crewe 1990: 217).

In a corpus-based study by Milton and Tsang (1993), Hong Kong students of the English language overused an entire range of logical connectors compared to native English speakers. Likewise, Field and Yip (1992) found that Cantonese EFL learners use far more connectors than the native English speakers. Granger and Tyson (1996: 19) found no overall overuse of the connectors by the French learners, but they overused exemplifying and emphasizing connectives “rather than those which change the direction of the argument or take the argument logically forward”. Altenberg and Tapper (1998) carried out research among Swedish students, which revealed that there was no general overuse of the connectors in their essay-writing. However, there was evidence of both overuse and underuse of individual connectors. Narita et al.’s (2004) research findings show that Japanese EFL learners overuse logical connectors in the sentence-initial position. Similarly, Pavičić Takač (2018) found that transition markers, among the most frequent ones being *on the other hand*, *but*, *also* are often found in the sentence-initial position in the discourse.

Additionally, EFL learners often misuse some of the connectors. Learners are more often than not unaware of the semantic relations that each of the connectors implies: “Although cohesive devices are visible signs of the relationships that they signal, they are at best only indicators of them. A cohesive device can mislead readers if it signals a relationship that is not intended or has multiple interpretations” (Hartnett, 1986: 143). Learners who are mostly exposed to “simplistic lists of interchangeable connectors” (Pavičić Takač et al. 2020: 185) during instruction in EFL classrooms, are more likely to misuse them. Pavičić Takač et al. (2020) researched English and German EFL texts, which revealed that the learners use the discourse markers erroneously and a limited variety of them with only one prototypical contrastive conjunctive *but*.

## 2. Coordination

Quirk (1985: 918-919) defines coordination as a syntactic configuration in which coordinated conjuncts, that is coordinated phrases or clauses, are in equal arrangement, and they have symmetrical structure meaning that conjunct A equals conjunct B. Coordinated conjuncts are of same importance and can be paraphrased as independent sentences (e.g., *Mary and John are painters.* = *Mary is a painter. John is a painter.*). Coordination and subordination differ in the syntactic arrangement of clauses known as parataxis ('equal arrangement') and hypotaxis ('underneath arrangement'). Subordinating clauses are not of equal grammatical importance, they are syntactically asymmetrical, and semantically "one of the parts is clearly more salient or important" than the other one (Haspelmath, 2004: 3). There is an 'underneath arrangement' in which the salient conjunct is the superordinate clause, while the one that is lower in the syntactic hierarchy is subordinate (e.g., *We went running, although it was raining*). The coordinated conjuncts are independent and can stand on their own as separate sentences, whereas in subordinating structure, the subordinate clause is dependent on the superordinate one and cannot retain meaning on its own.

The central coordinators are *and*, *or* and *but*, and they are representatives of three semantic types of coordination: conjunctive coordination, disjunction, and adversative coordination, respectively (Haspelmath, 2004: 5). Dik (1968: 258) claims that "coordinators indicate a certain relationship between semantic aspects of coordinated members, their semantic aspects are clearly dependent, i.e., they are semantic values." Coordinators *and*, *or* and *but*, are, therefore, semantically dependent on their coordinated members, that is, they do not carry semantic information themselves but realize meaning through them.

### 2.1. Coordinator *and*

The focus of the present study is the conjunctive coordinator *and*. Quirk et al. (1985: 930) claim that the coordinator *and* logically denotes that if the whole sentence is true, then each of the conjoined clauses is true. As already mentioned, *and*, similarly to other coordinators, does not convey meaning by itself, but by virtue of the coordinated clauses.

Traditionally, the coordinator *and* is assigned additive meaning in most textbooks and grammars. However, "the additive is a generalized semantic relation in the text-forming component of the semantic system, that is based on the logical notion of 'and'" (Halliday and Hasan, 1976: 234).

The coordinator *and*, however, does not only imply addition but many different semantic relationships. Dik (1968: 259) finds that “the familiar use of ‘and’ carries with it the temporal notion expressed by ‘and subsequently’ and even the casual notion expressed by ‘and in consequence’”. In addition, Pavičić Takač et al. (2020) observe that *and* can express contrast if it is followed by a conjunction *yet*: “*And* is a neutral coordinating conjunction, but can be used with adversative meaning ‘contrary to expectations’” (Bell, 1988: 520 cited in Pavičić Takač et al., 2020: 177). Similarly, Halliday and Hasan (1976: 237) corroborate that adversative meaning can be expressed by *and* in conjunction with another adverbial: “in addition to the meaning ‘adversative’, *but* contains within itself also the logical meaning of ‘and’, it is a sort of portmanteau, or shorthand form, of *and however*”. Essentially, the semantic relation expressed by *and* can be made more explicit by the addition of the adverbial that connotes the semantic relation implied between the constituents. However, there are certain limitations regarding the adverbial paraphrases of the connector *and*. As exemplified by Halliday and Hasan (1976: 237), *but* already contains ‘and’ in its meaning, which is “why we cannot say *and but*, although we can say *and yet*, *and so*, *and then*, etc.”. Also, Quirk et al. (1985: 922) support this argument by saying that coordinators *and*, *or*, *but*, *for* and *so that* do not allow another conjunction to precede them.

A detailed categorization of the various semantic relations of *and* is proposed by Quirk et al. (1985: 930-932), and it will serve as a framework for the corpus analysis in the present study. Quirk et al. (1985) have postulated eight connotations of meaning expressed by clauses coordinated by *and*. They have also offered paraphrases of the relations with explicit markers, as shown in Table 3. Most examples supplied in Table 3 come from my own corpus. Those semantic relations that were not represented in my corpus data are exemplified from the Quirk et al.’s (1985) work.

**Table 3.** *Eight types of semantic relations coordinated by ‘and’ according to Quirk et al. (1985)*

Semantic relation	Definition	Examples <sup>2</sup>
Consequence/result	The first conjoined clause entails circumstances, and the second clause is a consequence or result of the first.	“Furthermore, cities offer various job opportunities <i>and</i> there is a greater chance for success.” “Furthermore, cities offer various job opportunities

<sup>2</sup> Examples will be taken from the two research corpora, except for the condition, for which the example will be taken from Quirk et al. (1985), since the notion cannot be found in neither of the corpora.

		<i>and, therefore</i> , there is a greater chance for success.”
Temporality (Sequence, Simultaneity)	The clauses are in temporal relation, they can be either chronologically sequent or happening at the same time.	<p>“When you are bored, you just need to get out of your home <i>and</i> start exploring the city.”</p> <p>“When you are bored, you just need to get out of your home <i>and then</i> start exploring the city.” (sequential)</p> <p>“Not lounging <i>and</i> spending all day long sitting at their computers, gives them more time to enjoy life for what it is.”</p> <p>“Not lounging <i>and, at the same time</i>, spending all day long sitting at their computers, gives them more time to enjoy life for what it is.” (simultaneous)</p>
Contrast	The second clause introduces a contrast to the first clause.	<p>“In conclusion, some people are more keen on living in the city <i>and</i> some prefer the countryside.”</p> <p>“In conclusion, some people are more keen on living in the city <i>and, in contrast</i>, some prefer the countryside.”</p>



Concession	The first clause represents an idea or thought, and the second clause is surprising and contrastive in view of the first clause.	<p>“Many hours are lost because of the [traffic] <i>and</i> little can be done to prevent them.”</p> <p>“Many hours are lost because of the [traffic] <i>and yet</i> little can be done to prevent them.”</p>
Condition	The first clause is a directive, and the second clause is a consequence which ensues if the directive is not obeyed.	<p>“Give me some money <i>and</i> I’ll help you escape.”</p> <p>“If you give me some money, I will help you escape.”</p>
Similarity	The second clause conveys a meaning that is similar to that of the first clause.	<p>“In the present people always complain about living in the villages, <i>and</i> are claiming that life is better when you are living in the city.”</p> <p>“In the present people always complain about living in the villages, <i>and, similarly,</i> are claiming that life is better when you are living in the city.”</p>
Addition	The second clause adds information or extends the idea presented in the first clause.	<p>“You will never find yourself bored in the city, <i>and</i> there is always the opportunity for a new eye-opening experience.”</p>
Comment/Explanation	The second clause is a comment or an explanation of the first clause.	<p>“In my opinion the best advantage is that there is more diversity among</p>

	<p>The second clause can be paraphrased with a sentential relative clause.</p>	<p>people <i>and</i> that is why I would like to live in the city.”</p> <p>“In my opinion the best advantage is that there is more diversity among people, which is why I would like to live in the city.”</p> <p>(commentary)</p> <p>“Since around 8000 B.C., when people stopped being nomads <i>and</i> constantly moving from one location to another, many cities have been built as centers of life.”</p> <p>“Since around 8000 B.C., when people stopped being nomads, which means constantly moving from one location to another, many cities have been built as centers of life.”</p> <p>(explanatory)</p>
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### 3. The present study

The present study is part of a project titled *Local Coherence in Texts Written in First and Second Language: Contrastive Analysis of Connector Usage* conducted by the Center for Linguistic Research at the Faculty of Humanities and Social Sciences, Josip Juraj Strossmayer University in Osijek.

Although previous research has addressed the overuse and misuse of certain logical connectors, studies on central coordinators, especially on the coordinator *and* are notably lacking. To fill this gap, the present corpus-based study examines the use of the coordinator *and* in EFL learners' texts, comparing it to its use in native English-speaking texts.

#### 3.1. Aim and research questions

The present study aims to analyze the frequencies of the use of the coordinator *and*, as well as to examine and compare the semantic relations established between the clauses linked by this coordinator in a non-native (NNS) and native (NS) corpus of argumentative essays.

The research questions are:

1. What is the frequency of the coordinator *and* in the NNS and NS corpora?
2. What semantic relations does the coordinator *and* convey in the NNS and NS corpora?
3. What type of errors are observed in the use of *and* in the NNS and NS corpora?

Some hypotheses, based on the previous research among connectors and on the presuppositions about EFL's writing are:

- A) The connector *and* will be used significantly more frequently in the NNS corpus than in the NS corpus.
- B) Native speakers (NSs) will demonstrate a wider variety of uses for *and* in their essays compared to non-native speakers (NNSs).
- C) NNSs are expected to use *and* erroneously to some extent, unlike NSs.

The assumption that errors should be found in the NNS corpus is based on the premise that NNS are more likely to produce errors in the usage of *and* by connecting ideas or clauses that logically do not relate and fail to accurately reflect the intended semantic relation in appropriate contexts. Also, their errors might reflect transfer from their first language (L1), where coordination may be structured differently. As a result, NNSs may misuse *and* to connect clauses that are semantically mismatched or not contextually appropriate.

## 3.2. Methodology

### 3.2.1. Corpora of written texts

The present study is conducted on the NNS and NS argumentative essays compiled in 2022 within the project *Local Coherence in Texts Written in First and Second Language: Contrastive Analysis of Connector Usage*. The essays in the NNS corpus were written by undergraduate students of the English Language and Literature at the Faculty of Humanities and Social Sciences in Osijek, whose proficiency level of English is at the B2 level (CEFR 2001). The essays in the NS corpus were written by English native speaker students.

The topic of the essay *Life in the city* was the same for both groups of students. Their task was to compare the lifestyle in the city with the lifestyle in the village in 200-230 words. The students needed to present their arguments for and against the two views and give their opinion on the topic. The NNS students wrote their essays as an assignment in class, without any help from resources like the Internet, dictionaries, grammar checkers, peer help or any other external source.

The NNS corpus consists of 80 argumentative essays, and contains 21,895 tokens, while the NS corpus consists of 29 essays and contains 7,640 tokens. Despite the significant difference in size between the two corpora, the comparison will still be conducted, and the conclusions will be drawn.

### 3.2.2. Procedure

The study begins with data extraction from both corpora. A computer search within a *Word* document identified all the instances of the coordinator *and*, after which clausal coordinated structures were manually selected from the initial set of relevant data. The focus on clausal structures was chosen because semantic relationships are most clearly observed between clauses forming multiple sentences (as highlighted in Quirk et al., 1985). Additionally, the coordination of nominal, adjectival, and other phrases is generally self-explanatory, since the predominant semantic relation involved is that of addition. More complex meanings, however, cannot be expressed through these simpler structures.

Next, relevant instances of *and* were sorted into the semantic categories proposed by Quirk et al. 1985 (see Table 3). Quirk et al.'s (1985) classification was adopted as the framework for the present study because it comprehensively includes all possible connotations that the coordinator *and* could establish, as well as the various nuances of meaning (such as distinguishing between

the temporal sequential and simultaneous connotations, and explanatory and commentary relations, as outlined in Table 3).

Following a thorough analysis, an additional category, “uninterpretable”, was added to Quirk et al.'s (1985) classification. This category encompasses examples where no clear semantic relation from the existing classification could be identified. It includes cases with distorted meanings and unclear cohesive relationships. However, syntactically awkward sentences with problematic vocabulary, grammar or typographical errors were excluded from this category.

For each category, raw frequencies and relative frequencies were calculated, along with the log-likelihood (LL), which was determined using the calculator available at <https://ucrel.lancs.ac.uk/llwizard.html>. Raw frequency, also known as absolute frequency (*f*), refers to the count of occurrences of *and* in the text, while relative frequency (*rf*) represents the proportion of occurrences of *and* relative to the number of tokens in the text (i.e., tokens per 1000 words). Log-likelihood, a probability statistic which compares the frequency of occurrence of words in two corpora, was used to measure the significance of differences in the usage of *and* between the two corpora.

### 3.3. Results

To answer the first research question, raw and relative frequencies of the coordinator *and* were calculated for the NNS and NS corpus (see Table 4).

**Table 4.** *The comparison of raw and relative frequency of the coordinator and in NNS and NS corpora and the log-likelihood*

corpus	frequency	relative frequency (per 1000)	LL
NNS	240	10.96	3.84
NS	64	8.38	

The coordinator *and* appeared 240 times in the NNS corpus compared to 64 times in the NS corpus. Additionally, the relative frequency of *and* in the NNS corpus is 10.96 per 1000 words, which is higher compared to the relative frequency of 8.38 per 1000 words in the NS corpus. Generally, this shows that the connector *and* is used more frequently relative to the total word count in the NNS corpus.

To assess whether the difference in the usage of coordinator *and* between the two corpora was statistically significant, the log-likelihood test was applied (see Appendix 1). A log-likelihood value of 3.84 corresponds to a p-level of less than 0.05, indicating that the difference is statistically significant. This suggests there is less than a 5% probability that the observed difference is due to chance, providing 95% confidence that the results reflect a meaningful distinction (see Appendix 2).

To summarize, *and* is used significantly more frequently in the NNS corpus compared to the NS corpus, both in absolute and relative terms, which confirms the first hypothesis. The statistical analysis, supported by a log-likelihood value of 3.84, confirms that this difference is not due to chance but is a meaningful distinction. Therefore, NNS students rely more heavily on the connector *and* for linking clauses compared to NS students, suggesting an overuse of *and* in clausal structures by non-native speakers.

Next, the raw and relative frequencies of the different uses of the coordinator *and* were calculated based on Quirk et al.'s (1985) classification (see Table 5). The instances of *and* that could not be classified into either of the categories, were classified as “uninterpretable”.

**Table 5.** *The raw and relative frequencies of different uses of the coordinator and according to Quirk et al.'s (1985) classification and the log-likelihood*

The semantic relations of <i>and</i>	NNS corpus		NS corpus		LL
	f	rf (per 1000)	f	rf (per 1000)	
<b>1) consequence/result</b>	67	3.06	18	2.36	1.02
<b>2) temporal</b>	16	0.73	5	0.65	0.05
a. temporal sequential	9	0.41	4	0.52	0.16
b. temporal simultaneous	7	0.32	1	0.13	0.87
<b>3) contrastive</b>	10	0.46	3	0.39	0.05
<b>4) concessive</b>	2	0.09	-	-	-
<b>5) conditional</b>	-	-	-	-	-
<b>6) similarity</b>	1	0.05	-	-	-
<b>7) additive</b>	119	5.43	34	4.45	1.10
<b>8) comment/explanation</b>	24	1.10	3	0.39	3.64
a. commentary	11	0.50	2	0.26	0.83
b. explanatory	13	0.59	1	0.13	3.28

<b>9) uninterpretable</b>	1	0.05	1	0.13	0.53
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As shown in table 5, the additive semantic relation of *and* appeared 119 in the NNS corpus and 34 times in the NS corpus. The results suggest that both NNS and NS students use the additive semantic relation of *and* most frequently. In terms of relative frequency, the additive usage of *and* in the NNS corpus is 5.43 per 1.000 words, compared to 4.45 per 1.000 words in the NS corpus. The compared relative frequencies indicate that NNS students use *and* as an additive relation more frequently than NS students. However, the log-likelihood value of 1.10 does not show a statistically significant difference in the additive usage of *and* between the two corpora.

Secondly, the consequence/result relation of *and* is the second most frequent category in both corpora. In the NNS corpus, *and* appeared 67 times with a relative frequency of 3.06 per 1.000 words, compared to 18 times with the relative frequency of 2.36 per 1.000 words. These results suggest that NNS students use *and* to indicate consequence or result more frequently than NS students. However, the log-likelihood between both occurrences is 1.05, which does not indicate a statistically significant difference between the two groups in their usage of *and* for expressing consequence or result.

Thirdly, in the NNS corpus, the third most frequent category was commentary or explanatory as it occurred 24 times in the corpus, with a relative frequency of 1.10 per 1.000 words, while in the NS corpus it occurred only 3 times with a relative frequency of 0.39 per 1.000 words. The results imply that the NNS students use the commentary or explanatory relation of *and* more frequently than the NS students. Nevertheless, the log-likelihood value of 3.64, while indicating overuse in the NNS corpus compared to the NS corpus, does not indicate a statistically significant difference as the critical threshold value of 3.84 was not reached (see Appendix 2).

The instance of conditional connotation implied by the coordinator *and* is not found in either of the corpora. Surprisingly enough, there is no instance of the concessive and similar connotation of *and* in the NS corpus, whereas there are relative frequencies of 0.09 and 0.05, respectively, in the NNS corpus. This refutes the hypothesis that the NS students would demonstrate a wider variety of uses of *and* in their essays. The NNS students relied more readily on the coordinator *and* to convey complex semantic relations like similarity and concession. While this may suggest that NNSs are more flexible in using *and*, it must be added that the relative frequency of the more complex semantic relations in the NNS corpus is not considerably high – 0.09 for concessive and

0.05 for similarity relations. Also, it remains uncertain whether this flexibility is beneficial for the NNSs' essay writing (see further below).

As for the temporal relation of *and*, there were 16 instances of it in the NNS corpus, whereas there were 5 instances in the NS corpus. The log-likelihood value of 0.05 confirmed no significant differences in the use of the coordinator *and*, with relative frequencies of 0.73 in the NNS corpus and 0.65 in the NS corpus. Similarly, the contrastive relation of *and* appeared 10 times in the NNS corpus and 3 times in the NS corpus, showing comparable relative frequencies of 0.46 in the NNS corpus and 0.39 in the NS corpus, with no statistical significance indicated, as the log-likelihood was also 0.05.

Lastly, there were two instances of “uninterpretable” uses of *and* in both corpora, as they could not be classified under any of the remaining categories. This finding disproves the hypothesis that NNSs would exhibit a higher frequency of errors compared to the NS. The fact that both corpora contained an equal number of such instances suggests that difficulties with the use of *and* are not restricted to NNSs. In both subcorpora, the errors were categorized as “uninterpretable” because the conjunction *and* failed to accurately express the intended meaning, therefore leading to ambiguity or confusion in meaning. The erroneous examples will be exemplified in the following chapter.

### 3.4. Discussion

The aim of the present study was to analyze the different semantic relations established between clauses linked with the coordinator *and* and compare their frequencies in NNS' and NS' texts.

To address the first research question, frequencies of the coordinator *and* in the NNS and NS corpora were calculated. The relative frequencies of *and* and the log-likelihood value (see Table 4) show that there is some overuse of the coordinator *and* in the NNS corpus compared to the NS corpus. These results could imply that the NNS students rely more on the coordinator *and* to convey more complex different semantic relations than on the more specialized connectors that could have been used instead (e.g., the coordinating conjunction *but* could be used to express contrast or the subordinating *although* could be used to express concession). It is quite plausible that this finding suggests an avoidance strategy on the part of NNSs due to potentially insufficient command of the specialized connectors. Instead, they rely on the semantically vague but contextually versatile coordinator *and* to service these more complex functions. Since this cannot



be proved within the limits of the present study, this presents itself as a plausible question to address in future studies.

According to the analysis of relative frequencies of the sematic relations of *and* based on Quirk et al.'s (1985) classification (see Table 3), the most frequently used semantic relations indicated by the coordinator *and* were additive and consequence or result (see Table 5). The additive relation, being the most frequent category in both corpora, plays a crucial role in argumentative essay writing as "it links a series of points all contributing to one general argument" (Halliday & Hasan, 1976: 236). Halliday and Hasan (1976) refer to this role of the coordinator *and* as retrospective.

(20) The reason why people prefer life in the city is because there are many possibilities there, such as more opportunities for various jobs, and colleges, more places to visit *and* to spend time with people, *and* more ways to spend your free time. (NNS corpus)

(21) Though survival skills in the city are different from nature, it takes grit and resilience to combat city life *and* learn what one need to "succeed" in their version of urban life. (NS corpus)

The consequence/result relation in turn is used to strengthen students' arguments and thus improve the coherence and cohesion of the text:

(22) The larger the city, the crowded it is, *and* harder it is to get from point „A“ to point „B“. (NNS corpus)

(23) Overall, the benefits to living in a city are endless *and* bring about new opportunities for individuals to grow both in their career and personal life. (NS corpus)

Interestingly, NNS learners showcase substantially more commentary and explanatory uses of *and* in their essay writing. However, this does not always improve the comprehensibility and conciseness of the text, as can be seen from the examples taken from the NNS corpus below:

(24) Cities are loud and crowded *and* some people just don't like that.

(25) I agree that it would be easier in the city because I could walk or ride a bike to college but I take public transport *and* that is fine with me.

(26) It's a rule *and* it's well known.

Neither corpus featured any instances of conditional interpretations of clauses coordinated by *and*. While this finding deserves more attention in the future, a cursory look at illustrative examples from the literature (e.g., Quirk et al. 1985: 931) suggests that one possible explanation might be the highly colloquial nature of such instances, which are more characteristic of spoken interactive

discourse than of formal writing, such as essay writing. They usually express promises or threats. The examples from Quirk et al. (1985: 931) illustrate this:

- (27) Give me some money *and (then)* I'll help you escape.  
(28) Let's give him some money *and (then)* he won't tell anybody what we did.

Another difference between the corpora is that the NNS corpus contained instances of concessive and similarity relationships, whereas they do not appear in the NS corpus. This finding refutes the hypothesis that the NS students would demonstrate a wider variety of uses of *and* in their essays. However, to be able to draw precise conclusions, it is essential to consider other cohesive devices that express similar semantic relationship (e.g., specialized subordinators for expressing concession like *although, even though, despite* and condition *if, whether*). NNS students may rely on the "safer option" of using the coordinator *and* to convey various connotations, hoping that their extralinguistic knowledge will compensate for gaps in their grammatical knowledge. As mentioned earlier, the overuse of the coordinator *and* and its deployment for a variety of semantic relationships may indicate weaknesses in writing, and warrant further research.

In both corpora, there are examples of emphatic coordinators *and* with another adverbial that makes the semantic relations between the clauses explicit. This shows that NNS and NS students are aware of the semantic relations they intend to express in certain sentences.

- (29) Life in the city indeed serves its purpose, every aspect of life is connected *and thus*, more opportunities are opened for the individual citizen. (consequence/result)  
(30) Firstly, many cities are over-populated which leads to pollution because citizen produce trash and many travel to work by car *and in that way* pollute the environment. (consequence/result)  
(31) This creates a lot of nervous drivers and *thus is the reason* for frequent accidents. (consequence/result)  
(32) The other disadvantage is that in the city the number of crime is increasing *and that is* a fact that concerns a lot of people. (commentary)  
(33) I lived in a small town most of my life *and later* I moved into a small village, so I can safely say I prefer smaller towns. (temporal sequential)  
(34) Secondly, you can always meet new people in the city *and also* there are many job opportunities. (additive)

Also, both NNS and NS students showcase similar frequencies of the temporal usage of *and* differentiating the sequential and the simultaneous notion, which resulted in two subcategories of

chronological sequence and simultaneity. Quirk et al. (1985: 931) proposes that two clauses can be linked by *and then* connotating sequence of events, or they can be linked by *and, at the same time* connotating simultaneous events. This is relevant to the EFL argumentative writing because the ability to express temporal relationships helps students to convey the proper sequence of events or simultaneous actions and it enhances the coherence of the text by logically connecting ideas/propositions in relation to their locatedness in time:

(35) People have the land for farming and the ability to produce *and* [then] consume organic products. (temporal sequence)

(36) In today's time, more and more people move to big cities *and* [at the same time] leave smaller towns or villages. (temporal simultaneity)

Another remark concerns the use of *and* in the sentence-initial position. Halliday and Hasan address this usage by stating: "...this is why we feel a little uncomfortable at finding a sentence in written English beginning with *And*, [...]. However it is a fact that the word *and* is used cohesively, to link one sentence to another, ..." (1976: 233).

Therefore, the use of *and* in the sentence-initial position is not claimed to be erroneous, it is just that stylistically it is a poor choice, when the students can present the additive meaning through many other different additive connectors whose sentence-initial appearance is not seen as marginal (e.g. *in addition, also*). The following examples are supplied from both corpora:

(37) *And* people would say that people in smaller communities are more friendly.

(38) Animal lovers may not be able to have any pets. *And* it's hard for the pet too.

(39) *And*, everyone has an opinion on the city in general.

(40) *And* not to forget one of the most important aspects of living in the city, its inhabitants.

The third hypothesis regarding the errors made in both corpora is disproved, since not many errors regarding the usage of coordinator *and* were found in both corpora. The following two examples were labeled as "uninterpretable" because they fail to convey the intended meaning clearly, thereby undermining the coherence of the text:

(41) It is a fact that more densely populated regions are peaceful to live in *and* are more polluted. (NNS corpus)

(42) Traffic are a common thing in big cities such as New York *and* in which also slows down public transport such as trams and buses. (NS corpus)

In example (40), the conjunction *and* is used to link two contrasting ideas – peaceful living conditions and pollution – yet the sentence lacks clarity due to the juxtaposition of these opposing propositions. This ambiguity can confuse readers about the writer's actual point: “readers are unable to reconstruct the clausal relationship the author/speaker is attempting to convey” (Crewe 1990: 217). In example (41), the relative pronoun phrase *in which* is erroneously introduced after the coordinator *and*, resulting in a grammatically awkward construction which not only disrupts the flow of the sentence, but also fails to convey the intended meaning.

## 4. Conclusion

### 4.1. General conclusive remarks

In EFL essay writing, the correct and effective use of cohesive devices is of extreme importance to the contribution of the texts' coherence: "learning when not to use them is as important as learning when to do so" (Granger & Tyson, 1996:25). The present study's focus is the connector *and*, which can establish a multitude of semantic relations other than the additive one (Table 3). The present study's aim was to examine the frequencies and the different semantic relations between clauses coordinated by the coordinator *and* in the NNS and NS corpora (Table 5).

In both corpora, the most frequently conveyed meaning of *and* was the additive meaning. Similarly, the second highest frequency of *and* is the consequence or result relation in both corpora. Students employ this relation in argumentative essay writing so that they can convey the cause-result relations between their arguments, moving the logical connections forward and creating 'cohesive harmony' (Hasan, 1984) in their texts. Similarly, both corpora showcase similar relative frequencies of temporal and contrastive relations of *and* presenting that both NNS and NS students can indicate logical sequencing and simultaneous relations between clauses and show contrasting relations. These skills are useful in EFL essay writing because learners should know how to clarify the timeline of the events or points in the argument and how to cohesively oppose different views on some matter. Furthermore, no relation of condition expressed by *and* is found in the corpora, and it was suggested that a possible explanation might lie in the informal, interactive quality of such conditionally interpreted *and* sentences. Both NNS and NS learners employed the emphatic use of the coordinator *and* making the semantic relationship explicit by addition of a non-coordinative adverb (e.g., *and thus*, *and also*, *and then* etc.). Also, the coordinator *and* was found in the sentence-initial position in both corpora highlighting the marginal and informal use of the coordinator, and not opting for a more "acceptable" one (e.g. *in addition*, *also*). There were only two cases that were sorted as "uninterpretable", marking the uncomprehensible meaning coordinated by *and* between the clauses. However, grammatical, lexical and typographical errors were not included in this category. It has been successfully refuted that NNS learners would exhibit a substantial amount of errors in their usage of *and*.

What differentiates the two corpora is the statistically significant overuse of *and* in the NNS corpus compared to the NS corpus. Additionally, NNS learners use *and* to express concessive and similarity relationships, which were not found in the NS corpus. They also demonstrate a more

frequent usage of the commentary or explanatory *and* in their essays. To conclude, these findings suggest that NNS learners may rely on *and* to express broader, non-specialized semantic relationships, instead of utilizing more specific cohesive devices that convey the same meanings. Further research should compare the use of different cohesive devices that indicate the same relation in the corpora.

#### 4.2. Pedagogical implications

The issue underpinning the problem of the usage of all sorts of coordinators, including the coordinator *and*, is that “learners should not be presented with lists of ‘interchangeable’ connectors but instead taught the semantic, stylistic and syntactic behavior of individual connectors, using authentic texts” (Granger and Tyson, 1996: 17). Learners are often presented with very limited sets of cohesive devices categorized according to function, without considering that there may be more than one function or meaning implied by a certain cohesive device. Comprehensive essay writing and the correct usage of the coordinators can be “a threefold problem” for the non-native undergraduate students: they can have “opaque and abstract meaning, multiple pragmatic uses, and hidden nuances of meaning” (Crewe, 1990: 325). However, both NNS and NS undergraduate students may benefit from additional instruction or practice in effectively integrating and articulating these intricate cohesive ties in their writing.

Students should adopt the deductionist approach recommended by Crewe to enhance their essay organization and logical argument development. This method emphasizes clarifying the logical relationships within the text and should be introduced as part of essay writing preparation. It involves familiarizing students with a more advanced set of connectives categorized by their discourse functions, such as illustrating, enumerating, comparing, indicating consequences, rephrasing, and concluding (Crewe, 1990: 323). Students should analyze the logical connections between the stages of the argument that they have written as their draft and continue by creating cohesive ties between the arguments.

Instruction in the EFL classroom should focus more on coordination in general, as well as different uses of *and*. Appropriate texts should be supplied in which various semantic relations of *and* are present and analyzed. Additionally, analysis of various EFL corpora can be a useful source of correct and incorrect uses of the coordinator *and*: “Analysis of the corpus will provide a rule-base more relevant to strategies and tendencies of learners than the generalizations attempted by

[existing] grammar checkers” (Milton and Tsang, 1993: 220). Learners can, also, differentiate the relations by addition of non-coordinative words, like adverbials to their texts making the connections more explicit.

#### 4.3. Limitations of the study

The present study is limited by the smaller size of the NS corpus compared to the NNS corpus. To draw more generalized conclusions, a larger NS corpus should be analyzed, encompassing all semantic relations from the classification of *and* (Table 3). A larger corpus would also allow for a broader examination of errors and 'uninterpretable' uses of *and*, potentially leading to more insightful findings.

Additionally, the analysis did not account for other cohesive devices that express the same semantic relations, which could yield more precise insights (e.g., concessive relations can be expressed with the coordinator *and* or subordinator *although*). Furthermore, detailed analysis of different cohesive devices that express the same semantic relations could also provide insights into the register used, whether formal or informal.

#### 4.4. Future research

Future research might be done as a comparison of a NNS corpus with a larger NS corpus, to get even more precise results of the different uses of *and* and the erroneous use of *and*. Also, future research could be done as a comparison of different cohesive devices that show the same semantic relationship in sentences.

Additionally, a corpus of English essays of NNS learners could be compared to the essays of the same topic in L1, that is, the Croatian language to show how one language impacts the use of the coordinator *and* in the other, and in what semantic relations it appears in both corpora.

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## 6. Appendices

### Appendix 1. Log-likelihood calculator results

**Log-likelihood calculator results**

Key:  
O1 is observed frequency in Corpus 1  
O2 is observed frequency in Corpus 2  
%1 and %2 values show relative frequencies in the texts.  
+ indicates overuse in O1 relative to O2.  
- indicates underuse in O1 relative to O2

Item	O1	%1	O2	%2	LL	%DIFF	Bayes	ELL	RRisk	LogRatio	OddsRatio
Word	240	1.10	64	0.84 +	3.84	30.85	-6.45	0.00003	1.31	0.39	1.31

### Appendix 2. The statistical critical values for log-likelihood

The statistical difference values:

95th percentile; 5% level;  $p < 0.05$ ; critical value = 3.84.

99th percentile; 1% level;  $p < 0.01$ ; critical value = 6.63.

99.9th percentile; 0.1% level;  $p < 0.001$ ; critical value = 10.83.

99.99th percentile; 0.01% level;  $p < 0.0001$ ; critical value = 15.13.