

Doctoral Dissertation

Lexical and Syntactic Activation in Translation

(Activación Léxica y Sintáctica en la Traducción)

PhD candidate

Jason O. Ruíz Huertas

Advisor

Pedro Macizo Soria

PhD in Psychology

Department of Experimental Psychology



University of Granada

March, 2020

Editor: Universidad de Granada. Tesis Doctorales
Autor: Jason Omar Ruíz Huertas
ISBN: 978-84-1306-564-9
URI: <http://hdl.handle.net/10481/63336>

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Publications of this Thesis

Ruiz, J. O., & Macizo, P. (2018). Things can change: Sentence processing in consecutive translation. *Canadian Journal of Experimental Psychology/Revue Canadienne de Psychologie Expérimentale*, 72, 183-196. doi: 10.1037/cep0000141

Ruiz, J. O., & Macizo, P. (2019). Lexical and syntactic target language interactions in translation. *Acta Psychologica*, 199. doi: 10.1016/j.actpsy.2019.102924

Ruiz, J. O., & Macizo, P. (2020). *Ambiguous Sentence Processing in Translation*. Manuscript submitted for publication.

Agradecimientos

A todos aquellos que abandonaron el barco cuando vieron que hacía aguas, pero sobre todo a todos aquellos que se quedaron y que, de una manera u otra, me ayudaron a conducir este barco hasta la orilla. A ustedes, toda mi familia, por nunca decirme “abandona” y por intentar entender todos los sacrificios que este proyecto ha implicado. A los que dijeron “presente” en los buenos momentos y voluntariamente en los malos, que es cuando más cuenta: a mis amigos Tino, Amador, Kelly, José, Lara, Gabi, Juanfran, Lena, Dari y Zheni.

A ti Rita, por haberte implicado completamente en este proceso y siempre intentar mostrar cariño, paciencia y apoyo durante cada minuto.

Por último, a Pedro, por tu paciencia y por creer; porque de lo contrario hace mucho habrías dejado esto. A los compañeros de entonces en el 112 del CIMCYC, quienes desde el primer día me ofrecieron sonrisas y buena disposición, pero a los que no he podido corresponderles hasta ahora con lo que me hicieron sentir: a Marta, Alba, Nuria Montoro, Nuria Aguerre, Cristina, Chus, Ana Cejudo, Borja, Antonio, Iván y Raquel Mateo. Y a ti Óscar, por tu inmensa ayuda de forma desinteresada en el tramo final de la investigación.

Introductory Note

This Research has been supported by the grant PSI2016-75250-P from the Spanish Ministry of Economy, Industry and Competitiveness to Pedro Macizo Soria.

The content of this doctoral dissertation has been drawn up following the regulations of the University of Granada. The majority of the thesis has been written in English. A chapter including a summary and conclusions of the thesis is presented in Spanish (Capítulo VIII).

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Preface

When I engaged in this task, I could not foresee the extension and difficulties it would entail. Neither could I get a glimpse or a grasp of the consequences it would and will have for me at a professional level or for the translation and cognitive fields. Nevertheless, I did not consider giving up along the way because I heartily wish to leave a contribution, small as it may be, next to those important and numerous studies I discovered and read to produce this work.

Today, I can proudly say I feel pleased knowing that the final outcome of this research plays a role in the further enrichment of the fields abovementioned and sets another stepping stone towards a deeper insight of language processing during translation. What is more, the new information provided by this project will hopefully not only remain a theoretical knowledge on paper, but will also help in the development of more efficient translation techniques or will at least contribute, in any possible way, as reference to future studies that aim to a similar purpose.

THEORETICAL FRAME

1. Language Processing in Translation

1.1. INTRODUCTION

The study of translation as a process is a perspective that focuses on the translator himself and the cognitive processes that take place in a translation task (e.g., comprehension, production, code switching, problem identification and solution, decision making and strategy application) (Padilla, Macizo, & Bajo, 2007). There are two main theoretical approaches that tackle cognitive processes during translation. On one hand, the Vertical View of Translation (Fodor, 1978; Seleskovitch, 1976) holds that processes occur in a serial and modular manner. On the other hand, the Horizontal View of Translation (Danks & Griffin, 1997; Gerver, 1976; Padilla et al., 2007) proposes that the different processes that take place in translation have a simultaneous and overlapping nature.

The present dissertation aims to investigate and provide new empirical evidence concerning the relation and processing of the languages involved in a translation task, from the Horizontal View theoretical frame. In particular, we address the processing of the syntactic properties of the target language (TL) during comprehension of the source language (SL) in consecutive translation. Such mode of translation consists of understanding the written message in the SL and rendering it in the TL. Furthermore, we compare processing of the syntactic properties of the TL during comprehension of the text for translation with comprehension in reading in a monolingual context (e.g., reading for comprehension), in respect to their differences. That is, we aim to study translation as a process and to contrast processing during comprehension in translation with comprehension during a reading task in a monolingual context. In addition, we must stress that participation in the debate about Natural Translation vs. Professional formation of translators is not entailed within the goals of the present dissertation.

Along this doctoral thesis we tackle processing of TL syntactic properties by breaking them down in three specific aspects which make up our three lines of research. Firstly, we compare the use of syntactic properties of the same kind (syntactic cues), which contrast (between) themselves in strength within and between the SL and the TL, by (putting them in competition) for sentence interpretation. Secondly, we centered our attention on the manipulation of cognate words and word order in the same sentence to investigate the processing of lexical and syntactic properties. That is, the processing of lexical and syntactic properties, conjointly. Thirdly, we study the activation and processing of word order and attachment strategies in the same sentence. Although they are both syntactic properties, they differ in nature. In particular, word order is directly related to structure representation and is processed *in situ*, whereas attachment strategies deal with linking the word that is being read to information that had been already processed. In other words, parsers have to refer back to previous regions of the sentence in order to link and understand a specific new (piece chunk) of information. Finally, the simultaneous manipulation of word order and cognate words in the second research line and, on the other hand, of word order and attachment strategies in the third research line have the ultimate goal of searching for possible interaction between lexical and syntactic properties and between different kinds of syntactic properties, respectively.

1.2. Cognitive Processes in Translation: Vertical and Horizontal Approaches

The Vertical and the Horizontal Views of Translation are two different approaches that try to explain the way processing takes place during translation. On one hand, the Vertical View comes from the Translation and Interpretation studies and it proposes a semantic approach to the translation task. It is based on The Theory of Sense or Interpretive Theory of Translation, whose greatest exponent, Danica Seleskovitch, was an interpreter at the Ecole Supérieure d'Interprètes et de Traducteurs at the University of Paris III (also called Paris School). This theory reached its highest peak of acceptance among interpreters' associations in the 1970's and 1980's, and even extended to interpreters' formation due to its pedagogical approach. It focuses mainly on the comprehension of the intended meaning of the message (sense), that is, the abstract representation of the message stripped from its superficial structure (e.g., lexical and syntactic properties). Meaning can be found in a specific structure of a language (Shveitser, 1988), while sense can be expressed through different linguistic means in different languages (L'vovskaja, 1985). Moreover, the description of the translation process from this perspective suggests that processing occurs in a serial manner where both languages (the source language, SL and the target language, TL) are kept separated and never active at the same time.

On the other hand, The Horizontal View of Translation approaches the translation process from a cognitive perspective. It directs its attention to the memory processes that take place during translation (e.g., comprehension, production) and the interaction between those processes and between the SL and TL. It finds its roots in Gerver's model of simultaneous interpretation (SI) (Gerver, 1969, 1976) which has been very influential in highlighting the roles of memory systems in translation tasks (e.g., Moser, 1978; Levelt, 1989, 1993). Furthermore, according to this view of translation, the processing during translation has an interactive nature. For example, although the SL and TL are stored separately, they interact between themselves exchanging information during translation. Such type of processing implies that in order to exchange information, both languages (SL and TL) have to be active at the same time, and thus, they are both taking

part in the translation process simultaneously. In the next paragraphs we described in detail these two views of translation.

1.2.1. The Vertical View of Translation

The Vertical View of Translation (Delisle, 1980, 1988, 1993; Lavault 1996; Lederer, 1994; Seleskovitch, 1976, 1977; Seleskovitch & Lederer, 1984, 1989) proposes that translators and interpreters play a dual role when translating or interpreting. In first place, they are the receiver of the source language (SL), then, they decode its sense, and finally, as senders they recode the message in the target language (TL). The translation task is considered a deverbalization process where the message is firstly stripped from its linguistic form, secondly reformulated, and finally recoded in the TL.

In addition, Seleskovitch (1976) suggests the participation of two memory systems in the translation task. The first of them is an acoustic or verbal memory system that retrieves the lexical and grammatical properties of the pair of languages involved in the translation project (Padilla et al., 2007). Its function should be to decode the SL in order to extract its meaning and “deverbalize” it. Then, the conceptual representation of the message would pass to a semantic memory where it would be maintained for a short period of time and used as reference for the forthcoming information that the interpreter will receive. These processes are similar to the processes proposed by some monolingual models for spoken word recognition (Marslen-Wilson & Tyler, 1978). Afterwards, it would be necessary a reactivation of the acoustic memory to access the lexical and syntactic properties of the TL.

Hence, according to the Vertical View, the processing stages that go from comprehension to production in translation are divided in two stages and take place in a serial and modular manner (see Figure 1). In the first stage, analysis and understanding of the SL take place. In this stage, the message is stripped from its linguistic form and its abstract representation is kept. Then, a reformulation process occurs, where the representation of the message is recoded in the TL linguistic form in order to be produced.

Therefore, the Vertical View is a semantic approach to translation where language is only the vehicle of the message (Padilla et al., 2007). Moreover, the serial and additive nature of the process proposed by this view implies that the flow of information between the comprehension and the production processes is unidirectional from the SL to the TL and neither of the languages (SL and TL) are simultaneously active nor there is interaction between the lexical and syntactic properties of the pair of languages of the translation project. Instead, the only direct contact between the SL and the TL that could affect the translation task takes place in situations of transliterations, moments where literal translation is necessary (maturity date/*date de maturité*, instead of *date d'échéance*).

We must take into account that the Vertical View is an attempt to explain the translation process from the Translation studies perspective and based in the Theory of Sense. Thus, language processing in translation viewed from this perspective suggests that translators activate only one of their languages at each stage of the translation process to communicate: during the comprehension process the only active language will be the SL whereas in the production process, after deverbalization, the only active language will be the TL. This type of processing in translation agrees with the Language Selective Access perspective in bilinguals. This perspective comes from psycholinguistic studies and holds that there is only one language active at a given time during bilingual language processing (for reviews, Dijkstra, 2005; Kroll & de Groot, 2005). That is, bilinguals only access one of their languages at a time and none of them influence processing of the other during the different stages of language processing.

In all, the Vertical View of Translation does not assume the concurrent activation of the languages involved in the translation task. Both languages coexist independently and they are activated in a serial modular manner. During comprehension, the SL is the only active language, while during the recoding and production process the only active language is the TL, and, thus, there is not either any direct relation between the superficial structure (lexical and syntactic properties) of the SL and the TL or overlapping of the comprehension, reformulation and production processes.

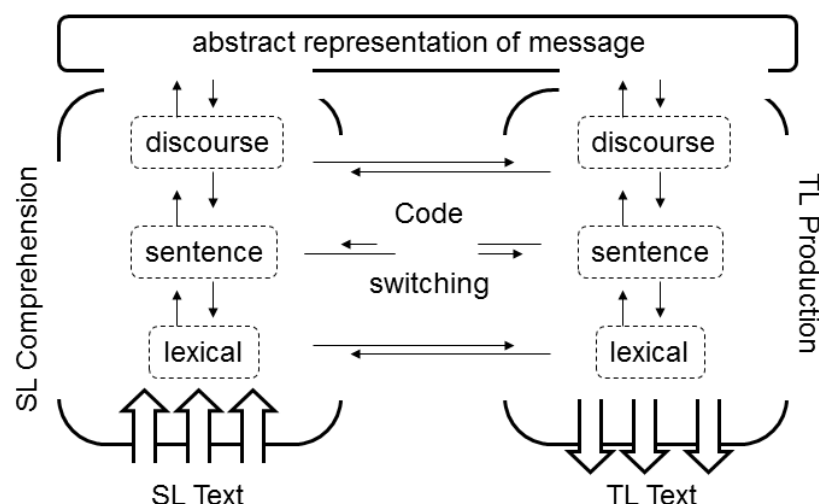


Figure 1. Language processing in translation. Taken from Padilla et al. (2007). In the Vertical View of Translation, comprehension of the SL message would through several stages (levels) of (analyses processing) (lexical, sentence and discourse) until total comprehension of the intended message. Once that stage has been completed, the message is stripped from its structural code, remaining, thus, as an abstract representation. At this point the TL becomes active and the abstract representation of the message is recoded in the TL linguistic code in order to be produced. In contrast, according to the Horizontal View of Translation, comprehension of the SL message comes about while is taking place a search for TL structure equivalences (lexical and syntactic) which will be already available to be use in the production of the message and interaction between the SL and TL. Once total comprehension of the message has been finalized, code switch to the TL takes place for message production in the TL.

1.2.2. The Horizontal View of Translation

Contrary to the Vertical View of Translation, the Horizontal View (Danks & Griffin, 1997; Gerver, 1976; Padilla et al., 2007) advocates for a concurrent type of processing that involves the comprehension, reformulation and production processes. According to this view, the SL and TL are activated simultaneously and they are mutually interrelated at different levels of processing (lexical and syntactic levels). This perspective suggests that comprehension and production processes are affected by several factors that are inherent to the translation task such as the cognitive load imposed by the task, the TL proficiency, code switching, the similarity between the superficial structure of the languages involved in the translation task, and the direction of translation (e.g., L1 to L2, L2 to L1).

Contrary to the Vertical View which attributes almost exclusive importance to the message (semantic contents), the Horizontal View focus its attention on language itself

as the carrier of the message. It makes a distinction between the superficial structure of the languages (lexical and syntactic levels of processing) and their deep structure (conceptual analyses). Given that the message is contained in a language, it is necessary to understand the superficial structure of that language (e.g., a sentence) to get access to the message.

According to this approach, there is overlapping and interaction between the comprehension and production processes; in particular, between the lexical and syntactic properties of the SL and TL. This type of processing suggests that the reformulation process starts before having finished reading and overall comprehension of the sentence has been achieved. That is, lexical and syntactic representations of the TL are retrieved before having finished reading and completely comprehending the message in the SL. This type of processing would be subject to a simultaneous activation of both the SL and TL at all moment during the translation task and a bidirectional flow of processing between them.

As we mentioned before, one of the most important characteristics of the Horizontal models of translation is the suggestion of a continuous interaction between the pair of languages involved in the translation project. Thus, the SL and TL are always active during the task and the linguistic representations of the TL are already retrieved before the total comprehension of the TL. Similarly, research in bilingual from a psycholinguistic perspective suggests non-selective parallel activation in bilingual language processing. Contrary to the Language Selective Access view, the Language Non-Selective Access account proposes parallel activation of the first language (L1) and second language (L2) of bilingual speakers (Dijkstra, 2005; Kroll & de Groot, 2005). However, it considers that bilinguals may activate either both languages at the same time or only one of them. For instance, Grosjean (1985, 1989, 1997) use the term *language modes* to describe this particularity. When bilinguals activate both languages simultaneously, they are in *bilingual mode* whereas when they activate only one of their languages they are in *monolingual mode*. According to Grosjean (1998), activation of one or more languages is modulated by specific intrinsic factors (e.g., the topic of the conversation, the input language of the conversation or knowledge of the bilingual condition of the other speaker) and extrinsic factors (e.g., the speakers' proficiency level of their L1 and L2).

Padilla et al. (2007) suggest that the application of the *language modes* to the translation task would imply that translators always have both languages active to a certain extent because the SL and the TL are required to perform the task. Hence, if we assume that both the SL and TL are simultaneously active during the translation task, then it is expected that they affect in some way the comprehension stage of the translation process.

On the other hand, the idea of the non-selective vs. selective coactivation of languages that underlies the Horizontal vs. Vertical perspective of translation is closely related to the idea of "different bilingual experiences", according to the type of interactional contexts in which people use their languages in everyday situations (Green & Abutalebi, 2013, the Adaptive Control Hypothesis). From this view, the coactivation of languages and the control through which the flow of activation between languages is regulated would be determined by the experience that people have in their day-to-day life (the people's day-to-day life experiences) (e.g., people in bilingual communities who produce code-switches on a regular basis compared to bilingual people living in monolingual contexts) (Beatty-Martínez et al., 2019; Hartanto & Yang, 2019; Jevtović, Duñabeitia, & De Bruin, 2019; Zirnstein, Bice, & Kroll, 2019). Thus, the Horizontal View of Translation would be more easily observed in interactional contexts that favor language coactivation.

In sum, the Vertical View of Translation holds that translation involves the concurrent activation of the SL and the TL and the continuous interaction between the two languages at different lexical and syntactic stages of processing. Moreover, SL comprehension and TL production does not occur in a serial manner but there is cascading processing where reformulation of the TL begins before finishing the understanding of the input language.

Before concluding this section, we consider it is important to highlight that we are aware of the fact that the Vertical and Horizontal Views of Translation are not recent (Seleskovitch, 1976 and Gerver, 1976, respectively). These theoretical views are closely related to general frameworks of bilingual language processing developed through the last years in psycholinguistic studies of cognitive psychology. In particular, the Vertical View is connected with the Language Selective Access hypothesis (Costa, Colomé, &

Caramazza, 2000; Costa, Miozzo, & Caramazza, 1999; Finkbeiner, Gollan, & Caramazza, 2006) and the Horizontal View with the Non-Selective Access hypotheses, respectively (Dijkstra, 2005; Malivuk, Palmovic, & Zergollern-Miletić, 2018; Mishra & Singh, 2014; Schröter & Schroeder, 2018; Tamaoka, Miyatani, Zhang, Shiraishi, & Yoshimura, 2016). At present, it is undeniable the fact that there is a large amount of evidence that favors non-selective processing in bilinguals, and therefore, that also favors the Horizontal View over the Vertical View. In the current work, we consider them only as general approaches to processing in translation rather than final state models or theories. Furthermore, by comparing them we will obtain a framework to investigate in deep specific cognitive processes involved in translation (syntactic analysis and the interaction between syntax and lexical processing).

In the next section, we will review empirical evidence that favors the Horizontal View of Translation. Thus, we will evaluate if linguistic information of the TL becomes active during SL activation by discussing two different levels of representation: the lexical level and the syntactic level.

2. Lexical Processing in Translation

2.1. INTRODUCTION

Lexical processing is a process by which words (lexical items) are recognized and connected to meaning in online comprehension (e.g., silent reading) and production (e.g., reading aloud). In comprehension, word recognition is a retrieval task where the visual or auditory stimuli are mapped onto the corresponding mental representations of the lexical items in the mental lexicon. This process is also called *lexical access*. The mental lexicon (Oldfield, 1966) is considered a memory system where all our word knowledge is stored systematically. The mental representation of the lexical items contains different types of information about their word form (e.g., phonological and orthographic) and their semantic (e.g. meaning/meanings) and syntactic properties (their function in a sentence). Further, once this information is activated by the input stimuli, it becomes available for other levels of processing where the lexical items are integrated in phrases and sentences. Therefore, lexical access of words is mandatory to understand the SL in translation tasks.

Considering that the investigation of TL activation during SL comprehension is at the base and among the goals of our experiments, we will begin our review by evaluating if bilinguals activate lexical information of a *non-target* language during comprehension of a *target* language needed to perform a linguistic task. To this purpose, a considerable number of different tasks and paradigms have been used (e.g., Stroop task, priming, masked priming, picture naming and word naming). In addition, many studies have made use of stimulus with lexical similarity across-languages such as cognate words (for reviews see, Heredia & Cieřlicka , 2019).

Cognate words are of great importance in many research studies because of their particularities. Although there is not a unique definition for them, in general, they are considered words that share meaning (de Groot, 1992, 1993, 1995; de Groot & Nas, 1991;

Schwartz & Kroll, 2006, p. 200; van Hell & de Groot, 1998), lexical and/or grammatical representations (Kroll & Stewart, 1994, p.163), and orthographic and/or phonologic representations (Costa, Caramazza, & Sebastian-Galles, 2000, de Groot, 1992, 1993, 1995; de Groot & Nas, 1991; van Hell & de Groot, 1998). These features imply that cognate words share linguistic properties in both languages of a bilingual and, thus, they are adequate to be used as an index of simultaneous activation of a pair of languages. For our research purpose, we consider them words that share the same meaning and are orthographically and phonologically identical or very similar across languages (e.g., *piano* in English and Spanish).

Returning to the use of cognate words to study activation of the *non-target* language during comprehension of the *target* language, cognates have been studied either as isolated words (out of context) or within a sentence context. For example, in the first case, Van Hell and Dijkstra (2002) investigated whether knowledge of a second language (L2) modulates reading in the native language (L1). To this purpose, they presented Dutch (L1)-English (L2)-French (L3) trilingual letter strings on a computer screen. The participants, who were highly proficient in English (L2), were divided in to groups based on their proficiency in French (low proficiency vs. high proficiency). They were instructed to perform a lexical decision task in their L1. The lexical decision task consists in presenting letter strings on a computer screen to participants, who have to decide, as quickly and accurate as possible, whether the letter string they are seeing on the screen is a real word or not in a specific language. The stimulus words in L1 were either L1-L2 cognates (e.g., *hamer/hammer/marteau* in Dutch, English, and French, respectively), L1-L3 cognates (e.g., *citroen/lemon/citron* in Dutch, English, and French, respectively) or control words (e.g., *kelder/basement/cave* in Dutch, English, and French, respectively). On one hand, the data obtained revealed shorter lexical decision times to the L1-L2 cognates in comparison with the noncognate words for both groups of participants. On the other hand, response times (RTs) for the L1-L3 cognates were not different from those for the noncognate words in the L3 low- proficiency group, whereas for the L3 high-proficiency group RTs for the L1-L3 cognates were faster than the RTs for the noncognate words. Thus, the results showed cognate facilitation effect for L1-L2 cognates and for L1-L3 cognates, but only for highly-proficient L2-L3 bilinguals in the latter. These results indicate that words in the L1 activate information in the *non-target* language, which

implies that language access in multilinguals is non-selective; and moreover, that *non-target* L2-L3 activation modulates L1 lexical processing.

The study abovementioned suggests three important particularities related to our investigation: cross-language activation (non-selective access), and between-language interaction; all of them at the lexical level. Nevertheless, even if this and other studies on cognate words in isolation have shown cross-language activation (De Groot, 2011; Van Assche, Duyck & Hartsuiker, 2016, for a review) individuals rarely process words in isolation in their everyday life. Instead, it is more natural to put them together to form phrases and sentences to communicate (e.g., to understand or produce a sentence), and this is a topic of interest for our investigation because when we translate, we usually translate words within a sentence context. Therefore, our main subject of interest is between-language parallel activation in sentence reading.

2.2. Lexical coactivation in sentence reading

Schwartz and Kroll (2006) investigated the nature of bilingual lexical activation in sentence context based on the Non-Selective Activation perspective described in previous sections. Specifically, the authors examined if sentence context modulates or limit cross-linguistic activation in Spanish (L1) – English (L2) bilinguals. The participants were instructed to read sentences that included Spanish-English cognate words (e.g., *piano*) at the end of each sentence. Additionally, the semantic richness of the sentence context was manipulated. In one of the conditions, the cognate words were highly predictable according to the preceding semantic context (e.g., *María tocó una pieza de Chopin con su piano*), whereas in the other condition the semantic context did not predict the cognate word (e.g., *María fue a comprar un piano*). The results showed that the participants processed cognate words quicker than control words when cognate words were not predicted by the semantic context. This pattern of results suggests that there was simultaneous activation of both the participants' L1 and L2 and, therefore, this produced a facilitation effect. However, when the cognate words were preceded by a highly predictive semantic context, no difference was observed between the processing of cognate words and control words (see Van Assche, Drieghe, Duyck, Welvaert, &

Hartsuiker, 2011; for null effects of semantic richness in cognate words processing; see Lauro & Schwartz, 2017; for a recent meta-analytic review about the effect of cognate words in sentence processing).

In sum, these results indicate that between-language non-selective activation depends on the semantic richness of the sentence context. Schwartz and Kroll (2006) propose the influence of *top-down* processes to explain the lack of facilitation effect on cognate words in sentences with a rich semantic context. In particular, a representation of the overall meaning of the sentence (e.g., *María va a tocar un instrumento musical*) that can affect the recognition of a given word (e.g., *piano*) in a *top-down* manner is created increasingly during comprehension. These processes may limit the activation of lexical representations that compete for selection across languages.

As we have seen, semantic richness of sentences is proposed as one factor that can modulate non-selective lexical activation in sentence reading. Nevertheless, there are other variables that can modulate cross-linguistic activation in sentence processing (Lauro & Schwartz, 2017). For example, between-language coactivation is easier to observe when bilinguals process L2 sentences than L1 sentences. To illustrate, Peeters, Dijkstra, and Grainger (2013) found that the cognate status of words modulates their recognition on a L2 sentence context. French (L1) – English (L2) bilinguals read low-constraint sentences in L1 and L2. These sentences contained a cognate word or a control word. The amplitude of the P200 electrophysiological component differed between cognate and control words when participants read L2 sentences. However, these electrophysiological modulations were not found when the reading was in L1.

Another factor that seems to modulate between-language activation is the mixing of languages in the reading task. For example, cognate effects are usually found in L1 sentence reading and L2 sentence reading when languages are intermixed across sentences (Dijkstra, Van Hell, & Brenders, 2015) while they are circumscribed to L2 sentences when all sentences are presented in one language and there are no language switching in the reading task (e.g., Van Hell & De Groot, 2008).

In short, the results obtained in studies examining the processing of cognate words embedded into sentences show that, overall, there is between-language activation in sentence reading: Reading comprehension in one of the bilingual's languages is

modulated by the activation of the other language. However, there are several factors constraining this coactivation such as the semantic constrain of the sentences or the mixing of languages in the reading task. This variability seems to support the Language Model Hypothesis (Grosjean, 1985, 1989, 1997) and the influence of variations in language experience (Zirnstien et al., 2019) described in previous section according to which several factors determine whether coactivation of languages in bilinguals will show up or not.

Up to this point, we have studied lexical coactivation within sentence context in reading tasks. In the next section, we will study lexical coactivation during comprehension in reading for translation tasks.

2.3. Between-language lexical activation in translation tasks

As we have explained in previous sections of this work, the Vertical (Fodor, 1978; Seleskovitch, 1976) and Horizontal (Danks & Griffin, 1997; Gerver, 1976; Padilla et al., 2007) Views of Translation aim to explain the processes that take place during a translation task. From these perspectives comes out that processing in translation consists of three general stages: comprehension, code-switching, and production. However, each perspective proposes a different time course for these processes. The Vertical View holds that they take place in a serial manner, whereas the Horizontal View suggests they overlap.

One way to disassociate one perspective from the other empirically is to compare a single process (e.g., comprehension) by using different linguistic tasks like reading and translation. Each perspective makes a different prediction regarding these tasks. On one hand, the Vertical View states that processing during translation occurs in a serial manner (overall comprehension of the message in the SL, code-switching, and production of the message in TL). Thus, reading for translation will not be different from reading in a monolingual context (e.g., reading for comprehension) since both types of reading require total comprehension of the message before switching to the TL's linguistic code (code-

switching). With respect to reading for translation, code-switching will only occur after total comprehension of the message had taken place. On the other hand, the Horizontal View holds that there is activation of the TL and search for possible equivalencies within the reformulation process while reading for translation. Therefore, there is overlapping between the comprehension and production processes and between the SL and TL. Consequently, the comprehension processes within reading for translation and reading in a monolingual context will be different due to a combination of the code-switching and TL activation processes that take place before reaching overall comprehension of the SL.

There are not many studies with professional translators where the Horizontal View of Translation or non-selective lexical activation has been tackled empirically. For example, Macizo and Bajo (2006) and later Ruiz, Paredes, Macizo, and Bajo (2008) conducted a series of experiments aiming to prove the existence of lexical influence of the SL on the TL during the comprehension stage of a translation task.

In particular, Macizo and Bajo (2006) aimed at determining the coactivation of the SL and the TL at lexical level when reading for translation. To this end, they manipulated the cognate status of words and their position in the sentences. Cognate words were placed either at the beginning or at the end of the sentences to investigate the moment in which lexical properties of the TL were activated during reading for translation. Bilinguals were instructed to read sentences in Spanish (L1) either for repetition in Spanish or to translate them into English (L2). The results showed a facilitation effect for cognate words (*zebra/cebra*, in English and Spanish, respectively) when they were located at the final segment of the sentences, relative to the processing of non-cognate control words (*caterpillar/oruga*, in English and Spanish, respectively), when participants read for translation. This cognate effect was not found when cognate words were placed at the beginning of the sentences to be translated. Nevertheless, when the participants were instructed to read for repetition no significant effect was found for cognate words, no matter their position in the sentences.

Thus, the difference between the reading times of the critical words in the two tasks clearly indicates that the TL lexical properties are active during the comprehension of the SL in translation. Moreover, this lexical coactivation seems to take place once the

understanding process has been initiated since the cognate effect was not found at the beginning of the reading for translation.

Furthermore, Ruiz, Paredes, Macizo, and Bajo (2008) corroborated again the coactivation of TL lexical properties during reading for translation by manipulating the frequency of critical words in the TL. To be more specific, the purpose of the experiment was to determine whether the cognate facilitation effect showed in the translation task by Macizo and Bajo (2006) was truly a lexical effect. In fact, there are previous proposals defending that cognate words are closely related at the semantic level as well as the lexical level in the two languages of a bilingual individual (De Groot, 1992). Thus, the specific *locus* of the cognate effect (lexical vs. semantic) could not be determined completely with the cognate manipulation. As commented, Ruiz et al. manipulated the frequency of critical words in the target language (high, low frequency) which were equated in the SL frequency. According to many previous studies (e.g., Forster & Chambers, 1973; Frederiksen & Kroll, 1976; Balota & Chumbley, 1984; Seidenberg, 1995), lexical frequency is a factor that impacts at the lexical level so it was considered an index of lexical coactivation in the Ruiz et al.' study. The results of the study showed that words with high L2 frequency placed at the end of the sentences were read faster than low L2 frequency words in the same position during the reading for translation task even when these words were equated in their L1 frequency. Again, this effect was not found at the beginning of the reading for translation processes and the frequency effect did not show up when reading for repetition. Hence, the results indicated that both TL and SL lexical properties were simultaneously active during the comprehension and reformulation processes of the SL in a translation task.

The abovementioned results cannot be explained through the Vertical View given that the facilitation effects that were found in these studies took place during *on-line* comprehension. According to the Vertical View, the lexical properties of the TL should not affect comprehension of the SL because the message will be first reformulated abstractly to be afterwards produced in the TL. Thus, interaction between the SL and TL will not take place during comprehension of the SL.

At first glance, the pattern of results found in the studies about coactivation of languages during the translation task contrast with those obtained in within language

sentence reading. To be more specific, Macizo and colleagues (Macizo & Bajo, 2006, Ruiz et al., 2008) did not observe cognate effect when participants read L1 sentences for repetition in L1. On the contrary, cognate facilitation has been reported in L1 reading (Lauro & Schwartz, 2017, for a review). However, as we pointed out before, it is more difficult to observe L2 activation during L1 comprehension. Moreover, the sentences used in the experiments reported by Macizo and colleagues were semantically rich, which could have favored a more general processing of the sentences at the expense of lexical activation (Dijkstra & van Heuven, 2002; Duyck, Van Assche, & Hartsuiker, 2007; Elston-Güttler, Paulmann, & Kotz, 2005; Schwartz & Kroll, 2006), and it could have also affect the integration of sentence meaning: «[...] when context provides sufficient semantic information and the reader has enough processing resources, the meaning of the sentences can be integrated and the presence of cognates is no longer important». (Macizo & Bajo, 2006, p. 26).

Another important finding of these studies about language lexical activation in translation is the position of the critical words in the sentences where facilitation effect showed up during reading for translation. In both studies (Macizo & Bajo, 2006; Ruiz et al., 2008) the facilitation effect was shown only when the critical words were placed in the last segment of the sentences. This finding may suggest that the activation of the TL lexical properties does not take place at the beginning of sentences, but it rather may start after a minimum unit of information has been processed (e.g., noun phrase, Goldman-Eisler, 1972; Macizo & Bajo, 2006).

All in all, the studies on bilingual lexical processing in reading tasks and lexical processing during comprehension in translation indicate that:

1. Lexical access in bilinguals is non-selective. This type of lexical processing is evidenced in the facilitation effect derived from reading cognates in isolation and within sentence context.
2. Parallel activation of L1 and L2 lexical representations modulates lexical processing in the target language.

3. L1-L2 coactivation is modulated by various factors such as the semantic constraint of sentences, proficiency level in L2, and type of task (e.g., language mixed, language switching).
4. Non-selective lexical access also extends to reading for comprehension in translation. TL lexical access and processing during SL comprehension is indicated by cognate facilitation effects and frequency effects of target words placed at the end of phrases. Furthermore, TL lexical processing seems to modulate SL comprehension when reading for translation.

3. Syntactic Processing in Translation

3.1. INTRODUCTION

As we have mentioned before, the Horizontal View of Translation proposes coactivation and interaction of the SL and TL during comprehension in the translation task (Gerver, 1976). In the last section, we presented evidence that suggests the existence of connections and the simultaneous activation at lexical level between the pair of languages of bilinguals during the comprehension processes. These connections seem to be inherent to the bilingual condition and it also seems that bilinguals make good use of it during the translation task to achieve an efficient and precise execution of the task (Macizo & Bajo, 2006). Additionally, words are usually grouped in a specific functional order to express an idea. We call this process syntax. If there is a connection between the SL and TL in the translation task, then syntax will be affected too by simultaneous activation of the SL and TL.

Most of the evidence in the study of syntax that favors the Horizontal View of Translation originates from the field of Bilingualism. In particular, most of the evidence comes from studies of syntactic coactivation in bilinguals during production (Bernolet, Hartsuiker & Pickering, 2007; Hatzidaki, Branigan & Pickering, 2011; Huang et al., 2019; Hwang, Shin, & Hartsuiker, 2018; Hartsuiker, Pickerin & Veltkamp, 2004), while studies that aim to examine syntactic coactivation in bilinguals during comprehension are almost inexistent (but see, Dussias & Cramer, 2006). In order to study syntax processing in bilinguals, researchers usually utilize tasks related to the syntax facilitation paradigms. These tasks consist of word order repetition, reading of sentences with agreement errors, reading of sentences with morpho-syntactic errors, etc. In the following subsection we will evaluate psycholinguistics studies that tackle syntactic processing in bilinguals and possible between-language parallel activation of syntactic properties.

3.2. Syntactic coactivation in sentence reading

As we mentioned before, the Horizontal View of Translation suggests between-language simultaneous activation of the syntactic properties of the SL and TL. Among them, there will be some representations that will be either congruent or incongruent between both languages and others that will be particular to each language. In this section, we review evidence about coactivation of syntactic information in bilinguals and after this we will focus on studies about between-language syntactic influences in translation tasks.

3.2.1. Separate-syntax vs. Shared-syntax in bilinguals

There are two different hypotheses that deal with the way syntactic information is represented in bilinguals. The Separate-Syntax account suggests that syntactic structures are stored separately in each of the bilinguals' languages, regardless of their similarities, since their construction might differ in some respects depending on the specific language in which these syntactic structures are used (Hartsuiker et al., 2004). On the contrary, the Shared-Syntax account suggests that syntactic rules are represented only once in languages. Specifically, it proposes that bilinguals will have only one common representation of the syntactic aspects that are shared between their languages while the syntactic aspects that are specific to each language will be represented separately.

This characteristic of syntax may be advantageous for bilinguals when it comes to code-switching between languages in a conversation, since they will have stored the necessary syntactic information in a single cognitive system to be used across their languages (Hartsuiker et al., 2004). Concerning the translation task, such shared representation would mean a more adaptive architecture to processing syntax, which would improve the reformulation process and code-switching between the SL and the TL. Moreover, the use of this common syntax would reduce cognitive load so bilinguals would have available resources to perform other processes associated to the translation task.

In several studies, it has been demonstrated that syntax in bilinguals indeed seems to be shared. For instance, Hartsuiker et al. (2004), asked Spanish (L1) – English (L2) bilingual to describe pictures that represented situations involving an agent that was performing an action and a patient that was receiving it. The experimenter described the pictures in L1 while the participants described them in L2. The experimenter described the pictures using different syntactic structures: actives, passives, intransitives and OVS (sentences that follow the word order *object-verb-subject*), whereas the participants could describe the pictures freely. That is, using the syntactic structure of their preference. If syntax is shared between the languages of bilinguals and comprehension of L1 syntactic structures determines verbal production in L2, then it was expected that the participants would use the same syntactic structures that the experimenter was using in the other language. The results revealed that the participants produced a greater percentage of passive sentences in English whenever they had just listened the experimenter produced a passive sentence in Spanish. Therefore, the activation of syntactic representations during comprehension that was observed in this experiment adds evidence in favor of the Shared-Syntax account and in favor of a connection between the comprehension of L1 sentences and sentence production in L2 (Hartsuiker et al., 2004).

However, it could be argued that the facilitation effect or syntactic priming found in Hartsuiker et al. (2004) was not truly syntactic but consequence of the activation of a string of lexical units in L1 and L2 that fostered the use of the same syntactic structure in the two languages. However, other studies suggest that this is not the case. For example, syntactic facilitation has been observed even if the main verb of the sentence is not repeated or reactivated in the other language (one of the most important lexical elements at sentence level, Bock, 1986). Similarly, facilitation has been observed during processing of function words with no lexico-semantic content (e.g., conjunctions), that, however, play a major role in the syntactic structure of sentences (Bernolet et al., 2007).

The results of other studies indicate that syntactic facilitation effects depend on the similarity of word order in the languages of bilinguals. In fact, it seems that word order is inherent to syntactic representations in bilinguals (Bernolet et al., 2007). In particular, Bernolet et al. contributed to the evidence available in favor of the Shared-Syntax account by evaluating the importance of word order in between-language syntactic facilitation effects. In the study, bilingual participants were instructed to

describe scenes that were represented with pictures. The experimenters used noun phrases in English, German and Dutch, where nouns were either preceded by an adjective (*AN*) (e.g., *the red shark*) or followed by a relative clause (*RC*) (e.g., *the shark that is red*). The *AN* structures follow the same word order in all three languages. Nonetheless, word order in the English relative clauses differs from word order in the relative clauses in Dutch and German. In these two languages, the adjective is placed between the relative pronoun and the verb (*der Hai der rot ist*, in German, and *de haai die rood is*, in Dutch). If word order is not relevant for sharing syntactic representations between languages, then a facilitation effect would show between the different *RC* structures regardless of the languages involved in the task (English, Dutch, German), since the functional and hierarchical relationships between the constituents are identical and they express the same meaning, regardless if word order differed slightly in these languages. On the contrary, if bilinguals store syntactic structures that follow the same word order, then it would be possible to activate the *RC* representation in German by presenting that clause in Dutch and vice versa because *RC* structures follow the same word order in these two languages. Nevertheless, no modulations would be found when considering English and Dutch because word order in *RC* structures differs between these two languages.

Bernolet et al. (2007) found syntactic facilitation in the L1-L2 direction in sentences with a *RC* structure that followed the same word order in (Dutch – German). The participants produced a significant greater number of *RC* after they had listened to sentences with *RC* than after having listened to *AN* structures in their L1 and L2. However, there was not any facilitation effect between Dutch and English in either direction (L1-L2, L2-L1), which suggests that this effect did not take place because sentences with *RC* in these languages do not follow the same word order. As a result, the findings of this study show that word order plays a major role in the occurrence of between-language shared syntactic activation.

If we applied the findings about between-language syntactic facilitation in bilinguals to the Horizontal View of Translation, we would predict that the understanding of the SL would be facilitate when it contains syntactic structures that follow a same word order in the TL (we will review studies on this issue later).

The studies reviewed in this section appears to support the Shared-Syntax Hypothesis (Hartsuiker et al., 2004) according to which bilinguals have a shared representation of syntactic structures used in their two language. Moreover, there are syntactic aspects or cues used to establish functional relations between words which depend on the language. Therefore, the question to be answered is about the way bilinguals manage these specific cues when they are communicating in one of their languages. We address this issue in the next section.

3.2.2. Syntactic Cues in Language Processing

There is abundant research about the use of syntactic cues in monolingual language processing. In particular, it has been shown that individuals use a variety of syntactic cues in order to interpret sentences correctly. To know the agent of a sentence (i.e., the subject) several cues can be used such as word order (the first noun in a sentence will be probably the agent), subject-verb agreement (the agent must agree in person and number with the verb), and animacy (most of the time the agent is the animate noun in a sentence). According to the Competition Model (Bates & MacWhinney, 1981, 1982; Bates, McNew, MacWhinney, Devescovi, & Smith, 1982; MacWhinney, 1985; MacWhinney, Bates, & Kliegl, 1984), and the Unified Competition Model (MacWhinney, 2011) these cues (e.g., word order, subject-verb agreement, animacy, etc.) are used for thematic role assignment in comprehension (e.g., to know which is the agent that performs the action described by the verb). Syntactic cues can compete or converge for meaning interpretation within a sentence. For example, in the sentence *the dog chases the cats*, both word order and subject-verb agreement converge to point to dog as agent of the action. On the other hand, in the sentence *the dogs chases the cat*, word order and subject-verb agreement point to different nouns as agent (word order points to dogs, whereas subject-verb agreement points to cat), which creates competition between the cues. Sentence interpretation is disrupted when the cues compete. However, when they converge, interpretation is facilitated because they point towards the same meaning interpretation.

In addition, cue strength varies from one language to another (e.g., Bates, Devescovi, & D'Amico, 1999; MacWhinney et al., 1984). The reason seems to be cue validity (the number of times a cue is present in a language and it leads to the correct interpretation of a sentence) which varies from one language to another. For instance, word order in English is a high validity cue while Spanish speakers rely heavily on subject-verb agreement.

Moving on to the field of bilinguals, there are two opposing views about the way bilinguals use syntactic cues to understand sentences. The Shallow Structure Hypothesis (Clahsen & Felser, 2006) holds that bilinguals who acquired their L2 later than their L1 would perform a superficial syntactic analysis of L2 sentences more focused on lexico-semantic information than on syntactic cues. On the contrary, when bilinguals understand L1 sentences, a full syntactic parsing would be produced with the complete analysis of syntactic information presented in the sentence. Thus, under this view, bilinguals would use L1 syntactic cues to comprehend L2 sentences. On the other hand, the Competition Model suggests the use of different strategies when bilinguals process syntactic information across their languages (Morett & MacWhinney, 2013). Namely, forward transfer: the use of L1 sentence interpretation strategies in L2 (Kilborn, 1989; Wang & Xu, 2015); backward transfer: the use of L2 sentence interpretation strategies in L1 (Liu, Bates & Li, 1992; Reyes & Hernández, 2006); differentiation: the use of the strongest monolingual interpretation strategies of each language separately (Liu et al., 1992; Reyes & Hernández, 2006); and amalgamation: a combination of strategies from both languages, applied to both of them to the same extent.

The use of these strategies seems to depend on several factors such as L2 age of acquisition, frequency of language use, the similarity between the strength of the syntactic cues in L1 and L2, cross-language structure similarity, time of exposure to L2, and L2 proficiency. For instance, Morett and MacWhinney (2013) examined how English (L1) - Spanish (L2) bilinguals used syntactic cues as a function of their proficiency in L2. The participants were presented with English and Spanish sentences, and they were asked to indicate the agent of the sentences. The sentences used in the study consisted of two nouns or pronouns, a verb, and determiners. Syntactic cues that are shared and are used in these two languages were considered (word order, subject-verb agreement, and animacy). For instance, in the sentence “*the pens is hitting the dog*”, word order cue marks “*pens*” as

agent because it is the first noun of the sentence, subject-verb agreement marks “*dog*” as agent because it agrees with the verb, and animacy cue marks “*dog*” as agent because it is the animate noun in the sentence. These common cues in L1 and L2 were compared with the use of cues that were language specific. For L1 English, the authors considered the pronominal case-marking cue which is the use of a pronoun that marks the object (patient) of the sentence (e.g., in the sentence “*Him chases the chicken*”, the pronoun “*him*” is the patient so the agent is “*chicken*”). For L2 Spanish, the authors considered prepositional case-marking cue which is the use of a preposition (“*a*”; *al* for masculine and *a la* for feminine) before the noun that is the patient (object) of the sentence (e.g., in the sentence “*El perro persigue a la gallina/the dog chases the chicken*”, “*a*” marks “*chicken*” as patient, so “*dog*” is the agent of the sentence). The results showed the use of syntactic cues depended on the proficiency of participants in L2. In general, when understanding L2 sentences, more advanced learners compared to less advanced learners relied more on the animacy cue which has greater validity in Spanish (L2) than in English (L1). On the contrary, less advanced L2 learners applied L1 syntactic strategies to understand L2 sentences. Importantly, when fluent bilinguals performed the understanding task in L1, there was evidence of backward transfer so that participants paid more attention to the L2 syntactic cue when they processed L1 sentences. Hence, L2 syntactic preferences determined the comprehension of L1 sentences.

In sum, there is evidence that bilinguals transfer syntactic preferences from one language to the other. In particular, the understanding of L1 sentences is modulated by the strength of syntactic cues in the bilinguals’ L2. In our opinion, this linguistic transfer has direct implications for the translation tasks in which two languages are involved with specific syntactic preferences. However, to our knowledge, the use of syntactic cues in translation tasks as compared to within-language tasks has not been investigated in the past. We will address this issue in one section of our experimental research. Nevertheless, there are a few reports which show that sentence comprehension for later translation is modulated by the similarity of syntactic structures in the SL and TL. We review these studies in the next section.

3.3. Between-Language Syntactic Activation in translation tasks

The data collected in the investigations that we mentioned in the last section suggests syntax in bilinguals is shared between the comprehension and production processes as well as between their languages. The data also provide evidence about the relation between the L1 and L2 of bilinguals at structural level, and therefore, it provides also indirect evidence in favor of the Horizontal View of Translation.

Although the number of studies that examine the syntactic relation between the L1 and L2 of bilinguals are even scarcer, it was possible to observe between-language syntactic overlapping during comprehension of the SL in translation in some of those studies. For example, Ruiz et al. (2008) conducted an experiment looking for evidence of TL activation at the syntactic level. They manipulated the syntactic congruency between the SL and the TL sentences by varying the order in which adjective-noun forms were presented and by including or omitting the pronoun that constituted the subject of the verb of a relative clause embedded in the sentence. To illustrate, there were congruent sentences in which the adjective (e.g., *bonita*, *nice*, in English and Spanish respectively) was placed before the noun (*casa*, *house*, in English and Spanish respectively) (e.g., *bonita casa/nice house*) and the pronoun/subject was included in SL sentences (Spanish) (e.g., *La bonita casa que yo alquilé este verano tenía un verde jardín* / *The nice house that I rented this summer had a green garden*). There were also incongruent sentences in which the adjective (*bonita*, *nice*) was placed after the noun (*casa*, *house*) (e.g., *casa bonita/nice house*) and the pronoun was omitted (e.g., *La casa bonita que alquilé este verano tenía un jardín verde* / *The nice house that I rented this summer had a green garden*). Note that in the incongruent sentences, the word order of the adjective-noun form and the omission of the subject pronoun in the Spanish sentences are impossible in an English sentence structure. The manipulation was based on the assumption that the same syntactic representation is shared across the bilinguals' languages when the syntactic structure follows an identical word order in both languages (Bernolet et al., 2007). Hence, the authors argued that congruent sentences across languages in which word order was the same in two languages would foster the coactivation of the TL when

reading for translation. Put it differently, if bilinguals coactivate syntactic properties in the TL when comprehending SL sentences for later translation, congruent sentences would be read faster than incongruent sentences. Moreover, in order to explore the moment in which TL was activated, the sentences were divided in three regions: initial (noun/adjective), middle (verbal form embedded in a relative clause) and final (noun/adjective). The participants were instructed to read the sentences word-by-word for repetition or for translation. The results showed a facilitation effect for congruent SL/TL syntactic structures in the middle region of sentences when the participants read for translation, while in the reading for repetition task no facilitation effects were found for congruent syntactic structures. No congruency effects were found in the initial and final part of the sentence in any reading task.

Thus, comprehension of the SL for translation involves parallel activation of the SL and the TL syntactic properties. Moreover, the activation of TL syntactic properties during SL comprehension process in translation not only suggests a code-to-code connection at syntactic level between the languages of bilinguals during translation, but also that (1) those syntactic representations shared between the SL and TL become activated during the SL comprehension, and (2) this TL syntactic activation affects SL syntactic processing during comprehension for translation (faster reading times when the SL and TL word order matches).

It is a matter of utmost importance to point out that in the study conducted by Macizo and Bajo (2006) the facilitation effect for cognates words during translation was found only at the final region of the sentences, while the syntactic facilitation effect for congruent sentences in the Ruiz et al. (2008) experiment was significant in the middle region of the sentences. The effect was close to significant when the participants read the initial region of the sentences, but it did not reach significance when participants read the final region of the sentences. The difference in the facilitation effects across different regions of the sentences suggests a cascade activation of syntactic and lexical properties of the TL during SL comprehension for translation. Thus, when a bilingual starts the understanding of the SL, the syntactic properties of the TL are activated and they facilitate SL processing when they are shared and congruent across languages (e.g., adjective-noun word order in Spanish and English). But once the syntactic representation necessary to understand the sentence is created, between-language syntactic parallel activation seems

to be less relevant during comprehension of the SL, and it is at this point when evidence of TL lexical activation shows up. Hence, these results suggest that the time course of activation of TL lexical and syntactic properties during comprehension in translation is different.

Most recently, the results from a study done by Togato, Paredes, Macizo, and Bajo (2017) show further support for the Horizontal View of Translation. Their research was aimed at exploring the resolution of syntactic ambiguities when reading sentences in Spanish (SL) to translate them in English (TL). Taking into account the activation of TL syntactic properties when reading for translation, they manipulated syntactic ambiguities in relative clauses formed by a double antecedent. For example, the sentence *someone shot the servant of the actress who was on the balcony*, contains an ambiguous relative clause (*who was on the balcony*) because the first noun (*servant*) and the second (*actress*) are potential subjects for the relative clause. Previous studies have found cross-linguistic differences in determining the subject of the relative clause. That is, English native speakers and Spanish native speakers adopt different parsing strategies. On one hand, English native speakers rely on a low attachment strategy so they choose “*actress*” as the subject of the relative clause (Cuetos & Mitchell, 1988), according to the Late Closure Principle (Frazier, 1987; Frazier & Rayner 1982), which states that the new lexical units are attached to the phrase currently being processed. On the other hand, Spanish native speakers have a high attachment preference instead. (“*servant*” will be the subject of the relative clause) (Cuetos & Mitchell, 1988). Interestingly, bilingual speakers of Spanish and English do not show a clear preference toward low or high attachment (Dussias, 2001; Fernandez, 2003), which seems to indicate that they maintain active the syntactic preferences of their two languages.

The sentences used in the Togato et al.’s study had a relative clause that could be attached to one of the antecedents without relying on any syntactic indicator that could boost the attachment preference of either language (e.g., *El dentista atendió a la secretaria de la directora que se divorció de su marido/The dentist attended to the secretary of the director who divorced her husband*, in Spanish and English, respectively). The participants were asked to read the sentences at their own pace to either translate them or repeat them, depending on the block type. After completing each task, the participants had to answer a verification question that was used to evaluate the

participant's preferred attachment strategy. The authors argued that participants would employ different strategies depending on the task (repetition vs. translation). In particular, they predicted that bilinguals would not exhibit a clear preference for either high or low attachment in the reading for repetition task, which would replicate previous studies (Dussias, 2001; Fernandez, 2003). By contrast, when reading for translation, participants would solve syntactic ambiguities by adopting the TL (English) preferred strategy (low attachment strategy). The data collected in the experiment indicated that the type of processing (low attachment vs. high attachment) depended on the type of task (reading for repetition vs. reading for translation). When reading for repetition, no effect was observed for attachment preference, while in the reading for translation task the participants preferred the low attachment strategy. Therefore, the reading for translation task was characterized by between-language interactions which changed the parsing of the SL (high attachment) to accommodate the understanding of sentences to the way the message needs to be produced in the TL (low attachment).

To sum up, we reviewed in this section empirical evidence concerning a possible non-selective activation of the syntactic properties of the TL during comprehension of the SL. Studies about bilingual processing during comprehension for translation and its relation with syntactic processing seems to indicate that:

1. There are between-language connections at syntactic level in the bilingual's cognitive system. Such connection is reflected in the non-selective activation showed (1) in the repetition of the same syntactic structures that the participants had listened to before production and (b) in the facilitation effect found during comprehension for translation.
2. The activation of syntactic information in one of the languages of bilinguals (L1 or L2) modulates processing in the other language. The activation and facilitation effect that one of the languages produces in the other may be influenced by the similarity of their syntactic structures (a same word order).
3. The relationship between languages at syntactic level is also reflected in translation tasks. It seems that the intrinsic characteristics of the translation task along with the degree of similarity between the structure that is being understood

and the one that must be produced favor an overlapping between the SL and TL during comprehension in the translation task. The evidence also suggests that the syntactic properties of the TL are active since comprehension of the SL begins; and moreover, they have an impact on such process.

4. The Time Course of Lexical and Syntactic Activation in Translation Task

4.1. INTRODUCTION

In previous sections, we have observed that, in translation tasks, there is lexical and syntactic activation of the output language during comprehension of the source language. This coactivation of languages favors the Horizontal View of Translation. However, at this point, we could ask about the time course of activation of these two types of information (lexical and syntactic contents) when participants perform consecutive translation of sentences. If we consider studies related to this point that were discussed in previous sections, the *locus* of linguistic effects during reading for translation is different for both lexical and syntactic properties. Lexical effects were only found at the final region of the sentences in Macizo and Bajo (2006), while syntactic main effects were near significant at the initial region and reached significance at the middle region in Ruiz et al. (2008). Hence, the results obtained in those two studies point towards an apparently serial order of activation of the TL syntactic and lexical properties during SL comprehension. However, in order to have an insight into the nature of the activation time course of linguistic information, we could resort to the neurophysiological perspective on this issue.

Neurophysiological studies on the time course of linguistic processing made use of electroencephalography (EEG) and magnetoencephalography (MEG) to measure brain responses on a millisecond basis (Hagoort, Brown, & Groothusen, 1993; Penolazzi, Hauk, & Pulvermüller, 2007; Pulvermüller, 1999, 2007). In these studies, it is possible to evaluate the time course associated to the activation of different types of linguistic

information, for example, those involved in word processing (orthography, phonology, grammar/syntax, semantics). The data obtained in those experiments seemed to favor a serial type of processing at first (Fodor, 1983; Friederici, 2002; Morton, 1969; Shallice, 1988). Modular seriality advocates for a string of processes that take place sequentially and independently, suggesting that after an initial analysis of physical features of the word stimuli (phonological features in spoken words and orthographic features in written words which allows for word identification during comprehension), lexical category information is retrieved (e.g., noun, verb, adjective) and a basic syntactic structure is built (lexico-syntactic analysis stage), followed by a lexical processing stage, a semantic processing stage, and, finally, a context integration stage and an optional stage of syntactic reanalysis at 100 ms, 200 ms, 300 ms, 400 ms and 500 ms onwards, respectively. In addition, the onset of each module in the processing sequence starts only after the previous processing stage has ended, which implies that each module processes its own part of the information input; and thus, that there is no spreading activation from one module to another or any kind of simultaneous processing whatsoever.

In spite of the seemingly serial processing of linguistic information, there is a less strict view which, although serially in nature, suggests a connection between the different linguistic processing levels, where information is passed along the different levels in a cascade manner (Dell, 1986; Dell, Schwartz, Martin, Saffran, & Gagnon, 1997; Hagoort, 2008; Norris, McQueen, & Cutler, 2000). The cascade processing perspective holds that the different language processing levels are connected by nodes which spread information across themselves. Hence, although serially in terms of each level onset, linguistic information processing is also interactive and it is activated simultaneously since each level becomes active after receiving information from another level, and, while one level will be at its threshold of activation, the other levels will remain active but to a lesser extent (see Figure 2). Therefore, at some point in processing all levels will be active. Finally, despite the differences between the serial and cascade perspectives in terms of how processing takes place, both perspectives agree on the activation time course of linguistic information processing: analysis of physical features of critical word stimuli, retrieval of lexical category information and building of an elementary syntactic structure; followed by predominantly lexical processing, semantic access and context integration (indexed with the N400 electrophysiological component), concluding with an optional

second step of deep syntactic analysis or re-parsing (indexed with the P600 electrophysiological component) (Friederici, 2002).

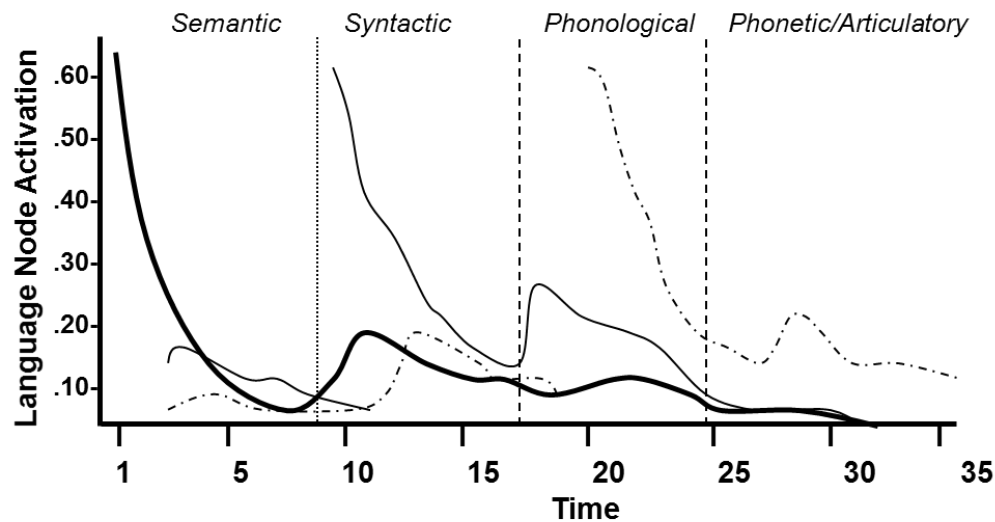


Figure 2. Time course of semantic, syntactic (at word-level) and phonological language node activation. Adapted from Dell & O’Searghda (1991, 1992). A 1.0 external signal is sent to the nodes in each time unit. The vertical dotted straight lines delimit the domains where a specific node type is predominantly active in comparison with the rest. The curve in bold corresponds to the semantic nodes, the fine one to the syntactic nodes, and the dotted one to the phonological nodes

That being said, there is a more recent perspective contrasting with these two views which suggests that early access to the different linguistic information takes place near-simultaneously (e.g., Pulvermüller, Shtyrov, & Hauk, 2009). To put it in another way, the access to different types of linguistic information happens around the same time window width with just a slight difference of tens of milliseconds unlike hundreds of milliseconds in the late effects (N400 and P600 component). In addition, even though the duration of these early effects is extremely short, their activation time course seems to be of a serial nature when looked from a broader and classical diagram (boxes and arrows) perspective, as if all the different properties of a given linguistic information level (e.g., lexical) are enclosed within that level and processed at a same time. But, remarkably, analyzing those early effects in comprehension from a neuronal circuit perspective sheds a different light upon their time course access. Several studies have found early access to all kind of linguistic information: phonological (Näätänen et al., 1997; Shtyrov, Pihko, &

Pulvermüller, 2005), lexical (Pulvermüller et al., 2001b, 2003), semantic (Pulvermüller, 1999), (Pulvermüller, Shtyrov, & Ilmoniemi, 2005), syntactic (Menning et al., 2005; Shtyrov, Pulvermüller, Näätänen, & Ilmoniemi, 2003), and including semantic context (Menning et al., 2005; Shtyrov & Pulvermüller, 2007; Brown, van Berkum, & Hagoort, 2000), and it has been suggested that the different onset of the latencies might be due to category-specificity (Pulvermüller, Hummel, & Härle, 2001a, Pulvermüller et al., 2005; Shtyrov et al., 2004).

Nevertheless, the concept of parallel processing of different types of linguistic information that has been defended in recent neurophysiological studies is not something entirely new, since it was put forth from a cognitive perspective several decades ago. For instance, and from the monolingual language processing field (Spreading Activation Theory- SAT, Dell, 1986; Dell & O'Seaghdha, 1991), Dell and colleagues held that if we looked at the activation course of linguistic information from a broader perspective activation, it would seem that syntactic information becomes active first, followed then by lexical activation in an apparent sequential manner. But according to the authors, if we took a closer look at the process, it would turn out to be a cascading process where both syntactic and lexical information would be conjointly active with a variation of their activation peak over time. More specifically, when the syntactic activation peak is at its threshold at the beginning of a linguistic task, activation at the lexical level would be weak, while afterwards, when the activation peak of lexical information has reached its threshold, activation at the syntactic level would still be present but to a lower degree. Furthermore, this cascading perspective maintains that parallel activation of the different language levels would allow them to influence each other; thus, allowing them to modulate each other during language processing. For instance, and in regard to our concrete case, the syntactic activation could be modulated by lexical information and vice versa (e.g., Dell, 1986) (Figure 2).

5. Goals and Structure of the Experimental Sections

5.1. INTRODUCTION

When we think about syntax, the first image that is usually evoked in our mind is that of the syntactic structure of a phrase. But syntax is much more than that; there is beauty in syntax since it determines our singularity of expression. Words mean a lot more when they are arranged together, and even if they may mean different things by themselves, their intended meaning is justified by their place within a string of words and their relationship with the rest of the words in that string. Thus, syntax does not refer solely to the rules that control a string of words, but also to the relationship between those words, and the meaning conferred by that relationship. Syntax is not only about “between words” but also about “within words”. Words have syntactic properties by themselves and those properties determine their relationship with the rest of the words. At this point, we should say that “relationship” is the key word: relationship between those same kinds of properties, relationship between different kind of syntactic properties, and relationship between those syntactic properties and the properties of other parts of speech. That is the main objective of the experimental series of this doctoral dissertation: to investigate, within the comprehension for translation frame, which syntactic properties become active; to discover whether there is interaction between syntactic properties of the same type, between syntactic properties of different kinds, and between syntactic properties and the properties of another part of speech (lexical), along with an insight of such interaction; and finally, to explore the activation time course of syntactic and lexical properties.

To accomplish those goals, we developed a research line which comprises three experimental series that focused on the processing of TL syntactic properties during comprehension in translation. The first series dealt with modulation of sentence

processing by syntactic cues during translation. The second series emphasized on the interaction between syntactic and lexical properties and their activation time course during translation; and the third series revolved around the modulation of attachment strategies by the TL and their interaction with another syntactic property (word order) in a translation task. As a general goal, we foresought to explore the impact of L2 activation on L1 processing at the syntactic level during comprehension in translation. Furthermore, all three experimental series had some convergent methodological principles. Namely, bilingual Spanish (L1) – English (L2) participants, direct comparison of between-language task (translation) and within-language task (reading), and manipulation of syntactic elements. In this section below, we will present the structure, goals, and hypothesis of the experiments carried out.

5.2. Experimental section 1. Things Can Change: Sentence Processing in Consecutive Translation

Syntactic cues are used to assign thematic roles (agent/patient) in sentence processing (Bates & MacWhinney, 1981, 1982; Bates, McNew, MacWhinney, Devescovi, & Smith, 1982; MacWhinney, 1985; MacWhinney, Bates, & Kliegl, 1984; MacWhinney, 2011), which make them of crucial importance for sentence comprehension given that they will be used to identify who/what performs an action and who/what receives it. There are different types of syntactic cues (e.g., word order, animacy, case-marking) whose strength varies across languages (Bates, Devescovi, & D'Amico, 1999; MacWhinney et al., 1984). Cue strength is the weight speakers assign to cues when they are competing against each other during sentence processing, and it is determined by cue validity, which, in turn, consists of cue availability (the number of times a cue is present) and cue reliability (the number of times a cue leads to the correct interpretation). That being said, syntactic cues can compete or converge for correct interpretation of a sentence. When they compete, the number of present cues point to different nouns as possible agents, interrupting, thus, sentence interpretation; whereas when they converge, comprehension is facilitated given that they point toward the same noun as a possible agent.

In this experimental series, we explored the use of syntactic cues during within-language and between-language tasks. In **Experiment 1**, we evaluated if the role of animacy and word order depended on the task the participants performed, in **Experiment 2** we evaluated the use of subject-verb agreement and word order with the same purpose, and in **Experiment 3**, we investigated whether the use of a same syntactic cue (word order) which would lead to different agent interpretation depending on the language (English or Spanish), would be used differently based on the task (within-language task vs. between-language task).

1. Previous studies have shown TL activation of different types of syntactic properties like sentence structure representation (Ruiz et al., 2008) and attachment strategies (Togato et al., 2017) during translation tasks. Thus, **our goal was to examine whether activation of TL syntactic properties extends to the use of TL syntactic cues depending on the goal of the reading.** To this end, we presented three written words which consisted of two nouns and a verb in their L1 (Spanish). The participants were instructed to either build a sentence in their L1 or their L2 (English) with those three words. The words were manipulated according to three different cues: animacy, subject-verb agreement, and word order. While animacy is a stronger cue in Spanish than in English, and native Spanish speakers rely substantially more on subject-verb agreement than native English speakers, word order is the most critical cue in English. Finally, two of the cues were manipulated in each experiment while one of them was kept constant, allowing, thus, to compare the use of those cues when building the sentences in each task.
2. We expected participants to use the strongest cue in their L1 (Spanish) in the within-language task to produce sentences, while they would rely more on the TL strongest cue (word order) to choose the agent and produce the sentences in the between-language task, despite the presence of cue competition. Thus, the necessity of activating a specific syntactic cue in each language would be modulated by the type of task.

5.3. Experimental section 2. Lexical and Syntactic Target Language Interactions in Translation

1. **The objective of the study was to explore possible interactions between TL syntactic properties (syntactic structure representation) and TL word representation (cognate words) during reading for translation.** As mentioned earlier, it is suggested that syntactic representations which follow the same word order across different languages are stored only once and shared between those languages (Bernolet, Hartsuiker & Pickering, 2007; Hatzidaki, Branigan & Pickering, 2011; Hartsuiker, Pickerin & Veltkamp, 2004). Similarly, cognate words, which share identical or almost identical features such as (phonology, spelling, meaning) across languages are shared between those languages as well. As mentioned before, Ruiz et al. (2008) explored TL syntactic structure activation through word order, and activation of TL word representation through word frequency, respectively. Nonetheless, investigation of TL syntactic and lexical properties was carried out separately which did not allow to explore any possible interaction between both types of properties. That is why we decided to tackle this matter by manipulating word order to create SL-TL congruent/incongruent sentence structures and cognate/control words within the same sentence (**Experiment 4**). The cognate words (nouns) would be placed as one of the two words manipulated in the word order (noun/adjective) to create congruent structures between the SL and the TL. Therefore, syntactic and lexical manipulations would be present within the same sentence which would enable us to obtain comprehension indexes of both types of linguistic information in the same sentence. We predicted slower RTs in reading for translation than in reading for repetition. As mentioned previously, slower reading times are interpreted as an indirect index of TL activation. Activation of the TL will demand additional processing resources, which in turn would increase RTs in the reading for translation task compared to the reading for repetition task. Furthermore, we expected TL lexical properties activation during SL comprehension, reflected in faster RTs of cognate words in comparison with control words. Also, we predicted TL syntactic properties activation in SL comprehension which would be reflected

in faster RTs of congruent structures vs. incongruent structures. However, the most relevant and original prediction of our study was the following: if activation across different linguistic levels takes place in cascade and interactively, we would then find interaction between both linguistic factors.

2. **The second goal of the study aimed at exploring the TL time course of activation.** To achieve this goal, we followed Ruiz et al. (2008) method of dividing the sentences into three regions (initial, middle, and final) where the syntactic manipulation (performed in the initial, middle, and final region) and the lexical manipulation (initial and final region) were carried out. Past studies where sentences were divided into regions have found syntactic effects in the middle region (Ruiz et al., 2008) and lexical effects in the final region (Macizo & Bajo, 2006; Ruiz et al., 2008). Hence, we predicted a greater syntactic effect in the initial and middle regions in comparison with the final region. Lexical effect, on the other hand, was expected to be stronger in the final region of the sentences in contrast with the initial and middle regions. So, if we look at them separately, one type of linguistic property would be active before the other.
3. **The third goal of the study sought to examine whether the expected effects at the final region in the reading for translation task of Experiment 4 could be a result of the integration processes that occur at the end of a sentence (Experiment 5).** These processes, known as wrap-up effect, entail longer reading times at the end of a sentence in comparison with other parts of it (Rayner, Sereno, Morris, Schmauder, & Clifton, 1989; Stowe, Kaan, Sabourin, & Taylor, 2018). To this end, we modified the experimental sentences that would be used in Experiment 4 by adding a clause after the final critical region so the latter would not be found at the end of the sentences. Then we would compare the reading times of the reading for translation task of Experiment 5 to those of Experiment 4. We predicted that if the expected effects at the final region in the reading for translation task were specifically derived from the wrap-up effect, then such effects would be absent in Experiment 5 due to the increased length of the experimental sentences.

5.4. Experimental section 3. Ambiguous Sentence Processing in Translation

1. **The aim of this study was to explore possible online coactivation of two TL syntactic properties in translation: Syntactic structure representation and attachment strategies.** Previous studies have investigated the processing of both properties during translation tasks (Ruiz et al., 2008, and Togato et al., 2017, respectively). Nevertheless, both studies explored the activation of those properties independently, and not in conjunction with another syntactic property. Thus, in order to study both properties simultaneously, in the last experiment of our work (**Experiment 6**) we first created ambiguous relative sentences with double antecedents which ended in an adjective. The adjective matched the gender of the first, the second or none of the antecedents. This would allow us to study the attachment strategy preferences of the participants. Next, we manipulated syntactic congruency between the SL and TL syntactic structure within the same sentences, following Ruiz et al.'s method. First, we expected to find slower reading times (RTs) in the reading for translation task in comparison with the reading for repetition task. Slower reading times in the reading for translation task would suggest TL activation during SL comprehension (Schaeffer, Patterson, McGowan, White, & Malmkjær, 2017). And second, we expected faster RTs when reading congruent sentences in comparison with incongruent sentences. As mentioned earlier, previous studies have shown facilitation effects in sentence production in bilinguals when both of their languages share the same syntactic structure (Bernolet, Hartsuiker & Pickering, 2007; Hatzidaki, Branigan & Pickering, 2011; Hartsuiker, Pickerin & Velkamp, 2004). It is suggested that syntactic structures that share a same word order are stored only once in the bilingual mind and shared between both languages, while those structure representations which do not follow the same word order are stored separately and are not shared between both languages. In addition, we also expected to obtain a higher preference of the favorite TL attachment strategy (low attachment) when reading for translation; confirming, thus, the results obtained in Togato et al. (2017)

2. We should remark that all the sentences in the Togato et al.'s study were ambiguous, which did not allow taking online measures. To address this issue and take online measures on possible online coactivation of attachment preferences during reading for translation, we decided to create high, low and ambiguous attachment conditions. The gender of the last word of the sentences was manipulated in order to match one of the antecedents (high and low conditions) or both of them (ambiguous condition). The RTs of the last word of the sentence would tell us if participants used the preferred attachment strategy of the TL in the reading for translation task. In other words, if participants used the preferred attachment strategy of the TL (low attachment, in English), then RTs of the last word of the sentences would be faster in the low attachment condition than in the high attachment condition. In addition, just like in Togato et al. (2017), the participants had to answer a reading comprehension question regarding the last part of the sentence after completing the task. Both antecedents were provided as possible answers. The participants had to attach one of the antecedents to the last word of the sentences in order to answer the question which, in turn, would also allow us to take offline measures on the chosen attachment strategy.
3. **The second goal was to look for possible interaction between TL syntactic congruency and attachment strategies during SL comprehension.** Our hypothesis proposed that if TL syntactic properties are already active before finishing reading the sentences, then the TL syntactic structure representation would be active and, hence, it would enhance the use of the second antecedent (low attachment strategy). To be specific, a more frequent usage of the TL most common attachment strategy vs. the SL most common one in SL-TL syntactically congruent sentences would favor interaction between both syntactic properties. This is the most significant and novel prediction from our last experimental section compared to previous studies on the subject.

The upcoming section gathers all the empirical work carried out for this thesis. All the studies have been already published, except for one which is still in the “submitted for publication” status. All the studies have been adapted to a thesis format for this doctoral thesis. Nevertheless, all the content has been kept as in the original articles that have been already published and the one which has been submitted for publication.

EXPERIMENTAL SECTIONS

6. **Experimental section 1. Things Can Change:** Sentence Processing in Consecutive Translation

Syntactic cues help individuals to assign thematic roles (agent/patient) during sentence processing. In the present study, we examined whether the use of syntactic cues changed in bilinguals depending on the task they performed. Spanish (L1)/English (L2) bilinguals read sentences in Spanish either to produce them in the same language or to translate them in English. Three syntactic cues were evaluated: animacy (Experiment 1), subject–verb agreement (Experiment 2), and word order (Experiment 3). In Experiments 1 and 2, word order was stronger than animacy and subject–verb agreement when bilinguals read for translation. Moreover, when the same syntactic cue favored a different agent for each language (word order in Experiment 3), the bilinguals performed as native speakers of Spanish in the within-language task, whereas they performed as native speakers of English in the translation task. Together, this research indicates that translation changes the way bilinguals use syntactic cues in sentence processing.

This study has been published as Ruiz, J. O., & Macizo, P. (2018). Things can change: Sentence processing in consecutive translation. *Canadian Journal of Experimental Psychology/Revue Canadienne de Psychologie Expérimentale*. doi: 10.1037/cep0000141

6.1. INTRODUCTION

Translation is the task of reformulating a message from a source language (SL) into a target language (TL). In consecutive translation, bilinguals have to read a sentence visually presented in a SL and afterward reformulate it and produce the message in a TL.

There are two different theoretical accounts that explain the way comprehension, reformulation, and production processes take place in translation. The Horizontal View holds that reading for translation differs from reading for comprehension in a monolingual context in that the former is an interactive process that involves simultaneous activation of the SL and TL. Thus, the TL lexical and syntactic properties modulate the processing of the SL even in the comprehension phase of the translation task (Danks & Griffin, 1997; Gerver, 1976; Macizo & Bajo, 2006; Padilla, Macizo, & Bajo, 2007). On the other hand, the Vertical View (Seleskovitch, 1976, 1999) maintains that comprehension and reformulation are independent processes which are produced in a sequential manner. Therefore, no modulation of the SL comprehension by the TL is expected according to this account. In other words, comprehension in translation will be similar to that carried out in monolingual contexts (e.g., sentence reading within a language alone).

In agreement with the Horizontal View of translation, at the lexical level, there is evidence that bilinguals activate TL properties during comprehension of the SL for translation, although this activation does not occur when reading for repetition (Macizo & Bajo, 2006; Ruiz, Paredes, Macizo, & Bajo, 2008). Evidence of TL activation during reading for translation has been also found at the syntactic level (Ruiz et al., 2008; Togato, Paredes, Macizo, & Bajo, 2017). For example, considering that syntactic structures that follow the same word order in the bilinguals' L1 and L2 will share the same syntactic representation (Bernolet, Hartsuiker, & Pickering, 2007), Ruiz et al. (2008) examined possible between-language congruency effects at the syntactic level in Spanish (L1)/English (L2) bilinguals when they read for repetition or translation. For instance, in congruent sentences, the adjectives (e.g., *nice*, *bonita*, in English and Spanish, respectively) were placed before the nouns (*house*, *casa*, in English and Spanish, respectively; e.g., *bonita casa/nice house*) and the subject pronouns were included in the SL sentences (e.g., *La bonita casa que yo alquilé este verano tenía un verde jardín/The*

nice house that I rented this summer had a green garden). On the other hand, given that Spanish is a Pro-Drop language, whereas in English such syntactic structures are not possible, the incongruent sentences were constructed by dropping the subject pronoun in the SL sentences (e.g., *La casa bonita que alquilé este verano tenía un jardín verde*/The house nice that [I] rented this summer had a garden green), and by placing the adjectives after the nouns (e.g., *casa bonita*/house nice). The results showed a significant facilitation effect for the congruent SL/TL syntactic structures in the reading for translation task, whereas no facilitation effect was found for congruent structures when reading for repetition. This finding suggests that bilinguals activate syntactic properties of the target language during sentence comprehension in a translation task, and that the syntactic properties of the target language modulate SL comprehension during translation.

The current study was focused on how bilinguals use syntactic cues to understand sentences in consecutive translation. Individuals use a variety of syntactic cues to interpret sentences correctly. According to the competition model (Bates & MacWhinney, 1981, 1982; Bates, McNew, MacWhinney, Devescovi, & Smith, 1982; MacWhinney, 1985; MacWhinney, Bates, & Kliegl, 1984), and the unified competition model (MacWhinney, 2011) these cues (e.g., subject–verb agreement, case marking, word order, animacy) are used for thematic role assignment in comprehension (e.g., agent, patient). Syntactic cues can compete or converge for meaning interpretation in a sentence. For example, in the sentence *the dog chases the cat*, both word order and subject–verb agreement converge to point to *dog* as agent of the action. However, in the sentence *the dogs chases the cat*, word order and subject–verb agreement point to different nouns as agent (word order points to *dogs*, whereas subject–verb agreement points to *cat*), which creates competition between the cues. Sentence interpretation is disrupted when the cues compete. Nevertheless, when they converge, interpretation is facilitated because they point toward the same meaning interpretation. In addition, cue strength varies from one language to another (e.g., Bates, Devescovi, & D’Amico, 1999; MacWhinney et al., 1984). The reason seems to be cue validity because it allows a correct interpretation of the sentence depending on the language characteristics. Cue validity is the product of *cue availability* (the number of times a cue is present) and *cue reliability* (the number of times it leads to the correct interpretation). Cue validity determines *cue strength*, which is the weight speakers assign to different cues when they are put into competition in sentence

processing. However, cue validity varies from one language to another because some are not as strong in some languages as they are in others. For instance, word order in English is a high validity cue. The lack of inflections in verbs and nouns has made word order the most valid cue to assign syntactic roles in English sentences and, therefore, to obtain such information to interpret sentences correctly. The usage of this cue by English speakers can be considered a normal interpretation strategy because subjects precede verbs in the most common type of English sentence structure, the canonical noun–verb–noun (NVN) structure. By contrast, the word order cue is not the strongest cue in Spanish because even though the usual word order in Spanish sentences is the canonical (subject–verb–object) SVO, the highly inflective nature of this language and the information it provides morphologically allows the use of a flexible word order in sentence structure (e.g., OVS, OSV). Spanish speakers rely heavily on subject–verb agreement due to syntactic rules because in Spanish every agent must agree with the verb in person and number.

Moving on to the field of bilinguals, there are two opposing views about the way bilinguals use syntactic cues to understand sentences. The shallow structure hypothesis (Clahsen & Felser, 2006) holds that bilinguals who acquired their L2 later than their L1 would perform a superficial syntactic analysis of L2 sentences more focused on lexico-semantic information than on syntactic cues. On the contrary, when bilinguals understand L1 sentences, a full syntactic parsing would be produced with the complete analysis of syntactic information presented in the sentence. Thus, under this view, bilinguals would use L1 syntactic cues to comprehend sentences. On the other hand, the competition model suggests the use of different strategies when bilinguals process syntactic information across their languages (Morett & MacWhinney, 2013). Namely, *Forward Transfer*: the use of L1 sentence interpretation strategies in L2 (Kilborn, 1989; Wang & Xu, 2015); *Backward Transfer*: the use of L2 sentence interpretation strategies in L1 (Liu, Bates, & Li, 1992; Reyes & Hernández, 2006); *Differentiation*: the use of the strongest monolingual interpretation strategies of each language separately (Liu et al., 1992; Reyes & Hernández, 2006); and *Amalgamation*: a combination of strategies from both languages, applied to both of them to the same extent. The use of these strategies seems to depend on several factors such as L2 age of acquisition, frequency of language use, the social context where it is used, the similarity between the strength of the syntactic cues in L1 and L2, cross-language structure similarity, time of exposure to L2, and L2

proficiency. For instance, Morett and MacWhinney (2013) examined how English (L1)/Spanish (L2) bilinguals used syntactic cues as a function of their proficiency in L2. The sentences used in their study consisted of two nouns or pronouns, a verb, and determiners. The use of cues that are shared between the two languages (word order, subject–verb agreement, and animacy) was contrasted with the use of cues that are language specific (prepositional case marking in Spanish and nominal case marking in English). The participants were presented with English and Spanish sentences, and they were asked to indicate the agent of the sentences. The results showed that processing for bilinguals with a high degree of L2 proficiency was similar to that of monolinguals. In particular, the more advanced learners relied more on the animacy cue than the less advanced learners whenever other stronger cues in Spanish (e.g., NVN order or prepositional case marking) were not available. In addition, the more advanced L2 learners showed increased use of the VS word order in Spanish, which helped them to interpret VNN sentences as VSO. In addition, the results indicated that cue strength shifts from L1 to L2 gradually so forward transfer of L1 interpretation strategies to L2 sentence comprehension in learners depended on their L2 fluency.

6.2. The current study

As we have seen, speakers make use of different syntactic cues (e.g., animacy, word order, subject–verb agreement) that are available during sentence comprehension. Furthermore, the strength of each cue varies across languages. It seems that bilinguals adopt different processing strategies depending on different factors such as L2 age of acquisition, L2 proficiency and L1–L2 similarity, among other factors.

To our knowledge, the use of syntactic cues in consecutive translation has not been studied in the past. The goal of our research was to evaluate whether activation of the TL syntactic properties extends to activation of the TL syntactic cues based on the task bilinguals perform (within-language production vs. translation). To do so, we considered three syntactic cues: animacy, subject–verb agreement and word order. To this end, we broke a full 2 (task) x 3 (animacy) x 3 (agreement) x 3 (word order) design into

three separate experiments with a 2 x 3 design for each experiment to explore each syntactic cue separately.

Furthermore, in many studies evaluating the use of syntactic cues, the participants' agent choice is determined by presenting sentences and asking participants to indicate who did the action (Bates et al., 1999; Kilborn, 1989). Because this method is an explicit one, we decided to use a new methodology instead. Participants were presented with two nouns and a verb in L1 and they had to read them to produce a sentence in L1 or to produce the sentence in L2 (L2 translation). To determine the participants' agent choice, they were required to always produce the sentence using the canonical subject–verb–object (SVO) structure. Thus, the first noun produced by a participant was the one chosen as the agent of the sentence.

In addition, most studies about the use of syntactic cues have been performed in the auditory modality. In contrast, the study reported here was carried out with sentences presented visually. The decision to use visual stimuli was due to our interest in exploring the use of syntactic cues in consecutive translation. This task involves the comprehension of visual information in the SL and the production of the oral translation in the TL. Moreover, the use of visual sentences avoids any confounds that might result from prosodic factors on the assignment of the agent role (see, MacWhinney et al., 1984).

According to the Horizontal View of Translation (Danks & Griffin, 1997; Macizo & Bajo, 2006), we expected the results of our study to show that (a) the importance of a syntactic cue relied on the necessity of activating one of the bilinguals' languages according to the task requirements; (b) whenever Spanish–English participants had to read and produce the sentences in Spanish, the most relevant syntactic cues would be those with the highest strength in Spanish; and (c) whenever the participants were asked to read and translate the sentences in English, the syntactic cues with the highest strength in English would be more relevant than those with the highest strength in the Spanish language. The critical point was that this pattern of results would indicate that the use of syntactic cues is not fixed in bilinguals, but that it would depend on the task goal (reading for L1 production or reading for translation). In other words, the way bilinguals understand sentences would depend on the task they perform. On the contrary, the Vertical View of Translation would predict similar use of syntactic cues during the

understanding of sentences regardless of the task bilinguals perform because SL comprehension and TL reformulation proceed in a discrete serial manner (Seleskovitch, 1976, 1999).

6.3. Experiment 1: Animacy

In Experiment 1, we explored whether the role of the animacy cue depended on the task participants performed. Thus, a set of bilinguals read Spanish sentences to produce them in L1 (Spanish) or to translate them in L2 (English). Three animacy conditions were examined: two animate nouns (AA condition; *El tigre persigue el león*/The tiger chases the lion), first noun animate only (AI condition; *El caballo lame el bolígrafo*/The horse licks the pen), and second noun animate only (IA condition; *El balón pega el cerdo* /The ball hits the pig). The animacy cue was examined while the agreement cue was kept constant (the two nouns agreed in number with the verb). If participants use the animacy cue, animate nouns would be assigned as the agent of the sentences. In addition, all sentences followed the canonical noun–verb–noun (NVN) word order structure. We decided to use NVN sentences in Experiment 1 (also in Experiment 2) since it is the most frequent word order in Spanish and English sentences (Hernández, Bates, & Avila, 1994; MacWhinney et al., 1984). Moreover, the use of word order in NVN sentences produces first noun preference as the agent of the sentences. Thus, in Experiment 1, word order always guided to first noun preference, whereas the animacy cue guided to first noun preference in AI sentences, second noun preference in IA sentences, and was non-informative in AA sentences.

As explained in the introduction section, animacy has more weight in Romance languages relative to Germanic languages (e.g., English). In addition, although word order is a relevant syntactic cue across languages, its relevance is critical in English. If the use of syntactic cues depends on the type of task, the weight assigned to animacy and word order would depend on the task Spanish/English bilinguals (L1/L2, respectively) perform when understanding Spanish sentences for production in Spanish or translation in English. In particular, the bilinguals would rely on the syntactic cue with the highest

strength in L2 (word order) to choose the agent when reading for translation in English, regardless of the animacy value (AA, AI or IA).

6.4. METHOD

6.4.1. Participants

Twenty-four Spanish–English (L1–L2) bilinguals from the University of Granada participated in the experiment (16 women and 8 men). Their mean age was 22.88 years ($SD = 2.31$). Each subject provided written informed consent before performing the experiment. Their participation was remunerated with academic credits. Before performing the experiment, all the participants completed a language history questionnaire previously used in our lab (Macizo, Bajo, & Martín, 2010; Martín, Macizo, & Bajo, 2010), in which they rated their speech fluency, speech comprehension, and writing and reading skills in both L1 and L2 (see Table 1). The mean proficiency of participants was higher in Spanish ($M = 9.14$, $SD = 0.66$) than in English ($M = 7.07$, $SD = 0.79$), $t(23) = 13.57$, $p < .001$. Therefore, participants were unbalanced bilinguals with higher proficiency in their first language relative to their second language.

6.4.2. Design and Materials

The type of reading (reading for within-language production in L1 and reading for translation in L2) and the animacy of the two nouns contained in a sentence (both animate = AA, first animate and second inanimate = AI, first inanimate and second animate = IA), were manipulated in a 2 x 3 within-participants design.

There was a total of 60 simple sentences in Spanish for each participant (30 for each type of reading). Sentences were counterbalanced by task across participants so each sentence was presented an equal number of times in the two tasks across participants.

Within each task, there was a total of 10 sentences in the AA condition, 10 sentences in the AI condition, and 10 sentences in the IA condition (see Table 2 for examples of sentences in the three conditions). There was subject–verb agreement in all

sentences. Half of the sentences in the three levels of animacy were presented with singular nouns and verbs and the rest of sentences were presented with plural nouns and verbs. We could have examined only sentences with singular nouns and verbs; however, we decided to use singular and plural nouns in the experimental sentences to make comparable the material to that used in Experiment 2 where singular and plural nouns had to be used to evaluate subject–verb agreement.

Table 1. *Characteristics of Participants in the Study*

| | Experiment 1 | Experiment 2 | Experiment 3 |
|--|--------------|--------------|--------------|
| Age (years) | 22.88 (2.31) | 22.96 (3.75) | 23.75 (4.26) |
| Age starting L2 learning (years) | 6.58 (2.15) | 6.67 (1.83) | 6.38 (2.65) |
| Time living in L2 speaking countries (months) | 8.25 (6.14) | 9.21 (8.04) | 8.75 (7.87) |
| <i>Language Proficiency Questionnaire</i> | | | |
| L1 Reading proficiency | 9.02 (0.91) | 9.15 (1.02) | 9.13 (1.12) |
| L1 Speech comprehension | 9.15 (0.88) | 9.02 (1.01) | 9.08 (1.21) |
| L1 Writing proficiency | 9.19 (1.11) | 9.06 (1.07) | 9.00 (1.22) |
| L1 Speech fluency | 9.21 (1.02) | 9.17 (1.05) | 9.13 (1.15) |
| Mean L1 fluency | 9.14 (0.66) | 9.10 (0.66) | 9.08 (0.62) |
| L2 Reading proficiency | 7.46 (1.18) | 7.17 (1.17) | 7.25 (1.22) |
| L2 Speech comprehension | 7.21 (1.25) | 7.33 (1.17) | 7.33 (1.17) |
| L2 Writing proficiency | 7.08 (0.97) | 7.13 (0.90) | 6.88 (1.03) |
| L2 Speech fluency | 6.92 (1.14) | 7.21 (1.38) | 7.17 (1.55) |
| Mean L2 fluency | 7.07 (0.79) | 7.22 (0.70) | 7.13 (0.79) |

Note. The self-report ratings in L1 (Spanish) and L2 (English) ranged from 1 to 10, where 1 was not fluent and 10 was very fluent. Standard deviations are reported in brackets. Across experiments, participants were equated in all measures reported in this table (all $ps > .05$).

Table 2. *Examples of Sentences Used in the Study*

| |
|------------------------|
| Experiment 1 (Animacy) |
|------------------------|

| | |
|---|---|
| AA | <i>El tigre persigue el león</i> (The tiger chases the lion) |
| AI | <i>El caballo lame el bolígrafo</i> (The horse licks the pen) |
| IA | <i>El balón pega el cerdo</i> (The ball hits the pig) |
| <hr/> Experiment 2 (Subject-verb agreement) | |
| Ag0 | <i>El burro ama el conejo</i> (The donkey loves the rabbit) |
| Ag1 | <i>El búfalo oye los toros</i> (The buffalo hears the bulls) |
| Ag2 | <i>Los patos busca el pavo</i> (The ducks seeks the turkey) |
| <hr/> Experiment 3 (Word order) | |
| NVN | <i>El escarabajo encuentra el lagarto</i> (The beetle finds the lizard) |
| NNV | <i>El ciervo el rinoceronte huele</i> (The deer the rhino smells) |
| VNN | <i>Muerde el loro el pelícano</i> (Bites the parrot the pelican) |

Note. Sentences were presented in Spanish. English translations are given in bracket. AA = first and second noun animate; AI = first noun animate, second noun inanimate; IA = first noun inanimate, second noun animate. Ag0 = first and second nouns agree in number with verb; Ag1 = first noun only agrees; Ag2 = second noun only agrees. NVN = noun-verb-noun word order; NNV = noun-noun-verb word order; VNN = verb-noun-noun word order.

The sentences were generated by inserting a verb and two nouns into a simple transitive template. The nouns were randomly selected from a pool of 60 animate nouns, 30 inanimate nouns, and 30 verbs. All sentences were constructed in the canonical noun–verb–noun (NVN) order in which the nouns were preceded by a Spanish article. Thus, word order was kept constant in the experiment. The nouns and verbs were selected from previously published studies (Bates, Friederici, & Wulfeck, 1987; MacWhinney et al., 1984; see Appendix 1). We acknowledge that the random combination of animate/inanimate nouns and verbs to create the sentences might change the acceptability of inanimate entities as agents depending on the verb. We decided to use this random combination as done in many previous studies on this topic (Bates et al., 1987; MacWhinney et al., 1984). Nevertheless, in our study, we evaluated whether the effects of animacy and task applied across sentences (item analyses, see below).

Before evaluating the possible effect of the type of reading in sentence understanding, we checked that between-language differences in the use of syntactic cues observed previously (MacWhinney et al., 1984) could be found with our experimental

sentences. To this end, we performed a pilot study to evaluate how monolingual speakers of the languages used in the current study (Spanish and English) interpreted sentences depending on animacy. A set of 60 NVN sentences were created with the nouns and verbs used in the main experiment. The nouns and verbs were combined randomly to create the sentences. These sentences were presented to a group of 46 Spanish monolinguals at the University of Granada (Spain) and a group of 41 English monolinguals at the University of Arizona (U.S.A.) in the language spoken by the participants¹. Twenty sentences were assigned to each animacy level (AA, AI, IA). The participants received a booklet of 60 sentences randomly intermixed and were instructed to read each sentence and, afterward, to interpret it by marking the noun that was the subject/agent of the sentence; that is, the one who did the action. The choice percentage of first noun was computed for each participant based on animacy.

Afterward, a mixed 2 x 3 analysis of variance (ANOVA) was performed with language (Spanish, English) as the between participants factor and animacy (AA, AI, IA) as the within-subject factor. The main effect of language was significant, $F_1(1, 85) = 6.64$, $p = .01$, $\eta_p^2 = .07$, $F_2(1, 59) = 5.07$, $p = .02$, $\eta_p^2 = .08$. First noun preference was higher in English ($M = 55.41\%$, $SE = 1.36$) than in Spanish ($M = 50.58\%$, $SE = 1.29$). Since the sentences used in the experiment followed the NVN structure, the main effect of language replicates previous studies suggesting that English monolinguals prefer the first noun as the agent of the sentence to a greater extent than Spanish monolinguals (MacWhinney et al., 1984). The main effect of animacy was significant too, $F_1(2, 170) = 395.56$, $p < .001$, $\eta_p^2 = .82$, $F_2(2, 118) = 371.81$, $p < .001$, $\eta_p^2 = .86$. Animate nouns had more weight as the subject of sentences across the animacy conditions. Thus, first noun choice was higher in AI sentences relative to AA sentences, $F_1(1, 85) = 174.18$, $p < .001$, $\eta_p^2 = .67$, $F_2(1, 59) = 109.94$, $p < .001$, $\eta_p^2 = .65$ (28.98% difference), and first noun choice was lower in IA sentences relative to AA sentences, $F_1(1, 85) = 249.49$, $p < .001$, $\eta_p^2 = .75$, $F_2(1, 59) = 208.73$, $p = .02$, $\eta_p^2 = .78$ (41.48% difference). The main effect of animacy indicates that this is a valid cue for interpreting the sentences across languages; there was a tendency to assign animate nouns as the subject of the sentence over inanimate nouns. Finally, the

¹ Data from English monolingual speakers in the three experiments reported here were gathered by Pedro Macizo when he was a postdoctoral researcher at the University of Arizona.

Language x Animacy interaction was significant, $F_1(2, 170) = 3.13, p = .05, \eta_p^2 = .03$, $F_2(2, 118) = 3.40, p = .03, \eta_p^2 = .05$. Language differences in first noun choice were not significant in either AA sentences (0.90% difference), F_1 and $F_2 < 1$, or AI sentences (3.81% difference), $F_1(1, 85) = 1.41, p = .24, \eta_p^2 = .02, F_2 < 1$. However, in IA sentences, first noun preference was lower in Spanish than in English (11.57% difference), $F_1(1, 85) = 13.60, p < .001, \eta_p^2 = .14, F_2(1, 59) = 15.70, p < .001, \eta_p^2 = .21$ (see Figure 3). This Animacy x Language interaction showed that the animacy effect was stronger in Spanish than in English. In IA sentences, animacy guided to a second noun preference while the NVN word order used in all sentences guided to a first noun preference. In this situation, second noun preference was higher in Spanish than in English, therefore indicating, that animacy is stronger in Spanish relative to English.

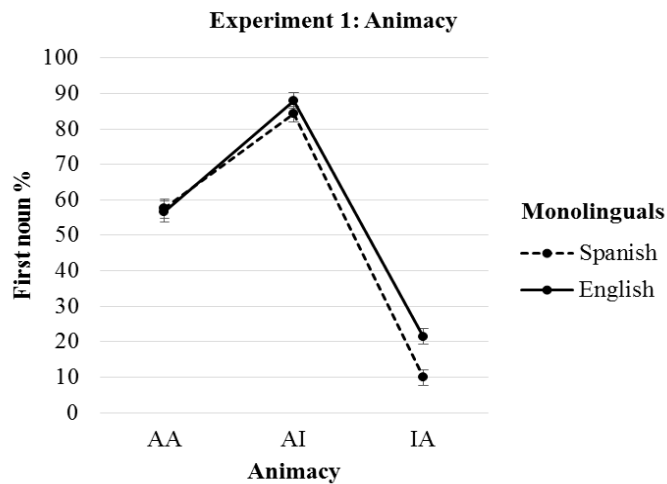


Figure 3. Percentage of first noun preference obtained in the pilot study of Experiment 1 with Spanish monolinguals and English monolinguals as a function of animacy of the two nouns (both animate = AA, first animate and second inanimate = AI, first inanimate and second animate = IA). Error lines depict standard error.

6.4.3. Procedure

Participants were evaluated individually. They were told that an NVN sentence would be presented in Spanish (L1) and that they had to read it. After reading the sentence, they had to produce it in L1 or translate it in L2. They were informed that they had to say the sentence aloud as they understood it by producing the sentence orally with a subject–verb–object (SVO) structure. Sentences produced orally by the participants were recorded

for later analysis. Since participants were required to produce SVO structures, the first noun produced by the participants in L1 reading and L2 translation was that chosen as the agent of the sentence.

In each trial, a sentence was presented in the middle of the screen for a maximum of 1800 ms or until the participant pressed the space bar after reading the sentence. Afterward, a blank space appeared for 200 ms followed by the message “task”, presented in the middle of the screen. At this point, participants had to produce their responses (reading aloud in L1 or translation in L2 depending on the block of trials; see below). After finishing the production task, they pressed the space bar to continue with the next trial.

The task (reading in L1 and translation in L2) was presented in a blocked design. This blocked design has been used in previous studies in which lexical and syntactic processing has been evaluated with the tasks employed here (Macizo & Bajo, 2006; Ruiz et al., 2008; Togato et al., 2017). Another possibility would be the use of a nonblocked design in which the task (reading in L1 and translation in L2) randomly changed on a trial-by-trial basis. However, this nonblocked design with the same tasks used here produces switching cost effects and cognitive inhibition due to the frequent changing of the task goal (Ibáñez, Macizo, & Bajo, 2010). Hence, to avoid these factors, we decided to use the blocked design as done in other studies. Participants received two blocks of trials with 30 sentences each. Each block contained 10 AA sentences, 10 AI sentences, and 10 IA sentences. Within each set of sentences (AA, AI, IA), 5 sentences were presented with singular nouns and verbs and 5 sentences with plural nouns and verbs. In one block, participants were instructed to read each Spanish sentence for understanding and to produce it in Spanish after finishing reading it. In the other block, participants were instructed to read in L1 and to translate in L2. Instructions to produce the sentences in Spanish or translate them in English were displayed at the beginning of each block. The order of the blocks was counterbalanced across participants, and the order of the sentences within each block was randomized for each participant.

6.5. Results

We computed first noun percentages of the read sentences that participants used as the agent of the SVO sentences (the first noun they produced) in the L1 production and L2 translation task. An ANOVA was performed with type of reading (for L1 production, for L2 translation) and animacy (AA, AI, IA) as variables. The main effect of type of reading was significant, $F_1(1, 23) = 6.44, p = .02, \eta_p^2 = .22, F_2(1, 59) = 7.49, p = .008, \eta_p^2 = .11$. First noun preference was higher when participants translated in L2 ($M = 68.41\%$, $SE = 2.85$) than when they produced in L1 ($M = 61.18\%$, $SE = 3.27$). This effect indicates that the preferred syntactic cue in the TL (word order) was used to a larger extent in the reading of NVN sentences for translation compared with the reading for L1 production. The main effect of animacy was significant too, $F_1(2, 46) = 79.67, p < .001, \eta_p^2 = .77, F_2(2, 118) = 154.83, p < .001, \eta_p^2 = .72$. First noun preference was higher in the AI condition ($M = 87.75, SE = 3.35$), relative to the AA condition ($M = 77.30, SE = 3.33$), $F_1(1, 23) = 12.45, p = .002, \eta_p^2 = .35, F_2(1, 59) = 16.57, p < .001, \eta_p^2 = .22$, and the IA condition ($M = 29.35, SE = 4.91$), $F_1(1, 23) = 91.65, p < .001, \eta_p^2 = .80, F_2(1, 59) = 216.31, p < .001, \eta_p^2 = .79$. Similarly, first noun preference was higher in the AA condition relative to the IA condition, $F_1(1, 23) = 85.01, p < .001, \eta_p^2 = .79, F_2(1, 59) = 152.93, p < .001, \eta_p^2 = .72$. Finally, the Type of reading x Animacy interaction was not significant; F_1 and $F_2 < 1$ (see Figure 4).

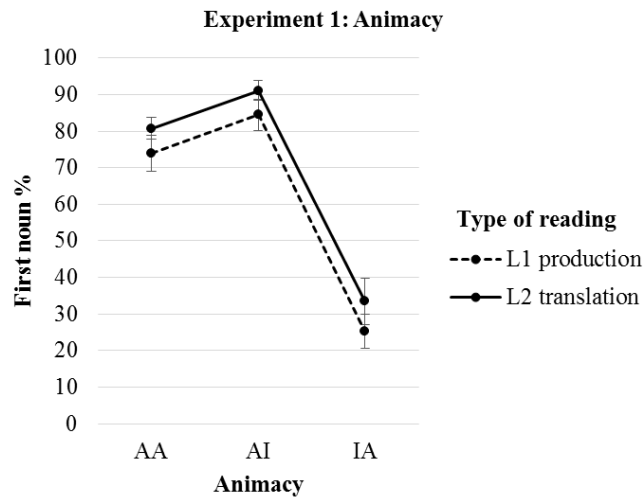


Figure 4. Percentage of first noun preference in the production task of Experiment 1 as a function of the type of reading (L1 production, L2 translation), and the animacy of the two nouns (both animate = AA, first animate and second inanimate = AI, first inanimate and second animate = IA). Error lines depict standard error.

6.5.1. Discussion

The overall results found in Experiment 1 indicated that the type of reading affected the use of syntactic cues. The participants used the first noun more as agent of the produced sentences when reading to translate in their L2 (English) than when they read the sentences to produce in their L1 (Spanish). In other words, participants relied more on the syntactic cue with the highest strength in English; they employed the SVO word order when interpreting sentences in Spanish to produce NVN structures in English. When the animacy pattern was AI, the percentage of use of the first noun as agent of the sentence was greater than in the AA and IA structures regardless of the type of reading. The tendency to perceive the animate noun as the agent of an action (MacWhinney et al., 1984) might explain the greater first noun preference shown in AI structures in comparison with the AA and IA sentences. The greater percentage of use of the first noun as agent of the action in the AA pattern in comparison with the IA pattern can be explained by the coalition between animacy and word order since these two cues guided to first noun preference in AI sentences. On the contrary, the smaller percentage of use of the first noun as agent in IA sentences might be explained as the result of cue competition. In particular, when understanding IA sentences, the participants had to deal with two cues

that pointed to different agents; the SVO word order cue led to an interpretation of the first noun as the agent of the action while the animacy cue led to the interpretation of second noun as the possible agent. However, the critical result found in Experiment 1 was the effect of the task participants performed. This effect seems to suggest that word order, which was the strongest cue in English, had more weight when reading for translation in English relative to reading for production in Spanish, regardless of the values assigned to the animacy cue. Thus, there was backward transfer from the cues preferred in L2 (word order) to the understanding of sentences in L1 for later translation.

6.6. Experiment 2: Subject–Verb Agreement

In Experiment 2, we evaluated the use of subject–verb agreement as a cue to interpret the agent of sentences depending on the task bilinguals performed. We considered three subject–verb agreement conditions: in the Ag0 condition, the first and second nouns agreed in number with the verb (*El burro ama el conejo/The donkey loves the rabbit*); in the Ag1 condition, only the first noun agreed (*El búfalo oye los toros/The buffalo hears the bulls*); and in the Ag2 condition, only the second noun agreed (*Los patos busca el pavo/The ducks seeks the turkey*). In Experiment 2, the animacy cue was not informative (all nouns referred to animate entities), whereas word order guided to first noun preference since all sentences followed the NVN structure.

If the use of syntactic cues to assign the agent of the sentence depends on the task bilinguals perform, we expected higher first noun preference in the reading for translation task relative to the reading for L1 production task. This pattern of results would indicate that bilinguals reformulating in L2 used the cue with the highest strength in L2 (word order) regardless of the values of a syntactic cue highly informative in L1 (subject–verb agreement in Spanish).

6.7. METHOD

6.7.1. Participants

A set of 24 Spanish–English bilinguals (L1–L2) from the University of Granada participated in the experiment for course credits (18 women, 6 men). Participants were selected from the same pool as those of Experiment 1. Their mean age was 22.96 years ($SD = 3.75$). The participants did not take part in Experiment 1. They gave informed consent to participate in the experiment. As in Experiment 1, we evaluated the participants' proficiency in Spanish and English (see Table 1). The mean score was higher in Spanish ($M = 9.10$, $SD = 0.66$) than in English ($M = 7.22$, $SD = .70$), $t(23) = 10.57$, $p < .001$. However, participants of Experiment 2 did not differ from those of Experiment 1 either in L1 proficiency, $t(46) = .22$, $p = .83$, or L2 proficiency, $t(46) = .19$, $p = .84$.

6.7.2. Design and materials

The type of reading (reading for production in L1, reading for translation in L2) and the subject–verb agreement in a sentence (first and second nouns agree in number with the verb = Ag0, first noun only agrees = Ag1, and second noun only agrees = Ag2) were manipulated in a 2 x 3 within participants design.

A total of 60 sentences were presented to each participant. These sentences were created as described in Experiment 1. They include the same verbs used in Experiment 1, but only animate nouns were employed in Experiment 2 to control for animacy (see Appendix). As in the previous experiment, all sentences were presented in the NVN word order. Half of the sentences were presented for reading and production in Spanish and half were assigned to the reading and translation in English. Sentences were counterbalanced by the two types of reading across participants. In each reading task, there were 10 sentences in each condition of subject–verb agreement (Ag0, Ag1 and Ag2). In each condition, five sentences were presented with singular verbs and the rest of sentences included plural verbs. Table 2 provides examples of the sentences in the three conditions of subject–verb agreement.

As in Experiment 1, we gathered information about the way in which Spanish monolinguals and English monolinguals interpreted sentences in the case of Experiment 2, depending on subject–verb agreement. A new set of 52 Spanish speakers and 44 English speakers that did not participate in the pilot study of Experiment 1 received 60 sentences in a booklet. They had to mark the agent/actor of each sentence after reading it. The sentences were created by randomly intermixing the nouns and verbs employed in the main experiment. Twenty sentences were used in each agreement condition (Ag0, Ag1, Ag2) and were presented in random order. The choice percentage of first noun was computed for each participant based on the subject–verb agreement variable (Ag0, Ag1, Ag2). A 2 x 3 mixed design was used with language (Spanish, English) as a between-participants variable and agreement (Ag0, Ag1, Ag2) as a within-participants variable. The main effect of language was significant, $F_1(1, 94) = 9.04, p = .003, \eta_p^2 = .09, F_2(1, 59) = 14.23, p < .001, \eta_p^2 = .19$. The choice percentage of first noun was higher in English ($M = 55.64\%, SE = 1.15$) than in Spanish ($M = 50.93, SE = 1.06$). This effect suggests that in NVN sentences, English monolinguals prefer the first noun as the subject of the sentence to a greater degree than Spanish monolinguals. The main effect of agreement was also significant, $F_1(2, 188) = 190.27, p < .001, \eta_p^2 = .67, F_2(2, 118) = 642.88, p < .001, \eta_p^2 = .91$. First noun percentage in the Ag0 condition was 56.63% ($SE = 1.90$). Compared with this condition, first noun percentage was higher in the Ag1 condition ($M = 79.51\%, SE = 1.96$), $F_1(1, 94) = 100.57, p < .001, \eta_p^2 = .52, F_2(1, 59) = 242.07, p < .001, \eta_p^2 = .80$, and was lower in the Ag2 condition ($M = 23.71\%, SE = 1.62$), $F_1(1, 94) = 130.02, p < .001, \eta_p^2 = .58, F_2(1, 59) = 472.24, p < .001, \eta_p^2 = .89$. The main effect of agreement indicates that this is a valid cue that participants use when they understand sentences; there is a tendency to select the noun in agreement with verb as the subject of the sentence. Finally, the Language x Agreement interaction was significant, $F_1(2, 188) = 3.09, p = .05, \eta_p^2 = .03, F_2(2, 118) = 10.60, p < .001, \eta_p^2 = .15$. Language differences in first noun choice were not significant in either the Ag0 condition (0.77% difference), $F_1 < 1, F_2(1, 59) = 1.53, p = .22, \eta_p^2 = .02$. However, in the Ag2 condition, first noun preference was lower in Spanish participants than in English participants (12.81% difference), $F_1(1, 94) = 15.57, p < .001, \eta_p^2 = .14, F_2(1, 59) = 34.57, p < .001, \eta_p^2 = .37$ (see Figure 5). This pattern of results suggests that agreement was a valid cue in both languages but it was stronger in Spanish than in English. When subject–verb agreement guided Spanish participants to select the second noun as the agent of the sentence (Ag2

sentences), they assigned this second noun as the agent to a greater degree than English monolinguals.

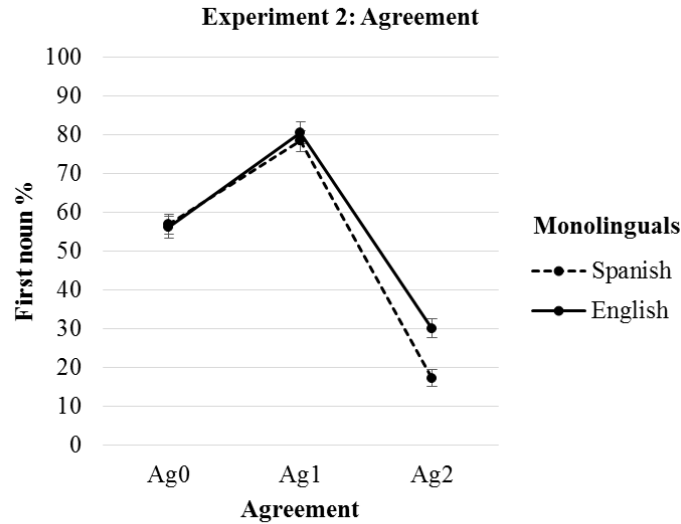


Figure 5. Percentage of first noun preference obtained in the pilot study of Experiment 2 with Spanish monolinguals and English monolinguals as a function of subject-verb agreement (first and second nouns agree in number with verb = Ag0, first noun only agrees = Ag1, and second noun only agrees = Ag2). Error lines depict standard error.

6.7.3. Procedure

The procedure used in Experiment 2 was the same as that described in Experiment 1.

6.8. Results

First noun % used by the bilinguals as the subject in the production task was submitted to an ANOVA with Type of reading (for L1 production, for L2 translation), and Agreement (Ag0, Ag1, Ag2) as factors. The type of reading effect was significant, $F_1(1, 23) = 11.82, p = .002, \eta_p^2 = .34, F_2(1, 59) = 25.87, p < .001, \eta_p^2 = .30$. First noun preference was higher in the L2 translation task ($M = 73.02\%, SE = 3.01$) than in the L1

production task ($M = 62.27\%$, $SE = 3.66$). The type of reading effect showed that the preference for using the word order cue, which is the dominant syntactic cue in the TL, was higher when bilinguals understood sentences for later translation than when they read them for L1 production. There was a significant effect of agreement, $F_1(2, 46) = 42.04$, $p < .001$, $\eta_p^2 = .65$, $F_2(2, 118) = 171.79$, $p < .001$, $\eta_p^2 = .74$. First noun preference was 80.70% ($SE = 3.73$) in the Ag0 condition, 84.97% ($SE = 3.65$) in the Ag1 condition, and 37.28% ($SE = 5.67$) in the Ag2 condition. The difference between the Ag0 condition and the Ag1 condition was marginal in the subject analysis, $F_1(1, 23) = 3.25$, $p = .08$, $\eta_p^2 = .12$, and it was not significant by items, $F_2(1, 59) = 1.63$, $p = .21$, $\eta_p^2 = .03$.

First noun preference was lower in Ag2 condition compared with both, the Ag0 condition, $F_1(1, 23) = 46.56$, $p < .001$, $\eta_p^2 = .67$, $F_2(1, 59) = 184.54$, $p < .001$, $\eta_p^2 = .76$, and the Ag1 condition, $F_1(1, 23) = 42.69$, $p < .001$, $\eta_p^2 = .65$, $F_2(1, 59) = 253.63$, $p < .001$, $\eta_p^2 = .81$. The Type of reading x Agreement interaction was not significant, F_1 and $F_2 < 1$ (see Figure 6).

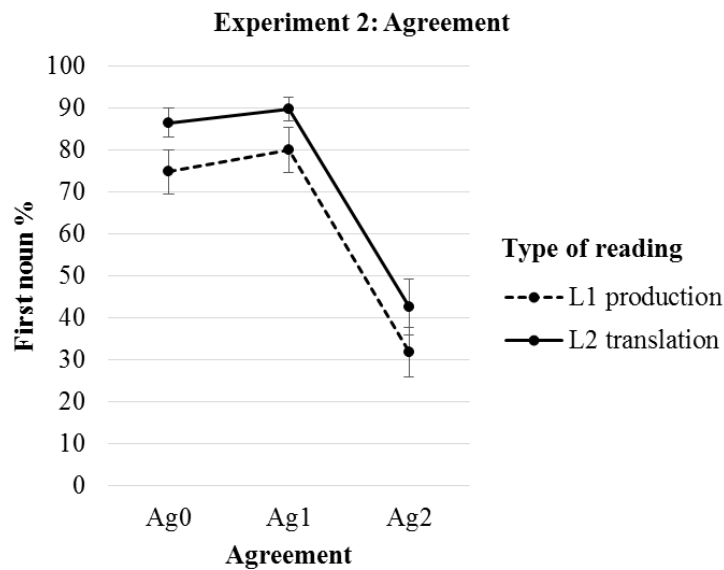


Figure 6. Percentage of first noun preference in the production task of Experiment 2 as a function of the type of reading (L1 production, L2 translation) and the subject-verb agreement (first and second nouns agree in number with verb = Ag0, first noun only agrees = Ag1, and second noun only agrees = Ag2). Error lines depict standard error.

6.8.1. Discussion

The results obtained in Experiment 2 showed that subject–verb agreement is a valid cue that bilinguals used when they performed a production task, either producing L1 sentences or translating sentences into L2. However, the results concerning the type of task bilinguals performed were more important because the type of reading modulated the use of syntactic cues. The participants used the first noun of the sentences as agent more often when reading for translation in English than when reading for production in Spanish, regardless of the subject–verb agreement manipulation. This result implies that bilinguals relied on the word order cue to a greater extent in the between-language task than when they performed the within-language task. In addition, the type of reading did not interact with the agreement variable, which indicates that the word order cue was stronger than the agreement cue in the two tasks.

6.9. Experiment 3: Word Order

In previous experiments, we evaluated the use of animacy (Experiment 1) and agreement (Experiment 2) when participants understood sentences for production in Spanish and translation in English. We observed that bilinguals assigned the first noun as the subject of the sentence to a greater extent in the L2 translation task relative to the L1 production task. This pattern is in agreement with the use of word order cue because only NVN structures, which guide to first noun assignment, were presented to the participants in both experiments.

Experiments 1 and 2 allowed us to evaluate the use of word order when participants read for translation in L2 versus reading for production in L1. It is important to note that the use of both animacy and agreement would guide to the same agent assignment across the languages used in the L1 production and L2 translation tasks. Thus, in Spanish and English, animate nouns and nouns that agree with the verb would be assigned as the subject of the sentence. On the contrary, the use of word order would lead to different agent assignment in English and Spanish while no other syntactic cues were presented. When a sentence follows the canonical NVN structure, speakers of English

and Spanish prefer the first noun as the agent of the sentence. However, things change when other word orders are used. When the sentences follow the NNV and VNN structure, English speakers change their preferences toward the second noun assignment in VNN and NNV structures relative to the use of first noun preference in NVN structures. For example, it has been shown that English monolinguals have a defined preference for second noun as the agent of VNN sentences by age seven and that they show a second noun strategy for NNV sentences by age nine (von Berger, Wulfeck, Bates, & Fink, 1996). On the contrary, in these noncanonical word order structures (VNN and NNV), the first noun is always marked as agent by Spanish speakers (Morett & MacWhinney, 2013; Reyes & Hernández, 2006).

Therefore, in Experiment 3, we directly contrasted whether the use of the same syntactic cue (word order) that guide to different agent interpretation between two languages (Spanish and English) was used differently depending on the task bilinguals performed: L1 production or L2 translation tasks. The critical prediction was about the interpretation of noncanonical NNV (*El ciervo el rinoceronte huele/The deer the rhino smells*) and VNN structures (*Muerde el loro el pelícano/Bites the parrot the pelican*). If the way bilinguals interpret word order depends on the task they perform, second noun preference in noncanonical structures would be higher in the L2 translation task than in the L1 production task.

6.10. METHOD

6.10.1. Participants

Twenty-four Spanish-English (L1-L2) bilinguals from the University of Granada participated in the experiment for course credits (16 women, 8 men). Participants were selected from the same pool as those of Experiments 1 and 2. Their mean age was 23.75 years ($SD = 4.26$). The participants did not take part in previous experiments. They gave informed consent to participate in the experiment. The language history questionnaire showed that the mean proficiency of the bilinguals was higher in Spanish ($M = 9.08$, $SD = .62$) than in English ($M = 7.13$, $SD = 0.79$), $t(23) = 9.98$, $p < .001$ (see Table 1). When

participants of Experiment 3 were compared with those of Experiments 1 and 2, we did not find differences in their Spanish proficiency or English proficiency, $F_s < 1$.

6.10.2. Design and Materials

The Type of reading (L1 production, L2 translation) and the Word order of the sentences (noun-verb-noun = NVN, noun-noun-verb = NNV, and verb-noun-noun = VNN), were manipulated in a 2 x 3 within-participants design.

Each participant received 60 sentences in Spanish. These sentences were made with the animate nouns and verbs used in Experiment 2. The sentences were created as described in previous experiments (see Appendix 1). Half of the sentences were presented in the reading and production in Spanish and half were assigned to the reading and translation in English. Sentences were counterbalanced by the two reading tasks across participants. In each reading task, there were 10 sentences in each word order condition (NVN, NNV and VNN; see Table 2 for examples). The two nouns and the verb agreed in number in all sentences. Five sentences were presented with singular nouns and verbs. The rest of sentences included plural nouns and verbs.

To determine the way Spanish and English monolinguals interpreted sentences depending on the word order, a new pilot study was performed. A group of 43 Spanish speakers and 36 English speakers that did not participate in previous experiments were presented with a booklet containing 60 sentences. Participants had to read each sentence and mark the agent of the sentence. The booklet was constructed as described in previous pilot studies. Twenty sentences were assigned to each word order condition. The percentage of first noun choice for each participant was computed. A 2 x 3 mixed ANOVA was performed. The language was a between-participants factor (Spanish, English) and the word order was a within-participants factor (NVN, NNV, VNN). The main effect of language was marginal by subjects, $F_1(1, 77) = 2.79$, $p = .09$, $\eta_p^2 = .03$, and it was significant by items, $F_2(1, 59) = 17.30$, $p < .001$, $\eta_p^2 = .80$. First noun percentage was 54.42% ($SE = 2.03$) in Spanish and 49.40% ($SE = 2.22$) in English. The main effect of word order was significant, $F_1(2, 154) = 27.14$, $p < .001$, $\eta_p^2 = .26$, $F_2(2, 118) = 53.59$, $p < .001$, $\eta_p^2 = .48$. The first noun percentage was 60.94% ($SE = 2.25$) in NVN sentences. Compared with this condition, first noun percentage was lower in the NNV condition ($M = 51.15\%$, $SE = 1.90$), $F_1(1, 77) = 15.35$, $p < .001$, $\eta_p^2 = .17$, $F_2(1, 59) = 29.14$, $p < .001$,

$\eta_p^2 = .33$, and the VNN condition ($M = 43.63\%$, $SE = 1.94$), $F_1(1, 77) = 54.55$, $p < .001$, $\eta_p^2 = .41$, $F_2(1, 59) = 20.62$, $p < .001$, $\eta_p^2 = .26$. Finally, the Language x Word Order interaction was significant, $F_1(2, 154) = 4.97$, $p = .008$, $\eta_p^2 = .06$, $F_2(2, 118) = 9.51$, $p < .001$, $\eta_p^2 = .14$. In the NVN condition, language differences were not significant in the subject analysis, $F_1 < 1$, but they were significant in the item analysis, $F_2(1, 59) = 5.38$, $p = .02$, $\eta_p^2 = .08$ (2.57% difference). In the NNV condition, language differences were not significant (5.36% difference), $F_1(1, 77) = 1.20$, $p = .16$, $\eta_p^2 = .03$, $F_2(1, 59) = 1.35$, $p = .25$, $\eta_p^2 = .02$. However, first noun percentage was higher in Spanish ($M = 49.77\%$, $SE = 2.62$) than in English ($M = 37.50\%$, $SE = 2.86$) in the VNN condition (12.27% difference), $F_1(1, 77) = 10.01$, $p = .002$, $\eta_p^2 = .12$, $F_2(1, 59) = 26.93$, $p < .001$, $\eta_p^2 = .31$ (see Figure 7).

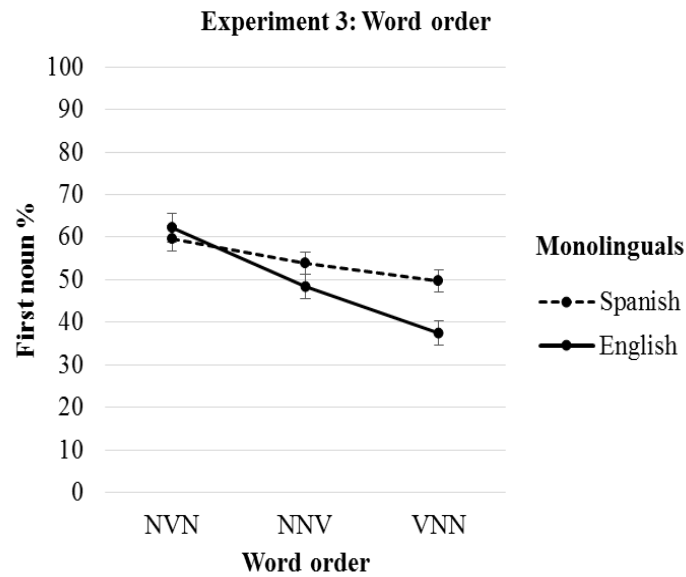


Figure 7. Percentage of first noun preference obtained in the pilot study of Experiment 3 with Spanish monolinguals and English monolinguals as a function of the word order of sentences (noun-verb-noun = NVN, noun-noun-verb = NNV, and verb-noun-noun = VNN). Error lines depict standard error.

6.10.3. Procedure

The procedure was identical to that described in Experiment 1.

6.11. Results

First noun % used by the bilinguals as the subject in the production task was entered into an ANOVA with type of reading (for L1 production, for L2 translation) and word order (NVN, NNV, VNN) as within-participants factors. The type of reading was not significant, F_1 and $F_2 < 1$. First noun preference was similar in the translation task ($M = 70.73\%$, $SE = 4.29$) and the production in L1 task ($M = 69.18\%$, $SE = 4.85$). The main effect of word order was significant, $F_1(2, 46) = 11.46$, $p < .001$, $\eta_p^2 = .33$, $F_2(2, 118) = 14.90$, $p < .001$, $\eta_p^2 = .20$. First noun preference was 78.03% ($SE = 4.52$) in the NVN condition, 71.09% ($SE = 4.79$) in the NNV condition, and 60.76% ($SE = 4.72$) in the VNN condition. Importantly, the type of Reading x Word Order interaction was significant, $F_1(2, 46) = 10.74$, $p < .001$, $\eta_p^2 = .32$, $F_2(2, 118) = 10.75$, $p < .001$, $\eta_p^2 = .16$ (see Figure 8). This effect indicated that the use of the word order cue depended on the task participants performed. The word order effect was significant in the L2 translation task, $F_1(2, 46) = 17.22$, $p < .001$, $\eta^2 = .43$, $F_2(2, 118) = 24.89$, $p < .001$, $\eta^2 = .30$. First noun preference was higher in the NVN condition ($M = 86.25\%$, $SE = 4.23$) compared with both the NNV condition ($M = 71.36\%$, $SE = 5.45$), $F_1(1, 23) = 6.09$, $p = .02$, $\eta^2 = .21$, $F_2(1, 59) = 15.88$, $p < .001$, $\eta^2 = .20$, and the VNN condition ($M = 54.59\%$, $SE = 6.07$), $F_1(1, 23) = 39.71$, $p < .001$, $\eta^2 = .63$, $F_2(1, 59) = 68.23$, $p < .001$, $\eta^2 = .54$. The comparison between the NNV condition and the VNN was also significant, $F_1(1, 23) = 10.89$, $p = .003$, $\eta^2 = .32$, $F_2(1, 59) = 7.97$, $p = .006$, $\eta^2 = .12$. This pattern of results indicated that bilinguals behaved as English monolinguals when they understood sentences for later translation. However, when the production in L1 task was considered, word order effect was not significant, F_1 and $F_2 < 1$. First noun preference was similar in the NVN condition ($M = 69.80\%$, $SE = 5.99$) relative to the NNV condition ($M = 70.81$, $SE = 5.50$), F_1 and $F_2 < 1$, and the VNN condition ($M = 66.92\%$, $SE = 4.60$), F_1 and $F_2 < 1$. Similarly, there were no differences between the NNV condition and the VNN condition in the production in L1 task, $F_1(1, 23) = 1.01$, $p = .32$, $\eta^2 = .04$, $F_2 < 1$.

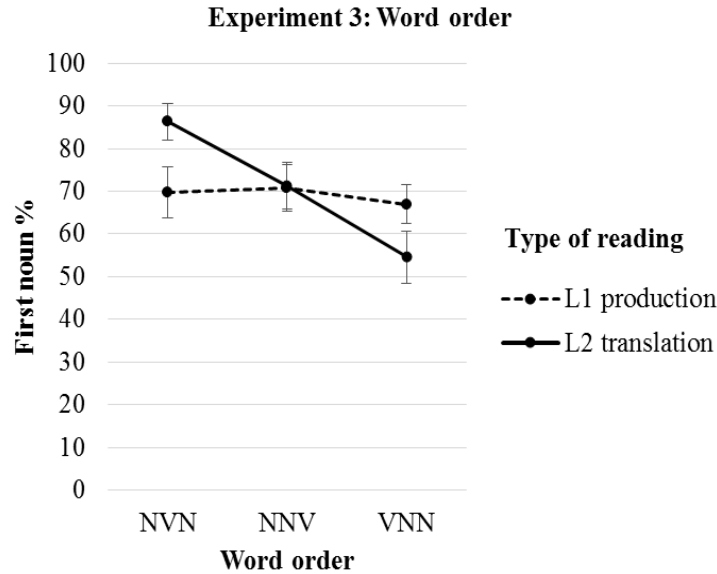


Figure 8. Percentage of first noun marked as the subject in the production task of Experiment 3 as a function of the type of reading (L1 production, L2 translation), and the word order of sentences (noun-verb-noun = NVN, noun-noun-verb = NNV, and verb-noun-noun = VNN). Error lines depict standard error.

6.12. Discussion

The results of Experiment 3 showed that the same syntactic cue (word order) had a different effect depending on the task bilinguals performed. In the within-language task (the production in L1 task), the participants used the first noun as agent when producing sentences regardless of the word order structure, which agrees with the First Noun Principle (VanPatten, 2004). On the contrary, in the between-language task (the L2 translation task), the participants shifted from using the first noun as agent in the NVN structures to the second noun when they encountered the NNV and VNN structures, thus behaving as native English speakers (Bates et al., 1999; Evans & MacWhinney, 1999; MacWhinney et al., 1984; MacWhinney, Pleh, & Bates, 1985; Morett & MacWhinney, 2013; Reyes & Hernández, 2006; von Berger et al., 1996). NNV structures are not very common in English, and the use of the VNN structure is even less common. However, the shift of strategy from the first noun to the second noun as agent of the sentence in the L2 translation task could have taken place due to the use of the SV and the VO units in English. Hence, the NNV was interpreted as OSV, while the VNN structure was interpreted as VOS. For example, when participants were presented in Spanish the NNV sentence “*el ciervo el rinoceronte huele*” for its translation into English, “*the deer the*

rhino smells”, participants would consider the SV unit by grouping the verb (smells) and the adjacent noun (rhino). Hence, this SV structure would produce a second noun preference for assigning the agent of the sentence. On the other hand, when participants received VNN structures in Spanish “*muerde el loro el pelicano*” for translation into English “*Bites the parrot the pelican*”, participants would make use of the VO unit by grouping the verb (*bites*) and the contiguous noun (*parrot*). Thus, the second noun would be considered the subject of VNN sentences.

6.13. General Discussion

The goal of the current study was to examine whether the use of syntactic cues changes in Spanish (L1) – English (L2) bilinguals depending on the task they are performing (within-language task vs. between-language task). As indicated in the introduction section, two theoretical approaches suggest differences in sentence understanding depending on the task. The first one states that the use of syntactic cues changes across languages (the competition model, MacWhinney et al., 1984). For example, a syntactic cue that provides a considerable amount of information for thematic role assignment (agent, patient) and is greatly reliable in one language may not have the same strength in another language (e.g., word order, subject–verb agreement, animacy). Therefore, a language change between sentence understanding and sentence production would promote a change in syntactic processing to adjust the sentences to the TL. The Horizontal View of Translation (Danks & Griffin, 1997; Gerver, 1976; Macizo & Bajo, 2006; Padilla et al., 2007) states that the processes involved in comprehension for translation differ from the ones that take place during comprehension in a monolingual context. In particular, within this view, it is suggested that during comprehension of the SL for translation, a reformulation process takes place where individuals search for linguistic equivalencies in the TL. Thus, during reading for translation, comprehension and reformulation processes interact, both SL and TL are active simultaneously, and their respective lexical and syntactic properties are accessed in parallel.

On the contrary, there are two other perspectives that might suggest that comprehension does not depend on the task participants perform (i.e., within-language

tasks such as reading or between-language tasks such as consecutive translation). The Shallow Structure Hypothesis (Clahsen & Felser, 2006) maintains that full syntactic processing is only performed when bilinguals understand sentences in their L1. Under this perspective, L1 comprehension for L2 translation would be similar to L1 comprehension for L1 reading since they both involve the understanding of sentences in L1. The second perspective, the Vertical View of Translation (Seleskovitch, 1976, 1999), maintains that comprehension, reformulation and production are three independent processes in consecutive translation tasks. They are performed in a serial order, so comprehension would not be influenced by posterior processes bilinguals have to perform (reformulation and production of the translated sentences)².

The results found in the three experiments reported here showed differences in the use of syntactic cues depending on the task bilinguals performed. Thus, they favor the idea that comprehension is influenced by task goal. In particular, in our study, bilinguals were instructed to read sentences in Spanish either to produce them in Spanish (SL) or to translate them in English (TL). The use of syntactic cues was examined by manipulating animacy, agreement and word order in Experiments 1, 2 and 3, respectively. The results showed differences depending on the task that the participants carried out. In the within-language task of the first two experiments, the participants used the noun favored by the syntactic cue manipulated in the SL (animacy and subject–verb agreement, respectively) as agent of the produced sentences, whereas that processing strategy changed when they performed the between-language task. In that case, the participants were more likely to use the noun that the word order cue in English (SVO) would lead them to use as agent

² The Horizontal/Vertical Views come from cognitive translation and interpreting studies while the Competition Model/Shallow Structure Hypothesis originate from cognitive linguistics. In our manuscript, we decided to embrace these perspectives since they speak about the same issue (i.e., the translation task) from different scientific fields (translation and interpreting, cognitive linguistics). In our opinion, the Horizontal/Vertical Views are broad approaches to understand the translation task (comprehension, code-switching, reformulation at several levels, e.g., lexical, syntactic stages, etc.). Additionally, the Competition Model/Shallow Structure Hypothesis, respectively, specify in detail the underlying cognitive processes of linguistic tasks focused on the syntactic level of analysis. In our opinion, regarding the translation task, a dissociation between the Horizontal View vs. Competition Model, Vertical View vs. Shallow Structure Hypothesis cannot be made because they are explanations that complement and enrich each other.

of a sentence (the first noun in NVN sentences). Furthermore, when the same syntactic cue (word order) that would lead to a different agent assignment in each language was manipulated (Experiment 3), clear differences were found depending on the task. Whereas bilinguals assigned the first noun as the agent in all syntactic structures (NVN, NNV, and VNN sentences) in the reading in L1 task, in the translation task, the participants shifted from using the first noun they encountered in the NVN structures as agent to using the second noun in the NNV and VNN structures instead.

The results found in Experiment 3 suggested that bilinguals relied on the syntactic cue that is strongest in the TL when they were performing the translation task. To shift from using the first noun as agent in canonical structures (NVN) to using the second noun in noncanonical structures (VNN and NNV), bilinguals had to process the sentences according to the SV and VO basic units of English word order. Thus, when bilinguals read for translation, they interpreted NVN structures as SVO sentences and NNV and VNN structures as the less common OSV and VOS sentences, respectively.

Some prior experiments have reported the influence of one of the bilingual's languages over the other during the processing of syntactic cues (Janssen, Meir, Baker, & Armon-Lotem, 2010; Kilborn, 1989; Liu et al., 1992; Seibert Hanson & Carlson, 2014; Wang & Xu, 2015). Furthermore, those results suggested the existence of four different kinds of sentence interpretation strategies in bilinguals (described in the introduction section); namely, *forward transfer*, *backward transfer*, *differentiation* and *amalgamation*. The development of these strategies is influenced by factors such as age of acquisition, frequency of language use, social context where it is used, the similarity between the strength of the most valid cues in L1 and L2, cross-language structure similarity, time of exposure to L2, and proficiency level. These factors are critical during the development of L2 sentence interpretation strategies.

From a general point of view, the task of translating a message from one language to another consists of understanding a message in the SL and then translating it in the TL, also transferring the agent of the sentence. If the agent in the TL sentence is different from the one in the original message, then the message is mistranslated. Thus, to correctly understand the SL and reformulate the message in the TL, the bilinguals have to make use of the SL syntactic cues to understand the message, given that interpreting it using

the TL syntactic cues could lead to a mistranslation. In the between-language task, participants chose as the agent of the sentence the noun that would be selected with the word order cue. This observation seems to indicate that individuals processed sentences according to the preferred TL syntactic cue (word order) in the translation task. Hence, we found evidence for *backward transfer* during sentence reformulation, when there was cue competition between the strongest syntactic cues in the SL and the strongest syntactic cue in the TL.

The processing strategy adopted by the participants in this study gives rise to the question of what the reasons are behind this phenomenon. The answer can be found in some of the factors described above. First, we must take into consideration that the Horizontal View of Translation (Danks & Griffin, 1997; Gerver, 1976; Macizo & Bajo, 2006; Padilla et al., 2007) states that the reformulation process is of an interactive nature and entails the activation of the SL and the TL simultaneously at different levels of analysis (lexical level, syntactic level, etc.). Second, the cues we manipulated in the experiments were the most valid cues in the participants' L1 (animacy, subject–verb agreement) and L2 (word order); that is, they are of similar strength in each language respectively. Therefore, the results seem to indicate that both languages were active and they interact with each other during reading for translation.

Recent evidence suggests that, in fact, sentence processing in bilingual speakers involves the activation and interaction between the two languages of the bilinguals at the syntactic level. Runnqvist, Gollan, Costa, and Ferreira (2013) tested English monolinguals, Spanish–English bilinguals and Mandarin–English bilinguals in a sentence production task in English. The participants received a verb (e.g., *push*) or an adjectival phrase (e.g., *is pink*) with two nouns (e.g., *woman*, *stroller*) and they had to produce a sentence with active or passive voice (e.g., “*the woman pushes the stroller*” and “*the stroller is pushed by the woman*”) and pre- or postmodified possessive noun phrases (e.g., “*the woman’s stroller is pink*” and “*the stroller of the woman is pink*”). They found that syntactic frequency and cross-language similarity modulated the production task. For example, in active-passive alternation, both Spanish–English and Mandarin–English bilinguals showed a larger frequency effect than monolinguals (the difference between active and passive sentences was large in bilingual speakers). The authors suggested that this effect might be caused by an additional influence of bilingual

speakers' other language because the frequency of passive sentences in Mandarin and Spanish is even lower. Hence, the authors proposed interactive syntax processing across languages. The study we report here also suggests interactivity in the processing of syntactic information. Importantly, the pattern of results found in our study indicates that this interactivity is observed to a greater extent when the task involved the processing of the bilinguals' two languages (reading and translation) relative to the within-language task (reading and repeating in the L1).

It might be argued that the tasks used in the current study were artificial in the sense that the sentences we used were based on random combination of nouns and verbs. Hence, the results found in our study might have limited generalization to real world consecutive translation tasks. We agree with this limitation. However, the sentence comprehension technique used in our study has been used in many different languages, with adults and children, and with monolingual and bilinguals. In every case, results found in previous studies are consistent with known facts about the structure of the languages employed under normal situations. In the current study, participants made use of syntactic strategies that draw detailed structural information about Spanish and English (e.g., a preference for agreement and animacy in Spanish and a preference for word order in English). Moreover, use of ungrammatical sentences in our study could be also questioned. We also agree about this issue. However, previous studies have shown (e.g., MacWhinney et al., 1985) that the combination of grammatical and ungrammatical sentences (Experiment 1) versus the use of grammatical sentences only (Experiment 2) does not change the strategies participants employ to interpret simple sentences.

Overall, the present study supports the Horizontal View of Translation, which suggests that the translation tasks involve the management of TL syntactic properties in a flexible manner and interaction with syntactic properties of the SL. This finding has important practical implications in the domain of training in translation tasks (e.g., the consecutive translation task used in the current study). A trend in training programs for professional translators is the "process-oriented approach" (Gile, 1994). This perspective holds that translation students have to practice cognitive processes they will need in the future to perform reformulation tasks. Given our results, this training should include practice in the use of the strongest syntactic cues in the target language (e.g., word order in English) while performing consecutive translation. Students of Spanish–English

translation should be trained in the use of second noun preferences when they encounter noncanonical structures (VNN and NNV structures) regardless of first noun preference for noncanonical structures in Spanish, since it is the strategy shown by bilinguals when they perform consecutive translation tasks from Spanish to English.

To conclude, the results found in the current study suggest that, first, bilinguals have acquired the syntactic preferences of their L1 and L2 and they used them according to the task they were performing (L1 production, L2 translation). Therefore, the use of syntactic cues is not only language dependent but also task dependent. Second, the syntactic cues with the highest strength in Spanish (animacy and subject verb agreement) were dominant and were used in both tasks, but third, when the participants were asked to read and translate the sentences in English, word order was always the strongest cue. Finally, when the individuals encountered a single cue that led to a different agent interpretation in each language (word order in noncanonical structures), they interpreted the sentences like native speakers of Spanish in the within-language task, whereas they interpreted the sentences like English monolinguals in the between-language task.

7.0. Experimental section 2. Lexical and Syntactic Target Language Interactions in Translation

The aim of the study was to evaluate the possible interaction between syntactic and lexical properties of the target language (TL) in consecutive translation. To this end, participants read sentences in the source language (SL) to translate them into the TL (reading for translation) or to repeat them in the same language (reading for repetition). The cognate status of words at the beginning and at the end of sentences and the congruency in the syntactic structure of sentences in the SL and TL were manipulated. The results showed coactivation of the syntactic and lexical properties of the TL in middle and final regions of the sentence. In addition, in the reading for translation, an interaction was observed between the cognate status and the syntactic congruency at the end of the sentence. The pattern of results suggests that the time course of syntactic and lexical activation in translation is interactive.

This study has been published as Ruiz, J. O., & Macizo, P. (2019). Lexical and syntactic target language interactions in translation. *Acta Psychologica*, 199, 183-196. doi: 10.1016/j.actpsy.2019.102924

7.1. INTRODUCTION

Translation is a task that involves multiple processes that cope with the activation and processing of a Source Language (SL) and a Target Language (TL). These processes can be summed up in three major general operations: understanding of the SL, switching between the two linguistic codes involved in the task (reformulation process), and production of the message in the TL (e.g., Padilla, Macizo, & Bajo, 2007). There are two main views to explain how these processes are coordinated when bilinguals perform a translation task. The Vertical view of Translation considers the translation process as one of modular and sequential nature, in which the message is first received, then decoded and divested from the SL linguistic code, and finally its meaning is recoded in the TL linguistic code (Seleskovitch, 1976; Fodor, 1978). That is, according to this view, during the translation task the message undergoes a “deverbalization” and “reverbalization” process, where there will not be any interaction or overlapping either between the comprehension, reformulation and production processes or the different linguistic levels (e.g., lexical and syntactic) of languages involved in the task. Instead, information will flow only in one direction and there will be only one language (SL or TL) active at a time, respectively.

Alternatively, according to the Horizontal view of Translation (Danks & Griffin, 1997; Gerver, 1976; Padilla et al., 2007) comprehension and reformulation processes take place in parallel, which implies that lexical and syntactic properties of the SL and the TL are both accessed simultaneously during comprehension of the SL.

The results of previous studies support the Horizontal view of Translation (Balling, Jensen, & Sjørup, 2014; Danks & Griffin, 1997; Gerver, 1976; Jensen, Sjørup, & Balling, 2009; Jakobsen & Jensen, 2008; Maier, Pickering, & Hartsuiker, 2017; Padilla et al., 2007; Ruiz, Paredes, Macizo, & Bajo, 2008; Ruiz & Macizo, 2017; Schaeffer & Carl, 2017; Schaeffer, Paterson, McGowan, White, & Malmkjær, 2017; Togato, Paredes, Macizo, & Bajo, 2017) by showing the lexical and syntactic coactivation of TL properties when individuals comprehend sentences for later translation. For example, Macizo and Bajo (2006) aimed at determining the coactivation of the SL and the TL at the lexical level when reading for translation. To this end, they manipulated the cognate status of words and their position in the sentences. Cognate words are words with equivalent

meaning and similar superficial form (orthographic and phonological) across languages (e.g., *piano* in Spanish and English). Cognate words were placed either at the beginning or at the end of the sentences to investigate the moment in which lexical properties of the TL were activated during reading for translation. Bilinguals were instructed to read sentences in Spanish (L1) either for repetition in Spanish or to translate them into English (L2). The results showed a facilitation effect for cognate words (*zebra/cebra*, in English and Spanish, respectively) when they were located at the final segment of the sentences, relative to the processing of non-cognate control words (*caterpillar/oruga*, in English and Spanish respectively), when participants read for translation. This cognate effect was not found when cognate words were placed at the beginning of the sentences to be translated. Nevertheless, when the participants were instructed to read for repetition, no significant effects were found for cognate words, no matter their position in the sentences. Thus, the difference between the reading times of the critical words in the two tasks clearly indicates that the TL lexical properties are active during the comprehension of the SL in translation. Moreover, this lexical coactivation seems to take place once the understanding process has been initiated since the cognate effect was not found at the beginning of the reading for translation.

Furthermore, Ruiz et al. (2008) corroborated again the coactivation of TL lexical properties during reading for translation by manipulating the frequency of critical words in the TL. In particular, the purpose of the experiment was to determine whether the cognate facilitation effect showed in the translation task by Macizo and Bajo (2006) was truly a lexical effect. In fact, there are previous proposals defending that cognate words are closely related at the semantic level as well as the lexical level in the two languages of a bilingual individual (De Groot, 1992). Thus, the specific locus of the cognate effect (lexical and/or semantic) could not be determined completely with the cognate manipulation. As commented, Ruiz et al., manipulated the frequency of critical words in the target language (high, low frequency) which were equated in the SL frequency. According to many previous studies (e.g., Balota & Chumbley, 1984; Forster & Chambers, 1973; Frederiksen & Kroll, 1976; Seidenberg, 1995), lexical frequency is a factor that impacts at the lexical level so it was considered an index of lexical coactivation in the study conducted by Ruiz et al. The results of the study showed that words with high L2 frequency placed at the end of the sentences were read faster than low L2 frequency

words in the same position during the reading for translation task even when these words were equated in their L1 frequency. Again, this effect was not found at the beginning of the reading for translation processes and the frequency effect did not show up when reading for repetition. Thus, the results indicated that both TL and SL lexical properties were simultaneously active during the comprehension and reformulation processes of the SL in the translation task.

Empirical evidence favors also the Horizontal View of Translation at the syntactic level by showing that syntactic properties of the TL are activated when bilinguals read a sentence for later translation. Ruiz et al. (2008) conducted a second experiment looking for evidence of TL activation at the syntactic level. They manipulated the syntactic congruency between the SL and the TL sentences by varying the order in which adjective-noun forms were presented and by including or omitting the pronoun that constituted the subject of the verb of a relative clause embedded in the sentence. To illustrate, there were congruent sentences in which the adjective (e.g., *bonita*, *nice*, in English and Spanish respectively) was placed before the noun (*casa*, *house*, in English and Spanish respectively) (e.g., *bonita casa/nice house*) and the pronoun/subject was included in SL sentences (Spanish) (e.g., *La bonita casa que yo alquilé este verano tenía un verde jardín* / *The nice house that I rented this summer had a green garden*). There were also incongruent sentences in which the adjective (*bonita*, *nice*) was placed after the noun (*casa*, *house*) (e.g., *casa bonita/nice house*) and the pronoun was omitted (e.g., *La casa bonita que alquilé este verano tenía un jardín verde* / *The nice house that I rented this summer had a green garden*). Note that in the incongruent sentences, the word order of the adjective-noun form and the omission of the pronoun subject are plausible in Spanish sentences but impossible in an English sentence structure. The manipulation was based on the assumption that the same syntactic representation is shared across the bilinguals' languages when the syntactic structure follows an identical word order in both languages (Bernolet, Hartsuiker, & Pickering, 2007). Hence, the authors argued that congruent sentences in which word order was the same in two languages would foster the coactivation of the TL when reading for translation. Put differently, if the TL syntactic properties are active when comprehending SL sentences for later translation, congruent sentences will be read faster than incongruent sentences. Moreover, in order to explore the moment in which TL was activated, the sentences were divided in three regions: initial

(noun/adjective), middle (verbal form embedded in a relative clause) and final (noun/adjective). The participants were instructed to read the sentences word-by-word for repetition or for translation. The results showed a facilitation effect for congruent SL/TL syntactic structures only in the middle region of sentences when the participants read for translation, while in the reading for repetition task no facilitation effects were found for congruent syntactic structures.

Thus, comprehension of the SL for translation involves parallel activation of the SL and the TL syntactic properties. Moreover, the activation of TL syntactic properties during SL comprehension process in translation not only suggests a code-to-code connection at the syntactic level between a bilingual's languages during translation, but also that (1) those syntactic representations shared between the SL and TL become activated during the SL comprehension, and (2) this TL syntactic activation affects SL syntactic processing during comprehension for translation (faster reading times when there is a match in the word order between the SL and TL).

It is important to point out that in the study conducted by Macizo and Bajo (2006) the facilitation effect for cognate words during translation was found only at the final region of the sentences, while the syntactic facilitation effect for congruent sentences in the second experiment by Ruiz et al. (2008) was significant in the middle region of the sentences. The syntactic effect was close to significant when the participants read the initial region of the sentences, but it did not reach significance when participants read the final region of the sentences. The difference in the facilitation effects across the regions of the sentences, that is, syntactic effect at the middle region in Ruiz et al. (2008) and lexical effect at the final region in Macizo and Bajo (2006), suggests a serial course of activation of TL syntactic and lexical properties during SL comprehension for translation. Thus, when comprehension of the SL starts, syntactic properties of the TL are activated and facilitate SL processing when they are shared and congruent across languages (e.g., adjective-noun word order in Spanish and English). But once the syntactic representation necessary to understand the sentence is created, the evidence of syntactic coactivation vanishes and the TL lexical activation shows up. Hence, these results suggest that activation of TL syntactic properties precedes the retrieval of TL lexical forms in a serial manner when reading the SL for later translation.

The idea of a serial time course of syntactic and lexical activation in translation is similar to the time course proposed in several models of language processing in monolingual speakers (e.g., Levelt, Roelofs, & Meyer, 1999). In these serial models, it is assumed that syntax planning has to be formulated before lexical information is retrieved.

However, there is the possibility that the syntactic and lexical activation in translation was performed through a cascading process. In fact, theories about language processing in monolingual speakers proposed this type of processing (Spreading Activation Theory- SAT, Dell, 1986; Dell & O'Seaghdha, 1992). Specifically, Dell and colleagues suggest that if the course of activation is considered as a whole, we would first find syntactic and then lexical activation, which would lead us to think that linguistic information was activated sequentially. Nevertheless, the authors also propose that a fine analysis would reveal a cascading process in which syntactic and lexical information would be simultaneously active but the activation peak of these contents would vary over time. Thus, at the beginning of a linguistic task, the syntactic activation peak would be at maximum and the lexical activation would be weak. Subsequently, the activation peak would be maximum for the lexical information while the syntactic contents would remain active but to a lesser extent. In addition, this cascading perspective would assume the interactive activation of different language levels so that the syntactic activation could be modulated by lexical information and vice versa (e.g., Dell, 1986).

Previous studies conducted with monolingual speakers have reported interactions between the activation of lexical and syntactic information during sentence comprehension. For instance, Keller, Carpenter, and Just (2001) performed an fMRI study to examine the relationship between syntactic and lexical processing. They focused on which cortical regions became activated and in the distribution of activation across regions as a function of the combined variations in syntactic complexity and lexical frequency. Syntactic complexity was manipulated by contrasting conjoined-active sentences with object-relative clauses, and lexical frequency by replacing nouns with similar words of high frequency in half of the sentences and with similar low frequency words in the other half. The authors assumed that the increased processing load imposed by the syntactic and lexical manipulation would be reflected in a higher activation of brain regions associated to the processing of linguistic information. Native speakers of English had to read sentences at their own pace and then answer a probe question. The results

revealed an interaction between lexical and syntactic factors. At the neural level, the reading of syntactically complex sentences (object-relative) with low frequency nouns produced greater activation of the left hemisphere (Broca's area, Wernicke's area, and Supramarginal and Angular Gyrus) compared to sentences with high frequency words. However, during the reading of syntactically simple sentences (conjoined actives) the frequency of the words did not determine the pattern of brain activation. Thus, the study conducted by Keller et al. revealed an interaction between lexical frequency and syntactic complexity.

The cascade processing described above may account for the results obtained by Ruiz et al. (2008) in the translation task. Thus, the SL/TL syntactic congruency effect found at the middle region of the task would show the activation peak of the TL syntactic information while the TL frequency effect observed at the end of the task would index the activation peak of the TL lexical information. However, in the study by Ruiz et al. (2008), the concurrent and interactive activation of lexical and syntactic information in translation could not be determined because the authors manipulated syntactic and lexical factors in two independent experiments. In our study, we evaluated this point directly.

7.2. The current study

Previous studies seem to indicate a time course in the activation of the TL when bilinguals read a SL for later translation. TL syntactic information is activated first and afterwards TL lexical activation seems to take place (Macizo & Bajo, 2006; Ruiz et al., 2008). However, in these previous studies lexical and syntactic variables were independently manipulated making direct comparison of their time course of activation slightly problematic. Furthermore, the interactive nature of the activation of lexical and syntactic information of the TL could not be determined in these previous experiments.

In our study, we manipulated at the same time lexical and syntactic variables to directly evaluate the activation time course of TL lexical and syntactic properties during comprehension in translation. For this purpose, we employed a methodology similar to the one used in the Macizo and Bajo (2006) and Ruiz et al. (2008) studies. In our experiment, Spanish-English bilinguals (L1-L2, respectively) were asked to read

sentences, word-by-word, in Spanish (SL) either to repeat them in Spanish or to translate them into English (TL). Sentences were manipulated by varying the critical words (control words, cognate words) and their position in the sentence, and by manipulating the syntactic congruency between SL and TL.

We expected (1) slower reading times in comprehension for translation than in comprehension for repetition, which would be considered as an indirect index of TL activation during comprehension. This activation requires additional processing resources that would increase reading times in this condition in comparison with reading for repetition; (2) TL lexical properties activation during SL comprehension, which would be reflected in faster reading times of cognate words vs. control words; (3) TL syntactic properties activation during comprehension, which would imply a more efficient processing of congruent sentences vs. incongruent sentences. As to TL time course of activation, on the one hand, we expected to find a greater syntactic effect in the initial and middle region of the sentences in contrast with the effect at the final region. On the other hand, we expected to find a greater lexical effect at the final region of the sentences compared to the initial and middle regions. Thus, if we analyzed separately lexical and syntactic properties, the latter would be active before the former. Moreover, by manipulating both lexical and syntactic characteristics in the same sentence we were able to look for a possible interaction between the TL lexical and syntactic levels. If the lexical and syntactic activation of TL information occurs in a cascade and interactive manner, we expect to find an interaction of both factors.

7.3. Experiment 4

7.4. METHOD

7.4.1. Participants

Twenty-five Spanish (L1) – English (L2) bilinguals participated in this experiment. Their mean age was 21.12 years ($SD = 3.60$). They were paid for their

participation in the study. Also, they completed a language history questionnaire where they self-assessed their proficiency in reading, speaking and speech comprehension in their L1 and L2 languages. The proficiency scale ranged from 1 to 10 where 1 was not proficient and 10 was highly proficient (see Table 3 for the results). Their mean proficiency in each skill was higher in Spanish (speaking proficiency, $M = 9.40$, $SD = 0.76$; reading proficiency, $M = 9.52$, $SD = 0.71$; speech comprehension, $M = 9.64$, $SD = 0.57$) than in English (speaking proficiency, $M = 7.68$, $SD = 0.90$, $t(24) = 7.12$, $p < .001$; reading proficiency, $M = 8.04$, $SD = 0.84$, $t(24) = 7.36$, $p < .001$; speech comprehension, $M = 8.12$, $SD = 0.78$, $t(24) = 9.24$, $p < .001$). Therefore, the participants were unbalanced bilinguals but highly fluent in their L2.

Table 3. *Characteristics of Participants in the Study*

| <i>Demographic Characteristics</i> | |
|---|--------------|
| Age (years) | 21.12 (3.60) |
| Age starting L2 learning (years) | 6.60 (3.35) |
| Time living in L2 speaking countries (months) | 8.00 (8.22) |
| Language proficiency questionnaire | |
| L1 Speaking proficiency | 9.40 (0.76) |
| L1 Speech comprehension | 9.64 (0.57) |
| L1 Reading proficiency | 9.52 (0.71) |
| Mean L1 fluency | 9.52 (0.12) |
| L2 Speaking proficiency | 7.68 (0.90) |
| L2 Speech comprehension | 8.12 (0.78) |
| L2 Reading proficiency | 8.04 (0.84) |
| Mean L2 fluency | 7.95 (0.23) |

Note. The self-report ratings in L1 (Spanish) and L2 (English) ranged from 1 to 10, where 1 was not fluent and 10 was very fluent. Standard deviations are reported in parentheses.

7.4.2. Design and Materials

We manipulated the type of reading (reading for repetition vs. reading for translation), the cognate status of critical words (cognate words vs. non-cognate control words), and the syntactic structure of the sentence (congruent and incongruent).

A set of 96 Spanish words that were Spanish/English cognates were selected from the *NTC's dictionary of Spanish cognates: Thematically organized* (Nash, 1997), and also a set of 96 non-cognate Spanish control words were selected. For each word, length (in number of letters) and frequency were computed in Spanish (per one-million count, Alameda & Cuetos, 1995) and English (per one-million count, Brysbaert & New, 2009). The word length in Spanish was similar for cognate words ($M = 6.35$, $SD = 1.55$) and control words ($M = 6.50$, $SD = 1.58$), $t(95) = 0.57$, $p = .57$. The frequency of usage in Spanish was comparable also for cognate words ($M = 40.96$, $SD = 67.05$) and control words ($M = 54.20$, $SD = 121.29$), $t(95) = 0.97$, $p = .33$. Furthermore, the word length in English was similar for cognate words ($M = 6.08$, $SD = 1.49$) and control words ($M = 6.14$, $SD = 2.30$), $t(95) = 0.19$, $p = .85$. Finally, the English lexical frequency of cognate words ($M = 40.51$, $SD = 75.00$) and control words ($M = 53.22$, $SD = 83.62$), was equated, $t(95) = -1.24$, $p = .22$.

The syntactic manipulation was made by considering the word order of noun phrases (adjective/noun word order) and the presence/omission of the pronoun that constituted the subject of the verb of a relative clause embedded in the sentence. In Spanish, the adjective can be placed both before and after the noun and the subject can be omitted or be present, unlike in English, where the adjective should be located before the noun, and the subject is always present. Thus, in a Spanish congruent sentence the adjective was presented before the noun and the relative clause included the pronoun (e.g., *El derruido puente que nosotros cruzamos durante la huída conducía al profundo canal*/The ruined bridge we crossed during our getaway led to the deep canal). In the incongruent version, the adjective was always presented after the noun and the personal pronoun was omitted (e.g., *El puente derruido que cruzamos durante la huída conducía al canal profundo*/The ruined bridge we crossed during our getaway led to the deep canal).

A set of 96 experimental sentences were constructed. All the sentences ranged from 12 to 16 words in Spanish. For each experimental sentence, four versions were created in order to cross the lexical variable (cognate status) and the syntactic variable (word order) (see Table 4 for examples and Appendix 2 for the complete set of material). In two versions, the cognate word was placed at the beginning of the sentence (*canal*, in Spanish and English) and the non-cognate word was located at the end of the sentence (*punte*, bridge in English). In the other two versions, the cognate word appeared at the end of the sentence and the non-cognate word appeared at the beginning of the sentence. Moreover, one sentence in the cognate (beginning) / non-cognate (final) condition and one sentence in the non-cognate (beginning) / cognate (final) condition were syntactically congruent (*profundo canal*, *derruido puente*, deep canal, ruined bridge in English) while another two sentences in each cognate manipulation were syntactically incongruent (*canal profundo*, *punte derruido*). The first author of this work (early bilingual with high proficiency in Spanish and English) corroborated that the experimental sentences were plausible grammatical and syntactic structures that followed the idiomaticity of the English and Spanish language.

Each participant received 96 sentences. In half of the sentences, participants had to read for translation and they had to read for repetition the rest of sentences. In each reading task, a set of 12 sentences were presented in each treatment: congruent with cognate at the beginning of the sentence, incongruent with cognate at the beginning of the sentence, congruent with cognate at the end of the sentence, and incongruent with cognate at the end of the sentence. The participants received only one version of each sentence but, across participants, each sentence appeared an equal number of times across the four cells of the design.

Table 4. *Example of Experimental Sentences Used in the Study*

| Condition | Sentence |
|--------------------|---|
| 1Cognate-Congruent | El profundo canal que nosotros cruzamos durante la huída conducía al derruido punte (The deep canal that we crossed during our getaway led to the ruined bridge). |

| | |
|----------------------|--|
| 1Cognate-Incongruent | El canal profundo que cruzamos durante la huída conducía al puente derruido (The deep canal that we crossed during our getaway led to the ruined bridge). |
| 2Cognate-Congruent | El derruido puente que nosotros cruzamos durante la huída conducía al profundo canal (The ruined bridge that we crossed during our getaway led to the deep canal). |
| 2Cognate-Incongruent | El puente derruido que cruzamos durante la huída conducía al canal profundo (The ruined bridge that we crossed during our getaway led to the deep canal). |

Note. Sentences were presented in Spanish, English translation are given in brackets. 1Cognate: Sentence with a cognate word at the initial region of the sentence. 2Cognate: Sentence with a cognate word at the final region of the sentence. Congruent: Sentence with similar structure in Spanish and English, Incongruent: Sentence with different structure in Spanish and English.

In addition, to make sure participants were not only paying attention to sentence structure but also involved in meaning comprehension, 30 filler sentences were created, followed by a reading comprehension question (see Table 5). Half of these filler sentences were presented in the reading for translation task and the other half was presented in the reading for repetition task. Filler and experimental sentences were shown in a random order.

Table 5. *Filler Sentences Used in the Study*

| Type | Sentence |
|--------------------------------|---|
| Filler Sentence | El ajedrecista cuidadoso que enfrenté en la partida no realizó ninguna jugada débil. (The careful chess player I played against in the match didn't make any weak moves.) |
| Reading Comprehension Question | El ajedrecista cuidadoso jugó una buena partida. (The careful chess player played good match.) |

7.4.3. Procedure

The experiment consisted of two blocks of 63 sentences (48 experimental sentences and 15 filler sentences). Participants were instructed to read and repeat the sentences or to read and translate them, depending on the block. The task instructions appeared in the middle of the screen at the beginning of each block. The type of task was counterbalanced across participants.

The sentences appeared word-by-word in the middle of a computer screen (Just, Carpenter, & Woolley, 1982). Specifically, noncumulative moving-window self-paced reading was used in which each sentence was presented masked with each character replaced with dashes. Participants read the sentences at their own pace by pressing the space bar every time they wanted to see new words. For each button press, a new word was revealed while all other words remained masked. Although this type of reading is not very naturalistic, self-paced results (of the noncumulative moving-window type in particular) are well correlated with results obtained in other online measures of reading such as eye-tracking data ($r = .57$) (Just, Carpenter, & Woolley, 1982).

The time between consecutive key presses was taken as an index of the processing time for the displayed words. After the participants finished reading the sentence, the word “TAREA” (“task” in English) appeared on the middle screen and the participants had to perform the block’s task (to repeat or to translate the sentences). Next, after finishing the repetition/translation task, the word “VERIFICACIÓN” (“verification” in English) appeared in filler sentences followed by a reading comprehension question. After the participants finished answering the reading comprehension question, they had to press the space bar in order to receive the next sentence. Oral productions (the repeated and translated sentences) were recorded using an ICD-SX1000 Sony Digital Voice Recorder for later analyses.

7.5. Results

The general quality of the participants' oral productions was evaluated by the first author of this work (early bilingual with high proficiency in Spanish and English). The scoring system ranged from 0 to 5 where 5 indicated very good production, 1 very poor production, and 0 that no answer was produced. The scoring system for the repetition task measured how well the lexical and syntactic forms of the output matched those of the input, while for the translation task, it measured how well the lexical and syntactic forms of the output matched those of the TL language, alongside correspondence of meaning between the sentences in the SL and their translation in the TL. Those sentences marked 3 or higher were considered correct (see Table 6 for examples) and included in the analyses (90.5% of the sentences).

The mean Reading Times (RTs) for correct produced sentences in each condition was computed for each participant and item and submitted to analyses of variance (ANOVA) with participants (F_1) and items (F_2) as random factors. Furthermore, RTs that were two standard deviations above the participant's mean for the critical words were replaced with the participant's mean for that word (5.87% of the data). We present the results depending on the region of the sentence (initial region, middle region and final region). The mean RTs obtained in each condition and sentence region are reported in Table 7.

Table 6. *Example of Scores for Correct Oral Productions*

| Example sentence | | |
|---|---|-------|
| Spanish | English | |
| El guionista genial que asesoré en el rodaje es amigo del director célebre. | The brilliant scriptwriter I advised during the filming is a friend of the famous director. | |
| Reading for Repetition | Reading for Translation | Score |

| | | |
|---|---|---|
| El guionista genial que asesoré en el rodaje es amigo del director célebre. | The brilliant scriptwriter I advised during the filming is a friend of the famous director. | 5 |
| El guionista que asesoré en el rodaje es amigo del director. | The scriptwriter I advised during the filming is a friend of the director. | 4 |
| El hombre que asesoré en el rodaje es amigo del hombre. | The man I advised during the filming is friend of the man. | 3 |

Note. The scoring system ranged from 0 to 5 (5 = Very good production, 0 = no answer). Sentences marked 3 or higher were considered correct.

Table 7. *Mean Reading Times Obtained in Experiment 4*

| | Sentence region | | |
|-------------------------|-----------------|----------------|------------------|
| | Initial region | Middle region | Final region |
| Reading for repetition | | | |
| 1Cognate-Congruent | 739 ms (59.95) | 863 ms (86.85) | 879 ms (61.92) |
| 1Cognate-Incongruent | 739 ms (69.61) | 759 ms (70.59) | 878 ms (70.38) |
| 2Cognate-Congruent | 712 ms (57.04) | 786 ms (77.85) | 898 ms (61.01) |
| 2Cognate-Incongruent | 738 ms (73.81) | 717 ms (65.25) | 915 ms (77.70) |
| Reading for translation | | | |
| 1Cognate-Congruent | 994 ms (84.71) | 914 ms (74.44) | 1446 ms (187.56) |
| 1Cognate-Incongruent | 1055 ms (84.51) | 847 ms (66.05) | 1119 ms (114.01) |
| 2Cognate-Congruent | 1049 ms (57.04) | 894 ms (83.87) | 1279 ms (137.04) |
| 2Cognate-Incongruent | 1039 ms (91.64) | 834 ms (64.58) | 1231 ms (145.97) |

Note. Standard deviations are reported in parentheses.

7.5.1. Initial Region

The analyses were conducted on the average RTs of critical words (the noun and the adjective) at the beginning of the sentence. The results of the ANOVA showed a significant type of reading effect, $F_1(1, 23) = 24.66, p < .001, \eta_p^2 = .52, F_2(1, 89) = 207.77, p < .001, \eta_p^2 = .70$. Reading for translation was significantly slower ($M = 1021$ ms, $SE =$

167) than reading for repetition ($M = 732$ ms, $SE = 128$). No other main effects or interactions between variables were significant (all F s < 1). Finally, the Type of reading x Cognate status x Syntactic structure three-way interaction was not significant by participants, $F_1(1, 23) = 1.28$, $p > .05$, $\eta_p^2 = .05$, or items $F_2(1,89) = .68$, $p > .05$, $\eta_p^2 = .00$.

7.5.2. Middle Region

The analyses were conducted on the RTs of the verb included in the relative clause of the sentences. The analysis showed that the type of reading main effect was not significant by participants, $F_1(1, 23) = 2.82$, $p > .05$, $\eta_p^2 = .11$, but it was significant by items, $F_2(1,88) = 19.67$, $p < .001$, $\eta_p^2 = .18$. The RTs were $M = 781$ ms, $SE = 137$, in the reading for repetition task, and $M = 865$ ms, $SE = 130$, in the reading for translation task. The main effect of syntactic structure was significant, $F_1(1, 23) = 4.06$, $p < .001$, $\eta_p^2 = .15$, $F_2(1,88) = 25.67$, $p < .001$, $\eta_p^2 = .23$. Participants were slower when reading the verb in the congruent condition ($M = 859$ ms, $SE = 70$) compared with the incongruent condition ($M = 788$ ms, $SE = 59$). In addition, the main effect of cognate status was significant by participants, $F_1(1, 23) = 5.29$, $p < .001$, $\eta_p^2 = .19$, but not by items, $F_2(1,88) = 1.61$, $p > .05$, $\eta_p^2 = .02$. In the middle region, participants were slower in the cognate condition ($M = 848$ ms, $SE = 65$) than in the control condition ($M = 798$ ms, $SE = 62$). None of the interactions between variables were significant (all $ps > .05$). Finally, the Type of reading x Cognate status x Syntactic structure three-way interaction was not significant by participants or items (F_1 and $F_2 < 1$).

7.5.3. Final Region

The analyses were conducted on the average RTs of critical words (the noun and the adjective) at the end of the sentence. The ANOVA performed in this region showed significant main effect of type of reading, $F_1(1, 23) = 15.31$, $p < .001$, $\eta_p^2 = .40$, $F_2(1, 89) = 55.96$, $p < .001$, $\eta_p^2 = .40$. The RTs were slower in the reading for translation condition ($M = 1183$ ms, $SE = 232$) compared to the reading for repetition condition ($M = 892$ ms,

$SE = 128$). The main effect of syntactic structure was significant too, $F_1(1, 23) = 6.43, p < .001, \eta_p^2 = .22, F_2(1, 89) = 8.9, p < .001, \eta_p^2 = .09$. Participants were faster reading the final region in the incongruent condition ($M = 988$ ms, $SE = 157$) than in the congruent condition ($M = 1087$ ms, $SE = 193$). The main effect of cognate status was not significant (F_1 and $F_2 < 1$). The RTs were similar in the cognate condition ($M = 1035$ ms, $SE = 174$) and the control condition ($M = 1040$ ms, $SE = 171$). The Type of reading x Syntactic structure interaction was significant, $F_1(1, 23) = 5.73, p < .001, \eta_p^2 = .20, F_2(1, 89) = 8.32, p < .001, \eta_p^2 = .09$. The Syntactic structure x Cognate status interaction was significant as well, $F_1(1, 23) = 4.59, p < .001, \eta_p^2 = .17, F_2(1, 89) = 8.39, p < .001, \eta_p^2 = .09$. Finally, the Type of reading x Syntactic structure x Cognate status three-way interaction was significant, $F_1(1, 23) = 4.39, p < .001, \eta_p^2 = .16, F_2(1, 89) = 4.25, p < .001, \eta_p^2 = .05$. This significant three-way interaction was examined further by evaluating the syntactic structure and cognate status separately in the reading for translation task and the reading for repetition task.

While the syntactic structure was significant in the reading for translation task, $F_1(1, 24) = 6.16, p < .001, \eta_p^2 = .20, F_2(1, 91) = 8.55, p < .001, \eta_p^2 = .09$, the cognate status was not significant either by participants or items, F_1 and $F_2 < 1$. However, the interaction between syntactic structure and cognate status was significant, $F_1(1, 24) = 5.98, p < .001, \eta_p^2 = .20, F_2(1, 91) = 9.74, p < .001, \eta_p^2 = .10$. When participants read syntactically congruent sentences, a cognate facilitation effect was found, $F_1(1, 24) = 4.66, p < .001, F_2(1, 91) = 4.92, p < .001$, with faster RTs for cognate words ($M = 1279$ ms, $SE = 137$) than for control words ($M = 1446$ ms, $SE = 188$). When participants read syntactically incongruent sentences, the cognate effect was significant also by participants, $F_1(1, 24) = 4.96, p < .001$, but not by items, $F_2(1, 91) = 1.66, p > .05$. In this case, cognate words were read more slowly ($M = 1231$ ms, $SE = 146$) than control words ($M = 1119$ ms, $SE = 114$) (see Figure 9).

In the reading for repetition task, neither the syntactic structure, F_1 and $F_2 < 1$, the cognate status, $F_1(1, 23) = 1.49, p > .05, \eta_p^2 = .06, F_2 < 1$, or the Syntactic structure x Cognate status interaction, F_1 and $F_2 < 1$, were significant.

The results obtained in Experiment 4 confirmed several of the predictions described at the beginning of the study. First, slower reading times were found in the reading for translation versus the reading for repetition, which seems to reflect the

coactivation of the TL during the comprehension of the SL in translation. Second, the effects of the lexical and syntactic properties of the SL-TL were observed during the reading task, which suggests that the participants retrieved lexical and syntactic information from the TL during the comprehension of the SL.

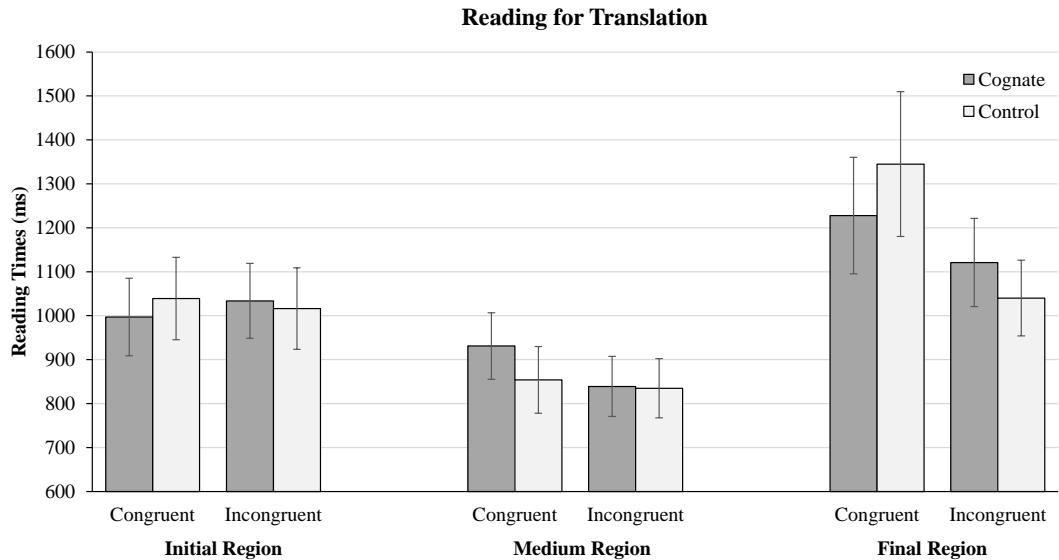


Figure 9. Mean reading times (in milliseconds, ms) obtained in the reading for translation task of Experiment 4 as a function of the syntactic structure (congruent, incongruent) and the cognate status (cognate, control). Vertical bars represent the standard error.

7.5.4. Discussion

The results obtained in Experiment 4 confirmed several of the predictions described at the beginning of the study. First, slower reading times were found in the reading for translation versus the reading for repetition, which seems to reflect the coactivation of the TL during the comprehension of the SL in translation. Second, the effects of the lexical and syntactic properties of the SL-TL were observed during the reading task, which suggests that the participants retrieved lexical and syntactic information from the TL during the comprehension of the SL.

Moreover, one of the most relevant results of Experiment 4 refers to those obtained at the end of the sentence reading. In this case, in the reading for translation, TL

lexical activation depended on the congruency between the syntactic structure of the SL and the TL. When the syntactic structure was congruent, a facilitation effect was observed with faster RTs when participants read cognate words compared to control words. Conversely, when the syntactic structure was incongruent, an interference effect was found with slower RTs when reading cognate words versus control words. The cognate facilitation effect seems to indicate that lexical activation of TL benefited from the structural similarity between languages. On the contrary, the interference effect could be explained by the mismatch between the presence of lexical similarities and the absence of syntactic correspondences between languages. Nevertheless, since all the experimental sentences were presented with a full stop, it is possible that the cognate interference effect only found in the reading for translation of syntactically incongruent sentences may be explained by the wrap-up effect. This effect consists of an increase in reading times at the end of a sentence as compared to the reading of other parts of the sentence (Rayner et al., 1989; Stowe et al., 2018). In order to evaluate this point, we decided to conduct a follow-up experiment to compare the reading for translation of the sentences used in Experiment 4 with the processing of a modified version of the material in which we added a clause at the end of the sentence (e.g., *El atareado abogado que tú atendiste en el despacho estaba esperando al exigente cliente [para preguntarle algo.]*/ The busy lawyer you saw in the office was waiting for the demanding client [to ask him something.]) (see Appendix 3 for the complete set of sentences). If the interaction between the syntactic congruency and cognate status found at the end of the reading for translation was only due to a wrap-up effect (Experiment 4), this interaction would not be found when the length of the experimental sentences increases.

7.6. Experiment 5

7.7. METHOD

7.6.1. Participants

Twenty-one Spanish (L1) – English (L2) bilinguals participated in the second experiment. Their mean age was 25.52 years ($SD = 5.43$). Like in Experiment 4, they were paid for their participation in the study, and completed the same language history questionnaire to self-assess their proficiency in their L1 and L2. The proficiency scale was the same used in Experiment 4. The participants' mean proficiency in every skill was higher in Spanish (speaking proficiency, $M = 9.52$, $SD = 0.60$; reading proficiency, $M = 9.67$, $SD = 0.48$; speech comprehension, $M = 9.67$, $SD = 0.48$) than in English (speaking proficiency, $M = 7.81$, $SD = 1.03$, $t(20) = 7.13$, $p < .001$; reading proficiency, $M = 8.57$, $SD = 0.93$, $t(20) = 5.65$, $p < .001$; speech comprehension, $M = 8.43$, $SD = 0.87$, $t(20) = 7.38$, $p < .001$). Thus, participants were unbalanced bilinguals but with a quite very high L2 proficiency (see Table 8).

7.6.2. Design and Materials

In a reading for translation task, we manipulated the type of sentence (full stop sentences vs. final clause sentences), the cognate status of critical words (cognate words vs. non-cognate control words), and the syntactic structure of the sentence (congruent and incongruent).

The same set of 96 experimental sentences and 30 filler sentences from Experiment 4 were used in Experiment 5. The final clause sentences were created by adding an extra clause to the final region of the experimental sentences; thus, creating a new set of 96 experimental sentences. The extra clause ranged from 2 to 5 words in Spanish. The same four versions for each experimental sentence in Experiment 4 were

used in Experiment 5 for the new set of sentences (see Table 9 for examples and Appendix 3 for the complete set of material).

Table 8. *Characteristics of Participants in the Study*

| <i>Demographic Characteristics</i> | |
|---|---------------|
| Age (years) | 25.52 (5.43) |
| Age starting L2 learning (years) | 6.10 (3.11) |
| Time living in L2 speaking countries (months) | 18.70 (31.45) |
| Language proficiency questionnaire | |
| L1 Speaking proficiency | 9.52 (0.60) |
| L1 Speech comprehension | 9.67 (0.48) |
| L1 Reading proficiency | 9.67 (0.48) |
| Mean L1 fluency | 9.62 (0.08) |
| L2 Speaking proficiency | 7.81 (1.03) |
| L2 Speech comprehension | 8.43 (0.87) |
| L2 Reading proficiency | 8.57 (0.93) |
| Mean L2 fluency | 8.27 (0.40) |

Note. The self-report ratings in L1 (Spanish) and L2 (English) ranged from 1 to 10, where 1 was not fluent and 10 was very fluent. Standard deviations are reported in parentheses.

Each participant received 96 sentences. Half of the sentences were the same as those used in the main experiment (full stop sentences) and the rest of the sentences included a clause at the end of the sentence (final clause sentences). In all of them the participants had to read for translation. In each type of sentence, a set of 12 sentences were presented in each treatment: congruent with cognate at the beginning of the sentence, incongruent with cognate at the beginning of the sentence, congruent with cognate at the end of the sentence, and incongruent with cognate at the end of the sentence. Each participant received only one version of the sentence (in the full stop or the final clause condition). All other details were the same as those reported in Experiment 4.

7.6.3. Procedure

The procedure was the same as that used in the reading for translation task of Experiment 4.

Table 9. *Example of Experimental Final Clause Sentences Used in Experiment 5*

| Condition | Sentence |
|----------------------|---|
| 1Cognate-Congruent | El profundo canal que nosotros cruzamos durante la huída conducía al derruido Puente [lejos de la ciudad] (The deep canal that we crossed during our getaway led to the ruined bridge [far from the city]). |
| 1Cognate-Incongruent | El canal profundo que cruzamos durante la huída conducía al puente derruido [lejos de la ciudad] (The deep canal that we crossed during our getaway led to the ruined bridge [far from the city]). |
| 2Cognate-Congruent | El derruido puente que nosotros cruzamos durante la huída conducía al profundo canal [lejos de la ciudad] (The ruined bridge that we crossed during our getaway led to the deep canal [far from the city]). |
| 2Cognate-Incongruent | El puente derruido que cruzamos durante la huída conducía al canal profundo [lejos de la ciudad] (The ruined bridge that we crossed during our getaway led to the deep canal [far from the city]). |

Note. Sentences were presented in Spanish, English translation are given in brackets. 1Cognate: Sentence with a cognate word at the initial region of the sentence. 2Cognate: Sentence with a cognate word at the final region of the sentence. Congruent: Sentence with similar structure in Spanish and English, Incongruent: Sentence with different structure in Spanish and English. The final clause used in the final clause sentence condition is reported in square brackets.

7.7. Results

The general quality of the participants' oral productions was evaluated with the same coding method used in Experiment 4. Those sentences marked 3 or higher were considered correct and included in the analyses (80.63 % of the sentences). As in Experiment 4, RTs that were two standard deviations above the participant's mean for the critical words were replaced with the participant's mean for that word (3.50% of the data). The mean RTs obtained in each condition and sentence region are reported in Table 10.

Table 10. *Mean Reading Times Obtained in Experiment 5*

| | Sentence region | | |
|------------------------|-----------------|----------------|------------------|
| | Initial region | Middle region | Final region |
| Full stop sentences | | | |
| 1Cognate-Congruent | 737 ms (41.84) | 664 ms (51.95) | 1231 ms (127.59) |
| 1Cognate-Incongruent | 681 ms (46.59) | 650 ms (55.63) | 1142 ms (109.06) |
| 2Cognate-Congruent | 684 ms (45.71) | 616 ms (51.39) | 1143 ms (109.06) |
| 2Cognate-Incongruent | 684 ms (33.74) | 645 ms (40.10) | 1214 ms (136.32) |
| Final clause sentences | | | |
| 1Cognate-Congruent | 669 ms (34.91) | 671 ms (60.05) | 711 ms (58.72) |
| 1Cognate-Incongruent | 638 ms (38.08) | 600 ms (49.87) | 662 ms (65.46) |
| 2Cognate-Congruent | 659 ms (28.59) | 550 ms (32.94) | 642 ms (61.23) |
| 2Cognate-Incongruent | 656 ms (36.96) | 592 ms (46.58) | 649 ms (50.46) |

Note. Standard deviations are reported in parentheses.

7.7.1. Initial Region

The analyses were performed on the average RTs of critical words. The type of sentence effect was not significant, $F(1, 20) = 2.15$, $p > .05$, $\eta_p^2 = .10$. Reading of full stop sentences ($M = 696$ ms, $SE = 74$) was similar to the reading of final clause sentences ($M = 655$ ms, $SE = 64$). Likewise, no main effect of syntactic structure was found, $F(1, 20) = 1.21$, $p > .05$, $\eta_p^2 = .06$. The RTs were similar in the congruent condition ($M = 687$

ms, $SE = 66$) and the incongruent condition ($M = 665$ ms, $SE = 67$). The main effect of cognate status was not significant either, $F(1, 20) = 1.21$, $p > .05$, $\eta_p^2 = .06$. The reading of control words ($M = 671$ ms, $SE = 63$) was similar to reading of cognate words ($M = 681$ ms, $SE = 65$). Finally, none of the interactions between variables were significant (all $F_s < 1$).

7.7.2. Middle Region

The analyses were conducted on the RTs of the verb included in the relative clause of the sentences. The results of the ANOVA showed that the type of sentence effect was not significant, $F(1, 20) = 1.38$, $p > .05$, $\eta_p^2 = .06$. The RTs in the full stop sentences were $M = 644$ ms, $SE = 85$, and $M = 603$ ms, $SE = 81$, in the final clause sentences. The main effect of syntactic structure was not significant either, $F(1, 20) = .02$, $p > .05$, $\eta_p^2 = .00$. The RTs were similar in the congruent condition ($M = 625$ ms, $SE = 82$) and the incongruent condition ($M = 622$ ms, $SE = 76$). However, the main effect of cognate status was significant, $F(1, 20) = 4.63$, $p < .001$, $\eta_p^2 = .19$. RTs of the verb were slower when cognate words were presented at the beginning of the sentences ($M = 646$ ms, $SE = 90$) compared to the control condition ($M = 601$ ms, $SE = 64$). The Syntactic structure x Cognate status interaction was significant as well, $F(1, 20) = 5.44$, $p < .001$, $\eta_p^2 = .21$. In the congruent condition, participants were slower at reading the verb when cognate words were at the beginning of the sentence ($M = 667$ ms, $SE = 49$) compared with the incongruent condition ($M = 583$ ms, $SE = 37$), $F(1, 20) = 10.11$, $p = .004$, $\eta_p^2 = .34$. However, the cognate status effect was not significant in the incongruent condition, $F < 1$. Finally, none of the other interactions between variables were significant (all $p_s > .05$).

7.7.3. Final Region

The analyses were conducted on the average RTs of critical words (the noun and the adjective) at the end of the sentence. The results of the ANOVA in this region showed significant main effect of type of sentence, $F(1, 20) = 33.63$, $p < .001$, $\eta_p^2 = .63$. The participants were faster at reading in the final clause sentences condition ($M = 666$ ms,

$SE = 112$) than in the full stop sentences condition ($M = 1182$ ms, $SE = 233$). The main effect of syntactic structure was not significant, $F(1, 20) = 1.01$, $p > .05$, $\eta_p^2 = .05$. The reading in the congruent condition ($M = 932$ ms, $SE = 159$) was similar to the reading in the incongruent condition ($M = 916$ ms, $SE = 161$). The main effect of cognate status was not significant either, $F(1, 20) = 1.21$, $p > .05$, $\eta_p^2 = .06$. The RTs in the cognate condition were $M = 912$ ms, $SE = 155$, and $M = 936$ ms, $SE = 166$, in the control condition. However, the Syntactic structure x Cognate status interaction was significant, $F(1, 20) = 8.12$, $p < .001$, $\eta_p^2 = .29$. In the congruent condition, participants read faster cognate words ($M = 892$ ms, $SE = 74$) than control words ($M = 971$ ms, $SE = 87$), $F(1, 20) = 7.96$, $p = .01$, $\eta_p^2 = .29$. However, the cognate status effect was not significant in the incongruent condition, $F(1, 20) = 1.50$, $p = .23$, $\eta_p^2 = .07$ (see Figure 10). No other interactions were significant (all $ps > .05$).

7.7.4. Discussion

The goal of Experiment 5 was to evaluate a possible wrap-up effect when participants read the final region of the sentence and to examine whether this effect explained the interaction between the syntactic congruency and the cognate status found at the end of the reading for translation in Experiment 4. The results obtained in Experiment 5 revealed that reading times of the final region of the sentence were longer with full stop sentences than with final clause sentences, thus corroborating a wrap-up effect on the sentences used in Experiment 4. Furthermore, the interaction between syntactic congruency and cognate status was observed. A cognate facilitation effect was found only when participants read syntactically congruent sentences (see Figure 10). In addition, the type of sentence (full stop sentences vs. final clause sentences) did not interact with any other variable. Thus, although the wrap-up effect was present, it cannot account for the syntactic and lexical effects found in our study at the end of reading for translation.

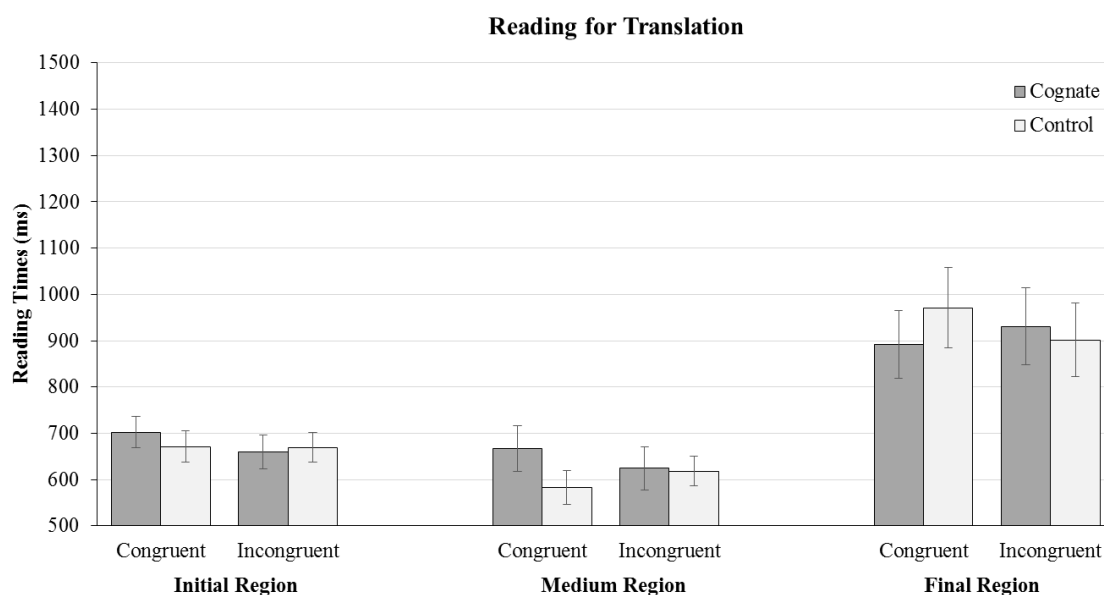


Figure 10. Mean reading times (in milliseconds, ms) obtained in the reading for translation task of Experiment 5 as a function of the syntactic structure (congruent, incongruent) and the cognate status (cognate, control). Vertical bars represent the standard error.

7.8. General Discussion

The main scope of our research was to study the time course of TL lexical and syntactic properties activation during comprehension in translation. According to the Horizontal/Parallel View (e.g., Padilla et al., 2007), reading for translation includes TL activation while reading in the SL, and a reformulation process, which starts before total comprehension of the original message is achieved, and where SL lexical and syntactic equivalents are searched in the TL. Therefore, this view advocates the activation of code-to-code links between the SL and the TL during comprehension of the SL, and interaction between both languages during comprehension in translation.

As we mentioned earlier, some previous studies have explored the time course of the TL lexical and syntactic properties activation by manipulating either one or both properties separately (e.g., Macizo & Bajo, 2006; Ruiz et al., 2008). In these studies, a time course of activation during reading for translation was observed characterized by syntactic activation in middle regions of the sentence and a late lexical activation in the final region of the sentence. This pattern of results suggested a serial TL activation course, in which the syntactic information would be activated first and then the lexical

information of the target language would be triggered. In this study, we manipulated together both the lexical and syntactic properties of TL in order to evaluate the possible interaction between both types of information during the translation task. The lexical manipulation consisted of placing critical words (cognates vs. control words) in the initial and final region of the sentences. On the other hand, the syntactic manipulation consisted of constructing congruent structures between the SL (Spanish) and the TL (English). Congruency was achieved by changing the word order of nouns and adjectives in the initial and final regions of the sentences, and by including or dropping the subject pronoun in front of the verb in the middle region. Thus, lexical and syntactic manipulations in our work were very similar to those done in previous experiments (Macizo & Bajo, 2006; Ruiz et al. 2008) which allowed a direct comparison between studies.

In our study, the results obtained at the beginning of the sentence reading showed no evidence of TL activation either at the syntactic or lexical level. Thus, regardless of the type of reading (to repeat or to translate), the cognate status effect was not observed nor was the effect of syntactic congruency between the SL and the TL. This pattern of results is consistent with that obtained by Ruiz et al. (2008), and seems to suggest that the activation of the TL does not occur at the beginning of the reading process but that linguistic reformulation is a process that develops after a minimal unit of the sentence has been understood. However, this conclusion should be considered with caution. On the one hand, an effect of the type of reading was observed from the beginning of the sentence. The RTs were slower in reading for translation than in reading for repetition. This effect could indicate that in reading for translation, participants were immersed in the search for lexical equivalences in the TL, a process that would increase the reading time. This interpretation is in line with a recent study by Schaeffer et al. (2017). The authors conducted an eye tracking study in which participants first read either for comprehension or for translation and then typed the translation. The authors observed significant effects of the type of reading on global measures of sentence reading (e.g., total reading time, average fixation duration, etc.) and local measures of the reading of critical words situated in the middle of the sentence. The authors interpreted those results as evidence of co-activation of the two linguistic systems (the SL and the TL) during the reading for translation.

On the other hand, in our study, the cognate status effect found in the middle region appeared to stem from the processing of cognate words in the initial region of the sentence. Specifically, the RTs in the middle region (associated with the verb of the relative clause; e.g., *crossed* in *The deep canal that we crossed ...*) were slower in the cognate condition (*The deep canal*) than in the control condition (*The ruined bridge*). However, all verbs used in our study were non-cognate words. Thus, the cognate status effect in the middle region had to come irremediably from the processing of cognate words vs. control words present at the beginning of the sentence. The presence of a cognate word at the beginning of the sentence would favor the search for lexical equivalences between languages. This process would increase the reading time of the following words in the sentence (i.e., middle region of the sentence). In order to obtain additional evidence that the cognate status effect was caused by the processing of cognate words at the beginning of the sentence, we performed additional analyses by classifying the RTs of the intermediate region depending on whether the previous cognate word was identical or not identical (*canal/canal*, *aventura/adventure*, in Spanish and English, respectively). The results showed a main effect of cognate type, $F(1, 20) = 6.63$, $p < .001$, $\eta_p^2 = .25$. The RTs for identical cognates were slower (877 ms) than the RTs for non-identical cognates (810 ms). Hence, these results seemed to suggest that the higher the between-language lexical similarity (identical cognates) in the initial region, the longer it took the participants to process the verb in the middle region.

Regarding the effect of the syntactic structure in the middle region of the sentence, the results showed an interference effect with longer RTs in the congruent condition than in the incongruent condition. This pattern of interference contrasts with the syntactic facilitation effect found by Ruiz et al. (2008) during the reading of syntactically congruent versus incongruent sentences. In our opinion, this pattern of results derives from the internal structure of the sentences used in our study. To be more specific, all of our sentences included an embedded object-relative clause (ORC). The initial region was always constituted by the definite article, an adjective, and a noun (e.g., the noun phrase NP, *the deep canal*). That region was followed by a relative clause constituted by a relative pronoun, a subject pronoun in the congruent versions, and a verb (*that we crossed*). Readers usually adopt an active filler strategy when processing relative clauses during online sentence processing, and initially parse the structure as a subject relative

clause (SRC) when they encounter complementizers (Traxler, Morris, & Seely, 2002; Traxler, Williams, Blozis, & Morris, 2005). Thus, the first name of the sentence (e.g., *canal*) would be assigned the thematic role of agent when the relative pronoun (*que, that* in English) arrived. After this, when the subject of the relative clause was read (*nosotros, we* in English) participants must engage in a reanalysis because they had misinterpreted the sentence by assigning thematic roles incorrectly (e.g., agent and patient). In such a case, a perspective shift will be necessary to build the correct syntactic representation, which consequently will lead to a more difficult comprehension of ORCs, in accordance with previous studies (MacWhinney, 1977; MacWhinney, & Pleh, 1988). Therefore, given that in the congruent version of the sentences the subject pronoun located in front of the relative clause verb was separated from the head noun of the first noun phrase (NP₁) only by the relative pronoun (*que*, in Spanish), while in the incongruent version that pronoun was dropped, the proximity between the head noun of NP₁ and the noun of the relative clause will make the comprehension difficult, since it implies a perspective shift from the head noun of NP₁ to the noun of the relative clause along with the process of correct thematic role assignment. Additionally, the interference effect due to the reading of syntactically congruent versus incongruent structures in the middle region of the sentence could be explained by the frequency of use of the verb with or without pronoun. In congruent sentences, the verb was preceded by the personal pronoun while in incongruent sentences the personal pronoun was omitted. Spanish is a pro-drop language and the unmarked version of a sentence is without a pronoun (Phinney, 1987). It is possible that the presence of a pronoun in congruent sentences was perceived as marked or less frequent and therefore led to longer reaction times.

One of the most relevant results of our study may refer to those obtained at the end of the sentence reading. In Experiments 4 and 5, when participants read for translation, TL activation depended on the congruency between the syntactic structure of the SL and the TL. In Experiment 4, when the syntactic structure was congruent, a facilitation effect was observed with faster RTs when participants read cognate words compared to control words. Conversely, when the syntactic structure was incongruent, an interference effect was found with slower RTs when reading cognate words versus control words. The cognate facilitation effect seems to indicate that lexical activation of TL benefited from the structural similarity between languages. On the contrary, the

interference effect could be explained by a mismatch between the presence of lexical similarities and the absence of syntactic correspondences between languages. Regardless of the direction of the effects, the occurrence of an interaction between lexical and syntactic factors of the TL favors the idea of a cascade processing time-course during the translation task. Thus, during the understanding of the SL, an interactive activation of the TL seems to take place at the syntactic and lexical level.

In Experiment 5, we examined whether the interaction between syntactic and lexical factors found in Experiment 4 was a consequence of a wrap-up effect due to use of full stop sentences which would increase the reading times at the end of the sentence reading (Rayner et al., 1989; Stowe et al., 2018). The results of Experiment 5 confirmed the wrap-up effect since participants took longer to read the end of full stop sentences compared to sentences that ended with a final clause. However, the interaction between the syntactic congruency and the cognate status was again obtained in Experiment 5 and it did not depend on the type of sentence (full stop and final clause sentences). Therefore, although the wrap-up effect was present in Experiment 4, it cannot account for the syntactic and lexical effects found in our study at the end of reading for translation.

To conclude, this study shows the activation of the TL at the syntactic and lexical level during the translation task. This result is in favor of a Horizontal View of Translation in which it is assumed that there is activation of the TL before the reading of the SL has been completed. Critically, in this study, we offer evidence that the TL activation at the syntactic and lexical levels is interactive: the structural similarity between languages determines the activation of lexical forms in the TL during the translation task.

8. Experimental section 3. Ambiguous Sentence Processing in Translation

The goal of our research was to explore possible online coactivation of both target language (TL) syntactic structure representation and TL attachment strategies in translation, and to look over possible interaction between both syntactic properties. To this purpose, Spanish (L1) – English (L2) bilinguals were instructed to read complex noun phrases with an ambiguous relative clause in Spanish to either repeat them in Spanish or translate them in English. The final word of the sentences and the congruency between source language (SL) and TL syntactic structure was manipulated. The results revealed coactivation of both TL syntactic properties: Participants interpreted sentences more accordingly to the TL preferred strategy (low attachment) in the reading for translation task, read congruent sentences faster, and used more the TL preferred interpretation strategy in the congruent condition of the sentences. These results indicated TL activation at different syntactic levels during comprehension of the SL in translation.

This study has been submitted as Ruiz, J. O., & Macizo, P. (2020). *Ambiguous Sentence Processing in Translation*. Manuscript submitted for publication.

8.1. INTRODUCTION

Language syntactic properties comprise different aspects that include activation of sentence structure representations and comprehension processing strategies. Among the syntactic processing strategies, we can find opposed attachment preferences regarding sentences with a structurally ambiguous relative clause (RC) preceded by a complex noun phrase (NP). For example, it has been found that in a sentence like *Someone shot the servant of the actress who was on the balcony*, the answer to the question *Who was on the balcony?* where the relative clause can be attached to either the first noun (NP₁/servant) or the second noun (NP₂/actress), depends on several factors like type of language (Spanish, English, etc.), time of exposure to a given language, prosodic breaks, number of languages spoken by the individual (monolingual speaker, bilingual speaker), and age of second language (L2) acquisition. In the next section, we review studies regarding crosslinguistic differences in the way monolinguals and bilinguals understand sentences that involve RC ambiguity.

8.2. Crosslinguistic differences in relative clause ambiguity resolution

Many previous studies have shown that native speakers of Spanish with no knowledge of English rely on a high (NP₁) attachment strategy for ambiguity resolution (i.e., the servant was on the balcony) (Arancibia, Bizama, & Sáez, 2015; Carreiras & Clifton, 1999; Carreiras, Salillas, & Barber, 2004; Dussias, 2003; Dussias & Sagarra, 2007; Jegerski, Keating, & VanPatten, 2016), while English monolinguals rely on a low (NP₂) attachment strategy (i.e., the actress was on the balcony) (Carreiras & Clifton, 1999; Cuertos & Mitchell, 1988; Mitchell & Cuertos, 1991; Dussias, 2001, 2003; Fernández, 2003; Frazier & Clifton, 1996). RC attachment to the NP₂ in native speakers of English agrees with the *late closure principle* proposed in the Garden-Path Model (Frazier, 1987; Frazier & Rayner, 1982), which predicts that new lexical items are attached to the most recently processed constituent or phrase, unless specific cues are employed to clarify the

intended meaning of the phrase. However, this is not a universal principle, unlike it was thought before, because, as we have explained previously, speakers of other languages (e.g., Spanish) show a preference for high attachment.

Several accounts have been put forth in an attempt to explain the crosslinguistic differences in RC ambiguity resolution. For instance, the Implicit Prosody Hypotheses (Fodor, 2002) holds that such preference results from the crosslinguistic differences in the prosody of sentences. Specifically, it assumes that in silent reading, just like in overt reading, prosodic breaks modulate syntactic interpretation. In complex NPs, it has been shown that a prosodic break before the RC (after NP₂) is associated with high attachment (De la Cruz-Pavia & Elordieta, 2015; Jun, 2003; Jun & Kim, 2004; Jun & Koike, 2008; Lovrić, Bradley, & Fodor, 2000, 2001; Maynell, 1999), while a break after NP₁ favours low attachment (Fernández & Sekerina, 2015; Yao & Scheepers, 2018). That is, prosodic breaks function as cues, creating boundaries between some of the sentence constituents (Wagner & Watson, 2010) and grouping others (Clifton, Carlson, & Frazier, 2002; Watson & Gibson, 2005). If a prosodic boundary is created after NP₁, then NP₂ and RC will form a single prosodic constituent, and the RC will be associated to NP₂, whereas a break after NP₂ will bind the NP₁ and the NP₂, and the RC will constitute a separate prosodic unit. Thus, the RC will be associated to NP₁. Along this line, some studies have found that native speakers of Spanish (Teira & Igoa, 2007; Fromont, Soto-Faraco, & Biau, 2017) and native speakers of English (Fernández, 2007; Fernández & Sekerina, 2015) favoured a low attachment strategy when no prosodic break was present in the auditory presentation of the experimental stimuli, which was reinforced by the presence of a prosodic break after NP₁, whereas a prosodic break after NP₂ elicited a modulation towards a high attachment strategy. Furthermore, the probability of creating a prosodic break after either NP₁ or NP₂ seems to correlate to the length of the RC (Jun & Kim, 2004; Jun & Koike, 2008). To test this hypothesis, De la Cruz-Pavia and Elordieta (2015) conducted a study where they investigated the production of prosodic phrasing in Spanish and the potential influence of RC length in monolingual speakers of Spanish, Spanish (L1) – Basque (L2) bilinguals, and Basque (L1) - Spanish (L2) bilinguals. In addition, given that Spanish language has been reported as a high attachment preference language (Arancibia et al., 2015; Carreiras & Clifton, 1999; Carreiras et al., 2004; Dussias, 2003; Dussias & Sagarra, 2007; Jegerski, Keating et al., 2016), in contrast with Basque, which

has shown preference for low attachment (Gutierrez, Carreiras, & Laka, 2004), the study also aimed to explore potential differences in the prosodic production of these two languages.

The sentences consisted of a complex NP ($NP_1 + NP_2$) and a syntactically ambiguous RC. The RCs were divided into three groups, depending on the number of syllables. The short RCs comprised 3 – 4 syllables, the middle RCs were 6 – 7 syllables, and the long RCs contained 9 – 11 syllables. The results showed significant differences in the percentages of prosodic boundaries after NP_2 between native speakers of Spanish (monolingual and Spanish (L1) – Basque (L2) groups) and non-native speakers of Spanish (Basque (L1) – Spanish (L2) group). While the latter group presented a 75.81% of breaks after NP_2 , the monolingual speakers of Spanish and Spanish (L1) – Basque (L2) bilingual groups produced 82.15% and 82.77% of breaks after NP_2 , respectively. Furthermore, a correlation between the prosodic breaks and the length of the RC was also found. There was a significant difference between the production of prosodic boundaries after NP_2 in the short RC block (56%) and the middle (90.3%) and long (94.0%) RC blocks, but no difference was found between the middle and long blocks. Regarding the performance by group, despite the general preference of all three groups to produce prosodic breaks after NP_2 , there was a significant difference between the non-native speaker group and the native speaker groups, who produced more breaks after NP_2 than the former group in the middle and long blocks. Therefore, although a prosodic segmentation after NP_2 is the default preference in Spanish, the RC length influenced it, with a higher frequency of prosodic breaks after NP_1 in short RCs, while long RCs seemed to lead towards a prosodic break after NP_2 .

Accounts based on immersion experience have been proposed also to explain the crosslinguistic differences in attachment preference, besides the explanations based on phonetic cues. For example, the Tuning Hypothesis (Mitchell & Cuetos, 1991) claims that in case of sentence ambiguity, individuals will opt for the kind of interpretation they have encountered more often in their previous linguistic experience. In other words, in the case of an ambiguous RC in a complex NP, parsers will favour either high attachment or low attachment depending on the language they have been more exposed to. If they have been exposed to a greater extent to a language where high attachment strategy is used more frequently (e.g., Spanish), they will favour this interpretation to solve the

ambiguity. Nevertheless, if they have had a greater exposure to a language which favours low attachment (e.g., English), then, parsers will resort to a low attachment strategy to solve the ambiguity. Supporting evidence towards this claim for English and Spanish comes from a corpus analysis by Mitchell, Cuetos, and Corley (1992) who reported that in sentences with an ambiguous relative clause preceded by two antecedents (NP₁ and NP₂), 60% of the relative clauses were attached high (to NP₁) in Spanish, while only 38% of them were attached high in English.

Further evidence coming from studies with high proficiency late Spanish-English bilinguals also suggests that RC attachment preference can be related to language exposure; and hence, to the Tuning Hypothesis. In a self-paced reading study, Dussias (2003) explored the use of RC attachment strategies among Spanish (L1) – English (L2) and English (L1) – Spanish (L2) bilinguals who had been living in the United States for 7.5 years. The results of the offline questionnaires revealed a low attachment preference in both languages for both groups, whereas in the online results, only the Spanish (L1) – English (L2) group showed a preference for the low attachment strategy. A similar result was obtained with a Spanish (L1) – English (L2) bilingual group with less time of language exposure to L2 (3.7 years) in Dussias (2004) where the bilinguals exhibited a low attachment preference in their L1. Nevertheless, in an eye movement study where two late Spanish (L1) – English (L2) bilingual groups who differed in time of exposure to L2 were compared (7.1 years of residence in the United States vs. 8.5 months of residence in an English-speaking country and residing in Spain at the time of the experiment), Dussias and Sagarra (2007) found asymmetrical results in the attachment preferences of the L1 of the groups. The longest exposed group showed a preference for low attachment, as opposed to the least exposed group that preferred a high attachment strategy. Hence, the studies above mentioned provide enough evidence to consider the time of past language exposure as a plausible factor to account for the different RC attachment preferences between languages. There is, however, another possible explanation put forth by Jegerski (2018) to explain the pattern of results reported by Dussias (2007): Given the extended exposure to English, it may be possible that the preference for low attachment exhibited by the late bilinguals was not due to L2 transfer but a consequence of crosslinguistic competition instead, in which the participants resorted to a less cognitive demanding strategy like the low attachment.

Studies with early bilinguals, on the other hand, have shown a different picture. Jegerski, VanPatten, and Keating (2016) explored the attachment preferences of a group of early Spanish (L2) – English (L1) bilinguals (heritage speakers of Spanish) and a group of late Spanish (L1) – English (L2) bilinguals who were both residing in the United States. The participants had to answer a questionnaire with ambiguous RCs. The authors found that the attachment preferences for the late bilinguals were nearly the same in both languages (high attachment 57.1% and 50.5% in Spanish and English, respectively), while the heritage group showed contrasting results between the two languages (high attachment 68.7% and 47.8% in Spanish and English, respectively). In another study, Jegerski, Keating et al. (2016) compared the attachment preferences of a Spanish monolingual group and heritage speakers of Spanish when reading sentences with RCs that were pragmatically biased to either low or high attachment while online and offline measures were considered. For the online measure, the authors divided the sentences in two critical regions. The first region comprised a complex NP ($NP_1 + NP_2$), and the second region, a RC. For the offline measure, the participants were asked to answer a question regarding their interpretation of the RC after each sentence. The results of both online and offline measures pointed towards a high attachment preference for both groups when the sentences were biased towards high attachment.

Finally, Jegerski (2018) carried a self-paced reading study with early Spanish – English bilinguals (heritage speakers of Spanish), late Spanish (L1) – English (L2) bilinguals and Spanish monolinguals. According to the author, both bilingual groups went over the critical period of time related to between-language competition on RC attachment based on Dussias (2004) and Dussias and Sagarra (2007) (0.7 - 3.7 years). The participants were instructed to read complex NP sentences with RCs that forced either low or high attachment by means of gender agreement, and then, to answer a comprehension question regarding the meaning of the sentence. In addition, RC length was also manipulated, with short clauses ranging from 5 to 7 syllables and long clauses, from 12 to 14 syllables. The offline results exhibited high attachment tendency for the three groups. The online results were less clear, nonetheless, because none of the groups showed a clear attachment preference. Altogether, the results of these studies suggest that extended exposure to L2 in early bilinguals might have helped them to manage crosslinguistic competition more efficiently rather than creating greater between-

language competition. As for the results of the late bilingual group, the author suggested that the high attachment preference showed by this group does not contradict an exposure-based hypothesis to account for the results found in other studies, where late bilinguals showed a preference for low attachment (Dussias, 2003, 2004; Dussias & Sagarra, 2007) or no preference at all (Jegerski, VanPatten et al., 2016), because it may have been less exposed to their L2 (English) and had a lower L2 proficiency, according to the participant's personal information.

In sum, the recent results concerning RC attachment preferences in Spanish - English bilinguals suggest that there are structural, phonetic, and past experience factors that modulate processing of this kind of sentence structure. Note, however, that all the tasks that the participants had to perform in the abovementioned studies were monolingual (within-language) tasks because the participants had to read for comprehension in either their L1 or their L2. Thus, in the current study we raised the question of what would happen when bilinguals have to perform a bilingual (between-language) task, like translation, where activation and processing of information in both of their languages is required.

8.3. Relative clause ambiguity resolution in translation

Processing information across languages in translation may come about in several ways, according to two different perspectives. On the one hand, the Vertical View (Seleskovitch, 1976; Fodor, 1978, Seleskovitch, 1999) holds that the three general processes in translation (comprehension, reformulation, and production) take place in a serial manner. According to this perspective, after comprehension of the message in its original language or source language (SL) had occurred, the message is stripped from its superficial structure and then is recoded in the language to which it is going to be translated (the target language, TL). Thus, information will flow in one direction and only one language will be active at a time in each process and no interaction or overlapping will take place between the three general processing stages (comprehension,

reformulation and production). On the other hand, the Horizontal View (Danks & Griffin, 1997; Gerver, 1976; Padilla et al., 2007) considers that processing of both languages in translation occurs simultaneously. According to this perspective, activation of the TL lexical and syntactic properties comes about while comprehension of the SL is taking place. Therefore, both SL and TL are active during comprehension of the SL. Empirical evidence seems to support the latter perspective (Balling, Hvelplund, & Sjørup, 2014; Jensen, Sjørup, & Balling, 2009; Jakobsen & Jensen, 2008; Maier, Pickering, & Hartsuiker, 2017; Padilla, Macizo & Bajo, 2007; Ruiz & Macizo, 2018; Ruiz, Paredes, Macizo, & Bajo, 2008; Schaeffer & Carl, 2017; Schaeffer, Paterson, McGowan, White, & Malmkjær, 2017; Togato, Paredes, Macizo, & Bajo, 2017). For example, the results of previous studies suggest that target language (TL) syntactic representations and syntactic processing strategies are active during comprehension of the SL in a translation task. Ruiz et al. (2008) asked Spanish (L1) – English (L2) bilinguals to read sentences in Spanish, word-by-word, to either repeat them in Spanish or translate them into English. To study the TL syntactic properties activation and the activation time course, sentences were divided into three regions (initial, middle and final) whose structure (word order) was either congruent or incongruent between Spanish and English. Syntactic congruency was manipulated by varying word order (noun-adjective) at the initial and final region and by including or dropping the subject pronoun of the embedded relative clause at the middle region. Hence, the adjective (e.g., *bonita/nice*, in English and Spanish, respectively) was placed before the noun (*casa/house*, in English and Spanish, respectively) (e.g., *bonita casa/nice house*) and the subject pronoun was included in the SL sentences (e.g., *La bonita casa que yo alquilé este verano tenía un verde jardín* / *The nice house that I rented this summer had a green garden*) in the congruent sentences, whereas the adjective (*bonita/nice*) was placed after the noun (*casa/house*) (e.g., *casa bonita/nice house*) and the subject pronoun was dropped (e.g., *La casa bonita que alquilé este verano tenía un jardín verde* / *The nice house that I rented this summer had a green garden*) in the incongruent sentences. As can be observed, the particular word order “noun-adjective” and the absence of the subject pronoun are allowed in Spanish but not in English.

It is believed that the syntactic representation of structures that follow a same word order in different languages are stored only once (shared representation), while they are stored separately when they follow a different word order (Bernolet, Hartsuiker, &

Pickering, 2007). Thus, if there was parallel activation of the TL and SL syntactic properties during comprehension of the SL in translation, then congruent sentences would be read faster than incongruent sentences. The results met the predictions: Ruiz et al. (2008) found faster reading times (RTs) for the congruent sentences only in the translation task. As for the activation time course, the facilitation effect in the congruent sentences was close to significant in the initial region, whereas it was significant in the middle region. Therefore, the result of this study suggested that the activation of the TL syntactic properties during comprehension of the SL in translation implies that (1) syntactic structure representations which are shared between SL and TL are activated when reading for translation; (2) TL syntactic activation modulates SL syntactic processing (which involves a code-to-code connection at syntactic level between both languages); and finally, (3) activation of TL syntactic representations starts very early during the comprehension phase of the SL.

Concerning syntactic processing strategies, Togato et al. (2017) investigated the strategy used by bilinguals to process ambiguous relative sentences in a translation task. Similar to Ruiz et al. (2008), Spanish (L1) – English (L2) bilinguals had to read sentences in Spanish, word-by-word, to either repeat them in Spanish or translate them in English. The sentences comprised a complex NP ($NP_1 + NP_2$) with an ambiguous RC (i.e., *the dentist attended to the secretary of the director who divorced her husband*). After reading the sentences, the participants had to repeat them in Spanish or translate them into English, and answer a verification question focused on the agent of the ambiguous relative clause. The alternatives of the answer contained both antecedents (first antecedent/ NP_1 and second antecedent/ NP_2) as potential agents. When the bilinguals read to repeat, no differences were observed in the preference of choosing the first or second antecedent as the subject of the relative clause. However, when the bilinguals read to translate into English, the percentage of choice of the second noun was greater than that of the first noun. Thus, the bilinguals preferred the low attachment strategy, which is the syntactic strategy preferred by speakers of the TL (English). Therefore, the results suggested that the attachment strategy used to solve the syntactic ambiguity of the sentences depended on the nature of the task that the participants were performing.

As can be observed in the studies described above, the results suggest activation of different syntactic aspects in translation tasks, namely syntactic structure

representation (Ruiz et al., 2008) and syntactic processing strategies (Togato et al., 2017), which leaves open the possibility of simultaneous activation of those two TL properties and interaction between them in a translation task.

8.4. The current study

The activation of TL syntactic properties during comprehension in translation has been studied in the past (Ruiz et al., 2008; Togato et al., 2017). Nevertheless, these studies investigated TL syntactic structure processing (word order) and TL attachment preferences separately. Furthermore, while SL-TL syntactic congruency in translation has been addressed with online indexes (RTs of critical sentence regions, Ruiz et al., 2008), processing strategies of RCs have been examined only with offline comprehension measures in translation tasks (attachment preferences after reading, Togato et al., 2017). The goal of our research was: (1) to explore the possible concurrent activation of both TL structure representation and TL attachment strategies in translation, (2) to look over possible interaction between them during SL comprehension, and (3) to obtain both online and offline comprehension measures of TL coactivation during reading for translation.

Spanish (L1) – English (L2) bilinguals were instructed to read, word-by-word, complex NP ($NP_1 + NP_2$) sentences with a RC in Spanish (SL), to either repeat them in Spanish or translate them into English (TL). The adjective/noun word order of both antecedents was manipulated to achieve congruency between the SL and the TL sentence structure and explore the syntactic structure activation. The congruent condition was possible because the same word order is allowed in both the SL and the TL (adjective-noun) whereas the incongruent condition was not because the word order in the SL (noun-adjective order in Spanish) was not allowed in the TL (adjective-noun order in English). Syntactic structure representations that follow a same word order in two languages are supposed to be stored only once and shared between those two languages (Bernolet et al., 2007). Hence, the activation of a particular structure during comprehension of the SL will make it available to use in the TL, as long as the syntactic structure follows the same word order in both languages.

In our study, we also used ambiguous sentences with the aim of confirming the results obtained by Togato et al. (2017) in which the authors used offline measures to explore attachment preferences in translation. Importantly, the use of online measures to explore RC attachment preferences was not possible in that study because all the sentences were ambiguous and thus, RTs were not informative of the attachment strategy preferred by the participant. In contrast, in our study, we also introduced high and low attachment conditions to examine the possible online coactivation of SL and TL attachment preferences in translation when participants read sentences in Spanish. These two conditions were identical at the initial and middle regions of the sentences (*Almudena llamó al joven sobrino_{Initial Region} de la simpática casera_{Middle Region} que fue a Barcelona cuando estaba...* / *Almudena called the young nephew_{Initial Region} of the nice landlady_{Middle Region} who went to Barcelona when he/she was...*; in Spanish and English, respectively). However, the adjective at the end of the sentence (final region) could only agree in gender with either the first antecedent in high attachment sentences (first noun: *sobrino/nephew*-masculine, final region: *casado/married*-masculine. *a* in Example 1) or the second antecedent in low attachment sentences (e.g., second noun: *casera/landlady*-feminine, final region: *casada/married*-feminine. *b* in Example 1).

Example 1

- a. *Almudena llamó al joven sobrino_{Initial Region} de la simpática casera_{Middle Region} que fue a Barcelona cuando estaba *casado*_{Final Region}. / Almudena called the young nephew_{Initial Region} of the nice landlady_{Middle Region} who went to Barcelona when he was *married*_{Final Region}.*
- b. *Almudena llamó al joven sobrino_{Initial Region} de la simpática casera_{Middle Region} que fue a Barcelona cuando estaba *casada*_{Final Region}. / Almudena called the young nephew_{Initial Region} of the nice landlady_{Middle Region} who went to Barcelona when she was *married*_{Final Region}.*

Thus, the RTs of the last word of the sentence allowed for further exploration of attachment strategy particularities. To be more specific, if participants use the favourite attachment strategy of the TL in the reading for translation task (low attachment in English), then the RTs of the last word in the sentence will be faster in the low attachment condition than in that of the high attachment.

The main predictions of our study were the following: We expected to find (1) slower RTs in the reading for translation task in comparison with the reading for repetition task. If there is coactivation of both SL and TL during comprehension of the SL in the reading for translation, then the additional processing resources needed to process the TL would increase RTs in comparison with the reading for repetition task. (2) We predicted activation of the TL syntactic properties when reading for translation. Namely, (a) syntactic structure representation and (b) RC attachment strategies. Activation of the TL syntactic structure representation would imply faster RTs in the congruent condition vs. the incongruent condition, and also greater activation of the more frequent TL attachment strategy (low attachment) compared to the SL preferred strategy (high attachment). Finally, (3) we explored the possible interaction between both syntactic factors when reading for translation. If the TL syntactic properties were already active before finishing reading the sentences, then the already active TL structure representation would boost the use of the second antecedent (low attachment strategy). In other words, interaction would be reflected by a more frequent use of the TL most common attachment strategy vs. the SL most common attachment strategy in syntactically congruent sentences.

8.5. Experiment 6

8.6. METHOD

8.6.1. Participants

Twenty-four Spanish (L1) – English (L2) bilinguals participated in the experiment, which took place at the Mind, Brain, and Behavior Research Center of the University of Granada, Spain (CIMCYC – UGR). They were all living in Spain at the time of the experiment and were paid for their participation. Their mean age was 24.67 ($SD = 6.02$) and they began acquiring their L2 at an early age ($M = 5.75$, $SD = 2.29$). All the participants filled out a language history questionnaire to self-rate their L1 and their L2. The proficiency scale ranged from 1 to 10 where 1 was not proficient and 10 was

highly proficient (see Table 11). Their L1 (Spanish) ratings were: speaking proficiency, $M = 9.58$ ($SD = 0.58$); reading proficiency, $M = 9.75$ ($SD = 0.53$); and speech comprehension, $M = 9.75$ ($SD = 0.44$). Their L2 (English) ratings were: speaking proficiency, $M = 8.08$ ($SD = 0.58$), $t(24) = 7.51$, $p < .001$; reading proficiency, $M = 8.58$ ($SD = 0.83$), $t(24) = 7.00$, $p < .001$; and speech comprehension, $M = 8.50$ ($SD = 0.78$), $t(24) = 9.06$, $p < .001$. The three proficiency skills (speaking, reading, and speech comprehension) were combined to calculate their mean language proficiency. Their mean L1 proficiency was $M = 9.69$ ($SD = 0.10$), while in their L2, it was $M = 8.39$ ($SD = 0.27$), $t(3) = 13.04$, $p < .001$. Thus, although the participants were unbalanced bilinguals, they were highly fluent in L2. Finally, in a combined percentage of the time the participants were currently and on average exposed to each language and which should add up to 100%, the participants reported they were more exposed to their L1 ($M = 62.71$, $SD = 15.03$) than to their L2 ($M = 30.38$, $SD = 14.22$, $t(24) = 5.81$, $p < .001$) in their daily life.

Table 11. *Characteristics of Participants in the Study*

| <i>Demographic Characteristics</i> | |
|--|---------------|
| Age (years) | 24.67 (6.02) |
| Age starting L2 learning (years) | 5.75 (2.29) |
| Time lived in L2 speaking countries (months) | 17.63 (23.70) |
| Language proficiency questionnaire | |
| L1 Speaking proficiency | 9.58 (0.58) |
| L1 Speech comprehension | 9.75 (0.44) |
| L1 Reading proficiency | 9.75 (0.53) |
| Mean L1 fluency | 9.69 (0.10) |
| L2 Speaking proficiency | 8.08 (0.58) |
| L2 Speech comprehension | 8.50 (0.78) |
| L2 Reading proficiency | 8.58 (0.83) |
| Mean L2 fluency | 8.39 (0.27) |

Note. The self-reported ratings in L1 (Spanish) and L2 (English) ranged from 1 to 10 where 1 was not fluent and 10 was very fluent. Standard deviations are reported in parentheses.

8.6.2. Materials

Sixty experimental sentences were constructed in Spanish. The sentences comprised a subject relative clause (RC) which was preceded by a complex NP (NP₁ + NP₂) where NP₁ (first antecedent) and NP₂ (second antecedent) were the potential subjects of the RC (see Appendix 4 for the complete set of material used in the study). All the antecedents were singular. The last word of the sentence (an adjective) agreed in gender and number with one or both antecedents and had to be attached to only one of them. Noun gender is marked in Spanish by placing the vowel *-a* (for feminine) and *-o* (for masculine) at the end of nouns. However, there are words whose gender is not marked neither with *-a* nor *-o* (e.g., *contrincante*, *representante/adversary*, *manager*; in Spanish and English, respectively). In that case, the gender is marked by the definite article *el* (*el contrincante*), for male, and *la* (*la representante*), for female, in singular (*the adversary/the manager*, in English). Six versions were created for each experimental sentence (see Table 12 for examples). In the high attachment condition, the last word of the sentence agreed with the first antecedent (*casado*, *sobrino/married*, *nephew*; in Spanish and English, respectively), while in the low attachment condition the last word agreed with the second antecedent (*casada*, *casera/married*, *landlady*; in Spanish and English respectively). There was also an ambiguous condition in which the last word of the sentence agreed with both antecedents (*sobrina*, *casera*, *casada/niece*, *landlady*, *married*; in Spanish and English, respectively), which made ambiguous the attachment of the relative clause. The syntactic congruency of the sentences was manipulated by placing an adjective next to each antecedent and varying their noun-adjective word order. Adjectives can be placed either before or after nouns in Spanish, while in English, adjectives are always placed before the noun. Therefore, congruent sentences between English and Spanish were constructed by placing the adjective before the noun in both antecedents (*joven sobrino*, *simpática casera/young nephew*, *nice landlady*; in Spanish and English, respectively), while in the incongruent version, the adjective was presented after the noun in Spanish (*joven sorbino*, *casera simpática/young nephew*, *nice landlady*; in Spanish and English respectively). Thus, for each attachment condition (low, high, and ambiguous) there were two word order conditions (congruent and incongruent). Finally, the sentences were divided into three regions. The first two regions comprised an antecedent followed or preceded by an adjective, depending on the congruency condition.

Thus, the initial region consisted of the first antecedent and an adjective; the middle region contained the second antecedent and an adjective, and the final region only included the last word of the sentence (an adjective).

Table 12. *Example of Experimental Sentences Used in the Study*

| Condition | Sentence |
|-----------------------|---|
| High-Congruent | Almudena llamó al joven sobrino de la simpática casera que fue a Barcelona cuando estaba casado (Almudena called the young nephew of the nice landlady who went to Barcelona when he was married). |
| High-Incongruent | Almudena llamó al sobrino joven de la casera simpática que fue a Barcelona cuando estaba casado (Almudena called the young nephew of the nice landlady who went to Barcelona when he was married). |
| Low-Congruent | Almudena llamó al joven sobrino de la simpática casera que fue a Barcelona cuando estaba casada (Almudena called the young nephew of the nice landlady who went to Barcelona when she was married). |
| Low-Incongruent | Almudena llamó al sobrino joven de la casera simpática que fue a Barcelona cuando estaba casada (Almudena called the young nephew of the nice landlady who went to Barcelona when she was married). |
| Ambiguous-Congruent | Almudena llamó a la joven sobrina de la simpática casera que fue a Barcelona cuando estaba casada (Almudena called the young niece of the nice landlady who went to Barcelona when she was married). |
| Ambiguous-Incongruent | Almudena llamó a la sobrina joven de la casera simpática que fue a Barcelona cuando estaba casada (Almudena called the young niece of the nice landlady who went to Barcelona when she was married). |

Note. All the sentences were presented in Spanish. Critical words are in bold. English translations are given in brackets. High: The last part of the sentence agrees with the first antecedent. Low: The last part of the sentence agrees with the second antecedent. Ambiguous: The last part of the sentence agrees with both antecedents. Congruent: Antecedents with same word order (adjective-noun) in Spanish and English. Incongruent: Antecedents with different word order in Spanish (noun-adjective) and English (adjective-noun).

To make certain that the two antecedents of each experimental sentence were similar in lexical properties, and thus avoiding biasing the participants' attachment preferences, the lexical frequency in Spanish (per one-million count, Alameda & Cueto, 1995) and English (per one-million count, Brysbaert & New, 2009), word length (number of letters in each word), and word gender of the antecedents were controlled. The statistical analysis revealed that word length in Spanish was similar between the first antecedent ($M = 7.75$, $SD = 2.20$) and the second one ($M = 7.57$, $SD = 2.04$), $t(59) = 0.53$, $p = .60$. Word frequency between the first antecedent ($M = 45.66$, $SD = 133.98$) and the second one ($M = 32.24$, $SD = 71.39$) was similar as well, $t(59) = 0.68$, $p = .50$. Likewise, no significant differences were found in English either for word length between the first antecedent ($M = 7.52$, $SD = 2.65$) and the second one ($M = 6.80$, $SD = 2.18$), $t(59) = 1.51$, $p = .14$, or the word frequency of the first antecedent ($M = 62.03$, $SD = 106.48$), and the second one ($M = 62.83$, $SD = 137.49$), $t(59) = 0.03$, $p = .97$. The percentages of feminine nouns (52%) and masculine nouns (48%) of the first antecedent were similar to the percentages of feminine (45%) and masculine nouns (55%) of the second antecedent, $\chi^2 = .98$, $p = .32$.

Each participant received 120 experimental sentences divided into two blocks of 60 sentences. Participants were instructed to read and repeat the sentences in one block and to read and translate them in the other block. The order of these two blocks (reading for repetition, reading for translation) was counterbalanced across participants. To make sure participants were reading the sentences to comprehend them, 20 non-ambiguous filler sentences were created and included in each block of trials. The sentences, which had a similar structural complexity to that of the experimental sentences but with no adjectives, were followed by a true or false verification question. Filler sentences were randomly intermixed with experimental sentences.

8.6.3. Procedure

At the beginning of each block, participants were instructed to read and repeat the sentences in Spanish or to read and translate them into English, depending on the block. The order in which the reading for repetition block and reading for translation block were administered was counterbalanced across participants. As in previous studies that dealt with translation tasks (Macizo & Bajo, 2006; Ruiz et al., 2008), the moving window methodology was used (Just, Carpenter, & Woolley, 1982). E-prime experimental software was used for stimulus presentation and data acquisition (Schneider, Eschman, & Zuccolotto, 2002). The participants read the sentences word-by-word at their own pace by pressing the space bar to see the next word of the sentence. Afterwards, when the participants finished reading a sentence, the word *TAREA* (*task*, in English) appeared in the middle of the screen which indicated to the participants that they had to repeat or to translate the sentence, depending on the task. Then, after finishing the production task, the participants completed the verification task, in which the word *VERIFICACIÓN* (*verification*, in English) appeared in the middle of the screen, followed by a reading comprehension question. To answer the question, the participants had to identify the subject of the RC. Both antecedents were provided as alternatives in the experimental sentences (see Table 13) while in the filler sentences, the participants had to choose *Sí* or *No* (*yes* or *no*, in English) to answer the questions (see Table 14). The two response alternatives were randomly presented on the left and right side of the screen. Finally, after the participants had answered the question, they had to press the space bar again to start reading the next sentence. All the oral productions were recorded using an ICD-SX1000 Sony Digital Voice Recorder for later analysis.

Table 13. *Example of Experimental Sentence with its Verification Question*

| | |
|---------------------|--|
| Ambiguous-Congruent | Almudena llamó a la joven sobrina de la simpática casera que fue a Barcelona cuando estaba casada (Almudena called the young niece of the nice landlady who went to Barcelona when she was married). |
|---------------------|--|

| | |
|-----------------------|---|
| Reading Comprehension | ¿Quién fue a Barcelona? (Who went to Barcelona?) |
| Question | |
| Answers | La sobrina – La casera (The niece – The landlady) |

Note. Experimental sentence with its verification question. English translation is given in brackets.

Table 14. *Example of Filler Sentences Used in the Study*

| | |
|-----------------------|--|
| Filler Sentence | El grupo fue a comprar unas cosas y luego volvió a su campamento que quedaba a tres kilómetros del pueblo (The group went to buy some things and then returned to their camp which was three kilometers away from town). |
| Reading Comprehension | El campamento estaba en el pueblo (The camp was in town). |
| Question | |
| Answers | A. Sí – No (Yes – No) |

Note. Filler sentence with its verification question. English translation is given in brackets.

8.6.4. Analyses

As mentioned previously, online and offline measures were taken in our study. The online analyses of the SL comprehension involved the RTs of all three regions. Thus, the type of task effect (reading for repetition vs. reading for translation) and the syntactic structure effect (congruent vs. incongruent) were examined in all three regions. Furthermore, we also conducted analyses on the type of attachment (high attachment, low attachment and ambiguous). However, only the final region was considered in the type of attachment analyses, because only this region disambiguated towards one of the antecedents, unlike the initial and middle regions. In the type of attachment analyses, we considered whether the final region of the sentence (an adjective) agreed with either the first or second antecedent (high or low attachment, respectively), thus excluding sentences with the ambiguous condition because the adjective at the end of these sentences was congruent with both the first and the second antecedent and did not reflect the type of attachment chosen by the participants at the end of the online reading. Faster RTs in the high attachment condition compared with the low attachment one at the final region would indicate that the participants had chosen the first antecedent as the subject

of the relative clause before reaching the end of the sentence. On the contrary, faster RTs in the low vs. high attachment condition would indicate that participants had selected the second antecedent as the subject of the relative clause.

The offline comprehension analyses included the type of task (reading for repetition, reading for translation), the syntactic structure (congruent and incongruent sentences), and the alternative chosen to answer the verification task, which was considered as the attachment strategy (high or low) used by the participants to interpret the sentences. The high and low attachment conditions were not considered in these analyses because they were not ambiguous and thus, there were no possible response alternatives. That is, for each condition, only one of the two alternatives given to answer the verification task agreed with the adjective at the final region. Therefore, the only possible choice for the high attachment sentences was the first antecedent while for the low attachment sentences, it was the second antecedent.

8.7. Results

Online comprehension was assessed by taking into account the RTs of the critical words in the sentences. The overall quality of the orally produced sentences was evaluated by rating them on a scale from 0 to 5 where 0 indicated no produced answer, 1- very poor production, and 5 - very good production (see Ruiz et al., 2008). The scoring system for the repetition task measured the degree of similarity between lexical and syntactic forms of the output and those of the input. The scoring system for the translation task measured the degree of similarity between the lexical and syntactic forms of the input and the ones of the output as well, but it also evaluated the congruity between the meaning of the sentences in the SL and their translation in the TL. The sentences marked 3 or higher in both tasks were included in the analyses (see Table 15 for examples). A total of 81.6% of the sentences were included in the analyses of the reading for repetition task, while 77.5% were included in the analyses of the reading for translation task.

The mean RTs for correctly produced sentences in each task and condition were computed and submitted to analyses of variance (ANOVA) with participants (F_1) and items (F_2) as random factors. The RTs which were two standard deviations above the

participant's mean for the critical words were replaced with the participant's mean for that word (4.9% of the data). The results were divided into two different sections. In the first section, we reported the online results by sentence region (initial region, middle region and final region), and in the second section, we presented the results of the attachment preferences.

Table 15. *Example of Scores for Correct Oral Productions*

| Example sentence | | |
|--|---|-------|
| Spanish | English | |
| El cura susurró algo a la tía delgada de la novia encantadora que se sentó fuera cuando se sintió mareada. | The priest whispered something to the thin aunt of the lovely bride who sat outside when she felt dizzy. | |
| Reading for Repetition | Reading for Translation | Score |
| El cura susurró algo a la tía delgada de la novia encantadora que se sentó fuera cuando se sintió mareada. | The priest whispered something to the thin aunt of the lovely bride who sat outside when she felt dizzy. | 5 |
| El cura le dijo algo a la tía de la novia encantadora que se sentó fuera cuando se mareó. | The priest said something to the aunt of the charming bride who sat outside when she wasn't feeling well. | 4 |
| Alguien le dijo algo a la tía de la novia que se sentó fuera cuando se mareó. | Someone said something to the aunt of the bride who sat outside when she wasn't feeling well. | 3 |

Note. The scoring system fluctuated from 0 to 5 (5 = Very good production, 0 = no answer). Sentences marked 3 or higher were considered correct and included in the analyses.

8.7.1. Online Results

8.7.1.1. Initial Region

An ANOVA was conducted on the average RTs of the critical words (the noun and the adjective of the first antecedent), with type of reading (reading for repetition, reading for translation) and syntactic structure (congruent structure, incongruent structure) as variables. The results revealed that the type of reading effect was marginal by participants, $F_1(1, 23) = 3.74$, $p = .07$, $\eta_p^2 = .14$, but significant by items, $F_2(1, 58) = 19.62$, $p < .001$, $\eta_p^2 = .25$. Reading for translation was slower ($M = 823$ ms, $SE = 87$) than reading for repetition ($M = 720$ ms, $SE = 70$). Also, a significant main effect of syntactic structure was found, $F_1(1, 23) = 7.75$, $p < .001$, $\eta_p^2 = .25$, $F_2(1, 58) = 7.58$, $p < .001$, $\eta_p^2 = .12$. Participants were faster at reading the critical words of the initial region in the congruent condition ($M = 747$ ms, $SE = 61$) compared with the incongruent condition ($M = 796$ ms, $SE = 79$). Finally, the Type of reading x Syntactic structure interaction was not significant (F_1 and $F_2 < 1$).

8.7.1.2. Middle Region

Just like in the initial region, an ANOVA was conducted on the average RTs of the critical words (this time, the noun and the adjective of the second antecedent), with type of reading (reading for repetition, reading for translation) and syntactic structure (congruent structure, incongruent structure) as variables. The main effect of type of reading was not significant by participants, $F_1(1, 23) = 1.04$, $p = .32$, $\eta_p^2 = .04$, but it was by items, $F_2(1, 58) = 4.16$, $p < .001$, $\eta_p^2 = .07$. The mean RTs in the reading for translation was $M = 870$ ms ($SE = 85$) and it was $M = 822$ ms ($SE = 87$) in the reading for repetition. A significant effect of syntactic structure was found, $F_1(1, 23) = 8.90$, $p < .001$, $\eta_p^2 = .28$, $F_2(1, 58) = 4.75$, $p < .001$, $\eta_p^2 = .08$. The critical words were read faster in the congruent condition ($M = 824$ ms, $SE = 24$) in comparison with the incongruent condition ($M = 873$ ms, $SE = 24$). No significant effect was found for the Type of reading x Syntactic structure interaction (F_1 and $F_2 < 1$).

8.7.1.3. Final Region

Here an ANOVA was performed on the average RTs of the final word of the sentences which had to be attached to one of the antecedents, with type of reading (reading for repetition, reading for translation), syntactic structure (congruent structure, incongruent structure), and type of attachment (high, low) as variables. No main effects or interactions between variables were significant in this region (F_{s1} and $F_{s2} < 1$). The mean RTs in each condition are reported in Table 16.

Table 16. *Mean Reading Times per Condition and Region*

| | Reading for Repetition | | Reading for Translation | |
|-------------|------------------------|----------------|-------------------------|----------------|
| | Initial Region | | | |
| Congruent | 704 ms (48) | | 789ms (57.24) | |
| Incongruent | 736 ms (52) | | 856 ms (68.29) | |
| | Middle Region | | | |
| Congruent | 804 ms (60) | | 852 ms (60) | |
| Incongruent | 841 ms (64) | | 888 ms (63) | |
| | Final region | | | |
| | High Attachment | Low Attachment | High Attachment | Low Attachment |
| Congruent | 1193 ms (151) | 1143 ms (150) | 1252 ms (186) | 1273 ms (146) |
| Incongruent | 1267 ms (180) | 1123 ms (118) | 1482 ms (308) | 1332 ms (253) |

Note. Standard errors are reported in parentheses.

8.7.2. Offline Results

8.7.2.1. Attachment Preferences

We computed the percentage of low attachment preference when participants processed ambiguous sentences and, afterwards, an ANOVA was carried out with type of reading (reading for repetition, reading for translation) and syntactic structure

(congruent structure, incongruent structure) as variables. The results revealed a significant main effect of the type of reading, $F_1(1, 23) = 11.04, p < .001, \eta_p^2 = .32, F_2(1, 58) = 23.77, p < .001, \eta_p^2 = .29$. The percentage of low attachment preference was higher in the reading for translation task ($M = 79.70\%, SE = 3.44$) than in the reading for repetition ($M = 66.35\%, SE = 3.86$). The syntactic structure effect was marginal, $F_1(1, 23) = 4.06, p = .06, \eta_p^2 = .15, F_2(1, 58) = 3.65, p = .06, \eta_p^2 = .06$. The percentage of low attachment preference was higher in the congruent sentences ($M = 76.07\%, SE = 3.56$) than in the incongruent sentences ($M = 69.98\%, SE = 3.26$) (see Figure 11). The Type of reading x Syntactic structure interaction was not significant (F_1 and $F_2 < 1$).

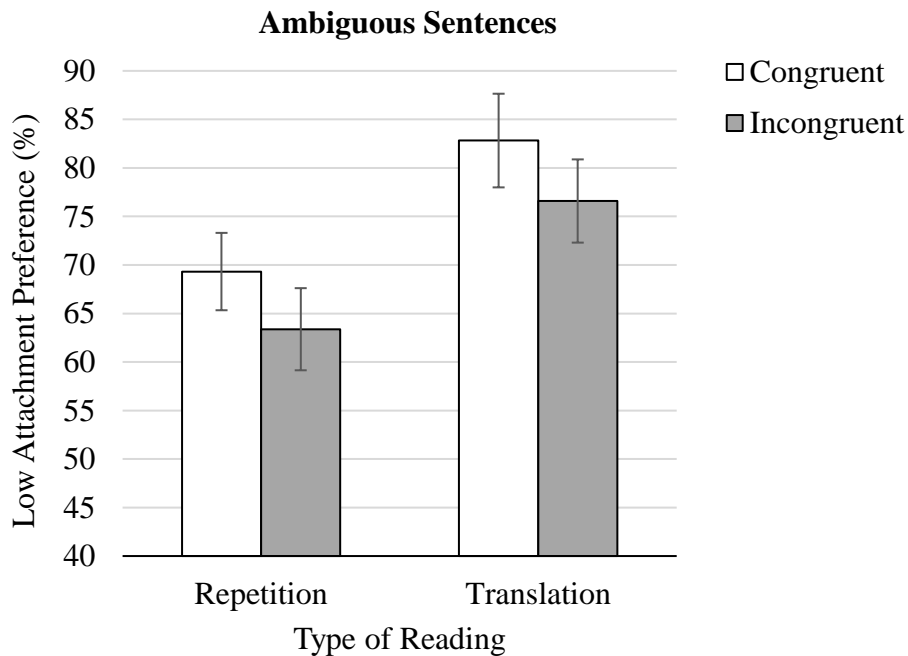


Figure 11. Low attachment preference percentages in ambiguous sentences obtained in both types of reading (reading for repetition, reading for translation) as a function of the syntactic structure (congruent, incongruent). Vertical bars represent the standard error.

8.8. General Discussion

The goal of the present study was to investigate conjointly the activation of TL syntactic representations and TL attachment strategies during comprehension in translation, and to explore possible interactions between both syntactic aspects.

According to the Horizontal/Parallel View of translation (Danks & Griffin, 1997; Gerver, 1976; Padilla et al., 2007), the processing of both the SL and TL in translation comes about simultaneously. This view advocates that the TL lexical and syntactic properties are active while comprehension of the SL is taking place, and, moreover, it holds that a search for SL and TL equivalents occurs (reformulation process) before complete comprehension of the original message has been achieved. Therefore, this view of translation defends code-to-code links between the SL and TL, and the coactivation of both languages during SL comprehension. In the current study, we looked for possible interactions between the SL and the TL at the syntactic level of processing with online and offline measures. Below, we discuss the online and offline comprehension results.

8.8.1. Online comprehension in translation

Regarding online measures, we manipulated the syntactic structure of the sentences at the initial and middle regions of the sentence. At the final region, we considered whether the last word corresponded to high vs. low attachment in complex NP ($NP_1 + NP_2$) with a RC. The syntactic structure manipulation involved the congruency in word order (adjective and noun) of the first and the second antecedent in the SL (Spanish) and the TL (English). The type of attachment manipulation consisted of varying the gender of the last word of the sentences so it matched only one of the antecedents (high or low attachment).

The results obtained at the initial and middle regions of the sentences revealed a type of reading effect and a syntactic facilitation effect. Thus, reading for translation was slower than reading for repetition and the congruent sentences were read faster than the incongruent ones. The longer RTs obtained in the reading for translation task have been confirmed in several previous studies (Macizo & Bajo, 2006; Ruiz et al., 2008) and could be an indicator of the additional time needed for TL activation and the search for SL-TL syntactic equivalences. This interpretation would be in favor of the Horizontal View of translation (Padilla et al., 2007). On the other hand, the syntactic facilitation effects found in the current study from the beginning to the middle region of the sentence differed from the one obtained by Ruiz et al. (2008). The authors observed a marginal syntactic

congruency effect at the beginning of the reading for translation that became significant at the middle region. It is possible that the different pattern of results between both studies was due to the location of the syntactic manipulation (adjective-noun order) at the beginning of the sentence. In Ruiz et al. (2008), this manipulation was implemented in the second word of the sentence while, in the current study, there were at least a minimum of four words before the participants encountered the first antecedent (adjective-noun words) that constituted the initial region. From the perspective of the translation task in our study, the number of words in front of the initial region would allow a minimal unit of the sentence to be understood before encountering the initial region. Therefore, TL activation and the reformulation process could have started by the time the participants read the initial region and kept on when reading the middle region. This observation agrees with the standard principles in translation theory in which it is suggested that a minimum piece of information has to be understood in the SL before between-language reformulation takes place (Goldman-Eisler, 1972).

However, the syntactic congruency effect was not found in the final region of the sentence. Similarly, Ruiz et al. (2008) did not observe differences between the processing of syntactically congruent and incongruent structures at the end of the reading for translation. This absence of a syntactic structure effect might be a consequence of the activation time course of the TL representations. Specifically, it is plausible that by the time the final word of the sentence was read, the activation course of the syntactic representation might have reached its threshold and such representation was then available to be used; demanding, thus, less cognitive resources for structural processing. Moreover, those resources could have been assigned to other comprehension processes such as the wrap-up mechanisms associated with online organizational and integrative semantic processing at the sentence boundaries (Stowe et al., 2018; Warren, White, & Reichle, 2009, for a review).

The shift in the type of processing from a structural one to a more conceptual one (wrap-up/integration processes) at the end of the sentence might also explain the absence of the type of attachment effect, where no differences were found between the processing of adjectives whose grammatical gender agreed with the first antecedent (NP₁/high attachment) or the second antecedent (NP₂/low attachment); showing, thus, no clear attachment preference at that point of reading. The absence of online attachment

preference has already been observed in Spanish-English bilinguals in Fernández (2003), which seemed to indicate that bilinguals use an amalgamation mechanism to process syntactic information across their languages by using a combination of strategies from both (Morett & MacWhinney, 2013). Nevertheless, the age of onset of bilingualism was not controlled in Fernández (2003), contrarily to posterior studies with late Spanish - English bilinguals who showed online preference for low attachment (Dussias 2003, 2004; Dussias & Sagarra, 2007) and early ones who showed high attachment preference (Jegerski, VanPatten et al., 2016; Jegerski, Keating et al., 2016). As we mentioned earlier, those studies were conducted within the framework of the Tuning Hypothesis which suggests that in case of ambiguity, the time of language exposure will modulate the interpretation of the sentence in favour of the most common interpretation of the language the individual has been more exposed to. Hence, neither the Tuning Hypothesis nor the age of onset of bilingualism can account for the absence of the type of attachment effect in the final region of the current study, since (1) the online results at the final region did not reflect the preference favored by either past language exposure (17.63 months living in an English speaking country) or current language exposure (they were all living in Spain by the time they participated in the experiment), and (2) the participants did not show the attachment preference (high) that would be favored by their age of onset of bilingualism (5.75 years, early bilinguals). It is more likely, however, that the attachment preference effect was simply not observed by the online measure, as was the case in some previous studies where an online attachment preference was absent in the critical region but appeared either later on or only in the offline measures (Costa, Maia, Fernández, & Lourenco-Gomes, 2006; De Vincenzi & Job, 1995; Dussias, 2003; Gibson, Pearlmutter, Canseco-Gonzalez, & Hickock, 1996; Gibson, Pearlmutter, & Torrens, 1999; Kamide & Mitchell, 1997; Pynte, Portes, Holcomb, & Di Cristo, 2003; Jegerski, 2018).

8.8.2. Offline comprehension in translation

In our study, we obtained offline comprehension measures through the verification task at the end of the reading process. The results obtained in this task confirmed those found by Togato et al. (2017) in the reading for translation. That is, a higher percentage of low attachment was found with ambiguous sentences when

participants read for translation compared to the reading for repetition task. This pattern of data suggests that the attachment preference (low attachment) in the TL (English) was also available to be used after the participants finished reading the sentences in the SL (Spanish).

The use of TL strategies during reading for translation has been observed in previous studies with other types of syntactic cues. For example, in a study conducted by Ruiz and Macizo (2018, Experiment 3), Spanish (L1)-English (L2) bilinguals had to read two nouns (N) and one verb (V) in Spanish (SL) either to produce a sentence in Spanish or to translate and produce a sentence in English. The critical condition was that in which participants received a VNN structure because it creates competition between Spanish and English. In particular, English monolinguals have a defined preference for the second noun as the agent of VNN sentences (von Berger, Wulfeck, Bates, & Fink, 1996) while in non-canonical word order structures (VNN and NNV), the first noun is always marked as the agent by Spanish speakers (Morett & MacWhinney, 2013; Reyes & Hernández, 2006). The results revealed that the participants interpreted and produced sentences as native speakers of Spanish in the within-language task, while they performed as native speakers of English in the translation task. Thus, the use of syntactic cues and attachment preferences depended on the task the participants performed (within vs. between-language tasks).

On the other hand, in our study, we examined for the first time whether SL-TL syntactic congruency determined the attachment preference chosen by the participants. The results revealed that low attachment preference was higher in the congruent version of the sentences (76%) than in the incongruent version (70%). Therefore, when the word order in the SL and TL was consistent, participants chose the attachment strategy preferred in the TL (low attachment in English). In addition, the antecedent (NP₁ or NP₂) selected for the interpretation of the relative clause (low attachment or high attachment) did not only agree with the last word of the sentence (adjective) but it was also the subject of the relative clause in all the experimental sentences, regardless of the condition (e.g., *El cura susurró algo a la tía delgada de la novia encantadora que se sentó fuera cuando se sintió mareada.*/The priest whispered something to the thin aunt of the lovely bride who sat outside when she felt dizzy.) Thus, it would be acceptable to consider that the higher percentage of choice of the second antecedent in the verification task suggests that

TL syntactic activation influenced the processing of the structural role of nouns in the sentence (subject assignment), at least to a minimal extent. This effect could be understood as a backward transfer process in which people use L2 syntactic interpretations during subject assignment in L1 (Liu, Bates, & Li, 1992; Reyes & Hernández, 2006). Several previous studies show that, among the possible syntactic cues that can be used for subject assignment (word order, subject-verb agreement, animacy, etc.), word order is the preferred cue in English speakers (Bates, Devescovi, & D'Amico, 1999). In our study, syntactic congruency was defined in terms of equal word order in the SL (Spanish) and the TL (English). Thus, it is reasonable to assume that in the syntactically congruent condition, the participants made use of the congruency in the word order to choose the preferred attachment in the TL.

To sum up, this study provides evidence for TL activation at different syntactic levels during comprehension in a translation task. The results suggest that the higher the number of active TL syntactic properties, the stronger the TL activation and the interpretation of sentences according to the TL interpretation will be. In addition, the results agree with the Horizontal/Parallel View of translation which suggests simultaneous activation and processing of both the SL and the TL during SL comprehension.

GENERAL DISCUSSION and CONCLUSIONS

9. General Discussion and Conclusions

When we started our research, we set out our sights on the idea of investigating the activation time course of the TL syntactic properties during SL comprehension in translation tasks. Nevertheless, while we were programming the first experiment of our second experimental series, we decided to focus our interest on the relationship between several aspects of the TL syntax and between the TL syntax and other linguistic aspects during the comprehension process of the SL. On one hand, studies concerning the use of syntactic cues for sentence interpretation in translation were non-existent to our knowledge. On the other hand, with regard to the activation of TL attachment strategies and structure representation during sentence comprehension for translation, the only studies available were those of Togato et al. (2017) and Ruiz et al. (2008), respectively. Therefore, our efforts were aimed at increasing the available evidence on the activation of the TL structure representation and the TL attachment strategies, and at taking a further step in the field of cognitive processes in translation by laying a first stepping stone for the study of other aspects such as syntactic cue activation and, ultimately, the interaction between syntactic processing and other types of linguistic information (syntactic and lexical knowledge) during SL comprehension.

It is with regard to the latter that this section revolves. Unlike the other translation studies mentioned over this thesis, all of our studies were characterized by a manipulation of two linguistic aspects simultaneously within the same experimental sentences, which allowed us to explore *syntactic interaction* during SL comprehension. Hence, it is in this specific characteristic where the singularity or uniqueness of our studies lies in and where the general discussion of the results obtained in the different experiments will revolve around.

In order to facilitate the comprehension of the results, the discussion will be divided in three different subsections. The first subsection will deal with the interaction process when syntactic properties of the same type were manipulated within the same

sentence, while in the second and the third subsection we will discuss the results obtained from the manipulation of different syntactic properties and the manipulation of different linguistic aspects (lexical and syntactic) within the same sentences, respectively.

9.1. Interaction between syntactic properties of the same type during SL comprehension

The results obtained in our first experimental series point to simultaneous activation of SL and TL syntactic properties of the same kind (syntactic cues) and interaction between TL strongest and, therefore, most widely use cue to assign agent-patient roles depending on the task goal. When Spanish participants had to produce sentences in their L2 (English), they behaved like native English speakers, as it could be observed specially in the third experiment where they changed the interpretation of the possible agent of the sentence from the first available noun in the NVN structure to the second in the NNV and VNN structures, whereas they behaved like Spanish monolinguals in the within-language task by choosing the first noun as the agent of the sentences, regardless of the type of word order (NVN, NNV, and VNN). Such behavior implies a shift of strategy when understanding linguistic information for translation. In other words, activation of the TL syntactic properties takes place during comprehension of the SL which, in turn, is understood by using strategies which are inherent and widely used in the TL. Furthermore, activation of those TL syntactic properties because of the task's goal is so strong that it overrides the preferred interpretation strategies used in the SL language (which was the dominant L1 language of the participants).

Altogether, the results obtained in this experimental series suggest that thematic role assignment can be modulated by task goals, and, thus, activation of TL syntactic cues during SL comprehension in translation modulates the way linguistic information is interpreted.

9.2. Interaction between different types of syntactic properties during SL comprehension

Moving further in our research, the data collected in this experimental series (experimental series 3) revealed online activation of two different kinds of syntactic properties (TL syntactic structure representation and TL attachment strategies) but a lack of interaction between them during SL comprehension for translation. We will now discuss the implications of the findings by order. First, we will discuss the syntactic structure effect, followed by the discussion of the online and offline attachment strategies effect, and finally, the lack of interaction between both factors.

As mentioned in the results of the “Ambiguous Sentence Processing in Translation” study, structure facilitation effects were found at the initial and middle regions of the sentences but not at the final region. If we referred back to other sections of our thesis, the Horizontal View of Translation states that there is TL activation and a reformulation process during SL comprehension. The reformulation process involves a search for SL-TL equivalences. The facilitation effect was reflected when structures followed a same word order (adjective-noun) in both SL and TL and participants benefitted from this activation in reading faster sentences which followed the same word order. It has been argued that structures which follow a same word order in two languages are stored only once and shared across them (e.g., Hartsuiker et al., 2004; Bernolet et al., 2007). It could be possible that this served the participants by means of having the syntactic structure representation already active because it shared the same word order between the SL and the TL. Early activation of the syntactic structure representation would imply it would be available to be used for production of the TL. However, as we discussed before, language processing follows a time course. Structure facilitation effects were only present in the first and second regions of the sentences but absent in the third region. This pattern of results may indicate that activation of structure representation was already completed before reaching the final region. Then, with the activation of the structure representation reaching its threshold, cognitive resources could be reallocated to other processes that demanded more attention towards the end of the sentence where the adjective had to be attached to one of the antecedents placed before the final region.

This behavior points to a processing shift from a structural analysis to a more integrative/conceptual processing, where the ambiguous last word of the sentence had to be attached. This process is, nevertheless, a syntactic one since it deals with the relationship between the words of the structure. In particular, it deals with the relationship between the adjective in the final region and the subject of the relative clause (first or second antecedent). Here is where activation of the TL attachment strategies plays a role. Our results did not find any kind of online effect in the final region of the sentences either for the high or low condition. However, when analyzing the results for the ambiguous sentences in the reading for translation task, we found that the participants use more the TL preferred attachment strategy compared with that usually used in the SL. It is true that this result confirms the results obtained in Togato et al. (2017), but, however, we found that the participants in our study used more the TL attachment strategy in the reading for translation condition when the sentences were syntactically congruent between languages (i.e., interaction between different types of syntactic properties when reading for translation). That being said, if we refer back to the Horizontal View of Translation, it suggests the SL and TL are connected via code-to-code links. This between-language connection appeared to be manifested in the structure facilitation effect in our experiment. Nonetheless, our findings on the use of TL attachment strategies during translation extend the proposals of the view to non-shared SL-TL syntactic properties. Specifically, it means that independent representations of the TL, whose activation is not triggered or modulated by the shared representation of their structurally similar SL equivalent, become active as well. The activation of those properties (attachment strategies, in our case) was boosted by a shared syntactic property (syntactic structure), which was already active. This has critical implications for the Horizontal View in regard to the reformulation process, where a search for equivalences between the SL and the TL takes place. Altogether, it means that not only SL-TL syntactic equivalences, in terms of code or superficial structure similarity, become active but also non-identical properties are activated along with a deeper TL syntactic processing.

Finally, and concerning the interaction between the different syntactic properties in this study, we have already mentioned that the use of TL attachment strategies was boosted by the SL-TL congruent structure without reaching interaction levels, nonetheless. What is more, no syntactic effect was found at the final region of the

sentences; which lead us to another possible reason why the interaction was not present. The shift from a structural processing to a more conceptual one has been already mentioned as one of the possible reasons for the absence of interaction between both syntactic factors. Nevertheless, we should also take into account the fact that the final region was conformed by the final word of the sentence and followed by a full stop, which in turn opens up the possibility for a wrap-up effect to have taken place, preventing, therefore, a syntactic effect from showing up. Thus, in order to either confirm or rule out the wrap-up effect as a possible cause for the lack of syntactic effects at the final region, it would be advisable to perform a study where a final clause would be added after the adjective that should be attach to one of the antecedents.

9.3. Interaction between different types of linguistic properties during SL comprehension

We have discussed interaction between the same types of syntactic properties and between different types of syntactic properties, so far. In this section we will talk about interaction between different types of TL linguistic properties. We have seen TL syntactic activation during SL comprehension but our results in the experimental series where lexical and syntactic properties were manipulated conjointly provide evidence that indicates that syntactic processing does not occur in a modular/serial way but in an interactive manner, via cascading activation or parallel activation.

In this particular experimental series (Experimental series 2), we found interaction between the type of syntactic structure and the type of word to be processed. As in other studies (Macizo & Bajo, 2006; Ruiz et al., 2008) where lexical and syntactic properties were manipulated, respectively, we manipulated them simultaneously in the same sentence, hoping to find interaction between them. Our expectations were satisfied when interaction between both factors was found in the third region of the sentences. Surprisingly, lexical and syntactic interaction during SL comprehension in the translation task came about in two different ways. When cognate words were read in the syntactically incongruent condition of the sentences, the cognate effect showed that the cognate words

were read slower than the control words. On the other hand, when the cognates were read in the syntactically congruent condition, the cognate effect revealed that they were read faster than the control words. Therefore, we found interference and facilitation lexical effects depending of the syntax condition (incongruent vs. congruent, respectively). As mentioned in the last section and over different part of this thesis, syntactic structures which follow a same word order are shared between languages in a bilingual's mind. Our findings have important connotations for the Translation field, since we found that SL and TL linguistic properties do not only interact between them but also within language itself during SL comprehension. To put it differently, TL linguistic information interacts horizontally (between SL and TL) and also vertically between different types of linguistic information (syntactic and lexical information, in our case) in a cascade manner.

9.4. Conclusion

Along the experimental section of this thesis, we have compared TL syntactic properties activation with those of the SL during SL comprehension for translation and in a monolingual task. The results indicated that the type of reading task modulated TL activation, and more importantly, in terms of the scope of our research, it was one of the conditions where syntactic interaction took place. As a whole, these results agree with the Horizontal View of Translation, which states that both the SL and TL become active during SL comprehension to an overlapping extent in a translation task. Therefore, our results support the Horizontal View by reporting activation at lexical and syntactic level, and interaction between structure and lexical representations, and between different types of syntactic information (syntactic cues and attachment preferences). One might ask how we link those results to the Horizontal View's proposals. The answer to that question lays in the design of the experiments. In particular, the data collected in the experiments where online measures of the reading of specific TL properties embedded in concrete sentence regions which were created in the SL. Furthermore, our results extend the Horizontal View by adding information of language vertical activation within the syntactic level (TL structure representation and attachment strategies), at different levels (lexical and syntactic) and interaction during SL comprehension.

Finally, syntax activation at different regions in two of our studies (middle and final region) and interaction in one of them, but the lack of it at the final region suggest TL syntactic activation at different times during the course of SL sentence comprehension.

Take home message

In this doctoral thesis, we have evaluated the way people translate between languages. The results of our studies indicate that the translation task is not done sequentially. Instead, people activate both the input and the output language at the same time. In our thesis, we demonstrate that people have active lexical and syntactic information of the target language during the comprehension of the source language. The most important finding of our thesis, novel, and not studied in previous works, refers to the interaction between types of target language information when they comprehend the target language. People interrelate syntactic information of the same type (different syntactic cues), of different types (syntactic cues, attachment strategies) and syntactic information interrelates with other contents (syntax and lexicon). Thus, the translation task is defined by its interactive nature.

10. Resumen

10.1. Marco Teórico

Esta tesis doctoral se centró en la tarea de traducción de lenguas. En concreto, en la etapa de comprensión de una lengua fuente (LF) que posteriormente se traduce a una lengua meta (LM). El objetivo general de la tesis fue evaluar si la LM modula la comprensión de la LF. Para ello, nos centramos en información de tipo sintáctico y exploramos la posible interacción de esta información con: (a) información sintáctica del mismo tipo (i.e., claves sintácticas), (b) información sintáctica de diferente tipo (estructura sintáctica y estrategias de adjunción), (c) información léxica. Además, quisimos estudiar el curso temporal de estos procesos durante la comprensión en traducción. El desarrollo de este proyecto se llevó a cabo dentro del marco teórico de la Perspectiva Horizontal de la Traducción (Danks & Griffin, 1997; Gerver, 1976; Padilla et al., 2007), la cual propone una activación de diferentes procesos que en algún punto a lo largo del acto traductológico tienen lugar de manera simultánea y se solapan. Según esta perspectiva, durante la comprensión de la LF, hay un proceso de reformulación donde se lleva a cabo una búsqueda de equivalencias léxicas y sintácticas entre la LF y la LM. Es decir, durante dicho proceso ocurre una activación en paralelo de la LF y la LM, así como de los procesos de comprensión y producción, acompañados de una búsqueda de equivalencias entre las propiedades léxicas y sintácticas inherentes a la estructura superficial de ambos códigos lingüísticos (LF y LM). El modo de procesamiento sugerido por esta perspectiva se fundamenta en estudios y líneas de investigación sobre el procesamiento lingüístico en bilingües, tales como las hipótesis de la Activación Léxica No-Selectiva (Dijkstra, 2005; Kroll & de Groot, 2005), la Sintaxis Compartida (Bernolet et al., 2007; Hatzidaki et al., 2011; Huang et al., 2019; Hwang et al., 2018; Hartsuiker et al., 2004), y del Control Adaptativo (Green & Abutalebi, 2013), las cuales proponen respectivamente el acceso en paralelo de la primera (L1) y la segunda (L2) lengua de personas bilingües; una representación compartida entre la L1 y la L2 de estructuras sintácticas que siguen un mismo orden de palabras con una misma función gramatical; y

una modulación del grado de activación de la L2 que depende del contexto situacional de vida en que se desenvuelve la persona bilingüe.

Una vez descritos los pilares teóricos sobre los que se fundamentan las líneas de investigación de esta tesis, será más sencillo comprender el resumen de las líneas de investigación que serán presentadas a continuación.

10.2. Líneas de investigación

La parte experimental de esta tesis doctoral ha sido dividida en tres líneas de investigación. Hubo varios aspectos metodológicos comunes para el conjunto de las series experimentales de estas líneas: participantes bilingües español (L1) – inglés (L2), comparación directa de tareas entre-lenguas (lectura de L1 para traducir a L2) y monolingüe (lectura de L1 para producir en la misma lengua), manipulación de aspectos sintácticos y presentación de los estímulos en la L1 de los participantes.

10.2.1. Procesamiento de Claves Sintácticas en la Traducción Consecutiva

La primera línea de investigación se centró en comparar el uso de claves sintácticas durante la traducción en tres experimentos. De acuerdo con el Modelo de Competición (Bates & MacWhinney, 1981, 1982; Bates, McNew, MacWhinney, Devescovi, & Smith, 1982; MacWhinney, 1985; MacWhinney, Bates, & Kliegl, 1984), y al Modelo de Competición Unificado (MacWhinney, 2011), existen varios tipos de claves sintácticas (e.g., orden de palabras, concordancia sujeto-verbo, marcador de caso y animacidad) cuya función radica en ayudar a asignar roles temáticos de agente/paciente de una acción en una frase (es decir, conocer quién es el sujeto y quién el receptor de la acción descrita en un verbo). No obstante, dentro de una misma frase se pueden encontrar varias claves sintácticas, las cuales pueden converger o competir entre sí para llevar a cabo la asignación del rol agente/paciente durante la comprensión de una frase. Cuando

estas convergen, se facilita la comprensión de la frase debido a que las diferentes claves señalan a una misma palabra como posible agente de la frase. En cambio, cuando las claves apuntan hacia diferentes palabras como posibles candidatos surge una competición entre ellas que afecta a la comprensión de la frase. Ahora bien, la *fuerza* de una clave sintáctica puede variar de una lengua a otra, y dicha fuerza está determinada por la *validez* de la clave, la cual, a su vez, está determinada por el peso que los hablantes de una lengua le asignan a dicha clave. Por último, la *validez* de una clave depende de su *disponibilidad* (el número de veces que puede aparecer en una lengua), y la *fiabilidad* de la misma (el número de veces que su uso produce una interpretación correcta de la frase).

Existen dos hipótesis contrarias acerca del modo en que las claves sintácticas son procesadas en personas bilingües. Por un lado, la Hipótesis de la Estructura Superficial (Clahsen & Felser, 2006) sugiere que el aprendizaje de una L2 posterior al de la L1 tiene como consecuencia un procesamiento sintáctico más superficial de la L2 basado en un análisis léxico-semántico. Así, el análisis sintáctico de la L2 no podría realizarse en profundidad (hasta el nivel de uso de claves sintácticas en nuestro caso), a diferencia del procesamiento sintáctico que las personas realizan en la L1. Por otro lado, el Modelo de Competición y el Modelo de Competición Unificado sostienen que el uso de claves sintácticas tiene lugar tanto en la L1 como en la L2, mediante el uso de diferentes tipos de transferencia lingüística (*forward transfer*, *backward transfer*, *differentiation* y *amalgamation*).

Como mencionamos anteriormente, esta línea de investigación se compone de tres experimentos. Los participantes, bilingües español (L1) – inglés (L2) debían leer tres palabras (dos sustantivos y un verbo) para producir con ellas una frase en español o en inglés, dependiendo del bloque de la tarea. En el estudio se manipularon tres claves sintácticas: animacidad, concordancia sujeto-verbo y orden de las palabras. A pesar de que la animacidad es una clave válida tanto en inglés como en español, esta clave tiene mayor fuerza en las lenguas romances que en las germánicas. Lo contrario ocurre en el caso del orden de las palabras. Si bien el orden de las palabras nombre-verbo-nombre (NVN) es el más convencional en ambas lenguas, esta clave tiene mayor fuerza en inglés debido a que el español cuenta con más casos gramaticales y una mayor flexibilidad morfológica que el inglés. Así pues, en español existe una mayor variabilidad en el orden de palabras de las frases, mientras que en inglés la estructura preferente es la NVN que

suele ser interpretada sintácticamente como sujeto-verbo-complemento (SVO) siguiendo el Principio del Primer Sustantivo (*First Noun Principle*; VanPatten, 2004). Por otro lado, la fuerza de la clave de concordancia sujeto-verbo es mayor en español que en inglés, ya que en español la morfología de los verbos concuerda con cada persona (primera, segunda y tercera) y número (singular y plural), lo que facilita un orden de palabras variado en la estructura sintáctica.

La lógica subyacente al método utilizado era comparar el uso de las claves sintácticas dependiendo de la tarea. Predijimos que el grado de activación y, por lo tanto, de uso de una determinada clave sintáctica, dependería de la tarea en cuestión. Por consiguiente, los participantes utilizarían más la clave de mayor peso en la L1 durante la tarea monolingüe, en comparación con la de mayor peso en la L2, mientras que en la tarea bilingüe (traducción), utilizarían la clave de mayor peso en la L2, en comparación con la de mayor peso en la L1. Los resultados más importantes se encontraron en el tercer experimento, donde la misma clave sintáctica apuntaba a palabras diferentes como posibles agentes de la frase. En dicho experimento se reflejó una interacción entre el tipo de tarea y la clave de orden de palabras. Hubo una mayor elección de la palabra señalada como posible agente en la L1 durante la tarea monolingüe, mientras que en la tarea de traducción los participantes usaron más como agente la palabra favorecida en la L2 por la misma clave. Por ende, el uso de una determinada clave sintáctica para elegir el agente de una frase fue modulado directamente por las características de la tarea que estaban realizando (monolingüe vs. bilingüe).

10.2.2. Procesamiento de Estructuras Sintácticas y Palabras Cognadas

Nuestra segunda línea de investigación se centraba en el estudio simultáneo de la activación léxica y de la estructura sintáctica de la LM, la posible interacción entre ambos factores y su orden de activación, durante la comprensión en la traducción. Tomamos en cuenta la Hipótesis de la Representación Compartida (Bernolet et al., 2007; Hatzidaki et al., 2011; Huang et al., 2019; Hwang et al., 2018; Hartsuiker et al., 2004), la cual estipula que aquellas representaciones de estructuras sintácticas que siguen un orden de palabras

idéntico en dos lenguas tienen una representación común para ambas. Además, consideramos la evidencia que sugiere que la representación de palabras cognadas es también compartida entre lenguas (Costa et al., 2000; de Groot, 1992, 1993, 1995; de Groot & Nas, 1991; Kroll & Stewart, 1994, p.163; Schwartz & Kroll, 2006, p. 200; van Hell & de Groot, 1998). En el estudio realizamos manipulaciones sintácticas y léxicas en tres regiones diferentes de la frase (inicial, media y final). El par de lenguas utilizadas en el estudio fueron español e inglés. La manipulación léxica consistió en la presentación de un cognado en la región inicial o final, mientras que la manipulación sintáctica se llevó a cabo mediante la alteración del orden de palabras. Para ello, se incluyó un adjetivo que podía preceder o seguir a la palabra cognada, y se manipuló el pronombre relativo de las frases incluyéndolo u omitiéndolo delante del verbo. Cuando el adjetivo precedía al cognado, se incluía también el pronombre relativo de la frase delante del verbo, produciendo así un mismo orden de palabras que es permitido en ambas lenguas y, en consecuencia, una congruencia sintáctica entre las estructuras de las frases en español e inglés. Por otro lado, si el adjetivo era colocado después del cognado, el pronombre relativo era también omitido, creando de tal modo una frase sintácticamente incongruente, ya que el orden de palabras en la frase no coincidía en ambas lenguas. Los participantes, bilingües español (L1) – inglés (L2), debían leer las frases para repetirlas o traducirlas, dependiendo del bloque de la tarea. De acuerdo a los resultados obtenidos en otros estudios, se esperaba observar un efecto sintáctico en la región media (Ruiz et al., 2008) y uno léxico en la región final (Macizo & Bajo, 2006), durante la lectura para traducción. Sin embargo, a diferencia de esos estudios donde, respectivamente, se exploró la activación léxica y sintáctica por separado, la manipulación léxica y sintáctica en nuestro estudio se realizó conjuntamente en la misma frase, lo que, por ende, permitiría explorar una posible interacción entre ambas propiedades lingüísticas. Nuestro razonamiento radicaba en el supuesto de que, si la activación sintáctica de la LM precedía a la léxica durante la comprensión de la LF en la lectura para traducción, entonces se observaría un efecto de interacción, reflejado en tiempos de lectura más rápidos en la versión congruente de las frases que incluían palabras cognadas al final de la oración.

Los resultados mostraron unos tiempos de lectura más lentos en la tarea de traducción con respecto a la tarea de repetición (considerado un índice de activación de la LM debido a la demanda de recursos de procesamiento adicionales que implica la tarea

de traducción frente a la de repetición), efectos léxicos y sintácticos, y efectos de interacción entre ambos en la región media de las frases. Curiosamente, solo se observó un efecto léxico en la región media cuando los cognados se encontraban en la región inicial de la versión congruente de las frases, mientras que, por el contrario, no se observó dicho efecto en la versión incongruente. En la región final de las frases, se observaron efectos de interacción entre tipo de lectura y estructura sintáctica, entre cognados y estructura sintáctica, y finalmente, entre tipo de lectura, estructura sintáctica y cognados. Al desglosar este efecto se encontró que el efecto de estructura sintáctica fue significativo en la tarea de lectura para traducción, así como la interacción entre la estructura sintáctica y la presencia de cognados. En la lectura para traducción, por ejemplo, hubo facilitación cognaticia cuando la estructura era congruente, mientras que la lectura de cognados en las estructuras incongruentes produjo interferencia. Por otro lado, no se observó ningún tipo de efecto en la lectura para repetición. Por lo tanto, los resultados en esta región final de frase indicaron que la activación léxica fue modulada por la congruencia sintáctica en ambas lenguas durante la lectura para traducción. Concretamente, cuando se presentaban estructuras congruentes el efecto léxico era de facilitación, a diferencia del caso de estructuras incongruentes, donde el efecto fue de interferencia. Por un lado, el efecto de facilitación puede ser atribuido a que la activación léxica de la LM se haya beneficiado de la similitud estructural de la frase en ambas lenguas, mientras que, por otro lado, el efecto de interferencia pudo haberse debido a una discordancia entre la ausencia de similitud estructural y la presencia de correspondencia léxica. Aun así, existe una explicación alternativa al efecto de interferencia durante la lectura de frases incongruentes que reside en los procesos de integración semánticos y sintácticos que tienen lugar al final de una frase (*wrap-up effect*), ya que todas las frases en el experimento terminaban en un punto final. Dichos procesos comprenden un incremento en los tiempos de lectura en comparación con otras partes de la frase (Rayner et al., 1989; Stowe et al., 2018).

Con el fin de explorar con mayor detalle la posible existencia de un *wrap-up effect*, se llevó a cabo un experimento adicional donde se utilizaron las mismas frases que en el experimento anterior, pero se les añadió una cláusula extra en la región final a la mitad de ellas, de modo que en lugar de situarse al final de la frase y ser seguida por el punto final, la tercera región era seguida entonces por la cláusula extra, la cual, a su vez, finalizaba con un punto. Los resultados mostraron tiempos de lectura más rápidos en la

tercera región de las frases con la cláusula extra en comparación con las frases donde la tercera región era seguida por el punto final de la frase, lo cual corroboró el “*wrap-up*” *effect*. También se encontró un efecto de interacción entre la estructura sintáctica y las palabras cognadas, las cuales fueron leídas más rápido que las palabras control en la versión congruente de las frases que en la incongruente.

En resumen, los resultados de este estudio apoyan la Perspectiva Horizontal de la traducción al presentar activación léxica y sintáctica de la LM durante la traducción. Además, este estudio proporciona datos que apoyan la idea de que la activación entre ambos niveles (léxico y sintáctico) es interactiva lo que, a su vez, favorece la hipótesis del procesamiento en cascada en tareas de traducción.

10.2.3. Procesamiento de Estructuras Sintácticas y Estrategias de Adjunción en Frases Ambiguas

El objetivo de nuestra tercera línea de investigación era estudiar conjuntamente la activación de la estructura sintáctica y las estrategias de adjunción de cláusulas relativas ambiguas en la LM, y su posible interacción durante la comprensión de la LF en la traducción. Como hemos explicado anteriormente, la Hipótesis de la Representación Compartida (Bernolet et al., 2007; Hatzidaki et al., 2011; Huang et al., 2019; Hwang et al., 2018; Hartsuiker et al., 2004) propone que aquellas estructuras sintácticas que siguen un mismo orden de palabras en dos lenguas comparten la misma representación. Por otro lado, la adjunción de cláusulas relativas ambiguas con doble antecedente ha sido extensamente estudiada. Los resultados de esas investigaciones previas señalan diferencias interlingüísticas en lo concerniente a la preferencia de elección del antecedente, como los casos de una preferencia por el primer antecedente (adjunción alta) en personas monolingües de español sin conocimiento de inglés (Arancibia et al., 2015; Carreiras & Clifton, 1999; Carreiras et al., 2004; Dussias, 2003; Dussias & Sagarra, 2007; Jegerski, Keating et al., 2016), y de una preferencia por el segundo antecedente (adjunción baja) en monolingües de inglés sin conocimiento de español (Carreiras & Clifton, 1999; Cuestos & Mitchell, 1988; Mitchell & Cuetos, 1991; Dussias, 2001, 2003; Fernández, 2003; Frazier & Clifton, 1996).

Además, se han observado diferencias en el tipo de estrategia adoptada por bilingües español (L1) – inglés (L2) para resolver cláusulas relativas ambiguas con doble antecedente. Dichas diferencias están relacionadas con la edad de adquisición de la L2. Por un lado, sujetos bilingües que han adquirido su L2 en la adultez y que han pasado un periodo de inmersión largo en un país de habla de su L2 han mostrado una preferencia de adjunción baja que concuerda con dicha lengua (inglés) (Dussias, 2003, 2004; Dussias & Sagarra, 2007). Este tipo de procesamiento apoya la Hipótesis del Ajuste Lingüístico (*Tuning Hypothesis*) según la cual las personas utilizarían la estrategia de adjunción más usada en su entorno. Por otro lado, bilingües tempranos inglés (L1) – español (L2) han mostrado una preferencia de adjunción alta en circunstancias similares de experiencia lingüística (Jegerski, VanPatten et al., 2016; Jegerski, Keating et al., 2016; Jegerski, 2018).

En el caso del estudio de estrategias de adjunción de cláusulas relativas ambiguas con doble antecedente durante la traducción, solo teníamos conocimiento de un estudio (Togato et al., 2016). En dicho estudio se observó un mayor uso de la estrategia preferida en la L1 (español) de los participantes bilingües en una tarea monolingüe (lectura y repetición dentro de una misma lengua), mientras que en la tarea de traducción, donde los participantes debían leer oraciones en español (LF y L1 de los participantes) para traducirlas al inglés (LM y L2 de los participantes), se observó una mayor preferencia por la estrategia de adjunción preferida en la LM (baja adjunción). Estos resultados se interpretaron como una indicación de la activación de estrategias de procesamiento sintáctico de la LM durante la comprensión de la LF.

Ahora bien, tanto el estudio de las estrategias de adjunción como el de la activación de estructuras sintácticas de la LM se había realizado de manera independiente (Ruiz et al., 2008; Togato et al., 2016); y en el caso de las estrategias de adjunción, las medidas tomadas en la investigación de Togato et al. fueron medidas exproceso (*offline measures*). Por ende, el estudio de ambas propiedades en conjunto en nuestra investigación facilitaría la exploración de una posible interacción entre ambas. Para tal fin, manipulamos conjuntamente ambos aspectos sintácticos dentro de la misma oración lo que, en consecuencia, nos dotaría de una herramienta útil para investigar una posible interacción entre ambas propiedades sintácticas. Los estímulos constaron de oraciones de relativo con doble antecedente que fueron divididas en tres regiones. Las primeras dos

regiones (inicial y media) contenían un antecedente (sustantivo) acompañado de un adjetivo. La tercera región (región final) contenía un adjetivo que debía ser unido a uno de los dos antecedentes. La manipulación del orden del sustantivo y el adjetivo consistía en dos condiciones donde el orden de palabras podía ser adjetivo-sustantivo o sustantivo-adjetivo, los cuales son posibles en español, mientras que en inglés el único orden posible es el de adjetivo-sustantivo. En el caso de la tercera región, manipulamos el género del adjetivo de manera que coincidiera solo con uno de los dos antecedentes o con ambos.

Los participantes, bilingües español (L1) – inglés (L2), debían leer las frases en español (LF) para luego repetirlas en la misma lengua o traducirlas al inglés (LM). Posteriormente, los participantes debían responder a una pregunta donde debían unir uno de los antecedentes al adjetivo final.

Nuestra predicción fue la siguiente: si la LM se activa durante la comprensión de la LF en la traducción, entonces los tiempos de lectura (RTs) de los antecedentes durante la traducción serían menores en el orden de palabras congruente que en el incongruente, y, asimismo, el porcentaje de la estrategia de adjunción favorita en la LM sería mayor en la tarea de traducción en comparación con la estrategia preferida en la LF. Además, esperamos encontrar una interacción entre ambos factores (es decir, una mayor preferencia de estrategia de adjunción preferida en la LM cuando la estructura sintáctica era congruente entre lenguas).

Los resultados obtenidos corroboraron nuestras predicciones, con excepción del efecto de interacción. Con respecto a esta última predicción, se pudo observar que, a pesar de la ausencia de un efecto de interacción, la lectura de frases congruentes favoreció el uso de la estrategia preferida en la LM (estrategia baja) en comparación con la más usada en la LF (estrategia alta). Por ende, la confirmación de nuestras predicciones sugiere que la activación de la LM a nivel sintáctico durante la comprensión de la LF en la traducción no se limita solamente a un tipo de propiedad sintáctica, sino que se extiende a varios subniveles (estrategia de procesamiento sintáctico y estructura sintáctica) dentro del nivel sintáctico en sí.

10.3. Conclusión

Según se desprende de las investigaciones previas, mencionadas y discutidas a lo largo de este trabajo, y de acuerdo con lo observado a lo largo de las series experimentales que conforman la parte empírica de esta tesis, la activación de la LM durante la lectura para la traducción comienza durante la comprensión de la LF. Dicha activación comprende propiedades léxicas y sintácticas, y de diferente tipo en el caso de las sintácticas, tales como la representación estructural y las estrategias de comprensión (claves sintácticas y adjunción de cláusulas relativas). Este patrón de activación concuerda con la propuesta de la Perspectiva Horizontal de la Traducción.

Ahora bien, los resultados de las investigaciones llevadas a cabo en esta tesis doctoral extienden la propuesta de dicha perspectiva al presentar evidencia que sugiere la activación de propiedades sintácticas de la LM que no son similares estructuralmente en la LF, y que, por lo tanto, no son compartidas entre ambas lenguas (estrategias de adjunción). Este tipo de activación, el cual no está relacionado con la estructura superficial del código lingüístico, implica un procesamiento sintáctico más profundo de la LM durante la tarea de traducción. Los resultados de los experimentos también proveen información sobre activación vertical en la LM dentro del nivel sintáctico (representación estructural de la LM y estrategias de adjunción) y entre niveles diferentes (léxico y sintáctico); y finalmente, sobre interacción durante la comprensión de la LF. Así pues, los modelos horizontales de la traducción deberían incorporar entre sus propuestas un análisis más profundo de la LM allende la estructura superficial, un componente vertical en el procesamiento de la LM, y el carácter interactivo de la coactivación de la LM durante la comprensión de la LF en tareas de traducción.

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12. APPENDIX

12.1. Appendix 1. *Nouns and verbs used in the study Things Can Change:*

Sentence Processing in Consecutive Translation. Experiments 1, 2, and 3.

| Animate Nouns | Inanimate Nouns | Verbs |
|----------------------|---------------------|--------------------|
| lagarto (lizard) | armario (closet) | cazar (hunt) |
| murciélago (bat) | vela (candle) | llamar (call) |
| tortuga (turtle) | plato (plate) | encontrar (find) |
| león (lion) | lápiz (pencil) | agarrar (get) |
| caballo (horse) | caja (box) | tirar (throw) |
| vaca (cow) | radio (radio) | observar (observe) |
| escorpión (scorpion) | ventana (window) | esperar (wait) |
| loro (parrot) | cubo (cube) | matar (murder) |
| buitre (vulture) | cigarro (cigarette) | oler (smell) |
| pájaro (bird) | mechero (lighter) | quemar (burn) |
| escarabajo (beetle) | palo (stick) | buscar (seek) |
| zorro (fox) | goma (eraser) | pegar (hit) |
| cerdo (pig) | tenedor (fork) | oír (hear) |
| conejo (rabbit) | mesa (table) | ver (see) |
| oveja (sheep) | coche (car) | olvidar (forget) |
| ciervo (deer) | papel (sheet) | golpear (strike) |
| pato (duck) | cuchara (spoon) | disparar (shoot) |
| gallina (hen) | sobre (envelope) | perseguir (chase) |

| | | |
|---------------------------|--------------------------|--------------------|
| gato (cat) | silla (chair) | apretar (screw) |
| foca (seal) | roca (rock) | amar (love) |
| toro (bull) | lápiz (pencil) | saludar (greet) |
| cabra (goat) | puerta (door) | besar (kiss) |
| dinosaurio (dinosaur) | vaso (glass) | empujar (push) |
| pelícano (pelican) | balón (ball) | querer (want) |
| asno (donkey) | bolígrafo (pen) | morder (bite) |
| araña (spider) | bolsa (bag) | comer (eat) |
| gusano (worm) | cuchillo (knife) | asesinar (kill) |
| camello (camel) | lámpara (lamp) | abrazar (hug) |
| pavo (turkey) | cama (bed) | mirar (watch) |
| flamenco (flamingo) | motocicleta (motorcycle) | perdonar (forgive) |
| delfín (dolphin) | | |
| tiburón (shark) | | |
| mosca (fly) | | |
| leopardo (leopard) | | |
| rana (frog) | | |
| rinoceronte (rhino) | | |
| oruga (caterpillar) | | |
| mariposa (butterfly) | | |
| búfalo (buffalo) | | |
| hipopótamo (hippopotamus) | | |
| serpiente (snake) | | |
| ardilla (squirrel) | | |

tigre (tiger)

ratón (mouse)

ballena (whale)

abeja (bee)

lobo (wolf)

perro (dog)

cisne (swan)

hormiga (ant)

elefante (elephant)

pingüino (penguin)

cocodrilo (crocodile)

cebra (zebra)

canguro (kangaroo)

caracol (snail)

mono (monkey)

oso (bear)

jirafa (giraffe)

hiena (hyena)

Note. Nouns and verbs were used to create sentences in Spanish. English translation of each noun and verb is given in brackets. The inanimate nouns were used only in Experiment 1. The animate nouns and the verbs were used in all experiments.

12.2. Appendix 2. *Sentences used in the study Lexical and Syntactic Target Language Interactions in Translation. Experiment 4.*

Sentences were presented in four conditions. The conditions are the following: 1Cognate (sentence with a cognate word at the initial region of the sentence), 2Cognate (sentence with a cognate word at the final region of the sentence), Congruent (sentence with similar structure in Spanish and English), Incongruent (sentence with different structure in Spanish and English).

English translations are given in brackets.

Sentence 1

1Cognate-Congruent: El bondadoso ángel del cuadro que yo pinté estaba junto a una vieja iglesia (The kind angel from the painting I made was next to an old church)

1Cognate-Incongruent: El ángel bondadoso del cuadro que pinté estaba junto a una iglesia vieja (The kind angel from the painting I made was next to an old church)

2Cognate-Congruent: La vieja iglesia del cuadro que yo pinté estaba junto a un bondadoso angel (The old church from the painting I made was next to a kind angel)

2Cognate-Incongruent: La iglesia vieja del cuadro que pinté estaba junto a un ángel bondadoso (The old church from the painting I made was next to a kind angel)

Sentence 2

1Cognate-Congruent: El polvoriento atlas que yo olvidé en el sótano estaba dentro de una amarillenta revista (The dusty atlas I left in the basement was inside a yellowish magazine)

1Cognate-Incongruent: El atlas polvoriento que olvidé en el sótano estaba dentro de una revista amarillenta (The dusty atlas I left in the basement was inside a yellowish magazine)

2Cognate-Congruent: La revista amarillenta que olvidé en el sótano estaba dentro de un atlas polvoriento (The yellowish magazine I left in the basement was inside a dusty atlas)

2Cognate-Incongruent: La amarillenta revista que yo olvidé en el sótano estaba dentro de un polvoriento atlas (The yellowish magazine I left in the basement was inside a dusty atlas)

Sentence 3

1Cognate-Congruent: El oscuro balcón por el que nosotros entramos al ayuntamiento era vigilado desde la pequeña ventana (The dark balcony we used to get into the town hall was being watched from the small window)

1Cognate-Incongruent: El balcón oscuro por el que entramos al ayuntamiento era vigilado desde la ventana pequeña (The dark balcony we used to get into the town hall was being watched from the small window)

2Cognate-Congruent: La pequeña ventana por la que nosotros entramos al ayuntamiento era vigilada desde el oscuro balcón (The small window we used to get into the town hall was being watched from the dark balcony)

2Cognate-Incongruent: La ventana pequeña por la que entramos al ayuntamiento era vigilada desde el balcón oscuro (The small window we used to get into the town hall was being watched from the dark balcony)

Sentence 4

1Cognate-Congruent: El acordado límite que ellos sobrepasaron en la venta rebasó el previsto gasto (The set limit that they exceeded during the sale surpassed the estimated expenditure)

1Cognate-Incongruent: El límite acordado que sobrepasaron en la venta rebasó el gasto previsto. (The set limit that they exceeded during the sale surpassed the estimated expenditure)

2Cognate-Congruent: El previsto gasto que ellos sobrepasaron en la venta rebasó el acordado límite (The estimated expenditure that they exceeded during the sale surpassed the set limit)

2Cognate-Incongruent: El gasto previsto que sobrepasaron en la venta rebasó el límite acordado (The estimated expenditure that they exceeded during the sale surpassed the set limit)

Sentence 5

1Cognate-Congruent: El manso gorila que nosotros traeremos el próximo sábado compartirá jaula con el inquieto simio (The tame gorilla we are bringing next Saturday will share a cage with the restless monkey)

1Cognate-Incongruent: El gorila manso que traeremos el próximo sábado compartirá jaula con el simio inquieto (The tame gorilla we are bringing next Saturday will share a cage with the restless monkey)

2Cognate-Congruent: El inquieto simio que nosotros traeremos el próximo sábado compartirá jaula con el manso gorila (The restless monkey we are bringing next Saturday will share a cage with the tame gorilla)

2Cognate-Incongruent: El simio inquieto que traeremos el próximo sábado compartirá jaula con el gorila manso (The restless monkey we are bringing next Saturday will share a cage with the tame gorilla)

Sentence 6

1Cognate-Congruent: La desafinada guitarra que yo compré para mi hermano está al lado del negro estuche (The flat guitar I bought for my brother is next to the black case)

1Cognate-Incongruent: La guitarra desafinada que compré para mi hermano está al lado del estuche negro (The flat guitar I bought for my brother is next to the black case)

2Cognate-Congruent: El negro estuche que yo compré para mi hermano está al lado de la desafinada guitarra (The black case I bought for my brother is next to the flat guitar)

2Cognate-Incongruent: El estuche negro que compré para mi hermano está al lado de la guitarra desafinada (The black case I bought for my brother is next to the flat guitar)

Sentence 7

1Cognate-Congruent: La hermosa rosa que yo vendí la semana pasada incluía una resistente maceta (The beautiful rose I sold last week came along with a strong flowerpot)

1Cognate-Incongruent: La rosa hermosa que vendí la semana pasada incluía una maceta resistente (The beautiful rose I sold last week came along with a strong flowerpot)

2Cognate-Congruent: La resistente maceta que yo vendí la semana pasada incluía una hermosa rosa (The strong flowerpot I sold last week came along with a beautiful rose)

2Cognate-Incongruent: La maceta resistente que vendí la semana pasada incluía una rosa hermosa (The strong flowerpot I sold last week came along with a beautiful rose)

Sentence 8

1Cognate-Congruent: El taxi estacionado que multamos el viernes chocó con un camión sobrecargado (The parked taxi we fined last Friday crashed into an overloaded truck)

1Cognate-Incongruent: El estacionado taxi que nosotros multamos el viernes chocó con un sobrecargado camión (The parked taxi we fined last Friday crashed into an overloaded truck)

2Cognate-Congruent: El sobrecargado camión que nosotros multamos el viernes chocó con un estacionado taxi (The overloaded truck we fined last Friday crashed into a parked taxi)

2Cognate-Incongruent: El camión sobrecargado que multamos el viernes chocó con un taxi estacionado (The overloaded truck we fined last Friday crashed into a parked taxi)

Sentence 9

1Cognate-Congruent: El valioso objeto que nosotros cogimos en la cueva tenía atado un borroso pergamino (The valuable object we picked up in the cave had a blurry scroll attached to it)

1Cognate-Incongruent: El objeto valioso que cogimos en la cueva tenía atado un pergamino borroso (The valuable object we picked up in the cave had a blurry scroll attached to it)

2Cognate-Congruent: El borroso pergamino que nosotros cogimos en la cueva tenía atado un valioso objeto (The blurry scroll we picked up in the cave had a valuable object attached to it)

2Cognate-Incongruent: El pergamino borroso que cogimos en la cueva tenía atado un objeto valioso (The blurry scroll we picked up in the cave had a valuable object attached to it)

Sentence 10

1Cognate-Congruent: El antiguo convento que nosotros restauraremos el mes que viene tiene una ancha plaza (The old convent we are restoring next month has a wide square)

1Cognate-Incongruent: El convento antiguo que restauraremos el mes que viene tiene una plaza ancha (The old convent we are restoring next month has a wide square)

2Cognate-Congruent: La ancha plaza que nosotros restauraremos el mes que viene tiene un antiguo convento (The wide square we are restoring next month has an old convent)

2Cognate-Incongruent: La plaza ancha que restauraremos el mes que viene tiene un convento antiguo (The wide square we are restoring next month has an old convent)

Sentence 11

1Cognate-Congruent: La alta galería que ellos adornarán en aquel edificio conduce a un angosto pasillo (The high gallery they are going to decorate in that building leads to a narrow corridor)

1Cognate-Incongruent: La galería alta que adornarán en aquel edificio conduce a un pasillo angosto (The high gallery they are going to decorate in that building leads to a narrow corridor)

2Cognate-Congruent: El angosto pasillo que ellos adornarán en aquel edificio conduce a una alta galería (The narrow corridor they are going to decorate in that building leads to a high gallery)

2Cognate-Incongruent: El pasillo angosto que adornarán en aquel edificio conduce a una galería alta (The narrow corridor they are going to decorate in that building leads to a high gallery)

Sentence 12

1Cognate-Congruent: El célebre director que yo asesoré en el rodaje es amigo del genial guionista (The famous director I advised during the filming is a friend of the brilliant scriptwriter)

1Cognate-Incongruent: El director célebre que asesoré en el rodaje es amigo del guionista genial (The famous director I advised during the filming is a friend of the brilliant scriptwriter)

2Cognate-Congruent: El genial guionista que yo asesoré en el rodaje es amigo del célebre director (The brilliant scriptwriter I advised during the filming is a friend of the famous director)

2Cognate-Incongruent: El guionista genial que asesoré en el rodaje es amigo del director célebre (The brilliant scriptwriter I advised during the filming is a friend of the famous director)

Sentence 13

1Cognate-Congruent: El antipático barbero que yo contraté el mes pasado se lleva bien con el gracioso conserje (The unpleasant barber I hired last month gets along with the funny caretaker)

1Cognate-Incongruent: El barbero antipático que contraté el mes pasado se lleva bien con el conserje gracioso (The unpleasant barber I hired last month gets along with the funny caretaker)

2Cognate-Congruent: El gracioso conserje que yo contraté el mes pasado se lleva bien con el antipático barbero (The funny caretaker I hired last month gets along with the unpleasant barber)

2Cognate-Incongruent: El conserje gracioso que contraté el mes pasado se lleva bien con el barbero antipático (The funny caretaker I hired last month gets along with the unpleasant barber)

Sentence 14

1Cognate-Congruent: El concurrido boulevard que nosotros recorrimos durante nuestro paseo acaba en un tranquilo jardín (The crowded boulevard we walked through during our walk ends in a peaceful garden)

1Cognate-Incongruent: El boulevard concurrido que recorrimos durante nuestro paseo acaba en un jardín tranquilo (The crowded boulevard we walked through during our walk ends in a peaceful garden)

2Cognate-Congruent: El tranquilo jardín que nosotros recorrimos durante nuestro paseo acaba en un concurrido boulevard (The peaceful garden we walked through during our walk ends in a crowded boulevard)

2Cognate-Incongruent: El jardín tranquilo que recorrimos durante nuestro paseo acaba en un boulevard concurrido (The peaceful garden we walked through during our walk ends in a crowded boulevard)

Sentence 15

1Cognate-Congruent: El profundo canal que nosotros cruzamos durante la huída conducía al derruido puente (The deep canal we crossed during our getaway led to the ruined bridge)

1Cognate-Incongruent: El canal profundo que cruzamos durante la huída conducía al puente derruido (The deep canal we crossed during our getaway led to the ruined bridge)

2Cognate-Congruent: El derruido puente que nosotros cruzamos durante la huída conducía al profundo canal (The ruined bridge we crossed during our getaway led to the deep canal)

2Cognate-Incongruent: El puente derruido que cruzamos durante la huída conducía al canal profundo (The ruined bridge we crossed during our getaway led to the deep canal)

Sentence 16

1Cognate-Congruent: El amplio palacio que yo diseñé durante las vacaciones colinda con una imponente ciudad (The large palace I designed on vacations adjoins with an impressive city)

1Cognate-Incongruent: El palacio amplio que diseñé durante las vacaciones colinda con una ciudad imponente (The large palace I designed on vacations adjoins with an impressive city)

2Cognate-Congruent: La imponente ciudad que yo diseñé durante las vacaciones colinda con un amplio palacio (The impressive city I designed on vacations adjoins with a large palace)

2Cognate-Incongruent: La ciudad imponente que diseñé durante las vacaciones colinda con un palacio amplio (The impressive city I designed on vacations adjoins with a large palace)

Sentence 17

1Cognate-Congruent: El lindo suéter que tú cosiste para mi madre es un precioso regalo
(The pretty sweater you sewed for my mother is a beautiful present)

1Cognate-Incongruent: El suéter lindo que cosiste para mi madre es un regalo precioso
(The pretty sweater you sewed for my mother is a beautiful present)

2Cognate-Congruent: El precioso regalo que tú cosiste para mi madre es un lindo suéter
(The beautiful present you sewed for my mother is a pretty sweater)

2Cognate-Incongruent: El regalo precioso que cosiste para mi madre es un suéter lindo
(The beautiful present you sewed for my mother is a pretty sweater)

Sentence 18

1Cognate-Congruent: El oloroso hongo que yo machaqué para la herida debería ser
mezclado con una venenosa raíz (The fragrant fungus I crushed for the wound should be
blended with a poisonous root)

1Cognate-Incongruent: El hongo oloroso que machaqué para la herida debería ser
mezclado con una raíz venenosa (The fragrant fungus I crushed for the wound should be
blended with a poisonous root)

2Cognate-Congruent: La venenosa raíz que yo machaqué para la herida debería ser
mezclada con un oloroso hongo (The poisonous root I crushed for the wound should be
blended with a fragrant fungus)

2Cognate-Incongruent: La raíz venenosa que machaqué para la herida debería ser
mezclada con un hongo oloroso (The poisonous root I crushed for the wound should be
blended with a fragrant fungus)

Sentence 19

1Cognate-Congruent: La costosa jarra que ellos colocaron en la mesa está apoyada contra
un lindo florero (The expensive jar they put on the table is leaning against a pretty vase)

1Cognate-Incongruent: La jarra costosa que colocaron en la mesa está apoyada contra un florero lindo (The expensive jar they put on the table is leaning against a pretty vase)

2Cognate-Congruent: El lindo florero que ellos colocaron en la mesa está apoyado contra una costosa jarra (The pretty vase they put on the table is leaning against an expensive jar)

2Cognate-Incongruent: El florero lindo que colocaron en la mesa está apoyado contra una jarra costosa (The pretty vase they put on the table is leaning against an expensive jar)

Sentence 20

1Cognate-Congruent: La potente lámpara que nosotros escogimos en la tienda es más útil que el bonito armario (The powerful lamp we picked in the store is more useful than the pretty wardrobe)

1Cognate-Incongruent: La lámpara potente que escogimos en la tienda es más útil que el armario bonito (The powerful lamp we picked in the store is more useful than the pretty wardrobe)

2Cognate-Congruent: El bonito armario que nosotros escogimos en la tienda es más útil que la potente lámpara (The pretty wardrobe we picked in the store is more useful than the powerful lamp)

2Cognate-Incongruent: El armario bonito que escogimos en la tienda es más útil que la lámpara potente (The pretty wardrobe we picked in the store is more useful than the powerful lamp)

Sentence 21

1Cognate-Congruent: El dulce licor que ellos enviaron por correo llegó antes que elpreciado vino (The sweet liquor they sent by mail arrived before the cherished wine)

1Cognate-Incongruent: El licor dulce que enviaron por correo llegó antes que el vinopreciado (The sweet liquor they sent by mail arrived before the cherished wine)

2Cognate-Congruent: Elpreciado vino que ellos enviaron por correo llegó antes que el dulce licor (The cherished wine they sent by mail arrived before the sweet liquor)

2Cognate-Incongruent: El vinopreciado que enviaron por correo llegó antes que el licor dulce (The cherished wine they sent by mail arrived before the sweet liquor)

Sentence 22

1Cognate-Congruent: El lento tractor que ellos alquilaron para la verbena estaba enganchado a un estrecho escenario (The slow tractor they rented for the festival was attached to a narrow stage)

1Cognate-Incongruent: El tractor lento que alquilaron para la verbena estaba enganchado a un escenario estrecho (The slow tractor they rented for the festival was attached to a narrow stage)

2Cognate-Congruent: El estrecho escenario que ellos alquilaron para la verbena estaba enganchado a un lento tractor (The narrow stage they rented for the festival was attached to a slow tractor)

2Cognate-Incongruent: El escenario estrecho que alquilaron para la verbena estaba enganchado a un tractor lento (The narrow stage they rented for the festival was attached to a slow tractor)

Sentence 23

1Cognate-Congruent: La madura pera que yo solté en la bandeja dio contra el cocido huevo (The ripe pear I dropped on the tray hit against the hard-boiled egg)

1Cognate-Incongruent: La pera madura que solté en la bandeja dio contra el huevo cocido (The ripe pear I dropped on the tray hit against the hard-boiled egg)

2Cognate-Congruent: El cocido huevo que yo solté en la bandeja dio contra la madura pera (The hard-boiled egg I dropped on the tray hit against the ripe pear)

2Cognate-Incongruent: El huevo cocido que yo solté en la bandeja dio contra la pera madura (The hard-boiled egg I dropped on the tray hit against the ripe pear)

Sentence 24

1Cognate-Congruent: El estrafalario actor que nosotros echamos del avión había peleado con la grosera azafata (The eccentric actor we kicked off the plane had fought with the rude stewardess)

1Cognate-Incongruent: El actor estrafalario que echamos del avión había peleado con la azafata grosera (The eccentric actor we kicked off the plane had fought with the rude stewardess)

2Cognate-Congruent: La grosera azafata que nosotros echamos del avión había peleado con el estrafalario actor (The rude stewardess we kicked off the plane had fought with the eccentric actor)

2Cognate-Incongruent: La azafata grosera que echamos del avión había peleado con el actor estrafalario (The rude stewardess we kicked off the plane had fought with the eccentric actor)

Sentence 25

1Cognate-Congruent: La insigne academia que nosotros abrimos en enero le cedió algunos libros a la esplendorosa librería (The famous academy we opened in January relinquished some books to the magnificent bookshop)

1Cognate-Incongruent: La academia insigne que abrimos en enero le cedió algunos libros a la librería esplendorosa (The famous academy we opened in January relinquished some books to the magnificent bookshop)

2Cognate-Congruent: La esplendorosa librería que nosotros abrimos en enero le cedió algunos libros a la insigne academia (The magnificent bookshop we opened in January relinquished some books to the famous academy)

2Cognate-Incongruent: La librería esplendorosa que abrimos en enero le cedió algunos libros a la academia insigne (The magnificent bookshop we opened in January relinquished some books to the famous academy)

Sentence 26

1Cognate-Congruent: El consagrado autor que nosotros hemos señalado en nuestra reseña es un conflictivo escritor (The acclaimed author that we pointed out in our review is a controversial writer)

1Cognate-Incongruent: El autor consagrado que hemos señalado en nuestra reseña es un escritor conflictivo (The acclaimed author that we pointed out in our review is a controversial writer)

2Cognate-Congruent: El conflictivo escritor que nosotros hemos señalado en nuestra reseña es un consagrado autor (The controversial writer we pointed out in our review is an acclaimed author)

2Cognate-Incongruent: El escritor conflictivo que hemos señalado en nuestra reseña es un autor consagrado (The controversial writer we pointed out in our review is an acclaimed author)

Sentence 27

1Cognate-Congruent: El acaudalado banco que nosotros denunciaremos este año hizo negocios con una endeudada empresa (The wealthy bank we are going to report this year did business with an indebted company)

1Cognate-Incongruent: El banco acaudalado que denunciaremos este año hizo negocios con una empresa endeudada (The wealthy bank we are going to report this year did business with an indebted company)

2Cognate-Congruent: La endeudada empresa que nosotros denunciaremos este año hizo negocios con un acaudalado banco (The indebted company we are going to report this year did business with a wealthy bank)

2Cognate-Incongruent: La empresa endeudada que denunciaremos este año hizo negocios con un banco acaudalado (The indebted company we are going to report this year did business with a wealthy bank)

Sentence 28

1Cognate-Congruent: La nueva bicicleta que yo dejé en tu jardín está cerca de la cuadrada mesa (The new bicycle I left in your garden is close to the square table)

1Cognate-Incongruent: La bicicleta nueva que dejé en tu jardín está cerca de la mesa cuadrada (The new bicycle I left in your garden is close to the square table)

2Cognate-Congruent: La cuadrada mesa que yo dejé en tu jardín está cerca de la nueva bicicleta (The square table I left in your garden is close to the new bicycle)

2Cognate-Incongruent: La mesa cuadrada que dejé en tu jardín está cerca de la bicicleta nueva (The square table I left in your garden is close to the new bicycle)

Sentence 29

1Cognate-Congruent: El enrollado cable que nosotros arrastramos por el césped se enredó con la estropeada manguera (The rolled-up cable we dragged on the grass got tangled up with the damaged hose)

1Cognate-Incongruent: El cable enrollado que arrastramos por el césped se enredó con la manguera estropeada (The rolled-up cable we dragged on the grass got tangled up with the damaged hose)

2Cognate-Congruent: La estropeada manguera que nosotros arrastramos por el césped se enredó con el enrollado cable (The damaged hose we dragged on the grass got tangled up with the rolled-up cable)

2Cognate-Incongruent: La manguera estropeada que arrastramos por el césped se enredó con el cable enrollado (The damaged hose we dragged on the grass got tangled up with the rolled-up cable)

Sentence 30

1Cognate-Congruent: La blanca botella que vosotros echaréis a la basura está delante de la desgastada gorra (The white bottle that you are going to throw away is in front of the worn out cap)

1Cognate-Incongruent: La botella blanca que echaréis a la basura está delante de la gorra desgastada (The white bottle that you are going to throw away is in front of the worn out cap)

2Cognate-Congruent: La desgastada gorra que vosotros echaréis a la basura está delante de la blanca botella (The worn out cap that you are going to throw away is in front of the white bottle)

2Cognate-Incongruent: La gorra desgastada que echaréis a la basura está delante de la botella blanca (The worn out cap that you are going to throw away is in front of the white bottle)

Sentence 31

1Cognate-Congruent: El peligroso animal que vosotros rescatasteis en la pradera huía del rápido jinete (The dangerous animal you rescued on the grassland was running away from the fast horseman)

1Cognate-Incongruent: El animal peligroso que rescatasteis en la pradera huía del jinete rápido (The dangerous animal you rescued on the grassland was running away from the fast horseman)

2Cognate-Congruent: El rápido jinete que vosotros rescatasteis en la pradera huía del peligroso animal (The fast horseman you rescued on the grassland was running away from the dangerous animal)

2Cognate-Incongruent: El jinete rápido que rescatasteis en la pradera huía del animal peligroso (The fast horseman you rescued on the grassland was running away from the dangerous animal)

Sentence 32

1Cognate-Congruent: La arrugada foto que tú guardaste en el cajón está grapada a la cómica carta (The wrinkled picture you kept in the drawer is stapled to the funny letter)

1Cognate-Incongruent: La foto arrugada que guardaste en el cajón está grapada a la carta cómica (The wrinkled picture you kept in the drawer is stapled to the funny letter)

2Cognate-Congruent: La cómica carta que tú guardaste en el cajón está grapada a la arrugada foto (The funny letter you kept in the drawer is stapled to the wrinkled picture)

2Cognate-Incongruent: La carta cómica que guardaste en el cajón está grapada a la foto arrugada (The funny letter you kept in the drawer is stapled to the wrinkled picture)

Sentence 33

1Cognate-Congruent: La maciza columna que nosotros medimos fue construida antes que la gruesa puerta (The solid column we measured was built before the thick door)

1Cognate-Incongruent: La columna maciza que medimos fue construida antes que la puerta gruesa (The solid column we measured was built before the thick door)

2Cognate-Congruent: La gruesa puerta que nosotros medimos fue construida antes que la maciza columna (The thick door we measured was built before the solid column)

2Cognate-Incongruent: La puerta gruesa que medimos fue construida antes que la columna maciza (The thick door we measured was built before the solid column)

Sentence 34

1Cognate-Congruent: El agobiado dentista que tú conociste en el ascensor quería hablar con el ocupado cirujano (The overwhelmed dentist you met in the elevator wanted to talk to the busy surgeon)

1Cognate-Incongruent: El dentista agobiado que conociste en el ascensor quería hablar con el cirujano ocupado (The overwhelmed dentist you met in the elevator wanted to talk to the busy surgeon)

2Cognate-Congruent: El cirujano ocupado que conociste en el ascensor quería hablar con el dentista agobiado (The busy surgeon you met in the elevator wanted to talk to the overwhelmed dentist)

2Cognate-Incongruent: El ocupado cirujano que tú conociste en el ascensor quería hablar con el agobiado dentista (The busy surgeon you met in the elevator wanted to talk to the overwhelmed dentist)

Sentence 35

1Cognate-Congruent: El encantador bebé que ellas trajeron al consultorio es familia de esa amable señora (The charming baby they brought to the office is related to that kind lady)

1Cognate-Incongruent: El bebé encantador que trajeron al consultorio es familia de esa señora amable (The charming baby they brought to the office is related to that kind lady)

2Cognate-Congruent: La amable señora que ellas trajeron al consultorio es familia de ese encantador bebé (The kind lady they brought to the office is related to that charming baby)

2Cognate-Incongruent: La señora amable que trajeron al consultorio es familia de ese bebé encantador (The kind lady they brought to the office is related to that charming baby)

Sentence 36

1Cognate-Congruent: El exigente cliente que tú atendiste en el despacho estaba esperando al atareado abogado (The demanding client you saw in the office was waiting for the busy lawyer)

1Cognate-Incongruent: El cliente exigente que atendiste en el despacho estaba esperando al abogado atareado (The demanding client you saw in the office was waiting for the busy lawyer)

2Cognate-Congruent: El atareado abogado que tú atendiste en el despacho estaba esperando al exigente cliente (The busy lawyer you saw in the office was waiting for the demanding client)

2Cognate-Incongruent: El abogado atareado que atendiste en el despacho estaba esperando al cliente exigente (The busy lawyer you saw in the office was waiting for the demanding client)

Sentence 37

1Cognate-Congruent: El hábil doctor que yo mantuve ocupado en urgencias está hablando con la joven enfermera (The skilled doctor that I kept busy in the emergency room is talking to the young nurse)

1Cognate-Incongruent: El doctor hábil que mantuve ocupado en urgencias está hablando con la enfermera joven (The skilled doctor that I kept busy in the emergency room is talking to the young nurse)

2Cognate-Congruent: La joven enfermera que yo mantuve ocupada en urgencias está hablando con el hábil doctor (The young nurse that I kept busy in the emergency room is talking to the skilled doctor)

2Cognate-Incongruent: La enfermera joven que mantuve ocupada en urgencias está hablando con el doctor hábil (The young nurse that I kept busy in the emergency room is talking to the skilled doctor)

Sentence 38

1Cognate-Congruent: El esperado eclipse que ellos vaticinaron estaba relacionado con la mala cosecha (The expected eclipse they predicted was related to the bad crop)

1Cognate-Incongruent: El eclipse esperado que vaticinaron estaba relacionado con la cosecha mala (The expected eclipse they predicted was related to the bad crop)

2Cognate-Congruent: La mala cosecha que ellos vaticinaron estaba relacionada con el esperado eclipse (The bad crop they predicted was related to the expected eclipse)

2Cognate-Incongruent: La cosecha mala que vaticinaron estaba relacionada con el eclipse esperado (The bad crop they predicted was related to the expected eclipse)

Sentence 39

1Cognate-Congruent: El defectuoso motor que tú vas a sacar del taller está encima de la sucia manta (The faulty motor you are going to take out of the garage is over the dirty blanket)

1Cognate-Incongruent: El motor defectuoso que vas a sacar del taller está encima de la manta sucia (The faulty motor you are going to take out of the garage is over the dirty blanket)

2Cognate-Congruent: La sucia manta que tú vas a sacar del taller está encima del defectuoso motor (The dirty blanket you are going to take out of the garage is over the faulty motor)

2Cognate-Incongruent: La manta sucia que vas a sacar del taller está encima del motor defectuoso (The dirty blanket you are going to take out of the garage is over the faulty motor)

Sentence 40

1Cognate-Congruent: La entrecortada línea que yo dibujé en el papel recorre el agradable paisaje (The dotted line I drew on the paper runs along the nice landscape) *1Cognate-*

Incongruent: La línea entrecortada que dibujé en el papel recorre el paisaje agradable
(The dotted line I drew on the paper runs along the nice landscape)

2Cognate-Congruent: El agradable paisaje que yo dibujé en el papel recorre la entrecortada línea (The nice landscape I drew on the paper runs along the dotted line)

2Cognate-Incongruent: El paisaje agradable que dibujé en el papel recorre la línea entrecortada (The nice landscape I drew on the paper runs along the dotted line)

Sentence 41

1Cognate-Congruent: La grasienta pizza que nosotros comimos en la azotea estaba mejor que el insulso pescado (The greasy pizza we ate on the terrace tasted better than the insipid fish)

1Cognate-Incongruent: La pizza grasienta que comimos en la azotea estaba mejor que el pescado insulso (The greasy pizza we ate on the terrace tasted better than the insipid fish)

2Cognate-Congruent: El insulso pescado que nosotros comimos en la azotea estaba mejor que la grasienta pizza (The insipid fish we ate on the terrace tasted better than the greasy pizza)

2Cognate-Incongruent: El pescado insulso que comimos en la azotea estaba mejor que la pizza grasienta (The insipid fish we ate on the terrace tasted better than the greasy pizza)

Sentence 42

1Cognate-Congruent: La seca palmera que nosotros cortamos en la playa cayó sobre un frondoso árbol (The dry palm tree we cut-down at the beach fell over a leafy tree)

1Cognate-Incongruent: La palmera seca que cortamos en la playa cayó sobre un árbol frondoso (The dry palm tree we cut-down at the beach fell over a leafy tree)

2Cognate-Congruent: El frondoso árbol que nosotros cortamos en la playa cayó sobre una seca palmera (The leafy tree we cut-down at the beach fell over a dry palm tree)

2Cognate-Incongruent: El árbol frondoso que cortamos en la playa cayó sobre una palmera seca (The leafy tree we cut-down at the beach fell over a dry palm tree)

Sentence 43

1Cognate-Congruent: El falso dólar que nosotros entregamos en el juicio es una irrefutable prueba (The counterfeit dollar we handed in in the trial is an undisputable evidence)

1Cognate-Incongruent: El dólar falso que entregamos en el juicio es una prueba irrefutable (The counterfeit dollar we handed in in the trial is an undisputable evidence)

2Cognate-Congruent: La irrefutable prueba que nosotros entregamos en el juicio es un falso dólar (The undisputable evidence we handed in the trial is a counterfeit dollar)

2Cognate-Incongruent: La prueba irrefutable que entregamos en el juicio es un dólar falso (The undisputable evidence we handed in in the trial is a counterfeit dollar)

Sentence 44

1Cognate-Congruent: El inesperado acto que tú realizaste para salvar a tu padre fue una buena obra (The unexpected act you committed to save your father was a good deed)

1Cognate-Incongruent: El acto inesperado que realizaste para salvar a tu padre fue una obra buena (The unexpected act you committed to save your father was a good deed)

2Cognate-Congruent: La buena obra que tú realizaste para salvar a tu padre fue un inesperado acto (The good deed you committed to save your father was a unexpected act)

2Cognate-Incongruent: La obra buena que realizaste para salvar a tu padre fue un acto inesperado (The good deed you committed to save your father was a unexpected act)

Sentence 45

1Cognate-Congruent: La cotizada radio que tú empeñaste el lunes fue intercambiada por un lujoso anillo (The sought-after radio that you pawned last Monday was traded for a luxurious ring)

1Cognate-Incongruent: La radio cotizada que empeñaste el lunes fue intercambiada por un anillo lujoso (The sought-after radio that you pawned last Monday was traded for a luxurious ring)

2Cognate-Congruent: El lujoso anillo que tú empeñaste el lunes fue intercambiado por una cotizada radio (The luxurious ring that you pawned last Monday was traded for a sought-after radio)

2Cognate-Incongruent: El anillo lujoso que empeñaste el lunes fue intercambiado por una radio cotizada (The luxurious ring that you pawned last Monday was traded for a sought-after radio)

Sentence 46

1Cognate-Congruent: La suave música que ellos podían oír desde la azotea ahogaba el molesto llanto (The soft music they could hear from the rooftop was drowning out the annoying crying)

1Cognate-Incongruent: La música suave que podían oír desde la azotea ahogaba el llanto molesto (The soft music they could hear from the rooftop was drowning out the annoying crying)

2Cognate-Congruent: El molesto llanto que ellos podían oír desde la azotea ahogaba la suave música (The annoying crying they could hear from the rooftop was drowning out the soft music)

2Cognate-Incongruent: El llanto molesto que podían oír desde la azotea ahogaba la música suave (The annoying crying they could hear from the rooftop was drowning out the soft music)

Sentence 47

1Cognate-Congruent: El engañoso mapa que ellas escondieron en el desván era una desconocida pista (The deceptive map they hid in the attic was an unknown clue)

1Cognate-Incongruent: El mapa engañoso que escondieron en el desván era una pista desconocida (The deceptive map they hid in the attic was an unknown clue)

2Cognate-Congruent: La desconocida pista que ellas escondieron en el desván era un engañoso mapa (The unknown clue they hid in the attic was a deceptive map)

2Cognate-Incongruent: La pista desconocida que escondieron en el desván era un mapa engañoso (The unknown clue they hid in the attic was a deceptive map)

Sentence 48

1Cognate-Congruent: La diminuta cámara que yo lancé detrás de los arbustos quedó lejos del marrón maletín (The tiny camera I threw behind the bushes landed far from the brown briefcase)

1Cognate-Incongruent: La cámara diminuta que lancé detrás de los arbustos quedó lejos del maletín marrón (The tiny camera I threw behind the bushes landed far from the brown briefcase)

2Cognate-Congruent: El marrón maletín que yo lancé detrás de los arbustos quedó lejos de la diminuta cámara (The brown briefcase I threw behind the bushes landed far from the tiny camera)

2Cognate-Incongruent: El maletín marrón que lancé detrás de los arbustos quedó lejos de la cámara diminuta (The brown briefcase I threw behind the bushes landed far from the tiny camera)

Sentence 49

1Cognate-Congruent: El descarrilado tren que ellos arreglaron cerca de aquel pueblo se había separado del descomunal vagón (The derailed train they repaired near that town got detached from the massive carriage)

1Cognate-Incongruent: El tren descarrilado que arreglaron cerca de aquel pueblo se había separado del vagón descomunal (The derailed train they repaired near that town got detached from the massive carriage)

2Cognate-Congruent: El descomunal vagón que ellos arreglaron cerca de aquel pueblo se había separado del descarrilado tren (The massive carriage they repaired near that town got detached from the derailed train)

2Cognate-Incongruent: El vagón descomunal que arreglaron cerca de aquel pueblo se había separado del tren descarrilado (The massive carriage they repaired near that town got detached from the derailed train)

Sentence 50

1Cognate-Congruent: El renombrado inspector que yo llamé hace unas horas conoce a un poderoso juez (The renowned inspector I called a few hours ago knows a powerful judge)

1Cognate-Incongruent: El inspector renombrado que llamé hace unas horas conoce a un juez poderoso (The renowned inspector I called a few hours ago knows a powerful judge)

2Cognate-Congruent: El poderoso juez que yo llamé hace unas horas conoce a un renombrado inspector (The powerful judge I called a few hours ago knows a renowned inspector)

2Cognate-Incongruent: El juez poderoso que llamé hace unas horas conoce a un inspector renombrado (The powerful judge I called a few hours ago knows a renowned inspector)

Sentence 51

1Cognate-Congruent: El codiciado calendario que vosotros descubristeis en el foso yacía sobre las deslumbrantes joyas (The coveted calendar you discovered in the pit was lying over the dazzling jewels)

1Cognate-Incongruent: El calendario codiciado que descubristeis en el foso yacía sobre las joyas deslumbrantes (The coveted calendar you discovered in the pit was lying over the dazzling jewels)

2Cognate-Congruent: Las deslumbrantes joyas que vosotros descubristeis en el foso yacían sobre el codiciado calendario (The dazzling jewels you discovered in the pit were lying over the coveted calendar)

2Cognate-Incongruent: Las joyas deslumbrantes que descubristeis en el foso yacían sobre el calendario codiciado (The dazzling jewels you discovered in the pit were lying over the coveted calendar)

Sentence 52

1Cognate-Congruent: El inagotable camello que ellas montaron durante el viaje se mantenía alejado del sediento caballo (The tireless camel they mounted during the trip was staying away from the thirsty horse)

1Cognate-Incongruent: El camello inagotable que montaron durante el viaje se mantenía alejado del caballo sediento (The tireless camel they mounted during the trip was staying away from the thirsty horse)

2Cognate-Congruent: El sediento caballo que ellas montaron durante el viaje se mantenía alejado del inagotable camello (The thirsty horse they mounted during the trip was staying away from the tireless camel)

2Cognate-Incongruent: El caballo sediento que montaron durante el viaje se mantenía alejado del camello inagotable (The thirsty horse they mounted during the trip was staying away from the tireless camel)

Sentence 53

1Cognate-Congruent: El asustado delfín que ellas vieron desde la orilla estaba nadando alrededor de la incansable ballena (The scared dolphin they saw from the shore was swimming around the tireless whale)

1Cognate-Incongruent: El delfín asustado que vieron desde la orilla estaba nadando alrededor de la ballena incansable (The scared dolphin they saw from the shore was swimming around the tireless whale)

2Cognate-Congruent: La incansable ballena que ellas vieron desde la orilla estaba nadando alrededor del asustado delfín (The tireless whale they saw from the shore was swimming around the scared dolphin)

2Cognate-Incongruent: La ballena incansable que vieron desde la orilla estaba nadando alrededor del delfín asustado (The tireless whale they saw from the shore was swimming around the scared dolphin)

Sentence 54

1Cognate-Congruent: La tesis impactante que expondrán en marzo se apoya en un hallazgo exitoso (The impressive thesis they are going to exhibit in March is based on a successful discovery)

1Cognate-Incongruent: La tesis impactante que expondrán en marzo se apoya en un hallazgo exitoso (The impressive thesis they are going to exhibit in March is based on a successful discovery)

2Cognate-Congruent: El exitoso hallazgo que ellos expondrán en marzo se apoya en una impactante tesis (The successful discovery they are going to exhibit in March is based on an impressive thesis)

2Cognate-Incongruent: El hallazgo exitoso que expondrán en marzo se apoya en una tesis impactante (The successful discovery they are going to exhibit in March is based on an impressive thesis)

Sentence 55

1Cognate-Congruent: El jugoso contrato que vosotros le estáis planteando a la empresa supone unos valiosos ingresos (The profitable contract you are proposing to the company means substantial revenues)

1Cognate-Incongruent: El contrato jugoso que le estáis planteando a la empresa supone unos ingresos valiosos (The profitable contract you are proposing to the company means substantial revenues)

2Cognate-Congruent: Los valiosos ingresos que vosotros le estáis planteando a la empresa suponen un jugoso contrato (The substantial revenues you are proposing to the company mean a profitable contract)

2Cognate-Incongruent: Los ingresos valiosos que le estáis planteando a la empresa suponen un contrato jugoso (The substantial revenues you are proposing to the company mean a profitable contract)

Sentence 56

1Cognate-Congruent: La imbatible legión que ellos avistaron en el bosque había encontrado al mermado ejército (The unbeatable legion they saw in the forest had found the diminished army)

1Cognate-Incongruent: La legión imbatible que avistaron en el bosque había encontrado al ejército mermado (The unbeatable legion they saw in the forest had found the diminished army)

2Cognate-Congruent: El mermado ejército que ellos avistaron en el bosque había encontrado a la imbatible legión (The diminished army they saw in the forest had found the unbeatable legion)

2Cognate-Incongruent: El ejército mermado que avistaron en el bosque había encontrado a la legión imbatible (The diminished army they saw in the forest had found the unbeatable legion)

Sentence 57

1Cognate-Congruent: La deteriorada máquina que ellas empujaron hasta mi cochera solía ser un rentable aparato (The damaged machine they pushed to my garage used to be a profitable device)

1Cognate-Incongruent: La máquina deteriorada que empujaron hasta mi cochera solía ser un aparato rentable (The damaged machine they pushed to my garage used to be a profitable device)

2Cognate-Congruent: El rentable aparato que ellas empujaron hasta mi cochera solía ser una deteriorada máquina (The profitable device they pushed to my garage used to be a damaged machine)

2Cognate-Incongruent: El aparato rentable que empujaron hasta mi cochera solía ser una máquina deteriorada (The profitable device they pushed to my garage used to be a damaged machine)

Sentence 58

1Cognate-Congruent: El escabroso patio en el que vosotros entraréis esta noche da a la tenebrosa senda (The steep patio you are going to enter tonight faces onto the dark path)

1Cognate-Incongruent: El patio escabroso en el que entraréis esta noche da a la senda tenebrosa (The steep patio you are going to enter tonight faces onto the dark path)

2Cognate-Congruent: La tenebrosa senda en la que vosotros entraréis esta noche da al escabroso patio (The dark path you are going to enter tonight faces onto the steep patio)

2Cognate-Incongruent: La senda tenebrosa en la que entraréis esta noche da al patio escabroso (The dark path you are going to enter tonight faces onto the steep patio)

Sentence 59

1Cognate-Congruent: El alargado insecto que yo atrapé ayer en mi cuarto era un ruidoso grillo (The elongated insect I caught in my room yesterday was a noisy cricket)

1Cognate-Incongruent: El insecto alargado que atrapé ayer en mi cuarto era un grillo ruidoso (The elongated insect I caught in my room yesterday was a noisy cricket)

2Cognate-Congruent: El ruidoso grillo que yo atrapé ayer en mi cuarto era un alargado insecto (The noisy cricket I caught in my room yesterday was an elongated insect)

2Cognate-Incongruent: El grillo ruidoso que atrapé ayer en mi cuarto era un insecto alargado (The noisy cricket I caught in my room yesterday was an elongated insect)

Sentence 60

1Cognate-Congruent: La larga canoa que vosotros recuperasteis del estanque estaba amarrada a la oxidada ancla (The long canoe you recovered from the pond was tied to the rusty anchor)

1Cognate-Incongruent: La canoa larga que recuperasteis del estanque estaba amarrada al ancla oxidada (The long canoe you recovered from the pond was tied to the rusty anchor)

2Cognate-Congruent: La oxidada ancla que vosotros recuperasteis del estanque estaba amarrada a la larga canoa (The rusty anchor you recovered from the pond was tied to the long canoe)

2Cognate-Incongruent: El ancla oxidada que recuperasteis del estanque estaba amarrada a la canoa larga (The rusty anchor you recovered from the pond was tied to the long canoe)

Sentence 61

1Cognate-Congruent: La rápida ambulancia que ellos intentaron detener a media noche adelantó a una pesada grúa (The fast ambulance they tried to stop at midnight overtook a heavy tow truck)

1Cognate-Incongruent: La ambulancia rápida que intentaron detener a media noche adelantó a una grúa pesada (The fast ambulance they tried to stop at midnight overtook a heavy tow truck)

2Cognate-Congruent: La pesada grúa que ellos intentaron detener a media noche adelantó a una rápida ambulancia (The heavy tow truck they tried to stop at midnight overtook a fast ambulance)

2Cognate-Incongruent: La grúa pesada que intentaron detener a media noche adelantó a una ambulancia rápida (The heavy tow truck they tried to stop at midnight overtook a fast ambulance)

Sentence 62

1Cognate-Congruent: El encolerizado gigante que ellos encontraron en el bosque buscaba a la malvada bruja (The furious giant they came across with in the forest was looking for the evil witch)

1Cognate-Incongruent: El gigante encolerizado que encontraron en el bosque buscaba a la bruja malvada (The furious giant they came across with in the forest was looking for the evil witch)

2Cognate-Congruent: La malvada bruja que ellos encontraron en el bosque buscaba al encolerizado gigante (The evil witch they came across with in the forest was looking for the furious giant)

2Cognate-Incongruent: La bruja malvada que encontraron en el bosque buscaba al gigante encolerizado (The evil witch they came across with in the forest was looking for the furious giant)

Sentence 63

1Cognate-Congruent: El amistoso contacto que nosotros logramos con esa aldea impulsó un provechoso acuerdo (The friendly contact we established with that village fostered a beneficial agreement)

1Cognate-Incongruent: El contacto amistoso que logramos con esa aldea impulsó un acuerdo provechoso (The friendly contact we established with that village fostered a beneficial agreement)

2Cognate-Congruent: El provechoso acuerdo que nosotros logramos con esa aldea impulsó un amistoso contacto (The beneficial agreement we established with that village fostered a friendly contact)

2Cognate-Incongruent: El acuerdo provechoso que logramos con esa aldea impulsó un contacto amistoso (The beneficial agreement we established with that village fostered a friendly contact)

Sentence 64

1Cognate-Congruent: El enfadado turista que yo intenté tranquilizar cerca de la muralla discutió con el alterado vigilante (The angry tourist I tried to calm down near the walls argued with the upset guard)

1Cognate-Incongruent: El turista enfadado que intenté tranquilizar cerca de la muralla discutió con el vigilante alterado (The angry tourist I tried to calm down near the walls argued with the upset guard)

2Cognate-Congruent: El alterado vigilante que yo intenté tranquilizar cerca de la muralla discutió con el enfadado turista (The upset guard I tried to calm down near the walls argued with the angry tourist)

2Cognate-Incongruent: El vigilante alterado que intenté tranquilizar cerca de la muralla discutió con el turista enfadado (The upset guard I tried to calm down near the walls argued with the angry tourist)

Sentence 65

1Cognate-Congruent: El agridulce cóctel que yo probé en la cena se repartió después del sabroso entremés (The sweet-and-sour cocktail I tried at dinner was served after the tasty appetizer)

1Cognate-Incongruent: El cóctel agridulce que probé en la cena se repartió después del entremés sabroso (The sweet-and-sour cocktail I tried at dinner was served after the tasty appetizer)

2Cognate-Congruent: El sabroso entremés que yo probé en la cena se repartió después del agri dulce cóctel (The tasty appetizer I tried at dinner was served after the sweet-and-sour cocktail)

2Cognate-Incongruent: El entremés sabroso que probé en la cena se repartió después del cóctel agri dulce (The tasty appetizer I tried at dinner was served after the sweet-and-sour cocktail)

Sentence 66

1Cognate-Congruent: El candente metal que tú metiste en el fuego fue convertido en una temible espada (The red hot metal you put in the fire was turned into a fearsome sword)

1Cognate-Incongruent: El metal candente que metiste en el fuego fue convertido en una espada temible (The red hot metal you put in the fire was turned into a fearsome sword)

2Cognate-Congruent: La temible espada que tú metiste en el fuego fue convertida en un candente metal (The fearsome sword you put in the fire was turned into a red hot metal)

2Cognate-Incongruent: La espada temible que metiste en el fuego fue convertida en un metal candente (The fearsome sword you put in the fire was turned into a red hot metal)

Sentence 67

1Cognate-Congruent: El divertido guía que tú mandarás a la piscina regresará con los escandalosos invitados (The funny guide you are sending to the pool is coming back with the noisy guests)

1Cognate-Incongruent: El guía divertido que mandarás a la piscina regresará con los invitados escandalosos (The funny guide you are sending to the pool is coming back with the noisy guests)

2Cognate-Congruent: Los escandalosos invitados que tú mandarás a la piscina regresarán con el divertido guía (The noisy guests you are sending to the pool are coming back with the funny guide)

2Cognate-Incongruent: Los invitados escandalosos que mandarás a la piscina regresarán con el guía divertido (The noisy guests you are sending to the pool are coming back with the funny guide)

Sentence 68

1Cognate-Congruent: El enorme pelícano que nosotros ahuyentábamos de nuestra pesca estaba volando con las insistentes gaviotas (The huge pelican we were frightening away from our catch was flying along with the persistent seagulls)

1Cognate-Incongruent: El pelícano enorme que ahuyentábamos de nuestra pesca estaba volando con las gaviotas insistentes (The huge pelican we were frightening away from our catch was flying along with the persistent seagulls)

2Cognate-Congruent: Las insistentes gaviotas que nosotros ahuyentamos de nuestra pesca estaban volando con el enorme pelícano (The persistent seagulls we were frightening away from our catch were flying along with the huge pelican)

2Cognate-Incongruent: Las gaviotas insistentes que ahuyentábamos de nuestra pesca estaban volando con el pelícano enorme (The persistent seagulls we were frightening away from our catch were flying along with the huge pelican)

Sentence 69

1Cognate-Congruent: El atemorizado nativo que yo guié hasta la choza atrapó al implacable cazador (The frightened native I led to the hut caught the relentless hunter)

1Cognate-Incongruent: El nativo atemorizado que guié hasta la choza atrapó al cazador implacable (The frightened native I led to the hut caught the relentless hunter)

2Cognate-Congruent: El implacable cazador que yo guié hasta la choza atrapó al atemorizado nativo (The relentless hunter I led to the hut caught the frightened native)

2Cognate-Incongruent: El cazador implacable que guié hasta la choza atrapó al nativo atemorizado (The relentless hunter I led to the hut caught the frightened native)

Sentence 70

1Cognate-Congruent: El exquisito paté que tú ofreciste en tu cumpleaños sabía bien con las crujientes galletas (The delicious paté you offered in your birthday party tasted good with the crunchy crackers)

1Cognate-Incongruent: El paté exquisito que ofreciste en tu cumpleaños sabía bien con las galletas crujientes (The delicious paté you offered in your birthday party tasted good with the crunchy crackers)

2Cognate-Congruent: Las crujientes galletas que tú ofreciste en tu cumpleaños sabían bien con el exquisito paté (The crunchy crackers you offered in your birthday party tasted good with the delicious paté)

2Cognate-Incongruent: Las galletas crujientes que ofreciste en tu cumpleaños sabían bien con el paté exquisito (The crunchy crackers you offered in your birthday party tasted good with the delicious paté)

Sentence 71

1Cognate-Congruent: La emocionante aventura que ellas comenzaron hace cuatro años fue un agotador viaje (The exciting adventure they began four years ago was an exhausting journey)

1Cognate-Incongruent: La aventura emocionante que comenzaron hace cuatro años fue un viaje agotador (The exciting adventure they began four years ago was an exhausting journey)

2Cognate-Congruent: El agotador viaje que ellas comenzaron hace cuatro años fue una emocionante aventura (The exhausting journey they began four years ago was an exciting adventure)

2Cognate-Incongruent: El viaje agotador que comenzaron hace cuatro años fue una aventura emocionante (The exhausting journey they began four years ago was an exciting adventure)

Sentence 72

1Cognate-Congruent: El estupendo hospital que nosotros subvencionaremos estas navidades será convertido en un maravilloso colegio (The great hospital we are subsidizing this Christmas is going to be turned into a marvelous school)

1Cognate-Incongruent: El hospital estupendo que subvencionaremos estas navidades será convertido en un colegio maravilloso (The great hospital we are subsidizing this Christmas is going to be turned into a marvelous school)

2Cognate-Congruent: El maravilloso colegio que nosotros subvencionaremos estas navidades será convertido en un estupendo hospital (The marvelous school we are subsidizing this Christmas is going to be turned into a great hospital)

2Cognate-Incongruent: El colegio maravilloso que subvencionaremos estas navidades será convertido en un hospital estupendo (The marvelous school we are subsidizing this Christmas is going to be turned into a great hospital)

Sentence 73

1Cognate-Congruent: El feliz atleta que ellos abrazaban corrió a través de la pista hacia el orgulloso abuelo (The happy athlete they were hugging ran across the track towards the proud grandfather)

1Cognate-Incongruent: El atleta feliz que abrazaban corrió a través de la pista hacia el abuelo orgulloso (The happy athlete they were hugging ran across the track towards the proud grandfather)

2Cognate-Congruent: El orgulloso abuelo que ellos abrazaban corrió a través de la pista hacia el feliz atleta (The proud grandfather they were hugging ran across the track towards the happy athlete)

2Cognate-Incongruent: El abuelo orgulloso que abrazaban corrió a través de la pista hacia el atleta feliz (The proud grandfather they were hugging ran across the track towards the happy athlete)

Sentence 74

1Cognate-Congruent: El pesado barril que ellos retiraron de la salida fue almacenado junto con la inservible cafetera (The heavy barrel they took away from the exit was stored along with the useless coffeemaker)

1Cognate-Incongruent: El barril pesado que retiraron de la salida fue almacenado junto con la cafetera inservible (The heavy barrel they took away from the exit was stored along with the useless coffeemaker)

2Cognate-Congruent: La inservible cafetera que ellos retiraron de la salida fue almacenada junto con el pesado barril (The useless coffeemaker they took away from the exit was stored along with the heavy barrel)

2Cognate-Incongruent: La cafetera inservible que retiraron de la salida fue almacenada junto con el barril pesado (The useless coffeemaker they took away from the exit was stored along with the heavy barrel)

Sentence 75

1Cognate-Congruent: El plateado compás que yo utilizaré para mi dibujo vino con un afilado lápiz (The silver compass I'm going to use for my drawing came along with a sharpened pencil)

1Cognate-Incongruent: El compás plateado que utilizaré para mi dibujo vino con un lápiz afilado (The silver compass I'm going to use for my drawing came along with a sharpened pencil)

2Cognate-Congruent: El afilado lápiz que yo utilizaré para mi dibujo vino con un plateado compás (The sharpened pencil I'm going to use for my drawing came along with a silver compass)

2Cognate-Incongruent: El lápiz afilado que utilizaré para mi dibujo vino con un compás plateado (The sharpened pencil I'm going to use for my drawing came along with a silver compass)

Sentence 76

1Cognate-Congruent: El acalambrado músculo que yo estiré durante el calentamiento me provocaba dolor en el lastimado brazo (The cramped muscle I stretched while warming-up caused me pain in the sore arm)

1Cognate-Incongruent: El músculo acalambrado que estiré durante el calentamiento me provocaba dolor en el brazo lastimado (The cramped muscle I stretched while warming-up caused me pain in the sore arm)

2Cognate-Congruent: El lastimado brazo que yo estiré durante el calentamiento me provocaba dolor en el acalambrado músculo (The sore arm I stretched while warming-up caused me pain in the cramped muscle)

2Cognate-Incongruent: El brazo lastimado que estiré durante el calentamiento me provocaba dolor en el músculo acalambrado (The sore arm I stretched while warming-up caused me pain in the cramped muscle)

Sentence 77

1Cognate-Congruent: La valerosa persona que ellos salvaron en el incendio quiso agradecerse al perseverante bombero (The brave person they saved from the fire wanted to thank the persistent fireman)

1Cognate-Incongruent: La persona valerosa que salvaron en el incendio quiso agradecerse al bombero perseverante (The brave person they saved from the fire wanted to thank the persistent fireman)

2Cognate-Congruent: El perseverante bombero que ellos salvaron en el incendio quiso agradecerse a la valerosa persona (The persistent fireman they saved from the fire wanted to thank the brave person)

2Cognate-Incongruent: El bombero perseverante que salvaron en el incendio quiso agradecerse a la persona valerosa (The persistent fireman they saved from the fire wanted to thank the brave person)

Sentence 78

1Cognate-Congruent: El tempestuoso océano que ellos surcaban no se podía equiparar con el caudaloso río (The stormy ocean they were sailing couldn't be compared with the large river)

1Cognate-Incongruent: El océano tempestuoso que surcaban no se podía equiparar con el río caudaloso (The stormy ocean they were sailing couldn't be compared with the large river)

2Cognate-Congruent: El caudaloso río que ellos surcaban no se podía equiparar con el tempestuoso océano (The large river they were sailing couldn't be compared with the stormy ocean)

2Cognate-Incongruent: El río caudaloso que surcaban no se podía equiparar con el océano tempestuoso (The large river they were sailing couldn't be compared with the stormy ocean)

Sentence 79

1Cognate-Congruent: La sangrienta batalla que yo presencié en la colina fue mucho más que un vergonzoso suceso (The bloody battle I witnessed in the hill was much more than just a shameful event)

1Cognate-Incongruent: La batalla sangrienta que presencié en la colina fue mucho más que un suceso vergonzoso (The bloody battle I witnessed in the hill was much more than just a shameful event)

2Cognate-Congruent: El vergonzoso suceso que yo presencié en la colina fue mucho más que una sangrienta batalla (The shameful event I witnessed in the hill was much more than just a bloody battle)

2Cognate-Incongruent: El suceso vergonzoso que presencié en la colina fue mucho más que una batalla sangrienta (The shameful event I witnessed in the hill was much more than just a bloody battle)

Sentence 80

1Cognate-Congruent: La reluciente medalla que tú recibiste después de la carrera es un merecido galardón (The shiny medal you got after the race is a well deserved prize)

1Cognate-Incongruent: La medalla reluciente que recibiste después de la carrera es un galardón merecido (The shiny medal you got after the race is a well deserved prize)

2Cognate-Congruent: El merecido galardón que tú recibiste después de la carrera es una reluciente medalla (The well deserved prize you got after the race is a shiny medal)

2Cognate-Incongruent: El galardón merecido que recibiste después de la carrera es una medalla reluciente (The well deserved prize you got after the race is a shiny medal)

Sentence 81

1Cognate-Congruent: La asombrosa imagen que ellos enviaron desde la furgoneta concuerda con el minucioso informe (The amazing image they sent from the van agrees with the detailed report)

1Cognate-Incongruent: La imagen asombrosa que enviaron desde la furgoneta concuerda con el informe minucioso (The amazing image they sent from the van agrees with the detailed report)

2Cognate-Congruent: El minucioso informe que ellos enviaron desde la furgoneta concuerda con la asombrosa imagen (The detailed report they sent from the van agrees with the amazing image)

2Cognate-Incongruent: El informe minucioso que enviaron desde la furgoneta concuerda con la imagen asombrosa (The detailed report they sent from the van agrees with the amazing image)

Sentence 82

1Cognate-Congruent: El rico yogur que nosotros anunciamos en el periódico tuvo más éxito que la apetitosa empanada (The tasty yogurt we advertised in the newspaper was more successful than the mouthwatering pie)

1Cognate-Incongruent: El yogur rico que anunciamos en el periódico tuvo más éxito que la empanada apetitosa (The tasty yogurt we advertised in the newspaper was more successful than the mouthwatering pie)

2Cognate-Congruent: La apetitosa empanada que nosotros anunciamos en el periódico tuvo más éxito que el rico yogur (The mouthwatering pie we advertised in the newspaper was more successful than the tasty yogurt)

2Cognate-Incongruent: La empanada apetitosa que anunciamos en el periódico tuvo más éxito que el yogur rico (The mouthwatering pie we advertised in the newspaper was more successful than the tasty yogurt)

Sentence 83

1Cognate-Congruent: El gris teléfono que tú tenías en el escritorio estaba al lado del caro teclado (The gray telephone you had on your desk was next to the expensive keyboard)

1Cognate-Incongruent: El teléfono gris que tenías en el escritorio estaba al lado del teclado caro (The gray telephone you had on your desk was next to the expensive keyboard)

2Cognate-Congruent: El caro teclado que tú tenías en el escritorio estaba al lado del gris teléfono (The expensive keyboard you had on your desk was next to the gray telephone)

2Cognate-Incongruent: El teclado caro que tenías en el escritorio estaba al lado del teléfono gris (The expensive keyboard you had on your desk was next to the gray telephone)

Sentence 84

1Cognate-Congruent: El inquietante diálogo que yo escribí para los personajes fue seguido de una fuerte discusión (The disturbing dialogue I wrote for the characters was followed by a heated argument)

1Cognate-Incongruent: El diálogo inquietante que escribí para los personajes fue seguido de una discusión fuerte (The disturbing dialogue I wrote for the characters was followed by a heated argument)

2Cognate-Congruent: La fuerte discusión que yo escribí para los personajes fue seguida de un inquietante diálogo (The heated argument I wrote for the characters was followed by a disturbing dialogue)

2Cognate-Incongruent: La discusión fuerte que escribí para los personajes fue seguida de un diálogo inquietante (The heated argument I wrote for the characters was followed by a disturbing dialogue)

Sentence 85

1Cognate-Congruent: El riguroso vegetariano que yo convidé a almorzar reprendió al quisquilloso cocinero (The strict vegetarian I invited to lunch scolded the fussy cook)

1Cognate-Incongruent: El vegetariano riguroso que convidé a almorzar reprendió al cocinero quisquilloso (The strict vegetarian I invited to lunch scolded the fussy cook)

2Cognate-Congruent: El quisquilloso cocinero que yo convidé a almorzar reprendió al riguroso vegetariano (The fussy cook I invited to lunch scolded the strict vegetarian)

2Cognate-Incongruent: El cocinero quisquilloso que convidé a almorzar reprendió al vegetariano riguroso (The fussy cook I invited to lunch scolded the strict vegetarian)

Sentence 86

1Cognate-Congruent: La calurosa audiencia que nosotros entrevistamos después de la función elogió al emocionado cantante (The warm audience we interviewed after the performance praised the excited singer)

1Cognate-Incongruent: La audiencia calurosa que entrevistamos después de la función elogió al cantante emocionado (The warm audience we interviewed after the performance praised the excited singer)

2Cognate-Congruent: El emocionado cantante que nosotros entrevistamos después de la función elogió a la calurosa audiencia (The excited singer we interviewed after the performance praised the warm audience)

2Cognate-Incongruent: El cantante emocionado que entrevistamos después de la función elogió a la audiencia calurosa (The excited singer we interviewed after the performance praised the warm audience)

Sentence 87

1Cognate-Congruent: La escasa pensión que ellos van a enviarte el próximo mes es una ínfima ayuda (The limited pension they are sending you next month is a very poor aid)

1Cognate-Incongruent: La pensión escasa que van a enviarte el próximo mes es una ayuda ínfima (The limited pension they are sending you next month is a very poor aid)

2Cognate-Congruent: La ínfima ayuda que ellos van a enviarte el próximo mes es una escasa pensión (The very poor aid they are sending you next month is a limited pension)

2Cognate-Incongruent: La ayuda ínfima que van a enviarte el próximo mes es una pensión escasa (The very poor aid they are sending you next month is a limited pension)

Sentence 88

1Cognate-Congruent: El honrado candidato que nosotros postulamos para el cargo quería conocer al destacado alcalde (The honest candidate we nominated for the position wanted to meet the distinguished mayor)

1Cognate-Incongruent: El candidato honrado que postulamos para el cargo quería conocer al alcalde destacado (The honest candidate we nominated for the position wanted to meet the distinguished mayor)

2Cognate-Congruent: El destacado alcalde que nosotros postulamos para el cargo quería conocer al honrado candidato (The distinguished mayor we nominated for the position wanted to meet the honest candidate)

2Cognate-Incongruent: El alcalde destacado que postulamos para el cargo quería conocer al candidato honrado (The distinguished mayor we nominated for the position wanted to meet the honest candidate)

Sentence 89

1Cognate-Congruent: El averiado vehículo que nosotros estábamos estacionando en una esquina fue impactado por un lujoso coche (The broken down vehicle we were parking on a corner was hit by a luxury car)

1Cognate-Incongruent: El vehículo averiado que estábamos estacionando en una esquina fue impactado por un coche lujoso (The broken down vehicle we were parking on a corner was hit by a luxury car)

2Cognate-Congruent: El lujoso coche que nosotros estábamos estacionando en una esquina fue impactado por un averiado vehículo (The luxury car we were parking on a corner was hit by a broken down vehicle)

2Cognate-Incongruent: El coche lujoso que estábamos estacionando en una esquina fue impactado por un vehículo averiado (The luxury car we were parking on a corner was hit by a broken down vehicle)

Sentence 90

1Cognate-Congruent: La sencilla danza que tú ensayaste con los chicos tuvo lugar después de la corta obra (The simple dance you practiced with the guys took place after the short play)

1Cognate-Incongruent: La danza sencilla que ensayaste con los chicos tuvo lugar después de la obra corta (The simple dance you practiced with the guys took place after the short play)

2Cognate-Congruent: La corta obra que tú ensayaste con los chicos tuvo lugar después de la sencilla danza (The short play you practiced with the guys took place after the simple dance)

2Cognate-Incongruent: La obra corta que ensayaste con los chicos tuvo lugar después de la danza sencilla (The short play you practiced with the guys took place after the simple dance)

Sentence 91

1Cognate-Congruent: El acalorado debate que nosotros tuvimos en el aula comenzó como un feo malentendido (The heated debate we had in the classroom started as a huge misunderstanding)

1Cognate-Incongruent: El debate acalorado que tuvimos en el aula comenzó como un malentendido feo (The heated debate we had in the classroom started as a huge misunderstanding)

2Cognate-Congruent: El feo malentendido que nosotros tuvimos en el aula comenzó como un acalorado debate (The huge misunderstanding we had in the classroom started as a heated debate)

2Cognate-Incongruent: El malentendido feo que tuvimos en el aula comenzó como un debate acalorado (The huge misunderstanding we had in the classroom started as a heated debate)

Sentence 92

1Cognate-Congruent: La pudiente familia que nosotros oímos quejarse en la iglesia estaba esperando al cansado cura (The wealthy family we heard complaining in the church was waiting for the tired priest)

1Cognate-Incongruent: La familia pudiente que oímos quejarse en la iglesia estaba esperando al cura cansado (The wealthy family we heard complaining in the church was waiting for the tired priest)

2Cognate-Congruent: El cansado cura que nosotros oímos quejarse en la iglesia estaba esperando a la pudiente familia (The tired priest we heard complaining in the church was waiting for the wealthy family)

2Cognate-Incongruent: El cura cansado que oímos quejarse en la iglesia estaba esperando a la familia pudiente (The tired priest we heard complaining in the church was waiting for the wealthy family)

Sentence 93

1Cognate-Congruent: El valiente héroe que tú amarraste en el tejado no sabía que eres un inofensivo ladrón (The brave hero you tied up on the roof didn't know you are a harmless thief)

1Cognate-Incongruent: El héroe valiente que amarraste en el tejado no sabía que eres un ladrón inofensivo (The brave hero you tied up on the roof didn't know you are a harmless thief)

2Cognate-Congruent: El inofensivo ladrón que tú amarraste en el tejado no sabía que eres un valiente héroe (The harmless thief you tied up on the roof didn't know you are a brave hero)

2Cognate-Incongruent: El ladrón inofensivo que amarraste en el tejado no sabía que eres un héroe valiente (The harmless thief you tied up on the roof didn't know you are a brave hero)

Sentence 94

1Cognate-Congruent: El breve texto que yo leí tiene el mismo argumento que el apasionante cuento (The short text I read has the same plot than the exciting story)

1Cognate-Incongruent: El texto breve que leí tiene el mismo argumento que el cuento apasionante (The short text I read has the same plot than the exciting story)

2Cognate-Congruent: El apasionante cuento que yo leí tiene el mismo argumento que el breve texto (The exciting story I read has the same plot than the short text)

2Cognate-Incongruent: El cuento apasionante que leí tiene el mismo argumento que el texto breve (The exciting story I read has the same plot than the short text)

Sentence 95

1Cognate-Congruent: El despiadado enemigo que nosotros acorralamos en el escondite fue ayudado por el temible malhechor (The ruthless enemy we cornered in the hideout was helped by the fearsome criminal)

1Cognate-Incongruent: El enemigo despiadado que acorralamos en el escondite fue ayudado por el malhechor temible (The ruthless enemy we cornered in the hideout was helped by the fearsome criminal)

2Cognate-Congruent: El temible malhechor que nosotros acorralamos en el escondite fue ayudado por el despiadado enemigo (The fearsome criminal we cornered in the hideout was helped by the ruthless enemy)

2Cognate-Incongruent: El malhechor temible que acorralamos en el escondite fue ayudado por el enemigo despiadado (The fearsome criminal we cornered in the hideout was helped by the ruthless enemy)

Sentence 96

1Cognate-Congruent: El amaestrado pingüino que nosotros alimentamos en el estanque fue más rápido que la hambrienta foca (The trained penguin we fed in the water tank was faster than the hungry seal)

1Cognate-Incongruent: El pingüino amaestrado que alimentamos en el estanque fue más rápido que la foca hambrienta (The trained penguin we fed in the water tank was faster than the hungry seal)

2Cognate-Congruent: La hambrienta foca que nosotros alimentamos en el estanque fue más rápida que el amaestrado pingüino (The hungry seal we fed in the water tank was faster than the trained penguin)

2Cognate-Incongruent: La foca hambrienta que alimentamos en el estanque fue más rápida que el pingüino amaestrado (The hungry seal we fed in the water tank was faster than the trained penguin)

Filler sentences

Sentence 97

El anciano sonriente que saludamos desde la otra acera estaba mirando el atardecer bello (The smiling elderly man we waved at from the other sidewalk was gazing at the beautiful sunset)

Sentence 98

El carnicero amigable que acogí en casa dijo que traerá unas chuletas ahumadas (The friendly butcher I took in said he would bring some smoked pork chops)

Sentence 99

La maestra alegre que felicité en la escuela adora su trabajo gratificante (The happy teacher I congratulated at school loves her rewarding job)

Sentence 100

El camarero alterado que llamamos desde la cabina se enfadó porque le hicimos una broma pesada (The upset waiter we called from the box got mad because we played him a sick joke)

Sentence 101

El pescador entusiasmado que sentaron a mi lado sabía una gran cantidad de relatos impresionantes (The excited fisherman they seated next to me knew many amazing stories)

Sentence 102

El ajedrecista cuidadoso que enfrenté en la partida no realizó ninguna jugada débil (The careful chess player I played against in the match didn't make any weak moves)

Sentence 103

El nadador triste que sancionaron por un año se perderá la carrera clasificatoria (The sad swimmer they suspended for a year is going to miss the qualifying race)

Sentence 104

El granjero extenuado que hicimos venir para ayudarnos estaba preparándole el desayuno a su hijo menor (The exhausted farmer we made come to help us was making breakfast for his youngest son)

Sentence 105

El jardinero desempleado que desperté muy temprano esta mañana está pensando en abrir un negocio propio (The unemployed gardener I woke up very early this morning is thinking about starting his own company)

Sentence 106

El vendedor afortunado que cambiaremos a otra tienda hará unas ventas excelentes (The lucky shop assistant we are going to transfer to another store will make some good sales)

Sentence 107

El árbitro novato que hemos animado desde la grada se levantó del suelo resbaladizo (The inexperienced referee we encouraged from the stands got up from the slippery floor)

Sentence 108

El hombre herido que acercamos a nuestro piso se encontraba en un estado lamentable (The wounded man we dropped at our flat was in bad shape)

Sentence 109

El marinero solitario que subimos al barco llevaba un abrigo aquella mañana fría (The lonely sailor we got on board was wearing a coat on that cold morning)

Sentence 110

El friegaplatos despistado que despedí hace unos días rompió mi taza preferida (The forgetful washer-up I fired a few days ago broke my favorite cup)

Sentence 111

La toalla mojada que se me quedó sobre la cama mojó la ropa limpia (The wet towel I left on the bed wet the clean clothes)

Sentence 112

La silla plegable que pusiste en la arena podría ser arrastrada por una ola imprevista (The folding chair you put in the sand could be dragged by an unexpected wave)

Sentence 113

El cenicero lleno que voy a vaciar es un regalo de mi hermana mayor (The overflowing ashtray I'm going to empty is a present from my oldest sister)

Sentence 114

El cuchillo embotado que tiré con rabia en el fregadero no cortaba la zanahoria cruda (The blunt knife I threw with anger in the kitchen sink wasn't cutting the raw carrot)

Sentence 115

La llave dorada que tienes en tu mano podría servir para entrar en la cochera precintada (The golden key you are holding in your hand could be used to get in the locked garage)

Sentence 116

El juego ameno que jugaron en el recreo no los dejó sentir el calor asfixiante (The entertaining game they played during the recess didn't let them feel the suffocating heat)

Sentence 117

El camionero gordo que auxiliamos en la autovía tenía una barba espesa (The fat truck driver we helped in the carriageway had a bushy beard)

Sentence 118

La caja liviana que subiremos al quinto piso está llena de camisas arrugadas (The light box we are going to take to the fifth floor is full of wrinkled shirts)

Sentence 119

El resplandor fuerte que grabamos en vivo provino de un relámpago repentino (The strong flash we recorded live came from a sudden bolt)

Sentence 120

El fusil descargado que saqué de una de las taquillas tenía el cargador vacío (The unloaded rifle I took from one of the racks had an empty magazine)

Sentence 121

El frío insoportable que pasé este invierno casi congeló el lago grande (The unbearably cold I felt last winter almost froze the big lake)

Sentence 122

El agua sucia que bebí proviene de aquel río con el fondo fangoso (The dirty water I drank comes from that river with the muddy bottom)

Sentence 123

El balón desinflado que voy a bajar del tejado pertenece a mi vecino travieso (The flat ball I'm going to get from the roof belongs to my naughty neighbor)

Sentence 124

El pantalón verde que te pondrás para la reunión es de una tela fina (The green trousers you are going to wear for the meeting are made from a light fabric)

Sentence 125

El vaso azul que llené de agua se me cayó mientras subía al coche alquilado (The blue glass I filled with water slipped from my hand while I was getting in the rented car)

Sentence 126

El calcetín rosa que vas a lavar con las sábanas tiene un agujero grande (The pink sock you are going to wash with the blankets has a big hole in it)

Practice sentences – Reading for repetition**Sentence 1**

Las zapatillas asquerosas que quité del sillón cuando volví del trabajo estaban llenas de barro seco (The filthy training shoes I took from the armchair when I got back from work were covered with dry mud)

Sentence 2

La pegatina bochornosa que tiré al suelo dejó algunos restos pegajosos (The shameful sticker I threw to the floor left some sticky remains)

Sentence 3

Las ramas húmedas que amontonamos en el cobertizo se secarán con el verano cálido (The wet branches we piled up in the shed will dry in the hot summer)

Practice sentences – Reading for translation**Sentence 1**

El conductor ebrio que metimos en la cárcel había estado en una fiesta universitaria (The drunk driver we put in jail had been in a college party)

Sentence 2

La lluvia copiosa que no pudimos evitar echó a perder nuestro paseo apacible (The heavy rain we couldn't avoid ruined our peaceful walk)

Sentence 3

La tarta helada que le pedimos al dependiente estaba hecha con fresas auténticas (The ice cream cake we asked to the shop assistant was made of real strawberries)

12.3. Appendix 3. *Sentences used in the study Lexical and Syntactic Target Language Interactions in Translation. Experiment 5.*

The sentences are identical to those in Appendix 2, except for the inclusion of a syntagma or an additional clause at the end of each sentence. Sentences were presented in four conditions. The conditions are the following: 1Cognate (sentence with a cognate word at the initial region of the sentence), 2Cognate (sentence with a cognate word at the final region of the sentence), Congruent (sentence with similar structure in Spanish and English), Incongruent (sentence with different structure in Spanish and English). Filler and practice sentences are not included because they are the same ones of Appendix 2. English translations are given in brackets.

Sentence 97

1Cognate-Incongruent: El ángel bondadoso del cuadro que pinté estaba junto a una iglesia vieja en una colina (The kind angel from the painting I made was next to an old church on a hill)

1Cognate-Congruent: El bondadoso ángel del cuadro que yo pinté estaba junto a una vieja iglesia en una colina (The kind angel from the painting I made was next to an old church on a hill)

2Cognate-Incongruent: La iglesia vieja del cuadro que pinté estaba junto a un ángel bondadoso en una colina (The old church from the painting I made was next to a kind angel on a hill)

2Cognate-Congruent: La vieja iglesia del cuadro que yo pinté estaba junto a un bondadoso ángel en una colina (The old church from the painting I made was next to a kind angel on a hill)

Sentence 98

1*Cognate-Incongruent*: El atlas polvoriento que olvidé en el sótano estaba dentro de una revista amarillenta con muchos apuntes (The dusty atlas I left in the basement was inside a yellowish magazine with many notes)

1*Cognate-Congruent*: El polvoriento atlas que yo olvidé en el sótano estaba dentro de una amarillenta revista con muchos apuntes (The dusty atlas I left in the basement was inside a yellowish magazine with many notes)

2*Cognate-Incongruent*: La revista amarillenta que olvidé en el sótano estaba dentro de un atlas polvoriento con muchos apuntes (The yellowish magazine I left in the basement was inside a dusty atlas with many notes)

2*Cognate-Congruent*: La amarillenta revista que yo olvidé en el sótano estaba dentro de un polvoriento atlas con muchos apuntes (The yellowish magazine I left in the basement was inside a dusty atlas with many notes)

Sentence

1*Cognate-Incongruent*: El balcón oscuro por el que entramos al ayuntamiento era vigilado desde la ventana pequeña todos los días (The dark balcony we used to get into the town hall was being watched from the small window every day)

1*Cognate-Congruent*: El oscuro balcón por el que nosotros entramos al ayuntamiento era vigilado desde la pequeña ventana todos los días (The dark balcony we used to get into the town hall was being watched from the small window every day)

2*Cognate-Incongruent*: La ventana pequeña por la que entramos al ayuntamiento era vigilada desde el balcón oscuro todos los días (The small window we used to get into the town hall was being watched from the dark balcony every day)

2*Cognate-Congruent*: La pequeña ventana por la que nosotros entramos al ayuntamiento era vigilada desde el oscuro balcón todos los días (The small window we used to get into the town hall was being watched from the dark balcony every day)

Sentence 100

1*Cognate-Incongruent*: El límite acordado que sobrepasaron en la venta rebasó el gasto previsto para este mes (The set limit that they exceeded during the sale surpassed the estimated expenditure for this month)

1*Cognate-Congruent*: El acordado límite que ellos sobrepasaron en la venta rebasó el previsto gasto para este mes (The set limit that they exceeded during the sale surpassed the estimated expenditure for this month)

2*Cognate-Incongruent*: El gasto previsto que sobrepasaron en la venta rebasó el límite acordado para este mes (The estimated expenditure that they exceeded during the sale surpassed the set limit for this month)

2*Cognate-Congruent*: El previsto gasto que ellos sobrepasaron en la venta rebasó el acordado límite para este mes (The estimated expenditure that they exceeded during the sale surpassed the set limit for this month)

Sentence 101

1*Cognate-Incongruent*: El gorila manso que traeremos el próximo sábado compartirá jaula con el simio inquieto durante un tiempo (The tame gorilla we are bringing next Saturday will share a cage with the restless monkey for some time)

1*Cognate-Congruent*: El manso gorila que nosotros traeremos el próximo sábado compartirá jaula con el inquieto simio durante un tiempo (The tame gorilla we are bringing next Saturday will share a cage with the restless monkey for some time)

2*Cognate-Incongruent*: El simio inquieto que traeremos el próximo sábado compartirá jaula con el gorila manso durante un tiempo (The restless monkey we are bringing next Saturday will share a cage with the tame gorilla for some time)

2*Cognate-Congruent*: El inquieto simio que nosotros traeremos el próximo sábado compartirá jaula con el manso gorila durante un tiempo (The restless monkey we are bringing next Saturday will share a cage with the tame gorilla for some time)

Sentence 102

1*Cognate-Incongruent*: La guitarra desafinada que compré para mi hermano está al lado del estuche negro lleno de pegatinas (The flat guitar I bought for my brother is next to the black case full of stickers)

1*Cognate-Congruent*: La desafinada guitarra que yo compré para mi hermano está al lado del negro estuche lleno de pegatinas (The flat guitar I bought for my brother is next to the black case full of stickers)

2*Cognate-Incongruent*: El estuche negro que compré para mi hermano está al lado de la guitarra desafinada llena de pegatinas (The black case I bought for my brother is next to the flat guitar full of stickers)

2*Cognate-Congruent*: El negro estuche que yo compré para mi hermano está al lado de la desafinada guitarra llena de pegatinas (The black case I bought for my brother is next to the flat guitar full of stickers)

Sentence 103

1*Cognate-Incongruent*: La rosa hermosa que vendí la semana pasada incluía una maceta resistente por mitad de precio (The beautiful rose I sold last week came along with a strong flowerpot for half price)

1*Cognate-Congruent*: La hermosa rosa que yo vendí la semana pasada incluía una resistente maceta por mitad de precio (The beautiful rose I sold last week came along with a strong flowerpot for half price)

2*Cognate-Incongruent*: La maceta resistente que vendí la semana pasada incluía una rosa hermosa por mitad de precio (The strong flowerpot I sold last week came along with a beautiful rose for half price)

2*Cognate-Congruent*: La resistente maceta que yo vendí la semana pasada incluía una hermosa rosa por mitad de precio (The strong flowerpot I sold last week came along with a beautiful rose for half price)

Sentence 104

1*Cognate-Incongruent*: El taxi estacionado que multamos el viernes chocó con un camión sobrecargado al mediodía (The parked taxi we fined last Friday crashed into an overloaded truck at midday)

1*Cognate-Congruent*: El estacionado taxi que nosotros multamos el viernes chocó con un sobrecargado camión al mediodía (The parked taxi we fined last Friday crashed into an overloaded truck at midday)

2*Cognate-Incongruent*: El camión sobrecargado que multamos el viernes chocó con un taxi estacionado al mediodía (The overloaded truck that we fined last Friday crashed into a parked taxi at midday)

2*Cognate-Congruent*: El sobrecargado camión que nosotros multamos el viernes chocó con un estacionado taxi al mediodía (The overloaded truck we fined last Friday crashed into a parked taxi at midday)

Sentence 105

1*Cognate-Incongruent*: El objeto valioso que cogimos en la cueva tenía atado un pergamino borroso con un nombre (The valuable object we picked up in the cave had a blurry scroll with a name attached to it)

1*Cognate-Congruent*: El valioso objeto que nosotros cogimos en la cueva tenía atado un borroso pergamino con un nombre (The valuable object we picked up in the cave had a blurry scroll with a name attached to it)

2*Cognate-Incongruent*: El pergamino borroso que cogimos en la cueva tenía atado un objeto valioso con un nombre (The blurry scroll we picked up in the cave had a valuable object with a name attached to it)

2*Cognate-Congruent*: El borroso pergamino que nosotros cogimos en la cueva tenía atado un valioso objeto con un nombre (The blurry scroll we picked up in the cave had a valuable object with a name attached to it)

Sentence 106

1*Cognate-Incongruent*: El convento antiguo que restauraremos el mes que viene tiene una plaza ancha a la derecha (The old convent we are restoring next month has a wide square on the right)

1*Cognate-Congruent*: El antiguo convento que nosotros restauraremos el mes que viene tiene una ancha plaza a la derecha (The old convent we are restoring next month has a wide square on the right)

2*Cognate-Incongruent*: La plaza ancha que restauraremos el mes que viene tiene un convento antiguo a la derecha (The wide square we are restoring next month has an old convent on the right)

2*Cognate-Congruent*: La ancha plaza que nosotros restauraremos el mes que viene tiene un antiguo convento a la derecha (The wide square we are restoring next month has an old convent on the right)

Sentence 107

1*Cognate-Incongruent*: La galería alta que adornarán en aquel edificio conduce a un pasillo angosto lleno de cajas (The high gallery they are going to decorate in that building leads to a narrow corridor full of boxes)

1*Cognate-Congruent*: La alta galería que ellos adornarán en aquel edificio conduce a un angosto pasillo lleno de cajas (The high gallery they are going to decorate in that building leads to a narrow corridor full of boxes)

2*Cognate-Incongruent*: El pasillo angosto que adornarán en aquel edificio conduce a una galería alta llena de cajas (The narrow corridor they are going to decorate in that building leads to a high gallery full of boxes)

2*Cognate-Congruent*: El angosto pasillo que ellos adornarán en aquel edificio conduce a una alta galería llena de cajas (The narrow corridor they are going to decorate in that building leads to a high gallery full of boxes)

Sentence 108

1*Cognate-Incongruent*: El director célebre que asesoré en el rodaje es amigo del guionista genial y de su hermana (The famous director I advised during the filming is a friend of the brilliant scriptwriter and his sister)

1*Cognate-Congruent*: El célebre director que yo asesoré en el rodaje es amigo del genial guionista y de su hermana (The famous director I advise during the filming is a friend of the brilliant scriptwriter and his sister)

2*Cognate-Incongruent*: El guionista genial que asesoré en el rodaje es amigo del director célebre y de su hermana (The brilliant scriptwriter I advise during the filming is a friend of the famous director and his sister)

2*Cognate-Congruent*: El genial guionista que yo asesoré en el rodaje es amigo del célebre director y de su hermana (The brilliant scriptwriter I advise during the filming is a friend of the famous director and his sister)

Sentence 109

1*Cognate-Incongruent*: El barbero antipático que contraté el mes pasado se lleva bien con el conserje gracioso porque habían trabajado juntos (The unpleasant barber I hired last month gets along with the funny caretaker because they had worked together)

1*Cognate-Congruent*: El antipático barbero que yo contraté el mes pasado se lleva bien con el gracioso conserje porque habían trabajado juntos (The unpleasant barber I hired last month gets along with the funny caretaker because they had worked together)

2*Cognate-Incongruent*: El conserje gracioso que contraté el mes pasado se lleva bien con el barbero antipático porque habían trabajado juntos (The funny caretaker I hired last month gets along with the unpleasant barber because they had worked together)

2*Cognate-Congruent*: El gracioso conserje que yo contraté el mes pasado se lleva bien con el antipático barbero porque habían trabajado juntos (The funny caretaker I hired last month gets along with the unpleasant barber because they had worked together)

Sentence 110

1*Cognate-Incongruent*: El boulevard concurrido que recorrimos durante nuestro paseo acaba en un jardín tranquilo cerca del lago (The crowded boulevard we walked through during our walk ends in a peaceful garden near the lake)

1*Cognate-Congruent*: El concurrido boulevard que nosotros recorrimos durante nuestro paseo acaba en un tranquilo jardín cerca del lago (The crowded boulevard we walked through during our walk ends in a peaceful garden near the lake)

2*Cognate-Incongruent*: El jardín tranquilo que recorrimos durante nuestro paseo acaba en un boulevard concurrido cerca del lago (The peaceful garden we walked through during our walk ends in a crowded boulevard near the lake)

2*Cognate-Congruent*: El tranquilo jardín que nosotros recorrimos durante nuestro paseo acaba en un concurrido boulevard cerca del lago (The peaceful garden we walked through during our walk ends in a crowded boulevard near the lake)

Sentence 111

1*Cognate-Incongruent*: El canal profundo que cruzamos durante la huída conducía al puente derruido lejos de la ciudad (The deep canal we crossed during our getaway led to the ruined bridge far from the city)

1*Cognate-Congruent*: El profundo canal que nosotros cruzamos durante la huída conducía al derruido puente lejos de la ciudad (The deep canal we crossed during our getaway led to the ruined bridge far from the city)

2*Cognate-Incongruent*: El puente derruido que cruzamos durante la huída conducía al canal profundo lejos de la ciudad (The ruined bridge we crossed during our getaway led to the deep canal far from the city)

2*Cognate-Congruent*: El derruido puente que nosotros cruzamos durante la huída conducía al profundo canal lejos de la ciudad (The ruined bridge we crossed during our getaway led to the deep canal far from the city)

Sentence 112

1*Cognate-Incongruent*: El palacio amplio que diseñé durante las vacaciones colinda con una ciudad imponente llena de jardines (The large palace I designed on vacations adjoins with an impressive city full of gardens)

1*Cognate-Congruent*: El amplio palacio que yo diseñé durante las vacaciones colinda con una imponente ciudad llena de jardines (The large palace I designed on vacations adjoins with an impressive city full of gardens)

2*Cognate-Incongruent*: La ciudad imponente que diseñé durante las vacaciones colinda con un palacio amplio lleno de jardines (The impressive city I designed on vacations adjoins with a large palace full of gardens)

2*Cognate-Congruent*: La imponente ciudad que yo diseñé durante las vacaciones colinda con un amplio palacio lleno de jardines (The impressive city I designed on vacations adjoins with a large palace full of gardens)

Sentence 113

1*Cognate-Incongruent*: El suéter lindo que cosiste para mi madre es un regalo precioso para navidad (The pretty sweater you sewed for my mother is a beautiful Christmas present)

1*Cognate-Congruent*: El lindo suéter que tú cosiste para mi madre es un precioso regalo para navidad (The pretty sweater you sewed for my mother is a beautiful Christmas present)

2*Cognate-Incongruent*: El regalo precioso que cosiste para mi madre es un suéter lindo para navidad (The beautiful present you sewed for my mother is a pretty sweater for Christmas)

2*Cognate-Congruent*: El precioso regalo que tú cosiste para mi madre es un lindo suéter para navidad (The beautiful present you sewed for my mother is a pretty sweater for Christmas)

Sentence 114

1*Cognate-Incongruent*: El hongo oloroso que machaqué para la herida debería ser mezclado con una raíz venenosa y agua (The fragrant fungus I crushed for the wound should be blended with a poisonous root and water)

1*Cognate-Congruent*: El oloroso hongo que yo machaqué para la herida debería ser mezclado con una venenosa raíz y agua (The fragrant fungus I crushed for the wound should be blended with a poisonous root and water)

2*Cognate-Incongruent*: La raíz venenosa que machaqué para la herida debería ser mezclada con un hongo oloroso y agua (The poisonous root I crushed for the wound should be blended with a fragrant fungus and water)

2*Cognate-Congruent*: La venenosa raíz que yo machaqué para la herida debería ser mezclada con un oloroso hongo y agua (The poisonous root I crushed for the wound should be blended with a fragrant fungus and water)

Sentence 115

1*Cognate-Incongruent*: La jarra costosa que colocaron en la mesa está apoyada contra un florero lindo y una caja (The expensive jar they put on the table is leaning against a pretty base and a box)

1*Cognate-Congruent*: La costosa jarra que ellos colocaron en la mesa está apoyada contra un lindo florero y una caja (The expensive jar they put on the table is leaning against a pretty vase and a box)

2*Cognate-Incongruent*: El florero lindo que colocaron en la mesa está apoyado contra una jarra costosa y una caja (The pretty vase they put on the table is leaning against an expensive jar and a box)

2*Cognate-Congruent*: El lindo florero que ellos colocaron en la mesa está apoyado contra una costosa jarra y una caja (The pretty vase they put on the table is leaning against an expensive jar and a box)

Sentence 116

1*Cognate-Incongruent*: La lámpara potente que escogimos en la tienda es más útil que el armario bonito que está en rebaja (The powerful lamp we picked in the store is more useful than the pretty wardrobe which is on sale)

1*Cognate-Congruent*: La potente lámpara que nosotros escogimos en la tienda es más útil que el bonito armario que está en rebaja (The powerful lamp we picked in the store is more useful than the pretty wardrobe which is on sale)

2*Cognate-Incongruent*: El armario bonito que escogimos en la tienda es más útil que la lámpara potente que está en rebaja (The pretty wardrobe we picked in the store is more useful than the powerful lamp which is on sale)

2*Cognate-Congruent*: El bonito armario que nosotros escogimos en la tienda es más útil que la potente lámpara que está en rebaja (The pretty wardrobe we picked in the store is more useful than the powerful lamp which is on sale)

Sentence 117

1*Cognate-Incongruent*: El licor dulce que enviaron por correo llegó antes que el vino preciado porque era un envío urgente (The sweet liquor they sent by mail arrived before the cherished wine because it was an urgent delivery)

1*Cognate-Congruent*: El dulce licor que ellos enviaron por correo llegó antes que el preciado vino porque era un envío urgente (The sweet liquor they sent by mail arrived before the cherished wine because it was an urgent delivery)

2*Cognate-Incongruent*: El vino preciado que enviaron por correo llegó antes que el licor dulce porque era un envío urgente (The cherished wine they sent by mail arrived before the sweet liquor because it was an urgent delivery)

2*Cognate-Congruent*: El preciado vino que ellos enviaron por correo llegó antes que el dulce licor porque era un envío urgente (The cherished wine they sent by mail arrived before the sweet liquor because it was an urgent delivery)

Sentence 118

1*Cognate-Incongruent*: El tractor lento que alquilaron para la verbena estaba enganchado a un escenario estrecho que les prestaron (The slow tractor they rented for the festival was attached to a narrow stage which someone lent them)

1*Cognate-Congruent*: El lento tractor que ellos alquilaron para la verbena estaba enganchado a un estrecho escenario que les prestaron (The slow tractor they rented for the festival was attached to a narrow stage which someone lent them)

2*Cognate-Incongruent*: El escenario estrecho que alquilaron para la verbena estaba enganchado a un tractor lento que les prestaron (The narrow stage they rented for the festival was attached to a slow tractor which someone lent them)

2*Cognate-Congruent*: El estrecho escenario que ellos alquilaron para la verbena estaba enganchado a un lento tractor que les prestaron (The narrow stage they rented for the festival was attached to a slow tractor which someone lent them)

Sentence 119

1*Cognate-Incongruent*: La pera madura que solté en la bandeja dio contra el huevo cocido y cayó al suelo (The ripe pear I dropped on the tray hit against the hard-boiled egg and fell on the ground)

1*Cognate-Congruent*: La madura pera que yo solté en la bandeja dio contra el cocido huevo y cayó al suelo (The ripe pear I dropped on the tray hit against the hard-boiled egg and fell on the ground)

2*Cognate-Incongruent*: El huevo cocido que solté en la bandeja dio contra la pera madura y cayó al suelo (The hard-boiled egg I dropped on the tray hit against the ripe pear and fell on the ground)

2*Cognate-Congruent*: El cocido huevo que yo solté en la bandeja dio contra la madura pera y cayó al suelo (The hard-boiled egg I dropped on the tray hit against the ripe pear and fell on the ground)

Sentence 120

1*Cognate-Incongruent*: El actor estrafalario que echamos del avión había peleado con la azafata grosera por una almohada (The eccentric actor we kicked off the plane had fought with the rude stewardess because of a pillow)

1*Cognate-Congruent*: El estrafalario actor que nosotros echamos del avión había peleado con la grosera azafata por una almohada (The eccentric actor we kicked off the plane had fought with the rude stewardess because of a pillow)

2*Cognate-Incongruent*: La azafata grosera que echamos del avión había peleado con el actor estrafalario por una almohada (The rude stewardess we kicked off the plane had fought with the eccentric actor because of a pillow)

2*Cognate-Congruent*: La grosera azafata que nosotros echamos del avión había peleado con el estrafalario actor por una almohada (The rude stewardess we kicked off the plane had fought with the eccentric actor because of a pillow)

Sentence 121

1*Cognate-Incongruent*: La academia insigne que abrimos en enero le cedió algunos libros a la librería esplendorosa por un año (The famous academy we opened in January relinquished some books to the magnificent bookshop for a year)

1*Cognate-Congruent*: La insigne academia que nosotros abrimos en enero le cedió algunos libros a la esplendorosa librería por un año (The famous academy we opened in January relinquished some books to the magnificent bookshop for a year)

2*Cognate-Incongruent*: La librería esplendorosa que abrimos en enero le cedió algunos libros a la academia insigne por un año (The magnificent bookshop we opened in January relinquished some books to the famous academy for a year)

2*Cognate-Congruent*: La esplendorosa librería que nosotros abrimos en enero le cedió algunos libros a la insigne academia por un año (The magnificent bookshop we opened in January relinquished some books to the famous academy for a year)

Sentence 122

1*Cognate-Incongruent*: El autor consagrado que hemos señalado en nuestra reseña es un escritor conflictivo pero humilde (The acclaimed author that we pointed out in our review is a controversial but humble writer)

1*Cognate-Congruent*: El consagrado autor que nosotros hemos señalado en nuestra reseña es un conflictivo escritor pero humilde (The acclaimed author that we pointed out in our review is a controversial but humble writer)

2*Cognate-Incongruent*: El escritor conflictivo que hemos señalado en nuestra reseña es un autor consagrado pero humilde (The controversial writer we pointed out in our review is an acclaimed but humble author)

2*Cognate-Congruent*: El conflictivo escritor que nosotros hemos señalado en nuestra reseña es un consagrado autor pero humilde (The controversial writer we pointed out in our review is an acclaimed but humble author)

Sentence 123

1*Cognate-Incongruent*: El banco acaudalado que denunciaremos este año hizo negocios con una empresa endeudada para ayudarla (The wealthy bank we are going to report this year did business with an indebted company to help it)

1*Cognate-Congruent*: El acaudalado banco que nosotros denunciaremos este año hizo negocios con una endeudada empresa para ayudarla (The wealthy bank we are going to report this year did business with an indebted company to help it)

2*Cognate-Incongruent*: La empresa endeudada que denunciaremos este año hizo negocios con un banco acaudalado para ayudarlo (The indebted company we are going to report this year did business with a wealthy bank to help it)

2*Cognate-Congruent*: La endeudada empresa que nosotros denunciaremos este año hizo negocios con un acaudalado banco para ayudarlo (The indebted company we are going to report this year did business with a wealthy bank to help it)

Sentence 124

1*Cognate-Incongruent*: La bicicleta nueva que dejé en tu jardín está cerca de la mesa cuadrada que compramos (The new bicycle I left in your garden is close to the square table we bought)

1*Cognate-Congruent*: La nueva bicicleta que yo dejé en tu jardín está cerca de la cuadrada mesa que compramos (The new bicycle I left in your garden is close to the square table we bought)

2*Cognate-Incongruent*: La mesa cuadrada que dejé en tu jardín está cerca de la bicicleta nueva que compramos (The square table I left in your garden is close to the new bicycle we bought)

2*Cognate-Congruent*: La cuadrada mesa que yo dejé en tu jardín está cerca de la nueva bicicleta que compramos (The square table I left in your garden is close to the new bicycle we bought)

Sentence 125

1*Cognate-Incongruent*: El cable enrollado que arrastramos por el césped se enredó con la manguera estropeada que vamos a tirar (The rolled-up cable we dragged on the grass got tangled up with the damaged hose we are going to throw away)

1*Cognate-Congruent*: El enrollado cable que nosotros arrastramos por el césped se enredó con la estropeada manguera que vamos a tirar (The rolled-up cable we dragged on the grass got tangled up with the damaged hose we are going to throw away)

2*Cognate-Incongruent*: La manguera estropeada que arrastramos por el césped se enredó con el cable enrollado que vamos a tirar (The damaged hose we dragged on the grass got tangled up with the rolled-up cable we are going to throw away)

2*Cognate-Congruent*: La estropeada manguera que nosotros arrastramos por el césped se enredó con el enrollado cable que vamos a tirar (The damaged hose we dragged on the grass got tangled up with the rolled-up cable we are going to throw away)

Sentence 126

1 *Cognate-Incongruent*: La botella blanca que echaréis a la basura está delante de la gorra desgastada que mi tío trajo (The white bottle that you are going to throw away is in front of the worn out cap my uncle brought)

1 *Cognate-Congruent*: La blanca botella que vosotros echaréis a la basura está delante de la desgastada gorra que mi tío trajo (The white bottle that you are going to throw away is in front of the worn out cap my uncle brought)

2 *Cognate-Incongruent*: La gorra desgastada que echaréis a la basura está delante de la botella blanca que mi tío trajo (The worn out cap you are going to throw away is in front of the white bottle my uncle brought)

2 *Cognate-Congruent*: La desgastada gorra que vosotros echaréis a la basura está delante de la blanca botella que mi tío trajo (The worn out cap you are going throw away is in front of the white bottle my uncle brought)

Sentence 127

1 *Cognate-Incongruent*: El animal peligroso que rescatasteis en la pradera huía del jinete rápido para salvarse (The dangerous animal you rescued on the grassland was running away from the fast horseman to save itself)

1 *Cognate-Congruent*: El peligroso animal que vosotros rescatasteis en la pradera huía del rápido jinete para salvarse (The dangerous animal you rescued on the grassland was running away from the fast horseman to save itself)

2 *Cognate-Incongruent*: El jinete rápido que rescatasteis en la pradera huía del animal peligroso para salvarse (The fast horseman you rescued on the grassland was running away from the dangerous animal to save himself)

2 *Cognate-Congruent*: El rápido jinete que vosotros rescatasteis en la pradera huía del peligroso animal para salvarse (The fast horseman you rescued on the grassland was running away from the dangerous animal to save himself)

Sentence 128

1*Cognate-Incongruent*: La foto arrugada que guardaste en el cajón está grapada a la carta cómica para conservar ambas (The wrinkled picture you kept in the drawer is stapled to the funny letter to keep both)

1*Cognate-Congruent*: La arrugada foto que tú guardaste en el cajón está grapada a la cómica carta para conservar ambas (The wrinkled picture you kept in the drawer is stapled to the funny letter to keep both)

2*Cognate-Incongruent*: La carta cómica que guardaste en el cajón está grapada a la foto arrugada para conservar ambas (The funny letter you kept in the drawer is stapled to the wrinkled picture to keep both)

2*Cognate-Congruent*: La cómica carta que tú guardaste en el cajón está grapada a la arrugada foto para conservar ambas (The funny letter you kept in the drawer is stapled to the wrinkled picture to keep both)

Sentence 129

1*Cognate-Incongruent*: La columna maciza que medimos fue construida antes que la puerta gruesa por equivocación (The solid column we measured was built before the thick door for mistake)

1*Cognate-Congruent*: La maciza columna que nosotros medimos fue construida antes que la gruesa puerta por equivocación (The solid column we measured was built before the thick door for mistake)

2*Cognate-Incongruent*: La puerta gruesa que medimos fue construida antes que la columna maciza por equivocación (The thick door we measured was built before the solid column for mistake)

2*Cognate-Congruent*: La gruesa puerta que nosotros medimos fue construida antes que la maciza columna por equivocación (The thick door we measured was built before the solid column for mistake)

Sentence 130

1*Cognate-Incongruent*: El dentista agobiado que conociste en el ascensor quería hablar con el cirujano ocupado para resolver una duda (The overwhelmed dentist you met in the elevator wanted to talk to the busy surgeon to clear a doubt)

1*Cognate-Congruent*: El agobiado dentista que tú conociste en el ascensor quería hablar con el ocupado cirujano para resolver una duda (The overwhelmed dentist you met in the elevator wanted to talk to the busy surgeon to clear a doubt)

2*Cognate-Incongruent*: El cirujano ocupado que conociste en el ascensor quería hablar con el dentista agobiado para resolver una duda (The busy surgeon you met in the elevator wanted to talk to the overwhelmed dentist to clear a doubt)

2*Cognate-Congruent*: El ocupado cirujano que tú conociste en el ascensor quería hablar con el agobiado dentista para resolver una duda (The busy surgeon you met in the elevator wanted to talk to the overwhelmed dentist to clear a doubt)

Sentence 131

1*Cognate-Incongruent*: El bebé encantador que trajeron al consultorio es familia de esa señora amable con gorro de lana (The charming baby they brought to the office is related to that kind lady with a wool hat)

1*Cognate-Congruent*: El encantador bebé que ellas trajeron al consultorio es familia de esa amable señora con gorro de lana (The charming baby they brought to the office is related to that kind lady with a wool hat)

2*Cognate-Incongruent*: La señora amable que trajeron al consultorio es familia de ese bebé encantador con gorro de lana (The kind lady they brought to the office is related to that charming baby with a wool bonnet)

2*Cognate-Congruent*: La amable señora que ellas trajeron al consultorio es familia de ese encantador bebé con gorro de lana (The kind lady they brought to the office is related to that charming baby with a wool bonnet)

Sentence 132

1*Cognate-Incongruent*: El cliente exigente que atendiste en el despacho estaba esperando al abogado atareado para preguntarle algo (The demanding client you saw in the office was waiting for the busy lawyer to ask him something)

1*Cognate-Congruent*: El exigente cliente que tú atendiste en el despacho estaba esperando al atareado abogado para preguntarle algo (The demanding client you saw in the office was waiting for the busy lawyer to ask him something)

2*Cognate-Incongruent*: El abogado atareado que atendiste en el despacho estaba esperando al cliente exigente para preguntarle algo (The busy lawyer you saw in the office was waiting for the demanding client to ask him something)

2*Cognate-Congruent*: El atareado abogado que tú atendiste en el despacho estaba esperando al exigente cliente para preguntarle algo (The busy lawyer you saw in the office was waiting for the demanding client to ask him something)

Sentence 133

1*Cognate-Incongruent*: El doctor hábil que mantuve ocupado en urgencias está hablando con la enfermera joven para confirmar el horario (The skilled doctor that I kept busy in the emergency room is talking to the young nurse to confirm the schedule)

1*Cognate-Congruent*: El hábil doctor que yo mantuve ocupado en urgencias está hablando con la joven enfermera para confirmar el horario (The skilled doctor that I kept busy in the emergency room is talking to the young nurse nurse to confirm the schedule)

2*Cognate-Incongruent*: La enfermera joven que mantuve ocupada en urgencias está hablando con el doctor hábil para confirmar el horario (The young nurse that I kept busy in the emergency room is talking to the skilled doctor nurse to confirm the schedule)

2*Cognate-Congruent*: La joven enfermera que yo mantuve ocupada en urgencias está hablando con el hábil doctor para confirmar el horario (The young nurse that I kept busy in the emergency room is talking to the skilled doctor nurse to confirm the schedule)

Sentence 134

1*Cognate-Incongruent*: El eclipse esperado que vaticinaron estaba relacionado con la cosecha mala en octubre (The expected eclipse they predicted was related to the bad October crop)

1*Cognate-Congruent*: El esperado eclipse que ellos vaticinaron estaba relacionado con la mala cosecha en octubre (The expected eclipse they predicted was related to the bad October crop)

2*Cognate-Incongruent*: La cosecha mala que vaticinaron estaba relacionada con el eclipse esperado en octubre (The bad crop they predicted was related to the expected October eclipse)

2*Cognate-Congruent*: La mala cosecha que ellos vaticinaron estaba relacionada con el esperado eclipse en octubre (The bad crop they predicted was related to the expected October eclipse)

Sentence 135

1*Cognate-Incongruent*: El motor defectuoso que vas a sacar del taller está encima de la manta sucia que trajeron anoche (The faulty motor you are going to take out of the garage is over the dirty blanket they brought last night)

1*Cognate-Congruent*: El defectuoso motor que tú vas a sacar del taller está encima de la sucia manta que trajeron anoche (The faulty motor you are going to take out of the garage is over the dirty blanket blanket they brought last night)

2*Cognate-Incongruent*: La manta sucia que vas a sacar del taller está encima del motor defectuoso que trajeron anoche (The dirty blanket you are going to take out of the garage is over the faulty motor blanket they brought last night)

2*Cognate-Congruent*: La sucia manta que tú vas a sacar del taller está encima del defectuoso motor que trajeron anoche (The dirty blanket you are going to take out of the garage is over the faulty motor blanket they brought last night)

Sentence 136

1*Cognate-Incongruent*: La línea entrecortada que dibujé en el papel recorre el paisaje agradable que imprimí primero (The dotted line I drew on the paper runs the nice landscape I printed first)

1*Cognate-Congruent*: La entrecortada línea que yo dibujé en el papel recorre el agradable paisaje que imprimí primero (The dotted line I drew on the paper runs the nice landscape I printed first)

2*Cognate-Incongruent*: El paisaje agradable que dibujé en el papel recorre la línea entrecortada que imprimí primero (The nice landscape I drew on the paper runs the dotted line I printed first)

2*Cognate-Congruent*: El agradable paisaje que yo dibujé en el papel recorre la entrecortada línea que imprimí primero (The nice landscape I drew on the paper runs the dotted line I printed first)

Sentence 137

1*Cognate-Incongruent*: La pizza grasienta que comimos en la azotea estaba mejor que el pescado insulso del otro día (The greasy pizza we ate on the terrace tasted better than the insipid fish from the other day)

1*Cognate-Congruent*: La grasienta pizza que nosotros comimos en la azotea estaba mejor que el insulso pescado del otro día (The greasy pizza we ate on the terrace tasted better than the insipid fish from the other day)

2*Cognate-Incongruent*: El pescado insulso que comimos en la azotea estaba mejor que la pizza grasienta del otro día (The insipid fish we ate on the terrace tasted better than the greasy pizza from the other day)

2*Cognate-Congruent*: El insulso pescado que nosotros comimos en la azotea estaba mejor que la grasienta pizza del otro día (The insipid fish we ate on the terrace tasted better than the greasy pizza from the other day)

Sentence 138

1*Cognate-Incongruent*: La palmera seca que cortamos en la playa cayó sobre un árbol frondoso y unos arbustos (The dry palm tree we cut-down at the beach fell over a leafy tree and some bushes)

1*Cognate-Congruent*: La seca palmera que nosotros cortamos en la playa cayó sobre un frondoso árbol y unos arbustos (The dry palm tree we cut-down at the beach fell over a leafy tree and some bushes)

2*Cognate-Incongruent*: El árbol frondoso que cortamos en la playa cayó sobre una palmera seca y unos arbustos (The leafy tree we cut-down at the beach fell over a dry palm tree and some bushes)

2*Cognate-Congruent*: El frondoso árbol que nosotros cortamos en la playa cayó sobre una seca palmera y unos arbustos (The leafy tree we cut-down at the beach fell over a dry palm tree and some bushes)

Sentence 139

1*Cognate-Incongruent*: El dólar falso que entregamos en el juicio es una prueba irrefutable que aclarará todo (The counterfeit dollar we handed in trial is an undisputable evidence which will clear everything up)

1*Cognate-Congruent*: El falso dólar que nosotros entregamos en el juicio es una irrefutable prueba que aclarará todo (The counterfeit dollar we handed in trial is an undisputable evidence which will clear everything up)

2*Cognate-Incongruent*: La prueba irrefutable que entregamos en el juicio es un dólar falso que aclarará todo (The undisputable evidence we handed in trial is a counterfeit dollar which will clear everything up)

2*Cognate-Congruent*: La irrefutable prueba que nosotros entregamos en el juicio es un falso dólar que aclarará todo (The undisputable evidence we handed in trial is a counterfeit dollar which will clear everything up)

Sentence 140

1*Cognate-Incongruent*: El acto inesperado que realizaste para salvar a tu padre fue una obra buena que nunca olvidará (The unexpected act you committed to save your father was a good deed he will never forget)

1*Cognate-Congruent*: El inesperado acto que tú realizaste para salvar a tu padre fue una buena obra que nunca olvidará (The unexpected act you committed to save your father was a good deed he will never forget)

2*Cognate-Incongruent*: La obra buena que realizaste para salvar a tu padre fue un acto inesperado que nunca olvidará (The good deed you committed to save your father was an unexpected act he will never forget)

2*Cognate-Congruent*: La buena obra que tú realizaste para salvar a tu padre fue un inesperado acto que nunca olvidará (The good deed you committed to save your father was an unexpected act he will never forget)

Sentence 141

1*Cognate-Incongruent*: La radio cotizada que empeñaste el lunes fue intercambiada por un anillo lujoso y algo de efectivo (The sought-after radio that you pawned last Monday was traded for a luxurious ring and some cash)

1*Cognate-Congruent*: La cotizada radio que tú empeñaste el lunes fue intercambiada por un lujoso anillo y algo de efectivo (The sought-after radio that you pawned last Monday was traded for a luxurious ring and some cash)

2*Cognate-Incongruent*: El anillo lujoso que empeñaste el lunes fue intercambiado por una radio cotizada y algo de efectivo (The luxurious ring that you pawned last Monday was traded for a sought-after radio and some cash)

2*Cognate-Congruent*: El lujoso anillo que tú empeñaste el lunes fue intercambiado por una cotizada radio y algo de efectivo (The luxurious ring that you pawned last Monday was traded for a sought-after radio and some cash)

Sentence 142

1*Cognate-Incongruent*: La música suave que podían oír desde la azotea ahogaba el llanto molesto que venía de abajo (The soft music they could hear from the flat roof was drowning out the annoying crying which came from below)

1*Cognate-Congruent*: La suave música que ellos podían oír desde la azotea ahogaba el molesto llanto que venía de abajo (The soft music they could hear from the flat roof was drowning out the annoying crying which came from below)

2*Cognate-Incongruent*: El llanto molesto que podían oír desde la azotea ahogaba la música suave que venía de abajo (The annoying crying they could hear from the flat roof was drowning out the soft music which came from below)

2*Cognate-Congruent*: El molesto llanto que ellos podían oír desde la azotea ahogaba la suave música que venía de abajo (The annoying crying they could hear from the flat roof was drowning out the soft music which came from below)

Sentence 143

1*Cognate-Incongruent*: El mapa engañoso que escondieron en el desván era una pista desconocida para los detectives (The deceptive map they hid in the attic was an unknown clue to the detectives)

1*Cognate-Congruent*: El engañoso mapa que ellas escondieron en el desván era una desconocida pista para los detectives (The deceptive map they hid in the attic was an unknown clue to the detectives)

2*Cognate-Incongruent*: La pista desconocida que escondieron en el desván era un mapa engañoso para los detectives (The unknown clue they hid in the attic was a deceptive map to the detectives)

2*Cognate-Congruent*: La desconocida pista que ellas escondieron en el desván era un engañoso mapa para los detectives (The unknown clue they hid in the attic was a deceptive map to the detectives)

Sentence 144

1*Cognate-Incongruent*: La cámara diminuta que lancé detrás de los arbustos quedó lejos del maletín marrón pero cerca de la casa (The tiny camera I threw behind the bushes landed far from the brown briefcase but close to the house)

1*Cognate-Congruent*: La diminuta cámara que yo lancé detrás de los arbustos quedó lejos del marrón maletín pero cerca de la casa (The tiny camera I threw behind the bushes landed far from the brown briefcase but close to the house)

2*Cognate-Incongruent*: El maletín marrón que lancé detrás de los arbustos quedó lejos de la cámara diminuta pero cerca de la casa (The brown briefcase I threw behind the bushes landed far from the tiny camera but close to the house)

2*Cognate-Congruent*: El marrón maletín que yo lancé detrás de los arbustos quedó lejos de la diminuta cámara pero cerca de la casa (The brown briefcase I threw behind the bushes landed far from the tiny camera but close to the house)

Sentence 145

1*Cognate-Incongruent*: El tren descarrilado que arreglaron cerca de aquel pueblo se había separado del vagón descomunal esa mañana (The derailed train they repaired near that town got detached from the massive carriage that morning)

1*Cognate-Congruent*: El descarrilado tren que ellos arreglaron cerca de aquel pueblo se había separado del descomunal vagón esa mañana (The derailed train they repaired near that town got detached from the massive carriage that morning)

2*Cognate-Incongruent*: El vagón descomunal que arreglaron cerca de aquel pueblo se había separado del tren descarrilado esa mañana (The massive carriage they repaired near that town got detached from the derailed train that morning)

2*Cognate-Congruent*: El descomunal vagón que ellos arreglaron cerca de aquel pueblo se había separado del descarrilado tren esa mañana (The massive carriage they repaired near that town got detached from the derailed train that morning)

Sentence 146

1*Cognate-Incongruent*: El inspector renombrado que llamé hace unas horas conoce a un juez poderoso desde hace años (The renowned inspector I called a few hours ago has known a powerful judge for some years now)

1*Cognate-Congruent*: El renombrado inspector que yo llamé hace unas horas conoce a un poderoso juez desde hace años (The renowned inspector I called a few hours ago has known a powerful judge for some years now)

2*Cognate-Incongruent*: El juez poderoso que llamé hace unas horas conoce a un inspector renombrado desde hace años (The powerful judge I called a few hours ago has known a renowned inspector for some years now)

2*Cognate-Congruent*: El poderoso juez que yo llamé hace unas horas conoce a un renombrado inspector desde hace años (The powerful judge I called a few hours ago has known a renowned inspector for some years now)

Sentence 147

1*Cognate-Incongruent*: El calendario codiciado que descubristeis en el foso yacía sobre las joyas deslumbrantes y unas armas (The coveted calendar you discovered in the pit was lying over the dazzling jewels and some weapons)

1*Cognate-Congruent*: El codiciado calendario que vosotros descubristeis en el foso yacía sobre las deslumbrantes joyas y unas armas (The coveted calendar you discovered in the pit was lying over the dazzling jewels and some weapons)

2*Cognate-Incongruent*: Las joyas deslumbrantes que descubristeis en el foso yacían sobre el calendario codiciado y unas armas (The dazzling jewels you discovered in the pit were lying over the coveted calendar and some weapons)

2*Cognate-Congruent*: Las deslumbrantes joyas que vosotros descubristeis en el foso yacían sobre el codiciado calendario y unas armas (The dazzling jewels you discovered in the pit were lying over the coveted calendar and some weapons)

Sentence 148

1*Cognate-Incongruent*: El camello inagotable que montaron durante el viaje se mantenía alejado del caballo sediento por un motivo (The tireless camel they mounted during the trip was staying away from the thirsty horse for a reason)

1*Cognate-Congruent*: El inagotable camello que ellas montaron durante el viaje se mantenía alejado del sediento caballo por un motivo (The tireless camel they mounted during the trip was staying away from the thirsty horse for a reason)

2*Cognate-Incongruent*: El caballo sediento que montaron durante el viaje se mantenía alejado del camello inagotable por un motivo (The thirsty horse they mounted during the trip was staying away from the tireless camel for a reason)

2*Cognate-Congruent*: El sediento caballo que ellas montaron durante el viaje se mantenía alejado del inagotable camello por un motivo (The thirsty horse they mounted during the trip was staying away from the tireless camel for a reason)

Sentence 149

1*Cognate-Incongruent*: El delfín asustado que vieron desde la orilla estaba nadando alrededor de la ballena incansable para ahuyentar al tiburón (The scared dolphin they saw from the shore was swimming around the tireless whale to scare the shark away)

1*Cognate-Congruent*: El asustado delfín que ellas vieron desde la orilla estaba nadando alrededor de la incansable ballena para ahuyentar al tiburón (The scared dolphin they saw from the shore was swimming around the tireless whale to scare the shark away)

2*Cognate-Incongruent*: La ballena incansable que vieron desde la orilla estaba nadando alrededor del delfín asustado para ahuyentar al tiburón (The tireless whale they saw from the shore was swimming around the scared dolphin to scare the shark away)

2*Cognate-Congruent*: La incansable ballena que ellas vieron desde la orilla estaba nadando alrededor del asustado delfín para ahuyentar al tiburón (The tireless whale they saw from the shore was swimming around the scared dolphin to scare the shark away)

Sentence 150

1*Cognate-Incongruent*: La tesis impactante que expondrán en marzo se apoya en un hallazgo exitoso que publicaron (The impressive thesis they are going to exhibit in March is based on a successful discovery they published)

1*Cognate-Congruent*: La impactante tesis que ellos expondrán en marzo se apoya en un exitoso hallazgo que publicaron (The impressive thesis they are going to exhibit in March is based on a successful discovery they published)

2*Cognate-Incongruent*: El hallazgo exitoso que expondrán en marzo se apoya en una tesis impactante que publicaron (The successful discovery they are going to exhibit in March is based on an impressive thesis they published)

2*Cognate-Congruent*: El exitoso hallazgo que ellos expondrán en marzo se apoya en una impactante tesis que publicaron (The successful discovery they are going to exhibit in March is based on an impressive thesis they published)

Sentence 151

1*Cognate-Incongruent*: El contrato jugoso que le estáis planteando a la empresa supone unos ingresos valiosos para todos (The profitable contract you are proposing to the company means substantial revenues for everyone)

1*Cognate-Congruent*: El jugoso contrato que vosotros le estáis planteando a la empresa supone unos valiosos ingresos para todos (The profitable contract you are proposing to the company means substantial revenues for everyone)

2*Cognate-Incongruent*: Los ingresos valiosos que le estáis planteando a la empresa suponen un contrato jugoso para todos (The substantial revenues you are proposing to the company mean a profitable contract for everyone)

2*Cognate-Congruent*: Los valiosos ingresos que vosotros le estáis planteando a la empresa suponen un jugoso contrato para todos (The substantial revenues you are proposing to the company mean a profitable contract for everyone)

Sentence 152

1*Cognate-Incongruent*: La legión imbatible que avistaron en el bosque había encontrado al ejército mermado cerca del campamento (The unbeatable legion they saw in the forest had found the diminished army near the camp)

1*Cognate-Congruent*: La imbatible legión que ellos avistaron en el bosque había encontrado al mermado ejército cerca del campamento (The unbeatable legion they saw in the forest had found the diminished army near the camp)

2*Cognate-Incongruent*: El ejército mermado que avistaron en el bosque había encontrado a la legión imbatible cerca del campamento (The diminished army they saw in the forest had found the unbeatable legion near the camp)

2*Cognate-Congruent*: El mermado ejército que ellos avistaron en el bosque había encontrado a la imbatible legión cerca del campamento (The diminished army they saw in the forest had found the unbeatable legion near the camp)

Sentence 153

1*Cognate-Incongruent*: La máquina deteriorada que empujaron hasta mi cochera solía ser un aparato rentable hasta hace unos meses (The damaged machine they pushed to my garage used to be a profitable device until a few months ago)

1*Cognate-Congruent*: La deteriorada máquina que ellas empujaron hasta mi cochera solía ser un rentable aparato hasta hace unos meses (The damaged machine they pushed to my garage used to be a profitable device until a few months ago)

2*Cognate-Incongruent*: El aparato rentable que empujaron hasta mi cochera solía ser una máquina deteriorada hasta hace unos meses (The profitable device they pushed to my garage used to be a damaged machine until a few months ago)

2*Cognate-Congruent*: El rentable aparato que ellas empujaron hasta mi cochera solía ser una deteriorada máquina hasta hace unos meses (The profitable device they pushed to my garage used to be a damaged machine until a few months ago)

Sentence 154

1*Cognate-Incongruent*: El patio escabroso en el que entraréis esta noche da a la senda tenebrosa de la que hablamos (The steep patio you are going to enter tonight faces onto the dark path we talked about)

1*Cognate-Congruent*: El escabroso patio en el que vosotros entraréis esta noche da a la tenebrosa senda de la que hablamos (The steep patio you are to going enter tonight faces onto the dark path we talked about)

2*Cognate-Incongruent*: La senda tenebrosa en la que entraréis esta noche da al patio escabroso del que hablamos (The dark path you are going to enter tonight faces onto the steep patio we talked about)

2*Cognate-Congruent*: La tenebrosa senda en la que vosotros entraréis esta noche da al escabroso patio del que hablamos (The dark path you are going to enter tonight faces onto the steep patio we talked about)

Sentence 155

1*Cognate-Incongruent*: El insecto alargado que atrapé ayer en mi cuarto era un grillo ruidoso que no se callaba (The elongated insect I caught in my room yesterday was a noisy cricket that wouldn't shut up)

1*Cognate-Congruent*: El alargado insecto que yo atrapé ayer en mi cuarto era un ruidoso grillo que no se callaba (The elongated insect I caught in my room yesterday was a noisy cricket that wouldn't shut up)

2*Cognate-Incongruent*: El grillo ruidoso que atrapé ayer en mi cuarto era un insecto alargado que no se callaba (The noisy cricket I caught in my room yesterday was an elongated insect that wouldn't shut up)

2*Cognate-Congruent*: El ruidoso grillo que yo atrapé ayer en mi cuarto era un alargado insecto que no se callaba (The noisy cricket I caught in my room yesterday was an elongated insect that wouldn't shut up)

Sentence 156

1*Cognate-Incongruent*: La canoa larga que recuperasteis del estanque estaba amarrada al ancla oxidada que habían escondido (The long canoe you recovered from the pond was tied to the rusty anchor they had hidden)

1*Cognate-Congruent*: La larga canoa que vosotros recuperasteis del estanque estaba amarrada a la oxidada ancla que habían escondido (The long canoe you recovered from the pond was tied to the rusty anchor they had hidden)

2*Cognate-Incongruent*: El ancla oxidada que recuperasteis del estanque estaba amarrada a la canoa larga que habían escondido (The rusty anchor you recovered from the pond was tied to the long canoe they had hidden)

2*Cognate-Congruent*: La oxidada ancla que vosotros recuperasteis del estanque estaba amarrada a la larga canoa que habían escondido (The rusty anchor you recovered from the pond was tied to the long canoe they had hidden)

Sentence 157

1*Cognate-Incongruent*: La ambulancia rápida que intentaron detener a media noche adelantó a una grúa pesada antes de chocar (The fast ambulance they tried to stop at midnight overtook a heavy tow truck before crashing)

1*Cognate-Congruent*: La rápida ambulancia que ellos intentaron detener a media noche adelantó a una pesada grúa antes de chocar (The fast ambulance they tried to stop at midnight overtook a heavy tow truck before crashing)

2*Cognate-Incongruent*: La grúa pesada que intentaron detener a media noche adelantó a una ambulancia rápida antes de chocar (The heavy tow truck they tried to stop at midnight overtook a fast ambulance before crashing)

2*Cognate-Congruent*: La pesada grúa que ellos intentaron detener a media noche adelantó a una rápida ambulancia antes de chocar (The heavy tow truck they tried to stop at midnight overtook a fast ambulance before crashing)

Sentence 158

1*Cognate-Incongruent*: El gigante encolerizado que encontraron en el bosque buscaba a la bruja malvada para atraparla (The furious giant they came across with in the forest was looking for the evil witch to catch her)

1*Cognate-Congruent*: El encolerizado gigante que ellos encontraron en el bosque buscaba a la malvada bruja para atraparla (The furious giant they came across with in the forest was looking for the evil witch to catch her)

2*Cognate-Incongruent*: La bruja malvada que encontraron en el bosque buscaba al gigante encolerizado para atraparlo (The evil witch they came across with in the forest was looking for the furious giant to catch him)

2*Cognate-Congruent*: La malvada bruja que ellos encontraron en el bosque buscaba al encolerizado gigante para atraparlo (The evil witch they came across with in the forest was looking for the furious giant to catch him)

Sentence 159

1*Cognate-Incongruent*: El pingüino amaestrado que alimentamos en el estanque fue más rápido que la foca hambrienta ese día (The trained penguin we fed in the water tank was faster than the hungry seal that day)

1*Cognate-Congruent*: El amaestrado pingüino que nosotros alimentamos en el estanque fue más rápido que la hambrienta foca ese día (The trained penguin we fed in the water tank was faster than the hungry seal that day)

2*Cognate-Incongruent*: La foca hambrienta que alimentamos en el estanque fue más rápida que el pingüino amaestrado ese día (The hungry seal we fed in the water tank was faster than the trained penguin that day)

2*Cognate-Congruent*: La hambrienta foca que nosotros alimentamos en el estanque fue más rápida que el amaestrado pingüino ese día (The hungry seal we fed in the water tank was faster than the trained penguin that day)

Sentence 160

1*Cognate-Incongruent*: El contacto amistoso que logramos con esa aldea impulsó un acuerdo provechoso durante mucho tiempo (The friendly contact we established with that village fostered a beneficial agreement for a long time)

1*Cognate-Congruent*: El amistoso contacto que nosotros logramos con esa aldea impulsó un provechoso acuerdo durante mucho tiempo (The friendly contact we established with that village fostered a beneficial agreement for a long time)

2*Cognate-Incongruent*: El acuerdo provechoso que logramos con esa aldea impulsó un contacto amistoso durante mucho tiempo (The beneficial agreement we established with that village fostered a friendly contact for a long time)

2*Cognate-Congruent*: El provechoso acuerdo que nosotros logramos con esa aldea impulsó un amistoso contacto durante mucho tiempo (The beneficial agreement we established with that village fostered a friendly contact for a long time)

Sentence 161

1*Cognate-Incongruent*: El turista enfadado que intenté tranquilizar cerca de la muralla discutió con el vigilante alterado y su amigo (The angry tourist I tried to calm down near the walls argued with the upset guard and his friend)

1*Cognate-Congruent*: El enfadado turista que yo intenté tranquilizar cerca de la muralla discutió con el alterado vigilante y su amigo (The angry tourist I tried to calm down near the walls argued with the upset guard and his friend)

2*Cognate-Incongruent*: El vigilante alterado que intenté tranquilizar cerca de la muralla discutió con el turista enfadado y su amigo (The upset guard I tried to calm down near the walls argued with the angry tourist and his friend)

2*Cognate-Congruent*: El alterado vigilante que yo intenté tranquilizar cerca de la muralla discutió con el enfadado turista y su amigo (The upset guard I tried to calm down near the walls argued with the angry tourist and his friend)

Sentence 162

1*Cognate-Incongruent*: El cóctel agri dulce que probé en la cena se repartió después del entremés sabroso y las aceitunas (The sweet-and-sour cocktail I tasted at dinner was served after the tasty appetizer and the olives)

1*Cognate-Congruent*: El agri dulce cóctel que yo probé en la cena se repartió después del sabroso entremés y las aceitunas (The sweet-and-sour cocktail I tasted at dinner was served after the tasty appetizer and the olives)

2*Cognate-Incongruent*: El entremés sabroso que probé en la cena se repartió después del cóctel agri dulce y las aceitunas (The tasty appetizer I tasted at dinner was served after the sweet-and-sour cocktail and the olives)

2*Cognate-Congruent*: El sabroso entremés que yo probé en la cena se repartió después del agri dulce cóctel y las aceitunas (The tasty appetizer I tasted at dinner was served after the sweet-and-sour cocktail and the olives)

Sentence 163

1*Cognate-Incongruent*: El metal candente que metiste en el fuego fue convertido en una espada temible por orden del rey (The red hot metal you put in the fire was turned into a fearsome sword by order of the king)

1*Cognate-Congruent*: El candente metal que tú metiste en el fuego fue convertido en una temible espada por orden del rey (The red hot metal you put in the fire was turned into a fearsome sword by order of the king)

2*Cognate-Incongruent*: La espada temible que metiste en el fuego fue convertida en un metal candente por orden del rey (The fearsome sword you put in the fire was turned into a red hot metal by order of the king)

2*Cognate-Congruent*: La temible espada que tú metiste en el fuego fue convertida en un candente metal por orden del rey (The fearsome sword you put in the fire was turned into a red hot metal by order of the king)

Sentence 164

1*Cognate-Incongruent*: El guía divertido que mandarás a la piscina regresará con los invitados escandalosos después del almuerzo (The funny guide you are sending to the pool is coming back with the noisy guests after lunch)

1*Cognate-Congruent*: El divertido guía que tú mandarás a la piscina regresará con los escandalosos invitados después del almuerzo (The funny guide you are sending to the pool is coming back with the noisy guests after lunch)

2*Cognate-Incongruent*: Los invitados escandalosos que mandarás a la piscina regresarán con el guía divertido después del almuerzo (The noisy guests you are sending to the pool are coming back with the funny guide after lunch)

2*Cognate-Congruent*: Los escandalosos invitados que tú mandarás a la piscina regresarán con el divertido guía después del almuerzo (The noisy guests you are sending to the pool are coming back with the funny guide after lunch)

Sentence 165

1*Cognate-Incongruent*: El pelícano enorme que ahuyentábamos de nuestra pesca estaba volando con las gaviotas insistentes desde hacía unas horas (The huge pelican we were frightening away from our catch had been flying along with the persistent seagulls for some hours)

1*Cognate-Congruent*: El enorme pelícano que nosotros ahuyentábamos de nuestra pesca estaba volando con las insistentes gaviotas desde hacía unas horas (The huge pelican we were frightening away from our catch was flying along with the persistent seagulls for some hours)

2*Cognate-Incongruent*: Las gaviotas insistentes que ahuyentábamos de nuestra pesca estaban volando con el pelícano enorme desde hacía unas horas (The persistent seagulls we were frightening away from our catch were flying along with the huge pelican for some hours)

2Cognate-Congruent: Las insistentes gaviotas que nosotros ahuyentamos de nuestra pesca estaban volando con el enorme pelícano desde hacía unas horas (The persistent seagulls we were frightening away from our catch were flying along with the huge pelican for some hours)

Sentence 166

1Cognate-Incongruent: El nativo atemorizado que guié hasta la choza atrapó al cazador implacable esa tarde (The frightened native I led to the hut caught the relentless hunter that afternoon)

1Cognate-Congruent: El atemorizado nativo que yo guié hasta la choza atrapó al implacable cazador esa tarde (The frightened native I led to the hut caught the relentless hunter that afternoon)

2Cognate-Incongruent: El cazador implacable que guié hasta la choza atrapó al nativo atemorizado esa tarde (The relentless hunter I led to the hut caught the frightened native that afternoon)

2Cognate-Congruent: El implacable cazador que yo guié hasta la choza atrapó al atemorizado nativo esa tarde (The relentless hunter I led to the hut caught the frightened native that afternoon)

Sentence 167

1Cognate-Incongruent: El paté exquisito que ofreciste en tu cumpleaños sabía bien con las galletas crujientes que trajimos (The delicious patê you offered in your birthday party tasted good with the crunchy crackers we brought)

1Cognate-Congruent: El exquisito paté que tú ofreciste en tu cumpleaños sabía bien con las crujientes galletas que trajimos (The delicious patê you offered in your birthday party tasted good with the crunchy crackers we brought)

2Cognate-Incongruent: Las galletas crujientes que ofreciste en tu cumpleaños sabían bien con el paté exquisito que trajimos (The crunchy crackers you offered in your birthday party tasted good with the delicious patê we brought)

2Cognate-Congruent: Las crujientes galletas que tú ofreciste en tu cumpleaños sabían bien con el exquisito paté que trajimos (The crunchy crackers you offered in your birthday party tasted good with the delicious patê we brought)

Sentence 168

1Cognate-Incongruent: La aventura emocionante que comenzaron hace cuatro años fue un viaje agotador y lleno de peligros (The exciting adventure they began four years ago was an exhausting journey full of dangers)

1Cognate-Congruent: La emocionante aventura que ellas comenzaron hace cuatro años fue un agotador viaje y lleno de peligros (The exciting adventure they began four years ago was an exhausting journey full of dangers)

2Cognate-Incongruent: El viaje agotador que comenzaron hace cuatro años fue una aventura emocionante y llena de peligros (The exhausting journey they began four years ago was an exciting adventure full of dangers)

2Cognate-Congruent: El agotador viaje que ellas comenzaron hace cuatro años fue una emocionante aventura y llena de peligros (The exhausting journey they began four years ago was an exciting adventure full of dangers)

Sentence 169

1Cognate-Incongruent: El hospital estupendo que subvencionaremos estas navidades será convertido en un colegio maravilloso antes del verano (The great hospital we are subsidizing this Christmas is going to be turned into a marvelous school before summer)

1Cognate-Congruent: El estupendo hospital que nosotros subvencionaremos estas navidades será convertido en un maravilloso colegio antes del verano (The great hospital

we are subsidizing this Christmas is going to be turned into a marvelous school before summer)

2Cognate-Incongruent: El colegio maravilloso que subvencionaremos estas navidades será convertido en un hospital estupendo antes del verano (The marvelous school we are subsidizing this Christmas is going to be turned into a great hospital before summer)

2Cognate-Congruent: El maravilloso colegio que nosotros subvencionaremos estas navidades será convertido en un estupendo hospital antes del verano (The marvelous school we are subsidizing this Christmas is going to be turned into a great hospital before summer)

Sentence 170

1Cognate-Incongruent: El atleta feliz que abrazaban corrió a través de la pista hacia el abuelo orgulloso para celebrar con él (The happy athlete they were hugging ran across the track towards the proud grandfather to celebrate with him)

1Cognate-Congruent: El feliz atleta que ellos abrazaban corrió a través de la pista hacia el orgulloso abuelo para celebrar con él (The happy athlete they were hugging ran across the track towards the proud grandfather to celebrate with him)

2Cognate-Incongruent: El abuelo orgulloso que abrazaban corrió a través de la pista hacia el atleta feliz para celebrar con él (The proud grandfather they were hugging ran across the track towards the happy athlete to celebrate with him)

2Cognate-Congruent: El orgulloso abuelo que ellos abrazaban corrió a través de la pista hacia el feliz atleta para celebrar con él (The proud grandfather they were hugging ran across the track towards the happy athlete to celebrate with him)

Sentence 171

1Cognate-Incongruent: El barril pesado que retiraron de la salida fue almacenado junto con la cafetera inservible para donarlos (The heavy barrel they took away from the exit was stored along with the useless coffeemaker to give them away)

1*Cognate-Congruent*: El pesado barril que ellos retiraron de la salida fue almacenado junto con la inservible cafetera para donarlos (The heavy barrel they took away from the exit was stored along with the useless coffeemaker to give them away)

2*Cognate-Incongruent*: La cafetera inservible que retiraron de la salida fue almacenada junto con el barril pesado para donarlos (The useless coffeemaker they took away from the exit was stored along with the heavy barrel to give them away)

2*Cognate-Congruent*: La inservible cafetera que ellos retiraron de la salida fue almacenada junto con el pesado barril para donarlos (The useless coffeemaker they took away from the exit was stored along with the heavy barrel to give them away)

Sentence 172

1*Cognate-Incongruent*: El compás plateado que utilizaré para mi dibujo vino con un lápiz afilado y un sacapuntas (The silver compass I'm going to use for my drawing came along with a sharpened pencil and a sharpener)

1*Cognate-Congruent*: El plateado compás que yo utilizaré para mi dibujo vino con un afilado lápiz y un sacapuntas (The silver compass I'm going to use for my drawing came along with a sharpened pencil and a sharpener)

2*Cognate-Incongruent*: El lápiz afilado que utilizaré para mi dibujo vino con un compás plateado y un sacapuntas (The sharpened pencil I'm going to use for my drawing came along with a silver compass and a sharpener)

2*Cognate-Congruent*: El afilado lápiz que yo utilizaré para mi dibujo vino con un plateado compás y un sacapuntas (The sharpened pencil I'm going to use for my drawing came along with a silver compass and a sharpener)

Sentence 173

1*Cognate-Incongruent*: El músculo acalambrado que estiré durante el calentamiento me provocaba dolor en el brazo lastimado después del partido (The cramped muscle I stretched while warming-up caused me pain in the sore arm after the match)

1*Cognate-Congruent*: El acalambrado músculo que yo estiré durante el calentamiento me provocaba dolor en el lastimado brazo después del partido (The cramped muscle I stretched while warming-up caused me pain in the sore arm after the match)

2*Cognate-Incongruent*: El brazo lastimado que estiré durante el calentamiento me provocaba dolor en el músculo acalambrado después del partido (The sore arm I stretched while warming-up caused me pain in the cramped muscle after the match)

2*Cognate-Congruent*: El lastimado brazo que yo estiré durante el calentamiento me provocaba dolor en el acalambrado músculo después del partido (The sore arm I stretched while warming-up caused me pain in the cramped muscle after the match)

Sentence 1741

Cognate-Incongruent: La persona valerosa que salvaron en el incendio quiso agradecerse al bombero perseverante esa misma tarde (The brave person they saved from the fire wanted to thank the persistent fireman that very after afternoon)

1*Cognate-Congruent*: La valerosa persona que ellos salvaron en el incendio quiso agradecerse al perseverante bombero esa misma tarde (The brave person they saved from the fire wanted to thank the persistent fireman that very after afternoon)

2*Cognate-Incongruent*: El bombero perseverante que salvaron en el incendio quiso agradecerse a la persona valerosa esa misma tarde (The persistent fireman they saved from the fire wanted to thank the brave person that very after afternoon)

2*Cognate-Congruent*: El perseverante bombero que ellos salvaron en el incendio quiso agradecerse a la valerosa persona esa misma tarde (The persistent fireman they saved from the fire wanted to thank the brave person that very after afternoon)

Sentence 175

1*Cognate-Incongruent*: El océano tempestuoso que surcaban no se podía equiparar con el río caudaloso del que les hablaron (The stormy ocean they were sailing couldn't be compared with the large river they were told about)

1*Cognate-Congruent*: El tempestuoso océano que ellos surcaban no se podía equiparar con el caudaloso río del que les hablaron (The stormy ocean they were sailing couldn't be compared with the large river they were told about)

2*Cognate-Incongruent*: El río caudaloso que surcaban no se podía equiparar con el océano tempestuoso del que les hablaron (The large river they were sailing couldn't be compared with the stormy ocean they were told about)

2*Cognate-Congruent*: El caudaloso río que ellos surcaban no se podía equiparar con el tempestuoso océano del que les hablaron (The large river they were sailing couldn't be compared with the stormy ocean they were told about)

Sentence 176

1*Cognate-Incongruent*: La batalla sangrienta que presencié en la colina fue mucho más que un suceso vergonzoso para ese pueblo (The bloody battle I witnessed in the hill was much more than just a shameful event for those people)

1*Cognate-Congruent*: La sangrienta batalla que yo presencié en la colina fue mucho más que un vergonzoso suceso para ese pueblo (The bloody battle I witnessed in the hill was much more than just a shameful event event for those people)

2*Cognate-Incongruent*: El suceso vergonzoso que presencié en la colina fue mucho más que una batalla sangrienta para ese pueblo (The shameful event I witnessed in the hill was much more than just a bloody battle event for those people)

2*Cognate-Congruent*: El vergonzoso suceso que yo presencié en la colina fue mucho más que una sangrienta batalla para ese pueblo (The shameful event I witnessed in the hill was much more than just a bloody battle event for those people)

Sentence 177

1*Cognate-Incongruent*: La medalla reluciente que recibiste después de la carrera es un galardón merecido que emocionó a todos (The shiny medal you got after the race is a well deserved prize that got everyone excited)

1*Cognate-Congruent*: La reluciente medalla que tú recibiste después de la carrera es un merecido galardón que emocionó a todos (The shiny medal you got after the race is a well deserved prize that got everyone excited)

2*Cognate-Incongruent*: El galardón merecido que recibiste después de la carrera es una medalla reluciente que emocionó a todos (The well deserved prize you got after the race is a shiny medal that got everyone excited)

2*Cognate-Congruent*: El merecido galardón que tú recibiste después de la carrera es una reluciente medalla que emocionó a todos (The well deserved prize you got after the race is a shiny medal that got everyone excited)

Sentence 178

1*Cognate-Incongruent*: La imagen asombrosa que enviaron desde la furgoneta concuerda con el informe minucioso que encontramos (The amazing image they sent from the van agrees with the detailed report we found)

1*Cognate-Congruent*: La asombrosa imagen que ellos enviaron desde la furgoneta concuerda con el minucioso informe que encontramos (The amazing image they sent from the van agrees with the detailed report we found)

2*Cognate-Incongruent*: El informe minucioso que enviaron desde la furgoneta concuerda con la imagen asombrosa que encontramos (The detailed report they sent from the van agrees with the amazing image we found)

2*Cognate-Congruent*: El minucioso informe que ellos enviaron desde la furgoneta concuerda con la asombrosa imagen que encontramos (The detailed report they sent from the van agrees with the amazing image we found)

Sentence 179

1*Cognate-Incongruent*: El yogur rico que anunciamos en el periódico tuvo más éxito que la empanada apetitosa que vendíamos primero (The tasty yogurt we advertised in the newspaper was more successful than the mouthwatering pie we used to sell first)

1*Cognate-Congruent*: El rico yogur que nosotros anunciamos en el periódico tuvo más éxito que la apetitosa empanada que vendíamos primero (The tasty yogurt we advertised in the newspaper was more successful than the mouthwatering pie we used to sell first)

2*Cognate-Incongruent*: La empanada apetitosa que anunciamos en el periódico tuvo más éxito que el yogur rico que vendíamos primero (The mouthwatering pie we advertised in the newspaper was more successful than the tasty yogurt we used to sell first)

2*Cognate-Congruent*: La apetitosa empanada que nosotros anunciamos en el periódico tuvo más éxito que el rico yogur que vendíamos primero (The mouthwatering pie we advertised in the newspaper was more successful than the tasty yogurt we used to sell first)

Sentence 180

1*Cognate-Incongruent*: El teléfono gris que tenías en el escritorio estaba al lado del teclado caro por comodidad (The gray telephone you had on your desk was next to the expensive keyboard for convenience)

1*Cognate-Congruent*: El gris teléfono que tú tenías en el escritorio estaba al lado del caro teclado por comodidad (The gray telephone you had on your desk was next to the expensive keyboard for convenience)

2*Cognate-Incongruent*: El teclado caro que tenías en el escritorio estaba al lado del teléfono gris por comodidad (The expensive keyboard you had on your desk was next to the gray telephone for convenience)

2*Cognate-Congruent*: El caro teclado que tú tenías en el escritorio estaba al lado del gris teléfono por comodidad (The expensive keyboard you had on your desk was next to the gray telephone for convenience)

Sentence 181

1*Cognate-Incongruent*: El diálogo inquietante que escribí para los personajes fue seguido de una discusión fuerte al principio del acto (The disturbing dialogue I wrote for the characters was followed by a heated argument at the beginning of the act)

1*Cognate-Congruent*: El inquietante diálogo que yo escribí para los personajes fue seguido de una fuerte discusión al principio del acto (The disturbing dialogue I wrote for the characters was followed by a heated argument at the beginning of the act)

2*Cognate-Incongruent*: La discusión fuerte que escribí para los personajes fue seguida de un diálogo inquietante al principio del acto (The heated argument I wrote for the characters was followed by a disturbing dialogue at the beginning of the act)

2*Cognate-Congruent*: La fuerte discusión que yo escribí para los personajes fue seguida de un inquietante diálogo al principio del acto (The heated argument I wrote for the characters was followed by a disturbing dialogue at the beginning of the act)

Sentence 182

1*Cognate-Incongruent*: El vegetariano riguroso que convidé a almorzar reprendió al cocinero quisquilloso por su comportamiento (The strict vegetarian I invited to lunch scolded the fussy cook because of his behavior)

1*Cognate-Congruent*: El riguroso vegetariano que yo convidé a almorzar reprendió al quisquilloso cocinero por su comportamiento (The strict vegetarian I invited to lunch scolded the fussy cook because of his behavior)

2*Cognate-Incongruent*: El cocinero quisquilloso que convidé a almorzar reprendió al vegetariano riguroso por su comportamiento (The fussy cook I invited to lunch scolded the strict vegetarian because of his behavior)

2*Cognate-Congruent*: El quisquilloso cocinero que yo convidé a almorzar reprendió al riguroso vegetariano por su comportamiento (The fussy cook I invited to lunch scolded the strict vegetarian because of his behavior)

Sentence 183

1*Cognate-Incongruent*: La audiencia calurosa que entrevistamos después de la función elogió al cantante emocionado por su cariño (The warm audience we interviewed after the performance praised the excited singer for his love)

1*Cognate-Congruent*: La calurosa audiencia que nosotros entrevistamos después de la función elogió al emocionado cantante por su cariño (The warm audience we interviewed after the performance praised the excited singer for his love)

2*Cognate-Incongruent*: El cantante emocionado que entrevistamos después de la función elogió a la audiencia calurosa por su cariño (The excited singer we interviewed after the performance praised the warm members of the audience for their love)

2*Cognate-Congruent*: El emocionado cantante que nosotros entrevistamos después de la función elogió a la calurosa audiencia por su cariño (The excited singer we interviewed after the performance praised the warm members of the audience for their love)

Sentence 184

1*Cognate-Incongruent*: La pensión escasa que van a enviarte el próximo mes es una ayuda ínfima para tus necesidades (The limited pension they are sending you next month is a very poor aid for all your needs)

1*Cognate-Congruent*: La escasa pensión que ellos van a enviarte el próximo mes es una ínfima ayuda para tus necesidades (The limited pension they are sending you next month is a very poor aid for all your needs)

2*Cognate-Incongruent*: La ayuda ínfima que van a enviarte el próximo mes es una pensión escasa para tus necesidades (The very poor aid they are sending you next month is a limited pension for all your needs)

2*Cognate-Congruent*: La ínfima ayuda que ellos van a enviarte el próximo mes es una escasa pensión para tus necesidades (The very poor aid they are sending you next month is a limited pension for all your needs)

Sentence 185

1*Cognate-Incongruent*: El candidato honrado que postulamos para el cargo quería conocer al alcalde destacado para felicitarlo (The honest candidate we nominated for the position wanted to meet the distinguished mayor to congratulate him)

1*Cognate-Congruent*: El honrado candidato que nosotros postulamos para el cargo quería conocer al destacado alcalde para felicitarlo (The honest candidate we nominated for the position wanted to meet the distinguished mayor to congratulate him)

2*Cognate-Incongruent*: El alcalde destacado que postulamos para el cargo quería conocer al candidato honrado para felicitarlo (The distinguished mayor we nominated for the position wanted to meet the honest candidate to congratulate him)

2*Cognate-Congruent*: El destacado alcalde que nosotros postulamos para el cargo quería conocer al honrado candidato para felicitarlo (The distinguished mayor we nominated for the position wanted to meet the honest candidate to congratulate him)

Sentence 186

1*Cognate-Incongruent*: El vehículo averiado que estábamos estacionando en una esquina fue impactado por un coche lujoso esa noche (The broken down vehicle we were parking on a corner was hit by a luxury car that night)

1*Cognate-Congruent*: El averiado vehículo que nosotros estábamos estacionando en una esquina fue impactado por un lujoso coche esa noche (The broken down vehicle we were parking on a corner was hit by a luxury car that night)

2*Cognate-Incongruent*: El coche lujoso que estábamos estacionando en una esquina fue impactado por un vehículo averiado esa noche (The luxury car we were parking on a corner was hit by a broken down vehicle that night)

2*Cognate-Congruent*: El lujoso coche que nosotros estábamos estacionando en una esquina fue impactado por un averiado vehículo esa noche (The luxury car we were parking on a corner was hit by a broken down vehicle that night)

Sentence 187

1 *Cognate-Incongruent*: La danza sencilla que ensayaste con los chicos tuvo lugar después de la obra corta porque había poco tiempo (The simple dance you practiced with the guys took place after the short play because there was little time left)

1 *Cognate-Congruent*: La sencilla danza que tú ensayaste con los chicos tuvo lugar después de la corta obra porque había poco tiempo (The simple dance you practiced with the guys took place after the short play because there was little time left)

2 *Cognate-Incongruent*: La obra corta que ensayaste con los chicos tuvo lugar después de la danza sencilla porque había poco tiempo (The short play you practiced with the guys took place after the simple dance because there was little time left)

2 *Cognate-Congruent*: La corta obra que tú ensayaste con los chicos tuvo lugar después de la sencilla danza porque había poco tiempo (The short play you practiced with the guys took place after the simple dance because there was little time left)

Sentence 188

1 *Cognate-Incongruent*: El debate acalorado que tuvimos en el aula comenzó como un malentendido feo por varios motivos (The heated debate we had in the classroom started as a huge misunderstanding for several reasons)

1 *Cognate-Congruent*: El acalorado debate que nosotros tuvimos en el aula comenzó como un feo malentendido por varios motivos (The heated debate we had in the classroom started as a huge misunderstanding for several reasons)

2 *Cognate-Incongruent*: El malentendido feo que tuvimos en el aula comenzó como un debate acalorado por varios motivos (The huge misunderstanding we had in the classroom started as a heated debate for several reasons)

2 *Cognate-Congruent*: El feo malentendido que nosotros tuvimos en el aula comenzó como un acalorado debate por varios motivos (The huge misunderstanding we had in the classroom started as a heated debate for several reasons)

Sentence 189

1*Cognate-Incongruent*: La familia pudiente que oímos quejarse en la iglesia estaba esperando al cura cansado para la boda (The wealthy family we heard complaining in the church was waiting for the tired priest for the wedding)

1*Cognate-Congruent*: La pudiente familia que nosotros oímos quejarse en la iglesia estaba esperando al cansado cura para la boda (The wealthy family we heard complaining in the church was waiting for the tired priest for the wedding)

2*Cognate-Incongruent*: El cura cansado que oímos quejarse en la iglesia estaba esperando a la familia pudiente para la boda (The tired priest we heard complaining in the church was waiting for the wealthy family for the wedding)

2*Cognate-Congruent*: El cansado cura que nosotros oímos quejarse en la iglesia estaba esperando a la pudiente familia para la boda (The tired priest we heard complaining in the church was waiting for the wealthy family for the wedding)

Sentence 190

1*Cognate-Incongruent*: El héroe valiente que amarraste en el tejado no sabía que eres un ladrón inofensivo cuando intentó huír (The brave hero you tied up on the roof didn't know you are a harmless thief when he tried to run away) ´

1*Cognate-Congruent*: El valiente héroe que tú amarraste en el tejado no sabía que eres un inofensivo ladrón cuando intentó huír (The brave hero you tied up on the roof didn't know you are a harmless thief when he tried to run away)

2*Cognate-Incongruent*: El ladrón inofensivo que amarraste en el tejado no sabía que eres un héroe valiente cuando intento huír (The harmless thief you tied up on the roof didn't know you are a brave hero when he tried to run away)

2*Cognate-Congruent*: El inofensivo ladrón que tú amarraste en el tejado no sabía que eres un valiente héroe cuando intentó huír (The harmless thief you tied up on the roof didn't know you are a brave hero when he tried to run away)

Sentence 191

1*Cognate-Incongruent*: El texto breve que leí tiene el mismo argumento que el cuento apasionante del que hablamos (The short text I read has the same plot than the exciting story we talked about)

1*Cognate-Congruent*: El breve texto que yo leí tiene el mismo argumento que el apasionante cuento del que hablamos (The short text I read has the same plot than the exciting story we talked about)

2*Cognate-Incongruent*: El cuento apasionante que leí tiene el mismo argumento que el texto breve del que hablamos (The exciting story I read has the same plot than the short text we talked about)

2*Cognate-Congruent*: El apasionante cuento que yo leí tiene el mismo argumento que el breve texto del que hablamos (The exciting story I read has the same plot than the short text we talked about)

Sentence 192

1*Cognate-Incongruent*: El enemigo despiadado que acorralamos en el escondite fue ayudado por el malhechor temible que estaba escondido (The ruthless enemy we cornered in the hideout was helped by the fearsome criminal who was hiding)

1*Cognate-Congruent*: El despiadado enemigo que nosotros acorralamos en el escondite fue ayudado por el temible malhechor que estaba escondido (The ruthless enemy we cornered in the hideout was helped by the fearsome criminal who was hiding)

2*Cognate-Incongruent*: El malhechor temible que acorralamos en el escondite fue ayudado por el enemigo despiadado que estaba escondido (The fearsome criminal we cornered in the hideout was helped by the ruthless enemy who was hiding)

2*Cognate-Congruent*: El temible malhechor que nosotros acorralamos en el escondite fue ayudado por el despiadado enemigo que estaba escondido (The fearsome criminal we cornered in the hideout was helped by the ruthless enemy who was hiding)

12.4. Appendix 4. *Sencences used in the study Ambiguous Sentence Processing in Translation. Experiment 6.*

Sentences were presented in six conditions The conditions are the following: Ambiguous (sentence with an adjective as final word that matches in gender with both antecedents), High (sentence with an adjective as final word that matches in gender with the first antecedent), Low (sentence with an adjective as final word that matches in gender with both antecedents), Congruent (sentence with similar structure in Spanish and English), Incongruent (sentence with different structure in Spanish and English). The female antecedents in Spanish are specified in English by the adjective “female” followed by the noun.

English translations are given in brackets.

Sentence 1

Ambiguous-Congruent: Carlos fue a la playa con el nuevo vecino del famoso bailarín que se mudó cuando se hizo rico (Carlos went to the beach with the new neighbor of the famous dancer who moved out when he became rich)

Ambiguous-Incongruent: Carlos fue a la playa con el vecino Nuevo del bailarín famoso que se mudó cuando se hizo rico (Carlos went to the beach with the new neighbor of the famous dancer who moved out when he became rich)

High-Congruent: Carlos fue a la playa con la nueva vecina del famoso bailarín que se mudó cuando se hizo rica (Carlos went to the beach with the new female neighbor of the famous dancer who moved out when she became rich)

High-Incongruent: Carlos fue a la playa con la vecina nueva del bailarín famoso que se mudó cuando se hizo rica (Carlos went to the beach with the new female neighbor of the famous dancer who moved out when she became rich)

Low-Congruent: Carlos fue a la playa con la nueva vecina del famoso bailarín que se mudó cuando se hizo rico (Carlos went to the beach with the new female neighbor of the famous dancer who moved out when he became rich)

Low-Incongruent: Carlos fue a la playa con la vecina nueva del bailarín famoso que se mudó cuando se hizo rico (Carlos went to the beach with the new female neighbor of the famous dancer who moved out when he became rich)

Sentence 2

Ambiguous-Congruent: Almudena llamó a la joven sobrina de la simpática casera que fue a Barcelona cuando estaba casada (Almudena called the young niece of the nice landlady who went to Barcelona when she was married)

Ambiguous-Incongruent: Almudena llamó a la sobrina joven de la casera simpática que fue a Barcelona cuando estaba casada (Almudena called the young niece of the nice landlady who went to Barcelona when she was married)

High-Congruent: Almudena llamó al joven sobrino de la simpática casera que fue a Barcelona cuando estaba casado (Almudena called the young nephew of the nice landlady who went to Barcelona when he was married)

High-Incongruent: Almudena llamó al sobrino joven de la casera simpática que fue a Barcelona cuando estaba casado (Almudena called the young nephew of the nice landlady who went to Barcelona when he was married)

Low-Congruent: Almudena llamó al joven sobrino de la simpática casera que fue a Barcelona cuando estaba casada (Almudena called the young nephew of the nice landlady who went to Barcelona when she was married)

Low-Incongruent: Almudena llamó al sobrino joven de la casera simpática que fue a Barcelona cuando estaba casada (Almudena called the young nephew of the nice landlady who went to Barcelona when she was married)

Sentence 3

Ambiguous-Congruent: El futbolista miró al inquieto entrenador del talentoso chico que se sentó en la grada porque fue expulsado (The football player looked at the restless team manager who sat in the grandstand because he was sent off)

Ambiguous-Incongruent: El futbolista miró al entrenador inquieto del chico talentoso que se sentó en la grada porque fue expulsado (The football player looked at the restless team manager who sat in the grandstand because he was sent off)

High-Congruent: El futbolista miró a la inquieta entrenadora del talentoso chico que se sentó en la grada porque fue expulsada (The football player looked at the restless female team manager who sat in the grandstand because she was sent off)

High-Incongruent: El futbolista miró a la entrenadora inquieta del chico talentoso que se sentó en la grada porque fue expulsada (The football player looked at the restless female team manager who sat in the grandstand because she was sent off)

Low-Congruent: El futbolista miró a la inquieta entrenadora del talentoso chico que se sentó en la grada porque fue expulsado (The football player looked at the restless female team manager who sat in the grandstand because he was sent off)

Low-Incongruent: El futbolista miró a la entrenadora inquieta del chico talentoso que se sentó en la grada porque fue expulsado expulsado (The football player looked at the restless female team manager who sat in the grandstand because he was sent off)

Sentence 4

Ambiguous-Congruent: El gerente separó a la torpe cajera de la seria cliente que salió a la calle porque estaba enfadada (The manager separated the clumsy female cashier from the serious female customer who went out to the street because she was angry)

Ambiguous-Incongruent: El gerente separó a la cajera torpe de la cliente seria que salió a la calle porque estaba enfadada (The manager separated the clumsy female cashier from the serious female customer who went out to the street because she was angry)

High-Congruent: El gerente separó al torpe cajero de la seria cliente que salió a la calle porque estaba enfadado (The manager separated the clumsy cashier from the serious female customer who went out to the street because he was angry)

High-Incongruent: El gerente separó al cajero torpe de la clienta seria que salió a la calle porque estaba enfadado (The manager separated the clumsy cashier from the serious female customer who went out to the street because he was angry)

Low-Congruent: El gerente separó al torpe cajero de la seria clienta que salió a la calle porque estaba enfadada (The manager separated the clumsy cashier from the serious female customer who went out to the street because she was angry)

Low-Incongruent: El gerente separó al cajero torpe de la clienta seria que salió a la calle porque estaba enfadada (The manager separated the clumsy cashier from the serious female customer who went out to the street because she was angry)

Sentence 5

Ambiguous-Congruent: Yo animé al preocupado cuidador del alborotoso simio que no quería comer porque estaba enfermo (I cheered up the worried keeper of the rowdy monkey who did not want to eat because he was ill)

Ambiguous-Incongruent: Yo animé al cuidador preocupado del simio alborotoso que no quería comer porque estaba enfermo (I cheered up the worried keeper of the rowdy monkey who did not want to eat because he was ill)

High-Congruent: Yo animé a la preocupada cuidadora del alborotoso simio que no quería comer porque estaba enferma (I cheered up the worried female keeper of the rowdy monkey who did not want to eat because she was ill)

High-Incongruent: Yo animé a la cuidadora preocupada del simio alborotoso que no quería comer porque estaba enferma (I cheered up the worried female keeper of the rowdy monkey who did not want to eat because she was ill)

Low-Congruent: Yo animé a la preocupada cuidadora del alborotoso simio que no quería comer porque estaba enfermo (I cheered up the worried female keeper of the rowdy monkey who did not want to eat because he was ill)

Low-Incongruent: Yo animé a la cuidadora preocupada del simio alborotoso que no quería comer porque estaba enfermo (I cheered up the worried female keeper of the rowdy monkey who did not want to eat because he was ill)

Sentence 6

Ambiguous-Congruent: Ellos saludaron a la amable abuela de la traviesa niña que sonreía cuando estaba nerviosa (They greeted the kind grandmother of the naughty girl who smiled when she was nervous)

Ambiguous-Incongruent: Ellos saludaron a la abuela amable de la niña traviesa que sonreía cuando estaba nerviosa (They greeted the kind grandmother of the naughty girl who smiled when she was nervous)

High-Congruent: Ellos saludaron al amable abuelo de la traviesa niña que sonreía cuando estaba nervioso (They greeted the kind grandfather of the naughty girl who smiled when he was nervous)

High-Incongruent: Ellos saludaron al abuelo amable de la niña traviesa que sonreía cuando estaba nervioso (They greeted the kind grandfather of the naughty girl who smiled when he was nervous)

Low-Congruent: Ellos saludaron al amable abuelo de la traviesa niña que sonreía cuando estaba nerviosa (They greeted the kind grandfather of the naughty girl who smiled when she was nervous)

Low-Incongruent: Ellos saludaron al abuelo amable de la niña traviesa que sonreía cuando estaba nerviosa (They greeted the kind grandfather of the naughty girl who smiled when she was nervous)

Sentence 7

Ambiguous-Congruent: Nosotros hablamos con el antipático barbero del gracioso conserje que abandonó el edificio porque estaba molesto (We talked to the unpleasant barber of the funny caretaker who left the building because he was upset)

Ambiguous-Incongruent: Nosotros hablamos con el barbero antipático del conserje gracioso que abandonó el edificio porque estaba molesto (We talked to the unpleasant barber of the funny caretaker who left the building because he was upset)

High-Congruent: Nosotros hablamos con la antipática barbera del gracioso conserje que abandonó el edificio porque estaba molesta (We talked to the unpleasant female barber of the funny caretaker who left the building because she was upset)

High-Incongruent: Nosotros hablamos con la barbera antipática del conserje gracioso que abandonó el edificio porque estaba molesta (We talked to the unpleasant female barber of the funny caretaker who left the building because she was upset)

Low-Congruent: Nosotros hablamos con la antipática barbera del gracioso conserje que abandonó el edificio porque estaba molesto (We talked to the unpleasant female barber of the funny caretaker who left the building because he was upset)

Low-Incongruent: Nosotros hablamos con la barbera antipática del conserje gracioso que abandonó el edificio porque estaba molesto (We talked to the unpleasant female barber of the funny caretaker who left the building because he was upset)

Sentence 8

Ambiguous-Congruent: La dueña cenó con el codicioso representante del conocido jugador que vendió una casa cuando estaba soltero (The owner had dinner with the greedy agent of the renowned player who sold a house when he was single)

Ambiguous-Incongruent: La dueña cenó con el representante codicioso del jugador conocido que vendió una casa cuando estaba soltero (The owner had dinner with the greedy agent of the renowned player who sold a house when he was single)

High-Congruent: La dueña cenó con la codiciosa representante del conocido jugador que vendió una casa cuando estaba soltera (The owner had dinner with the greedy female agent of the renowned player who sold a house when she was single)

High-Incongruent: La dueña cenó con la representante codiciosa del jugador conocido que vendió una casa cuando estaba soltera (The owner had dinner with the greedy female agent of the renowned player who sold a house when she was single)

Low-Congruent: La dueña cenó con la codiciosa representante del conocido jugador que vendió una casa cuando estaba soltero (The owner had dinner with the greedy female agent of the renowned player who sold a house when he was single)

Low-Incongruent: La dueña cenó con el representante codiciosa del jugador conocido que vendió una casa cuando estaba soltero (The owner had dinner with the greedy female agent of the renowned player who sold a house when he was single)

Sentence 9

Ambiguous-Congruent: Mi madre felicitó a la honrada costurera de la elegante muchacha que estudió en Alemania cuando era pequeña (My mother congratulated the honest seamstress of the elegant girl who studied in Germany when she was a child)

Ambiguous-Incongruent: Mi madre felicitó a la costurera honrada de la muchacha elegante que estudió en Alemania cuando era pequeña (My mother congratulated the honest seamstress of the elegant girl who studied in Germany she was a child)

High-Congruent: Mi madre felicitó al honrado costurero de la elegante muchacha que estudió en Alemania cuando era pequeño (My mother congratulated the honest tailor of the elegant girl who studied in Germany he was a child)

High-Incongruent: Mi madre felicitó al costurero honrado de la muchacha elegante que estudió en Alemania cuando era pequeño (My mother congratulated the honest tailor of the elegant girl who studied in Germany he was a child)

Low-Congruent: Mi madre felicitó al honrado costurero de la elegante muchacha que estudió en Alemania cuando era pequeña (My mother congratulated the honest tailor of the elegant girl who studied in Germany she was a child)

Low-Incongruent: Mi madre felicitó al costurero honrado de la muchacha elegante que estudió en Alemania cuando era pequeña (My mother congratulated the honest tailor of the elegant girl who studied in Germany she was a child)

Sentence 10

Ambiguous-Congruent: Luisa se disculpó con el tímido amigo del genial guionista que repartió periódicos cuando era niño (Luisa apologised to the shy friend of the brilliant scriptwriter who delivered newspapers when he was a child)

Ambiguous-Incongruent: Luisa se disculpó con el amigo tímido del guionista genial que repartió periódicos cuando era niño (Luisa apologised to the shy friend of the brilliant scriptwriter who delivered newspapers he was a child)

High-Congruent: Luisa se disculpó con la tímida amiga del genial guionista que repartió periódicos cuando era niña (Luisa apologised to the shy female friend of the brilliant scriptwriter who delivered newspapers when she was a child)

High-Incongruent: Luisa se disculpó con la amiga tímida del guionista genial que repartió periódicos cuando era niña (Luisa apologised to the shy female friend of the brilliant scriptwriter who delivered newspapers when she was a child)

Low-Congruent: Luisa se disculpó con la tímida amiga del genial guionista que repartió periódicos cuando era niño (Luisa apologised to the shy female friend of the brilliant scriptwriter who delivered newspapers when he was a child)

Low-Incongruent: Luisa se disculpó con la amiga tímida del guionista genial que repartió periódicos cuando era niño (Luisa apologised to the shy female friend of the brilliant scriptwriter who delivered newspapers when he was a child)

Sentence 11

Ambiguous-Congruent: Mi hermano jugó con el infatigable cachorro del salvaje perro que se mete en el patio del vecino cuando está hambriento (My brother played with the

tireless puppy of the wild dog which gets in the neighbour's courtyard when it feels hungry)

Ambiguous-Incongruent: Mi hermano jugó con el cachorro infatigable del perro salvaje que se mete en el patio del vecino cuando está hambriento (My brother played with the tireless puppy of the wild dog which gets in the neighbour's courtyard when it feels hungry)

High-Congruent: Mi hermano jugó con la infatigable cachorra del salvaje perro que se mete en el patio del vecino cuando está hambrienta (My brother played with the tireless female puppy of the wild dog which gets in the neighbour's courtyard when the former feels hungry)

High-Incongruent: Mi hermano jugó con la cachorra infatigable del perro salvaje que se mete en el patio del vecino cuando está hambrienta (My brother played with the tireless female puppy of the wild dog which gets in the neighbour's courtyard when the former feels hungry)

Low-Congruent: Mi hermano jugó con la infatigable cachorra del salvaje perro que se mete en el patio del vecino cuando está hambriento (My brother played with the tireless female puppy of the wild dog which gets in the neighbour's courtyard when the latter feels hungry)

Low-Incongruent: Mi hermano jugó con la cachorra infatigable del perro salvaje que se mete en el patio del vecino cuando está hambriento (My brother played with the tireless female puppy of the wild dog which gets in the neighbour's courtyard when the latter feels hungry)

Sentence 12

Ambiguous-Congruent: La policía entrevistó al corrupto abogado del peligroso reo que quería alquilar una casa en el campo para vivir solo (The police interrogated the corrupt lawyer of the dangerous inmate who wanted to rent a house in the countryside to live on his own)

Ambiguous-Incongruent: La policía entrevistó al abogado corrupto del reo peligroso que quería alquilar una casa en el campo para vivir solo (The police interrogated the corrupt lawyer of the dangerous inmate who wanted to rent a house in the countryside to live on his own)

High-Congruent: La policía entrevistó a la corrupta abogada del peligroso reo que quería alquilar una casa en el campo para vivir sola (The police interrogated the corrupt female lawyer of the dangerous inmate who wanted to rent a house in the countryside to live on her own)

High-Incongruent: La policía entrevistó a la abogada corrupta del reo peligroso que quería alquilar una casa en el campo para vivir sola (The police interrogated the corrupt female lawyer of the dangerous inmate who wanted to rent a house in the countryside to live on her own)

Low-Congruent: La policía entrevistó a la corrupta abogada del peligroso reo que quería alquilar una casa en el campo para vivir solo (The police interrogated the corrupt female lawyer of the dangerous inmate who wanted to rent a house in the countryside to live on his own)

Low-Incongruent: La policía entrevistó a la abogada corrupta del reo peligroso que quería alquilar una casa en el campo para vivir solo (The police interrogated the corrupt female lawyer of the dangerous inmate who wanted to rent a house in the countryside to live on his own)

Sentence 13

Ambiguous-Congruent: Pilar bailó con la dulce hija de la divertida maestra que fue a la fiesta sin ser invitada (Pilar danced with the sweet daughter of the fun female teacher who went to the party without her being invited)

Ambiguous-Incongruent: Pilar bailó con la hija dulce de la maestra divertida que fue a la fiesta sin ser invitada (Pilar danced with the sweet daughter of the fun female teacher who went to the party without her being invited)

High-Congruent: Pilar bailó con el dulce hijo de la divertida maestra que fue a la fiesta sin ser invitado (Pilar danced with the sweet son of the fun female teacher who went to the party without him being invited)

High-Incongruent: Pilar bailó con el hijo dulce de la maestra divertida que fue a la fiesta sin ser invitado (Pilar danced with the sweet son of the fun female teacher who went to the party without him being invited)

Low-Congruent: Pilar bailó con el dulce hijo de la divertida maestra que fue a la fiesta sin ser invitada (Pilar danced with the sweet son of the fun female teacher who went to the party without her being invited)

Low-Incongruent: Pilar bailó con el hijo dulce de la maestra divertida que fue a la fiesta sin ser invitada (Pilar danced with the sweet son of the fun female teacher who went to the party without her being invited)

Sentence 14

Ambiguous-Congruent: La azafata echó del avión al escandaloso sobrino del reputado cantante que se levantó tarde porque estaba cansado (The stewardess kicked out of the plane the annoying nephew of the renowned singer who woke up late because he was tired)

Ambiguous-Incongruent: La azafata echó del avión al sobrino escandaloso del cantante reputado que se levantó tarde porque estaba cansado (The stewardess kicked out of the plane the annoying nephew of the renowned singer who woke up late because he was tired)

High-Congruent: La azafata echó del avión a la escandalosa sobrina del reputado cantante que se levantó tarde porque estaba cansada (The stewardess kicked out of the plane the annoying niece of the renowned singer who woke up late because she was tired)

High-Incongruent: La azafata echó del avión a la sobrina escandalosa del cantante reputado que se levantó tarde porque estaba cansada (The stewardess kicked out of the plane the annoying niece of the renowned singer who woke up late because she was tired)

Low-Congruent: La azafata echó del avión a la escandalosa sobrina del reputado cantante que se levantó tarde porque estaba cansado (The stewardess kicked out of the plane the annoying niece of the renowned singer who woke up late because he was tired)

Low-Incongruent: La azafata echó del avión a la sobrina escandalosa del cantante reputado que se levantó tarde porque estaba cansado (The stewardess kicked out of the plane the annoying niece of the renowned singer who woke up late because he was tired)

Sentence 15

Ambiguous-Congruent: Linda telefoneó a la diestra asesora de la conflictiva escritora que fue a Inglaterra cuando estaba divorciada (Linda phoned the skilled female advisor of controversial female writer who went to England when she was divorced)

Ambiguous-Incongruent: Linda telefoneó a la asesora diestra de la escritora conflictiva que fue a Inglaterra cuando estaba divorciada (Linda phoned the skilled female advisor of controversial female writer who went to England when she was divorced)

High-Congruent: Linda telefoneó al diestro asesor de la conflictiva escritora que fue a Inglaterra cuando estaba divorciado (Linda phoned the skilled advisor of the controversial female writer who went to England when he was divorced)

High-Incongruent: Linda telefoneó al asesor diestro de la escritora conflictiva que fue a Inglaterra cuando estaba divorciado (Linda phoned the skilled advisor of the controversial female writer who went to England when he was divorced)

Low-Congruent: Linda telefoneó al diestro asesor de la conflictiva escritora que fue a Inglaterra cuando estaba divorciada (Linda phoned the skilled advisor of the controversial female writer who went to England when she was divorced)

Low-Incongruent: Linda telefoneó al asesor diestro de la escritora conflictiva que fue a Inglaterra cuando estaba divorciada (Linda phoned the skilled advisor of the controversial female writer who went to England when she was divorced)

Sentence 16

Ambiguous-Congruent: Antonio se encontró con el ocupado cirujano del agobiado dentista que se compró un perro para vivir acompañado (Antonio ran into the busy surgeon of the overwhelmed dentist who bought a dog so he could have company)

Ambiguous-Incongruent: Antonio se encontró con el cirujano ocupado del dentista agobiado que se compró un perro para vivir acompañado (Antonio ran into the busy surgeon of the overwhelmed dentist who bought a dog so he could have company)

High-Congruent: Antonio se encontró con la ocupada cirujana del agobiado dentista que se compró un perro para vivir acompañada (Antonio ran into the busy female surgeon of the overwhelmed dentist who bought a dog so she could have company)

High-Incongruent: Antonio se encontró con la cirujana ocupada del dentista agobiado que se compró un perro para vivir acompañada (Antonio ran into the busy female surgeon of the overwhelmed dentist who bought a dog so she could have company)

Low-Congruent: Antonio se encontró con la ocupada cirujana del agobiado dentista que se compró un perro para vivir acompañado (Antonio ran into the busy female surgeon of the overwhelmed dentist who bought a dog so he could have company)

Low-Incongruent: Antonio se encontró con la cirujana ocupada del dentista agobiado que se compró un perro para vivir acompañado (Antonio ran into the busy female surgeon of the overwhelmed dentist who bought a dog so he could have company)

Sentence 17

Ambiguous-Congruent: El doctor consultó a la experimentada enfermera de la dulce anciana que fue al mostrador porque estaba desesperada (The doctor consulted the experienced female nurse of the sweet elderly woman who went to the counter because she was desperate)

Ambiguous-Incongruent: El doctor consultó a la enfermera experimentada de la anciana dulce que fue al mostrador porque estaba desesperada (The doctor consulted the

experienced female nurse of the sweet elderly woman who went to the counter because she was desperate)

High-Congruent: El doctor consultó al experimentado enfermero de la dulce anciana que fue al mostrador porque estaba desesperado (The doctor consulted the experienced nurse of the sweet elderly woman who went to the counter because he was desperate)

High-Incongruent: El doctor consultó al enfermero experimentado de la anciana dulce que fue al mostrador porque estaba desesperado (The doctor consulted the experienced nurse of the sweet elderly woman who went to the counter because he was desperate)

Low-Congruent: El doctor consultó al experimentado enfermero de la dulce anciana que fue al mostrador porque estaba desesperada (The doctor consulted the experienced nurse of the sweet elderly woman who went to the counter because she was desperate)

Low-Incongruent: El doctor consultó al enfermero experimentado de la anciana dulce que fue al mostrador porque estaba desesperada (The doctor consulted the experienced nurse of the sweet elderly woman who went to the counter because she was desperate)

Sentence 18

Ambiguous-Congruent: El teléfono despertó al perezoso jardinero del poderoso juez que se quedó dormido en la bañera porque estaba agotado (The telephone woke up the lazy gardener of the powerful judge who fell asleep in the bathtub because he was exhausted)

Ambiguous-Incongruent: El teléfono despertó al jardinero perezoso del juez poderoso que se quedó dormido en la bañera porque estaba agotado (The telephone woke up the lazy gardener of the powerful judge who fell asleep in the bathtub because he was exhausted)

High-Congruent: El teléfono despertó a la perezosa jardinera del poderoso juez que se quedó dormida en la bañera porque estaba agotada (The telephone woke up the lazy female gardener of the powerful judge who fell asleep in the bathtub because she was exhausted)

High-Incongruent: El teléfono despertó la jardinera perezosa del juez poderoso que se quedó dormida en la bañera porque estaba agotada (The telephone woke up the lazy

female gardener of the powerful judge who fell asleep in the bathtub because she was exhausted)

Low-Congruent: El teléfono despertó a la perezosa jardinera del poderoso juez que se quedó dormida en la bañera porque estaba agotado (The telephone woke up the lazy female gardener of the powerful judge who fell asleep in the bathtub because he was exhausted)

Low-Incongruent: El teléfono despertó a la jardinera perezosa del juez poderoso que se quedó dormida en la bañera porque estaba agotado (The telephone woke up the lazy female gardener of the powerful judge who fell asleep in the bathtub because he was exhausted)

Sentence 19

Ambiguous-Congruent: El gigante preguntó por la malvada bruja de la temida reina que huyó al bosque cuando era perseguida (The giant asked for the wicked witch of the feared queen who fled to the forest when she was being followed)

Ambiguous-Incongruent: El gigante preguntó por la bruja malvada de la reina temida que huyó al bosque cuando era perseguida (The giant asked for the wicked witch of the feared queen who fled to the forest when she was being followed)

High-Congruent: El gigante preguntó por el malvado brujo de la temida reina que huyó al bosque cuando era perseguido (The giant asked for the wicked wizard of the feared queen who fled to the forest when he was being followed)

High-Incongruent: El gigante preguntó por el brujo malvado de la reina temida que huyó al bosque cuando era perseguido (The giant asked for the wicked wizard of the feared queen who fled to the forest when he was being followed)

Low-Congruent: El gigante preguntó por el malvado brujo de la temida reina que huyó al bosque cuando era perseguida (The giant asked for the wicked wizard of the feared queen who fled to the forest when she was being followed)

Low-Incongruent: El gigante preguntó por el brujo malvado de la reina temida que huyó al bosque cuando era perseguida (The giant asked for the wicked wizard of the feared queen who fled to the forest when she was being followed)

Sentence 20

Ambiguous-Congruent: Carmen le sonrió al agradable jefe del alterado vigilante que se sentó fuera porque estaba acalorado (Carmen smiled at the nice boss of the upset watchman who sat outside because he was feeling hot)

Ambiguous-Incongruent: Carmen le sonrió al jefe agradable del vigilante alterado que se sentó fuera porque estaba acalorado (Carmen smiled at the nice boss of the upset watchman who sat outside because he was feeling hot)

High-Congruent: Carmen le sonrió a la agradable jefa del alterado vigilante que se sentó fuera porque estaba acalorada (Carmen smiled at the nice female boss of the upset watchman who sat outside because she was feeling hot)

High-Incongruent: Carmen le sonrió a la jefa agradable del vigilante alterado que se sentó fuera porque estaba acalorada (Carmen smiled at the nice female boss of the upset watchman who sat outside because she was feeling hot)

Low-Congruent: Carmen le sonrió a la agradable jefa del alterado vigilante que se sentó fuera porque estaba acalorado (Carmen smiled at the nice female boss of the upset watchman who sat outside because he was feeling hot)

Low-Incongruent: Carmen le sonrió a la jefa agradable del vigilante alterado que se sentó fuera porque estaba acalorado (Carmen smiled at the nice female boss of the upset watchman who sat outside because he was feeling hot)

Sentence 21

Ambiguous-Congruent: El sirviente viajó con el cortés anfitrión del rico huésped que no bajó a cenar porque estaba ocupado (The servant travelled with the polite host of the wealthy guest who skipped dinner because he was busy)

Ambiguous-Incongruent: El sirviente viajó con el anfitrión cortés del huésped rico que no bajó a cenar porque estaba ocupado (The servant travelled with the polite host of the wealthy guest who skipped dinner because he was busy)

High-Congruent: El sirviente viajó con la cortés anfitriona del rico huésped que no bajó a cenar porque estaba ocupada (The servant travelled with the polite hostess of the wealthy guest who skipped dinner because she was busy)

High-Incongruent: El sirviente viajó con la anfitriona cortés del huésped rico que no bajó a cenar porque estaba ocupada (The servant travelled with the polite hostess of the wealthy guest who skipped dinner because she was busy)

Low-Congruent: El sirviente viajó con la cortés anfitriona del rico huésped que no bajó a cenar porque estaba ocupado (The servant travelled with the polite hostess of the wealthy guest who skipped dinner because he was busy)

Low-Incongruent: El sirviente viajó con la anfitriona cortés del huésped rico que no bajó a cenar porque estaba ocupado (The servant travelled with the polite hostess of the wealthy guest who skipped dinner because he was busy)

Sentence 22

Ambiguous-Congruent: El caballo se quedó con la cautelosa hermana de la atemorizada indígena que recorrió toda la pradera al sentirse perseguida (The horse stayed with the cautious sister of the frightened indigenous woman who went all around the meadow when she felt she was being followed)

Ambiguous-Incongruent: El caballo se quedó con la hermana cautelosa de la indígena atemorizada que recorrió toda la pradera al sentirse perseguida (The horse stayed with the cautious sister of the frightened indigenous woman who went all around the meadow when she felt she was being followed)

High-Congruent: El caballo se quedó con el cauteloso hermano de la atemorizada indígena que recorrió toda la pradera al sentirse perseguido (The horse stayed with the

cautious brother of the frightened indigenous woman who went all around the meadow when he felt he was being followed)

High-Incongruent: El caballo se quedó con el hermano cauteloso de la indígena atemorizada que recorrió toda la pradera al sentirse perseguido (The horse stayed with the cautious brother of the frightened indigenous woman who went all around the meadow when he felt he was being followed)

Low-Congruent: El caballo se quedó con el cauteloso hermano de la atemorizada indígena que recorrió toda la pradera al sentirse perseguida (The horse stayed with the cautious brother of the frightened indigenous woman who went all around the meadow when she felt she was being followed)

Low-Incongruent: El caballo se quedó con el hermano cauteloso de la indígena atemorizada que recorrió toda la pradera al sentirse perseguida (The horse stayed with the cautious brother of the frightened indigenous woman who went all around the meadow when she felt she was being followed)

Sentence 23

Ambiguous-Congruent: El cura susurró algo a la delgada tía de la encantadora novia que se sentó fuera cuando se sintió mareada (The priest whispered something to the slim aunt of the charming bride who sat outside when she felt dizzy)

Ambiguous-Incongruent: El cura susurró algo a la tía delgada de la novia encantadora que se sentó fuera cuando se sintió mareada (The priest whispered something to the slim aunt of the charming bride who sat outside when she felt dizzy)

High-Congruent: El cura susurró algo al delgado tío de la encantadora novia que se sentó fuera cuando se sintió mareado (The priest whispered something to the slim uncle of the charming bride who sat outside when he felt dizzy)

High-Incongruent: El cura susurró algo al tío delgado de la novia encantadora que se sentó fuera cuando se sintió mareado (The priest whispered something to the slim uncle of the charming bride who sat outside when he felt dizzy)

Low-Congruent: El cura susurró algo al delgado tío de la encantadora novia que se sentó fuera cuando se sintió mareada (The priest whispered something to the slim uncle of the charming bride who sat outside when she felt dizzy)

Low-Incongruent: El cura susurró algo al tío delgado de la novia encantadora que se sentó fuera cuando se sintió mareada (The priest whispered something to the slim uncle of the charming bride who sat outside when she felt dizzy)

Sentence 24

Ambiguous-Congruent: Andrea abrazó al fiel compañero del valiente bombero que regresó a su coche cuando se sintió calmado (Andrea hugged the loyal colleague of the brave firefighter who returned to his car when he felt calm)

Ambiguous-Incongruent: Andrea abrazó al compañero fiel del bombero valiente que regresó a su coche cuando se sintió calmado (Andrea hugged the loyal colleague of the brave firefighter who returned to his car when he felt calm)

High-Congruent: Andrea abrazó a la fiel compañera del valiente bombero que regresó a su coche cuando se sintió calmada (Andrea hugged the loyal female colleague of the brave firefighter who returned to her car when she felt calm)

High-Incongruent: Andrea abrazó a la compañera fiel del bombero valiente que regresó a su coche cuando se sintió calmada (Andrea hugged the loyal female colleague of the brave firefighter who returned to her car when she felt calm)

Low-Congruent: Andrea abrazó a la fiel compañera del valiente bombero que regresó a su coche cuando se sintió calmado (Andrea hugged the loyal female colleague of the brave firefighter who returned to his car when he felt calm)

Low-Incongruent: Andrea abrazó a la compañera fiel del bombero valiente que regresó a su coche cuando se sintió calmado (Andrea hugged the loyal female colleague of the brave firefighter who returned to his car when he felt calm)

Sentence 25

Ambiguous-Congruent: Victoria se quedó con el maravilloso nieto del destacado alcalde que quiso irse a su casa para estar tranquilo (Victoria stayed with the wonderful grandson of the renowned mayor who wanted to go home so he could rest)

Ambiguous-Incongruent: Victoria se quedó con el nieto maravilloso del alcalde destacado que quiso irse a su casa para estar tranquilo (Victoria stayed with the wonderful grandson of the renowned mayor who wanted to go home so he could rest)

High-Congruent: Victoria se quedó con la maravillosa nieta del destacado alcalde que quiso irse a su casa para estar tranquila (Victoria stayed with the wonderful granddaughter of the renowned mayor who wanted to go home so she could rest)

High-Incongruent: Victoria se quedó con la nieta maravillosa del alcalde destacado que quiso irse a su casa para estar tranquila (Victoria stayed with the wonderful granddaughter of the renowned mayor who wanted to go home so she could rest)

Low-Congruent: Victoria se quedó con la maravillosa nieta del destacado alcalde que quiso irse a su casa para estar tranquilo (Victoria stayed with the wonderful granddaughter of the renowned mayor who wanted to go home so he could rest)

Low-Incongruent: Victoria se quedó con la nieta maravillosa del alcalde destacado que quiso irse a su casa para estar tranquilo (Victoria stayed with the wonderful granddaughter of the renowned mayor who wanted to go home so he could rest)

Sentence 26

Ambiguous-Congruent: Vivian atrapó a la cuidadosa prima de la inofensiva ladrona que se fue a vivir con sus tíos cuando se volvió problemática (Vivian caught the cautious female cousin of the harmless female thief who went to live with her uncles when she became troublesome)

Ambiguous-Incongruent: Vivian atrapó a la prima cuidadosa de la ladrona inofensiva que se fue a vivir con sus tíos cuando se volvió problemática (Vivian caught the cautious

female cousin of the harmless female thief who went to live with her uncles when she became troublesome)

High-Congruent: Vivian atrapó al cuidadoso primo de la inofensiva ladrona que se fue a vivir con sus tíos cuando se volvió problemático (Vivian caught the cautious cousin of the harmless female thief who went to live with his uncles when he became troublesome)

High-Incongruent: Vivian atrapó al primo cuidadoso de la ladrona inofensiva que se fue a vivir con sus tíos cuando se volvió problemático (Vivian caught the cautious cousin of the harmless female thief who went to live with his uncles when he became troublesome)

Low-Congruent: Vivian atrapó al cuidadoso primo de la inofensiva ladrona que se fue a vivir con sus tíos cuando se volvió problemática (Vivian caught the cautious cousin of the harmless female thief who went to live with her uncles when she became troublesome)

Low-Incongruent: Vivian atrapó al primo cuidadoso de la ladrona inofensiva que se fue a vivir con sus tíos cuando se volvió problemática (Vivian caught the cautious cousin of the harmless female thief who went to live with her uncles when she became troublesome)

Sentence 27

Ambiguous-Congruent: Luisa regañó al cocinero quisquilloso del riguroso vegetariano que se fue a casa cuando se sintió ignorado (Luisa scolded the fussy cook of the strict vegetarian who went home when he felt ignored)

Ambiguous-Incongruent: Luisa regañó al quisquilloso cocinero del vegetariano riguroso que se fue a casa cuando se sintió ignorado (Luisa scolded the fussy cook of the strict vegetarian who went home when he felt ignored)

High-Congruent: Luisa regañó a la cocinera quisquillosa del riguroso vegetariano que se fue a casa cuando se sintió ignorada (Luisa scolded the fussy female cook of the strict vegetarian who went home when she felt ignored)

High-Incongruent: Luisa regañó a la quisquillosa cocinera del vegetariano riguroso que se fue a casa cuando se sintió ignorada (Luisa scolded the fussy female cook of the strict vegetarian who went home when she felt ignored)

Low-Congruent: Luisa regañó a la cocinera quisquillosa del riguroso vegetariano que se fue a casa cuando se sintió ignorado (Luisa scolded the fussy female cook of the strict vegetarian who went home when he felt ignored)

Low-Incongruent: Luisa regañó a la quisquillosa cocinera del vegetariano riguroso que se fue a casa cuando se sintió ignorado (Luisa scolded the fussy female cook of the strict vegetarian who went home when he felt ignored)

Sentence 28

Ambiguous-Congruent: Jorge le hizo una broma al alterado camarero del pobre mendigo que se metió en el baño cuando se sintió avergonzado (Jorge joked with the distressed waiter of the poor beggar who went into the bathroom when he felt embarrassed)

Ambiguous-Incongruent: Jorge le hizo una broma al camarero alterado del mendigo pobre que se metió en el baño cuando se sintió avergonzado (Jorge joked with the distressed waiter of the poor beggar who went into the bathroom when he felt embarrassed)

High-Congruent: Jorge le hizo una broma a la alterada camarera del pobre mendigo que se metió en el baño cuando se sintió avergonzada (Jorge joked with the distressed waitress of the poor beggar who went into the bathroom when she felt embarrassed)

High-Incongruent: Jorge le hizo una broma a la camarera alterada del mendigo pobre que se metió en el baño cuando se sintió avergonzada (Jorge joked with the distressed waitress of the poor beggar who went into the bathroom when she felt embarrassed)

Low-Congruent: Jorge le hizo una broma a la alterada camarera del pobre mendigo que se metió en el baño cuando se sintió avergonzado (Jorge joked with the distressed waitress of the poor beggar who went into the bathroom when he felt embarrassed)

Low-Incongruent: Jorge le hizo una broma a la camarera alterada del mendigo pobre que se metió en el baño cuando se sintió avergonzado (Jorge joked with the distressed waitress of the poor beggar who went to the bathroom when he felt embarrassed)

Sentence 29

Ambiguous-Congruent: Mario almorzó con el viejo empleado del amigable carnicero que fue a la piscina cuando fue despedido (Mario had lunch with the old employee of the friendly butcher who went to the swimming pool when he got fired)

Ambiguous-Incongruent: Mario almorzó con el empleado viejo del carnicero amigable que fue a la piscina cuando fue despedido (Mario had lunch with the old employee of the friendly butcher who went to the swimming pool when he got fired)

High-Congruent: Mario almorzó con la vieja empleada del amigable carnicero que fue a la piscina cuando fue despedida (Mario had lunch with the old female employee of the friendly butcher who went to the swimming pool when she got fired)

High-Incongruent: Mario almorzó con la empleada vieja del carnicero amigable que fue a la piscina cuando fue despedida (Mario had lunch with the old female employee of the friendly butcher who went to the swimming pool when she got fired)

Low-Congruent: Mario almorzó con la vieja empleada del amigable carnicero que fue a la piscina cuando fue despedido (Mario had lunch with the old female employee of the friendly butcher who went to the swimming pool when he got fired)

Low-Incongruent: Mario almorzó con la empleada vieja del carnicero amigable que fue a la piscina cuando fue despedido (Mario had lunch with the old female employee of the friendly butcher who went to the swimming pool when he got fired)

Sentence 30

Ambiguous-Congruent: Esperanza se escapó con el despiadado enemigo del implacable cazador que fue al campamento para sentirse protegido (Esperanza ran away with the ruthless enemy of the relentless hunter who went to the camp to feel protected)

Ambiguous-Incongruent: Esperanza se escapó con el enemigo despiadado del cazador implacable que fue al campamento para sentirse protegido (Esperanza ran away with the ruthless enemy of the relentless hunter who went to the camp to feel protected)

High-Congruent: Esperanza se escapó con la despiadada enemiga del implacable cazador que fue al campamento para sentirse protegida (Esperanza ran away with the ruthless female enemy of the relentless hunter who went to the camp for her to feel protected)

High-Incongruent: Esperanza se escapó con la enemiga despiadada del cazador implacable que fue al campamento para sentirse protegida (Esperanza ran away with the ruthless female enemy of the relentless hunter who went to the camp for her to feel protected)

Low-Congruent: Esperanza se escapó con la despiadada enemiga del implacable cazador que fue al campamento para sentirse protegido (Esperanza ran away with the ruthless female enemy of the relentless hunter who went to the camp to feel protected)

Low-Incongruent: Esperanza se escapó con la enemiga despiadada del cazador implacable que fue al campamento para sentirse protegido (Esperanza ran away with the ruthless female enemy of the relentless hunter who went to the camp to feel protected)

Sentence 31

Ambiguous-Congruent: Ellos desayunaron con la intranquila ahijada de la triste viuda que no quiso conducir cuando se sintió desanimada (They had breakfast with the nervous goddaughter of the sad widow who did not want to drive when she felt discouraged)

Ambiguous-Incongruent: Ellos desayunaron con la ahijada intranquila de la viuda triste que no quiso conducir cuando se sintió desanimada (They had breakfast with the nervous goddaughter of the sad widow who did not want to drive when she felt discouraged)

High-Congruent: Ellos desayunaron con el intranquilo ahijado de la triste viuda que no quiso conducir cuando se sintió desanimado (They had breakfast with the nervous godson of the sad widow who did not want to drive when he felt discouraged)

High-Incongruent: Ellos desayunaron con el ahijado intranquilo de la viuda triste que no quiso conducir cuando se sintió desanimado (They had breakfast with the nervous godson of the sad widow who did not want to drive when he felt discouraged)

Low-Congruent: Ellos desayunaron con el intranquilo ahijado de la triste viuda que no quiso conducir cuando se sintió desanimada (They had breakfast with the nervous godson of the sad widow who did not want to drive when she felt discouraged)

Low-Incongruent: Ellos desayunaron con el ahijado intranquilo de la viuda triste que no quiso conducir cuando se sintió desanimada (They had breakfast with the nervous godson of the sad widow who did not want to drive when she felt discouraged)

Sentence 32

Ambiguous-Congruent: Ana conversó con el sonriente bisabuelo del feliz deportista que se fue al parque cuando se sintió aburrido (Ana chatted with the cheerful great-grandfather of the happy athlete who went to the park when he felt bored)

Ambiguous-Incongruent: Ana conversó con el bisabuelo sonriente del deportista feliz que se fue al parque cuando se sintió aburrido (Ana chatted with the cheerful great-grandfather of the happy athlete who went to the park when he felt bored)

High-Congruent: Ana conversó con la sonriente bisabuela del feliz deportista que se fue al parque cuando se sintió aburrida (Ana chatted with the cheerful great-grandmother of the happy athlete who went to the park when she felt bored)

High-Incongruent: Ana conversó con la bisabuela sonriente del deportista feliz que se fue al parque cuando se sintió aburrida (Ana chatted with the cheerful great-grandmother of the happy athlete who went to the park when she felt bored)

Low-Congruent: Ana conversó con la sonriente bisabuela del feliz deportista que se fue al parque cuando se sintió aburrido (Ana chatted with the cheerful great-grandmother of the happy athlete who went to the park when he felt bored)

Low-Incongruent: Ana conversó con la bisabuela sonriente del deportista feliz que se fue al parque cuando se sintió aburrido (Ana chatted with the cheerful great-grandmother of the happy athlete who went to the park when he felt bored)

Sentence 33

Ambiguous-Congruent: Marcos se casó con la exigente supervisora de la eficiente vendedora que acampó junto a un lago cuando estaba desempleada (Marcos married the demanding female supervisor of the efficient saleswoman who camped beside a lake when she was unemployed)

Ambiguous-Incongruent: Marcos se casó con la supervisora exigente de la vendedora eficiente que acampó junto a un lago cuando estaba desempleada (Marcos married the demanding female supervisor of the efficient saleswoman who camped beside a lake when she was unemployed)

High-Congruent: Marcos se casó con el exigente supervisor de la eficiente vendedora que acampó junto a un lago cuando estaba desempleado (Marcos married the demanding supervisor of the efficient saleswoman who camped beside a lake when he was unemployed)

High-Incongruent: Marcos se casó con el supervisor exigente de la vendedora eficiente que acampó junto a un lago cuando estaba desempleado (Marcos married the demanding supervisor of the efficient saleswoman who camped beside a lake when he was unemployed)

Low-Congruent: Marcos se casó con el exigente supervisor de la eficiente vendedora que acampó junto a un lago cuando estaba desempleada (Marcos married the demanding supervisor of the efficient saleswoman who camped beside a lake when she was unemployed)

Low-Incongruent: Marcos se casó con el supervisor exigente de la vendedora eficiente que acampó junto a un lago cuando estaba desempleada (Marcos married the demanding supervisor of the efficient saleswoman who camped beside a lake when she was unemployed)

Sentence 34

Ambiguous-Congruent: Jacinto comió con el difícil contrincante del modesto luchador que entrenó en la India cuando estaba suspendido (Jacinto ate with the strong opponent of the modest wrestler who trained in India when he was suspended)

Ambiguous-Incongruent: Jacinto comió con el contrincante difícil del luchador modesto que entrenó en la India cuando estaba suspendido (Jacinto ate with the strong opponent of the modest wrestler who trained in India when he was suspended)

High-Congruent: Jacinto comió con la difícil contrincante del modesto luchador que entrenó en la India cuando estaba suspendida (Jacinto ate with the strong female opponent of the modest wrestler who trained in India when she was suspended)

High-Incongruent: Jacinto comió con la contrincante difícil del luchador modesto que entrenó en la India cuando estaba suspendida (Jacinto ate with the strong female opponent of the modest wrestler who trained in India when she was suspended)

Low-Congruent: Jacinto comió con la difícil contrincante del modesto luchador que entrenó en la India cuando estaba suspendido (Jacinto ate with the strong female opponent of the modest wrestler who trained in India when he was suspended)

Low-Incongruent: Jacinto comió con la contrincante difícil del luchador modesto que entrenó en la India cuando estaba suspendido (Jacinto ate with the strong female opponent of the modest wrestler who trained in India when he was suspended)

Sentence 35

Ambiguous-Congruent: Nosotros conocimos al humilde cuñado del responsable chófer que trabajó en casa como canguro antes de ser contratado (We met the humble brother-in-law of the reliable driver who worked in the house as a nanny before he got hired)

Ambiguous-Incongruent: Nosotros conocimos al cuñado humilde del chófer responsable que trabajó en casa como canguro antes de ser contratado (We met the humble brother-in-law of the reliable driver who worked in the house as a nanny before he got hired)

High-Congruent: Nosotros conocimos a la humilde cuñada del responsable chófer que trabajó en casa como canguro antes de ser contratado (We met the humble sister-in-law of the reliable driver who worked in the house as a nanny before he got hired)

High-Incongruent: Nosotros conocimos a la cuñada humilde del chófer responsable que trabajó en casa como canguro antes de ser contratado (We met the humble sister-in-law of the reliable driver who worked in the house as a nanny before he got hired)

Low-Congruent: Nosotros conocimos a la humilde cuñada del responsable chófer que trabajó en casa como canguro antes de ser contratado (We met the humble sister-in-law of the reliable driver who worked in the house as a nanny before he got hired)

Low-Incongruent: Nosotros conocimos a la cuñada humilde del chófer responsable que trabajó en casa como canguro antes de ser contratado (We met the humble sister-in-law of the reliable driver who worked in the house as a nanny before he got hired)

Sentence 36

Ambiguous-Congruent: Pablo abrazó a la amistosa suegra de la incansable granjera que no se quiso bañar en el río porque estaba resfriada (Pablo hugged the friendly mother-in-law of the tireless female farmer who did not want to swim in the river because she had a cold)

Ambiguous-Incongruent: Pablo abrazó a la suegra amistosa de la granjera incansable que no se quiso bañar en el río porque estaba resfriada (Pablo hugged the friendly mother-in-law of the tireless female farmer who did not want to swim in the river because she had a cold)

High-Congruent: Pablo abrazó al amistoso suegro de la incansable granjera que no se quiso bañar en el río porque estaba resfriado (Pablo hugged the friendly father-in-law of the tireless female farmer who did not want to swim in the river because he had a cold)

High-Incongruent: Pablo abrazó al suegro amistoso de la granjera incansable que no se quiso bañar en el río porque estaba resfriado (Pablo hugged the friendly father-in-law of the tireless female farmer who did not want to swim in the river because he had a cold)

Low-Congruent: Pablo abrazó al amistoso suegro de la incansable granjera que no se quiso bañar en el río porque estaba resfriada (Pablo hugged the friendly father-in-law of the tireless female farmer who did not want to swim in the river because she had a cold)

Low-Incongruent: Pablo abrazó al suegro amistoso de la granjera incansable que no se quiso bañar en el río porque estaba resfriada (Pablo hugged the friendly father-in-law of the tireless female farmer who did not want to swim in the river because she had a cold)

Sentence 37

Ambiguous-Congruent: Lucía se sentó con la magnífica peluquera de la respetable embajadora que firmó el contrato cuando se sintió convencida (Lucia sat with the wonderful female hairdresser of the esteemed ambassadress who signed the contract when she felt convinced)

Ambiguous-Incongruent: Lucía se sentó con la peluquera magnífica de la embajadora respetable que firmó el contrato cuando se sintió convencida (Lucia sat with the wonderful female hairdresser of the esteemed ambassadress who signed the contract when she felt convinced)

High-Congruent: Lucía se sentó con el magnífico peluquero de la respetable embajadora que firmó el contrato cuando se sintió convencido (Lucia sat with the wonderful hairdresser of the esteemed ambassadress who signed the contract when he felt convinced)

High-Incongruent: Lucía se sentó con el peluquero magnífico de la embajadora respetable que firmó el contrato cuando se sintió convencido (Lucia sat with the wonderful hairdresser of the esteemed ambassadress who signed the contract when he felt convinced)

Low-Congruent: Lucía se sentó con el magnífico peluquero de la respetable embajadora que firmó el contrato cuando se sintió convencida (Lucia sat with the wonderful hairdresser of the esteemed ambassadress who signed the contract when she felt convinced)

Low-Incongruent: Lucía se sentó con el peluquero magnífico de la embajadora respetable que firmó el contrato cuando se sintió convencida (Lucia sat with the wonderful hairdresser of the esteemed ambassadress who signed the contract when she felt convinced)

Sentence 38

Ambiguous-Congruent: Jaime fue al cine con la carismática profesora de la novata corredora que se fue de crucero cuando estaba deprimida (Jaime went to the movies with the charismatic female coach of the rookie female runner who went on a cruise when she was despressed)

Ambiguous-Incongruent: Jaime fue al cine con la profesora carismática de la corredora novata que se fue de crucero cuando estaba deprimida (Jaime went to the movies with the charismatic female coach of the rookie female runner who went on a cruise when she was despressed)

High-Congruent: Jaime fue al cine con el carismático profesor de la novata corredora que se fue de crucero cuando estaba deprimido (Jaime went to the movies with the charismatic coach of the rookie female runner who went on a cruise when he was despressed)

High-Incongruent: Jaime fue al cine con el profesor carismático de la corredora novata que se fue de crucero cuando estaba deprimido (Jaime went to the movies with the charismatic coach of the rookie female runner who went on a cruise when he was despressed)

Low-Congruent: Jaime fue al cine con el carismático profesor de la novata corredora que se fue de crucero cuando estaba deprimida (Jaime went to the movies with the charismatic coach of the rookie female runner who went on a cruise when she was despressed)

Low-Incongruent: Jaime fue al cine con el profesor carismático de la corredora novata que se fue de crucero cuando estaba deprimida (Jaime went to the movies with the charismatic coach of the rookie female runner who went on a cruise when she was despressed)

Sentence 39

Ambiguous-Congruent: Diego se asoció con el astuto consejero del magnífico fotógrafo que se quedaba en cama los lunes porque era un vago (Diego teamed up with the clever counselor of the wonderful photographer who stayed in bed on Mondays because he was lazy)

Ambiguous-Incongruent: Diego se asoció con el consejero astuto del fotógrafo magnífico que se quedaba en cama los lunes porque era un vago (Diego teamed up with the clever counselor of the wonderful photographer who stayed in bed on Mondays because he was lazy)

High-Congruent: Diego se asoció con la astuta consejera del magnífico fotógrafo que se quedaba en cama los lunes porque era una vaga (Diego teamed up with the clever female counselor of the wonderful photographer who stayed in bed on Mondays because she was lazy)

High-Incongruent: Diego se asoció con la consejera astuta del fotógrafo magnífico que se quedaba en cama los lunes porque era una vaga (Diego teamed up with the clever female counselor of the wonderful photographer who stayed in bed on Mondays because she was lazy)

Low-Congruent: Diego se asoció con la astuta consejera del magnífico fotógrafo que se quedaba en cama los lunes porque era un vago (Diego teamed up with the clever female counselor of the wonderful photographer who stayed in bed on Mondays because he was lazy)

Low-Incongruent: Diego se asoció con la consejera astuta del fotógrafo magnífico que se quedaba en cama los lunes porque era un vago (Diego teamed up with the clever female counselor of the wonderful photographer who stayed in bed on Mondays because he was lazy)

Sentence 40

Ambiguous-Congruent: El jinete confió en el renombrado pintor del aclamado rey que cambió de habitación cuando se sintió inseguro (The jockey trusted the renowned painter of the acclaimed King who changed his room when he felt unsafe)

Ambiguous-Incongruent: El jinete confió en el pintor renombrado del rey aclamado que cambió de habitación cuando se sintió inseguro (The jockey trusted the renowned painter of the acclaimed King who changed his room when he felt unsafe)

High-Congruent: El jinete confió en la renombrada pintoradel aclamado rey que cambió de habitación cuando se sintió insegura (The jockey trusted the renowned female painter of the acclaimed King who changed her room when she felt unsafe)

High-Incongruent: El jinete confió en la pintora renombrada del rey aclamado que cambió de habitación cuando se sintió insegura (The jockey trusted the renowned female painter of the acclaimed King who changed her room when she felt unsafe)

Low-Congruent: El jinete confió en la renombrada pintora del aclamado rey que cambió de habitación cuando se sintió inseguro (The jockey trusted the renowned female painter of the acclaimed King who changed his room when he felt unsafe)

Low-Incongruent: El jinete confió en la pintora renombrada del rey aclamado que cambió de habitación cuando se sintió inseguro (The jockey trusted the renowned female painter of the acclaimed King who changed his room when he felt unsafe)

Sentence 41

Ambiguous-Congruent: Néstor trabajó con la leal socia de la hábil vendedora que invirtió en una compañía cuando se hizo millonaria (Nestor worked with the loyal female partner of the skilled saleswoman who invested in a company when she became rich)

Ambiguous-Incongruent: Néstor trabajó conla socia leal de la vendedora hábil que invirtió en una compañía cuando se hizo millonaria (Nestor worked with the loyal female partner of the skilled saleswoman who invested in a company when she became rich)

High-Congruent: Néstor trabajó con el leal socio de la hábil vendedora que invirtió en una compañía cuando se hizo millonario (Nestor worked with the loyal partner of the skilled saleswoman who invested in a company when he became rich)

High-Incongruent: Néstor trabajó con el socio leal de la vendedora hábil que invirtió en una compañía cuando se hizo millonario (Nestor worked with the loyal partner of the skilled saleswoman who invested in a company when he became rich)

Low-Congruent: Néstor trabajó con el leal socio de la hábil vendedora que invirtió en una compañía cuando se hizo millonaria (Nestor worked with the loyal partner of the skilled saleswoman who invested in a company when she became rich)

Low-Incongruent: Néstor trabajó con el socio leal de la vendedora hábil que invirtió en una compañía cuando se hizo millonaria (Nestor worked with the loyal partner of the skilled saleswoman who invested in a company when she became rich)

Sentence 42

Ambiguous-Congruent: La granjera guió a la veloz mensajera de la gentil princesa que canceló su viaje porque estaba resfriada (The female farmer led the fast female messenger of the kind princess who cancelled her journey because she had a cold)

Ambiguous-Incongruent: La granjera guió a la mensajera veloz de la princesa gentil que canceló su viaje porque estaba resfriada (The female farmer led the fast female messenger of the kind princess who cancelled her journey because she had a cold)

High-Congruent: La granjera guió al veloz mensajero de la gentil princesa que canceló su viaje porque estaba resfriado (The female farmer led the fast messenger of the kind princess who cancelled his journey because he had a cold)

High-Incongruent: La granjera guió al mensajero veloz de la princesa gentil que canceló su viaje porque estaba resfriado (The female farmer led the fast messenger of the kind princess who cancelled his journey because he had a cold)

Low-Congruent: La granjera guió al veloz mensajero de la gentil princesa que canceló su viaje porque estaba resfriada (The female farmer led the fast messenger of the kind princess who cancelled her journey because she had a cold)

Low-Incongruent: La granjera guió al mensajero veloz de la princesa gentil que canceló su viaje porque estaba resfriada (The female farmer led the fast messenger of the kind princess who cancelled her journey because she had a cold)

Sentence 43

Ambiguous-Congruent: El comerciante le pidió ayuda al intimidante guardián del detestado príncipe que inició una batalla cuando se sintió humillado (The merchant asked for the help of the intimidating guardian of the hated prince who started a battle when he felt humiliated)

Ambiguous-Incongruent: El comerciante le pidió ayuda al guardián intimidante del príncipe detestado que inició una batalla cuando se sintió humillado (The merchant asked for the help of the intimidating guardian of the hated prince who started a battle when he felt humiliated)

High-Congruent: El comerciante le pidió ayuda a la intimidante guardiana del detestado príncipe que inició una batalla cuando se sintió humillada (The merchant asked for the help of the intimidating female guardian of the hated prince who started a battle when she felt humiliated)

High-Incongruent: El comerciante le pidió ayuda a la guardiana intimidante del príncipe detestado que inició una batalla cuando se sintió humillada (The merchant asked for the help of the intimidating female guardian of the hated prince who started a battle when she felt humiliated)

Low-Congruent: El comerciante le pidió ayuda a la intimidante guardiana del detestado príncipe que inició una batalla cuando se sintió humillado (The merchant asked for the help of the intimidating female guardian of the hated prince who started a battle when he felt humiliated)

Low-Incongruent: El comerciante le pidió ayuda a la guardiana intimidante del príncipe detestado que inició una batalla cuando se sintió humillado (The merchant asked for the help of the intimidating female guardian of the hated prince who started a battle when he felt humiliated)

Sentence 44

Ambiguous-Congruent: Enrique conoció a la creativa diseñadora de la popular nadadora que se quedó en un hotel hasta sentirse recuperada (Enrique met the creative female designer of the famous female swimmer who stayed in the hotel until she recovered)

Ambiguous-Incongruent: Enrique conoció a la diseñadora creativa de la nadadora popular que se quedó en un hotel hasta sentirse recuperada (Enrique met the creative female designer of the famous female swimmer who stayed in the hotel until she recovered)

High-Congruent: Enrique conoció al creativo diseñador de la popular nadadora que se quedó en un hotel hasta sentirse recuperado (Enrique met the creative designer of the famous female swimmer who stayed in the hotel until he recovered)

High-Incongruent: Enrique conoció a al diseñador creativo de la nadadora popular que se quedó en un hotel hasta sentirse recuperado (Enrique met the creative designer of the famous female swimmer who stayed in the hotel until he recovered)

Low-Congruent: Enrique conoció al creativo diseñador de la popular nadadora que se quedó en un hotel hasta sentirse recuperada (Enrique met the creative designer of the famous female swimmer who stayed in the hotel until she recovered)

Low-Incongruent: Enrique conoció aal diseñador creativo de la nadadora popular que se quedó en un hotel hasta sentirse recuperada (Enrique met the creative designer of the famous female swimmer who stayed in the hotel until she recovered)

Sentence 45

Ambiguous-Congruent: Matilde atendió a la compasiva niñera de la bonita chica que merendó en la cama porque se sentía exhausta (Matilde took care of the sympathetic

female babysitter of the pretty girl who had her snack in bed/the room because she was exhausted)

Ambiguous-Incongruent: Matilde atendió a la niñera compasiva de la chica bonita que merendó en la cama porque se sentía exhausta (Matilde took care of the sympathetic female babysitter of the pretty girl who had her snack in bed/the room because she was exhausted)

High-Congruent: Matilde atendió al compasivo niño de la bonita chica que merendó en la cama porque se sentía exhausto (Matilde took care of the sympathetic babysitter of the pretty girl who had his snack in bed/the room because he was exhausted)

High-Incongruent: Matilde atendió al niño compasivo de la chica bonita que merendó en la cama porque se sentía exhausto (Matilde took care of the sympathetic babysitter of the pretty girl who had his snack in bed/the room because he was exhausted)

Low-Congruent: Matilde atendió al compasivo niño de la bonita chica que merendó en la cama porque se sentía exhausta (Matilde took care of the sympathetic babysitter of the pretty girl who had her snack in bed/the room because she was exhausted)

Low-Incongruent: Matilde atendió al niño compasivo de la chica bonita que merendó en la cama porque se sentía exhausta (Matilde took care of the sympathetic babysitter of the pretty girl who had her snack in bed/the room because she was exhausted)

Sentence 46

Ambiguous-Congruent: Rocío cocinó para la cariñosa hermanastra de la distinguida bailarina que fue a Portugal cuando se convirtió en doctora (Rocio cooked for the affectionate stepsister of the renowned female dancer who went to Portugal when she became a doctor)

Ambiguous-Incongruent: Rocío cocinó para la hermanastra cariñosa de la bailarina distinguida que fue a Portugal cuando se convirtió en doctora (Rocio cooked for the affectionate stepsister of the renowned female dancer who went to Portugal when she became a doctor)

High-Congruent: Rocío cocinó para el cariñoso hermanastro de la distinguida bailarina que fue a Portugal cuando se convirtió en doctor (Rocio cooked for the affectionate stepbrother of the renowned female dancer who went to Portugal when he became a doctor)

High-Incongruent: Rocío cocinó para el hermanastro cariñoso de la bailarina distinguida que fue a Portugal cuando se convirtió en doctor (Rocio cooked for the affectionate stepbrother of the renowned female dancer who went to Portugal when he became a doctor)

Low-Congruent: Rocío cocinó para el cariñoso hermanastro de la distinguida bailarina que fue a Portugal cuando se convirtió en doctora (Rocio cooked for the affectionate stepbrother of the renowned female dancer who went to Portugal when she became a doctor)

Low-Incongruent: Rocío cocinó para el hermanastro cariñoso de la bailarina distinguida que fue a Portugal cuando se convirtió en doctora (Rocio cooked for the affectionate stepbrother of the renowned female dancer who went to Portugal when she became a doctor)

Sentence 47

Ambiguous-Congruent: Gloria preguntó por el serio invitado del excelente guitarrista que se sentó en un sillón porque se sentía angustiado (Gloria asked about the serious guest of the excellent guitar player who sat on an armchair because he was upset)

Ambiguous-Incongruent: Gloria preguntó por el invitado serio del guitarrista excelente que se sentó en un sillón porque se sentía angustiado (Gloria asked about the serious guest of the excellent guitar player who sat on an armchair because he was upset)

High-Congruent: Gloria preguntó por la seria invitada del excelente guitarrista que se sentó en un sillón porque se sentía angustiada (Gloria asked about the serious female guest of the excellent guitar player who sat on an armchair because she was upset)

High-Incongruent: Gloria preguntó por la invitada seria del guitarrista excelente que se sentó en un sillón porque se sentía angustiada (Gloria asked about the serious female guest of the excellent guitar player who sat on an armchair because she was upset)

Low-Congruent: Gloria preguntó por la seria invitada del excelente guitarrista que se sentó en un sillón porque se sentía angustiado (Gloria asked about the serious female guest of the excellent guitar player who sat on an armchair because he was upset)

Low-Incongruent: Gloria preguntó por la invitada seria del guitarrista excelente que se sentó en un sillón porque se sentía angustiado (Gloria asked about the serious female guest of the excellent guitar player who sat on an armchair because he was upset)

Sentence 48

Ambiguous-Congruent: Leticia intento calmar al impaciente cliente del lento mecánico que llegó tarde al taller porque se quedó dormido (Leticia tried to calm down the restless customer of the slow mechanic who arrived late at the workshop because he fell asleep)

Ambiguous-Incongruent: Leticia intento calmar al cliente impaciente del mecánico lento que llegó tarde al taller porque se quedó dormido (Leticia tried to calm down the restless customer of the slow mechanic who arrived late at the workshop because he fell asleep)

High-Congruent: Leticia intento calmar a la impaciente clienta del lento mecánico que llegó tarde al taller porque se quedó dormida (Leticia tried to calm down the restless female customer of the slow mechanic who arrived late at the workshop because she fell asleep)

High-Incongruent: Leticia intento calmar a la clienta impaciente del mecánico lento que llegó tarde al taller porque se quedó dormida (Leticia tried to calm down the restless female customer of the slow mechanic who arrived late at the workshop because she fell asleep)

Low-Congruent: Leticia intento calmar a la impaciente clienta del lento mecánico que llegó tarde al taller porque se quedó dormido (Leticia tried to calm down the restless

female customer of the slow mechanic who arrived late at the workshop because he fell asleep)

Low-Incongruent: Leticia intento calmar a la clienta impaciente del mecánico lento que llegó tarde al taller porque se quedó dormido (Leticia tried to calm down the restless female customer of the slow mechanic who arrived late at the workshop because he fell asleep)

Sentence 49

Ambiguous-Congruent: Rosa intercambió mensajes con el antiguo instructor del arriesgado piloto que dejó el trabajo para convertirse en escritor (Rosa exchanged messages with the former instructor of the daring pilot who quit his job to become a writer)

Ambiguous-Incongruent: Rosa intercambió mensajes con el instructor antiguo del piloto arriesgado que dejó el trabajo para convertirse en escritor (Rosa exchanged messages with the former instructor of the daring pilot who quit his job to become a writer)

High-Congruent: Rosa intercambió mensajes con la antigua instructora del arriesgado piloto que dejó el trabajo para convertirse en escritora (Rosa exchanged messages with the former female instructor of the daring pilot who quit her job to become a writer)

High-Incongruent: Rosa intercambió mensajes con la instructora antigua del piloto arriesgado que dejó el trabajo para convertirse en escritora (Rosa exchanged messages with the former female instructor of the daring pilot who quit her job to become a writer)

Low-Congruent: Rosa intercambió mensajes con la antigua instructora del arriesgado piloto que dejó el trabajo para convertirse en escritor (Rosa exchanged messages with the former female instructor of the daring pilot who quit his job to become a writer)

Low-Incongruent: Rosa intercambió mensajes con la instructora antigua del piloto arriesgado que dejó el trabajo para convertirse en escritor (Rosa exchanged messages with the former female instructor of the daring pilot who quit his job to become a writer)

Sentence 50

Ambiguous-Congruent: Mateo consultó al codicioso patrocinador del arriesgado motociclista que tuvo que ir a juicio cuando fue acusado (Mateo consulted the greedy sponsor of the daring motorcyclist who had to go to trial when he was accused)

Ambiguous-Incongruent: Mateo consultó al patrocinador codicioso del motociclista arriesgado que tuvo que ir a juicio cuando fue acusado (Mateo consulted the greedy sponsor of the daring motorcyclist who had to go to trial when he was accused)

High-Congruent: Mateo consultó a la codiciosa patrocinadora del arriesgado motociclista que tuvo que ir a juicio cuando fue acusada (Mateo consulted the greedy female sponsor of the daring motorcyclist who had to go to trial when she was accused)

High-Incongruent: Mateo consultó a la patrocinadora codiciosa del motociclista arriesgado que tuvo que ir a juicio cuando fue acusada (Mateo consulted the greedy female sponsor of the daring motorcyclist who had to go to trial when she was accused)

Low-Congruent: Mateo consultó a la codiciosa patrocinadora del arriesgado motociclista que tuvo que ir a juicio cuando fue acusado (Mateo consulted the greedy female sponsor of the daring motorcyclist who had to go to trial when he was accused)

Low-Incongruent: Mateo consultó a la patrocinadora codiciosa del motociclista arriesgado que tuvo que ir a juicio cuando fue acusado (Mateo consulted the greedy female sponsor of the daring motorcyclist who had to go to trial when he was accused)

Sentence 51

Ambiguous-Congruent: Eduardo compartió piso con la estricta directora de la inteligente farmacéutica que ganó un premio cuando era universitaria (Eduardo shared a flat with the strict female supervisor of the intelligent female chemist who won an award when she was a college student)

Ambiguous-Incongruent: Eduardo compartió piso con la directora estricta de la farmacéutica inteligente que ganó un premio cuando era universitaria (Eduardo shared a

flat with the strict female supervisor of the intelligent female chemist who won an award when she was a college student)

High-Congruent: Eduardo compartió piso con el estricto director de la inteligente farmacéutica que ganó un premio cuando era universitario (Eduardo shared a flat with the strict supervisor of the intelligent female chemist who won an award when he was a college student)

High-Incongruent: Eduardo compartió piso con el director estricto de la farmacéutica inteligente que ganó un premio cuando era universitario (Eduardo shared a flat with the strict supervisor of the intelligent female chemist who won an award when he was a college student)

Low-Congruent: Eduardo compartió piso con el estricto director de la inteligente farmacéutica que ganó un premio cuando era universitaria (Eduardo shared a flat with the strict supervisor of the intelligent female chemist who won an award when she was a college student)

Low-Incongruent: Eduardo compartió piso con el director estricto de la farmacéutica inteligente que ganó un premio cuando era universitaria (Eduardo shared a flat with the strict supervisor of the intelligent female chemist who won an award when she was a college student)

Sentence 52

Ambiguous-Congruent: Lisa tuvo que reunirse con la paciente editora de la minuciosa autora que dio una fecha incorrecta porque estaba emocionada (Lisa had to meet with the patient female editor of the meticulous female writer who gave a wrong date because she was excited)

Ambiguous-Incongruent: Lisa tuvo que reunirse con la editora paciente de la autora minuciosa que dio una fecha incorrecta porque estaba emocionada (Lisa had to meet with the patient female editor of the meticulous female writer who gave a wrong date because she was excited)

High-Congruent: Lisa tuvo que reunirse con el paciente editor de la minuciosa autora que dio una fecha incorrecta porque estaba emocionado (Lisa had to meet with the patient editor of the meticulous female writer who gave a wrong date because he was excited)

High-Incongruent: Lisa tuvo que reunirse con el editor paciente de la autora minuciosa que dio una fecha incorrecta porque estaba emocionado (Lisa had to meet with the patient editor of the meticulous female writer who gave a wrong date because he was excited)

Low-Congruent: Lisa tuvo que reunirse con el paciente editor de la minuciosa autora que dio una fecha incorrecta porque estaba emocionada (Lisa had to meet with the patient editor of the meticulous female writer who gave a wrong date because she was excited)

Low-Incongruent: Lisa tuvo que reunirse con el editor paciente de la autora minuciosa que dio una fecha incorrecta porque estaba emocionada (Lisa had to meet with the patient publisher of the meticulous female writer who gave a wrong date because she was excited)

Sentence 53

Ambiguous-Congruent: Emilia le envió un email al espléndido maquillador del reconocido reportero que fue ascendido porque era muy trabajador (Emilia emailed the splendid make-up artist of the renowned reporter who was promoted because he was a hard worker)

Ambiguous-Incongruent: Emilia le envió un email al maquillador espléndido del reportero reconocido que fue ascendido porque era muy trabajador (Emilia emailed the splendid make-up artist of the renowned reporter who was promoted because he was a hard worker)

High-Congruent: Emilia le envió un email a la espléndida maquilladora del reconocido reportero que fue ascendida porque era muy trabajadora (Emilia emailed the splendid female make-up artist of the renowned reporter who was promoted because she was a hard worker)

High-Incongruent: Emilia le envió un email a la maquilladora espléndida del reportero reconocido que fue ascendida porque era muy trabajadora (Emilia emailed the splendid female make-up artist of the renowned reporter who was promoted because she was a hard worker)

Low-Congruent: Emilia le envió un email a la espléndida maquilladora del reconocido reportero que fue ascendido porque era muy trabajador (Emilia emailed the splendid female make-up artist of the renowned reporter who was promoted because he was a hard worker)

Low-Incongruent: Emilia le envió un email a la maquilladora espléndida del reportero reconocido que fue ascendido porque era muy trabajador (Emilia emailed the splendid female make-up artist of the renowned reporter who was promoted because he was a hard worker)

Sentence 54

Ambiguous-Congruent: El general ascendió al valeroso capitán del perseverante soldado que volvió a casa después de ser herido (The General promoted the brave Captain of the persevering soldier who went back home after he was wounded)

Ambiguous-Incongruent: El general ascendió al capitán valeroso del soldado perseverante que volvió a casa después de ser herido (The General promoted the brave Captain of the persevering soldier who went back home after he was wounded)

High-Congruent: El general ascendió a la valerosa capitana del perseverante soldado que volvió a casa después de ser herida (The General promoted the brave female Captain of the persevering soldier who went back home after she was wounded)

High-Incongruent: El general ascendió a la capitana valerosa del soldado perseverante que volvió a casa después de ser herida (The General promoted the brave female Captain of the persevering soldier who went back home after she was wounded)

Low-Congruent: El general ascendió a la valerosa capitana del perseverante soldado que volvió a casa después de ser herido (The General promoted the brave female Captain of the persevering soldier who went back home after he was wounded)

Low-Incongruent: El general ascendió a la capitana valerosa del soldado perseverante que volvió a casa después de ser herido (The General promoted the brave female Captain of the persevering soldier who went back home after he was wounded)

Sentence 55

Ambiguous-Congruent: Julia le llevó la agenda a la meticulosa asistente de la importante delegada que exigió otro puesto porque era laboriosa (Julia took the agenda to the meticulous female assistant of the important female delegate who requested another job post because she was a hard worker)

Ambiguous-Incongruent: Julia le llevó la agenda a la asistente meticulosa de la delegada importante que exigió otro puesto porque era laboriosa (Julia took the agenda to the meticulous female assistant of the important female delegate who requested another job post because she was a hard worker)

High-Congruent: Julia le llevó la agenda al meticuloso asistente de la importante delegada que exigió otro puesto porque era laborioso (Julia took the agenda to the meticulous assistant of the important female delegate who requested another job post because he was a hard worker)

High-Incongruent: Julia le llevó la agenda al asistente meticuloso de la delegada importante que exigió otro puesto porque era laborioso (Julia took the agenda to the meticulous assistant of the important female delegate who requested another job post because he was a hard worker)

Low-Congruent: Julia le llevó la agenda al meticuloso asistente de la importante delegada que exigió otro puesto porque era laboriosa (Julia took the agenda to the meticulous assistant of the important female delegate who requested another job post because she was a hard worker)

Low-Incongruent: Julia le llevó la agenda al asistente meticuloso de la delegada importante que exigió otro puesto porque era laboriosa (Julia took the agenda to the meticulous assistant of the important female delegate who requested another job post because she was a hard worker)

Sentence 56

Ambiguous-Congruent: Beatriz pidió hablar con la modesta biógrafa de la admirada locutora que pudo asistir a la conferencia porque estaba desocupada (Beatriz asked to talk to the modest female biographer of the admired female presenter who was able to attend the conference because she was free)

Ambiguous-Incongruent: Beatriz pidió hablar con la biógrafa modesta de la locutora admirada que pudo asistir a la conferencia porque estaba desocupada (Beatriz asked to talk to the modest female biographer of the admired female presenter who was able to attend the conference because she was free)

High-Congruent: Beatriz pidió hablar con el modesto biógrafo de la admirada locutora que pudo asistir a la conferencia porque estaba desocupado (Beatriz asked to talk to the modest biographer of the admired female presenter who was able to attend the conference because he was free)

High-Incongruent: Beatriz pidió hablar con el biógrafo modesto de la locutora admirada que pudo asistir a la conferencia porque estaba desocupado (Beatriz asked to talk to the modest biographer of the admired female presenter who was able to attend the conference because he was free)

Low-Congruent: Beatriz pidió hablar con el modesto biógrafo de la admirada locutora que pudo asistir a la conferencia porque estaba desocupada (Beatriz asked to talk to the modest biographer of the admired female presenter who was able to attend the conference because she was free)

Low-Incongruent: Beatriz pidió hablar con el biógrafo modesto de la locutora admirada que pudo asistir a la conferencia porque estaba desocupada (Beatriz asked to talk to the

modest biographer of the admired female presenter who was able to attend the conference because she was free)

Sentence 57

Ambiguous-Congruent: Rocío coincidió en el edificio con la influyente arquitecta de la innovadora masajista que se puso pantalones cortos para trabajar más cómoda (While in the building, Rocio ran into the influential female architect of the innovative masseuse who wore shorts so she worked more comfortably)

Ambiguous-Incongruent: Rocío coincidió en el edificio con la arquitecta influyente de la masajista innovadora que se puso pantalones cortos para trabajar más cómoda (While in the building, Rocio ran into the influential female architect of the innovative masseuse who wore shorts so she worked more comfortably)

High-Congruent: Rocío coincidió en el edificio con el influyente arquitecto de la innovadora masajista que se puso pantalones cortos para trabajar más cómodo (While in the building, Rocio ran into the influential architect of the innovative masseuse who wore shorts so he worked more comfortably)

High-Incongruent: Rocío coincidió en el edificio con el arquitecto influyente de la masajista innovadora que se puso pantalones cortos para trabajar más cómodo (While in the building, Rocio ran into the influential architect of the innovative masseuse who wore shorts so he worked more comfortably)

Low-Congruent: Rocío coincidió en el edificio con el influyente arquitecto de la innovadora masajista que se puso pantalones cortos para trabajar más cómoda (While in the building, Rocio ran into the influential architect of the innovative masseuse who wore shorts so she worked more comfortably)

Low-Incongruent: Rocío coincidió en el edificio con el arquitecto influyente de la masajista innovadora que se puso pantalones cortos para trabajar más cómoda (Rocio ran into the influential architect of the innovative masseuse who wore shorts so she worked more comfortably)

Sentence 58

Ambiguous-Congruent: Francisco le hizo una oferta al comprensivo jefe del metódico electricista que recibió un aumento de sueldo porque era muy laborioso (Francisco made an offer to the sympathetic boss of the methodical electrician who received a pay raise because he was hard-working)

Ambiguous-Incongruent: Francisco le hizo una oferta al jefe comprensivo del electricista metódico que recibió un aumento de sueldo porque era muy laborioso (Francisco made an offer to the sympathetic boss of the methodical electrician who received a pay raise because he was hard-working)

High-Congruent: Francisco le hizo una oferta a la comprensiva jefa del metódico electricista que recibió un aumento de sueldo porque era muy laboriosa (Francisco made an offer to the sympathetic female boss of the methodical electrician who received a pay raise because she was hard-working)

High-Incongruent: Francisco le hizo una oferta a la jefa comprensiva del electricista metódico que recibió un aumento de sueldo porque era muy laboriosa (Francisco made an offer to the sympathetic female boss of the methodical electrician who received a pay raise because she was hard-working)

Low-Congruent: Francisco le hizo una oferta a la comprensiva jefa del metódico electricista que recibió un aumento de sueldo porque era muy laborioso (Francisco made an offer to the sympathetic female boss of the methodical electrician who received a pay raise because he was hard-working)

Low-Incongruent: Francisco le hizo una oferta a la jefa comprensiva del electricista metódico que recibió un aumento de sueldo porque era muy laborioso (Francisco made an offer to the sympathetic female boss of the methodical electrician who received a pay raise because he was hard-working)

Sentence 59

Ambiguous-Congruent: Mariana tuvo que esperar por el nervioso pasajero del paciente taxista que dejó una maleta en el aeropuerto porque estaba despistado (Mariana had to wait for the nervous passenger of the patient taxi driver who left a suitcase at the airport because he was absent-minded)

Ambiguous-Incongruent: Mariana tuvo que esperar por el pasajero nervioso del taxista paciente que dejó una maleta en el aeropuerto porque estaba despistado (Mariana had to wait for the nervous passenger of the patient taxi driver who left a suitcase at the airport because he was absent-minded)

High-Congruent: Mariana tuvo que esperar por la nerviosa pasajera del paciente taxista que dejó una maleta en el aeropuerto porque estaba despistada (Mariana had to wait for the nervous female passenger of the patient taxi driver who left a suitcase at the airport because she was absent-minded)

High-Incongruent: Mariana tuvo que esperar por la pasajera nerviosa del taxista paciente que dejó una maleta en el aeropuerto porque estaba despistada (Mariana had to wait for the nervous female passenger of the patient taxi driver who left a suitcase at the airport because she was absent-minded)

Low-Congruent: Mariana tuvo que esperar por la nerviosa pasajera del paciente taxista que dejó una maleta en el aeropuerto porque estaba despistado (Mariana had to wait for the nervous female passenger of the patient taxi driver who left a suitcase at the airport because he was absent-minded)

Low-Incongruent: Mariana tuvo que esperar por la pasajera nerviosa del taxista paciente que dejó una maleta en el aeropuerto porque estaba despistado (Mariana had to wait for the nervous female passenger of the patient taxi driver who left a suitcase at the airport because he was absent-minded)

Sentence 60

Ambiguous-Congruent: Silvia le pasó un mensaje a la atareada abogada de la respetada senadora que recibió una llamada de su hijo cuando estaba reunida (Silvia passed a message to the busy female lawyer of the esteemed female senator who received a call from her son while she was in a meeting)

Ambiguous-Incongruent: Silvia le pasó un mensaje a la abogada atareada de la senadora respetada que recibió una llamada de su hijo cuando estaba reunida (Silvia passed a message to the busy female lawyer of the esteemed female senator who received a call from her son while she was in a meeting)

High-Congruent: Silvia le pasó un mensaje al atareado abogado de la respetada senadora que recibió una llamada de su hijo cuando estaba reunido (Silvia passed a message to the busy lawyer of the esteemed female senator who received a call from his son while he was in a meeting)

High-Incongruent: Silvia le pasó un mensaje al abogado atareado de la senadora respetada que recibió una llamada de su hijo cuando estaba reunido (Silvia passed a message to the busy lawyer of the esteemed female senator who received a call from his son while he was in a meeting)

Low-Congruent: Silvia le pasó un mensaje al atareado abogado de la respetada senadora que recibió una llamada de su hijo cuando estaba reunida (Silvia passed a message to the busy lawyer of the esteemed female senator who received a call from her son while she was in a meeting)

Low-Incongruent: Silvia le pasó un mensaje al abogado atareado de la senadora respetada que recibió una llamada de su hijo cuando estaba reunida (Silvia passed a message to the busy lawyer of the esteemed female senator who received a call from her son while she was in a meeting)

Filler sentences

Sentence 61

Maricel bajó a su casa con los músicos de la orquesta que tocaron en el patio de la facultad de leyes (Maricel went to her house with the orchestra musicians who performed in the courtyard of the Faculty of Law)

Sentence 62

Aníbal insistió en comprar el ventilador para su habitación que vió el miércoles en la tienda del centro (Anibal insisted on buying the fan, which he saw on Wednesday in the shop in the city center, for his room)

Sentence 63

El marinero le pidió ayuda al capitán del barco pesquero que estaba dando un paseo por el muelle (The sailor asked for the help of the fishing boat captain who was taking a walk around the dock)

Sentence 64

Tomás se sacó de uno de los bolsillos el llavero de madera que le regaló su ex-novia la semana pasada (Tomas took out of his pocket the wooden keychain that his ex-girlfriend gave him as a gift last week)

Sentence 65

La bióloga se hizo amiga del pescador que la llevó hasta la orilla del río en su barca (The female biologist became friends with the fisherman who took her till the other side of the river in his boat)

Sentence 66

Fernando tenía prisa cuando se puso la corbata de su padre que encontró colgando del pomo de la puerta (Fernando was in a hurry when he put on his father's tie that he found hanging from the door handle)

Sentence 67

Lucía sabía muy bien dónde estaba escondida la bolsa de caramelos que su madre trajo el viernes de la oficina (Lucia knew very well where the candy bag, which her mother brought on Friday from work, was hidden)

Sentence 68

El camionero caminó hasta el puesto de gasolina del próximo pueblo que estaba abierto cada día las veinticuatro horas (The lorry driver walked until the gas station of the neighboring village that was open twenty-four hours a day)

Sentence 69

El árbol se cayó hacia el lado contrario de las personas que lo talaron para sacar leña (The tree fell at the opposite side of the people who cut it down in order to get firewood)

Sentence 70

Elisa se puso muy contenta cuando recibió la buena noticia de su hijo mayor que se había ido a estudiar inglés a los Estados Unidos (Elisa was very happy to receive the good news about her eldest son who had gone to study English in the United States)

Sentence 71

Los niños no querían untarse el repelente para mosquitos que sus padres habían comprado en la farmacia (The children did not want to apply the mosquito repellent that their parents had bought from the pharmacy)

Sentence 72

El carpintero subió al tejado de la casa abandonada que iba ser demolida por los vecinos del barrio (The carpenter went up the roof of the abandoned house which was to be demolished by the residents of the neighborhood)

Sentence 73

Marcelino se quedó esperando por una de sus primas en la parada de autobús que está cerca del comedor universitario (Marcelino waited for one of his female cousins at the bus stop that is near the university canteen)

Sentence 74

Alejandro se estaba lavando los dientes y no escuchó el teléfono que tenía el volumen quitado desde la noche anterior (Alejandro was brushing his teeth, so he did not hear the phone that was put on silent since the night before)

Sentence 75

El cónsul estaba buscando al guarda de la entrada de la embajada que estaba haciendo café en la cocina (The consul was looking for the guard of the entrance of the embassy who was making coffee in the kitchen)

Sentence 76

Helen encontró la mochila roja y las zapatillas que su hijo le había escondido en el armario por la mañana (Helen found the red rucksack and the trainers that her son had hidden from her in the closet in the morning)

Sentence 77

El bebé se rió con la hija pequeña de la dentista que estaba cantándole una nana para que se durmiera (The baby laughed with the youngest daughter of the female dentist who was singing it a lullaby to sleep)

Sentence 78

El coche giró hacia la izquierda y frenó cerca del peatón que estaba cruzando la calle con el semáforo en rojo (The car turned left and braked close to the pedestrian who was crossing the street when the light was red)

Sentence 79

Marcelo quedó para tomar unas cervezas con su maestro de música que se había mudado a la ciudad hacía un mes (Marcelo hung out to have some beers with his music teacher who had moved into the city a month before)

Sentence 80

El grupo fue a comprar unas cosas y luego volvió a su campamento que quedaba a tres kilómetros del pueblo (The group went to buy some things and then got back to the camp that was three kilometers away from the village)

Practice sentences

Sentence 1

La muchacha rescató al instructor responsable del niño pequeño que se cayó a la piscina porque se había distraído (The girl rescued the responsible instructor of the little boy who fell in the pool because he got distracted)

Sentence 2

El cartero le entregó una carta a la ocupada profesora de la buena estudiante que tuvo dos trabajos cuando estuvo muy endeudada (The postman delivered a letter to the busy female professor who had two jobs when she had a lot of debts)

Sentence 3

El pescador le pidió un café al camarero desocupado que estaba fumando solo en la entrada del bar (The fisherman ordered a coffee from the idle waiter who was smoking at the bar entrance)

Sentence 4

El jugador se emocionó al ver a la numerosa familia de su atenta novia que pudo ir al partido porque estaba desocupada (The player got excited when he saw the large family of his caring girlfriend who could make it to the match because she was free)

Sentence 5

El presentador del programa llamó a los padres de los participantes que estaban descansando en la cafetería porque estaban agotados (The programme host, called the participants' parents who were getting some rest at the cafeteria because they were exhausted)

Sentence 6

La encargada del hotel regañó a los nuevos recepcionistas que estaban comiendo a escondidas en la cocina (hotel manager scolded at the new receptionists who were eating in secret in the kitchen)