



FACULTADE DE FILOLOXÍA

TRABALLO DE FIN DE GRAO

Grao en Lingua e Literatura Inglesas

# Relative adjunction ambiguities in English vs Spanish

Autora: María Celia Loira Rodríguez

Titor: Dr. Carlos Acuña Fariña

Curso Académico 2018/2019



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Sinatura da alumna

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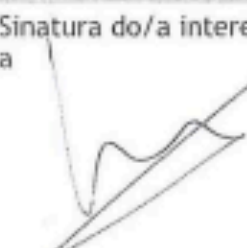

SOLICITO a aprobación do seguinte título e resumo:

**Título:** *Relative adjunction ambiguities in English vs Spanish*

**Resumo**

This work deals with the syntactic attachment preferences of ambiguous relative clauses with double nominal antecedent both in English and Spanish. Ambiguities tend to be resolved differently in both languages and in order to explain these differences I will introduce various theories of syntactic ambiguity resolution or parsing strategies, such as *late closure*, *minimal attachment* and *tuning*. For example, in the clause *Someone shot the maid of the actress who was on the balcony* (*Alguien disparó a la criada de la actriz que estaba en el balcón*) we find an ambiguity because the relative clause *who was on the balcony* can modify *the maid* or *the actress* (that is, the grammar of RC attachment does not specify who is actually in the balcony in either Spanish or English). English speakers prefer to attach the relative clause to the most recent noun of the complex noun phrase (*actress*), but Spanish speakers tend to take the first noun (the head of the overall complex NP) as the host of the relative clause (*maid*). In order to study these inclinations of parsers when producing new sentences I will report two sentence completion experiments, one in Spanish and another in English. I seek to contribute to a deeper knowledge of the factors that play a part in the resolution of this ambiguity in particular, as well as to shed light on the general dynamics of modifier attachment in language.

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## TABLE OF ABBREVIATIONS

<b>Abbreviation</b>	<b>Meaning</b>
CNP	Complex Nominal Phrase
DTC	Derivational Theory of Complexity
HA	High Attachment
LA	Low attachment
LC	Late Closure
MA	Minimal Attachment
NP	Nominal Phrase
RC	Relative Clause

# 1. INTRODUCTION

The linguistic faculty humans have is unique among the communicative systems of the animal kingdom. This faculty, that is socially-learned, has an aspect that must be highlighted, which is what makes it so special: *grammar*. We understand grammar as the guidelines that structure a language, including syntax (the grammatical arrangement of words in a sentence) and morphology (the study of the form of words and phrases). The language acquisition problem has always triggered a great debate. There are linguists, such as Chomsky (1965, 1981), who defend the innateness of language, while others, such as Langacker (1991), maintained that this ability is learned.

In 1871 Darwin described language as a kind of instinct (an innate, typically fixed pattern of behaviour in animals in response to certain stimuli). Later on, in the 1950s, Chomsky, also gives us the definition of language as an instinct. This conception of the language acquisition is characteristic of nativist linguists. Pinker (1994, p. 22) summarizes Chomsky's theory about the innateness of language with the following words:

Chomsky called attention to two fundamental facts about language. First, virtually every sentence that a person utters or understands is a brand-new combination of words, appearing for the first time in the history of the universe. Therefore, a language cannot be a repertoire of responses; the brain must contain a recipe or program that can build an unlimited set of sentences out of a finite list of words. That program may be called a mental grammar (not to be confused with pedagogical or stylistic "grammars", which are just guides to the etiquette of written prose). The second fundamental fact is that children develop these complex grammars rapidly and without formal instruction and grow up to give consistent

interpretations to novel sentence constructions that they have never before encountered. Therefore, he argued, children must innately be equipped with a plan common to the grammars of all languages, a Universal Grammar, that tells them how to distill the syntactic patterns out of the speech of their parents.

According to Chomsky, Universal Grammar comes from the innate language faculty humans have. It is a kind of mechanism that would allow people to create correct sentences like ‘Mary went to the church’ instead of the incorrect one ‘went to the church Mary’.

Several linguists did not believe in Chomsky's thoughts regarding the innatism of language, so its antithetical school of thought — cognitivism — appeared. At the end of the 1980s, this cognitive approach emerged from theoreticians such as Langacker, Johnson and Lakoff, and their main consideration is that the human language faculty is learnt. In Langacker’s view (2002, p.1) the cognitivist model:

(...) assumes that language is neither self-contained nor describable without essential reference to cognitive processing (regardless of whether one posits a special *faculté de langage*). Grammatical structures do not constitute an autonomous formal system or level of representation: they are claimed instead to be inherently symbolic, providing for the structuring and conventional symbolization of conceptual content. Lexicon, morphology, and syntax form a continuum of symbolic units, divided only arbitrarily into separate components; it is ultimately as pointless to analyze grammatical units without reference to their semantic value as to write a dictionary which omits the meanings of its lexical items.

The study of syntactic processing was found to be an interesting way of reinforcing the earlier theories that tried to analyse the human linguistic faculty, so at the end of the 1960s this study blossomed, spurred on by Chomsky's new theories. He assumed generative grammar "in terms of computational interactions among categories, a *derivational approach*" (Uriagereka, 2012, p.2). In his syntactic theory, Chomsky (1957, 1965) stated that "the surface syntactic structure of a sentence was derived (in an analytical sense) from an underlying structure or structures by a series of operations called transformations" (Garnham, 2005, p.243). These derivations, for example, turned assertions into questions or actives into passive sentences. According to Stefan Müller (2016, p. 501) the transformations sentences had were "cognitively real", so "a sentence that requires more transformations than the analysis of another sentence should therefore also be difficult for human to process". Another fact the American psycholinguist considers is that words are grouped into phrases and clauses, and then into sentences; and when words are recognized, they are grouped syntactically with what has just gone previously (Garnham, 2005). Therefore, this statement is in good agreement with the *Late Closure* principle that will be explained in the next section.

As a rejoinder to Chomsky's theories, George Miller (1962) formulated the *derivational theory of complexity* (DTC), not only denying Chomsky's theories but also considering them implausible. His proposal is based on the fact "that the difficulty of understanding a sentence depended on the complexity of the derivation of its surface structure from its underlying structure, but did not deal directly with how its surface structure was computed" like Chomsky claimed (Garnham, 2005, p.243).

After this debate regarding sentence processing, general principles were needed to explain syntactic processing, and the study of ambiguities was thought to be fruitful. For example, when somebody has to process this sentence:

(1) The horse raced past the barn fell

the first thought is that the sentence is ungrammatical, that it has an extra word or that a word is missing in the middle (i.e. *The horse raced past the barn and fell*). This is due to the fact that ‘raced’ can be either a past tense of the verb ‘to race’ or its past participle, and only the latter is suitable for the correct understanding of the rest of the sentence (*the horse that was raced*). If we read this sentence “The horse that was walked past the fence proceeded steadily, but the horse raced past the barn fell” (Pinker, 1994, p. 212), our brain will process the sentence perfectly.

## 2. AMBIGUITIES

According to the Oxford English Dictionary (n.d) ambiguity can be defined as “a word or phrase susceptible of more than one meaning; an equivocal expression”. Due to the wealth and variety of languages at a lexical, syntactic, semantic, phonetic and pragmatic level, ambiguities are inevitable.

Que la ambigüedad es connatural al lenguaje común — a lo que llamamos lengua a secas — en cualquiera de sus variadísimas especies es un hecho tan conocido que no hace falta apelar a refinadas técnicas dialécticas y retóricas para traer a los incrédulos al buen camino. (...) La ambigüedad es, sin lugar a dudas, uno de los universales más patentes del lenguaje natural. (Michelena, 1972, p. 237)

In his work “Descubriendo y procesando el lenguaje”, Manuel Carreiras (1997) states that ambiguities do exist not only at the lexical level, but also at other levels of language processing, such as structural ambiguities, which are those which derive from the grammatical relationships assigned in a sentence. In this way ambiguities can be classified into two categories: structural ambiguities and lexical ambiguities. Both ambiguities are often momentary, since ultimately the reader is able to compose the correct meaning of the phrase. Cuetos, Mitchell and Corley (1996, p. 146) point out that:

the function of the parser<sup>1</sup> is to compute the syntactic structure of the sentences, allowing the reader or listener to determine “who did what and to whom” and, more generally, to infer appropriate relationships between statements and entities expressed by the sentence.

MacDonald, Pearlmuter, and Seidenberg (1994, p. 677) claim that “syntactic ambiguities arise when a sequence of words has more than one syntactic interpretation.” These ambiguities happen when the analysis of some constituent can lead to two interpretations that are different but also plausible or when there is some information in a sentence that forces us to repeat the analysis.

In his book, Pinker (1994, p. 212) gives us examples of syntactic ambiguities such as:

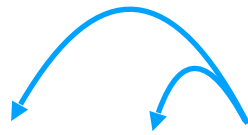
- The prime number few.
- The tycoon sold the offshore oil tracts for a lot of money wanted to kill JR.

The aim of this paper is to analyse how speakers parse the complex nominal phrase + relative clause construction (henceforth named RC), known as double nominal

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<sup>1</sup> In the literature, the term ‘parser’ refers to the syntactic processor. Pinker (1994, p. 197) defines it as “the mental program that analyzes sentence structure during language comprehension”.

antecedent, both in English and Spanish, as the ambiguity of attachment was and is the main focus of attention for many linguists.



(3) Someone shot the servant of the actress **who** was on the balcony.

In (3) a very famous example of attachment ambiguity is presented. Who was on the balcony? The actress or the servant of the actress? If we analyse the sentence we get: Someone shot [the servant]NP1 of [the actress]NP2 [who was on the balcony]RC. The relative clause can be attached to either of the two noun phrases in the complex nominal phrase. There are two possible interpretations: the RC may be attached to the first noun phrase (NP1), *the servant*, or to the second noun phrase (NP2), *the actress*. The first resolution is denominated *High Attachment (HA)*, *NP1-attachment* or *early attachment*. Correspondingly, the second one is known as *Low Attachment (LA)*, *NP2-attachment* or *late-attachment*.

high attachment



Someone shot [the servant] of the actress [who was on the balcony]

low attachment



Someone shot the servant of [the actress] [who was on the balcony]

It was originally believed that this type of ambiguity would be resolved by the *Late Closure* principle, that stated that across languages, listeners generally prefer the low interpretation in case of syntactic ambiguity (Frazier, 1979; Fernández, 2003), interpreting then that it is the actress who is on the balcony and not her servant. However, Cuetos and Mitchell (1988) discovered that *Late Closure* principle was not universal since Spanish speakers prefer a high interpretation of the relative clause, in which the whole complex nominal phrase is the head (Frazier and Clifton, 1996). In fact,

Cuetos and Mitchell do not assume that an Early Closure strategy applies in Spanish in the general case, but they do argue that it applies in the case of relative clauses following a complex NP and they therefore deny the cross-language universality of late closure. (Frazier and Clifton, 1996, p.72)

Ambiguity plays a dominant role in sentence processing studies because it is here that theoretical models differ the most. There is still a debate between modular models and connectionist or interactive models that I will introduce in the next section. The main discrepancy between the two models is the extent to which the semantic factor is involved in syntactic processing.

To finish with this section, it is important to point out a phenomenon, called vagueness, due to its similarity to ambiguity. Murphy (2010, p.84) differentiates the two terms in the following way: “if an expression is vague its meaning is imprecise, but if it is ambiguous, it has at least two separate senses”.

### 3. SENTENCE PROCESSING

When processing a sentence, we follow three different processes: lexical processing, semantic processing and syntactic processing. In this chapter and during the whole paper, we will focus primarily on syntactic processing.

To process a sentence syntactically means to identify the different constituents that compose it and to establish how these syntactic units are related to each other in a hierarchical manner. The relationship between the constituents is what gives shape to the sentence, to the message, since isolated words do not bring any meaning. Carreiras and Clifton (1999, p. 826) elaborated a more precise definition of syntactic processing:

Sentence comprehension involves more than simply retrieving word meanings. It also requires an analysis of constituent structure — that is, an analysis of the relative ordering of words in the sentence and of the grammatical roles played by these words. In order to figure out “who did what to whom,” we need to be able to identify the who, the whom, and the what in the internal structure of the sentence—the argument structure of the sentence.

In sentences (4) and (5) we can see how two sentences with the very same words but in different order mean the opposite.

(4) Peter gave Danielle a book

(5) Danielle gave Peter a book

To understand the first sentence, it is necessary to appreciate the hierarchical relations of: subject of the sentence (*Peter*), predicate of the sentence (*gave Danielle a book*), the main verb (*gave*), the indirect object (*Danielle*) and the direct object (*a book*).

Although we know the meaning of all the words that make up the sentence, the weight of the syntax is greater, since as we can see, the order of the constituents changes their meaning completely.

Syntax is a combination of words in clauses and sentences; the meaning of the sentence depends on more complex combination principles, beyond the word order and the morphosyntactic concordance between the elements of the sentence (Carreiras, 1997). In other terms, words are interpreted in terms of their constituent grouping, sometimes being associated with non-contiguous constituents. Carreiras (1997) uses as an example the sentence *la bailarina que ovacionó el público lloró de emoción*. In this sentence we can notice the hierarchical relations between the constituents since while the NP is attached to the verbal phrase *lloró de emoción*, it is not interpreted as subject, which is a more distant NP, *la bailarina*.

As might be seen, syntactic processing is harder than we may think. Human beings first acquire and then use language easily, but “existe una gran complejidad computacional en los procesos de adquisición, comprensión y producción del lenguaje” (Carreiras, 1997). Pinker (1994) makes a comparison between human parsing mechanism and artificial intelligences, that is, the ones computers have. The easiest things are not that easy for computers, while the hard things are easy for them: understanding a sentence is one of the things that is easy for us but difficult for them. “Why is it so hard to program a computer to parse sentences?” Because of two key aspects: memory and decision making. Memory is extremely simple for computers, but difficult for people, but when it comes to making decisions, the opposite happens, or at least if the sentence is well formed. The remembrance of things parsed is highly important when processing a dangling sentence, but short-term memory is an obstacle since “only a few items can be held in mind at once,

and the items are immediately subject to fading or being overwritten” (Pinker, 1994, p. 201). For example, when reading the following *top heavy sentences*:

(6) He gave the girl that he met in New York while visiting his parents for ten days around Christmas and New Year’s the candy.

(7) He sent poisoned candy that he had received in the mail from one of his business rivals connected with the Mafia to the police.

you may get lost, lose count and might have to read the sentence again to process it correctly, since the dangling sentence is open in memory for too long. These sentences are easier to understand if we put them in order:

(6.1) He gave the candy to the girl that he met in New York while visiting his parents for ten days around Christmas and New Year’s.

(7.1) He sent poisoned candy that he had received in the mail from one of his business rivals connected with the Mafia to the police.

It is believed that by moving the constituents of the phrase, the load on the listener's memory is reduced (Pinker, 1994, p. 203). This would explain why sentences (6.1) and (7.1) are easier to understand than (6) and (7).

Another thing that I find very interesting is local ambiguities. Considering that there are plenty of words that have more than one entry on the dictionary — more than one meaning — it is fairly common that the phrases they belong to also have more than one interpretation. For example, in the classic sentence *Visiting relatives can be boring* there is

an ambiguity (Pinker, 1994, p.209): *Visiting relatives* can be both the action of visiting relatives or the relatives that come to visit you. The same happens with the phrase *landing planes*. This type of sentences made from words with more than one meaning can be taken to another level. According to Pinker (1994, p. 210) The following example, which was invented by Annie Senghas, is totally grammatical:

Buffalo buffalo Buffalo buffalo buffalo buffalo Buffalo buffalo.

American bison are called *buffalo*. A kind of bison that comes from Buffalo, New York, could be called a *Buffalo buffalo*. Recall that there is a verb *to buffalo* that means “to overwhelm, to intimidate.” Imagine that New York State bison intimidate one another: *(The) Buffalo buffalo (that) Buffalo buffalo (often) buffalo (in turn) buffalo (other) Buffalo buffalo*.

In addition to local ambiguities mentioned before, it is important to mention *garden path* sentences when talking about parsing sentences. The sentence (1) that was introduced in the previous section (*The horse raced past the barn fell*), the most-often cited example of this class in the psycholinguistics literature, is similar to

(8) Fat people eat accumulates.

When our brain is processing the sentence, it is waiting for a noun phrase after the verb ‘to eat’, instead of another verb. Indeed, this sentence is hard to process because we think that *fat* is modifying *people*, instead of thinking it is a noun (*fat that people eat*). Both (1) and (8) are called *garden path* sentences, because the listener or the reader gets caught up in its first words, leading him or her “ “up the garden path” to an incorrect analysis” (Pinker,

1994, 213). This kind of sentences show that people and computers are highly different when processing sentences: computers build all possible trees and people select an analysis that looks appropriate, and whenever words that do not fit into the structure appear, they go back and start over with a different tree — a second analysis is made in order to find out where the problem was. That is, massive parallelism is not a feature of syntactic parsing.

## 4. PARSING THEORIES

Two types of models can be distinguished based on the use of the semantic context in relation to syntactic analysis processes (Carreiras, 1997, p.140). On the one hand, the modular models, *Sausage Machine* (Frazier and Fodor, 1978), the *Garden Path* (Ferreira and Clifton, 1986; Frazier, 1987; Rayner, Carlson and Frazier, 1983), its evolution to the *Construal* hypothesis (Frazier and Clifton, 1996) and the *Tuning* model (Cuetos *et al.*, 1996; Mitchell, 1994; Mitchell, Cuetos, Corley and Brysbaert, 1995). These models are dominated by the idea of serial parsing<sup>2</sup>. On the other hand, interactive models such as the *Referential* model (Altmann, Garnham and Denis, 1992; Altman and Steedman, 1988) and constraint-based models (MacDonald *et al.*, 1994; Taraban and McClelland, 1988; Trueswell, Tanenhaus and Garnsey, 1994) spouse the idea of parallel parsing<sup>3</sup> in various ways.

Carreiras (1997) draws a clear distinction between these two approaches of parsing.

About the modular approach he states that:

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<sup>2</sup> Syntactic information is processed at first, and semantic information is considered later.

<sup>3</sup> Every source of information is equally important and syntactic and non-syntactic information are processed at the same time.

parte de un sistema estructurado y modulado, compuesto de varios subsistemas. La información semántica y pragmática opera solo en etapas tardías del procesamiento del lenguaje. Así, las etapas tempranas de procesamiento son gobernadas solo por principios sintácticos. (p.138)

And about its antithetical model he claims that:

proclama un uso indiferenciado de fuentes de información sintácticas y no sintácticas en la resolución de la ambigüedad. La información semántica y pragmática gobierna virtualmente todos los aspectos del procesamiento del lenguaje, y de hecho en algunos modelos no se establece ninguna distinción entre procesamiento sintáctico y semántico. (p.137)

Moreover, there is another division according to the position they take regarding the universality of the parser. Modular approaches to parsing are widely considered universal. According to Cuetos *et al.* (1996, p.147), universal theories assume that all languages have identical parsing strategies and the same computational mechanisms (e.g. Frazier, 1987; Kimball, 1973), by assigning a secondary role to the particular features of each grammar in syntactic processing. In accordance with Chomsky's conception of the innatism of language they considered the possibility that some of the procedures that people use to process language may also be universal and innate (Cuetos *et al.*, 1996, p. 146). These models propose that regardless of the input language, the parser employs the same strategies, even though there are lexical and grammatical differences in the different languages (Tena and Pérez, 2017), in other words, that parsing strategies operate in the same way in all the languages of the world. The main models of this category are *Garden Path*, the *Construal* model, which is a modification of the previous one and *Tuning*.

However, interactive models are specific to each language, this aspect will be dealt with in more detail in the next pages.

## **4.1 Modular approaches to parsing**

### *4.1.1 The Garden Path theory*

*Garden Path*, proposed by Frazier (1987), Frazier and Fodor (1978), and Frazier and Rayner (1982), is a modular account of parsing in that it strongly defends informational encapsulation (Fodor, 1983). Informational encapsulation “consiste en una serie de etapas de procesamiento autónomas” (Carreiras 1992, p.4), they only have access to one another’s outputs, not to their internal workings. These stages Carreiras talks about are phonetics, lexicon, syntax, pragmatics and semantics and all of them act independently, without taking into account the other stages. This theory:

bases its seriality (first in syntax, then all the rest) on the presumed need for the human sentence processor (henceforth HSP) to minimise memory costs. A crucial feature of the model is that the HSP will always prefer simple analysis to complex. (Acuña-Fariña, 2003, p.14)

At first, the parser only has access to the syntactic information, that is, syntax and the grammatical categories of the words — like noun phrase, verbal phrase... —, not to the meanings. “At this early stage of processing the parser has no access to any layer of meaning (lexical, semantic, pragmatic), even if this is immediately available” (Acuña-Fariña, 2004, p.7). Moreover, the syntactic processor establishes only one analysis each time, and when it is possible to create various syntactical structures in the phrase, he will choose the one with the simplest grammatical structure (Carreiras, 1997). The creation of

the simplest structure is achieved by attaching each new word to the phrase under the principles of *Minimal Attachment* and *Late Closure* (Clifton and Ferreira, 1989 and Frazier, 1987). Syntactic information is used before completing sentence processing, and thematic and semantic information is then evaluated. If there is no concordance, if these do not agree, a reanalysis is started, which means, only in these cases, a major processing effort (Carreiras, 1997).

Therefore, the simplicity of the parser is key in this theory, which is formed by several structural principles of which it is necessary to remark the *Minimal Attachment* and the *Late Closure*, which are the principles that the parsers must follow to resolve the ambiguity:

— *Minimal Attachment* (MA): “Do not postulate any unnecessary nodes” (Frazier, 1987 p.562).

— *Late Closure* (LC): “If grammatically permissible attach new items into the clause or phrase currently being processed” (Frazier, 1987 p. 562).

In order to explain the *Minimal Attachment* principle, Acuña-Fariña (2004) gives the next examples: *Amanda believed the senator...* so ‘the senator’ may be analysed as a Direct Object of the verb ‘to believe’ (*Amanda believed the senator during the speech*) or the subject of the complement clause of ‘believe’ (*Amanda believed the senator was lying*). The *Minimal Attachment* interpretation is the first one since it involves less nodes than the second one. Moreover, simpler phrases are easier to keep in working memory (Frazier and Fodor, 1978).

Due to the mandatory application of the *Late Closure* principle when *Minimal Attachment* does not adjudicate between competing analysis, the model predicts a preference for the second name, which, in the case of the clause (7)

(7) Someone shot the servant of

the actress



who was on the balcony

also introduced previously, would be the second noun, ‘the actress’, because it is nearer in the complex noun phrase.

Despite all the importance given to this theory, and to its influence, it was found to be flawed. Garnham (2005) explains that one of the weaknesses of the theory is that “there were claims that parsing preferences could be overridden by non syntactic information, in a way the theory did not allow”. Moreover, in 1988 Cuetos and Mitchell showed that this principle was not universal, demonstrating, through a questionnaire, that for a relative sentence with double antecedent Spanish speakers prefers high attachment, thus attaching the relative clause to the first nominal clause, in the case of (1) would be *the servant*. Some years later, these shortcomings were confirmed by self-paced reading tasks (Mitchell and Cuetos 1991; Mitchell *et al.* 1995) that showed a NP1 bias in Spanish speakers. Also Cuetos *et al.* (1996) and Carreiras and Clifton (1999) studied parsing strategies from a cross-linguistic perspective, especially concerning English and Spanish. Subsequent studies showed that this inclination was also found in languages such as French (Frenck-Mestre and Pynte, 1997; Zagar, Pynte and Rativeau, 1997), German (Hemforth, Konieczny, Scheepers and Strube, 1998), Dutch (Brysbaert and Mitchell 1996), Greek

(Papadopoulou and Clahsen, 2003), European Portuguese (Soares, Fraga, Comesaña, and Piñeiro, 2010) and others. Moreover, Cuetos *et al.* (1996) and Carreiras and Clifton (1999) focused on English and Spanish. Furthermore, other context effects that seem to contradict this theory were discovered (Altman and Steedman, 1988; Altman, Garnham and Dennis, 1992; Trueswell, Tanenhaus and Garnsey, 1994; Trueswell, 1996).

All these shortcomings prompted the proponents of the theory to reformulate it, thus emerging the new *Construal hypothesis* (Frazier and Clifton, 1996; Gilboy, Sopena, Clifton, and Frazier, 1995), that will be explained now.

#### 4.1.2 *The Construal hypothesis*

The *Construal hypothesis* (Frazier and Clifton, 1996, 1997; Gilboy *et al.* 1995), as previously mentioned, was postulated by the same linguists who theorized the *Garden Path*, in order to straighten out the shortcomings of the first model. Frazier & Clifton (1996, p. 31) state the following:

What does it mean to *construe* a relative clause? By hypothesis, construal consists of a syntactic operation of association to a domain, indicated throughout this book by a dashed line (...), and an interpretation process. Association differs from attachment because it is not governed by general attachment principles that favor structurally defined “target” sites.

This new model does not differ significantly from its predecessor, the *Garden Path*, as it respects its original shape “with the addition of highly circumscribed underspecification of the syntactic representation of the relation between a nonprimary phase and the larger phrase marker” (Frazier and Clifton, 1996, p. 163). These linguists

still uphold that *Late Closure* and *Minimal Attachment* are mandatory universal principles, but these principles are limited to primary syntactic relations. First of all, it is necessary to make a clear distinction between primary syntactic relations and non-primary syntactic relations.

— Primary phrases and relations include:

- a. the subject and main predicate of any (+ or - ) finite clause.
- b. complements and obligatory constituents of primary phrases.

— Non-primary phrases and relations:

(RCs, adjunct predicates and phrases related via conjunction)

(Frazier and Clifton, 1996, p. 41)

Primary relations are the ones established between the subject and the predicate of a sentence, and the complements and obligatory constituents of primary phrases, while a secondary relation is the one established with a modifier, RCs or phrases connected by a conjunction. The processing of primary relations is based exclusively on syntactic principles, whereas the principle of *Construal* would apply to secondary relations, which implies a certain permissiveness to the intervention of extra syntactic factors in an initial stage of processing (Carreiras, 1997, p.142).

*Construed* relations are simply associations to some part of a sentence “interpreted using both structural and nonstructural information” (Gilboy *et al.*, 1995, p. 133), also including a *referentiality principle* in the sense that *attachees* (i.e. relative clause) may be more inclined to be attached to a referential host (i.e. nominal phrase) (Acuña-Fariña, 2003, p.17).

The main difference between these two kinds of relations Frazier and Clifton differentiated is that primary phrases can be compulsory or optional, while non-primary relations are always optional, not necessary, and they are not constrained nor does they interact with the syntactic properties of individual lexical constituents. Nonetheless, the primary relations are the ones that determine the transitivity of a verb, how many objects it has, and many other properties of the sentence. When a non-primary relation is detected, the *Construal* principle operates in the following way:

a. *Construal Principle*

- i. Associate a phrase XP that cannot be analyzed as instantiating a primary relation into the current thematic processing domain.
- ii. Interpret XP within that domain using structural and non-structural (interpretive) principles.

b. *Current thematic processing domain*

The current thematic processing domain is the extended maximal projection of the last theta assigner. (Frazier and Clifton, 1996:41-42)

When the CNP contains a preposition capable of providing a theta-role, i.e., a preposition with predicative meaning (as *with*, which means accompaniment or genitive of), the current processing domain dismisses the first noun attachment. The preposition in sequences like *the house of the painter that* or *the house with the roof that* assigns ‘possessor’ and ‘accompaniment’ theta-roles correspondingly, so the RC would prefer low attachment rather than high attachment (Acuña-Fariña, 2004, p.9).

Interestingly, another difference of the *Construal* model in comparison to its predecessor is that the new model proposes that the information used in the first instance is

not always exclusively syntactic, acknowledging the importance of semantic content, context and pragmatics (Tena and Pérez, 2017, p.6)

#### 4.1.3. *Tuning model*

The *Tuning* model (Brysbaert and Mitchell, 1996; Mitchell and Cuetos, 1991; Mitchell *et al.*, 1995) is a hybrid between modular, syntax-based models, like *Construal* or *Garden Path*, and interactive, lexically-based, constraint satisfaction approaches to parsing (Taraban and McClelland, 1988; Macdonald *et al.*, 1994). Just like syntax-based models, *Tuning* is premised on a syntactic processor that at the beginning is only focused on syntax. Crucially, the model argues that the choice of any of the interpretations depends on the frequency of use of whole syntactic structures, like lexically-based models. The most appropriate method in order to study the frequency of use of a language is through corpus study, therefore, this model has drawn a great deal of attention to corpus analysis in several languages.

A series of data obtained in other languages (Carreiras, 1992; Carreiras and Clifton, 1993; Cuetos and Mitchell, 1988), such as Spanish, raised many questions about the universality of the *Late Closure* principle, which caused the emergence of this new theory. These researches demonstrated that when facing an ambiguous sentence, Spanish speakers prefer to initially attach the RC to the first nominal phrase, thereby violating the principle of *Late Closure*, which proposes a local attachment (Carreiras, 1997, p.141).

Further tests carried out with a corpus study in both English and Spanish by Mitchell *et al.* (1992) confirmed the statistical predominance of the NP1 site for Spanish (60%), whereas British English speakers only attach the RC to the first noun in 38% of the cases. This correlation between the corpus studies and the online experiments is in

accordance with *Tuning* predictions. However, in languages such as German and Dutch there are some inconsistencies between corpus data and online experiments (Carreiras and Meseguer 1999).

Like the *Garden Path* model, *Tuning* advocates state that it has an autonomous processing stage, but instead of the principles of *Minimal Attachment* and *Late Closure*, the frequency of use of language structures is the key information when forming a syntactic representation of the sentence: “the parser does not choose specific trees based on properties intrinsic to them (like cognitively simpler geometries)” (Cuetos and Mitchell, 1988; Brysbaert and Mitchell, 1996). In the case of an ambiguous sentence, the speaker will initially choose the tree that was most frequent and successful in its language, instead of applying the principles of *Minimal Attachment* (Carreiras and Meseguer, 1999). In other words, the parsers will choose more frequent syntactic trees over less frequent ones, but still trees, not meanings (Acuña-Fariña, 2004, p.6). Tena and Pérez (2017, p.7) provide an example of ambiguity resolution in Spanish according to the *Tuning* hypothesis:

Dado que el español suele colocar los modificadores después de los sustantivos, cuando hay dos antecedentes, como en el caso de nuestro ejemplo (i)<sup>4</sup>, el segundo (amigo) podría ser tomado como modificador del primero (hijo); por tanto, la cláusula de relativo debería adjuntarse al primer sustantivo, es decir, al núcleo nominal y no a su modificador.

As stated by Carreiras (1997, p.142) *Construal* and *Tuning* hypotheses often lead to similar predictions, although for very different theoretical reasons. In the first one, the predictions about attachment preferences are based on computational design of the

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<sup>4</sup> (i) El hijo de un amigo mío que trabaja en los juzgados ha sido procesado por tráfico de drogas.

cognitive system (as its predecessor, the *Garden Path*). On the contrary, *Tuning* is based on the previous experience of the individuals regarding similar phrases, and the frequency with which that ambiguous structure has been resolved in one direction or the other (being attached to NP1 or NP2).

However, *Tuning* predictions are easy to falsify, one only has to prove that the data obtained from online experiments do not correspond with the corpus results (Acuña-Fariña, 2004, p. 6).

Thus, for instance, if in an ambiguous segment like *the teacher told the boy that...*, a complement *that*-clause occurs more often than a relative *that*-clause, *Tuning* would predict facilitation (faster latencies) for continuations as relatives (... *that he had to work harder*) and re-processing (lower latencies) for continuations as relatives (...*that had asked the question to stand up*). (Acuña-Fariña, 2004, p. 7)

That is not the only shortcoming of the model, since Acuña-Fariña (2004) highlights that it is the theory that has less connection with the linguistic field. Moreover, the most known flaw of the model was found by Mitchell (1994), it is called the *Grain-size* problem. What segment should we consider when studying frequency? The whole sentence? The prepositions inside the CNP? The RC with particular nouns? The far-reaching delimitation of the segment of analysis implies that the proponents can accommodate *any* finding, which makes this model weak and inaccurate.

## **4.2. Interactive approaches to parsing**

Contrary to modular models, interactive models presuppose that lexical, syntactic and semantic information works simultaneously when resolving an ambiguity, bearing in mind

semantic and contextual factors. These models underline the unbreakable link between the resolution of lexical and syntactic ambiguities. Furthermore, they are based on the idea that sentence processing is not universal but specific to each language, since this process is linked to the particular acquisition of each language, determined by its particular specificities and based on use.

#### *4.2.1. Constraint-Satisfaction models*

*Constraint-Satisfaction* models were proposed by MacDonald (1994), MacDonald *et al.* (1994) Trueswell, Tenenhaus and Garnsey (1994), Tanenhaus, Spivey-Knowlton and Hanna (2000) and Trueswell (1996). As opposed to all the models explained before, these models consider that when resolving ambiguities, several sources of information are used simultaneously, not just structural data. Lexical information is very important when solving an ambiguity, because words can be interpreted differently depending on their specific types of analysis (phonologic, semantic, syntactic or morphological analysis). Moreover, they do not make a distinction between syntactic and lexical ambiguity. This operation is seen as a process of satisfying restrictions, involving competition between incompatible alternatives (Carreiras, 1997, p. 144). When the parser reads the sentence, different alternatives are evaluated at the same time, using evidence obtained both from local input and from the context and finally it chooses the one that suits better with the contextual information (MacDonald *et al.*, 1994). If the context is not useful, the next step to follow in order to break the ambiguity is frequency of use.

For example, assuming the Competition Model of MacWhinney and Bates (1989), MacDonald *et al.* (1994a) suggest that the oddity that arises during the first-pass

reading of the sentence *The horse raced past the barn fell* occurs because the relative frequency of *raced* as a past-tense verb is much greater than that of *raced* as a past participle. When the sentence is read, both types of information become available and enter into competition, but the past-tense reading of the verb “wins”, leading to the notorious garden-path effect. (Dussias, 2001, p. 164)

To complete this section, it is also necessary to remark that MacDonald *et al.* (1994) claimed that cross-linguistic variation can be defined in terms of alterations in lexical preferences. For example, in the sentence that has been repeated throughout this work “Somebody shot the servant of the actress who was on the balcony”, the preference for low attachment in English may be because the noun *actress* is more likely to be followed by a modifier. In contrary, high attachment is preferred in Spanish.

Nonetheless, these models have a deficit of specification, as they only focus on the idea that context is important but do not go beyond that and they do not make clear predictions (Carreiras, 1997, p. 144). They are often accused of being able to accommodate any finding.

#### 4.2.2. *The Referential model*

The *Referential* model was proposed by Altmann and Steedman (1988) and Altmann, Garnham and Dennis (1992). According to this theory, in the first stage of processing, the parser analyzes several syntactic structures simultaneously, that is, in parallel, and chooses the one that suits better the pragmatic constraints of the discourse (Carreiras, 1997, p.143). In other words, parsers access various meanings, and then the context is used to select one of them. In fact, before an isolated ambiguous phrase, the parser’s preferences may change

in the presence of a previous context that promotes other analyses. For example, in the sentence *Somebody shot the servant of the actress who...* if there are two servants and an actress, the relative clause usually modifies the servant to clarify which it is, and vice versa.

NP1 preference in Spanish is based on its higher referentiality, while in English NP2 preference is due to the existence of the alternative provided by the Saxon Genitive. Carreiras and Clifton (1999) argued that Gricean principles suggest that in English, “if the speaker had wanted to express high attachment, he or she would have used the *s'* form; since he or she did not, low attachment was probably intended”.

Most of the evidence comes from reaction-time experiments. These experiments consist of comparing the reading times of critical regions. For instance, in *Alguien disparó al criado de la actriz que estaba agachado*, high attachment disambiguation is enforced, but in *Alguien disparó al criado de la actriz que estaba agachada* low attachment is now imposed. Reaction times for *agachado/agachada* are registered and if one is statistically faster than the other then it is assumed that that binding reflects the parser's preference.

Several researchers have called into question the accuracy of this model because “sugiere que el modelo del discurso se consulta frecuentemente y se actualiza de forma casi inmediata, seleccionándose una determinada estructuración u otra dependiendo del grado con el que el material del *input* se adecúa al contexto previo” (Carreiras, 1997, p. 143). Several years later, advocates of this model claimed that it is at the very early stages of parsing when context has an impact (Altmann, Garnham and Dennis, 1992).

After the description of the most important parsing strategies, in the following section I will present the experiment carried out to compare the attachment patterns of English and Spanish speakers.

## 5. EXPERIMENTS

Since the study of ambiguities was found to be useful, many studies have been carried out to explore the differences between Spanish speakers and English speakers when processing ambiguous constructions. These cross-linguistic studies were based on different parameters, to find out how the interaction of different factors work when processing a sentence. These factors are mainly extra-syntactic, for example, locality, prosody, attachée size, lexical frequency, contextual referentiality, grammatical number, animacy...

This study investigates the syntactic attachment preferences of ambiguous relative clauses with double nominal antecedents through a production experiment on English and Spanish sentences. The grammatical number of the NPs was targeted, creating four different combinations in the first experiment (Plural NP1 + Singular NP2, Singular NP1 + Plural NP2, Plural NP1 + Plural NP2, Singular NP1 + Singular NP2) and two in the second experiment (Plural NP1 + Singular NP2, Singular NP1 + Plural NP2).

Plural NP1 + Singular NP2: The family of the victim stoned the lawyers of the criminal who...

Singular NP1 + Plural NP2: The police arrested the accomplice of the drug traffickers who...

Plural NP1 + Plural NP2: The patient congratulated the assistants of the doctors who...

Singular NP1 + Singular NP2: The teacher welcomed the father of the student who...

The first experiment<sup>5</sup> I created did not meet my expectations, since several answers that do not disambiguate the sentences were received, so I made another survey (experiments 2.1 and 2.2) with a different methodology that would ensure the success of the experiment. Nevertheless, I am going to analyse the two pieces of research carried out, separating them into two sections: experiment 1 and experiment 2.

## **5.1. Experiment 1**

Native English and native Spanish speaking participants read sentences consisting of a complex nominal phrase (Nominal Phrase 1 *of/de* Nominal Phrase 2) followed by “who” (*que*) and they had to complete the relative clause, evaluating their attachment preferences for each phrase. Moreover, in the instructions for the survey I recommended them to use the verb *to be* whenever possible.

### **Method**

#### *Participants*

Sixty-nine Spanish native speakers took this questionnaire voluntarily. Their ages range from 20 to 35 years, all of them are university students or graduates, mainly from the Universidad de Santiago de Compostela, Universidad de La Coruña and Universidad de Vigo. None of them had any prior knowledge of the objectives of the experiment.

Twenty-one native English native speakers took this questionnaire voluntarily. 57'14% of them were from the United Kingdom, 33'33% were from the United States of America and 9'53% were from Ireland. Their ages ranged from 15 to 50 years. None of them had any prior knowledge of the objectives of the experiment.

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<sup>5</sup> Experiment 1 (5.1)

## *Materials and design*

I developed two questionnaires made up with parallel English and Spanish versions of different phrases (direct translations) created by myself consisting of a subject (NP) a verb and a complex nominal phrase (Nominal Phrase 1 *of/de* Nominal Phrase 2) working as a direct object, followed by “who” (que). The participants had to complete the sentence deciding if the relative clause modified the first or the second nominal phrase. The questionnaires were presented in Google Forms format, a free and easy online tool that stores the feedback in order to analyze it.

The questionnaires included a total of thirty-two phrases: eight phrases with a singular nominal phrase plus a plural nominal phrase; eight phrases with a singular nominal phrase plus a singular nominal phrase; eight phrases with a plural nominal phrase plus a plural nominal phrase and eight phrases with a plural nominal phrase plus a singular nominal phrase.

Both NP1 and NP2 of all the sentences were human nouns. One of the sentences had to be removed from the experiment due to a translation error. Here is an example of the sentences:

- The teacher welcomed the father of the student who...
- Pedro Sánchez faced the managers of the workers who...
- The medical team said sorry to the patients of the elderly doctor who...
- A pregnant woman yelled at the leader of the demonstrators who...

and its direct translation in Spanish. All the sentences used in this experiment are in appendix 1.

## *Results*

The answers were totally free, as each participant gave use to his imagination, but these were not the expected answers since many of them gave rise to doubts and did not disambiguate the phrase. I found that in both plural — plural and singular — singular sentences, disambiguation was very complicated, and most subjects answered things like "was/were happy" and it was not clear whether the relative clause was modifying NP1 or NP2. The good part about this experiment was that the subjects let their imagination fly, providing very original and funny answers.

In the English survey, for example, to the sentences I presented before, I received answers like:

(9) The teacher welcomed the father of the student who... was failing because he and his friends decided they were going to be in a band and didn't need school anymore.

(10) Pedro Sánchez faced the managers of the workers who... messed up his taco order.

(11) The medical team said sorry to the patients of the elderly doctor who... mixed up blood and ketchup samples

And to the Spanish survey I received answers like:

(12) La profesora dio la bienvenida al padre del estudiante que... iba a afilar los lápices a la papelería para hablar con sus compañeros.

(13) Pedro Sánchez se enfrentó a los representantes de los trabajadores que... sufrieron un despido masivo.

(14) El equipo médico pidió perdón a los pacientes del viejo doctor que...no fueron atendidos correctamente

It is true that, although I removed most of the answers because they were not disambiguated, and taking into account only valid answers, Spanish speakers were in general inclined to high attachment and English speakers to low attachment.

After the failure of this experiment, I decided to make two more questionnaires (Experiment 2.1 and 2.2), more restrictive and that included clues in order to obtain the disambiguation of the sentences by the subjects, which we could not obtain in this one.

## 5.2. Experiment 2

This time I decided to use only phrases with different number: phrases with singular NP1 and plural NP2, and other phrases with plural NP2 and singular NP1. After a failed experiment and to ensure the success of the second experiment, I recommended to the people that were going to take the survey to use the verb 'to be' whenever possible. Furthermore, I guided the experiment by writing in brackets an adjective, or a clause, for them to use in the construction of the sentence. An example of the format of the survey is:

Complete the phrases using the phrases in parentheses. Use the verb "to be" when possible:

BBC talked to the handmaids of the actress who\_\_\_(racist)

The journalism student interviewed the mechanic of the pilots  
who\_\_\_(talented)

And their correspondent direct translation into Spanish:

Completa las frases usando las frases entre paréntesis. Usa el verbo “ser/estar” cuando sea posible:

BBC habló con las sirvientas de la actriz que\_\_\_(racista/s)

El estudiante de periodismo entrevistó al mecánico de los pilotos

que\_\_\_(talentoso/s)

From now on I will divide this experiment into two: Experiment 2.1, which is the one in Spanish, and Experiment 2.2 which is the one in English, in order to have a clearer analysis of their answers, results and conclusions. Afterwards I will make a comparison with the obtained results in both experiments.

## **Experiment 2.1**

### **Method**

#### *Participants*

Forty-three Spanish native speakers took this questionnaire voluntarily. Their ages range from 20 to 35 years, all of them are university students or graduates, mainly from the Universidad de Santiago de Compostela, Universidad de La Coruña and Universidad de Vigo. None of them had any prior knowledge of the objectives of the experiment. Four participants were excluded from the analysis, because of the following reasons: one of them answered in English; two of them always answered with the two available choices, without resolving the ambiguity; and another one only answered four questions. Thirty-nine people remained for analysis.

## *Materials and design*

On the basis of the previous experiment, I developed two questionnaires made up with parallel English and Spanish versions of different phrases (direct translations) created by myself, most of the phrases used were taken from the first experiment, following the same pattern: subject (NP) + verb + complex NP (NP 1 *of/de* NP2) working as a direct object + ‘who’ (‘que’ in the case of the Spanish survey) + \_\_\_ (adjective/phrase). Participants had to complete the sentence deciding if the relative clause modified the first or the second nominal phrase. The questionnaires were presented in Google Forms format.

Number was targeted. This was made possible by keeping two possible combinations of singular/plural: Singular NP1 + Plural NP2 and Plural NP1 + Singular NP2. Both questionnaires included a total of twenty phrases: seven phrases with a singular nominal phrase + a plural nominal phrase; seven phrases with a plural nominal phrase + a singular nominal phrase, and six filler sentences. Both NP1 and NP2 of all the sentences were human nouns.

An example of the format of the survey is:

P-S: Un radical atropelló a los asistentes del político que \_\_\_ (asustado/s)

S-P: El presidente del equipo despidió al entrenador de los jugadores de baloncesto que \_\_\_ (pésimo/s)

‘P’ meaning ‘plural’ and ‘S’ meaning ‘singular’, regarding the grammatical number of the NP. Thus, P-S means plural NP1 + singular NP2. The subjects had to decide who was scared, the politician or her assistants, and who was dreadful, the basketball players or their coach.

All the sentences were randomly listed, alternating P-S sentences, S-P sentences and filler sentences. The list of the sentences used in this experiment is in appendix 2.

### *Results*

The responses to the questionnaires are classified in four categories: HA when participants attached the RC to NP1; LA when the RC was attached to NP2; *both* when the participant wrote, for example ‘was/were happy’ and *invalid* when the verb *to be* was not used. Nonetheless, the important categories are HA and LA.

Of the fourteen ambiguous sentences of the Spanish survey, only in four of them was a clear-preference for high attachment greater than 59% observed (phrases 1, 2, 3 and 14; three of them were P-S and one S-P). In contrast, five of the sentences showed a tendency towards low attachment greater than 59% (sentences 6, 7, 8, 9 and 11; two of them P-S and the rest S-P.) and even 71.8% in sentence 6. The other sentences (4, 5, 10, 11, 12 and 13) did not show a clear preference for any type of attachment, as they were in a distribution range less than 59/41.

The overall count of the analyzed sentences in the P-S group reveals that 46.2% of them show a preference for low attachment and 52% prefer high attachment. In the S-P group, 54,2% show a preference for low attachment and 44,7% show a preference for high attachment.

	LA	HA	both	not valid	total
1. La novia y el novio...	33,3	64,1	0,0	2,6	100,00
2.El equipo médico...	20,5	71,8	2,6	5,1	100,00
3. El radical...	35,9	64,1	0,0	0,0	100,00

4. El profesor...	43,6	56,4	0,0	0,0	100,00
5. La familia...	56,4	43,6	0,0	0,0	100,00
6. BBC	71,8	25,6	2,6	0,0	100,00
7. Tiffany's...	61,5	38,5	0,0	0,0	100,00
TOTAL	46,2	52,0	0,7	1,1	100,00

Table 1: Spanish P-S recount.

	LA	HA	both	not valid	total
8. El periodista...	59,0	41,0	0,0	0,0	100,00
9. El hotel Ritz...	59,0	38,5	0,0	2,6	100,00
10. El presidente...	48,7	48,7	0,0	2,6	100,00
11. Mary...	61,5	38,5	0,0	0,0	100,00
12. La secretaria	53,8	46,2	0,0	0,0	100,00
13. Los retirados...	56,4	41,0	0,0	2,6	100,00
14. La policía...	41,0	59,0	0,0	0,0	100,00
TOTAL	54,2	44,7	0,0	1,1	100,00

Table 2: Spanish S-P recount.

## Experiment 2.2

### Method

#### *Participants*

Forty-two English native speakers took this survey voluntarily. One participant was excluded from the analysis because he always answered with the two available choices, so forty-one participants remained for analysis: 51,2% of them were from the United States of America, 29.3% of them were from the United Kingdom, 14.6% from Ireland, 2.4% from Australia and 2,4% were Spanish<sup>6</sup>. Their ages ranged from 20 to 30 years, all of them are

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<sup>6</sup> The Spanish participant has been living in the USA all her life and English is her first language.

university students or graduates. None of them had any prior knowledge of the objectives of the experiment.

### *Materials and design*

The same materials and the same procedure as those of the experiment 2.1 were used, but this time the sentences were a direct translation into English of the used in the previous experiment. The pattern of the sentences used was also:

subject (NP) + verb + complex NP (NP 1 *de* NP2) working as a direct object, + *que* \_\_\_\_ (adjective/phrase).

All the sentences were randomly listed, alternating P-S sentences, S-P sentences and filler sentences. The list of the sentences used in this experiment is in appendix 2.

### *Results*

The responses to the questionnaires are classified in the same way as in the previous experiment: 'HA', 'LA', 'both' and 'not valid'.

Of the fourteen ambiguous sentences of the English survey, in eight of them a clear preference for the low attachment greater than 60% was observed (phrases 1, 5, 6, 7, 8, 12, 13 and 14; four of them were P-S and the other four were S-P), and even 87.8% in the sixth and 85,4% in the twelfth sentence. The other sentences did not show a clear preference for any type of attachment, as they were in a distribution range less than 60/40.

When analysing P-S results, we found out that 61.7% of the P-S sentences showed a preference for low attachment, while only 37,3% for high attachment. Results from S-P

cluster are very similar to the previous ones: 58,2% of the sentences showed a preference for low attachment and 38,3% for high attachment.

	LA	HA	Both	Not valid	Total
1. The bride and the groom...	61,0	39,0	0,0	0,0	100,00
2. The medical team...	41,5	58,8	0,0	0,0	100,00
3. A party's radical...	46,3	51,2	2,4	0,0	100,00
4. The professor...	53,7	43,9	0,0	2,4	100,00
5. The family...	68,3	29,3	2,4	0,0	100,00
6. BBC	87,8	12,2	0,0	0,0	100,00
7. Tiffany's...	73,2	26,8	0,0	0,0	100,00
TOTAL	61,7	37,3	0,7	0,3	100,00

Table 3: English P-S recount.

	LA	HA	Both	Not valid	Total
8. The journalist...	65,854	31,707	2,43 9	0,0	100,00
9. The Ritz Hotel...	39,024	51,220	7,31 7	2,439	100,00
10. The president...	39,024	56,098	4,87 8	0,0	100,00
11. Mary...	39,024	58,537	2,43 9	0,0	100,00
12. The secretary...	85,366	14,634	0,0	0,0	100,00
13. The retirees...	70,732	26,829	0,0	2,439	100,00
14. The police...	68,293	29,268	0,0	2,439	100,00
TOTAL	58,2	38,3	2,4	1,0	100,00

Table 4: English S-P recount.

Moreover, in this survey another variable was added: the nationality of the subjects. Since it has been said that American English speakers show a preference for low attachment when parsing a relative clause (Clifton, 1988), showing results more closer to Spanish than to British English, we decided to analyse the results regarding the nationality of the participants. Contrary to expectations, we did not find a significant difference between American English speakers' preferences and British English speakers'. Only in one sentence the inclination of American English speakers to NP1 (higher than 60%) was found:

S-P The president fired the coach of the basketball players who \_\_\_ (dreadful)

		Nationality						Total
		American	Australian	British	Irish	Spanish	Español	
LA	Count	8	0	5	2	1	19	35
	% in Nationality	38,1 %	0,0 %	41,7 %	33,3 %	100,0 %	48,7 %	43,8 %
HA	Count	13	1	6	3	0	19	42
	% in Nationality	61,9 %	100,0 %	50,0 %	50,0 %	0,0 %	48,7 %	52,5 %
Both	Count	0	0	1	1	0	0	2
	% in Nationality	0,0 %	0,0 %	8,3 %	16,7 %	0,0 %	0,0 %	2,5 %
Not valid	Count	0	0	0	0	0	1	1
	% in Nationality	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %	2,6 %	1,3 %
Total	Count	21	1	12	6	1	39	80
	% in Nationality	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %

Table 5: Cross classification of parsing preferences by nationality in sentence 10.

but this was not significant since the inclination of British participants to HA is 50% in this sentence.

The small statistical sample could account for explain why there are no significant differences between HA and LA. Further data collection would be needed to determine exactly the differences between those two groups of English speakers. Please refer to appendix 4 for more details.

### **5.3. General discussion and conclusions**

The main goal of this experiment is to compare the preferences of attachment in English and Spanish speakers. Moreover, another goal is to explore the role of the grammatical number in the completion of relative clauses with double antecedent.

As I pointed out previously, there is an abundant bibliography on parsing relative clauses with double antecedents in English and in Spanish: English speakers typically prefer NP2 attachment (LA) while Spanish speakers are more likely to prefer NP1 attachment (HA). Our results share a number of similarities with Cuetos and Mitchell's (1988) findings regarding the RC interpretation preferences in English and in Spanish. The results are pretty different in both languages since in English the preference for low attachment is remarkable, since in none of the sentences high attachment is preferred. By contrast, it does not occur the same in Spanish, since the results are similar in both choices: in four of the ambiguous sentences a clear preference for high attachment was observed, while five of them showed a preference for low attachment. The remaining five sentences did not show a particular preference. Although the preference for HA in Spanish is not absolute, these results contradict the *Late Closure* principle stated in the *Garden Path*

theory: “If grammatically permissible attach new items into the clause or phrase currently being processed”, Frazier, 1987 p. 562).

Results show that when a relative clause with two antecedents is analysed, not only syntactic factors but also extra-syntactic factors have an influence. As stated by Tena and Pérez (2017) regarding the results of their experiments, we found evidence to support models such as *Construal* which affirms that the parser uses both syntactic and extra-syntactic (lexicon, pragmatics and semantics) information at the same time. This would explain why in sentences such as *BBC talked to the handmaids of the actress who \_\_\_ (racist)* the same preference is chosen in both languages, 87,805% of the English readers and 71,795% of the Spanish readers chose low attachment. In this case it may be because the media would be more likely to interview somebody’s handmaids if the person they work for has done something wrong, in this case, to be racist.

			data		Total
			English	Spanish	
P-S BBC talked to the handmaids of the actress who...	LA	Count	36	28	64
		% in data	87,8 %	71,8 %	80,0 %
	HA	Count	5	10	15
		% in data	12,2 %	25,6 %	18,8 %
	Ambas	Count	0	1	1
		% in data	0,0 %	2,6 %	1,3 %
	Total	Count	41	39	80
		% in data	100,0 %	100,0 %	100,0 %

Table 6: Cross classification of parsing preferences in English vs. Spanish in sentence 6.

In contrast, in specific sentences there is quite a difference in the attachment preferences in the two languages. This mismatch was found in three sentences: *The bride and the groom didn't invite the friends of the tennis player who \_\_\_ (mean)*, *The secretary*

*inscribed the family of the children who \_\_\_ (under investigation) and the police arrested the accomplice of the drug traffickers who \_\_\_ (powerful).*

			data		Total
			English	Spanish	
P-S The bride and the groom didn't invite the friends of the tennis player who ...	LA	Count	25	13	38
		% in data	61,0 %	33,3 %	47,5 %
	HA	Count	16	25	41
		% in data	39,0 %	64,1 %	51,3 %
	not valid	Count	0	1	1
		% in data	0,0 %	2,6 %	1,3 %
Total	Count		41	39	80
	% in data		100,0 %	100,0 %	100,0 %

Table 7: Cross classification of parsing preferences in English vs. Spanish in sentence 1.

In the sentence *The bride and the groom didn't invite the friends of the tennis player who \_\_\_ (mean)*, for example, there is a highly remarkable difference between the two languages. 61% of the English speakers preferred low attachment, while 64,1% of the Spanish speakers preferred high attachment. The NP2 bias of the English participants might be explained because the existence of the Saxon Genitive in English. If the RC was attached to the NP1, it would say 'the tennis player's friends', but as the Norman Genitive is used, NP2 is assumed to be the host of the RC.

			data		Total
			English	Spanish	
S-P The secretary inscribed the family of the children who	LA	Count	35	21	56
		% in data	85,4 %	53,8 %	70,0 %
	HA	Count	6	18	24
		% in data	14,6 %	46,2 %	30,0 %
Total	Count		41	39	80
	% in data		100,0 %	100,0 %	100,0 %

Table 8: Cross classification of parsing preferences in English vs. Spanish in sentence 12.

The same occurs with the sentence *The secretary inscribes the family of the family of the children who \_\_\_ (under investigation)*, the interpretation preferences in both languages differ. Again, most of the English participants considered *the children* as the host of the RC, while the Spanish ones do not show a particular preference for any type of attachment.

			data		Total
			English	Spanish	
S-P The police arrested the accomplice of the drug traffickers who	LA	Count	28	16	44
		% in data	68,3 %	41,0 %	55,0 %
	HA	Count	12	23	35
		% in data	29,3 %	59,0 %	43,8 %
	Not valid	Count	1	0	1
		% in data	2,4 %	0,0 %	1,3 %
Total	Count	41	39	80	
	% in data	100,0 %	100,0 %	100,0 %	

Table 9: Cross classification of parsing preferences in English vs. Spanish in sentence 14.

This sentence is the last we found with substantial differences in the values of adjunction preferences in the different languages. Again, English participants showed an NP2 bias, and Spanish speakers chose HA.

If we now turn to the influence of grammatical number on the research, the current study proved that the correlation between grammatical number and higher attachment exists in Spanish. It is noteworthy because in S-P sentences, attachment to the second nominal phrase was increased. However, this was not proved in English, since participants tend to attach the RC to the NP2 no matter the grammatical number. Deevy (2000) found out that when the second NP of the CNP is plural, attachment to that noun is increased.

Plurals have also been proved to attract RC attachment in corpus studies of Dutch (De Baecke, Brysbaert, and Desmet, 2000) and Galician (García-Orza, Fraga, Teijido, and Acuña-Fariña, 2000). It is often speculated that this may be due to the fact that plural is a marked number, not the default.

To sum up, I would like to refer back to an observation by Van Gompel, Pickering and Traxler (2001: 230) who explained that despite the many existing parsing theories, none of them “claim that the non-preferred analysis is abandoned completely. In all theories, multiple analyses remain activated in parallel (though perhaps only weakly) at least as long as the sentence is ambiguous”.

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## 7. APPENDIX

### 1. Sentences used in Experiment 1 (English)

#### S - S

1. The teacher welcomed the father of the student who...
2. The paparazzi stalked the son of the president who...
3. Somebody insulted the chauffeur of the executive who...
4. The interviewer paid the brother of the artist who...
5. The client knew the relative of the pharmacist who...
6. The citizen killed the assistant of the mayor who...
7. The counselor defended the client of the broker who...
8. A Spaniard poisoned the patron of the sculptor who...

#### P - P

9. The psychologist calmed the parents of the victims who...
10. Pedro Sánchez faced the managers of the workers who...
11. The hotel director greeted the relatives of the tourists who...
12. The criminal band took advantage of the children of the homeless people who...
13. The retirees insulted the spokesmen of the bankers who...
14. The magazine published a photography of the wives of the politicians who...
15. Uber spoke to the clients of the taxi drives who...
16. The patient congratulated the assistants of the doctors who...

#### P - S

17. BBC released the video of the handmaids of Cristiano Ronaldo who...
18. The medical team said sorry to the patients of the elderly doctor who...
19. The bride and groom didn't invite the friends of the tennis player who...
20. The family of the victim stoned the lawyers of the criminal who...
21. Tiffany's lent jewels to the models of the famous fashion designer who...
22. A party's radical ran over the assistants of the politician who...

23. John combed the musicians of Ariana Grande who...
24. The professor assessed the friends of the student who...

#### S - P

25. The journalism student interviewed the mechanic of the pilots who...
26. A pregnant woman yelled at the leader of the demonstrators who...
27. The president of the team fired the the coach of the basketball players who...
28. The police arrested the accomplice of the drug traffickers who...
29. Donald Trump introduced the new boss of the bodyguards who...
30. Mary recognized the manager of the actors who...
31. The secretary inscribed the family of the children who...
32. The Ritz Hotel hired the cook of the millionaires who...

## **2. Sentences used in Experiment 1 (Spanish)**

#### S - S

1. La profesora dio la bienvenida al padre del estudiante que...
2. El paparazzi acechó al hijo del presidente que...
3. Alguien insultó al chófer del empresario que...
4. El entrevistador pagó al hermano del artista que...
5. El cliente conoció al pariente del farmacéutico que...
6. El ciudadano mató al asistente del alcalde que...
7. El abogado defendió al cliente del bróker que...
8. Un español envenenó al mecenas del escultor que...

#### P - P

9. El psicólogo calmó a los padres de las víctimas que...
10. Pedro Sánchez se enfrentó a los representantes de los trabajadores que...
11. El director del hotel recibió a los familiares del turista que...
12. La banda criminal se aprovechó de los hijos de los vagabundos que...

13. Los retirados insultaron al portavoz de los banqueros que...
14. La revista publicó una fotografía de las mujeres de los políticos que...
15. Uber habló con los clientes de los conductores de taxi que...
16. El paciente felicitó a los ayudantes de los doctores que...

#### P - S

17. BBC emitió el video de las sirvientas de Cristiano Ronaldo que...
18. El equipo médico pidió perdón a los pacientes del viejo doctor que...
19. El novio y la novia no invitaron a los amigos del tenista que...
20. La familia de la víctima apedreó a los abogados del criminal que...
21. Tiffany's prestó joyas a los modelos del famoso diseñador que...
22. Un radical atropelló a los asistentes del político que...
23. John peinó a los músicos de Ariana Grande que...
24. El profesor evaluó a los amigos de la alumna que...

#### S - P

25. El estudiante de periodismo entrevistó al mecánico de los pilotos que...
26. Una mujer embarazada gritó al líder de los manifestantes que...
27. El presidente del equipo despidió al entrenador de los jugadores de baloncesto que...
28. La policía arrestó al cómplice de los narcotraficantes que...
29. Donald Trump presentó al nuevo jefe de los guardaespaldas que...
30. Mary reconoció al representante de los actores que...
31. La secretaria inscribió a la familia del niño que...
32. El hotel Ritz contrató al cocinero de los millonarios que...

### **3. Sentences used in Experiment 2.1**

#### P - S

1. BBC habló con las sirvientas de la actriz que \_\_\_(racista/s)
2. El equipo médico pidió perdón a los pacientes del viejo doctor que \_\_\_(infeliz/infelices)

3. El novio y la novia no invitaron a los amigos del tenista que \_\_\_(maleducado/s)
4. La familia de la víctima apedreó a los abogados del criminal que \_\_\_(republicano/s)
5. Tiffany's prestó joyas a los modelos del famoso diseñador que \_\_\_(estiloso/s)
6. Un radical atropelló a los asistentes del político que \_\_\_(asustado/s)
7. El profesor evaluó a los amigos de la alumna que \_\_\_(confundido/s)
8. El director del hotel recibió a los familiares del turista que \_\_\_(religioso/s)

S - P

9. El estudiante de periodismo entrevistó al mecánico de los pilotos que \_\_\_(talentoso/s)
10. Una mujer embarazada gritó al líder de los manifestantes que \_\_\_(grosero/s)
11. El presidente del equipo despidió al entrenador de los jugadores de baloncesto que \_\_\_(pésimo/s)
12. La policía arrestó al cómplice de los narcotraficantes que \_\_\_(poderoso/s)
13. Donald Trump presentó al nuevo jefe de los guardaespaldas que \_\_\_(fuerte/s)
14. Mary reconoció al representante de los actores que \_\_\_
15. La secretaria inscribió a la familia del niño que \_\_\_(bajo investigación)
16. El hotel Ritz contrató al cocinero de los millonarios que \_\_\_(famoso/s)
17. Los retirados insultaron al portavoz de los banqueros que \_\_\_(en la reunión)

Filler sentences

El concierto de los Rolling Stones \_\_\_ (genial)

El debate de los candidatos \_\_\_ (líder de audiencia en televisión)

El icono de Hollywood Audrey Hepburn \_\_\_(heroína de la resistencia alemana)

El horario de la oficina \_\_\_ (de diez a una)

El mobiliario de madera \_\_\_ (clásico de la decoración)

El gobierno de Theresa May \_\_\_ (conversando con el partido laborista de la oposición)

## 4. Sentences used in Experiment 2.2

### P - S

1. BBC talked to the handmaids of the actress who \_\_\_(racist)
2. The medical team said sorry to the patients of the elderly doctor who \_\_\_(unhappy)
3. The bride and groom didn't invite the friends of the tennis player who \_\_\_ (mean)
4. The family stoned the lawyers of the criminal who \_\_\_(Republican)
5. Tiffany's lent jewels to the models of the famous fashion designer who \_\_\_(stylish)
6. A party's radical ran over the assistants of the politician who \_\_\_(scared)
7. The professor assessed the friends of the student who \_\_\_ (confused)

### S - P

8. The journalism student interviewed the mechanic of the pilots who \_\_\_(talented)
9. The president fired the the coach of the basketball players who \_\_\_(dreadful)
10. The police arrested the accomplice of the drug traffickers who \_\_\_(powerful)
11. Mary recognized the manager of the actors who \_\_\_(American)
12. The secretary inscribed the family of the children who \_\_\_(under investigation)
13. The Ritz Hotel hired the cook of the millionaires who \_\_\_(famous)
14. The retirees insulted the spokesman of the bankers who \_\_\_(at the meeting)

### Filler sentences

The concert of the Rolling Stones \_\_\_(great)

The Debate of the Candidates \_\_\_(audience leader on tv)

Hollywood icon Audrey Hepburn \_\_\_ (heroine of Dutch Resistance)

The office schedule \_\_\_(from eight to twelve)

Wooden furniture \_\_\_(classic decoration)

Mrs. May's government \_\_\_(holding talks with the opposition Labour Party)

## 5. Statistical analysis (Experiment 2)

### Frecuencias completas

#### 1. P-S The bride and the groom didn't invite the friends of the tennis player who ...

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	38	47,5	47,5	47,5
	HA	41	51,3	51,3	98,8
	No válida	1	1,3	1,3	100,0
	Total	80	100,0	100,0	

#### 2. P-S The medical team said sorry to the patients of the elderly doctor who...

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	25	31,3	31,3	31,3
	HA	52	65,0	65,0	96,3
	Ambas	1	1,3	1,3	97,5
	No válida	2	2,5	2,5	100,0
	Total	80	100,0	100,0	

#### 3. P-S A party's radical ran over the assistants of the politician who...

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	33	41,3	41,3	41,3
	HA	46	57,5	57,5	98,8
	Ambas	1	1,3	1,3	100,0
	Total	80	100,0	100,0	

#### 4. P-S The professor assessed the friends of the student who...

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	39	48,8	48,8	48,8
	HA	40	50,0	50,0	98,8
	No válida	1	1,3	1,3	100,0

### Nationality

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	American	21	26,3	26,3	26,3
	Australian	1	1,3	1,3	27,5
	British	12	15,0	15,0	42,5
	Irish	6	7,5	7,5	50,0
	Spanish	1	1,3	1,3	51,3
	Español	39	48,8	48,8	100,0
	Total	80	100,0	100,0	

Total	80	100,0	100,0
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### 5. P-S The family stoned the lawyers of the criminal who...

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	50	62,5	62,5	62,5
	HA	29	36,3	36,3	98,8
	Ambas	1	1,3	1,3	100,0
	Total	80	100,0	100,0	

### 6. P-S BBC talked to the handmaids of the actress who...

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	64	80,0	80,0	80,0
	HA	15	18,8	18,8	98,8
	Ambas	1	1,3	1,3	100,0
	Total	80	100,0	100,0	

### 7. P-S Tiffany's lent jewels to the models of the famous fashion designer who

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	54	67,5	67,5	67,5
	HA	26	32,5	32,5	100,0
	Total	80	100,0	100,0	

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**8. S-P The journalism student interviewed the mechanic of the pilots who**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	50	62,5	62,5	62,5
	HA	29	36,3	36,3	98,8
	Ambas	1	1,3	1,3	100,0
	Total	80	100,0	100,0	

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**9. S-P The Ritz Hotel hired the cook of the millionaires who**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	39	48,8	48,8	48,8
	HA	36	45,0	45,0	93,8
	Ambas	3	3,8	3,8	97,5
	No válida	2	2,5	2,5	100,0
	Total	80	100,0	100,0	

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**10. S-P The president fired the coach of the basketball players who**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	35	43,8	43,8	43,8
	HA	42	52,5	52,5	96,3
	Ambas	2	2,5	2,5	98,8
	No válida	1	1,3	1,3	100,0
	Total	80	100,0	100,0	

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**11. S-P Mary recognized the manager of the actors who**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	40	50,0	50,0	50,0
	HA	39	48,8	48,8	98,8
	Ambas	1	1,3	1,3	100,0

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Total	80	100,0	100,0	
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**12. S-P The secretary inscribed the family of the children who**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	56	70,0	70,0	70,0
	HA	24	30,0	30,0	100,0
	Total	80	100,0	100,0	

**13. S-P The retirees insulted the spokesman of the bankers who**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	51	63,8	63,8	63,8
	HA	27	33,8	33,8	97,5
	No válida	2	2,5	2,5	100,0
	Total	80	100,0	100,0	

**14. S-P The police arrested the accomplice of the drug traffickers who**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	44	55,0	55,0	55,0
	HA	35	43,8	43,8	98,8
	No válida	1	1,3	1,3	100,0
	Total	80	100,0	100,0	

## Frecuencias respuestas inglés

RECUELTOS PS					
	LA	HA	Ambas	No válida	TOTAL
P-S The bride	38	41	0	1	80
P-S The medic	25	52	1	2	80
P-S A party's	33	46	1	0	80
P-S The profes	39	40	0	1	80
P-S The famil	50	29	1	0	80
P-S BBC talk	64	15	1	0	80
P-S Tiffany's	54	26	0	0	80
TOTAL	303	249	4	4	560

Nationality<sup>a</sup>

TABLA RESUMEN PS											
% verticales						% horizontales					
	LA	HA	Ambas	No válida	TOTAL		LA	HA	Ambas	No válida	TOTAL
P-S The bride	12,5	16,5	0,0	25,0	14,3	P-S The bride	47,5	51,25	0	1,25	100
P-S The medic	8,3	20,9	25,0	50,0	14,3	P-S The medic	31,25	65	1,25	2,5	100
P-S A party's	10,9	18,5	25,0	0,0	14,3	P-S A party's	41,25	57,5	1,25	0	100
P-S The profes	12,9	16,1	0,0	25,0	14,3	P-S The profes	48,75	50	0	1,25	100
P-S The famil	16,5	11,6	25,0	0,0	14,3	P-S The famil	62,5	36,25	1,25	0	100
P-S BBC talk	21,1	6,0	25,0	0,0	14,3	P-S BBC talk	80	18,75	1,25	0	100
P-S Tiffany's	17,8	10,4	0,0	0,0	14,3	P-S Tiffany's	67,5	32,5	0	0	100
TOTAL	100,0	100,0	100,0	100,0	100,0	TOTAL	54,1	44,5	0,7	0,7	100,0

RECUENTOS SP					
	LA	HA	Ambas	No válida	TOTAL
S-P The journ	50	29	1	0	80
S-P The Ritz	39	36	3	2	80
S-P The presi	35	42	2	1	80
S-P Mary rec	40	39	1	0	80
S-P The secre	56	24	0	0	80
S-P The retire	51	27	0	2	80
S-P The polic	44	35	0	1	80
TOTAL	315	232	7	6	560

TABLA RESUMEN SP											
% verticales						% horizontales					
	LA	HA	Ambas	No válida	TOTAL		LA	HA	Ambas	No válida	TOTAL
S-P The journ	15,9	12,5	14,3	0,0	14,3	S-P The journ	62,5	36,25	1,25	0	100
S-P The Ritz	12,4	15,5	42,9	33,3	14,3	S-P The Ritz	48,75	45	3,75	2,5	100
S-P The presid	11,1	18,1	28,6	16,7	14,3	S-P The presid	43,75	52,5	2,5	1,25	100
S-P Mary rec	12,7	16,8	14,3	0,0	14,3	S-P Mary rec	50	48,75	1,25	0	100
S-P The secre	17,8	10,3	0,0	0,0	14,3	S-P The secre	70	30	0	0	100
S-P The retire	16,2	11,6	0,0	33,3	14,3	S-P The retire	63,75	33,75	0	2,5	100
S-P The polic	14,0	15,1	0,0	16,7	14,3	S-P The polic	55	43,75	0	1,25	100
TOTAL	100,0	100,0	100,0	100,0	100,0	TOTAL	56,3	41,4	1,3	1,1	100,0

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	American	21	51,2	51,2	51,2
	Australian	1	2,4	2,4	53,7
	British	12	29,3	29,3	82,9
	Irish	6	14,6	14,6	97,6
	Spanish	1	2,4	2,4	100,0
	Total	41	100,0	100,0	

a. archivos = Ingles

### 1. P-S The bride and the groom didn't invite the friends of the tennis player who ...<sup>a</sup>

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	25	61,0	61,0	61,0

HA	16	39,0	39,0	100,0
Total	41	100,0	100,0	

a. archivos = Ingles

## 2. P-S The medical team said sorry to the patients of the elderly doctor who...<sup>a</sup>

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	17	41,5	41,5	41,5
	HA	24	58,5	58,5	100,0
	Total	41	100,0	100,0	

a. archivos = Ingles

## 3. P-S A party's radical ran over the assistants of the politician who...<sup>a</sup>

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	19	46,3	46,3	46,3
	HA	21	51,2	51,2	97,6
	Ambas	1	2,4	2,4	100,0
	Total	41	100,0	100,0	

a. archivos = Ingles

## 4. P-S The professor assessed the friends of the student who...<sup>a</sup>

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	22	53,7	53,7	53,7
	HA	18	43,9	43,9	97,6
	No válida	1	2,4	2,4	100,0
	Total	41	100,0	100,0	

a. archivos = Ingles

## 5. P-S The family stoned the lawyers of the criminal who...<sup>a</sup>

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	28	68,3	68,3	68,3
	HA	12	29,3	29,3	97,6
	Ambas	1	2,4	2,4	100,0
	Total	41	100,0	100,0	

a. archivos = Ingles

## 6. P-S BBC talked to the handmaids of the actress who...<sup>a</sup>

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	36	87,8	87,8	87,8
	HA	5	12,2	12,2	100,0
	Total	41	100,0	100,0	

a. archivos = Ingles

**7. P-S Tiffany's lent jewels to the models of the famous fashion designer who<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	30	73,2	73,2	73,2
	HA	11	26,8	26,8	100,0
	Total	41	100,0	100,0	

a. archivos = Ingles

**8. S-P The journalism student interviewed the mechanic of the pilots who<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	27	65,9	65,9	65,9
	HA	13	31,7	31,7	97,6
	Ambas	1	2,4	2,4	100,0
	Total	41	100,0	100,0	

a. archivos = Ingles

**9. S-P The Ritz Hotel hired the cook of the millionaires who<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	16	39,0	39,0	39,0
	HA	21	51,2	51,2	90,2
	Ambas	3	7,3	7,3	97,6
	No válida	1	2,4	2,4	100,0
	Total	41	100,0	100,0	

a. archivos = Ingles

**10. S-P The president fired the coach of the basketball players who<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	16	39,0	39,0	39,0
	HA	23	56,1	56,1	95,1
	Ambas	2	4,9	4,9	100,0
	Total	41	100,0	100,0	

a. archivos = Ingles

**11. S-P Mary recognized the manager of the actors who<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	16	39,0	39,0	39,0
	HA	24	58,5	58,5	97,6
	Ambas	1	2,4	2,4	100,0
	Total	41	100,0	100,0	

a. archivos = Ingles

**12. S-P The secretary inscribed the family of the children who<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	35	85,4	85,4	85,4
	HA	6	14,6	14,6	100,0
	Total	41	100,0	100,0	

a. archivos = Ingles

**13. S-P The retirees insulted the spokesman of the bankers who<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	29	70,7	70,7	70,7
	HA	11	26,8	26,8	97,6
	No válida	1	2,4	2,4	100,0
	Total	41	100,0	100,0	

a. archivos = Ingles

**14. S-P The police arrested the accomplice of the drug traffickers who<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	28	68,3	68,3	68,3
	HA	12	29,3	29,3	97,6
	No válida	1	2,4	2,4	100,0
	Total	41	100,0	100,0	

a. archivos = Ingles

**Frecuencias respuestas castellano****Nationality<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	Español	39	100,0	100,0	100,0

a. archivos = Castellano

RECUEENTOS PS					
	LA	HA	Ambas	No válida	TOTAL
1. P-S The bride and the groom didn't	25	16	0	0	41
2. P-S The medical team said sorry to	17	24	0	0	41
3. P-S A party's radical ran over the a	19	21	1	0	41
4. P-S The professor assessed the frie	22	18	0	1	41
5. P-S The family stoned the lawyers	28	12	1	0	41
6. P-S BBC talked to the handmaids c	36	5	0	0	41
7. P-S Tiffany's lent jewels to the mod	30	11	0	0	41
TOTAL	177	107	2	1	287

TABLA RESUMEN PS											
	% verticales						% horizontales				
	LA	HA	Ambas	No válida	TOTAL		LA	HA	Ambas	No válida	TOTAL
P-S The bride	14,1	15,0	0,0	0,0	14,3	P-S The bride	61,0	39,0	0,0	0,0	100,0
P-S The medic	9,6	22,4	0,0	0,0	14,3	P-S The medic	41,5	58,5	0,0	0,0	100,0
P-S A party's r	10,7	19,6	50,0	0,0	14,3	P-S A party's r	46,3	51,2	2,4	0,0	100,0
P-S The profes	12,4	16,8	0,0	100,0	14,3	P-S The profes	53,7	43,9	0,0	2,4	100,0
P-S The family	15,8	11,2	50,0	0,0	14,3	P-S The family	68,3	29,3	2,4	0,0	100,0
P-S BBC talked	20,3	4,7	0,0	0,0	14,3	P-S BBC talked	87,8	12,2	0,0	0,0	100,0
P-S Tiffany's le	16,9	10,3	0,0	0,0	14,3	P-S Tiffany's le	73,2	26,8	0,0	0,0	100,0
TOTAL	100,0	100,0	100,0	100,0	100,0	TOTAL	61,7	37,3	0,7	0,3	100,0

RECUEENTOS SP					
	LA	HA	Ambas	No válida	TOTAL
8. S-P The journalism student interview	27	13	1	0	41
9. S-P The Ritz Hotel hired the cook o	16	21	3	1	41
10. S-P The president fired the coach o	16	23	2	0	41
11. S-P Mary recognized the manager	16	24	1	0	41
12. S-P The secretary inscribed the far	35	6	0	0	41
13. S-P The retirees insulted the spoke	29	11	0	1	41
14. S-P The police arrested the accom	28	12	0	1	41
TOTAL	167	110	7	3	287

TABLA RESUMEN SP											
	% verticales						% horizontales				
	LA	HA	Ambas	No válida	TOTAL		LA	HA	Ambas	No válida	TOTAL
S-P The journa	16,2	11,8	14,3	0,0	14,3	S-P The journa	65,853658536	31,707317073	2,4390243902	0	100
S-P The Ritz H	9,6	19,1	42,9	33,3	14,3	S-P The Ritz H	39,024390243	51,219512195	7,3170731707	2,4390243902	100
S-P The presid	9,6	20,9	28,6	0,0	14,3	S-P The presid	39,024390243	56,097560975	4,8780487804	0	100
S-P Mary recog	9,6	21,8	14,3	0,0	14,3	S-P Mary recog	39,024390243	58,536585365	2,4390243902	0	100
S-P The secret	21,0	5,5	0,0	0,0	14,3	S-P The secret	85,365853658	14,634146341	0	0	100
S-P The retiree	17,4	10,0	0,0	33,3	14,3	S-P The retiree	70,731707317	26,829268292	0	2,4390243902	100
S-P The police	16,8	10,9	0,0	33,3	14,3	S-P The police	68,292682926	29,268292682	0	2,4390243902	100
TOTAL	100,0	100,0	100,0	100,0	100,0	TOTAL	58,2	38,3	2,4	1,0	100,0

**P-S The bride and the groom didn't invite the friends of the tennis player who ...<sup>a</sup>**

Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
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Válido	LA	13	33,3	33,3	33,3
	HA	25	64,1	64,1	97,4
	No válida	1	2,6	2,6	100,0
	Total	39	100,0	100,0	

a. archivos = Castellano

**P-S The medical team said sorry to the patients of the elderly doctor who...<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	8	20,5	20,5	20,5
	HA	28	71,8	71,8	92,3
	Ambas	1	2,6	2,6	94,9
	No válida	2	5,1	5,1	100,0
	Total	39	100,0	100,0	

a. archivos = Castellano

**P-S A party's radical ran over the assistants of the politician who...<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	14	35,9	35,9	35,9
	HA	25	64,1	64,1	100,0
	Total	39	100,0	100,0	

a. archivos = Castellano

**P-S The professor assessed the friends of the student who...<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	17	43,6	43,6	43,6
	HA	22	56,4	56,4	100,0
	Total	39	100,0	100,0	

a. archivos = Castellano

**P-S The family stoned the lawyers of the criminal who...<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
--	--	------------	------------	-------------------	----------------------

Válido	LA	22	56,4	56,4	56,4
	HA	17	43,6	43,6	100,0
	Total	39	100,0	100,0	

a. archivos = Castellano

**P-S BBC talked to the handmaids of the actress who...<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	28	71,8	71,8	71,8
	HA	10	25,6	25,6	97,4
	Ambas	1	2,6	2,6	100,0
	Total	39	100,0	100,0	

a. archivos = Castellano

**P-S Tiffany's lent jewels to the models of the famous fashion designer who<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	24	61,5	61,5	61,5
	HA	15	38,5	38,5	100,0
	Total	39	100,0	100,0	

a. archivos = Castellano

**S-P The journalism student interviewed the mechanic of the pilots who<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	23	59,0	59,0	59,0
	HA	16	41,0	41,0	100,0
	Total	39	100,0	100,0	

a. archivos = Castellano

**S-P The Ritz Hotel hired the cook of the millionaires who<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
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Válido	LA	23	59,0	59,0	59,0
	HA	15	38,5	38,5	97,4
	No válida	1	2,6	2,6	100,0
	Total	39	100,0	100,0	

a. archivos = Castellano

**S-P The president fired the coach of the basketball players who<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	19	48,7	48,7	48,7
	HA	19	48,7	48,7	97,4
	No válida	1	2,6	2,6	100,0
	Total	39	100,0	100,0	

a. archivos = Castellano

**S-P Mary recognized the manager of the actors who<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	24	61,5	61,5	61,5
	HA	15	38,5	38,5	100,0
	Total	39	100,0	100,0	

a. archivos = Castellano

**S-P The secretary inscribed the family of the children who<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	21	53,8	53,8	53,8
	HA	18	46,2	46,2	100,0
	Total	39	100,0	100,0	

a. archivos = Castellano

**S-P The retirees insulted the spokesman of the bankers who<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
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Válido	LA	22	56,4	56,4	56,4
	HA	16	41,0	41,0	97,4
	No válida	1	2,6	2,6	100,0
	Total	39	100,0	100,0	

a. archivos = Castellano

**S-P The police arrested the accomplice of the drug traffickers who<sup>a</sup>**

		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Válido	LA	16	41,0	41,0	41,0
	HA	23	59,0	59,0	100,0
	Total	39	100,0	100,0	

a. archivos = Castellano

RECUEENTOS PS					
	LA	HA	Ambas	No válida	TOTAL
1. P-S The bride and the groo	13	25	0	1	39
2. P-S The medical team said	8	28	1	2	39
3. P-S A party's radical ran ov	14	25	0	0	39
4. P-S The professor assessed	17	22	0	0	39
5. P-S The family stoned the	22	17	0	0	39
6. P-S BBC talked to the hand	28	10	1	0	39
7. P-S Tiffany's lent jewels to	24	15	0	0	39
TOTAL	126	142	2	3	273

TABLA RESUMEN PS											
% verticales						% horizontales					
	LA	HA	Ambas	No válida	TOTAL		LA	HA	Ambas	No válida	TOTAL
P-S The bride	10,3	17,6	0,0	33,3	14,3	P-S The bride	33,3	64,1	0,0	2,6	100,0
P-S The med	6,3	19,7	50,0	66,7	14,3	P-S The med	20,5	71,8	2,6	5,1	100,0
P-S A party's	11,1	17,6	0,0	0,0	14,3	P-S A party's	35,9	64,1	0,0	0,0	100,0
P-S The prof	13,5	15,5	0,0	0,0	14,3	P-S The prof	43,6	56,4	0,0	0,0	100,0
P-S The fami	17,5	12,0	0,0	0,0	14,3	P-S The fami	56,4	43,6	0,0	0,0	100,0
P-S BBC talk	22,2	7,0	50,0	0,0	14,3	P-S BBC talk	71,8	25,6	2,6	0,0	100,0
P-S Tiffany's	19,0	10,6	0,0	0,0	14,3	P-S Tiffany's	61,5	38,5	0,0	0,0	100,0
TOTAL	100,0	100,0	100,0	100,0	100,0	TOTAL	46,2	52,0	0,7	1,1	100,0

## Tablas cruzadas

RECUENTOS SP					
	LA	HA	Ambas	No válida	TOTAL
8. S-P The journalism student	23	16	0	0	39
9. S-P The Ritz Hotel hired the	23	15	0	1	39
10- S-P The president fired the	19	19	0	1	39
11. S-P Mary recognized the m	24	15	0	0	39
12. S-P The secretary inscribed	21	18	0	0	39
13. S-P The retirees insulted th	22	16	0	1	39
14. S-P The police arrested the	16	23	0	0	39
TOTAL	148	122	0	3	273

TABLA RESUMEN SP											
% verticales						% horizontales					
	LA	HA	Ambas	No válida	TOTAL		LA	HA	Ambas	No válida	TOTAL
S-P The jour	15,5	13,1	0,0	0,0	14,3	S-P The jour	59,0	41,0	0,0	0,0	100,0
S-P The Ritz	15,5	12,3	0,0	33,3	14,3	S-P The Ritz	59,0	38,5	0,0	2,6	100,0
S-P The pres	12,8	15,6	0,0	33,3	14,3	S-P The pres	48,7	48,7	0,0	2,6	100,0
S-P Mary rec	16,2	12,3	0,0	0,0	14,3	S-P Mary rec	61,5	38,5	0,0	0,0	100,0
S-P The secr	14,2	14,8	0,0	0,0	14,3	S-P The secr	53,8	46,2	0,0	0,0	100,0
S-P The retir	14,9	13,1	0,0	33,3	14,3	S-P The retir	56,4	41,0	0,0	2,6	100,0
S-P The polic	10,8	18,9	0,0	0,0	14,3	S-P The polic	41,0	59,0	0,0	0,0	100,0
TOTAL	100,0	100,0	0,0	100,0	100,0	TOTAL	54,2	44,7	0,0	1,1	100,0

**1. P-S The bride and the groom didn't invite the friends of the tennis player who ... \* archivos**

**Tabla cruzada**

		archivos		Total	
		Ingles	Castellano		
P-S The bride and the groom didn't invite the friends of the tennis player who ...	LA	Recuento	25	13	38
		% dentro de archivos	61,0 %	33,3 %	47,5 %
	HA	Recuento	16	25	41
		% dentro de archivos	39,0 %	64,1 %	51,3 %
	No válida	Recuento	0	1	1
		% dentro de archivos	0,0 %	2,6 %	1,3 %
Total	Recuento	41	39	80	
	% dentro de archivos	100,0 %	100,0 %	100,0 %	

**Pruebas de chi-cuadrado**

	Valor	df	Significación asintótica (bilateral)
Chi-cuadrado de Pearson	6,719 <sup>a</sup>	2	0,035
Razón de verosimilitud	7,183	2	0,028
N de casos válidos	80		

a. 2 casillas (33,3%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,49.

**2. P-S The medical team said sorry to the patients of the elderly doctor who... \* archivos**

**Tabla cruzada**

		archivos		Total	
		Ingles	Castellano		
P-S The medical team said sorry to the patients of the elderly doctor who...	LA	Recuento	17	8	25
		% dentro de archivos	41,5 %	20,5 %	31,3 %
	HA	Recuento	24	28	52
		% dentro de archivos	58,5 %	71,8 %	65,0 %
	Ambas	Recuento	0	1	1
		% dentro de archivos	0,0 %	2,6 %	1,3 %
	No válida	Recuento	0	2	2
		% dentro de archivos	0,0 %	5,1 %	2,5 %
	Total	Recuento	41	39	80
		% dentro de archivos	100,0 %	100,0 %	100,0 %

**Pruebas de chi-cuadrado**

	Valor	df	Significación asintótica (bilateral)
Chi-cuadrado de Pearson	6,502 <sup>a</sup>	3	0,090
Razón de verosimilitud	7,731	3	0,052
N de casos válidos	80		

a. 4 casillas (50,0%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,49.

### 3. P-S A party's radical ran over the assistants of the politician who... \* archivos

**Tabla cruzada**

			archivos		Total
			Inglés	Castellano	
P-S A party's radical ran over the assistants of the politician who...	LA	Recuento	19	14	33
		% dentro de archivos	46,3 %	35,9 %	41,3 %
	HA	Recuento	21	25	46
		% dentro de archivos	51,2 %	64,1 %	57,5 %
	Ambas	Recuento	1	0	1
		% dentro de archivos	2,4 %	0,0 %	1,3 %
Total		Recuento	41	39	80
		% dentro de archivos	100,0 %	100,0 %	100,0 %

### Pruebas de chi-cuadrado

	Valor	df	Significación asintótica (bilateral)
Chi-cuadrado de Pearson	2,057 <sup>a</sup>	2	0,358
Razón de verosimilitud	2,445	2	0,294
N de casos válidos	80		

a. 2 casillas (33,3%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,49.

### 4. P-S The professor assessed the friends of the student who... \* archivos

**Tabla cruzada**

		archivos		Total	
		Ingles	Castellano		
P-S The professor assessed the friends of the student who...	LA	Recuento	22	17	39
		% dentro de archivos	53,7 %	43,6 %	48,8 %
	HA	Recuento	18	22	40
		% dentro de archivos	43,9 %	56,4 %	50,0 %
	No válida	Recuento	1	0	1
		% dentro de archivos	2,4 %	0,0 %	1,3 %
Total		Recuento	41	39	80
		% dentro de archivos	100,0 %	100,0 %	100,0 %

### Pruebas de chi-cuadrado

	Valor	df	Significación asintótica (bilateral)
Chi-cuadrado de Pearson	1,992 <sup>a</sup>	2	0,369
Razón de verosimilitud	2,380	2	0,304
N de casos válidos	80		

a. 2 casillas (33,3%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,49.

### 5. P-S The family stoned the lawyers of the criminal who... \* archivos

#### Tabla cruzada

		archivos		Total	
		Ingles	Castellano		
P-S The family stoned the lawyers of the criminal who...	LA	Recuento	28	22	50
		% dentro de archivos	68,3 %	56,4 %	62,5 %
	HA	Recuento	12	17	29
		% dentro de archivos	29,3 %	43,6 %	36,3 %
	Ambas	Recuento	1	0	1
		% dentro de archivos	2,4 %	0,0 %	1,3 %
Total		Recuento	41	39	80
		% dentro de archivos	100,0 %	100,0 %	100,0 %

### Pruebas de chi-cuadrado

	Valor	df	Significación asintótica (bilateral)
Chi-cuadrado de Pearson	2,534 <sup>a</sup>	2	0,282
Razón de verosimilitud	2,924	2	0,232
N de casos válidos	80		

a. 2 casillas (33,3%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,49.

#### 6. P-S BBC talked to the handmaids of the actress who... \* archivos

##### Tabla cruzada

		archivos		Total	
		Inglés	Castellano		
P-S BBC talked to the handmaids of the actress who...	LA	Recuento	36	28	64
		% dentro de archivos	87,8 %	71,8 %	80,0 %
	HA	Recuento	5	10	15
		% dentro de archivos	12,2 %	25,6 %	18,8 %
	Ambas	Recuento	0	1	1
		% dentro de archivos	0,0 %	2,6 %	1,3 %
Total	Recuento	41	39	80	
	% dentro de archivos	100,0 %	100,0 %	100,0 %	

##### Pruebas de chi-cuadrado

	Valor	df	Significación asintótica (bilateral)
Chi-cuadrado de Pearson	3,619 <sup>a</sup>	2	0,164
Razón de verosimilitud	4,038	2	0,133
N de casos válidos	80		

a. 2 casillas (33,3%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,49.

#### 7. P-S Tiffany's lent jewels to the models of the famous fashion designer who \* archivos

<b>Tabla cruzada</b>					
		archivos		Total	
		Ingles	Castellano		
P-S Tiffany's lent jewels to the models of the famous fashion designer who	LA	Recuento	30	24	54
		% dentro de archivos	73,2 %	61,5 %	67,5 %
	HA	Recuento	11	15	26
		% dentro de archivos	26,8 %	38,5 %	32,5 %
Total		Recuento	41	39	80
		% dentro de archivos	100,0 %	100,0 %	100,0 %

<b>Pruebas de chi-cuadrado</b>					
	Valor	df	Significación asintótica (bilateral)	Significación exacta (bilateral)	Significación exacta (unilateral)
Chi-cuadrado de Pearson	1,233 <sup>a</sup>	1	0,267		
Corrección de continuidad <sup>b</sup>	0,760	1	0,383		
Razón de verosimilitud	1,236	1	0,266		
Prueba exacta de Fisher				0,341	0,192
N de casos válidos	80				

a. 0 casillas (0,0%) han esperado un recuento menor que 5. El recuento mínimo esperado es 12,67.

b. Sólo se ha calculado para una tabla 2x2

### 8. S-P The journalism student interviewed the mechanic of the pilots who \* archivos

<b>Tabla cruzada</b>					
		archivos		Total	
		Ingles	Castellano		
S-P The journalism student interviewed the mechanic of the pilots who	LA	Recuento	27	23	50
		% dentro de archivos	65,9 %	59,0 %	62,5 %
	HA	Recuento	13	16	29
		% dentro de archivos	31,7 %	41,0 %	36,3 %
	Ambas	Recuento	1	0	1
		% dentro de archivos	2,4 %	0,0 %	1,3 %
Total		Recuento	41	39	80
		% dentro de archivos	100,0 %	100,0 %	100,0 %

<b>Pruebas de chi-cuadrado</b>			
	Valor	df	Significación asintótica (bilateral)
Chi-cuadrado de Pearson	1,581 <sup>a</sup>	2	0,454
Razón de verosimilitud	1,968	2	0,374
N de casos válidos	80		

a. 2 casillas (33,3%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,49.

### 9. S-P The Ritz Hotel hired the cook of the millionaires who \* archivos

#### Tabla cruzada

		archivos		Total	
		Ingles	Castellano		
S-P The Ritz Hotel hired the cook of the millionaires who	LA	Recuento	16	23	39
		% dentro de archivos	39,0 %	59,0 %	48,8 %
	HA	Recuento	21	15	36
		% dentro de archivos	51,2 %	38,5 %	45,0 %
	Ambas	Recuento	3	0	3
		% dentro de archivos	7,3 %	0,0 %	3,8 %
	No válida	Recuento	1	1	2
		% dentro de archivos	2,4 %	2,6 %	2,5 %
Total		Recuento	41	39	80
		% dentro de archivos	100,0 %	100,0 %	100,0 %

#### Pruebas de chi-cuadrado

	Valor	df	Significación asintótica (bilateral)
Chi-cuadrado de Pearson	5,210 <sup>a</sup>	3	0,157
Razón de verosimilitud	6,377	3	0,095
N de casos válidos	80		

a. 4 casillas (50,0%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,98.

### 10. S-P The president fired the coach of the basketball players who \* archivos

<b>Tabla cruzada</b>					
		archivos		Total	
		Ingles	Castellano		
S-P The president fired the coach of the basketball players who	LA	Recuento	16	19	35
		% dentro de archivos	39,0 %	48,7 %	43,8 %
	HA	Recuento	23	19	42
		% dentro de archivos	56,1 %	48,7 %	52,5 %
	Ambas	Recuento	2	0	2
		% dentro de archivos	4,9 %	0,0 %	2,5 %
	No válida	Recuento	0	1	1
		% dentro de archivos	0,0 %	2,6 %	1,3 %
Total	Recuento	41	39	80	
	% dentro de archivos	100,0 %	100,0 %	100,0 %	

### Pruebas de chi-cuadrado

	Valor	df	Significación asintótica (bilateral)
Chi-cuadrado de Pearson	3,590 <sup>a</sup>	3	0,309
Razón de verosimilitud	4,748	3	0,191
N de casos válidos	80		

a. 4 casillas (50,0%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,49.

### 11. S-P Mary recognized the manager of the actors who \* archivos

<b>Tabla cruzada</b>					
		archivos		Total	
		Ingles	Castellano		
S-P Mary recognized the manager of the actors who	LA	Recuento	16	24	40
		% dentro de archivos	39,0 %	61,5 %	50,0 %
	HA	Recuento	24	15	39
		% dentro de archivos	58,5 %	38,5 %	48,8 %
	Ambas	Recuento	1	0	1
		% dentro de archivos	2,4 %	0,0 %	1,3 %
	Total	Recuento	41	39	80
		% dentro de archivos	100,0 %	100,0 %	100,0 %

Pruebas de chi-cuadrado				
	Valor	df	Significación asintótica (bilateral)	
Chi-cuadrado de Pearson	4,630 <sup>a</sup>	2	0,099	
Razón de verosimilitud	5,043	2	0,080	
N de casos válidos	80			

a. 2 casillas (33,3%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,49.

## 12. S-P The secretary inscribed the family of the children who \* archivos

### Tabla cruzada

			archivos		Total
			Inglés	Castellano	
S-P The secretary inscribed the family of the children who	LA	Recuento	35	21	56
		% dentro de archivos	85,4 %	53,8 %	70,0 %
	HA	Recuento	6	18	24
		% dentro de archivos	14,6 %	46,2 %	30,0 %
Total	Recuento	41	39	80	
	% dentro de archivos	100,0 %	100,0 %	100,0 %	

### Pruebas de chi-cuadrado

	Valor	df	Significación asintótica (bilateral)	Significación exacta (bilateral)	Significación exacta (unilateral)
Chi-cuadrado de Pearson	9,456 <sup>a</sup>	1	0,002		
Corrección de continuidad <sup>b</sup>	8,015	1	0,005		
Razón de verosimilitud	9,766	1	0,002		
Prueba exacta de Fisher				0,003	0,002
N de casos válidos	80				

a. 0 casillas (0,0%) han esperado un recuento menor que 5. El recuento mínimo esperado es 11,70.

b. Sólo se ha calculado para una tabla 2x2

### 13. S-P The retirees insulted the spokesman of the bankers who \* archivos

#### Tabla cruzada

		archivos		Total	
		Ingles	Castellano		
S-P The retirees insulted the spokesman of the bankers who	LA	Recuento	29	22	51
		% dentro de archivos	70,7 %	56,4 %	63,8 %
	HA	Recuento	11	16	27
		% dentro de archivos	26,8 %	41,0 %	33,8 %
	No válida	Recuento	1	1	2
		% dentro de archivos	2,4 %	2,6 %	2,5 %
Total	Recuento	41	39	80	
	% dentro de archivos	100,0 %	100,0 %	100,0 %	

#### Pruebas de chi-cuadrado

	Valor	df	Significación asintótica (bilateral)
Chi-cuadrado de Pearson	1,838 <sup>a</sup>	2	0,399
Razón de verosimilitud	1,845	2	0,398
N de casos válidos	80		

a. 2 casillas (33,3%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,98.

### 14. S-P The police arrested the accomplice of the drug traffickers who \* archivos

#### Tabla cruzada

		archivos		Total	
		Ingles	Castellano		
S-P The police arrested the accomplice of the drug traffickers who	LA	Recuento	28	16	44
		% dentro de archivos	68,3 %	41,0 %	55,0 %
	HA	Recuento	12	23	35
		% dentro de archivos	29,3 %	59,0 %	43,8 %
	No válida	Recuento	1	0	1
		% dentro de archivos	2,4 %	0,0 %	1,3 %
Total	Recuento	41	39	80	
	% dentro de archivos	100,0 %	100,0 %	100,0 %	

### Pruebas de chi-cuadrado

	Valor	df	Significación asintótica (bilateral)
Chi-cuadrado de Pearson	7,685 <sup>a</sup>	2	0,021
Razón de verosimilitud	8,167	2	0,017
N de casos válidos	80		

a. 2 casillas (33,3%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,49.

## Cruce desglosado

<b>Tablas cruzadas</b>									
<b>1. P-S The bride and the groom didn't invite the friends of the tennis player who ... * Nationality</b>									
<b>Tabla cruzada</b>									
			Nationality						Total
			American	Australian	British	Irish	Spanish	Español	
P-S The bride and the groom didn't invite the friends of the tennis player who ...	LA	Recuento	11	1	8	5	0	13	38
		% dentro de Nationality y	52,4 %	100,0 %	66,7 %	83,3 %	0,0 %	33,3 %	47,5 %
	HA	Recuento	10	0	4	1	1	25	41
		% dentro de Nationality y	47,6 %	0,0 %	33,3 %	16,7 %	100,0 %	64,1 %	51,3 %
	No válida	Recuento	0	0	0	0	0	1	1
		% dentro de Nationality y	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %	2,6 %	1,3 %
Total	Recuento	21	1	12	6	1	39	80	
	% dentro de Nationality y	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	
<b>Pruebas de chi-cuadrado</b>									
	Valor	df	Significación asintótica (bilateral)						
Chi-cuadrado de Pearson	10,849 <sup>a</sup>	10	0,369						
Razón de verosimilitud	12,282	10	0,267						
N de casos válidos	80								
a. 12 casillas (66,7%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,01.									

**2. P-S The medical team said sorry to the patients of the elderly doctor who... \* Nationality**

**Tabla cruzada**

			Nationality					Total	
			American	Australian	British	Irish	Spanish		Español
P-S The medical team said sorry to the patients of the elderly doctor who...	LA	Recuento	10	1	3	2	1	8	25
		% dentro de Nationality y	47,6 %	100,0 %	25,0 %	33,3 %	100,0 %	20,5 %	31,3 %
	HA	Recuento	11	0	9	4	0	28	52
		% dentro de Nationality y	52,4 %	0,0 %	75,0 %	66,7 %	0,0 %	71,8 %	65,0 %
	Ambas	Recuento	0	0	0	0	0	1	1
		% dentro de Nationality y	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %	2,6 %	1,3 %
	No válida	Recuento	0	0	0	0	0	2	2
		% dentro de Nationality y	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %	5,1 %	2,5 %
	Total	Recuento	21	1	12	6	1	39	80
		% dentro de Nationality y	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %

**Pruebas de chi-cuadrado**

	Valor	df	Significac ión asintótica (bilateral)
Chi-cuadrado de Pearson	11,855 <sup>a</sup>	15	0,690
Razón de verosimilitud	13,169	15	0,589
N de casos válidos	80		

a. 19 casillas (79,2%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,01.

### 3. P-S A party's radical ran over the assistants of the politician who... \* Nationality

**Tabla cruzada**

			Nationality					Total	
			American	Australian	British	Irish	Spanish		Español
P-S A party's radical ran over the assistants of the politician who...	LA	Recuento	9	1	7	2	0	14	33
		% dentro de Nationality	42,9 %	100,0 %	58,3 %	33,3 %	0,0 %	35,9 %	41,3 %
	HA	Recuento	12	0	5	3	1	25	46
		% dentro de Nationality	57,1 %	0,0 %	41,7 %	50,0 %	100,0 %	64,1 %	57,5 %
	Ambas	Recuento	0	0	0	1	0	0	1
		% dentro de Nationality	0,0 %	0,0 %	0,0 %	16,7 %	0,0 %	0,0 %	1,3 %
Total	Recuento	21	1	12	6	1	39	80	
	% dentro de Nationality	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	

#### Pruebas de chi-cuadrado

	Valor	df	Significac ión asintótica (bilateral)
Chi-cuadrado de Pearson	16,574 <sup>a</sup>	10	0,084
Razón de verosimilitud	10,080	10	0,434
N de casos válidos	80		

a. 13 casillas (72,2%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,01.

**4. P-S The professor assessed the friends of the student who... \* Nationality**

**Tabla cruzada**

			Nationality					Total	
			American	Australian	British	Irish	Spanish		Español
P-S The professor assessed the friends of the student who...	LA	Recuento	13	1	6	2	0	17	39
		% dentro de Nationality y	61,9 %	100,0 %	50,0 %	33,3 %	0,0 %	43,6 %	48,8 %
	HA	Recuento	7	0	6	4	1	22	40
		% dentro de Nationality y	33,3 %	0,0 %	50,0 %	66,7 %	100,0 %	56,4 %	50,0 %
	No válida	Recuento	1	0	0	0	0	0	1
		% dentro de Nationality y	4,8 %	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %	1,3 %
Total	Recuento	21	1	12	6	1	39	80	
	% dentro de Nationality y	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	

**Pruebas de chi-cuadrado**

	Valor	df	Significac ión asintótica (bilateral)
Chi-cuadrado de Pearson	7,911 <sup>a</sup>	10	0,638
Razón de verosimilitud	8,621	10	0,568
N de casos válidos	80		

a. 12 casillas (66,7%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,01.

**5. P-S The family stoned the lawyers of the criminal who... \* Nationality**

**Tabla cruzada**

			Nationality					Total	
			American	Australian	British	Irish	Spanish		Español
P-S The family stoned the lawyers of the criminal who...	LA	Recuento	15	1	6	5	1	22	50
		% dentro de Nationality y	71,4 %	100,0 %	50,0 %	83,3 %	100,0 %	56,4 %	62,5 %
	HA	Recuento	5	0	6	1	0	17	29
		% dentro de Nationality y	23,8 %	0,0 %	50,0 %	16,7 %	0,0 %	43,6 %	36,3 %
	Ambas	Recuento	1	0	0	0	0	0	1
		% dentro de Nationality y	4,8 %	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %	1,3 %
Total	Recuento	21	1	12	6	1	39	80	
	% dentro de Nationality y	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	

**Pruebas de chi-cuadrado**

	Valor	df	Significac ión asintótica (bilateral)
Chi-cuadrado de Pearson	7,937 <sup>a</sup>	10	0,635
Razón de verosimilitud	8,620	10	0,569
N de casos válidos	80		

a. 13 casillas (72,2%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,01.

**6. P-S BBC talked to the handmaids of the actress who... \* Nationality**

**Tabla cruzada**

			Nationality					Total	
			American	Australian	British	Irish	Spanish		Español
P-S BBC talked to the handmaids of the actress who...	LA	Recuento	17	1	12	5	1	28	64
		% dentro de Nationality	81,0 %	100,0 %	100,0 %	83,3 %	100,0 %	71,8 %	80,0 %
	HA	Recuento	4	0	0	1	0	10	15
		% dentro de Nationality	19,0 %	0,0 %	0,0 %	16,7 %	0,0 %	25,6 %	18,8 %
	Ambas	Recuento	0	0	0	0	0	1	1
		% dentro de Nationality	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %	2,6 %	1,3 %
Total	Recuento	21	1	12	6	1	39	80	
	% dentro de Nationality	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	

**Pruebas de chi-cuadrado**

	Valor	df	Significación asintótica (bilateral)
Chi-cuadrado de Pearson	5,718 <sup>a</sup>	10	0,838
Razón de verosimilitud	8,586	10	0,572
N de casos válidos	80		

a. 14 casillas (77,8%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,01.

**7. P-S Tiffany's lent jewels to the models of the famous fashion designer who \* Nationality**

**Tabla cruzada**

			Nationality					Total	
			American	Australian	British	Irish	Spanish		Español
P-S Tiffany's lent jewels to the models of the famous fashion designer who	LA	Recuento	17	1	8	3	1	24	54
		% dentro de Nationalit y	81,0 %	100,0 %	66,7 %	50,0 %	100,0 %	61,5 %	67,5 %
	HA	Recuento	4	0	4	3	0	15	26
		% dentro de Nationalit y	19,0 %	0,0 %	33,3 %	50,0 %	0,0 %	38,5 %	32,5 %
Total		Recuento	21	1	12	6	1	39	80
		% dentro de Nationalit y	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %

**Pruebas de chi-cuadrado**

	Valor	df	Significac ión asintótica (bilateral)
Chi- cuadrado de Pearson	4,169 <sup>a</sup>	5	0,525
Razón de verosimili tud	4,879	5	0,431
N de casos válidos	80		

a. 7 casillas (58,3%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,33.

**8. S-P The journalism student interviewed the mechanic of the pilots who \* Nationality**

**Tabla cruzada**

			Nationality					Total	
			American	Australian	British	Irish	Spanish		Español
S-P The journalism student interviewed the mechanic of the pilots who	LA	Recuento	14	1	8	3	1	23	50
		% dentro de Nationality	66,7 %	100,0 %	66,7 %	50,0 %	100,0 %	59,0 %	62,5 %
	HA	Recuento	6	0	4	3	0	16	29
		% dentro de Nationality	28,6 %	0,0 %	33,3 %	50,0 %	0,0 %	41,0 %	36,3 %
	Ambas	Recuento	1	0	0	0	0	0	1
		% dentro de Nationality	4,8 %	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %	1,3 %
Total	Recuento	21	1	12	6	1	39	80	
	% dentro de Nationality	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	

**Pruebas de chi-cuadrado**

	Valor	df	Significación asintótica (bilateral)
Chi-cuadrado de Pearson	5,232 <sup>a</sup>	10	0,875
Razón de verosimilitud	5,747	10	0,836
N de casos válidos	80		

a. 13 casillas (72,2%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,01.

**9. S-P The Ritz Hotel hired the cook of the millionaires who \* Nationality**

**Tabla cruzada**

			Nationality					Total	
			American	Australian	British	Irish	Spanish		Español
S-P The Ritz Hotel hired the cook of the millionaires who	LA	Recuento	9	0	4	2	1	23	39
		% dentro de Nationality	42,9 %	0,0 %	33,3 %	33,3 %	100,0 %	59,0 %	48,8 %
	HA	Recuento	10	1	7	3	0	15	36
		% dentro de Nationality	47,6 %	100,0 %	58,3 %	50,0 %	0,0 %	38,5 %	45,0 %
	Ambas	Recuento	1	0	1	1	0	0	3
		% dentro de Nationality	4,8 %	0,0 %	8,3 %	16,7 %	0,0 %	0,0 %	3,8 %
	4	Recuento	1	0	0	0	0	0	1
		% dentro de Nationality	4,8 %	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %	1,3 %
	No válida	Recuento	0	0	0	0	0	1	1
		% dentro de Nationality	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %	2,6 %	1,3 %
	Total	Recuento	21	1	12	6	1	39	80
		% dentro de Nationality	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %

**Pruebas de chi-cuadrado**

	Valor	df	Significación asintótica (bilateral)
Chi-cuadrado de Pearson	13,719 <sup>a</sup>	20	0,844
Razón de verosimilitud	14,768	20	0,790
N de casos válidos	80		

a. 24 casillas (80,0%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,01.

**10. S-P The president fired the coach of the basketball players who \* Nationality**

**Tabla cruzada**

			Nationality						Total
			American	Australian	British	Irish	Spanish	Español	
S-P The president fired the coach of the basketball players who	LA	Recuento	8	0	5	2	1	19	35
		% dentro de Nationality	38,1 %	0,0 %	41,7 %	33,3 %	100,0 %	48,7 %	43,8 %
	HA	Recuento	13	1	6	3	0	19	42
		% dentro de Nationality	61,9 %	100,0 %	50,0 %	50,0 %	0,0 %	48,7 %	52,5 %
	Ambas	Recuento	0	0	1	1	0	0	2
		% dentro de Nationality	0,0 %	0,0 %	8,3 %	16,7 %	0,0 %	0,0 %	2,5 %
	No válida	Recuento	0	0	0	0	0	1	1
		% dentro de Nationality	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %	2,6 %	1,3 %
	Total	Recuento	21	1	12	6	1	39	80
		% dentro de Nationality	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %

**Pruebas de chi-cuadrado**

	Valor	df	Significación asintótica (bilateral)
Chi-cuadrado de Pearson	12,182 <sup>a</sup>	15	0,665
Razón de verosimilitud	11,443	15	0,721
N de casos válidos	80		

a. 18 casillas (75,0%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,01.

### 11. S-P Mary recognized the manager of the actors who \* Nationality

**Tabla cruzada**

			Nationality					Total	
			American	Australian	British	Irish	Spanish		Español
S-P Mary recognized the manager of the actors who	LA	Recuento	8	1	4	3	0	24	40
		% dentro de Nationality	38,1 %	100,0 %	33,3 %	50,0 %	0,0 %	61,5 %	50,0 %
	HA	Recuento	12	0	8	3	1	15	39
		% dentro de Nationality	57,1 %	0,0 %	66,7 %	50,0 %	100,0 %	38,5 %	48,8 %
	Ambas	Recuento	1	0	0	0	0	0	1
		% dentro de Nationality	4,8 %	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %	1,3 %
Total	Recuento	21	1	12	6	1	39	80	
	% dentro de Nationality	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	

### Pruebas de chi-cuadrado

	Valor	df	Significación asintótica (bilateral)
Chi-cuadrado de Pearson	9,079 <sup>a</sup>	10	0,525
Razón de verosimilitud	9,731	10	0,464
N de casos válidos	80		

a. 12 casillas (66,7%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,01.

12. S-P The secretary inscribed the family of the children who * Nationality									
Tabla cruzada									
			Nationality					Total	
			American	Australian	British	Irish	Spanish		Español
S-P The secretary inscribed the family of the children who	LA	Recuento	16	1	11	6	1	21	56
		% dentro de Nationality	76,2 %	100,0 %	91,7 %	100,0 %	100,0 %	53,8 %	70,0 %
	HA	Recuento	5	0	1	0	0	18	24
		% dentro de Nationality	23,8 %	0,0 %	8,3 %	0,0 %	0,0 %	46,2 %	30,0 %
Total	Recuento	21	1	12	6	1	39	80	
	% dentro de Nationality	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	
Pruebas de chi-cuadrado									
		Valor	df	Significac ión asintótica (bilateral)					
Chi-cuadrado de Pearson		11,340 <sup>a</sup>	5	0,045					
Razón de verosimilitud		13,967	5	0,016					
N de casos válidos		80							
a. 7 casillas (58,3%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,30.									

**13. S-P The retirees insulted the spokesman of the bankers who \* Nationality**

**Tabla cruzada**

			Nationality					Total	
			American	Australian	British	Irish	Spanish		Español
S-P The retirees insulted the spokesman of the bankers who	LA	Recuento	17	1	7	4	0	22	51
		% dentro de Nationality	81,0 %	100,0 %	58,3 %	66,7 %	0,0 %	56,4 %	63,8 %
	HA	Recuento	4	0	4	2	1	16	27
		% dentro de Nationality	19,0 %	0,0 %	33,3 %	33,3 %	100,0 %	41,0 %	33,8 %
	No válida	Recuento	0	0	1	0	0	1	2
		% dentro de Nationality	0,0 %	0,0 %	8,3 %	0,0 %	0,0 %	2,6 %	2,5 %
Total	Recuento	21	1	12	6	1	39	80	
	% dentro de Nationality	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	

**Pruebas de chi-cuadrado**

	Valor	df	Significac ión asintótica (bilateral)
Chi-cuadrado de Pearson	8,166 <sup>a</sup>	10	0,613
Razón de verosimilitud	8,908	10	0,541
N de casos válidos	80		

a. 13 casillas (72,2%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,03.

**14. S-P The police arrested the accomplice of the drug traffickers who \* Nationality**

**Tabla cruzada**

			Nationality					Total	
			American	Australian	British	Irish	Spanish		Español
S-P The police arrested the accomplice of the drug traffickers who	LA	Recuento	15	1	6	5	1	16	44
		% dentro de Nationality	71,4 %	100,0 %	50,0 %	83,3 %	100,0 %	41,0 %	55,0 %
	HA	Recuento	5	0	6	1	0	23	35
		% dentro de Nationality	23,8 %	0,0 %	50,0 %	16,7 %	0,0 %	59,0 %	43,8 %
	No válida	Recuento	1	0	0	0	0	0	1
		% dentro de Nationality	4,8 %	0,0 %	0,0 %	0,0 %	0,0 %	0,0 %	1,3 %
	Total	Recuento	21	1	12	6	1	39	80
		% dentro de Nationality	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %	100,0 %

**Pruebas de chi-cuadrado**

	Valor	df	Significación asintótica (bilateral)
Chi-cuadrado de Pearson	12,854 <sup>a</sup>	10	0,232
Razón de verosimilitud	13,863	10	0,179
N de casos válidos	80		

a. 12 casillas (66,7%) han esperado un recuento menor que 5. El recuento mínimo esperado es ,01.