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TRABAJO DE TITULACIÓN

**“THE PROCESSING OF AMBIGUOUS SENTENCES OF FIRST AND SECOND
LANGUAGE LEARNERS OF SPANISH”**

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DEDICATION

Dedico este trabajo a mi familia, profesores y amigos que me apoyaron durante todo el trayecto. Sin ustedes no podría haber llegado tan lejos.

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Agradezco a todos los que caminaron conmigo estos cuatro años.

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ABSTRACT

This paper presents a comparative analysis of the processing of ambiguous sentences between Spanish monolinguals and second language learners of Spanish. The study aims to investigate how language background influences the resolution of syntactic ambiguity and the strategies employed by these two groups in sentence comprehension. A quantitative method was employed, comprising the data analysis of participants' responses. The research sample consisted of 20 participants, including 10 Spanish monolinguals and 10 second language learners of Spanish. Participants were presented with a set of carefully constructed ambiguous sentences, and their comprehension and interpretation were assessed through a questionnaire that consisted of 10 sentences. The findings of the study revealed notable differences in the processing patterns between the two groups. Spanish monolinguals overall do not show a strong preference for either of the possible nouns when faced with ambiguous sentences, with only one exception noted. In contrast, second language learners presented a strong preference for either the first or second noun that appears in the main clause to resolve the ambiguity.

Keywords: ambiguous sentences, syntactic ambiguity, parser, second language acquisition.

RESUMEN

Este trabajo presenta un análisis comparativo del procesamiento de oraciones ambiguas entre monolingües de español y estudiantes de español como segunda lengua. El estudio tiene como objetivo investigar cómo la lengua materna influye en la resolución de la ambigüedad sintáctica y las estrategias empleadas por estos dos grupos en la comprensión de estas oraciones. Se empleó un método cuantitativo, que comprende el

análisis de datos de las respuestas de los participantes. La muestra de la investigación consistió en 20 participantes, incluidos 10 monolingües de español y 10 estudiantes de español como segunda lengua. A los participantes se les presentó un conjunto de oraciones ambiguas cuidadosamente construidas, y su comprensión e interpretación se evaluaron a través de un cuestionario que constaba de 10 oraciones. Los hallazgos del estudio revelaron diferencias notables en los patrones de procesamiento entre los dos grupos. Los monolingües de español en general no muestran una fuerte preferencia por ninguno de los posibles sustantivos cuando se enfrentan a oraciones ambiguas, con una sola excepción. Por el contrario, los estudiantes de español como segunda lengua presentaron una fuerte preferencia por el primer o el segundo sustantivo para resolver la ambigüedad.

Palabras clave: oraciones ambiguas, ambigüedad sintáctica, analizador sintáctico, adquisición de una segunda lengua.

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1. INTRODUCTION

Effective communication is crucial in any verbal interaction. However, we sometimes come across sentences that can be interpreted in different ways, leading to ambiguity. These types of sentences can be found in any language and they can be interpreted taking into consideration the context they are said in, or by asking for clarification. According to MacDonald et al., (1994), “Languages are structured at multiple levels simultaneously including lexical, phonological, morphological, syntactic, and text or discourse levels.” This also means that ambiguity can arise in many levels. The study carried out in this paper will only be centered around the ambiguity that forms in a syntactic level.

This study centers around the comparison between the way monolingual speakers process syntactic ambiguity and the way second language learners of the language process the exact same sentences. This comparison aims to contribute to the study of the parser in psycholinguistics and the influence of the speaker’s language background in the processing of their non-native language. By conducting a comparative analysis, this study aims to identify potential similarities or differences in the processing mechanisms employed by these two groups.

It is important to mention that each language has its own grammatical structure which shapes how their speaker of each language convey meaning by constructing utterances. English and Spanish are languages that belong to different linguistic families, Germanic and Romance respectively, which contributes to the differences in lexicon, syntax, phonology, etc. Taking this into consideration, it is natural for these languages to present ambiguity in similar and different ways. For example, Spanish is a null subject language, which means that speakers can omit the use of a subject as the

verb can carry the information needed to interpret the subject without specifically mentioning it. On the other hand English requires explicit subject pronouns in sentences, even when the subject is clear from the context. This paper will explore the role of the null subject in ambiguous sentences. However, even if there are these differences, we can also find similarities in the topic of ambiguous sentences. As stated previously, this study centers around syntactic ambiguity and, on this scope, English and Spanish have a very similar structure which means that we can convey the same ambiguity in both languages. Consider sentence 1 and sentence 2. In these examples taken from Warren (2013, p. 172) we can appreciate the same ambiguity translated in both languages.

(1) *El periodista entrevistó a la hija del coronel que tuvo el accidente.*

(2) The journalist interviewed the daughter of the colonel who had the accident.

The ambiguity of these sentences lies on whether the relative clause is attached to the subject of the sentence (NP1), or the object (NP2). Considering these crosslinguistic differences, this study focuses on finding if there are differences between the ways in which structural ambiguities are resolved which would indicate that some parsing strategies are language-specific rather than universal, which means that these strategies would have to be acquired through experience (Felser et al., 2003, p. 455).

Language plays a central role in human communication and understanding, and improving our understanding of how individuals navigate ambiguity can have positive impacts on various social aspects. Personally, I have always been interested in the way the brain processes language. I also have always had an interest in the different ways to process sentences depending on the languages we speak, or if it is different at all. By doing this research I will be able to gain some knowledge about the different ways people process sentences depending on their language knowledge.

2. OBJECTIVES

General objective: To compare the resolution of syntactic ambiguities in Spanish between Spanish native speakers and English native speakers who are proficient in Spanish.

Specific objectives:

1. Create sentences in Spanish that include syntactic ambiguities and present them to both Spanish native speakers and English native speakers who have a high level of proficiency in Spanish.
2. Gather participants' interpretations of the sentences and classify the results based on the different interpretations observed.
3. Analyze the collected data to identify potential differences in the resolution strategies employed by Spanish native speakers and English native speakers who are proficient in Spanish.

3. LITERATURE REVIEW

The purpose of this paper is to investigate and compare how Spanish monolinguals and second language learners of Spanish process ambiguous sentences. The study aims to see which factors influence ambiguity resolution in sentence comprehension. Before doing this analysis, it is important to take a look at other research that have been done on this topic.

3.1 REFERENTIAL FRAMEWORK

There have been various articles and investigation regarding the processing of sentences taking into consideration ambiguous sentences. One of them is the study titled “The processing of ambiguous sentences by first and second language learners of English” made by Claudia Felser, Leah Roberts, Theodore Marinis, and Rebecca Gross

(2003), which this investigation is heavily inspired on. In this study, they conducted a series of experiments focusing on the comparison of the processing of ambiguous sentences between adults L2 learners of English that had either Greek or German as their L1 and children L1 English speakers. The first experiment consisted on presenting a 40 ambiguous sentence questionnaire to 28 advanced German-speaking learners of English and asked them to determine most appropriate interpretation resolving the ambiguity. The result showed a preference for the NP2. On their second experiment, they presented non-ambiguous variants of the same sentences to the same participants, however they had to read the sentence segment by segment as quickly as possible, followed up by a comprehension question. The third and fourth experiments were exactly the same as experiments 1 and 2, but with 39 Greek-speaking learners of English. They obtained very similar results as the first experiment. After obtaining the results, they concluded that adults were influenced by the lexical and semantic properties of the link between the relative clause and the main NP while the children relied in structure-based parsing principles without taking the prepositions into consideration. They concluded that neither of the groups showed any attachment preferences for sentences involving complex genitive antecedents in either the questionnaire or the self-paced reading tasks. However, in both tasks, the L2 learners by displaying a clear preference for NP2 disambiguation when dealing with noun phrases connected by the preposition "with."

Another experiment that has been made regarding ambiguous sentences was carried out by Dussias and Sagara (2007). In their research, they analyzed with an eye-tracker how the exposure to a L2 influences sentence parsing in L1. They selected 44 monolingual Spanish speakers, 24 proficient Spanish-English bilinguals with limited immersion and 20 proficient Spanish-English bilinguals with extensive immersion. The

participants had to read constructions in Spanish where there was an ambiguity of attachment of the relative clause. The results showed that Spanish monolinguals and Spanish–English bilinguals with limited exposure attached the RC to the first noun, while Spanish–English bilinguals with extensive exposure did it to the second noun.

A study that is worth mentioning is the one carried out by Felser, Marinis, and Clahsen (2003), titled “Children's Processing of Ambiguous Sentences: A Study of Relative Clause Attachment”. In this study, the authors focused on the comparison between children and adults in the way they resolved relative clause attachment. They selected 29 English monolingual children from the ages of six to seven years old and 37 adults that were English native speakers. All of the participants were presented with an auditory questionnaire through headphones, which was self-paced. The results showed that adults were influenced by the type of preposition used to connect the two potential antecedent noun phrases. Meanwhile, children were found to vary based on their listening span. Children with a higher listening span preferred NP1 attachment regardless of the preposition used. In contrast, children with a lower listening span generally leaned towards NP2 disambiguation.

Finally, there has also been studies that take into consideration syntactic ambiguity in different languages in the translation field. This study carried out by Ruíz and Macizo Soria, (2021) titled “Ambiguous Sentence Processing in Translation”, “explore the possible online co-activation of both the target language (TL) syntactic structure representation and TL attachment strategies in translation.” (Felser, Roberts, et al., 2003). The participants of this study consisted of 24 Spanish-English bilinguals participated in the experiment. They were all presented 60 experimental sentences in Spanish, which they had to read out loud and then translate them to English and then answer a reading comprehension question where they had to solve the ambiguity. The

results gathered from this experiment showed that participants interpreted the ambiguous sentences accordingly to the TL strategy, participants read congruent sentences faster than the incongruent ones.

3.2 THEORETICAL FRAMEWORK

For this investigation, there are some concepts and theories that are going to be very important for the development of the strategies used and the analysis of the data collected.

3.2.1 Psycholinguistics

According to Crystal's "A dictionary of linguistics and phonetics", psycholinguistics is defined as "a branch of linguistics which studies the correlation between linguistic behaviour and the psychological processes thought to underlie that behaviour." This author states that there are two different approaches to this discipline, which are using language to understand psychological processes as in how it affects the memory, perception and learning. On the other hand, there is also the approach that takes into consideration the effects of psychological factors in language use. There are some examples like the role of memory in speech production. Psycholinguistics'' studies rely on experimental tasks to understand the mental processes that go into language processes like planning, production, perception and comprehension of any verbal utterance (Crystal, 2011).

This branch of linguistics is multidisciplinary as it involves the relation of linguistics and psychology and the processes that affect both of these scopes. Warren, (2013), presents a series of issues that have to do with psycholinguistics and everything that is related to the representation of language in the human mind. Some of the interrogants have to do with the way words are stored in the lexicon, how we recognize

words and sounds, how is meaning represented in memory, how plural is represented in the lexicon, how ideas are converted into utterances, among others. For this specific study, the focus is in the way human minds interpret sentences and the processes involved in language comprehension.

3.2.1.1 Language Comprehension

There are two perspectives in language and each one involves the same processes approached in a different way. Warren (2013) proposes the perspective of the producer, which is the one in charge of message production and the planning of the sentence structure and word selection. On the other hand, we have the comprehender's viewpoint or perspective which is the listener or reader of the utterance, in other words, is the receiver of the message. The processes involved in the two perspectives have been presented by Warren (2013), in the form of a chart (Figure 1).

Figure 1.

An outline sketch of language use.

Processes	Production		Comprehension
Central	Intention	Message	Interpretation
	Planning	Sentence structure	Parsing
	Lexicalization	Words	Word recognition
Peripheral	Articulation	Sounds/letters	Perception

Note. This table was produced by Warren (2013), to summarize the processes involved in the production and comprehension of language. From "Introducing Psycholinguistics" by Warren, 2013, Cambridge University Press, p. 5. Copyright 2013 by Cambridge University Press.

The comprehension of an utterance involves the "bottom-up" flow of information (Warren, 2013). This means that the listener or reader start perceiving the sounds or letters, then there is a process of word recognition where the lexicon is involved, then we have the involvement of the parser to help identify the syntactical

structure of the sentences and, finally, there is the interpretation of the message conveyed by the producer.

3.2.2 Syntax

Syntax is a branch of linguistics. According to Crystal (2011), this area of linguistic consists of the rules that shape how the words are combined in a language to form sentences. This author also presents the term “elements of sentence structure” as the parts of a sentence and talks about syntax as the study of the interrelationships between them and the positioning of sentences in sequence. Syntax also analyses the syntactic structures sentences which are patterns or constructions, which can be done by dividing them in syntactic categories or classes by their syntactic features which helps us to make generalizations (Crystal, 2011, p. 471).

There are rules present in syntax and they control how we structure phrases and sentences. Fromkin (2018), presents the function of syntax and what it tells us about a language. For example, syntax determine the word order of a language, for instance, English is a Subject-Verb-Object (SVO) language jus as Spanish as well. According to this author, syntax allows us to describe the relationship between the meaning of each word in a sentence or a group of sentences and the arrangement of those words as even if two sentences contain the same exact words, but are arranged differently can mean different things. Another function of syntax is to state grammatical relations, for example the subject and object of a verb. This is very relevant to the study of ambiguity present in this paper as it arises due to the syntactic or grammatical relations present in the sentence and the uncertainty of what grammatical structure is attached to the subordinate clause.

3.2.3 Subordination

This is a process of linking two or more linguistic units in a way that they present different syntactic status, where one depends on the other, usually a constituent (Crystal, 2011, p. 462). In this regard, we can find subordinate clauses which are clauses that depend on the main clause to convey the preferred meaning. They make use of the subordinating conjunction or subordinator, which are often analyzed as prepositions with complements (Crystal, 2011, p. 462). In Spanish, according to RAE (2010), there are three traditional ways to classify subordinate clauses: noun clauses, which often function as part of the predicate, adjective clauses, and adverbial clauses. For this specify study, we are going to focus on adverbial clauses. According to Grijelmo (2014), subordinate adverbial clauses are the ones that express the circumstances that exist around the context of the main clause. These can be divided into different types, for the purpose of this paper we are going to focus on adverbial clauses of time and adverbial clauses of place as these were the ones used to create the ambiguous sentences used in the questionnaire.

Adverbial subordinate clauses frame the time in which the main clause took place. They are linked to the verb by the use of an adverb of time like *cuando*, *dense*, *mientras*, *antes de que*, *despues de que*, etc. (Grijelmo, 2014). On the other hand, we have the adverbial subordinate clauses of place, which indicates the place or physical space in which the action of the main clause took place. They are introduced to the sentence by adverbs of place like *donde* and its varieties (Grijelmo, 2014).

3.2.4 Ambiguity

The general definition of ambiguity states that a word or a sentence expresses more than one meaning. The analysis that solves the ambiguity of the sentence is called disambiguation (Crystal, 2011). There are different types of ambiguity, there is lexical

ambiguity which happens when a word has more than one meaning, category ambiguity (Warren, 2013, p. 170), which happens when a word can represent different syntactic categories at the same time like noun and verb, and syntactic ambiguity, which is the one that is going to be taken into consideration for this study. According to Warren (2013), there is a syntactic processor, which, following the syntactic parsing approach, links words in a syntactic tree. To be able to form these trees it is important to have the syntactic relations between sentences and clauses clear. However, it does not always happen as there is ambiguity present in some sentences. Syntactical ambiguous sentences often present attachment ambiguities which means that there are two possible constituents that can be attached to a specific phrase.

3.2.5 Garden path sentences and the sausage machine

According to Crystal (2011), garden path sentences are those that, when read left to right and one word at a time, tend to mislead the reader or listener into an incorrect interpretation that would be corrected later on. There is a famous sentence that illustrates this concept and it was created by Beaver (1970) (Warren, 2013, p. 166).

(3) The horse which was raced past the barn fell.

Sentence 3 is an example of the way in which garden path sentences mislead the reader as the first interpretation of the sentence is that “raced” is the main verb of the sentence in past tense which is not the correct interpretation later on. This type of sentences led to the development of the sausage machine theory by Frazier and Fodor in 1978 (as cited in Warren, 2013). This is a reference to the way sausages are produced as just as sausages, words are put in a string of phrases. The machine is a metaphor for the parser, also called phrase marker, which is the one in charge of analyzing the sentence according to its syntactic structure. It also keeps the sentence as simple as possible syntactically speaking (Warren, 2013).

3.2.6 Minimal Attachment

This theory proposes that during sentence comprehension, individuals preferentially attach incoming words or phrases to the existing syntactic structure in a way that minimizes the complexity of the sentence (Warren, 2013). According to this theory, the parser adopts the simplest or "minimal" structure that allows for a coherent interpretation of the sentence. Another significant aspect of the Minimal Attachment Theory is the role of syntactic constraints in guiding sentence parsing. One prominent constraint discussed within this framework is the Late Closure Principle proposed by Frazier (1979). This principle suggests that when encountering a new constituent, the parser tends to attach it to the current clause rather than creating a new clause.

4. METHODOLOGY

In order to identify a pattern in the strategies used by first and second language learners of Spanish, this study used a quantitative approach. This type of study was chosen with the aim of identifying the patterns used by the two groups of participants by counting the amount of times each participant chose the first or second NP as the subject of the subordinate sentence.

4.1 Participants

For the purpose of this research, 20 participants were selected. 10 of whom were Spanish native speakers and 10 second language learners of Spanish. The criteria used for selecting the 10 Spanish native speakers were: a) they must speak the Quiteño dialect, and b) they must be monolingual. 10 students of the Universidad Central del Ecuador majoring in Bioquímica y Farmacia were selected to participate in this study. It is important to mention that these participants have had some basic English education during their middle school and high school years. However, they did not acquire the language. For the other half other participants, the criteria for choosing the second

language learners of Spanish were: a) they must be English native speakers, and b) Spanish must be their second language. Taking these points into consideration, 10 participants were chosen. It is important to mention that these participants had to be able to maintain conversations in Spanish for at least ten minutes to participate in this research.

For participant recruitment, a snowball sampling approach was employed to gather a sample of 10 participants who were English native speakers and second language learners of Spanish. Snowball sampling was chosen as the preferred method due to the limited direct contact with the specific community of interest. This sampling technique involved identifying initial participants who met the inclusion criteria and then asking them to refer other potential participants who fit the desired characteristics.

4.2 Materials

A questionnaire was made including 10 sentences in total (8 experimental and 2 distractors). All the sentences were in Spanish and were structurally ambiguous and were written to fit the Quiteño dialect so it sounded as natural as possible for the participants. They included a subordinate sentence with an ambiguous subject. In order to execute this questionnaire, the presentation program Power Point was used. The first slide of the presentation presented the instructions to follow for this experiment and the rest contained the items (sentences) of the questionnaire. Each item consisted of two slides, the first one included only the ambiguous sentence and the second one included a question that inquired about the subject of the subordinate clause with two possible answers (a and b), which were the possible subjects of the subordinate clause. All the experimental questions had human referents and two NP.

4.2 Procedure

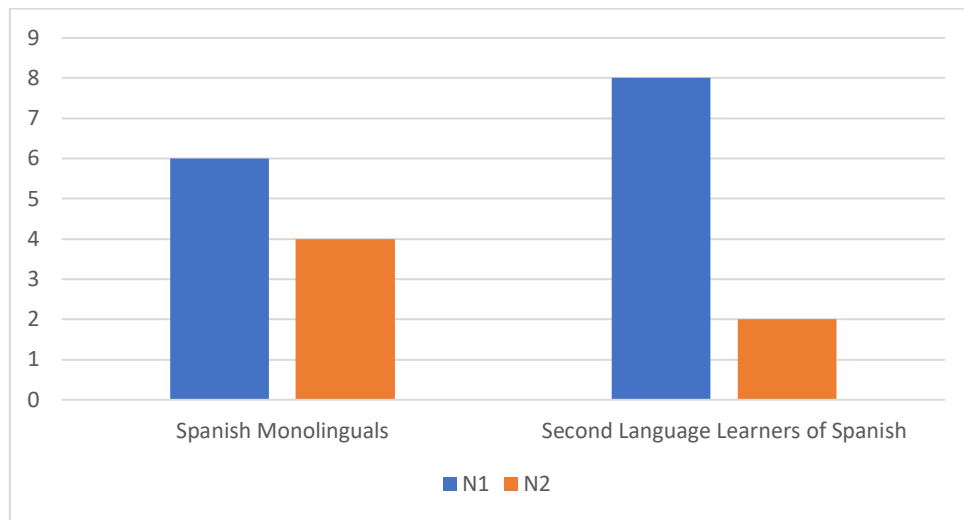
Participants were presented with a series of custom-designed ambiguous sentences in Spanish, specifically created for this study. All the participants were told that they were going to read some sentences and then answer some questions about them. Before beginning with the questionnaire, they were instructed to read carefully each sentence and respond the questions as spontaneous as possible. Each participant was given 5 seconds to read each sentence and then 5 seconds to answer a question in which they had to decide whether the subordinate clause was attached to the first or second NP. This was made in order to secure the spontaneity of the answers. In order to avoid creating a pattern for the participants, half of the answers had the first NP as a, and half as b. All of this process was carried out in real time for all of the participants. The Spanish monolinguals were presented with the Power Point slides, in a face-to-face meeting. On the other hand, the second language learners of Spanish were presented the same exact material but in a scheduled zoom meeting. It is important to mention that the meetings were held one by one in a controlled space in order to avoid other participants knowing about the study before time, and also to avoid any distraction.

5. DATA ANALYSIS

All of the data collected in this study is going to be presented in the following section in the form of bar graphs in order to easily detect the differences between the preferences of the Spanish monolinguals and the second language learners of Spanis. It is important to take into consideration that this analysis has some limitations concerning the sample size, which means there are going to be some restrictions in the generalization of the data.

Figure 2.

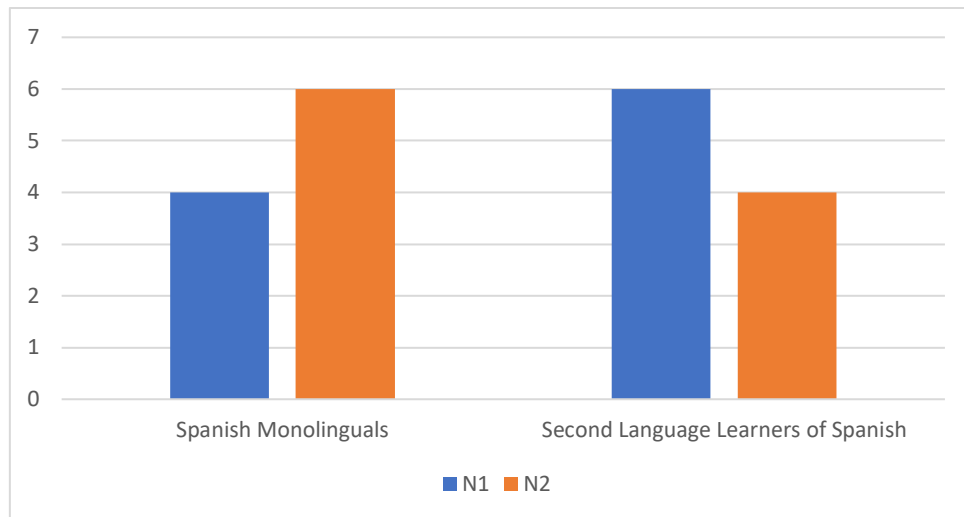
Responses of sentence number 1: “Camila habló con María después de que le despidieron del trabajo”.



This is a compound sentence that is formed by a main sentence and a subordinate clause. In the main sentence, Camila is the subject and “con María”, is the PP that acts as the direct object. In this sentence there are two nouns that can be the subjects of the subordinate clause (Camila and María), which is where the ambiguity lies. Considering the responses of the Spanish monolingual participants, it is evident that they showed a slight preference for the first noun (Camila) to resolve the ambiguity. However, it is important to note that this difference was observed in only two participants, which is not statistically significant. In contrast, the second language learners of Spanish demonstrated a significant preference, with 80% of participants opting for the first noun phrase (Camila) to resolve the ambiguity. This indicates a stronger tendency among second language learners to interpret the sentence in a specific way.

Figure 3.

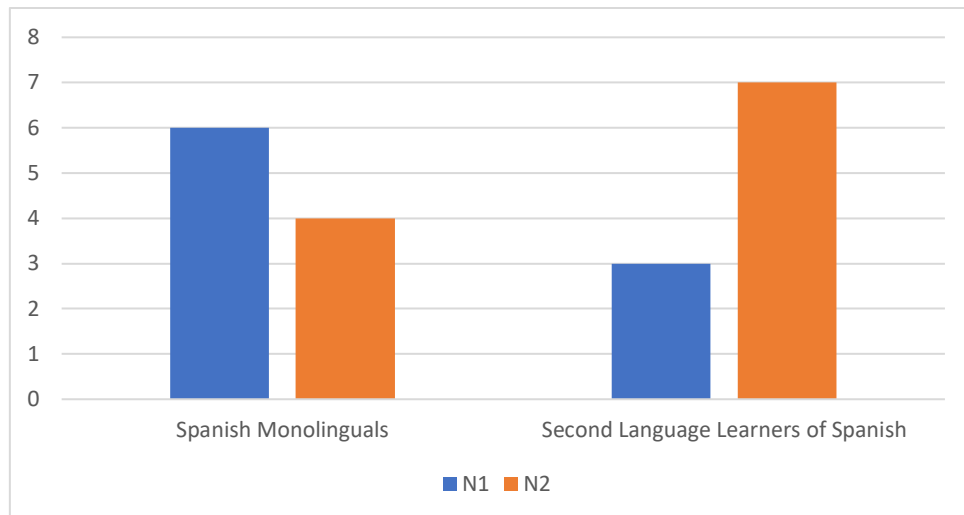
Responses of sentence number 2: “Luis vio a Juan cuando salió del gimnasio.”.



Just as the first one, compound sentence that is formed by a main sentence and a subordinate clause. In the main sentence, Luis is the subject and “a Juan”, is the PP that acts as the direct object. In this sentence there are two nouns that can be the subjects of the subordinate clause (Luis and Juan), which is where the ambiguity lies. The results indicate a slight preference among Spanish monolinguals for the second noun as the subject, although this difference was observed in only two participants, which is not statistically significant. Conversely, second language learners of Spanish showed a slight preference for using the first noun to resolve the ambiguity, but again, this difference was observed in only two participants and does not indicate a strong preference.

Figure 4.

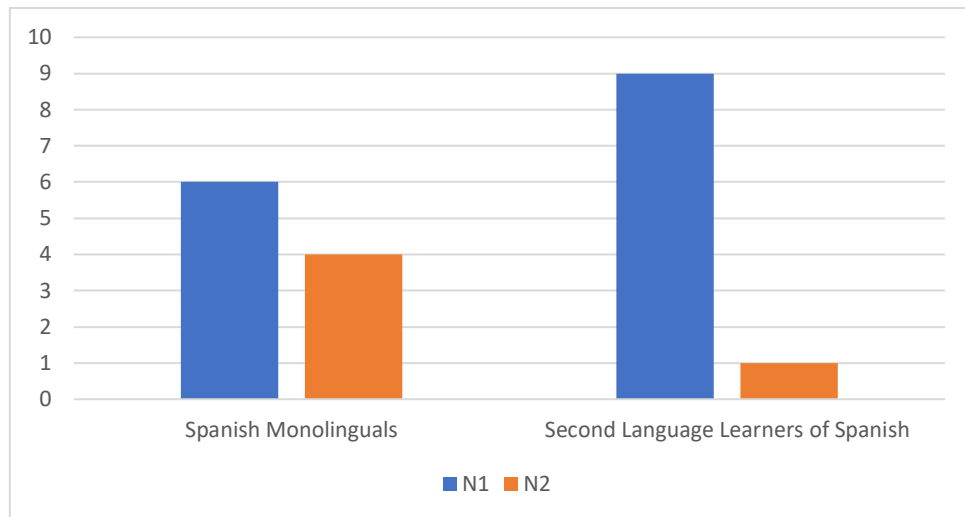
Responses of sentence number 3: “Ester y Marta caminaron a casa mientras ella hablaba de su nuevo proyecto.”.



In this case, the subject of the main sentence is plural and presents two nouns joined by the conjunction “y”. In this sentence there are also two nouns that can be the subjects of the subordinate clause, which is where the ambiguity lies. According to the results, the first noun was preferred among Spanish monolinguals, however, once again, there is only a difference of two participants which is not statistically significant. On the other hand, the second language learners of Spanish showed a significant preference, with 70% of the participants selecting the second noun as the subject to resolve the ambiguity. This indicates a notable difference in preference among second language learners.

Figure 5.

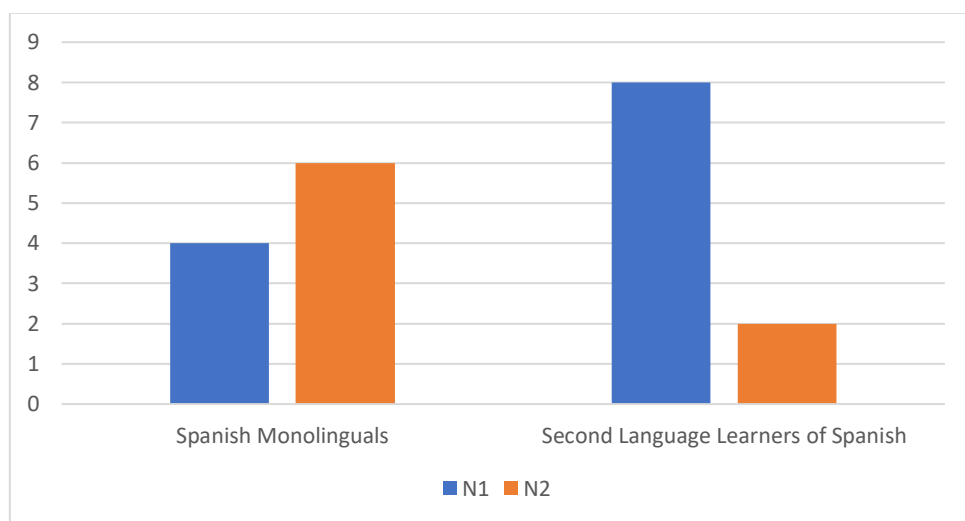
Responses of sentence number 5: “Marco se juntó con Lorena para hablar de su viaje por Europa.”.



This sentence also presents a case in which the second possible subject of the subordinate clause is presented as a complement of the main clause in the form of a PP. Among the Spanish monolingual participants, no strong preference for either of the possible nouns was observed to resolve the ambiguity. However, the second language learners of Spanish exhibited a substantial preference for the first noun, which serves as the subject of the main clause. Remarkably, 90% of the participants selected this option.

Figure 6.

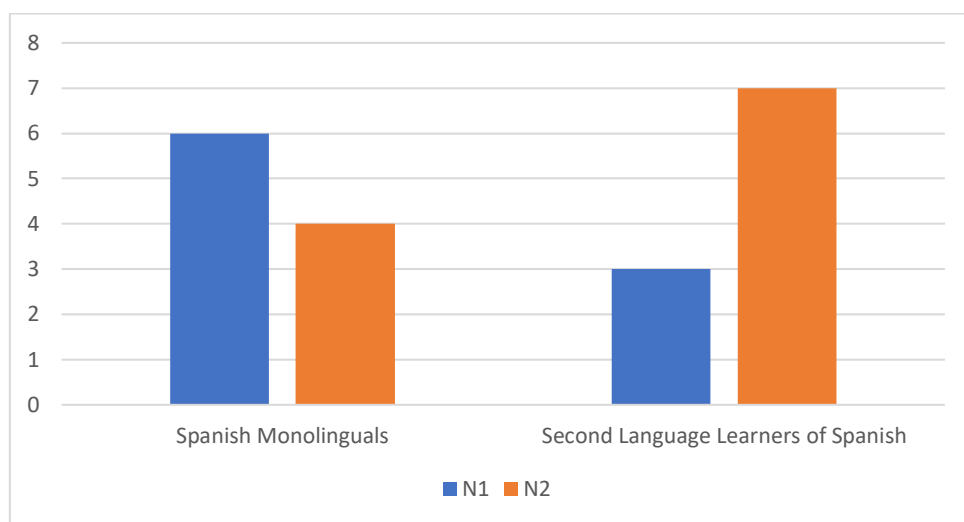
Responses of sentence number 6: “Jaime visitó a Luis después de que volvió de sus vacaciones.”.



This sentence also presents a case in which the second possible subject of the subordinate clause is presented as a complement of the main clause in the form of a PP. Among the Spanish monolingual participants, no strong preference for either of the possible nouns was observed to resolve the ambiguity. However, the second language learners of Spanish exhibited a substantial preference for the first noun, which represents 80% of them.

Figure 7.

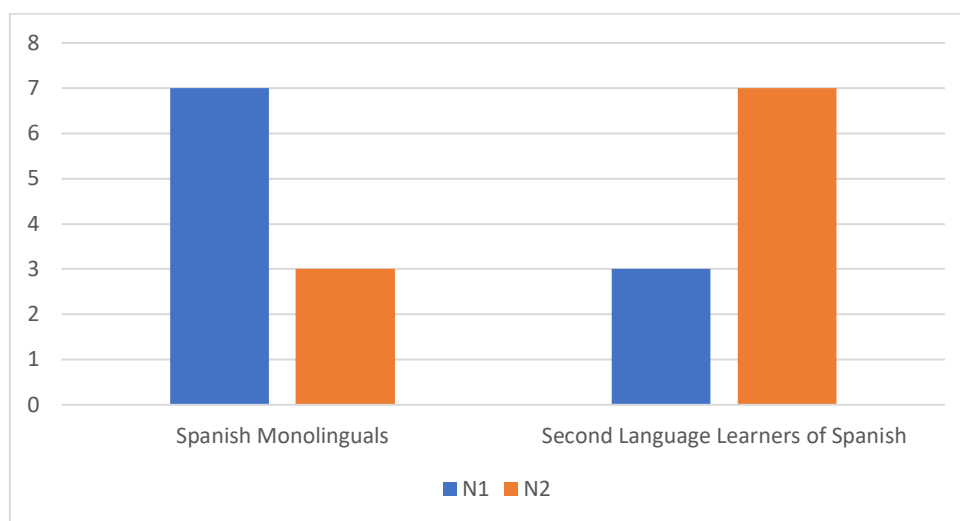
Responses of sentence number 7: “Dalia y Sofía visitaron el lugar donde ella había celebrado su primer empleo.”.



Just as sentence number 3, in this sentence, the subject of the main clause is plural and presents two nouns joined by the conjunction “y”. Among the Spanish monolingual participants, no strong preference for either of the possible nouns was observed to resolve the ambiguity. However, the second language learners of Spanish exhibited a substantial preference for the second noun, which represents 70% of them.

Figure 8.

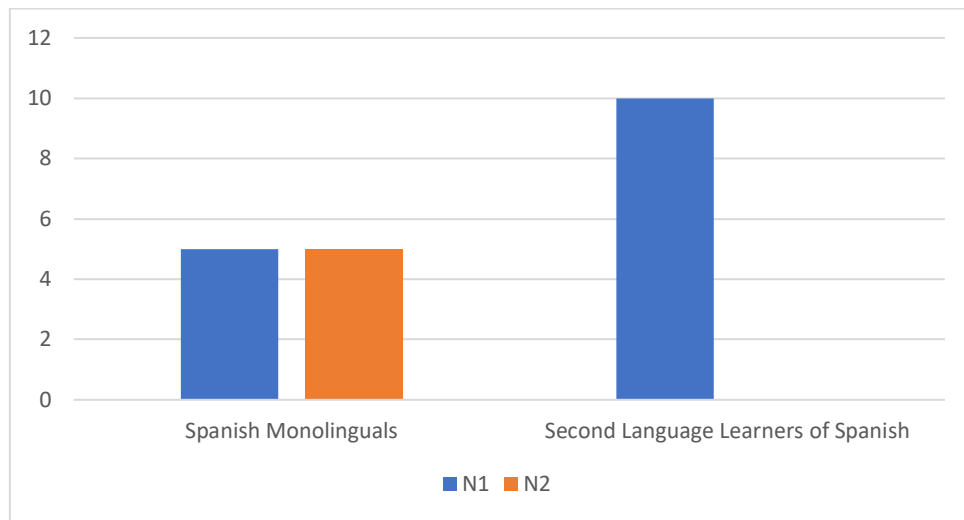
Responses of sentence number 9: “Carlos platicó con Pedro antes de que él salga del país.”.



This sentence also presents a case in which the second possible subject of the subordinate clause is presented as a complement of the main clause in the form of a PP. This is the only sentence in which Spanish monolinguals presents a statistically significant preference of 70% in favor of the first noun phrase. In this sentence, the two constituents that could resolve the ambiguity are presented in the form of the subject and direct object of the main clause respectively, which has been the structure of many of the experimental sentences present in this work. There is also the present of a pronoun as the subject of the subordinate clause with an ambiguous antecedent, which is also present in other experimental sentences, for instance, Sentences 3 and 7. However, this is the only sentence that present both of these characteristics together. It is interesting that the second language learners of Spanish also presented a strong preference, but for the second phrase with a 70% of the total, making it the complete opposite from the Spanish monolinguals.

Figure 8.

Responses of sentence number 10: “El abogado discutió con el fiscal después de que él revisara toda la evidencia.”.



This sentence also presents a case in which the second possible subject of the subordinate clause is presented as a complement of the main clause in the form of a PP. Among the Spanish monolingual participants, no strong preference for either of the possible nouns was observed to resolve the ambiguity as the answers are split in half. On the other hand, 100% of the second language learners of Spanish chose the first noun to solve the ambiguity.

6. CONCLUSIONS

In conclusion, the findings of this study shed light on the resolution of syntactic ambiguity among Spanish monolinguals and second language learners of Spanish. The results indicate that, overall, Spanish monolinguals do not exhibit a strong preference for either of the possible nouns when faced with ambiguous sentences, with only one exception noted. This suggests a level of flexibility in their interpretation strategies.

On the other hand, second language learners of Spanish consistently demonstrate a clear and strong preference for either the first or second noun that appears in the main clause to resolve the ambiguity. In most of the sentences there is a significance

preference of the first noun in their sentence processing, indicating a cognitive bias towards its interpretation. The only exceptions were found in the sentences that used a pronoun with an ambiguous antecedent instead of a null-subject in the subordinate clause.

These results contribute to our understanding of the impact of language background and proficiency on sentence processing strategies. They highlight the influence of linguistic factors and individual language experiences in the interpretations. It is worth noting that further research could help to understand cognitive mechanisms that drive this preference.

7. RECOMMENDATIONS

This study has specifically examined the processing of ambiguous sentences within the defined scope of the investigation, which was the comparison of Spanish monolinguals and second language learners of Spanish who are native speakers of English in the way they process these sentences. However, the results have generated further intriguing research inquiries and possibilities. One possibility could be to extend the research to include other languages and language combinations to explore cross-linguistic influences on sentence processing. By comparing the resolution strategies employed by second language learners of Spanish, who are English-native speakers with those who are native speakers of other languages, we can discover potential language-specific factors that contribute to their preferences. This comparative approach would contribute to the knowledge on the role of language transfer and universal cognitive processes in the resolution of syntactic ambiguity.

It is recommended to use a larger sample size in future studies. While the present study showed valuable insights into the preferences of Spanish monolinguals and second language learners of Spanish, a larger and more diverse sample would provide a

more representative picture of the population and allow for more relevant conclusions. By including a larger number of participants, researchers can better capture individual differences and potential subgroup variations within each population. Additionally, a larger sample size would provide a more reliable estimation of effect sizes and increase the probability of detecting statistically significant differences or patterns in the data. Therefore, future studies should aim to recruit a larger and more diverse participant pool to ensure the validity and reliability of the findings.

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9. ANNEX

Questionnaire:

1) Camila habló con María después de que le despidieron del trabajo.

¿A quién despidieron del trabajo?

a. Camila

b. María

2) Luis vio a Juan cuando salió del gimnasio.

¿Quién salió del gimnasio?

a. Luis

b. Juan

3) Ester y Marta caminaron a casa mientras ella hablaba de su nuevo proyecto.

¿Quién hablaba de su nuevo proyecto?

- a. Marta
- b. Ester

4) El empleado se reunió con su jefe antes de comenzar a trabajar.

¿Quién va a empezar a trabajar?

- a. El jefe
- b. El empleado

5) Marco se juntó con Lorena para hablar de su viaje por Europa.

¿Quién viajó por Europa?

- a. Marco
- b. Lorena

6) Jaime visitó a Luis después de que volvió de sus vacaciones.

¿Quién volvió de sus vacaciones?

- a. Luis
- b. Jaime

7) Dalia y Sofía visitaron el lugar donde ella había celebrado su primer empleo.

¿Quién había celebrado su primer empleo?

a. Sofía

b. Dalia

8) La doctora platicó con la paciente antes de comenzar su tratamiento.

¿Quién comenzó con el tratamiento?

a. La doctora

b. La paciente

9) Carlos platicó con Pedro antes de que él salga del país.

¿Quién saldrá del país?

a. Carlos

b. Pedro

10) El abogado discutió con el fiscal después de que él revisara toda la evidencia.

¿Quién revisó toda la evidencia?

a. El fiscal

b. El abogado