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Pablo Encinas Arquero

A thesis submitted to Plymouth University
in partial fulfilment for the degree of

DOCTOR OF PHILOSOPHY

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ABSTRACT

Literal and figurative meanings of Spanish spatial prepositions in Chinese students' acquisition of Spanish as a third language

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Abstract

This thesis investigates the acquisition of the spatial and figurative meanings of five Spanish spatial particles, namely *sobre, encima, debajo, bajo* and *en,* by a group of Chinese university students of Spanish as a foreign language at intermediate and upper-intermediate language levels. More specifically, this study aims to answer two questions. The first question considers the order of acquisition of prepositional meanings, that is, whether this is similar to a native language, with literal and more primary meanings acquired first and figurative ones later or, conversely, whether the pattern of acquisition is different to that found in a first language (Kemmerer, 2005; Lam, 2010). The second question of this research is to determine whether there are observable differences between the degree of acquisition and use of these prepositions in English compared to Spanish, and if so, what the characteristics of these differences are.

To try to answer these questions, the performance of this group of participants in four behavioural tests is compared. The tests were a lexical identification task, a picture fill-in-the- blank task, a sentence generation task and a truth value judgment task. These tests were conducted both in Spanish, which the participants had begun to study at

undergraduate level and English, which they had first been exposed to in school in a pre-puberty period.

The results of this study indicate, first, that the acquisition of the literal and figurative meanings of the spatial particles in this study does not follow a pattern similar to that found in a native language. That is, meaning acquisition in a foreign language occurs in a parallel or simultaneous pattern. Furthermore, in a non-immersion context such as that of this study, the age at which students begin the study of a foreign language is not a decisive factor in determining the degree of mastery that students can obtain. The quantity and quality of the input students are exposed to; together with an appropriate methodology appear to be the most important factors in predicting the level of proficiency that can be reached.

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ABBREVIATIONS

ASALE: Asociación de Academias de la Lengua Española

CEFR: Common European Framework of Reference

CET: College English Test

CREA: Corpus de Referencia del Español Actual

EA: Error Analysis

ELE: Español Lengua Extranjera

F: Figure

FL: Foreign Language

G: Ground

L1: First Language or Mother Language

L2: Second Language

L3: Third or Additional Language

LM: Landmark

NGRAE: Nueva Gramática de la Real Academia Española de la Lengua

PET: Prototype Elicitation Task

RAE: Real Academia Española de la Lengua

SFL: Spanish as a Foreign Language

SLA: Second Language Acquisition

TR: Trajector

TVJT: Truth Value Judgement Task

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AUTHOR´S DECLARATION

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award without prior agreement of the Graduate Committee.

Work submitted for this research degree at the Plymouth University has not formed part of any other degree either at Plymouth University or at another establishment This study was entirely self-financed by the student.

A programme of advanced study was undertaken, which included a one month long course in Neuropsychology and statistics for linguistic studies.

Relevant scientific seminars and conferences were regularly attended at which work was often presented; external institutions were visited for consultation purposes and several papers prepared for publication.

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CHAPTER 1: INTRODUCTION

CHAPTER 1: INTRODUCTION

The general subject of study of this doctoral thesis is Spanish as a Foreign Language (SFL) acquisition by Chinese-speaking students, and more specifically, the process of acquiring literal and notional values for a series of spatial prepositions/adverbs in Spanish and its possible correlation with the acquisition of similar spatial particles in English by Chinese students. This analysis falls within the field of study and theories of applied linguistics, with particular emphasis on cognitive theories. It comprises a first approach to the acquisition of the Spanish prepositional component by students whose mother tongue is Chinese and whose second language of study is English. This is something that, to the best of the author's knowledge, has, to date, been the object of virtually no studies with the type of participants, linguistic combinations and variables considered in this study (excluding some error analysis studies or studies with a different definition and treatment of prepositions to that v used here).

The Corpus Cumbre (http: //www.sgel.es), which contains over 20 million words from oral and written sources from both Spain and Spanish-speaking countries in Latin America, lists three prepositions among the ten most frequently used words in Spanish: the preposition *de* being the second most frequently used word in Spanish with a frequency of 119,766 occurrences, and the preposition *en* is in fifth place with a frequency of 51,338 occurrences. Despite this piece of data documenting the high frequency of appearance of prepositions in Spanish in both spoken and written registers the study and systematization of teaching of the prepositional component is something that still awaits attention from general linguistics and from linguistics applied to Spanish as a foreign or second language acquisition in particular. Until relatively recently, most Spanish as a foreign language

textbooks limited themselves to providing a list of uses, sometimes accompanied by a photograph/sketch/drawing, or to providing a glossary of prepositions accompanied by the equivalent terms in the students' language (Giraldo Silverio, 1997: 380). This teaching methodology is clearly insufficient considering the high number of errors students make at all levels of linguistic command.

Many scholars (Fernández, 1990; Vázquez, 1991; Sánchez Iglesias, 2004; Santiago Guervós & Bustos Gisbert, 2006; Fernández Jódar, 2007; Campillos Llanos, 2014 to name just a few) have documented the great difficulty that acquisition of the Spanish prepositional component entails, something that also seems to be common in other languages. The greater development of linguistics applied to the acquisition of English as a foreign language provides good proof of this. This phenomenon has been widely recorded in this field of study and is a shared phenomenon, regardless of the students' mother tongue (Politzer and Ramirez, 1973; Khampang, 1974; Lococo, 1976; Mukattash, 1976; Meziani, 1984; Vriend, 1988; Takahaski, 1996; Celce Murcia and Larsen-Freeman, 1999; Gass and Selinker, 2001; to name just some of a broad linguistic variety).

While it is true that the conclusions to each of these journal articles have a particular nuance from the contexts of study and the languages of the participants, it is also the case that there are reasons and arguments that repeatedly appear in all of them. Principal among these are the high number of prepositions, in particular in the case of English, and the high incidence of polysemy that makes it difficult to systematise their teaching. There is also another reason that, especially in recent years, has received considerable attention: the influence of the speakers' mother tongue (or L1) or second languages (L2s) on the language being studied, something that has been refered to as transference or cross linguistic

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influence, depending on the theoretical position of the authors or on the range of languages studied. The underlying idea is that previously- acquired languages can facilitate or inhibit the acquisition of an additional language.

The factors influencing acquisition of prepositions that have been mentioned in research so far vary depending on the authors, the level of linguistic command, the recency of use, the immersion or non-immersion factor, the psychotypology and so on. Other linguists, especially those who follow the precepts of Error Analysis or Interlanguage theories, consider errors to be something natural that can be systematised. For example, Pavesi (1987) carried out a study of Italian students of English on the use of prepositions of place and concluded that the evidence seems to support the idea that the type of input and/or instruction (classroom v. naturalistic learning) serve as a predictor of the type of spatial structure that the students used.

Similar arguments also appear in the body of work on Hispanic linguistics, in general terms agreeing with what is said in the case of English to justify this difficulty: by, on the one hand, linguistic explanations, and on the other, elements from the field of psycholinguistics. Campillos Llanos (2014), for example, discusses the multifunctional character of prepositions that is directly related to the semantic polysemy of these units. This turns them into a veritable dictionary of meanings and uses to be memorised by learners of Spanish as a foreign language.

As well as all of this, psycholinguistic factors should be included. Transference, or cross linguistic influence occupies a prominent position amongst these factors, namely the transference of uses or schema from the mother tongue or other languages previously studied, that can lead to the production of grammatically erroneous uses or uses that are

inappropriate for spatial expression in Spanish. However, there is presently a lack of studies with a broad-base in the number of participants, students' combinations of languages, the number of prepositions studied or how the preposition is conceptualised as an object of study, to name just some types of studies which are particularly lacking. In other words, there is a clear gap in the study of the acquisition of prepositions in Spanish as a foreign language that requires urgent attention. This gap grows to an almost total absence in the case of the acquisition of the prepositional system in Spanish as a foreign language by Chinese students, and it is this important gap that, in the first instance, motivates this thesis.

1.1 DEFINITIONS AND MEANING OF PREPOSITIONS AND SPATIAL WORDS

The expression of spatial concepts in Spanish depends, to a large extent, on the use of prepositions and adverbs, prepositions being first-choice linguistic resources. As well as prepositions, adverbs, particularly nominal or descriptive adverbs, complete the list of linguistics units employed in Spanish to express spatial relations. This list is generally characterised by having a limited number of units, by a high functionality, and by a marked semantic vagueness, at least in accordance with the traditional perspectives and studies of prepositions (RAE, 2009). The fact that spatial prepositions and nominal adverbs share a series of properties and uses that are in some ways related means that in this thesis I indistinctly adopt the terms preposition and spatial particles, as their field of application is more appropriate for describing this phenomenon in Chinese. It is relevant to point out that

etymologically, in the case of Spanish at least, most prepositions derive from the evolution of adverbs (Bassols de Climent, 1971).

The traditional list of prepositions in Spanish contains 19 distinct prepositions, although the Real Academia Española (RAE) and the Asociación de Academias de la Lengua Española (ASALE) in their latest versions of the *Nueva Gramática Básica de la Lengua Española (*2011) have increased this number to the current 23 prepositions. The traditional semantic classification of prepositions distinguishes between 10 different categories: namely space, time, comparison, material, possession, instrument, agent, purpose, cause and reference prepositions. In turn, spatial prepositions are divided into the spatial prepositions of location,*en (*in) *sobre* (on)*, bajo* (under/below) and *a través de (*through) and of movement (*desde (*from) and *hacia (*to/towards). The prepositions chosen as the object of study in this doctoral thesis are three spatial prepositions of location: *en, sobre, bajo* and their correlatives in the nominal adverbs, *debajo de* (below) and encima de. (above/on top of) The reason for choosing these particles lies, on the one hand, in the semantic characteristics of the vertical configuration of space that said lexemes establish and, on the other hand, in the group of figurative values (frequently also called notional uses) that clearly distinguish them from other prepositions.

If the list of prepositions in Spanish is compared with lists of prepositions in other languages, especially that of English, the number of prepositions in Spanish is very small. English has more than 100 clearly semantically limited prepositions, although as will be seen below, within this supposedly greater uniformity there is also variation depending on the variety of English, to mentionas an example just one of the variables that distort this apparently greater semantic delimitation. Consequently, it is undeniable that this small

number of units in Spanish must have an added number of functions and meanings, hence their polysemy and multi-functionality. Grammarians of the Spanish language, as indicated above, have modified the number of units that comprise this theoretically closed-class category. This is a clear sign of the continuous and unresolved debate about prepositions, something that further complicates teaching and learning of these linguistic units by students of Spanish as a foreign language.

The semantic definitions of the preposition in Spanish that traditional grammar provides (a methodological orientation that was dominant in the teaching of Spanish as a foreign language until very recently) are hardly much more encouraging. Traditionally, a distinction has been made between prepositions whose content is fully lexical in nature (for example, *bajo* whose spatial meaning is that of designating a lower place, or *sobre* whose meaning is that of indicating a higher place with regards to a landmark) in contrast with others whose content is grammatical in nature, for example the preposition *a* as a marker of the personal indirect/direct object. Gómez Torrego (2002: 219), for example, divides them into three groups: prepositions with their own semantic content (in general the prepositions studied here belong to this subgroup), prepositions whose meaning derives from their context, and prepositions without a lexical meaning. The question that arises is, faced with many possible contexts and considering that there are prepositions without meaning, how do teachers teach them to students of Spanish as a foreign language when native speakers themselves, and on occasions linguists, are unable to give a satisfactorydescription and explanation of how they are used? This can be seen in the following examples:

> 1.1 Fui *a* tu casa.
> 1.2 Vi *a* María.
> 1.3 Estuve *a* punto de entrar.
> 1.4 La Calle *de* Alcalá/La Calle Ø Alcalá.   (Gómez Torrego 2002: 219)

In examples (1.1), (1.2) and (1.3) the SFL teacher will rely on memorization and syntactic rules that do little or nothing to help and in the case of (1.4) it is either simply not explained or syntactic or phonetic arguments are used that, again, plunge the Spanish FL student ever further into the abyss of ignorance and causing even more confusion, especially for students without formal knowledge of syntax in their mother tongue, as is the case of Chinese students.[1]

Within this apparent chaos, spatial prepositions or particles are perhaps an example of systematization, at least in comparison with the apparent anarchy that reigns in the "kingdom" of prepositions.

1.2 THE ACQUISITION OF PREPOSITIONS IN A SECOND OR FOREIGN LANGUAGE

When learning a foreign language, in this case Spanish, students find that the prepositional system is one of the hardest hurdles to overcome. Concentrating on spatial prepositions alone, the student must first learn a number of new lexical units (in the case of Spanish this is not the greatest problem given that, as indicated,the number is much smaller than in some other languages such as English) and must secondly learn or interiorise the way in which native-speakers of that language codify and verbalise spatial relations, that is to say, their world-view, spatial configuration and concept of spatial relations. Often, and this is the

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[1] On most occasions causing even more confusion, especially for students without formal knowledge of syntax in their mother tongue, as is the case of Chinese students.

case that interests us here, the target language of study has spatial schema that do not match those used in the L1 or those of other previously-studied languages. This phenomenon has been recorded in the literature on the acquisition of English as a second language on many occasions. Mukkatash (1986), for example, in a study of 500 participants whose L1 was Arabic, recorded an error rate of almost 80% owing to the influence of the participants' L1. Similar results were obtained by Ijaz (1986) and Correa Beningfield (1988), whose participants (adult advanced level students of English) when assigning meaning to prepositions in English took into account the basic schemas of their L1, even at well advanced levels of command. Correa Beningfield (1988) used a comparison of the Spanish prepositional system with that of English, limiting some prototypical meanings (even if what the author regards as the prototypical meaning of spatial particles in Spanish is open to debate) and the results highlight the fact that participants tended to use the English preposition whose meaning was closest to what the native Spanish speakers identified as the prototypical meaning of the equivalent spatial preposition in Spanish.

Nonetheless, this comparative method is neither infallible nor is it without limitations. While it is true that contrastive study and analysis of errors resulting from comparing students' L1 and their L2 or subsequent languages (L3s) is a useful tool when trying to identify the possible origin of faulty usage, it is also the case that effects are sometimes attributed to a particular L1, that, in reality, are a constant in the acquisition of a given characteristic in particular language, regardless of what the students' L1 is (Cui, 2005). Therefore, it is important to be cautious when explaining errors in the acquisition of a foreign language based solely on the typological differences between the languages being compared. As well as the risk of this over-generalization, in the study I encountered a limitation resulting from the linguistic description itself of the students' L1. In the case of

English, study of spatial particles, especially from cognitive linguistics (Tyler & Evan, 2003) has received significant attention, resulting in an extensive list of bibliographical sources that precisely record the semantic nature, spatial, geometric and functional schema, and conditions and restrictions on the use of spatial prepositions in English.

This is not the case for Spanish and even less so for Chinese. Among grammarians of Spanish themselves there is no agreement when defining prepositions, leading to fundamental variations when studying these units. For example, Luque Durán (1980: 15) claims that prepositions in Spanish have, owing to their frequent use, undergone a process of desemantization and their meaning is only updated contextually. Morera Pérez (1988) disagrees with this and, like Trujillo (1971), maintains that prepositions possess a single and constant meaning (to a certain degree this idea is very similar to that of the prototypical meaning that shall be considered below). The Nueva Gramática de la Real Academia Española de la Lengua (NGRAE, 2010) throws some light on the problem of defining them by accepting a gradation between the traditional dichotomy between grammatical prepositions (with relational content and empty ones) and prepositions with lexical content.

What there does seem to be no doubt of amongst grammarians is that prepositions in Spanish are, above all, characterised by their polysemy, a feature that derives from two sources. On the one hand, it results from the historical evolution itself from the Latin cases to the current Romance system, and on the other hand, from the need to express a high number of paradigmatic and spatial relations, making use of a very small list. This is another characteristic of most studies that consider prepositions: the preparation of a long list of meanings without any apparent interrelation, generally arranged in a tripartite classification of spatial, temporal and notional ones (referring, of course, to spatial prepositions). Many of

the uses recorded in these long lists, that often disagree with each other (Trujillo, 1971; Luque Durán, 1980; Morera Pérez, 1988; NGRAE, 2010...), lack the idea of a central meaning, although they do accept the preposition's spatial origin. What is unclear is the relationship that is established in a preposition's different meanings, leaving the explanation up to polysemy, synonymy and homonymy. Nor do they provide a detailed cognitive-spatial scheme of the conditions of use of these units.

The outlook is even worse in the case of Chinese linguistics.[2] Until quite recently there were no studies on spatial particles apart from a few lists with examples of use, and thre are very few indeed at present (it should be recalled that the Chinese grammatical tradition has barely a century of history of study). This lack has meant that, in recent years, when studying the acquisition of second languages, Chinese linguists must themselves "create" the theory in their studies in order to describe their participants' L1. This is the case of Zhang (2009: 64) who states, when recognising the limitations of her study:

> ´there is no schema of Chinese noun of locality in Chinese study nowadays so that the central schemas are drawn by the author according to their definition, which is get from the authorized Chinese dictionaries` (2009: 64).

This limitation was taken into account when carrying out the methodological design and data collection.[3]

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[2] Although it is not the aim of this doctoral thesis, I d in the next chapter will contain a summary of the situation and reasons for the lack of studies on the prepositions in Chinese, in order to better understand the context of this thesis.

[3] As will be seen below, this is one of the limitations of this study, along with the type of Spanish-student profile available for data collection.

Most Spanish as a foreign language (SFL) textbooks take the research from the normative tradition mentioned above as a starting point, and so the approach lingers of providing lengthy lists, examples and opaque rules, that do not meet the real needs of Spanish L2/L3 students. This was a specific conclusion of one of the pre-study questionnaires that Lam (2003) carried out on the acquisition of the prepositions *por* and *para* where 56% of those interviewed directly identified these factors as the greatest barrier to acquisition of these two prepositions.

Cognitive grammar, availing itself of conceptual metaphor theory (Lakoff and Johnson, 1980) and prototype theory among others, is of considerable use when trying to explain this apparent dissociation of meanings, starting from the idea of a primitive semantic condition that is spatial in nature and from which the other meanings develop through metaphorical expansions. As I shall explain, these theories (Kemmerer, 2005) while not being immune from criticisms, are a starting point when trying to explain the semantic connection between spatial prepositions and for trying to find a pedagogical adaptation with which to bring them into the SFL class.

In this thesis one of the topics that has generated the greatest level of debate in the field of second language teaching is also explored: namely, the value of explicit grammatical instruction in improving the process of acquisition of an L2. Specifically, this thesis contains a comparison between the two interlanguages that our participants have acquired in different stages in their life. The comparison of these interlanguages has pedagogical implications that are of great importance for a number of reasons. Firstly, it makes it possible, albeit indirectly, to evaluate the influence of the age factor and of the possible existence of critical or sensitive periods in the acquisition of an L2. Secondly, it makes it possible to examine the

importance of factors such as the amount and quality of input, the effect of intensive teaching compared with non-intensive teaching and the influence of linguistic immersion, amongst other factors.

As will be shown in greater detail in the conclusion to this thesis, the results of this comparison of interlanguages appear to support the idea that the age of acquisition of Spanish, in comparison with English, does not play a decisive role in the subsequent command of prepositions. There also seems to be moderate evidence to suggest that intensive teaching, that is to say more hours in a shorter period of time, leads to a greater level of acquisition than non-intensive teaching. In turn, a cognitive teaching methodology, that is, the transmission and teaching of basic frameworks of spatial configuration appears to be more useful than the traditional system of teaching based on creating bilingual lists of meanings and lists of meanings for each preposition, a system that participants in this study had been receiving since they started studying English.

1.3 RESEARCH QUESTIONS

As can be seen from the above, studying prepositions in Spanish presents a series of challenges, both for grammarians in their attempts to define and delimit these grammatical elements, and for linguists in studies of the acquisition of Spanish as a foreign language.

From the point of view of acquiring prepositions, one question facing research into these units is the relationship between the spatial and non-spatial or figurative meanings of a given preposition.[4]

A number of studies, both in diachronic linguistics (Haspelmath, 1997; Hopper & Traugott, 2003) and in first language acquisition (Bowerman, 1983), have recorded sufficient evidence to be able to affirm that the spatial meanings of prepositions are acquired first and then, through various lexical expansion mechanisms, the figurative meanings develop. What is less clear is whether this relationship encountered in studies of an evolutionary character and in L1 acquisition also occurs in adults in the acquisition of foreign languages, as can be seen in these examples:

> 1.5 Te veo *en* dos minutos.
> 1.6 Fuimos de vacaciones *en* verano.
> 1.7 Pedro está *en* casa.
> 1.8 Este tren viene *de* Córdoba.
> 1.9 Estoy en la oficina *de* tres a cinco.
> 1.10 No estoy *de* buen humor hoy.

In sentences (1.5) and (1.6) the landmark of the preposition *en* is figurative or abstract, that is to say, it does not refer, as in the case of (1.7), to a physical landmark, the house, but rather to an abstract or temporal space, either a season of the year or a specific time period. Something similar can be seen in (1.8), (1.9) and (1.10) where the preposition *de* is used in a spatial context (8) and in two figurative contexts (1.9) and (1.10).

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[4] While it has been seen that the grammatical tradition distinguishes between temporal and notional uses, I however believe that, in accordance with cognitive theories about metaphor such as the Metaphoric Mapping Theory, the distinction between spatial and figurative uses and meanings is most appropriate.

It could, in general, be claimed that there are two positions to explain this phenomenon. On the one hand there is the strong view, proposed by authors (Lakoff & Johnson, 1999, to cite the strongest advocates of this position) who consider that mappings related to the conceptual metaphor are responsible for the lexical expansions of spatial particles from a spatial meaning to other more abstract ones in the adult stage as well, in other words spatial values are acquired first, and then figurative ones. On the other hand, there is the weak view (Kemmerer, 2005), that states that temporal values (and while there is a lack of further studies in this area, I believe that by extension the other figurative uses) and spatial ones are somehow independent. That is to say, while the former consider that it is necessary to have acquired the spatial uses of the prepositions to be able to use/understand temporal uses (and/or figurative ones), the latter, despite recognising the facilitating effect of having acquired spatial schema in a first case when acquiring the figurative uses, do not envisage a connection of need sine qua non. To support this claim, proponents of the weak view (Kemmerer, 2005; Martin & Caramazza, 2003; for an extensive review) rely on evidence from the field of neuropsychology and the study of focal injuries in which this dissociation of literal and abstract concepts after a cerebral lesion is documented. In the field of acquisition of second languages and foreign languages, there appears to be a lack of empirical studies that support any of these positions, a lack that in the case of the acquisition of Spanish as a foreign language (FL) or L2 and especially in the case of the acquisition of Spanish by Chinese speakers is a complete absence.

As far as I am aware, no studies have been carried out to date in the field of Spanish acquisition as L2/FL on the spatial and figurative values of spatial particles in Spanish with intermediate-upper-intermediate level speakers whose L1 is Chinese. The objective of this

thesis, therefore, is the empirical study and analysis of five spatial particles in Spanish in order to shed some light on the following research questions:

Is there a pattern in the acquisition of spatial and figurative meanings of prepositions by intermediate and upper-intermediate level Chinese students of Spanish as a Foreign Language and if so, what are the characteristics of this pattern?

Are there observable differences between the degree of acquisition and use of these prepositions in English compared to Spanish, and if so, what are the characteristics of these differences?

My working hypothesis is that, as the weak view states (Kemmerer, 2005), while the lexical expansion mechanism that the conceptual metaphor provides can facilitate the process of acquiring abstract uses, the development, acquisition and use of the figurative values of spatial particles do not rely on acquiring the literal values as a necessary and exclusive precondition.

The methodological design of this study, which compares the acquisition of a list of five spatial particles in Spanish, namely *en, sobre, encima, bajo*, and *debajo de,* with the process of acquisition of five spatial particles in English, namely *above, over, under, below* and *in,* allows us to examine empirically and directly the effect of factors such as the level of command of the target language, the length of exposure and the age of onset on the acquisition of spatial and figurative values in Spanish as L3 and, by extension, in comparison with the acquisition of English as L2.

As well as these factors, and although it is not the primary objective of this thesis, analysis of the tests carried out during the research enables an overall view of the difficulties of acquiring spatial particles in Spanish and English and provides an error analysis to try to identify the causes or reasons why acquisition of the prepositional system is problematic, including at advanced levels.

1.4 OUTLINE OF STUDY

This thesis is organized as follows:

Chapter 2 comprises a study of the Spanish preposition system, in particular the spatial prepositions and nominal adverbs that are the object of study of this thesis. The definitions and the problems surrounding the definition of prepositions and spatial particles are reviewed, as are the lexical phenomena that allow particles with a primarily spatial meaning to appear in abstract contexts. This is followed by an analysis of spatial particles and their expansions of meaning in English with a brief reference to the participants' L1.

In Chapter 3 of this thesis the acquisition of the prepositional component in a broad sense in a foreign language is considered and contextual information is provided in order to help understand the distinctive features of the teaching and acquisition of Spanish in China. Firstly, some of the studies carried out about the acquisition of prepositions in a foreign language are reviewed. Studies on the acquisition of prepositions in English L2 by Chinese students are then specifically addressed and finally, owing to the virtual non-existence of

studies in this area, a brief summary of the acquisition of prepositions in Spanish FL by Chinese students is provided.

In Chapter 4 the instruments used to collect the analysis data are presented, and the participants in the study and the data analysis methodology used are described.

In chapter 5 contains the analysis of the results obtained and how these provide data that help explore in greater depth the relations between the literal and figurative meanings of spatial particles. The data analysis is approached in a disaggregated form, examining the implications for the working hypothesis.

In Chapter 6 there is a discussion of the results obtained in Chapter 5 and a summary of the conclusions of the study, with special reference to implications for future studies and limitations.

This is followed by the bibliographical references and the appendices containing all the materials used during the preparation of this thesis.

CHAPTER 2: SPATIAL PREPOSITIONAL SYSTEMS

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This chapter comprises a review of the literature about the meanings of spatial prepositional units, as well as a study of the prepositional systems in Spanish, English and Chinese and their respective particular features. Firstly, the problem of studying the meaning of prepositions is considered with particular emphasis on phenomena of polysemy and the relationship between spatial and figurative meanings. Secondly, the phenomenon of prepositional variation is discussed from a cross-linguistic perspective. Thirdly, prepositions and prepositional phrases in Spanish and their semantic features are given specific consideration, focussing on the units chosen for study in this thesis. Finally, an overview is provided of the principal features of the prepositional system in English and spatial expression in Chinese.

2.1. STUDYING PREPOSITIONS AND THEIR MEANINGS

2.1.1 The meaning of prepositions

The preposition has traditionally been described as a closed category or class of words, that is to say, with a limited inventory to which new units are not added, and with a general meaning that is spatial in nature. Consequently, it has been thought that the primary function of prepositions is to relate expressions or movements of entities in space. However, prepositions are also very frequently used to express relationships that are abstract or figurative in character. Let us consider the following examples:

2.1. Está *en* <u>la oficina</u> todo el día.
2.2. Estamos *en* <u>marzo</u> pero parece junio.
2.3. Ese pobre hombre está *en* <u>las últimas.</u>
2.4. El Real Madrid está *en* <u>su mejor momento.</u>

Only in (2.1) can it be said that the preposition appears to be used to relate entities in space. In the other examples, the preposition introduces an abstract term. This use of the preposition to refer to non-spatial entities is not a creative use of the language; instead this use is as frequent as it is in merely spatial utterances.

Explaining this polysemy, this internal relationship between meanings, is the principal problem facing the study of the semantics of these units. I could, like Guarddon Anelo (2005: 6), subdivide this difficulty into three sub-questions in turn: firstly, it is necessary to question the need to distinguish between a broad abstract meaning and a series of contextually updated meanings, that is to say, meanings linked to the context in which the preposition appears. Secondly, it must be decided whether it is appropriate to define a primary sense for each preposition, if it is possible, and, if it is, how to make this definition. Thirdly, it is necessary to consider contextual influence in relation to the meaning of the preposition, that is to say, what each one contributes to the overall meaning. The question then is whether a given meaning results from the preposition's own semantics or, instead, it is its contextual updating that gives the utterance that meaning.

Most of the literature that I have revised in this thesis, in both English and Spanish, adheres primarily to studying prepositions in their spatial aspect. Although the conceptual metaphor is one of the cornerstones of cognitive linguistics, it is surprising that studies considering the dual aspect of the meaning of the preposition are noticeably scarce (Brugman & Lakoff, 1988; Guarddon Anelo, 2005).

A number of authors have proposed differing solutions to attempt to explain this phenomenon of prepositional polysemy. The different positions, as Tyler & Evans (2003: 6-8) note, can be divided into three major currents depending on the linguistic mechanism they invoke to explain the variety of meanings: phenomena of homonymy, monosemy and polysemy.

2.1.2 Prepositions and homonymy

The first of these positions (for example, Chomsky, 1995) reduces prepositional polysemy to a case of homonymy, in other words, it maintains that each of the meanings of a preposition, despite corresponding to the same linguistic form, would be an example of linguistic arbitrariness, thereby denying any type of relationship between the meanings of a single preposition. This position has a series of deficiencies. Firstly, it ignores the existence of any type of systematic relationship between the different meanings of a single preposition, a relationship that has been well documented within the cognitive school (Lakoff, 1987; Langacker, 1987). Secondly, it sees diachronic evolution as a purely accidental process that lacks motivation, something that Tyler & Evans (2003), citing studies on grammaticalisation (for example Heine et al., 1991), consider is not related to linguistic reality. Thirdly, Tyler & Evans (2003) believe that when studying prepositions it is possible to define a set of systematic relationships that affect the group in general, relationships that, again, are considered to be no more than accidental from this perspective.

2.1.3 Prepositions and monosemy

I now move on to examine, first of all, the monosemic view. This is the work of several authors who postulate the existence of a single fundamentally abstract meaning with which the other meanings that appear in the diverse contexts of use of prepositions are associated. Secondly, I shall consider the multiple-sense view, that is to say the work of those authors who maintain that, although there is a central sense for each preposition, cognitive phenomena are responsible for establishing the links between the new meanings and the core meaning.

One of the first studies to consider the semantics of prepositions (within the cognitive school) was Bennet's work (1975) on the prepositions *in, on* and *at* and their dual spatial and temporal meanings. The central idea of his work is that each preposition is endowed with a core meaning and that it is the context in which each preposition appears that gives the preposition a new meaning. Affirming the existence of such a highly abstract core meaning has the advantage of being easily applicable to most, if not all, of the uses that the preposition acquires with abstract values. However, the excessive weight that this author confers to contextual factors, the lack of a clear explanation of the semantic relationships between literal and figurative meanings, and the denial of the primacy of spatial values, as upheld by the studies on acquisition that will be introduced in the next chapter, mean that his work is incomplete.

Another of the most significant works in the literature on the study of prepositions is that of Herskovits (1986) who, like Bennet, centres her study on the English prepositions i*n, on* and *at.* In her work, the author proposes the existence of a sort of ideal meaning for each preposition. This meaning is geometric in nature, and consequently, spatial. According to

this author, the different meanings that the prepositions embody in the contexts in which they appear are gradual variations of the application of this ideal geometric meaning. The application of said framework is carried out through general mechanisms of lexical extension such as metonymy or pragmatic maxims. Criticisms of her work focus on the lack of solid criteria to support the differentiation of meanings that the author upholds (Cienki, 1989).

Brugman and Lakoff (1988) carried out a study of the preposition *over*. In their study, the authors establish what they call the central sense, that is to say, the most representative meaning of the preposition and the one with which another series of additional meanings is associated. This association of meanings occurs through what they call similarity and transformational links. However, as I shall explain below, Tyler and Evans (2003) criticise this model for relying on an excessively high number of senses and meanings, and because Brugman and Lakoff do not provide a solid explanation for the figurative extensions of the meanings of *over*, simply alluding to examples generated through the conceptual metaphor CONTROL IS UP.

Tyler & Evans (2003) again provide a series of counter-arguments that dismantle the validity of these positions. Firstly, according to these authors, it has been proven that there are meanings that are independent of the context in which they appear. Secondly, limiting the primary sense defended by the monosemic position would require the existence of a primary sense of such a level of abstraction that it would be difficult to distinguish it from that of other spatial particles. On the other hand, there is linguistic evidence that seems to support the existence of form-meaning pairings in long-term memory.

2.1.4 Prepositions and polysemy

The principal idea of the primary sense view maintains that the polysemy of prepositional units is a process of evolution that has a single primary sense as its starting point. The concept of primary sense is one of the points on which linguists studying the meaning of words disagree most. Dewel (1994) advocates the use of the linguist's own intuition as a sufficient criterion for defining the core meaning of spatial particles. Lakoff (1987) subordinates the choice of the primary sense of a preposition to the type of analysis that is being performed. Vandeloise (1984), in his diachronic vision, relates it with the first recorded use of the preposition. Tyler & Evans (2003) postulate the existence of a protoscene, which is an abstraction of the contexts in which each spatial particle appears, and from which the rest of the meanings derive. I shall consider this in greater detail.

Vandeloise (1984) undertook a study of prepositions in French and how they organise and describe space. The most relevant aspect of his work was the ability to establish a link between the original meanings of the prepositions and their diachronic development up to the present situation of use.[5] To do so, he proposes the notion of impulsion, reflecting his working methodology. According to this author, an appropriate working methodology would be based on a process of refining the documented meanings of a given preposition until arriving at a primary sense that would group all of them. This process of refining would be in opposition to the evolution that the semantic development of prepositions follows in his diachronic vision. That is to say, what the author calls logical time, implies that the meaning of a preposition evolves from more basic meanings towards other more complex and

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[5] Something that Tyler & Evans (2003) also record in their study of English prepositions when tracing the first recorded uses.

abstract ones. The most basic meanings are, essentially, spatial in nature. As Guarddon Anelo (2005: 8) maintains, it is to be expected that these manifest themselves as a constant over time, as, to a great extent, they depend on the speaker's perception of space.

Although Vandeloise's model is fundamentally geometric in nature, he does consider it necessary to introduce additional categorisation elements to avoid doing what other studies do, namely, relying on a large number of exceptions to justify the different recorded uses of a given preposition. Vandeloise suggests the inclusion of functional factors as a distinguishing factor.

Tyler & Evans (2003) performed a study of spatial particles in English which is probably the most comprehensive to date. In this study, they sketch a framework for analysis based on defining a polysemy network around each of the spatial particles in English. One of the most important characteristics of this study is its overarching character, in contrast with earlier studies that focussed on a limited number of spatial particles. In this work, the analysis is extended to twenty spatial particles, for which they consider, on the one hand, the descriptive-situational component, and, on the other hand, the functional component. I shall now consider it in greater detail.

2.1.5 Tyler & Evans' principled polysemy model

Tyler & Evans (2003) develop a model of polysemy that is built on foundations from cognitive linguistics and makes use of a wellthought-out methodology. Its principal aim is to enable future researchers to carry out studies with serious methodological rigour, thus making it possible to replicate them and consequently increasing their validity. Their model

is framed within the theoretical lines of cognitive linguistics. This has a series of implications that must be taken into account. The most important implication derives from the cognitive school's conception of the relationship between syntax and semantics as a continuum. Redundancy is one foreseeable consequence in this concept. Tyler & Evans (2003) recognise that redundancy is something that occurs naturally in language. However, they do warn of the excess of redundant examples in the analysis of polysemy carried out by other researchers owing to, among other factors, ineffective or incomplete working methodologies thatTo avoid this type of problem, Tyler and Evans (2003) propose a working methodology that enables analysis of the different meanings of polysemic prepositional units with a high level of precision.

Firstly, and in order to avoid this redundancy of meanings that they criticise in the work of other authors, they consider that it is necessary to determine which of the meanings have distinctive features and that cannot be encompassed within the traits of other meanings of the same lexical unit, or inferred through contextual clues. For a meaning to be considered independent it must satisfy two criteria; on the one hand, it must s not be strictly spatial or, if it is spatial, it must contain a different configuration (TR-LM) than that represented by the proto-scene of said linguistic unit. Secondly, the meaning in question must show contextual independence, that is to say, it must not be inferred from another meaning of said lexical unit and/or from its relationship with the context.

Secondly, the next aspect that must be defined and bounded is that of the primary sense. On the one hand, it is necessary to define what is understood as the primary sense, and on the other hand, it is necessary to determine how to establish the primary sense of a given lexical unit. From its origins, the concept of primary sense has been linked to the idea

of prototypicality, the notion of prototype as originally defined in the work on cognitive psychology by Eleanor Rosch (1978). In this author's work on semantic categorisation, prototypes are defined as the best or most representative case of a given category, for example, when thinking of the category of fruit, the most representative or prototypical fruit that comes to mind for Spanish-speakers would probably be an apple. It is more likely that this would be a prototype for the category of fruit than a mango or a rambutan. Around the central member of the category of fruit in a radial category there would be another series of more or less central members and so we could find pears, oranges and bananas, to give one example.

A similar process would occur with spatial particles. Lakoff (1987) stated that, just as objects could be categorised in accordance with Rosch's proposal, a parallelism could also be established with the different meanings of a polysemic lexical unit. Lakoff demonstrated this by constructing a polysemic network of meanings radiating from a prototypical core meaning of the spatial particle *over*. Each radial meaning was, to a greater or lesser extent, related to the meaning of the core term. The problem that Tyler & Evans (2003: 46) emphasise is the high degree of subjectivity in the choice of the core term, and so these authors consider that "linguists have simply asserted what constitute the prototype for a particular lexical category based on intuitions and assumptions which they have often failed to explicitly articulate" (2003: 46). As a consequence of this way of working, it is possible to find different semantic networks for a given term, depending on the author who carries out the study. A good example can again be found in the analysis of the term *over* by Lakoff (1987) and Kreitzer (1997; as cited in Tyler & Evans, 2003), where both authors present a possible, but conflicting, analysis owing to the subjectivity when establishing which is the central term of this particle.

Prepositions have features that differentiate them from other language categories. On the one hand, they belong to the so-called closed-classes, that is to say, they form a limited list of words to which new lexical units are not added.[6] On the other hand, the content of the spatial particles is relatively stable since, as Tyler & Evans state (2003: 47), their semantic content is a reflection of the speaker's spatial ordering and the semes that take part in it (vertical axis, horizontal axis, force of gravity, etc.) remain stable over time. These features mean that when studying and defining the prototypical meaning of these units, Tyler & Evans (2003) propose the use of a dual criterion using, on the one hand, linguistic proofs and on the other, empirical evidence.

The linguistic criteria that they use are, to a certain extent, based on the grammatical analysis proposed by Langacker (1987), and are, in this order (2003: 47): ascertaining what the first recorded use of this particle is, establishing its predominance in the semantic network (namely, seeing the type of TR-LM spatial configuration that is most repeated among the different recorded uses of this particle), studying its use in compound forms, studying its relationship with other spatial particles (for example, the combinations and divisions of space established between the spatial particles of the vertical axis) and, finally, noting the grammatical predictions.[7]

Another key concept, in the model proposed by these authors, when defining the semantic content of the spatial particles is the "proto-scene" (2003: 50). The proto-scene is an idealised mental concept formed from a series of recurring spatial scenes of a given spatial particle in the speaker's perception. The proto-scene comprises two types of

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[6] Apart from some exceptions, and in periods with a significantly long diachrony.

[7] This is what Langacker (1987) calls a "sanctioning" sense, that is, if one of the senses cannot be derived from the prototypical term, it is necessary to find another term within the semantic network from which it derives.

elements: idealised elements from the physical world (different TRs-LMs), and a particular conceptual relationship between these elements. The proto-scene is vitally important in the interpretation of the spatial particle that it represents; consequently Tyler & Evans maintain that the spatial particle is instantiated in the memory, thanks to the high frequency of use and its great usefulness in the interpretation of situations of habitual use (2003: 52). The authors make use of more or less schematic drawings to try to represent this proto-scene, while, it is true, playing down any type of psychological or neurological validity that it might have.

The "vantage point" concept (2003: 53) is closely linked to that of proto-scene. With this concept the authors simply refer to the position from which an ideal spectator would contemplate a given spatial situation. This perspective from which an ideal speaker contemplates a spatial scene is what, to a large degree, determines the function attributed to this relationship. From the view-point of the ideal observer certain parts of the spatial scene can stand out (Langacker, 1987, for further development of this idea), for example the interior or exterior, or part of the TR, depending on the communicative intention, or the entities in the scene can be endowed with different configurations, etc. I shall consider this in greater detail when I cover Brala's model (2002).

Compared with these proto-scenes that are stored in long-term memory due to their usefulness in the process of communication, we find constructions of a determined spatial particle interpreted on-line, making use of the speaker's general inference strategies. This inference ability that the speaker has makes use of contextual data and of every speaker's encyclopaedic knowledge. Tyler & Evans (2003: 55) give two utterances from Lakoff's analysis of the particle *over* to illustrate this process of online interpretation:

2.5 The plane flew over the city.
2.6 The bird flew over the wall.

In his analysis Lakoff discusses distinguishing between two meanings of the spatial particle over in order to explain uses such as those in the two utterances above, that is to say, the fact that the LM has a more or less extended character was grounds for Lakoff to decide to include two different meanings in the semantic network of *over.* Nonetheless, for Tyler & Evans (2003) it is simply a contextual update.

2.1.6 Spatial and figurative meanings

One almost universally observed semantic feature of the use of prepositions is that prepositions that denote spatial relationships can also be used to express temporal meanings. Haspelmath (1997) states this in a study that includes 53 languages from various linguistic families. While it is true that in this study variations in the form of representation are established, the fact that this feature appears so extensively seems to indicate that it is an almost universal cognitive mechanism. This is the case with the languages being studied here. For example, in Spanish one can find utterances such as the following ones:

2.7 Pedro está *en* casa.
2.8 Pon el cuadro *en* la pared.
2.9 Te veo *en* dos minutos.
2.10 Fuimos de vacaciones *en* verano.

Utterances (2.7) and (2.8) place the figure on a ground with spatial properties, namely, a house (denoting an inclusive three dimensional space) and a wall (denoting a supporting function). Nonetheless, the same preposition *en* in utterances (2.9) and (2.10) places the verbal action in a temporal referent with either a short duration or a longer time period. This phenomenon can also be found in both Chinese and in English. Consequently one can find utterances like the following:

2.11 In the kitchen.
2.12 In April.
2.13 在法国 (In France).
2.14 在 2000 年 (In 2000).

There have been many scholars who have centred their research on this phenomenon (amongst whom it is worth mentioning Boroditsky, 2000, 2001; Boroditsky & Ramscar, 2002; Gentner, 2001; Lakoff & Johnson, 1999, 2003) and among the various theories postulated to explain it, the one that has been the subject of the most attention and has been studied in the greatest depth is Metaphoric Mapping Theory. This theory sees metaphor as a cognitive mechanism that serves to structure thought, unlike traditional visions that confine it to the rhetorical and literary field. It is a cognitive mechanism that enables us to structure conceptual domains that are abstract or of some complexity, based on other conceptual domains generally of closer nature, for example, speaking of death or life experiences in spatial terms as in the conceptual metaphor LIFE IS A JOURNEY, as it seems to be generally accepted that the life-experience of undertaking a journey is something that is familiar and close to the speaker.

In the temporal-spatial field the wealth of knowledge of the three-dimensional reality of the spatial domain that the speaker has (one should not forget that the location of objects and of oneself is one of the earliest and most important life experiences in the development of human beings) acts as a basis for carrying out mappings of the temporal domain, whose difficulty of structuration is greater.

One of the features of these mappings, as Lakoff and Johnson (1980) and Kövecses (2002) initially indicated, is what is known as the unidirectionality of conceptual metaphors, in which an asymmetric relationship between both domains is established.[8] That is to say, conceptual frameworks for structuring space are used to refer to the temporal domain, but not in the opposite direction. This happens in this manner because the spatial domain's specific nature is close to the speaker, unlike the temporal domain.

Although I shall consider this in detail in the next chapter, I can state here that, from a language-acquisition perspective, the same theory predicts that the spatial values of the prepositions are acquired first and then the temporal meanings are acquired through a series of semantic extensions. This claim is supported by various types of evidence. From a diachronic perspective (Hopper & Traugott, 2003; Haspelmath, 1997) it has been shown that, apart from a few exceptions, temporal meanings develop from spatial uses. In the field of L1, acquisition examples have also been recorded that indicate that the acquisition of spatial meanings occurs first. Bowerman (1983, as cited in Kemmerer, 2005) provides a series of examples of utterances produced by children in their language development stage in which one can observe how once the spatial uses are acquired, albeit with some instability, they

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[8] While it is true that that a symmetrical relationship can sometimes be established, it is also recognised that in such cases, it would not be an example of everyday use

start to carry out novel mappings in the temporal domain, some of which violate the acceptable mapping frameworks of said language.

From both the viewpoint of L1 acquisition and from the perspective of diachronic studies, evidence has been found that indicates a sequential acquisition, that is to say, first spatial meanings and then temporal meanings. This poses the logical question of whether the same metaphor TIME IS SPACE intervenes directly in the representation and processing of prepositions in the case of adult speakers (Kemmerer, 2005: 798).

Kemmerer (2005) classifies the positions on this matter under the title of "strong/weak view" (2005: 798). According to the proponents of the strong view, who include Lakoff and Johnson (1999), the temporal meanings of these prepositions are processed mentally, based on the conceptual metaphor TIME IS SPACE, to such a point that, according to these authors, it is not possible to think or speak about temporal concepts without referring to the spatial scheme. On the other hand, the weak view maintains that the temporal meanings and the spatial meanings are not dependent, in other words, temporal meanings can be understood without relying on knowledge of the spatial meaning of a given preposition, even though this position does not deny the fact that the TIME IS SPACE metaphor might be a feature that is inherent to the human brain and so is always available (Kemmerer, 2005: 799). The difference between these two positions is, therefore, in the obligation or otherwise of resorting to the conceptual metaphor when processing or representing temporal meanings.

Various studies in the field of neuropsychology (see Kemmerer, 2005; Martin & Caramazza, 2003; for an extensive review), especially in patients with brain lesions, have revealed that certain types of focal brain lesions can disable particular concepts leaving

others intact, and amongst them the possible dissociation of concrete and abstract concepts has been revealed. However, this type of distinction has been found not only in patients with brain lesions, but also in healthy patients, and different electrophysiological and hemodynamic patterns have also been recorded (West & Holcomb, 2000; Fiebach & Friederici, 2004; Wise et al., 2000).

Kemmerer (2005), starting from these premises, carried out research with the aim of finding empirical evidence of this dissociation of spatial/abstract concepts at a prepositional level in patients with brain lesions. The results of his study are further supporting evidence for the weak view hypothesis as the participants were able to process abstract prepositional examples even with the spatial meaning affected. These results are evidence of the dissociation between abstract and literal concepts in the adult speaker. This does not mean that the metaphor TIME IS SPACE is nullified or has disappeared from the mind of the adult speaker.

Boroditsky (2000; 2001) carried out a series of contrast studies on the representation and processing of temporal concepts by Chinese speakers and English speakers, confirming a facilitation (reflected in a greater speed when responding) of spatial frameworks when accessing temporal concepts. Her studies also highlight the cross-linguistic differences between the way in which English and Chinese speakers conceptualise temporal experience. While native English speakers perform mappings with a horizontal spatial structure, the native Chinese speakers use a vertical spatial scheme, represented by the spatial particles 上 / 下. However, Boroditsky's studies, as Kemmerer (2005: 804) also notes, do not establish a connection of need; that is to say, no evidence has been found that the metaphor is necessary for accessing the temporal domain. The conclusions to her studies display a

concept of the metaphor as a cognitive resource that possibly, during the stage of acquisition of the language, facilitates or makes possible the creation of mappings between the two domains. Meanwhile, once language has developed, this knowledge is stored independently in the temporal domain without the conceptual metaphor TIME IS SPACE being activated every time that it is accessed, and, therefore, without the spatial frameworks being needed, something that obviously would be more profitable in terms of processing. In Kemmerer's words "the metaphor can be set aside like a scaffolding that is no longer needed" (2005: 804).

The next question that Kemmerer proposes, and that is a logical development of the results previously noted, is as follows: on the one hand, to what extent this influence of the spatial domain over other domains can be extrapolated, and on the other hand, if extrapolation is possible (in this sense Levinson, 2003; and Lakoff, 1980, provide a long list of correspondences between the spatial and figurative domains) what is the relationship between the source domain and the target domain, namely, between the spatial domain and the figurative domain. There are already many questions raised in the acquisition of a first language, and as has been seen from previous studies, we are far from resolving them. However, while the study of foreign language acquisition is infinitely more complex, it can at the same time be highly illustrative of the process of acquisition as a whole.

In the next chapter I shall consider the implications of adopting each of these positions from an acquisitional view-point in greater detail.

2.1.7 Prepositions and cross-linguistic variation

One of the most cited studies in the literature on prepositional variation in different languages is the work by Bowerman & Choi (2001). These authors carried out a cross-linguistic study in which they compared the use of the English prepositions *on* and *in* in 33 different natural languages. The most important result of their study was to reveal that the different examples of spatial relationships found in the different languages can be reduced to a continuum displayed in all of the languages studied. Bowerman and Pederson (1992, cited in Bowerman and Choi, 2001) demonstrated that the spatial relationships under scrutiny could be divided into 11 categories, with limits defined by changes in at least one language from one preposition to another. The different meanings are structured, depending on the languages, on a scale with different groupings, for example, in Spanish the preposition *en* would cover the uses of the English prepositions *on* and *in.*

According to Bowerman, organization of the spatial lexicon is strongly influenced by linguistic relativity, although she still does not deny the possibility of certain possible linguistic universals; she simply does not manage to explain how these two somewhat disparate positions can be reconciled with the data from the study.

This reconciliation is provided by Brala (2002). For this author one way of reconciling the two apparently contradictory ideas of universality and relativism would, on the one hand, be to recognise that prototypical spatial configurations are not so much based on a locative characterisation as on a functional characterisation. On the other hand, she also suggests observing the distribution of prepositions on this scale taking dynamic factors into account. The author (Brala, 2002: 38) illustrates this with the scale proposed by Vandeloise (1998: 7) in which the concepts of containment and support are related depending on the control

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factor, thereby making it possible to connect various categories in a single hierarchical network. In this way, the semantic content of the preposition is determined by the relationship of control established between the Ground and Figure.[9]

Brala (2002) suggests that this cross-linguistic variation in the use of prepositions is because of the different levels of generality in which the pre-linguistic concepts are associated with words. An example of the prepositional formulation that Brala (2002) suggests in now presented, to understand this better:

2.15 The picture is on the wall.

In a phrase like this one cited by the author (2002: 42) we find the following components, "F" (referring to the entirety of the Figure) "F′" (referring to the selected or prominent part of the Figure) and "f" (referring to the function that selects a given part of the Figure). In similar terms, we encounter "G" (referring to the entirety of the Ground), "G′" (referring to the prominent or selected part of the Ground), and finally "g" (representing the function that selects the part of the Ground). The function "f" selects the rear part of F (the back of the photo) that so becomes "F′". The function "g" selects the surface part of "G" (the external part of the wall) that consequently becomes "G′". In this example, the preposition "on" is activated by the type of relationship that is established between the two selected parts of "F" and "G" (that is to say, "F′" and "G′"), at least in the English language.

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[9] In this thesis, the terms *Figure* and *Ground* [originally introduced by Talmy (1972)] are used synonymously with the terms *Trajector* and *Landmark*, widely used by cognitive linguistic scholars, as these two terms were first found in the work of Langacker (1987).

Any physical or conceptual entity can be reduced to terms of "F" and "G". This is how cases of figurative uses of language are explained, and in the particular case that interests us, prepositions. Nonetheless, it is important to qualify that "F´s" and "G´s" cannot be part of a cognitively predisposed set" (Brala, 2002: 42); only the basic perception relationships, of the control, content, axes etc. types can comprise elements with a certain universal character as predisposed cognitive elements.

As seen above, in English, the preposition *on* is selected by the level of generality established between the f-s and the g-s in that particular language. However, each language displays different preferences, and some languages operate at higher levels of generality than others. The selection of "F´s" and "G´s" that each language makes to represent an objective reality linguistically is therefore what makes different languages differ from each other. Brala (2002: 42) cites the example of Spanish where for the English prepositions *in, on*, (and *at* could also be added) Spanish uses only use one preposition*: en*. In this way the author, referring to Vandeloise's model (1998: 7), observes that Spanish operates at a higher level of control than English, while English operates at a lower level.

Another illustrative example that the author cites (2002: 42) is that of the difference in choice of preposition between Italian and English in a representational context such as the following one:

2.16 Bob is on TV.
2.17 Bob é in television.

While English opts for a function that focusses on the exterior of the television screen, and so requires the preposition *on*, the prepositional function in Italian focusses on the inside and requires the equivalent of the preposition *in*.

Each language has certain activated conceptual relationships, and they are not necessarily the same in other languages, something that seems to be indirect proof of linguistic relativity, not in the traditional vision but in Slobin's sense (1996). In this sense, the mental concepts are shaped under a specific linguistic form when accessing this content in each language. However, this does not mean that the speaker is unable to perceive distinctions characteristic of other linguistic moulds when receiving focussed attention, that is to say, when this distinction that might be normal in another language is explicitly indicated to her. As Brala notes (2002: 43), these categorisation models might seem natural to the speakers of any language, however, this becomes an additional difficulty when trying to learn a foreign language, in which the categorisation models are different.

For Brala (2002: 44), the semantic nature of prepositions, that are of a more flexible componential type than, for example, nouns that are less subjective in nature (that is to say, the objects denoted by the nouns receive a given name whereas the relationships that prepositions express can be submitted to a greater degree of subjectivity, depending on the prominent aspects on which we fix our attention) means that they are more subjective. To support this claim, the author cites Gentner's work (1982) that seems to support the thesis that the relational concepts are more shaped by the intrinsic nature of the language, and consequently, states:

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the OBJECT slot in the vocabulary gets "filled" with a less componential content than the PREPOSITION slot […] a more componential pattern could then "yield" a greater number of perspectives (2002: 44).

2.2 THE SPANISH PREPOSITIONAL SYSTEM

The Spanish prepositional system has its origins in the simplification of the case system, firstly from Indo-European and subsequently from Latin. The original eight cases of Indo-European were reduced to six cases in Classical Latin.[10] The first declension to be affected by the process of simplification was the nominal declension. In this process, a single lexical unit started to combine different semantic meanings. As the process of simplification from pure Latin to Vulgar Latin continued, the phonetic distinction of the Latin case system became increasingly blurred and difficult to maintain (Lapesa, 1981; 1985).

In its place, a series of changes appear: on the one hand, the freedom in Latin word order became ever more rigid and inflexible, and, on the other hand, a process of reduction of cases took place until a single lexical form was attained, accompanied by a series of particles, prepositions and adverbs, of shared origins (Bassols de Climent, 1976), that help to express the various functions that previously fell on the cases.

In this process of diachronic evolution it is possible to distinguish three stages (Lapesa, 1981). In the first stage, until the 15th century, the inclusion of new prepositions

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[10] In fact in its very origins, the locative case is recorded in both for usein spatial situations and for use in topological situations.

occurs (*hasta, hacia, para, cabe* and *desde*) and the use of other already existing ones changes, for example, *para* acquires the nuance of purpose until then carried by the preposition *por*, and *desde* starts to alternate uses with *de*. In a second stage, lasting until the 17th century, the prepositional system shows a smaller number of changes than in the previous period, these essentially being limited to the exchange of meanings between prepositions. In the third stage, from the 18th century until now, the preposition *cabe* disappears, the preposition *en* loses its characteristic directional meaning of the 16th and 17th centuries and the use of *para* in contexts of purpose is strengthened.

The present-day Spanish prepositional system comprises 23 prepositions (RAE, 2010), some of which are fundamentally archaic (*cabe, so, versus*). Semantically, the traditional classification distinguishes 10 categories: space, time, comparison, material, possession, instrument, agent, purpose, causa and reference. Nonetheless, spatial expression in Spanish not only uses the list of spatial prepositions, but also adverbs and prepositional phrases that, as I have already explained, share the same etymological origin, although in the case of prepositional phrases they have fewer meanings than the simple prepositions (Morera Pérez, 1988). This is the case of the spatial units studied in this thesis, namely, the prepositions *sobre, bajo, en* and (depending on which grammar one consults, one terminology or another will be found)[11] the nominal adverbs or prepositional phrases *encima de* and *debajo de*.

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[11] Alcina and Blecua (1989) consider them to be prepositional adverbs, Morera Pérez (1988) as prepositional phrases.

2.2.1 The preposition *en*

The Spanish preposition *en*, as seen above, is one of the most frequently used words in Spanish (Rodrigues, 2009), one reason for its inclusion in this study, along with its high degree of polysemy and the semantic relationship that it shares with the particles *encima de* and *sobre.* This preposition has its origins in the Latin preposition *in*, whose uses were both non-dynamic (it expressed location without movement) and dynamic, when it appeared together with the accusative case. This meaning lasted into early Spanish and until well into the Spanish Golden Age.

The meaning of the preposition *en* is defined by the RAE dictionary (in its on-line (version) as follows: [12]

> Denota en qué lugar, tiempo o modo se realiza lo expresado por el verbo a que se refiere. [Denoting the place, time or mode of the action of the verb to which it refers.]

It also gives another seven definitions that are essentially figurative in nature, along with the prepositions that most commonly appear in contexts of switching.

Morera Pérez (1988: 361-404) prepares a complete inventory of uses of this preposition,[13] managing to count up to 41 different fields of performance (according to the author). In them we see how its distinctive features are due to the semes: + location, +

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[12] Similar definitions, but with different nomenclature are proposed by other authors such as the Gramática Descriptiva by Bosque & Demonte (1999); Fernández López (1999); Horno Chéliz (2002); and Moreno &Tuts (1998), that are the works consulted for this thesis, as well as the more in-depth work by Morera Pérez (1988).

[13] As with most authors who study the Spanish prepositional system, without entering into an analysis of its primary sense and postulating meanings that can be clearly derived from other meanings, as Tyler and Evans (2003) maintain.

absolute. Their contexts of use can encompass the spatial, temporal and figurative planes. In those contexts in which the preposition *en* indicates higher position, it accepts switching between the particles sobre and encima de. Nonetheless, in this type of use, namely, when the Ground has a seme of + inwardness and the location of the Figure that the speaker wishes to express is a superficial location, as Cifuentes Honrubia states (1998: 115), specific cultural knowledge is required to avoid confusion. Native speakers of a given language tend to interpret in a highly automatic fashion, which is the most habitual location in the given context of this particular Figure, but, as I shall show below, this does not happen in the case of SFL students.

2.2.2 The prepositions *sobre* and *bajo*

Morera Pérez groups these prepositions within a particular group that he characterises according to the following features (1988: 118):

1. The specific nature of their forms, that means that their meanings are more limited than, for example, the preposition *en.*

2. Low frequency of use, neither Rodrigues (2009), in any of the lists that he uses, nor Morera Pérez (1988), place them amongst the most frequent words in discourse.[14]

3. Their close relationship with the prepositional phrases *encima de* and *debajo de.*

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[14] Morera Pérez cites the Frequency Dictionary of Spanish Words and compares the frequency of *sobre* (854 occurrences) with that of the prepositions *con* (4667) or *por* (4700).

The opposition between both prepositions is limited by both poles of the vertical axis.

In the higher pole, sobre, is defined by the RAE dictionary (in its on-line version) as follows:

Preposición. *Encima de* [Preposition. *Above*]

For its part the preposition *bajo* is defined in the following terms: [15]

Preposición. *debajo de* (‖ en lugar inferior a) [Preposition. Under (in a lower place than)]

This is then followed by six more definitions with prepositional meaning, all of them with figurative senses.[16]

As one can see, in both cases, these are definitions that are clearly simple and insufficient to define the wealth of meanings and uses that these prepositions have.

2.2.3 The prepositional phrases *encima de* and *debajo de*

As I have previously noted, grammars refer to these two particles using a different terminology, there are authors (for example Morera Pérez) who prefer to call them prepositional phrases, while others (Pavón, 1999; Euguren, 1999), prefer the expression

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[15] In the on-line version of the dictionary there is a single entry (reflecting the high degree of homonymy of this word), meanings 43 to 49 correspond with prepositional uses, the most basic being the usage I transcribe here.

[16] This type of list of uses does little or nothing to help the SFL student.

nominal adverbs or descriptive adverbs, names that reflect the historical development of these units.

Originally, both in Spanish and in other Romance languages, their formation is the result of the fusion of a noun and a preposition (something that, in part, explains the variety of terminology applied to these units). In the case of the particle *encima* it originates from the fusion of the Latin prepositional form IN and the corresponding noun CYMA, and in the case of *debajo,* its archaic form corresponds to the Latin preposition DE and the noun BASSIU.

The RAE dictionary (in the on-line version) includes the double version of these forms, firstly, as an adverb, and, subsequently, as a prepositional phrase. The RAE dictionary defines both spatial particles as follows:

Encima. Adverbio. l. En lugar o puesto superior, respecto de otro inferior. U. t. en sent. fig
Encima (de). Locución preposicional. En la parte superior de algo.
Debajo. Adverbio. l. En lugar o puesto inferior, respecto de otro superior.
Debajo (de). Locución preposicional. En lugar inferior a.
[Encima. Adverb. I. In a higher place or position, relating to another lower one. *Also used in fig. sense*
Encima (de). Prepositional phrase. At the top of something.
Debajo. Adverb. I. In a lower place or position, relating to another higher one.
Debajo (de). Prepositional phrase. In a lower place than.]

As might be expected, the definitions of these particles are fairly limited and say little about their real use and the nature of their meanings, both spatial and figurative.

2.2.4 Relationship between the particles *encima (de), sobre*, *debajo (de)* and *bajo*

The prepositions *sobre* and *bajo* form a particular sub-group within the spatial prepositions (along with *ante* and *tras)* for various reasons: firstly, it is difficult to subject these units to contrast tests, that is, tests of interchangeability in a given context, something that seems to support the earlier locative origin of these units. Secondly, these units are directly related with the corresponding prepositional phrases, *encima de* and *debajo de*. I shall now examine the relationship that is established between these four particles.

In the case of Spanish the relationship established between the spatial particles *sobre* and *encima de,* on the one hand, and *bajo* and *debajo de,* on the other, is not comparable to the relationship established in English between, for example, the particles *above* and *on* where one of the most salient distinctive features is the notion of contact.[17] The case of Spanish has a more complex relationship. On the one hand, this relationship has syntactic implications, and on the other hand, semantic ones, as the two prepositional phrases are combinatory variants in most contexts, except for contexts in which the prepositional system is elliptic in nature (Morera Pérez, 1988):

2.18 *El libro está sobre/ El libro está encima.

In the same way, the phrasal variant requires the preposition *de* if the prepositional system is present:

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[17] In the case of Spanish, the notion of +/- contact only occurs with the spatial particles *junto a/ próximo a* (or *cerca de*).

2.19 El libro está sobre la mesa/El libro está encima de la mesa.

There is also a preference in the use of the simple preposition (*bajo* and *sobre*) to express figurative meanings (agglutinating the majority of the figurative uses of the English preposition under, in the case of *bajo)* although neither is it unusual to find figurative uses of the phrasal variant, even though this is normally more restricted to spatial and temporal contexts.

Both the preposition *sobre* and the phrasal variant *encima de*, can express contact between the Figure and the Ground on the upper vertical axis. However, there is a difference between them, as *sobre* can take the gravitational axis as a point of reference but does not have to, something that in the case of the phrase *encima de* is not as common.[18] For example:

2.20 Lleva una medalla sobre/encima del pecho.

I shall now review the features of the expression of spatial relations in both Chinese and in English that are equivalent or close to those expressed by the Spanish spatial particles that I have just considered.

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[18] According to some more prescriptive studies of prepositions this use would not be acceptable. Nonetheless I have found cases such as Lleva una medalla encima *del* pecho, produced by native speakers. Consequently, to give my work greater methodological consistency, the results of the tests, although they originally took into account a normative viewpoint, have been compared with the judgements made by a sample of monolingual native speakers of Spanish from the north of the Spanish Peninsula.

2.3 THE SPATIAL PARTICLES *OVER, ABOVE, BELOW, UNDER* AND *IN*

As has already been mentioned on a number of occasions throughout this thesis, the study of spatial particles in English using an empirical methodological focus is at a far superior level of development, depth and variety than is the case with Spanish and, of course, Chinese. From this fact one can surmise that we can rely on works of great precision when describing the conditions of use of the English prepositions, something that is not currently the case in Spanish or Chinese. In this thesis, I have opted for a cognitive vision as it seems to be the one that best explains the semantic complexity of these particles and is the one that best relates to new discoveries in the field of the neuroscience of language. Authors from the cognitive school who have studied the English spatial preposition system in the greatest depth include Langacker (1987) and Tyler and Evans (2003), are taken as reference points in this work.

When studying the spatial particles *over, above, below, under,* it is necessary to consider their relationship with the vertical axis. Langacker (1987) uses the term "orientation" to define the canonical relationship that this type of particle describes, that is to say, the orientation of the LMs-TRs refers to an ideal view by an ideal observer. This ideal situation of objects in space acts as a base for defining the core meanings of these particles and establishing their proto-scenes. I shall now consider each of these particles in greater detail.

2.3.1 The preposition *over*

According to Tyler & Evans (2003: 66), the following proto-scene would correspond to the spatial particle *over*:

Figure 2.1 Proto-scene corresponding to the spatial particle *over*
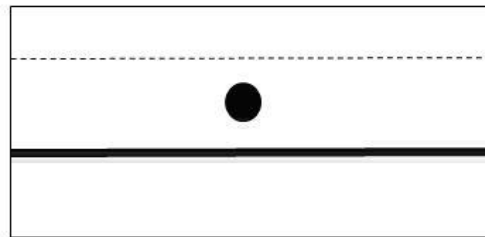
Fig. 2.1. Proto-scene corresponding to the spatial particle *over* according to Tyler & Evans (2003: 66)

The thick horizontal line represents the LM and the black sphere above this line is the TR. The dashed line represents the sphere of close influence of the LM that might or might not be in contact with the LM. The primary sense of over is that a TR is higher than the LM. As I shall explain below when making the corresponding comparison with above, *over* also implies that the TR is within the sphere of influence of the LM.

From a functional perspective, the proto-scene of over indicates that the TR and the LM are found within a same sphere of influence (2003: 67), that is to say, it is possible that the LM exercises some type of influence/control/command over the TR and the same happens in the opposite direction: the TR can influence the LM.

2.3.2 The preposition *above*

The spatial particle above has a proto-scene that it could be drawn as follows (Tyler & Evans, 2003: 112):

Figure 2.2 Proto-scene corresponding to the spatial particle *above*
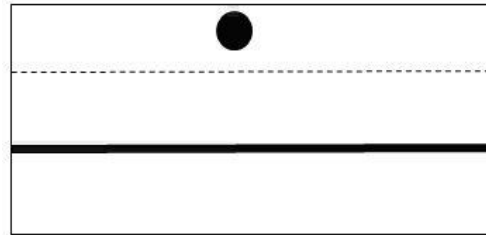
Fig. 2.2. Proto-scene corresponding to the spatial particle *above* according to Tyler & Evans (2003: 112)

In this schematic drawing the fact that the TR is above the dashed line and not below, as in the case of *over,* relates to the basic meaning of *above.* As I shall explain in detail below, the TR is outside the sphere of influence of *above,* but not that of *over.*

The basic meaning illustrated in the proto-scene of *above* is one in which a TR is higher than a LM. This fact has led the particles *above* and *over* to be seen as synonymous particles. However, as Tyler & Evans explain (2003: 110-115) the synonymy that traditionally has been attributed to these particles is not such. This is visible in the following utterances that the authors provide:

2.21 The picture is above the mantel.
2.22 The picture is over the mantel.
2.23 The man hung the jacket over the back of the chair.
2.24 The man hung the jacket above the back of the chair.

In (2.21) and (2.22) the meanings of both particles appear to be synonyms. Nonetheless, phrases such as those in (2.23) and (2.24) highlight the distance of meanings

between both particles that go beyond vagueness or imprecision of meanings and of the existence or otherwise of dynamism, the criteria traditionally used to justify these examples.

The criterion that Tyler & Evans (2003) use is functionality, that is to say, it is the differing functionalities of these two particles that distinguishes their meaning. The situation of the TR in *over* is within the reach of the LM or within the area or space of influence of the LM, while in the case of *above* the TR is outside the reach of the LM or is far from the influence of the LM.

This type of utterance supports the thesis of Tyler & Evans (2003) that claims that the topological judgement that the speaker establishes in her perception is more important than the actual objective reality of the outside world.

2.3.3 The preposition *under*

The proto-scene corresponding to *under* would be as follows (2003: 122):

Figure 2.3. Proto-scene corresponding to the spatial particle *under*
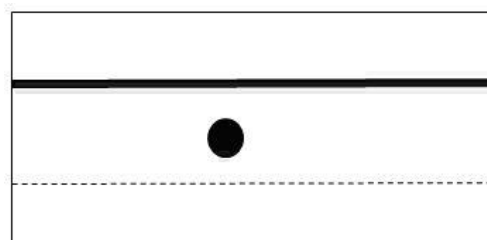
Fig. 2.3. Proto-scene corresponding to the spatial particle *under* according to Tyler & Evans (2003: 122)

The black sphere (TR) below the bold line (LM) and bounded by the dashed line (area of influence) represents the idea that the TR is in an area that is close to the LM, implying a possible interpretation of contact between them. This reading in the spatial plane also

projects into the abstract plane. Consequently two of the meanings conventionally associated with the primary sense of *under* are control and lesser quantity. This can be illustrated by some sentences:

2.25 If you are under 21, you are not allowed to get married in China.
2.26 We are under a lot of pressure lately.
2.27 John was always under his father´s scrutiny in the company.

Again, the vertical axis provides a reading related with the conceptual metaphor MORE IS UP, LESS IS DOWN. In (2.25) age is conceptualised in vertical terms, birth being at the base of the axis, and the passage of time being seen as moving up said axis. In (2.26) and (2.27) pressure and paternal scrutiny, two abstract entities, exercise control over their subject, as this is in a lower plane.

2.3.4 The preposition *below*

The proto-scene corresponding to *below* is the following (2003: 122):

Figure 2.4 Proto-scene corresponding to the spatial particle *below*
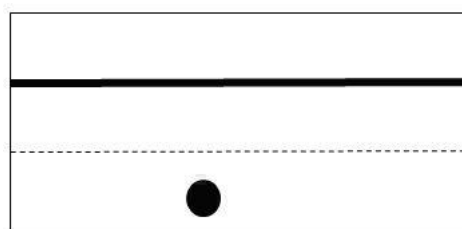
Fig. 2.4. Proto-scene corresponding to the spatial particle *below* according to Tyler & Evans (2003: 122)

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The black sphere (TR) is below the bold line (LM) as in the case of *under*; but, unlike the proto-scene of under, this is in the outer edge of the dashed line (area of influence), indicating (as previously seen in the case of *above*) that the TR is outside the sphere of influence of the LM, especially in cases of non-literal interpretation, and usually implies a lack of contact with the LM (although as I pointed with above, there are uses where contextually there is contact).

As I already explained, the primary sense of *below* is that a TR is in a lower position than an LM (a TR is lower than a LM). As well as this meaning, there are other meanings that are somehow associated in a similar way to those of *above,* such as inferiority, that rely on the vertical axis to indicate the lesser amount of something, and the lesser importance or power of someone, as can be found in phrases such as (2003: 128):

2.28 The temperatures dropped below freezing.
2.29 He is below me in the company so I guess that his salary is not very high.

Both examples are motivated by the orientational metaphor MORE IS UP/ LESS IS DOWN. Example (2.28) relies on the visual experience of the speaker and on her knowledge of the world that tells her that mercury rises or falls on a graded scale as the ambient temperature or that of a given object increases or decreases. That is to say, at a greater temperature, there is an accumulation of the number of degrees, and as in any accumulation of objects, an increase in volume is produced that generally is converted into greater height. In (2.29) possessing power or a certain status is associated with a greater height or elevated position, a conventionalised and highly productive image in everyday life. The greater height of a member of a species is generally converted into a greater advantage in the case of

confrontation, a biologically demonstrated fact throughout the evolution of the species. In the same way, finding oneself in a higher physical position gives the individual greater height, and consequently, greater power.

One use that is shared by both *above* and *below,* and that is worth mentioning is that of remoteness or distance, the Topographical-distance Sense of Tyler & Evans (2003: 121,130), that while being related to the primary-sense differs substantially from it. This meaning frequently appears in LMs that have a significant geographic extension, for example, rivers. This can be seen in a pair of examples that the authors provide:

2.30 They stood a mile or so below the falls
2.31 The nearest bridge is about half a mile above the falls

2.3.5 The preposition *in*

The last spatial particle in English that I am going to analyse is *in*. The proto-scene of in corresponds with the following scheme:

Figure 2.5. Proto-scene corresponding to the spatial particle *in*
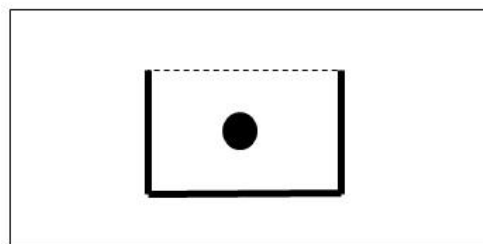
Fig. 2.5. Proto-scene corresponding to the spatial particle *in* according to Tyler & Evans (2003: 184)

2.32 There is a candle in the box.

The primary sense of *in* indicates a relationship of containment, that is to say, a given TR (a candle) is contained within an LM (the box). In this relationship one encounters three constituent elements, namely, an interior of the containing element, an exterior and some limits or boundaries. In the functional plane the main meaning of the particle in is that of expressing the idea of containment. The idea of containment both in the physical plane and in the figurative plane does not always correspond strictly with canonical three-dimensional containment. Tyler & Evans (2003: 184) illustrate this with the following utterance:

2.33 The cow munched grass in the field.

In the preceding phrase it can be seen that the TR (the cow) is contained in an LM (the grass) whose spatial features are not three-dimensional, however, they do satisfy the conditions of use of the particle *in.* On the one hand, there is an internal space in which the cow is grazing, limited by some boundaries, in this case fences, hedges or wire, and on the other hand, a space that is external to them.

As I mentioned above, the spatial particle *in*, beyond its spatial and functional primary sense, has a distinctive trait in the high degree of polysemy. Tyler & Evans (2003) list 27 distinct meanings in the semantic network of *in.* The number of abstract meanings stands out in particular.

2.4 SPATIAL EXPRESSION IN CHINESE

As seen above, cognitive linguistics states that the speaker's experience of the world to a large extent determines certain aspects of her linguistic conception. The cognitive enterprise also recognises the fact that cultural, geographic, biological and historical differences have an undeniable effect on forming the distinctive character of each language. It is here that the need for a brief analysis of the differences between on the one hand the specific conceptual frameworks of Chinese, and on the other, the frameworks of English and Spanish becomes important.[19]

The Chinese conceptual system is "integrated, subjective, intuitional, experiential and vague, while English culture is analytical, objective, logical, empirical and accurate" (Xu, 2008; Zhang, 2009: 12), I could add that Spanish is an intermediate term between the two. In contrast with the empirical character of Indo-European civilization, Chinese civilization makes use of primary images to explain reality; it is a language where conceptual and visual metaphor takes on a great importance.

This description of the Chinese cognitive system has a series of practical implications for its linguistic configuration. That is to say, starting from these differences in the conceptual systems one can infer that the perception of the spatial relationships established in both languages will be different.

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[19] Although it is true that English and Spanish differ in accordance with what is stated above, in essence, the similarities in their world-views outweigh the differences.

The visual motivation of the Chinese system of writing is, in many cases, based on the diachronic evolution of a pictorial writing system into a mixed system. This mixed character means that even nowadays the pictorial meaning can be glimpsed in some of its characters. Zhang (2009: 18) uses as an example the two nouns of locality that are equivalent to the English and Spanish prepositions that are the object of this study, 上 and 下. These two characters are not only antonyms in their meaning, but also in their very visual appearance. According to Zhang (2009), the fact that Chinese characters are made up of individual strokes making up a single character enables the reader to trace the pictorial origins of the characters, thereby connecting "vocabularies to their objects in the real world" (Zhang, 2009: 18).

In Chinese, spatial relationships are expressed through a system of adpositions, unlike what happens in English and Spanish. Chinese uses a double system of spatial expression; on the one hand, a limited system of locative particles is used, and on the other hand, either nouns of locality (or locative particles) or verbs are used to express the spatial relationships that Spanish and English express using prepositions.

In Spanish and in English, the structure for expressing a spatial relationship would generally correspond with the framework: Preposition + Nominal syntagma, as in the following examples:

2.34 He is in bed/Está en la cama.

That is to say, there is a basic framework in which firstly a Figure appears (He, in English; null subject in Spanish), then a preposition indicating the spatial situation and next a Ground.

In Chinese, the most common framework is: (在) + Noun phrase + Locative particle, as in the following example:

2.35 他在床上

It is also possible, especially in oral registers when the Figure is not mentioned, to suppress the particle (sometimes also called coverb) 在, as for example in the following utterances:

2.36 床上边/面
2.37 床下边/面

In Chinese, in contrast, there is a syntactic preference for putting the modifier in first place and then the noun that it modifies, something that is clearly obvious in this type of construction. Nonetheless, it is important to mention that in Chinese the complement of space can appear in either a pre-verbal or a post-verbal position, there being a series of semantic traits that display the preference for one or the other construction (Li & Thompson, 1981: 397-414).

Li & Thompson (1981: 391) list 15 locative particles, as well as a series of compounds or prepositional phrases made up of the more basic forms. However, unlike the more or less fixed order of English and Spanish, in Chinese, the omission, or the position of the locative particles is not infrequent, and their omission, when it does happen, is sometimes determined by the verbal meaning, or on other occasions by the meaning of the noun or by other contextual clues, a clear sign of the greater syntactic freedom of this language.

2.4.1 The locative particles 在。。。里 (边/ 面)

The meaning of the construction 在。。。 里（边/ 面）can be defined as follows: object A 在 object B 里（边/ 面）in the locative relation when object A is contained within the limits/boundaries of object B, its most important trait being that of three-dimensional inclusion, that is to say, the presence or absence of clear boundaries. I must, however, add that it is not a totally equivalent construction to the English in + Ground, as certain features of the Ground (for example, it being a geographical noun, a building or an organisation) exclude its use. For example:

2.38 他在苏州学习。
2.39 *他在苏州里学习。

Tai (1993) is among those who agree that both English and Chinese seem to use a similar cognitive schema which contains both Trajector and Landmark, and that this seems to be universal. However, as Herskovits (1986) points out, pragmatic issues act as a

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determining factor, this being the principal difference between English and Chinese. Herskovits provides the following examples in English[20]:

2.40 The water in the glass/ 杯子里面的水
2.41 The crack in the glass/杯子上面的裂缝
2.42 The bird in the tree/树上面的鸟

While in English it is possible to express these three scenarios through a single spatial preposition, in, in Chinese there is no locative particle which covers these three scenarios. Consequently, for the first phrase it is necessary to use 里头/面， and for the second and third phrases 上面儿.

2.4.2 The locative particles 在。。。上 and 在。。。下

The locative construction 在。。。上 corresponds, in very general terms, with the English words *above* and *over* and the Spanish *sobre* and *encima de.* The central definition of the term, according to Zhang (2009: 18), could be enunciated as follows: "something is higher than something else" and he continues "we can say object A 在 object B 上 in the locative relation when the sea level of object A is higher than that of object B". In the same way, 在。。。下, can be defined in the following terms: we can say object A 在 object B 下 in the locative relation when the sea level of object A is lower than that of object B.

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[20] The translation into Chinese of the phrases proposed by Herskovits (1986) is mine.

Spatial division in Chinese, however, does not correspond with the thorough and detailed segmentation of space that is found in English, instead being much closer in its vagueness to that expressed in Spanish. For example, here one can see the meanings that the particle 上 can express in Chinese alongside their equivalents in English

$$
上 \begin{cases} \text{- on the surface of, attachment} & \text{- on, at} \\ \text{- on top of, above, over} & \text{- over, up} \\ \text{- propositional usage} & \text{- on, up} \\ \text{- movement along vertical axis} & \text{- go up} \end{cases}
$$
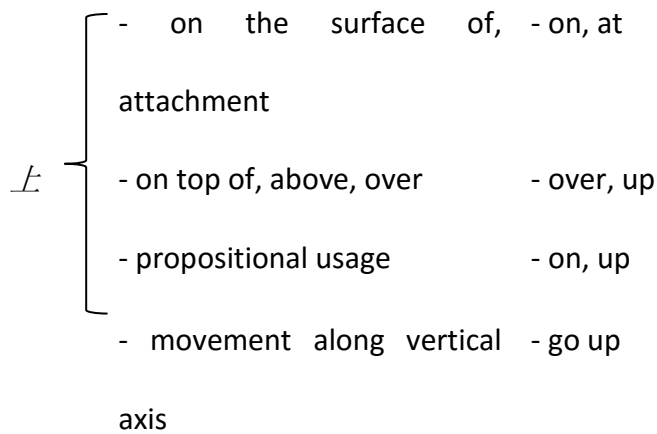
The particles 上 and 下 are also two of the spatial particles that display the greatest susceptibility to appear in contexts of figurative use. According to Chun (2002), these localizers are used mainly in the structuring of four cognitive domains: QUANTITY, SOCIAL HIERARCHY, TIME and STATE. There is a high degree of affinity between English and Chinese regarding the figurative uses of spatial terms. As a result, Chun (2002) postulates the existence of a universal metaphoric system, as already theorized by Johnson (1992) and Sinha (1995). However, there are also two important differences to mention:

One difference noted by Chun (2002) between English and Chinese concerns the frequency of use. In the corpus used by Chun, 87.6% of the examples of *up* (another of the possible translations into English of 上) have a metaphorical value. The figure for 上 is only

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72.3%. On the other hand, the terms *down* and 下 show very different results: 45.4% for down, and 77.7% for 下, respectively. Chun does not offer any plausible explanation for this difference, and concludes by highlighting the need for further research.

A second difference exists in the conceptualization of time. "An earlier time is 上" in Chinese while "A later time is Up" in English.

In the next chapter, I proceed to examine more specifically the literature on the acquisition of a prepositional system in a mother tongue and in foreign languages.

Summary:

In the first part of this chapter I have presented, firstly, an overview to the study of prepositional meaning, with particular emphasis on the complexity involved in the task of providing a satisfactory definition of these units, which are of a double nature, both lexical and functional. Secondly, I have examined three of the theoretical positions dealing with the study of prepositional meaning and their relationship with the many additional meanings that prepositions show. I have outlined Tyler & Evans' (2003) model in greater depth since, according to the linguistic and acquisitional evidence to date, this seems to be the model that best fits reality or the most accurate or pertinent so far.

I then discussed the central phenomenon of study of this thesis, that is, the relationship between the spatial and figurative meanings of prepositions. Firstly, I provided both neurocognitive and linguistic evidence about the relationship of these meanings in the speaker's mind. After this, I discussed the position of different scholars on this semantic relation, with particular attention to the work of Kemmerer (2005). Secondly, I reviewed the

literature on prepositional meaning and cross-linguistic variation, focusing on the work of Brala (2002), which, in my opinion, best explains these cross-linguistic relations.

The last part of this chapter was devoted to the study of the three prepositional systems under study in this thesis. Although most attention has been given to Spanish, for obvious reasons, a review of some of the particularities of English and the spatial expression in Chinese has also been provided. First of all, the five Spanish spatial prepositions studied in this thesis have been explained, followed by the five English spatial particles. I then presented a brief outline of the particularities of the expression of Chinese spatial relationships, based on the mappings established by the domains covered by the Spanish and English prepositions.

The main idea of this chapter, reached after thoroughly reviewing the existing literature, is that there is still a great deal of work to be done in order to provide a satisfactory definition and classification of these units. This requires urgent attention from the field of theoretical linguistics. Unfortunately, this theoretical and methodological shortcoming is transmitted to the field of second language teaching. This is clearly the case in the area of teaching and acquisition of Spanish as a foreign language.

The focus of attention in Chapter 3 falls, therefore, on the acquisition of Spanish as a foreign language by Chinese speaking students, andmore specifically, on the acquisition of the foreign language prepositional system.

CHAPTER 3: THE ACQUISTION OF PREPOSITIONS IN A SECOND/FOREIGN LANGUAGE

CHAPTER 3: THE ACQUISITION OF PREPOSITIONS IN A

SECOND/FOREIGN LANGUAGE

This chapter will comprise a review of the literature on the subject of study of this thesis: namely, the acquisition of the spatial and figurative meanings of Spanish prepositions by Chinese students. Firstly, in includes a review of a series of studies that address the acquisition of spatial expression in a preverbal stage and the appearance and development of the Spanish prepositional system during the first years of the appearance of language. Secondly, the study of the acquisition of the prepositional system in a foreign language is examined. Following on from this, studies on the acquisition of prepositions in a foreign language in general are considered, as is the acquisition of the Spanish prepositional system in particular. Thirdly, I go on to review the features of the acquisition of prepositions in Spanish and English by Chinese students (L1). Fourthly, a brief overview of the evolution and attitudes towards learning of SFL in China and the particular idiosyncrasies of Chinese university students of Spanish are provided. Finally, I briefly consider some of the most significant aspects of the acquisition of prepositions and present the research question and hypotheses.

3.1 THE PROCESS OF ACQUISITION OF A PREPOSITIONAL SYSTEM

Despite the semantic complexity of prepositions owing, as we have already seen, to their high degree of polysemy and high frequency of use in both spoken and written registers, and the communicative importance of their correct use, the lack of attention and studies on the acquisition of prepositions in SFL is somewhat surprising. There are a number of possible reasons for this absence.

Firstly, there is the lack of a solid reference theory in the Spanish grammatical tradition. As I mentioned in the previous chapter, the Spanish prepositional system, heir to the Latin system of cases, brings together a large number of literal and figurative meanings and apparently empty uses in what is, in comparison with other languages, a fairly small number of prepositional units. Consequently, systematization of their teaching is problematic for SFL teachers who do not, in turn, have a satisfactory fundamental tool. Secondly, there is confusion, above all in studies in the Hispanic field (probably, largely, motivated by those long lists of uses without an apparent motivation or connecting link) regarding the nature of the preposition, and so we find studies that mix the acquisition of the semantic meanings of prepositions with syntactic uses, or with complements required by the verbal system. To these two factors I must add the fact that many studies of SFL acquisition still do not follow a methodological paradigm appropriate to the social sciences supported by an empirical methodology and robust statistical analyses, meaning that, on the one hand, their assertions are not as valid as one would hope, and, on the other hand, replicating their conclusions is more difficult.

As the objective of this thesis is to investigate the degree of acquisition of the spatial and figurative meanings, principally of a semantic nature, I shall not refer in the rest of this chapter to acquisition studies that focus on syntactic properties, collocations or grammatical reactions, unless these studies are unique or of special relevance.

3.1.1 The relationship between acquisition of a L1 and the acquisition of a FL

Acquiring a foreign language involves a series of distinctive characteristics that differentiate it from the acquisition of a L1; within these features, perhaps the most important is the presence of an already-internalised cognitive system. This characteristic has an obvious acquisitional implication, namely that the acquisition of prepositions in SFL must, by necessity, be carried out through form-meaning mappings. However, as Bogaards (2001) states, not all of these mappings occur with the same frequency because of variation in the contextual input, or because of the phenomenon of restructuring of the mappings that takes place in formal instruction contexts.

On the other hand, there are parallels between L1 acquisition and L2 acquisition. There is an extensive body of literature on this area, emphasising the similarities between the acquisition of certain characteristics and schema that are common to the acquisition of a L1 and a foreign language (Ortega, 2013 for an overview). Two of these studies are especially relevant to us. In the late 1970s and early 1980s, Hyltenstam (1977) and Zobl (1980), studied the acquisition of negation in Swedish and of the collocation of personal pronouns in French and English, respectively. The conclusions of Hyltenstam's study (1977), a work of considerable length and importance, emphasized the fact that, contrary to what the fervent supporters of Error Analysis (EA) theories proposed, patterns of acquisition of negation were

similar, regardless of the L1 of the 160 participants. According to EA theory they should have shown clear signs of differences in the acquisition phase, namely, acquisition should have been easier for those participants whose L1 had similar properties to Swedish negation, and harder for those participants whose L1 was different. Furthermore, there were also cases of participants with the same L1 who displayed different acquisition patterns.

In the case of Zobl's study (1980), the conclusions also supported this same thesis. Contrary to the predictions of EA, the patterns of acquisition observed regarding pronouns were neither bidirectional nor symmetric; for students of English whose L1 was French, acquisition of the correct position of pronouns in English was not influenced by the L1, but it was in the case of students of French, whose L1 was English.

Therefore, while, EA is a methodology that was widely used until relatively recently, I feel that this type of study must be approached with some caution.

First I shall see what the field of L1 acquisition has to say about the acquisition of prepositions in Spanish.

3.1.2 The acquisition of the Spanish prepositional system (L1)

Recent decades have witnessed a blossoming of studies on L1 acquisition alongside language psychology. Research has been carried out in this field that demonstrates early acquisition of the capacity to express spatial relations in preverbal stages (see Carlston & Van der Zee [Eds.] [2005] for a more detailed vision). Quinn (1994; 2005), starting from the basis that children of preverbal age are capable of organising objects in category groupings, carried out a study showing that toddlers also have the capacity to form category

representations of spatial relations of terms that are similar to those studied in this thesis, namely, *above*, *below* and *between*. To do so, in his experiment (2005: 296), the children were given a basic representation, consisting of a line of horizontal points with 4 small diagonal points above it. They were then shown another two images, with the same horizontal line, but in each of the photographs there was a single diagonal point, either above the line (for the ABOVE category) or below (for the BELOW category). The motivation behind this experiment was that if the children were able to form a representation of the ABOVE category (similar to what was seen in the first representation), when the image with the diagonal point above the horizontal line appears, this would be a familiar image compared to the other image where the diagonal point appeared below the line, and so, it would be the children's preferred option as it was a new image. Quinn´s conclusions support the idea that there is a gradual development pattern from 3 or 4 months of age in which babies are able to categorise spatial relationships regarding a single landmark up to a more advanced period of 8 to 9 months when they are able to represent spatial relationships with multiple landmarks and adding a more abstract character that enables them to vary the objects presented while maintaining the same type of relationship.

Quinn´s study contributes to the understanding of the development of language and spatial thought during the first months of life of human beings.

What interests us now is to see the process of acquisition of the prepositional system, once language starts to appear, and more specifically in the acquisition and development of Spanish. When studying the acquisition of the prepositional system in L1 Spanish two complementing elements must be taken into account: on the one hand, the acquisition of

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prepositions, and on the other hand, the acquisition of figurative competence that is essential when accessing the non-literal meanings of these units.

As is also the case in the field of foreign language acquisition, there is also a clear shortage of studies here on the acquisition of the prepositional component of Spanish (L1). Most of the studies that consider language acquisition come from the English-speaking field (Castro & Sandoval, 2009: 244). Hispanic psychology has, above all, used as reference points the works of Tomasello (2000; 2003), Slobin (1987) and Pinker (1995), and in the last decade, the more specific works of Aguado (1999; 2005) and López Ornat (1999).

The appearance of prepositions in children whose L1 is Spanish has been documented in a period ranging from 18 to 24 months of age (Castro & Sandoval, 2009), although other authors (Serrat et al., 1994) mention an average age of 26 months. It appears that there are a number of requirements for this appearance to occur: contextual syntactic complexity, either an utterance with various clauses or semantic predicates, or with the shift from a passive grammar to an active one or with contexts of coordination/subordination (Castro & Sandoval, 2009: 253). All of this appears after acquiring the basic aspects of the grammar.

As children develop, and their linguistic repertoire grows, more and more prepositional units and new semantic meanings are added to the previously acquired prepositions. The first prepositions to appear in Spanish are *en, a* and *de*. Initially children aged between 24-36 months barely use prepositions with temporal meanings, it is mainly the spatial ones that undergo a progressive increase in use until the age of 30 months, with a subsequent fall up to 36 months (Castro & Sandoval, 2009: 249). Their use of prepositions is referential in nature and necessary for communication, relating to circumstantial

complements of place, and, to a lesser extent, of purpose (for the prepositions *para* and *con*), namely, strong or full prepositions.[21]

Serra et al. (2000: 372), taking the studies by Hernández Pina (1984a) and Peronard (1985) as a reference point, list the order of acquisition of the following spatial particles in this order: *en, a, de, para, con, por, hasta, sin, desde* and *entre.*

In the Spanish L1 acquisition process and in accordance with the results of previous studies, it is also on the one hand necessary to distinguish the process of production of understanding, and on the other hand, the type of meaning (s) connected to each of these prepositions.

From the semantic viewpoint, what all of these studies seem to support is the idea that first the spatial meaning is acquired, apparently, the most basic of the preposition. Peronard (1985), corroborated by López Ornat et al. (1994) and Castro & Sandoval (2009), states that spatial meanings are expressed earliest, followed by those denoting accompaniment and instrument, and not only this; in the particular case of the preposition *hasta*, she observes how children are able to use this preposition with a spatial meaning from the age of three, both in understating and in production. However, when it is a case of temporal uses of the same preposition the acquisition results are very different. It is necessary to wait for the period between 4 and a half years-old and 6 years-old to see an increase in the correct use of the preposition *hasta* in temporal utterances.

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[21] This is an English translation of the Spanish term, *preposiciones fuertes o llenas*. It refers to prepositions that operate independently of the terms they link or prepositions that can perform defined semantic roles owing to their specific content.

Analysis of the errors made by children in the acquisition phase of these units also provides us with relevant information. Peronard (1985) distinguishes between errors of omission and errors of commission. The errors of omission seem to be motivated (Serra et al., 2000: 373) by the children's difficulty in identifying the function of the prepositions, on the one hand, and on the other, by the variety of positions that they can occupy. And the errors of commission recorded in the literature show how children, in an initial stage, tend to overgeneralize the spatial meanings of prepositions, and progressively assign other values to them.

Regarding the acquisition of figurative competence, again, I have found very little literature that sets out to study this area (Crespo Allende & García Escala, 2009). Crespo (2006; cited in Crespo Allende & García Escala, 2009) carried out a study with almost 1000 school-age children, and determined that at the age of around five and a half, almost 42% of utterances that are figurative and of a certain semantic transparency were understood by the children, with their understanding increasing gradually between 6 and ten years of age. Nonetheless, as the author herself recognises (Crespo Allende & García Escala, 2009: 189), there is a lack of studies with less semantically transparent stimuli to complete the overview provided in this study.

Levorato and Cacciari (1992; 1995; 1999, 2002) have extensively studied the acquisition of what they call figurative competence, a skill that enables the child to interpret beyond the merely referential. Levorato and Cacciari (1995) divide this process of evolution into a series of stages (although the authors prefer the term phases of development as they are gradual and overlapping periods). A first stage, lasting until the age of 5, is characterised by maintaining linear thinking and a default literal interpretation. Next, between the ages of

6 and 7, children start to develop a linguistic conscience that enables them to be aware of incongruences motivated by a literal interpretation or incomplete phrases. It is therefore, necessary for children to look for indications that allow them to unravel the meaning of the expression in question from their prior knowledge, and from the communicative intention of the speaker.

The greater development of the figurative competence that, as has been seen, appears between the ages of 6 and 10, coincides with various factors, including the process of schooling, that means that the children enter into contact with a new setting that can provide a huge amount of information about the world, other people and the new and different relationships that they will have to learn to express. To carry out this task, there is also an increase in working memory (Haldford, 1993; cited in Crespo Allende & García Escala, 2009) that in turn makes analogy-based analyses possible, that is to say, comparison of different entities and concepts that leads to the appearance of resources such as conceptual metaphor.

In summary, the acquisition of prepositions in Spanish (L1) shows how the first meanings of the prepositions that children acquire are the spatial meanings. These first meanings are those that they overgeneralise, creating errors of commission. Additional meanings are progressively added as their linguistic background develops as does their cognitive system, with a consequent increase in the number of concepts that they understand. It seems obvious that children cannot acquire meanings with underlying concepts that they are still not cognitively able to understand. Accordingly, meanings are not all acquired at the same time or in a symmetric or continuous form. This finding is fully in accordance with the results obtained in studies on the acquisition of figurative competence.

It is not until the age of six that children truly start to develop the faculties that allow them to be able to use expressions that go beyond the merely spatial or referential.

It is however true, as I shall explain in detail below, that not all authors agree with this claim that this conceptual system-prepositional system relationship of dependency explains the appearance in first place of the spatial meanings of prepositions (since, as I have already mentioned, they appear in very early stages of the development of the child). Tomasello (1987), after observing that certain spatial prepositions that at first sight seem simple were acquired later than others, concluded that, in the cases of cognitive similarity required for their processing, there is a factor that has a significant influence on the order of acquisition: saliency.

I shall now consider a series of studies that tackle the acquisition of prepositions in a foreign language, something that will enable us to obtain a more comprehensive overview of the particular features and similarities regarding the acquisition of a L1.

3.2 THE ACQUISITION OF THE PREPOSITIONAL SYSTEM IN A FOREIGN LANGUAGE (FL)

As has been previously mentioned, the process of L1 acquisition and the process of FL acquisition share a series of characteristics that, using the studies by Zobl (1982) and Ortega (2008) as a foundation, I can summarise in the following points[22]. Firstly, it appears

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[22] I am aware that I am oversimplifying a little bit here.

that the majority of the linguistic groups of learners (regardless of their L1 background) make the same or similar series of modifications or approximations to the structure of the language being studied in the process of acquisition. Secondly, depending on the particular L1 of each group, the amount of time in each of these stages of approximation to the system of the meta language varies, sub-stages are created or the difficulty of attaining a given feature increases. For example, acquisition of the trill [R] is not the same for a Chinese student (L1) as for an English one (L1); both lack this sound in their respective L1s, but the time required or the creation of sub-stages until arriving at an acceptable pronunciation varies. This phenomenon is recognised by relevant teaching and learning institutions such as the Instituto Cervantes, that has modified the six reference levels of the Common European Framework by adding sub-levels to meet the needs of the different linguistic groups of students they teach in each country.

I shall now describe, in more detail, a series of studies that approach the acquisition of prepositions in a FL/L2.

The acquisition of prepositions in a second language implies a number of factors which clearly require more than simply memorizing a list of prepositions or related spatial terms in the new language According to Jarvis & Pavlenko (2008), there seems to be support for the idea that it is necessary to internalize four major components, namely, spatial relations, considered both compulsory and optional in the target language; "prototypes of particular language-mediated concepts such as (ON) and (OVER), as well as peripheral members of the conceptual category that allow for abstract meanings and metaphorical extensions" (2008: 145); particular preferences for a given frame of reference in the target language; and finally, language specific concepts to conceptualise spatial relations, for

instance, personal space. I shall now discuss how previous literature has accounted for the acquisition of these factors.

In the late 1970s a number of researchers started to focus their studies on the acquisition of the prepositional component, especially taking Arabic as the participants' L1. Scott & Tucker (1974), from a perspective centred on analysis of errors (EA), noted the fact that in the case of these participants the prepositional component was one of the aspects with greatest divergence regarding native speakers. Alani (1973) carried out a study with participants whose L1 was also Arabic on the acquisition of prepositions in English L2. This study focussed on a number of prepositions that are frequently used by Arabic-speaking students, in order to observe more easily both the frequency and types of errors that the participants produced. Some years later, Habash (1982) carried out a similar study, analysing written samples, again from students whose L1 was Arabic. These studies, like Richard´s (1971) and Mukattash´s (1976) identify as causes of error in the acquisition and use of prepositions in the L2 the inexistence of these prepositions in the L1 or the transfer of values from the participants' L1 to the L2, however, they did not carry out an analysis of the root causes or of the cognitive factors in both languages.

Using another type of participant, Ijaz (1986) conducted a study with some 150 German L2 users of English focussing on the use they made of several English spatial prepositions in comparison to the use sanctioned by native English speakers. The study focused on the prepositions *on*, *upon*, *onto, on top of*, *over* and *above*. A semantic-relatedness test and a cloze-type/sentence-completion test were used to elicit the data. The results show that the main difference between native speakers and ESL learners was in the semantic boundaries ascribed to the prepositions. The study concluded that a large number

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of L2 users transferred the internal structure of prepositions characteristic of their L1. It was also pointed out in the study that L2 users had a mental representation of the prototypical meaning of spatial prepositions which was very similar to those of native speakers. However, a difference emerged in the peripheral (non-prototypical) and figurative uses of spatial prepositions. In this area, the answers of native speakers showed clear differences with respect to those of L2 learners.

Correa Beningfield (1988) reached similar conclusions in her comparative study on the acquisition of the prototypical meanings of a range of prepositions in English (*in, at, on and over)* and in Spanish (*en* and *sobre*). She designed four data elicitation tools, two tests to obtain prototype meanings in accordance with the opinion of the native speaker, a translation test and a Picture Cloze Test,[23] with the main aim of determining whether or not there was transference. Her results appear to support, on the same lines as Ijaz (1986), the idea that there is a transference of the most prototypical or central meaning of the term in the L1 to the preposition in the L2 whose meaning most closely matches that in the L1, and thus a tendency towards overgeneralization. Krzeszowski (1990) also found that even though Polish (L1)-English (L2) learners had a high proficiency level in English (L2), there was still uncertainty and L1 transfer effects when it came to peripheral and figurative uses of spatial prepositions.

Nonetheless, these conclusions must be taken with caution when affirming that transference is the principal cause of errors or limitations in the acquisition of the prepositional component in a L2. The design of the translation tests and the fact that constant code switching was demanded of Correa Beningfield's participants (1988), and that

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[23] The design and results of which provoke certain doubts.

Ijaz (1986) and Krzeszowski (1990) did not consider other factors, seem like good reasons to to take into account other possible explanations.

One study that provides an alternative explanation is the one by Becker & Carroll (1997). These authors carried out a longitudinal and cross-linguistic study centred on the spatial uses of a prepositional inventory produced by a group of immigrants in their oral production in the acquisition of French, English and German. Their research design allowed them to record free conversations and semi-free oral tasks. The results of this study, on the one hand, provide a kind of system of underlying spatial expression that is common to all of the participants, and on the other hand, appear to support the idea that a series of actors inherent to the language itself can, in reality, be more important in the acquisition of spatial expression than the studies that I cited above had traditionally given to transference. Amongst these factors, semantic transparency, the conceptual difficulty of mappings and the input cues present in the context and capable of providing information on the form-function relationships are explicitly cited.

Another factor that has received much attention in the literature is the influence of a developmental decline, related to the idea of critical or sensitive periods such as those found in the acquisition of the phonological, morphological and syntactic components. I shall now review a series of studies that tackle this line of research.

3.2.1 Age-related factors

Almost complete acquisition of a first language normally occurs between the ages of four and six (Ortega, 2013). This is a phenomenon that seems to occur almost universally,

regardless of the language in question. Nonetheless, the acquisition of a second language is not subject to any type of chronological limits. This raises a number of questions, that for the purposes of the field of SLA can be summarised as two: firstly, whether there is (or is not) a Critical Period, that is to say, a period after which the processes of acquiring a second language changes or becomes limited in comparison with the acquisition of a first language; and secondly, whether there is a stage or limit to the level of acquisition that can be attained in a second language.[24]

The idea of the existence of critical period in the field of SLA dates back to the 1950s and 1960s, from the work of researchers such as Penfield and Roberts (1959) and Lenneberg (1967). These authors are frequently cited as the originators of the so-called critical period hypothesis. According to this hypothesis, at around puberty there are a series of changes (in brain plasticity, for Penfield and Roberts, in lateralisation for Lennenberg) that make the brain less receptive to learning certain stimuli from the environment surrounding it. Evidence from the animal world is frequently cited (Knudsen, 2004; cited in Ortega 2013), as are examples from the field of first language acquisition (Rymer, 1993), to support the existence of this critical period. Literature on this topic often draws on examples of late acquisition of language, such as the very well-known cases of Genie and other feral subjects who grew up in conditions of isolation or lacking linguistic stimuli, or examples of deaf children.

The panorama in the field of second language acquisition is far more complicated and there is currently still an intense debate on the existence of critical periods and their possible

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[24] One of the key factors, based on the findings of this thesis and on previous literature, is not so much starting sooner or later to study a given language, which I do not deny its importance, but rather the number of hours of instruction received and the linguistic features of the second language, in the specific features of each component of the language.

limits. Most researchers agree on the need to establish distinctions depending on the specific area of acquisition being studied, so, for example, acquiring the phonological component is not the same as acquiring morphology. or, in the case that interests us here, expressing spatial relationships.

In this sense, there is a broad literature based on the acquisition of the morphosyntactic component of a second language. The methodologies underlying these studies can, following Ortega (2013), be divided into two large groups: one group that could be called correlational, and another second group that could be called attainment studies.

The correlational studies share a series of features: they usually have acquisition of English (L2) as their object of study; they are usually based on conditions of immersion; they usually use grammaticality tests (grammaticality judgement tests or truth value judgement tests); and their results are usually compared with the answers given by native speakers. Within the current of correlational studies, perhaps one of the most cited and replicated studies in the literature on SLA and critical periods, is by Johnson and Newport (1989). These authors studied the acquisition of English in a context of immersion by two groups of Chinese and Korean speaking adults respectively. Their results seem to support the existence of a critical period located around puberty, at least for the morphosyntactic object of their study. This piece of work was followed by many others (Long, 1990; DeKeyser, 2000; Birdsong and Molis, 2001; Munich and Landau, 2010; to cite some of the most representative), nonetheless, the results obtained in the original work by Johnson and Newport's (1989) have not been replicated in most cases, particularly in the case of Birdsong and Molis's work (2001).

Attainment studies are also not free from this type of contradiction in results. This type of study usually follows a working methodology that is very close to the one used in the previous type of study, but its focus of attention is on trying to comprehend the level of similarity or difference with native speakers displayed by participants in the language being studied by studying the L2 competence of advanced students. In one of these works, Coppieters (1987) found evidence of the existence of a critical period in their research with near-native students of French (L2). However, Birdsong (1992) replicated this study and did not find any evidence of this critical period. Like these authors, many others (White and Genesee, 1996; Montrul and Slabakova, 2003; to mention but a few of them) have reached conclusions that differ considerably. This indicates a lack of agreement on whether critical periods exist or not in the acquisition of second languages, and on the difficulty of defining these periods in relation to the different areas of language study and their distinct subcomponents.

Even the phonological component, traditionally considered to be one of the ones that shows the greatest evidence of the existence of some type of critical period, is not free from cases (like Julia and Laura, participants in the works of Ioup et al., 1994) that appear to show that the definition of critical periods should, perhaps, be reconsidered.

In this line Munich & Landau (2010), carried out a series of experiments in which they asked native-speakers of Spanish and Korean who had emigrated to the United States to judge the degree of applicability of a series of prepositions in English (L2) in spatial contexts. Their results provide very interesting information. Firstly, they determined, as Becker and Carroll (1997) had already stated, that the effect of transference from the L1 of the participants had a rather limited effect. Secondly, the most important factor when explaining

limitations in the acquisition of correct spatial uses was the age of immersion (understood as the moment of arrival in the United States where English was their working language). The degree of accuracy that the participants displayed in their responses was directly related to the age at which they acquired these spatial prepositions in English (age of immersion), and not with the length of exposure to English (L2). Thirdly, the most influential factor when displaying this developmental decline was the representation of the objects of reference.

Most of the criticisms of these studies relate to the methodology used, primarily to the design of the data collection tests in morphosyntactic studies (the fact that cognitive factors are not taken into account when administering certain types of tests to adolescents, proficiency level measuring, etc.). They also relate to the fact that exceptional learners are always, and increasingly, encountered who attain a level of command similar to that of a monolingual speaker, even having started studying the language after puberty, and even in the area of detecting the so-called "foreign accent" (that is to say, the phonological component).

Another criticism that has been levelled at these studies is that most of them are carried out in immersion contexts. In this regard, in non-immersion contexts (as in the present study) results seem to point in a different direction. In Catalonia and the Basque Country various studies have been carried out (García Mayo and García Lecumberri, 2003) (Muñoz, 2006) comparing the level of command of two groups of students, a first group that had started studying English before the age of 8, and another group that had done so at the age of 11. After 7 and 9 years of study respectively, the students who had started later performed better than those who had started earlier. The results arising from this study emphasise the significance of additional factors that can even be of greater importance than

the age factor, namely, the number of hours of instruction, the quality of input and type of instruction received and the students' own motivation.

As I shall explain in greater detail below, I have decided to use an adapted version of this methodology in this study.

This work, as well as previous works by Munich et al. (2001; 2002), provides valuable information for understanding the acquisition of the spatial component in a second language. Nonetheless, from my perspective they still lack something, namely, they do not include the acquisition of non-spatial uses in their study.

Navarro i Ferrando & Tricker (2001) investigated the acquisition of the English prepositions at, on and in and of their different polysemous meanings with university level Spanish students. To do this they designed two tests, a sentence generation task,[25] and a difference-rating task in which the students had to rate the similarity between a series of suggested sentences (on a Likert scale) and a model sentence that the authors provided and that included the most central or prototypical meaning of the radial network of each preposition. Their results provide important details about the acquisition of the different meanings of the spatial prepositions. The authors stated that even in participants with a high level of linguistic command, complete acquisition was not achieved (as Guijarro Fuentes & Marinis also state [2007]). The type of acquisition that the participants displayed seems to be memorisation, based on collocations and set phrases, and they were not able to use the prepositions freely in contexts that required a certain level of innovation. Regarding the order of acquisition of the meanings of the prepositions, the authors determined that they

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[25] Similar to the one used in this thesis, but with a greater number of utterances in their study.

were learnt in parallel, that is, not one meaning after another, but simultaneously, seeming to support the idea that there is no lexical relationship between them.

Taking into account the fact that many of their participants were bilingual in Catalan/Spanish, they would not have had the same mother tongues; some would have had Catalan and others Spanish. It seems to us that to give their study more methodological consistency it would have been preferable to divide the participants along these lines as they had different L1s, and were acquiring a L3 with different linguistic combinations. Nonetheless, these results cast light on the process and order of acquisition of the different meanings of spatial prepositions in the face of the lack of studies in this area.

3.2.2 The acquisition of prepositions in the field of SFL

Research into the acquisition of prepositions in SFL suffers from a variety of problems in the majority of studies that I have reviewed. Firstly, they generally focus on the acquisition of the prepositions that have traditionally been classified as the most difficult: *por* and *para*, something that up to a point they do with good reason.

Secondly, when studying the acquisition of prepositions, they often do not make distinctions, that in my opinion are relevant, regarding spatial uses, uses required by the syntax/semantics interface or simply idiomatic uses, and so they end up including everything within one group. There are some authors, however, who have suggested a classification, although not one that is necessarily very useful for offering explanations from the perspective of acquisition. For example, Vázquez's classic dichotomy (1991: 183) that distinguishes between prepositions with homosyntagmatic functions and prepositions with

heterosyntagmatic functions, or Fernández's classification (1997) that distinguishes between regency, general values and idiomatic uses.

Thirdly, most studies involve a fairly small number of participants, generally English L1 speakers, and almost always focus on a group with an advanced level of command to which they usually apply an analysis of errors methodology. All of this somehow undermines the conclusions of their work. I shall now consider a series of studies in the Hispanic field that seem especially interesting to us.

Giraldo Silverio (1997) studied the acquisition of the prepositions *a*, *en*, *para* and *por* at advanced levels, however, in his study he does not provide details about his participants and so it is difficult to understand its scope. The causes he identifies as being responsible for prepositional errors include false equivalences between Spanish and the L1 of the participants or the distinct fields of application of the preposition in the L1 and inhibitions in the use of the preposition owing to uncertainty or not knowing (a descriptive reason, but one that does not in itself explain anything).[26]

Guijarro Fuentes & Marinis (2007) empirically study the acquisition of the preposition a, again by native-speakers of English, using an acceptability-rating task to try to see if the level of acquisition is similar to that of the native speakers. To do so they use a study methodology based on an analysis of the syntax-semantic interface. Their results showed that the phenomena that affect the syntax-semantic interface are developmentally unstable and that they are a major challenge for English-speaking Spanish FL students, who are sometimes unable to attain full acquisition, even at the most advanced levels.

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[26] The author states that this is the case, in particular, with speakers of Romance languages.

Lam (2010), like Guijarro Fuentes & Marinis (2007), carried out a study on the acquisition of the preposition a, but unlike them the focus of Lam's study (2010) was to observe the order of acquisition of the different meanings of this preposition. To do so she collected her oral data based on 15 photographs in which the participants were asked to tell the story shown in them. She had the collaboration of 24 university students, divided into three levels of linguistic command: beginners, intermediate and advanced levels. The results, contrary to the diachronic hypothesis that the author initially followed confirmed that the temporal meanings are acquired first, then the spatial ones and finally lexical and grammatical meanings. Another important conclusion derived from her study, in agreement with Rice (1996) and Kemmerer (2005), is that spatial, temporal, and abstract meanings are acquired independently. She also determined that the extension of meanings from a more prototypical central term (whether this be spatial or temporal) towards other abstract ones only occurs from intermediate levels, there being a progressive decline in the exactness of the responses. Furthermore, she also observed that the majority of the errors in grammatical uses occurred because of transference from the L1.

Perea Siller (2007) carried out a study to analyse errors produced in the acquisition of the Spanish prepositional system with a group of 10 American exchange students at the University of Córdoba (Spain). His analysis was based on obtaining and analysing 80 pieces of writing by these students, a corpus of data of 202 sentences that contained errors in the use of prepositions. His results underline the difficulties, already mentioned by other authors (Klein, 1984; Vazquez, 1991; Fernández, 1997): cases of syntactic rection, the preposition a as a direct object marker, infinitive phrases, indirect object with the verb gustar and some adverbials. The principal underlying cause to which the author attributes these errors, is the

standard one in this type of analysis: L1 influence. This explanation seems over-simplistic if one considers the methodology and conditions of his study.

Another study that I believe is relevant is by Lam (2003). This study represents another branch in the study of the acquisition of prepositions in a FL, namely, the influence of instructional factors on the different degree of acquisition. The author attempted to establish whether teaching rules that interrelate the meanings of the prepositions *por* and *para* was more effective than separately teaching the individual meanings of each of these prepositions. Her hypothesis was that the system for interrelating meanings would be more useful if it were based on a more precise linguistic description of the polysemous nature of the prepositions, and offering an internal coherence between meanings, something that has shown to have effects that facilitate memorisation. To do this she had the collaboration of Canadian participants who were university students of Spanish. Her results, while not yielding the expected statistical significance as they show almost the same effects with both teaching methodologies, do have sufficient pointers to be able to state that, regarding the students' understanding and the ability to make acceptability judgements of their own responses, the interrelation of rules is better than the isolated presentation of meanings.

Another recent study is the one by Campillos Llanos (2014) that I shall consider below as it deals directly with Chinese speaking participants.

I shall now more specifically consider the acquisition of prepositions by Chinese (L1) students and the particular characteristics of this type of students and their educational system.

3.2.3 Acquisition of the prepositional system by Chinese (L1) students

As is a constant theme here, the lack of studies focussing on the acquisition of prepositions by Chinese (L1) students is something very much evident in the literature. Nonetheless, from amongst the significant studies that I have been able to find, I shall review those that seem especially interesting.

Continuing with the structure this chapter, I shall start by considering firstly the acquisition of the prepositional component in Chinese (L1).

Ji, Hendriks & Hickmann (2011) carried out an experiment with 168 children aged between 3 and 10, who were native speakers of English and Chinese, in which they were asked to describe a series of cartoons in which they were shown motion events while they were filmed on video. As previously seen, the way of codifying the motion events, to a great extent depends on the particular type of frame of reference of each language. English is a satellite-frame language, Spanish is a verb-frame language and Chinese is an intermediate case, frequently referred to in the literature as an equipollent language (it makes use of characteristics of both systems). The results of their cartoon-based production task showed that the density of the utterances produced by the Chinese participants was greater than those produced by English speaking children of a similar age, from 3 to 8 years old. According to the authors, this is because Chinese children express themselves through resultative verb compounds, enabling them to codify simultaneously different components of the motion events. These results seem to (2011: 1817) support the theory that specific factors of the internal system of each language are of great importance when acquiring the spatial component of a given language.

In the field of FL/L2 acquisition, most studies that examine acquisition of prepositions by Chinese (L1) students focus, almost exclusively, on the acquisition of English as L2, as until quite recently it was virtually the only L2 offered to Chinese students in primary and secondary schools as a subject of study (I shall discuss the specific characteristics of Chinese students below in more detail).

In one study (cited in Zhang, 2009) carried out from a dual qualitative and quantitative perspective, studying the written production of a large group of Chinese (L1) students of English (L2), the conclusions were very clear; at all levels of linguistic command, the number of errors made in the prepositional plane occupied one of the first places in the ranking of errors. One of the limitations of this study, however, is the fact that the treatment of the preposition differed considerably from the one followed in this work, as virtually "everything" related with prepositions was included without distinctions on grounds of semantics, syntax, reactions, etc.

In another study (cited in Zhang, 2009) it was also analysed a written sample of essays produced by university students after taking a national linguistic level test called CET 4 (College English Test, level 4, and there is an additional level 6, and that it would be equivalent to intermediate, similar to a B1 in the CEFR). Again, the analysis of errors carried out shows that this is the leading cause of errors in the written production of this group of students. Unfortunately, this analysis is somewhat limited as the only information it provides is statistical, and it does not suggest or explain what might be the reasons that lead the students to make such a high number of errors. Hui's work (2007) is much more explicatory and extensive. Hui (2007) proposes classifying the errors into two types, on the one hand errors that break the rules of grammatical combination, and on the other hand, errors that

break idiomatic structures where the preposition appears. The data that she provides are useful because, even if the analysis carried out is somewhat simplistic, it provides a series of indications that make it possible to state (although the author does not explicitly do so in her study) that it is possible that overgeneralisation of the central meaning of the spatial term in Chinese tends to be transferred to English, as Correa Beningfield (1988) claims in her study. However, it cannot confirm that this mapping is exclusively because of a transference effect, since one could also hypothesise that, as has been seen in other studies, the fact that English has a large number of prepositions compared with Spanish, and even more so compared with Chinese, means that the task of acquiring spatial prepositions is especially complex. The inverse does not happen from languages with a large inventory towards others with a smaller number. This is why it possible to state that factors like those that Becker & Carroll (1997) cite, this is, the idiosyncratic internal characteristics of the three linguistic systems at stake, might be responsible for this attribute. Again, this study does not consider the figurative version of the preposition, although the particular preposition by preposition analysis is laudable, as is the attempt to find reasons to explain the acquisition errors.

As I have mentioned on several occasions throughout this thesis, the absence of studies with Chinese (L1) students learning Spanish is something that is at present being rectified, partly thanks to the efforts of research groups such as SinoE/LE, although the methodological design is not always as empirical and rigorous as could be hoped. I shall now review two studies that consider the acquisition of prepositions using Chinese speaking participants.

Campillos Llanos (2014) carried out a study in which he analyses the oral production of 40 intermediate level SFL students who were doing Spanish courses in Madrid. It is a

cross-sectional study with participants from a large range of languages: four subjects each from Italian, French, Portuguese, English, German, Dutch, Polish, Chinese and Japanese, plus four more students, one each from Finnish, Korean, Turkish and Hungarian. A control group of 4 native Spanish speakers was also used. Each participant was interviewed by the author for 15-20 minutes and they were asked to answer a question on general topics, describe a photograph and tell the story presented in a series of sketches. The result, with regards to the focus of this thesis, show that Chinese students are by a long way (only followed closely by the Japanese) the linguistic group that makes most errors in its use of prepositions. If one examines his data in detail it will be seen that there is a standard deviation of 12.68 percentage points, indicating that amongst these four participants there must have been one who made a lot of errors (probably owing to a lower level of Spanish) and the rest did not. Therefore, these results are highly unreliable. So too is the fact that the author identifies the mother-tongue as the cause of errors given that Chinese, according to Campillos Llanos, features postpositions and so this, in his opinion, is a frequent cause of errors. However, the author notes as a general conclusion to the whole study that most of the errors correspond to uses that require the students to make an innovative use of the prepositions, as Navarro i Ferrando & Tricker (2001) had already observed.

Another illuminating study is one by Blanco Pena (2014), even if it is not strictly acquisitional in nature. This is a laudable study that tackles the absence that I identified above, albeit one that is not fully empirical in design, since his analysis has some grey areas as I shall present below. This study analyses the points of Spanish grammar that are most difficult to acquire for Chinese speaking students. To perform this task the author used a methodology that he himself described as novel, mixing quantitative and subjective analysis based on the students' own opinion on the level of difficulty that each grammatical parcel

involves, following the theoretical patterns of the EA methodology. It involved the participation of 95 Taiwanese students. His results, in general, conclude that the areas where Chinese (L1) university students of Spanish have the greatest difficulties are: the past, future and conditional verbal tenses, ser and estar and prepositions. His participants were students from the Hispanic Studies degree, similar to those who have taken part in this study. In particular, the study of prepositions was tackled in the final part of these students' programme. The evaluation on which his study is based was done using two grammar tests (where all the uses of the prepositions appear mixed together) with a two-week gap between them, and through an opinion test in which the students were asked about the difficulties that studying these prepositions entailed for them. The results of both tests were compared (it is not clear how his analysis was carried out, as one test was completed by 95 students and another just 73). The students saw prepositions as one of the hardest areas to acquire, however, the two evaluation tests had an average score of 70 points, the second topic being less complicated. The prepositions that caused the greatest difficulties for the students were: *a, ante, de, contra, por, sobre* and *tras.* Curiously, the meanings that the students identified as most difficult are, the great majority being figurative or peripheral in nature.

3.3 STUDIES ON SFL ACQUISITION IN CHINA

As indicated above, among the researchers who have studied the acquisition of prepositions there have been some who have seen a possible explanation for both the

degree of acquisition and the errors made by foreign language students in the type of instruction they receive, without denying the influence of linguistic factors such as the possibility of transference from the L1 or other languages studied. Lam (2003, 2009) or Navarro i Ferrando & Tricker (2001) believe that the teaching system is of fundamental importance when explaining students' level of acquisition and the errors they make.

Furthermore, in the case that concerns me here, I believe that lack of knowledge of the type of student, traditions and Chinese language learning models in the West can lead researchers to take situations for granted that, while they might be normal practice in the West, are not in China, thus leading to misinterpretations or errors. For this reason, I shall now present a brief summary of the teaching and attitudes to foreign languages in China, and the characteristics of this type of student. I hope that this will make it easier to understand the type of analysis that I have carried out, based on a mixture of the limitations of theoretical and practical studies, and the homogeneity of the type of participant.

3.3.1 SFL study in China

The acquisition of Spanish as a foreign language (SFL) in Chinese speaking contexts has received increasing attention in the last two decades, and in particular in the last eight or ten years. This attention however, contrasts with a marked absence of research from before this period. Before these years it is difficult to find studies or publications that centre their interest exclusively on the teaching and acquisition of Spanish by Chinese students. This is not a chance or fortuitous fact motivated by lack of interest or of scholars who work in this area, but rather one that responds to reasons that are much more complex in character,

linked with both the political history of Chinese civilization and the history of linguistic ideas in the country.

The geographical area that nowadays roughly corresponds to the People's Republic of China has undergone numerous changes in the past under the control of different imperial dynasties and, more recently, the Communist party. However, one constant that has remained over time is its hermetic character and isolation from the Western world. While the first rapprochements between both cultures took place in the 16th century (López Álvarez, 1978; Lu, 2005), motivated principally by commercial exchanges with overseas colonies and trade routes in the South Seas of China and the Philippines, it was not until well into the 20th century, specifically 1952, that the first higher education institution of Spanish in China opened its doors. Foreign languages did not form part of the educational curriculum until the fall of the imperial regime, that is, well into the 20th century (they were not in the "Six Arts" or, after Confucius, in the "Four Books"). Such were the linguistic limitations of the imperial administration that sometimes, especially in the late 19th century with the increase in commercial exchange with Europe, communication between both parties became a serious problem. One should not forget that teaching Chinese to foreigners was forbidden during the imperial era under threat of prison, or the imperial hierarchy's lack of trust in foreign translators (Santos Rovira, 2011: 11).

After the creation of the People's Republic of China in 1949 a period of development of foreign language study began, predominantly Russian and subsequently English, although from 1952 Spanish also started to be studied, largely thanks to the need to train interpreters and translators to facilitate exchanges with countries in Latin America. This was a period in

which Spanish teaching was characterised by a dramatic lack of resources (mostly of Soviet origin) and professionals.

This era of relative growth of foreign languages was drastically interrupted by the Cultural Revolutionand the corresponding rejection of everything foreign; language study was abandoned and teachers suffered from very harsh repression (Santos Rovira, 2011: 14).

In 1977 university courses reopened, and in 1978 foreign teachers started to arrive. A period of growing interest in the study of foreign languages began, principally English.[27]

In the last decade, interest in learning Spanish has undergone a boom (in comparison, at least, with the situation in the past). There are at present more than 60 university departments that teach Spanish, although not all of them issue degrees, more than 400 university teachers, an upward trend in the number of university students admitted to Spanish programs and two Instituto Cervantes centres have been established in Beijing and Shanghai, respectively.

3.3.2 Characteristics of Chinese (L1) students of Spanish

The profile of students of Spanish, unlike the profile of students of English is characterised by their starting their first study contact with Spanish when they start university, aged between 18 and 19.[28] Unlike what might happen in other countries, as is the

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[27] An interesting aside is that the first translation of Don Quixote into Chinese from Spanish was published in 1995 by Dong Yansheng (translations had been made in the past using English as the starting language), one of the founding fathers of Chinese Hispanism and the renowned author of Spanish teaching methods, with his famous Español Moderno.

[28] It should not be forgotten that, except in individual cases, English is the only language studied on the school curriculum and in university entrance exams and is obligatory.

case of Spain, where there are many private businesses such as language schools and language centres for all tastes and ages, many of them offering special programs for children and young people, in China, these were an exception, until quite recently, apart from private English schools. This can, to a great extent, be explained by the fact that Chinese children and young people are subjected to great pressure in the educational sphere. The purpose of this pressure is to obtain good results in the entrance exams, firstly for secondary education, and later on, with the 高考 [gaokao], for higher education.

Another characteristic of Chinese students is their particular experience of language learning. If I take into account the data that Santos Rovira (2011: 42-45) records, provided by the Chinese government itself, it will be seen that the study of Mandarin (fundamentally learning 汉子[hanzi]) occupies 30% of the teaching load and the sciences between 30% (at primary school) and 50% (at secondary school), leaving the rest of the subjects with a very low percentage indeed, a sign of the (lack of) importance given to the humanities in the educational curriculum. Furthermore, the growing number of students and decline of educational centres, obviously leads to crowding in the classrooms. As such, the experience in language learning is fundamentally based on memorising and grammar and is aimed at passing the corresponding exams.

While it is true that recent years have seen a growing number of private language schools where Spanish classes are offered, especially in the wealthiest cities, most students receive these classes at university, either as an optional module or as an integral part of their Hispanic Studies degree. It is this last group, who are considered to have the most advanced level of Spanish, that I have called upon when collecting data for this thesis.

In general terms, these studies could be classified, following Santos Rovira (2011), by the high number of hours of Spanish teaching and related modules (interpreting, essay writing, lexicology, reading …). As an example, the author mentions the curriculum of the Guangdong University of Foreign Studies, where students have 504 hours (2011: 58) dedicated to Spanish in the first year of the degree. If the figures used in the classroom regarding the CEFR are taken into account and the number of hours needed to acquire an A1 level, for example, it will seen that when they finish the first year these students should be close to achieving a B2 level. However, nothing could be further from the truth in the great majority of cases. Santos Rovira (2011) mentions various factors that he considers contribute to a reduced level of input: firstly, the confinement to the university that Chinese students are subject to (they study and live almost like at a boarding school); secondly, the instruction that is largely by Chinese teachers who do not use Spanish as the medium of instruction in class; and thirdly, censorship of the media, publications and internet.[29] This lack of input seems to be directly related with the low level of Spanish of many of these Chinese students.

Based on this brief sketch I have provided of the study of Spanish in China, it can be appreciated that it has not been easy to successfully complete research with Chinese-speaking students in non-immersion contexts, that is, Chinese students of Spanish in China, at least, until very recently. While these limitations would, on their own, be enough to justify the bibliographical poverty in this area of research, there are more reasons, as not all of the obstacles end here. The next great barrier to overcome is the Chinese grammatical tradition, or to put it another way, the almost complete non-existence of the study of Chinese

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[29] I should recall that all of Google's services were completely blocked in China just this year; most Western social networks are banned, as are many blogging platforms or video platforms such as YouTube.

grammar as it is understood in the Western tradition, until the early 20th century as described in the previous chapter.

3.4 RESEARCH QUESTIONS AND HYPOTHESIS

Chapter 2 contained a review of studies on the semantics of spatial prepositions and the particular features of the prepositional systems for each of the languages of the participants. Following on from this, Chapter 3 considered the specific problem of the acquisition of the spatial uses of prepositions in a foreign language in non-immersion contexts. A number of deficiencies and questions arise from the literature review cited there, upon which I will attempt to cast some light, as far as is possible, in this doctoral thesis. In general terms, the main question posed is: how do intermediate/upper-intermediate level Chinese SFL students carry out the process of acquiring the spatial and figurative meanings of the Spanish prepositions selected in this study? More specifically, first research questions I will test is:

Is there a pattern in the acquisition of spatial and figurative meanings of prepositions by intermediate and upper intermediate level Chinese students of Spanish as a Foreign Language, and, if so, what are the features of this pattern?

The first hypothesis is that there is a clear diachronic pattern in the acquisition of the two types of meaning. Based on the parallels that have been established between the acquisition of an L1 and an L2 (diachronic version) and the theories regarding lexical extensions of the conceptual metaphor theory, I initially suggest that students acquire the spatial meanings first. The figurative and peripheral meanings are acquired later on, at more advanced levels of command, through processes of lexical extension. Consequently, I might expect to find that as the level of command increases there is a greater level of similarity with regards to the control group's responses, an increase in the use and understanding of figurative meanings and a smaller number of errors.

The second hypothesis is, as Navarro i Ferrando & Tricker (2001) and Lam (2010) maintain, and in accordance with Kemmerer's hypotheses (2005), that there is no such clear pattern. Learning L2 prepositions does not follow a diachronic pattern similar to that of the L1, and the acquisition of spatial and figurative meanings occurs in parallel. It is therefore expected that the students will have acquired (or not acquired) figurative and spatial meanings simultaneously.

The second question to be tested is:

Are there observable differences between the degree of acquisition and use of these prepositions in English compared to Spanish, and if so, what are the characteristics of these differences?

Again, the first hypothesis with which I work is that there is a difference, similar to that already identified by Munich (2001, 2002) and Munich & Landau (2010), in that there is

a developmental decline that makes age of acquisition the greatest determinant of the level of acquisition of the prepositions. Therefore, taking into account that the mean age of starting to study the language is 8 for English and 18 for Spanish, and that the number of years spent studying the language is 14 for English compared with 4 for Spanish, it is expected that the performance in the English tests will be noticeably better than in the Spanish ones.

A second hypothesis is that no superiority is observed in command of English compared to command of Spanish, casting doubt on the existence of a critical period, at least in non-immersion contexts and, therefore, as Becker and Carroll (1997) state, the level of acquisition would have to be linked to internal features of the linguistic system itself, for example, greater or lesser complexity, or similarities with the prepositional system of the L1.

Summary:

The overall theme of this chapter is the acquisition of a prepositional system in a foreign language. From a thematic point of view, this chapter is divided into four parts.

In the first part of this chapter, the specifics of the acquisition of a prepositional system in a first language were discussed. To do this, firstly, I have presented some of the similarities and differences between the acquisition of a first language and the acquisition of a foreign language. Then, I have examined the acquisition of the Spanish prepositional system as a first language and the issue of figurative competence (Levorato & Cacciari, 1992; 1995; 1999; 2002).

In the second part, the specifics of acquiring a prepositional system in a foreign language were examined. First, I have presented the results of a number of investigations in the field of the acquisition of English as a foreign language. Second, I have examined one of the most cited factors in the SLA literature, that is, the influence of the age factor in the acquisition of a foreign language. Third, I discussed some of the major works on both the acquisition of Spanish as a foreign language and in particular the acquisition of the prepositional system. Fourth, I briefly discussed some of the studies on the acquisition of a prepositional system by Chinese-speaking students that relate to the central theme of this thesis.

In the third part, I have focused specifically on describing the specific circumstances and characteristics of Chinese adult students of Spanish as a foreign language in contexts of formal university education.

In the last part of this chapter, I have developed, in greater detail, the research questions that naturally emerge, based on the literature reviewed in the previous chapter and in this one. This is, from all the above research and literature review there emerges a clearly unanswered question: how the students acquire prepositions. This will be the focus of the empirical study carried out.

In the next chapter I proceed to explain what type of data collection instruments I have chosen and how these can help to answer the above questions.

CHAPTER 4: METHODOLOGY

CHAPTER 4: METHODOLOGY

In this chapter I introduce and explain the methodological focus and design used in this research to try to respond to the research questions presented in the introduction to this thesis, namely:

Is there a pattern in the acquisition of spatial and figurative meanings of prepositions by intermediate and upper-intermediate level Chinese students of Spanish as a Foreign Language, and if so, what are the characteristics of this pattern?

Are there observable differences between the degree of acquisition and use of these prepositions in English compared to Spanish, and if so, what are the characteristics of these differences?

To perform this task I used a multi-modal and contrastive methodological design. First, I will provide an introduction to the process ahead of the preparation of the data-collection tests and a time-line of the preparation process. I then describe the participants in my study, firstly, the subjects in the study and then the two control groups used. Secondly, I present the Language Profile Questionnaire used to control the variables in the study. Thirdly, I present the Language Proficiency Test in Spanish and English along with the Lexical Identification Task that will provide information on linguistic command and prepositional knowledge in the respective languages studied. Fourthly, I will consider the Picture Elicitation Task, the Prototypical Meaning Elicitation Task and the Truth Value Judgement Task, tests that, taken together, will provide the basic information to answer the research question. Finally, I shall present the methodology for analysing the data obtained and the statistical procedure used.

4.1 DESIGN OF STUDY AND CHRONOLOGY

When devising the methodological design of this research a series of factors that motivated this choice were taken into account. Firstly, the type of research question (Trochim, 2000), fundamentally descriptive relational in nature. Secondly, the duration of the study, and thirdly, the number of participants involved.

The lack of empirical studies that precisely describe the spatial and figurative schemes of spatial particles primarily in Chinese, but also in Spanish, seemed to be an obstacle when making detailed comparisons. It is for this reason that I have chosen a binary contrast, namely, literal meanings versus abstract ones. Although this might seem like a simplification, it is, nonetheless, a first step towards greater knowledge of these particles and their acquisition in the field of SFL.

Taking into account the variables in the study, namely, the level of acquisition and pertinent use of literal and abstract meanings depending on factors such as the participants' linguistic command, age of acquisition, length of study and the possible influence of their linguistic melting pot, I decided that the most appropriate focus for this research was a cross-sectional study. This type of design enables us to explore the relations between the variables being studied, and generate working hypotheses that establish the bases for future studies, something that is justified by the aforementioned lack of research in the field of acquisition of SFL in Chinese-speaking contexts. Furthermore, this type of research makes it possible to group the participants in accordance with the study variables, and more specifically the level of linguistic command. The ability to obtain the data in a relatively short time period, even despite the obvious limitations of being unable to observe developmental

patterns of change does, on the other hand, allow us to access a broader sample of subjects, both by number and by geographical location. In this study I was able to call on the participation of six of China's most prestigious universities in the field of modern languages, thus giving this study considerable statistical robustness. This also allowed us to evaluate the potential influence of the teaching methodology used by the teachers when analysing the results, namely, a communicative method compared with a traditional language teaching method in accordance with the Chinese system.

As a preliminary step before collecting data, the appropriate ethical clearance was obtained from the University of Plymouth (UK), the University of Nottingham, Ningbo (China) and from the institutions where the data were to be collected.

The time-line for the preparation and collection of the data for the study is as follows:

Pilot Testing at the University of Nottingham, Ningbo (China)

Pilot testing was carried out during the 2012-2013 academic year for all of the tests there were to be included in the final version of the research. As well as these, a translation exercise was initially included that I finally decided not to include in the final thesis owing to the criticisms that have been made of this study methodology in the field of Second Language Acquisition (SLA) and the results obtained. In this pilot period, 50 students took part on a voluntary basis recruited from among the group of Spanish as a foreign language students at that university. I also had the participation of a group of three teachers of English linguistics and six English native-speakers, as well as three Spanish- as- a- foreign- language teacher and six Spanish native speakers to guarantee that the proposed type of input for

students matched real and up-to-date language use. All of the participants were either students or teachers at the University of Nottingham, Ningbo (China).

Collecting data

The final data collection took place between March and June 2014, a period shaped by the students' academic calendar. The universities that participated in the study were: Shanghai International Studies University and its Department of Spanish, Guangzhou University and its Department of Spanish, Sun Yat Sen University and its School of Modern Languages, Communication University Nanjing and its Spanish Department, Tianjin Foreign Studies University, and its Spanish Department.

The tests were administered by the participants' Spanish teachers, following instruction from that I gave by video conference about the data collection process and after sending all of the documents to them in hard copy by courier. At no time as the lead investigator did I have any relation in these institutions as a student or teacher. These universities participated voluntarily after a group email was sent to the mailing list for Spanish teachers in China. The distance between universities (almost five hours flight, for example, between Sun Yat Sen University and the University of Tianjin) and the teachers' greater familiarity with the participants were the main reasons for delegating data collection to the teachers.

The dates for collection of data were different for each university, depending on the availability of the students and their teachers, but the same format was always maintained, with two sessions of two hours each, on two separate days (to avoid tiredness as well as any

type of code switching phenomenon), with two breaks and with the option of taking an additional break to eat something or go to the bathroom if the student required it. Participation by students was voluntary, and they were only given a letter of thanks for participating in this study.

The time-line for administering the tests was as follows

Teacher gave the Language Profile Questionnaire, Information Sheet and Consent Form to the students so that they could complete them in their dormitories and could have time to decide whether or not they would volunteer to participate.

The Proficiency Test in Spanish and the Lexical Identification Task in Spanish were held on the first day of data collection, in a time period of 30 minutes.

The Picture Elicitation Task and the Prototypical Meaning Elicitation Task in Spanish came after the previous test. They were given to the students after a first pause. The students had 40 minutes to complete this part.

The Truth Value Judgement Task in Spanish was the final part they had to complete, again following a brief pause, and they were given 50 minutes to complete it. If the students finished early they could leave the classroom.

The second batch of tests, with the corresponding version of the tests in English, followed a similar time-line and form of administration to that used for the Spanish tests. Once all the tests had been completed, the teachers sent them to me by express courier for analysis.

4.2 PARTICIPANTS

The initial sample consists of a total of 192 participants, of whom 147 (76.6%) are women. This is a statistically significant majority with P<.001 (Chi2=54.19; 1 df; P<.000) compared with the remaining 23.4% (45) who are male. The age of the participants is in the 17-69 range with a median of 21, the mean age being 22.30 ±5.28 years. A clear skew can be seen, although this is due to the presence of a very small number of cases who are older than the rest of the group. The majority of the participants (88.5%; 170) are aged between 17 and 23. The males are slightly older (23.47 ±8.52) than the mean age of the women (21.94 ±3.75). This difference is not statistically significant with P>.05.

These 192 participants are divided into three groups: the Chinese focus group (71.9%; 138), and two control groups, the Spanish native speakers (14.1%; 27) and the English native speakers (14.1%; 27). See figure 4.1. All the members of the Chinese focus group were born in China (138), and all members of the Spanish control group were born in Spain (27). In the case of the English-speaking control group, 25 of the 27 subjects were born in the United Kingdom, one in the USA and another person in Australia (fig. 4.2).

In the sample of Chinese subjects, the majority of the participants are women (84.8%; 117 of 138). In contrast, in the configuration of the control groups the gender is more balanced: 59.3% women in the English-speaking group (16 of 27) and 51.9% (14 of 27) in the Spanish group. The difference in composition of the groups by gender shows statistically significant differences with P<.001 (Chi2=18.89; 2 df; P<.000).

Figure 4.1. Distribution of the sample by GROUPS
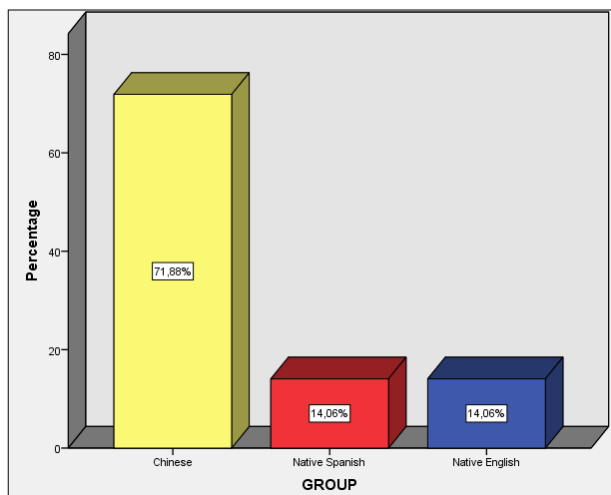
Figure 4.2. Distribution of the sample by COUNTRY OF ORIGIN
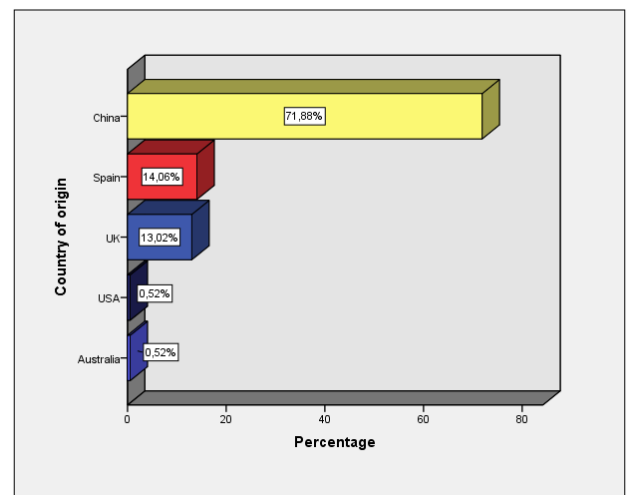
Prepared by the author using IBM SPSS Statistics 22

Description of the composition of the focus group (N=138)

All participants were university Hispanic philology or modern languages students at the universities mentioned above. Specifically, the number of participants who volunteered to participate in this research was as follows: Shanghai International Studies University provided 27 participants, Guangzhou University provided 21 participants, Sun Yat Sen University provided 26, Communication University Nanjing provided 57 participants, and Tianjin Foreign Studies University provided seven participants.

The majority of the group are women (117; 84.8%), compared with men (21; 15.2%), see fig. 4.3; this is a statistically significant difference with $P<.001$ (Chi2=66.78; 1 df; $P<.000$). The mean age of these subjects is 21.37 years ±1.07 within a range of 18 to 25 years; the majority of them being aged between 20 and 23 (97.1%) with a median age of 21 (fig. 4.4).

Figure 4.3. GENDER of the Chinese focus group
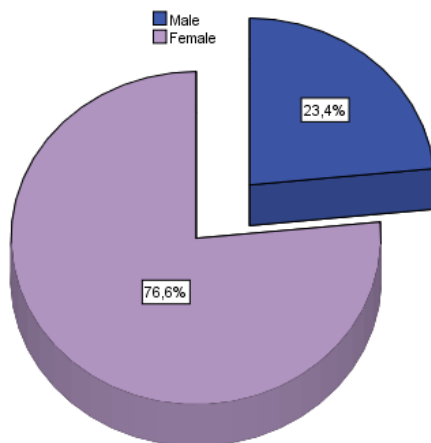
Figure 4.4. AGE distribution of the Chinese focus group
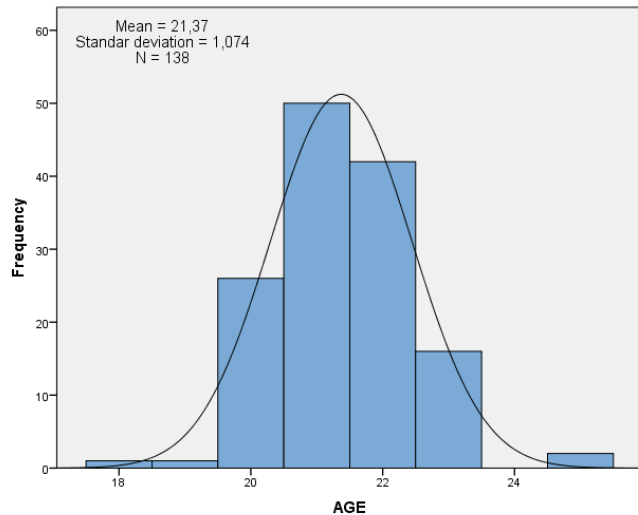
Prepared by the author using IBM SPSS Statistics 22

All of them are university students. As China is their country of origin, all them speak Mandarin Chinese as their first language, which is also the first language of their parents, the language they have learnt since birth and the language they spoke at home as children. Furthermore, all of them have attended primary and secondary school and started university in China, using this language, which is the language that they use at home, at work and with friends.

Some of them started studying English at a very early age: from three or four years old. Specifically, 18.8% of them (26 cases) before the age of seven. Therefore, the mean age when they started is 8.83 ±2.27, in a range of 3-14 with a median age of nine (fig. 4.5). In contrast, they started studying Spanish at a much later age, the earliest cases being 12 or 13, and the majority 18. Therefore the mean age in this case is 18.29 ±1.09 within a range of 12-20 and with a median age of 18 (fig. 4.6). The difference (9.46 years) between the two mean ages for starting to study these languages is highly significant with P<.001 (T=47.32; 137 df; P<.000); from which I can estimate with a confidence of 95% for this population that the difference in the start-age for studying Spanish occurs between 9.07 and 9.86 years later

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than the start-age for studying English. All of them started studying English at school and Spanish at university, this being the reason of the difference mentioned. All participating subjects started studying these languages after encountering them as subjects on their respective academic curricula.

None of them study French or any other languages. In the initial sample of participants there were six students who said that they had studied other languages, including Japanese and French, using the self-learning method, and so to guarantee the uniformity of the sample, and given that the number of them was too small to form an additional comparison group, it was decided to eliminate these subjects from the study.

Figure 4.5. AGE at which they started studying ENGLISH (Chinese focus group)
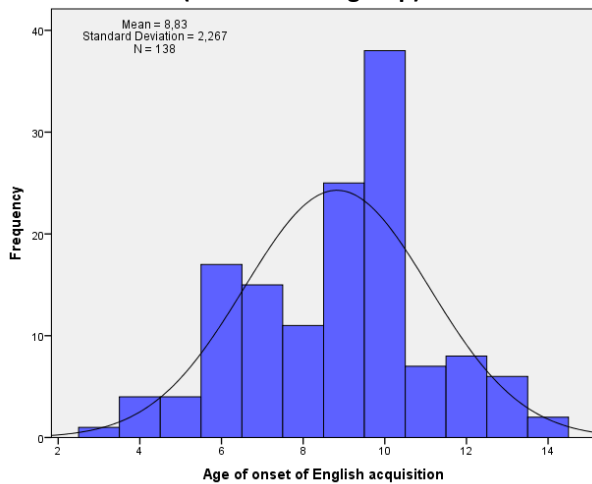
Figure 4.6. AGE at which they started studying SPANISH (Chinese focus group)
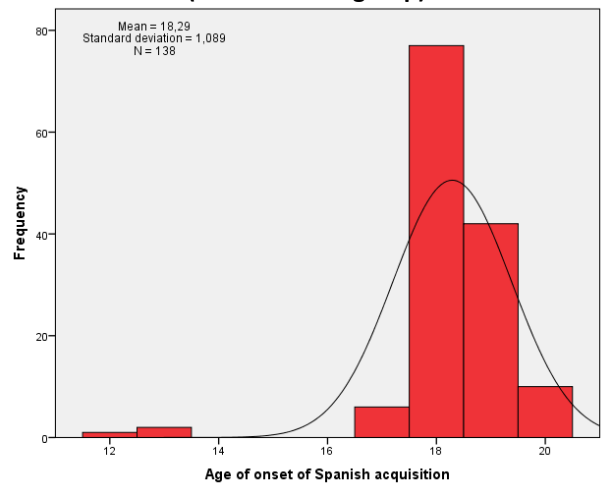
Prepared by the author using IBM SPSS Statistics 22

At the time the data was collected, the great majority of those surveyed had not visited any English-speaking countries (95.7%; 132 of 134; 4 did not answer) or any Spanish-speaking places (84.3%; 113 of 134; four did not answer).

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Of those who have been to these countries: one has been to the UK (three months), one to the USA (two months) and 21 to Spain (between two and 12 months; 18 of them for more than six months). The subjects who have spent between six months and a year in Spain (18 subjects) might be a special subgroup owing to the possible effect of linguistic immersion. Therefore, it was decided to make a special subgroup from them and exclude them from the initial focus group. This matter was not considered relevant for the two subjects who had spent two months in Spain, or for those who had spent a maximum of three months in an English-speaking country.

Consequently, from this moment, the focus group is reduced to 120 Chinese subjects who have not had any immersion in Spanish, assuming that the four who did not answer have also not visited any English or Spanish-speaking countries.

Description of the composition of the Spanish control group (N= 27)

This control group is made up of 27 native Spanish speakers, 14 females (51.9%) and 13 males (48.1%) so there is no significant gender difference (P>.05). They are aged between 17 and 34, with a median age of 18. The mean age is 20.33 ±4.88 years.

Of these participants, 92.6% of them (25 cases) are students: 16 in secondary school and nine in professional training. The other two (7.4%) are university lecturers. As native speakers, all of them speak Spanish as their first language, and it is also the first language of their parents, and is the language they have learnt since birth and which they spoke at home as children. Furthermore, all of them have performed their studies in Spain using their mother tongue, which is also the language that they use at home, at work and with friends.

There are two reasons for the choice of a control group with a statistically representative and valid number: on the one hand, to be able to establish valid comparisons between the native speakers' awareness of linguistic use and the interlanguage of the Spanish FL student, and on the other hand, to compensate for the lack of studies on the Spanish preposition system based on real up-to-date usage, with special emphasis on the spatial and geometric plane. To do so, as in the case of English where I used the Bank of English, the Oxford and Cambridge Learners' Dictionaries and the Tyler & Evans reference work, in Spanish I used the Diccionario de la Real Academia Española (Spanish Royal Academy, RAE), the Corpus de Referencia del Español Actual (CREA) corpus that is also from the RAE and different traditional inventories (Trujillo, 1971; Luque Durán, 1980; Morera Pérez, 1988) in the initial stage of designing my tests. However, native-speakers from the initial pilot testing and judgements on the final study from members of the control groups provided the theoretical basis of the meanings to be compared. Consequently, a usage-based focus was preferred instead of a purely prescriptive or grammatical one.

Description of the composition of the English control group (N= 27)

The other control group comprises 27 native-speakers of English, 16 women (59.3%) and 11 men (40.7%), although the gender difference is not statistically significant with P>.05. They are aged between 20 and 69, with a median age of 26. Of this group 70.4% are aged between 20 and 30, the rest being older (three are over 40). This is why the group has a higher mean age: 29.00 years $\pm$ 10.95 and with more variability.

All of them have university-level studies. With regards to their occupation, 37% (10) are students and another 37% (10) work in the health sector; of the rest, five (18.5%) are teachers and two (7.4%) are other public-sector workers.

As native speakers, all of them speak English as their first language. It is also the first language of their parents, the language they have learnt since birth and the language they spoke at home as children. They also all attended primary school in their country and in their native language. All of of them (100%) use English at home, at work and with their friends.

4.3. DATA COLLECTION INSTRUMENTS

Each of the instruments used to elicit my data will now be presented.

4.3.1. Language profile questionnaire

The Language Profile Questionnaire along with the Consent Form and Information Sheet were, first of all, submitted to the students so that they could complete them in their dormitories after reading the information about the study and only if they voluntarily participated in the study. This questionnaire is divided into five parts, in the first part the variables requested are sex and age, as the rest of them were common to all participants, as they were all university students of Chinese nationality. In the second part, participants were asked about their family linguistic heritage to eliminate those students who were not of Han

ethnicity, or whose L1 was not Mandarin, but rather another language such as Cantonese, as two of the study universities were in the province of Guangdong. In the third part, a series of usage contexts that could act as a variable were included, but given that 100% of the sample are students, and in the case of China, dedication to studies is usually full-time, none of the participants said that they use Spanish or English outside of the university setting. In all of the sample Spanish, like English, is used as a subject, none of these centres is an English or Spanish medium university. In the fourth part, the questions relevant to this research (given that either in the others they did not answer or the responses are homogeneous and therefore cannot be converted into variables) were questions one, four and six, namely, the age at which they started studying English and Spanish, the presence or otherwise of linguistic immersion, and the context of use, which they were also asked about previously. Question number 9 in the fourth section and section five are closely related and refer to the subjective level and to the participants' awareness of their linguistic commandthat is then compared with their objective command.

When preparing the Language Profile Questionnaire, that might at first sight seem rather long, a series of considerations were taken into account that should be mentioned: firstly, it was to be entirely in Chinese, so that there would be no doubts or misunderstandings by the participants (in English and Spanish respectively, for each of the control groups). Secondly, that it should include a large number of questions in order to have a general overview of the major variables that the literature on the acquisition of second languages identifies as being influential, for example, knowledge of other languages, self-perceived subjective level in each of the skills, age of starting to learn the languages in question, usage contexts, linguistic habits and family linguistic inheritance, presence or not of linguistic immersion, etc.

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Scrutiny of the answers to this questionnaire enabled us to limit the type of statistical analysis carried out, namely, for a feature in question to become a statistical variable it is necessary that there be variation between the sample subjects. In the case of my sample, the level of homogeneity was such that while it might have been interesting to analyse many of the variables, this was not possible because such variation did not exist. For this reason the analysis performed is fundamentally based on the segmentation of the sample depending on the level of linguistic command, on performance in relation to the answers from native speakers as a control mechanism, and on a possible comparison between performance in Spanish and in English owing to the varying age at which participants acquired or started to study the foreign languages.

4.3.2. Proficiency tests in Spanish and English for the Chinese focus group

When determining the participants' level of linguistic command a variety of methods were used: firstly, a placement test in Spanish and one English that are prepared by the language centre of the University of Oxford and freely available on its website. Secondly, the judgement of the participants' instructors was used, as they already knew the general level of the students. As well as these methods, the subjective allocation provided by the answers to the language profile questionnaires and, as I shall explain below, the results of the lexical identification task, were also used.

While I am aware that some studies (Thomas, 2006) suggest using the level of the students' class as a tool for classifying linguistic command, in my opinion to avoid doubts or the influence of other variables, for example the type of instruction or the particular system for allocating levels at each centre, it is better to use an additional test, the University of

Oxford placement test, that would clarify any doubts. Therefore I did so, a choice that I believe was correct, in order to avoid cases where students whose division into levels in their educational centre was at odds with the results of the Oxford test. If this situation arose, it was decided to eliminate this type of subject from the study.

The advantages of this test are that it contains a limited number of items, in a multiple choice format, it can be completed in a relatively short time period, and it is very reliable, as is shown by the fact that it has been used for many years by the University of Oxford and by the number of researchers who have relied on using it in the field of SLA.

However, one of the drawbacks of this test, and by extension similar tests (Mackey & Gass, 2012), is that as a general placement test it is not specifically focussed on evaluating knowledge of prepositions, even though both versions include a reasonable number of items in which use of a preposition is required. Therefore, the Lexical Identification Task has an important complementary function.

The results of the Spanish and English versions of the test were used to divide the sample according to the following criterion: scores (0-12) were labelled as absolute beginners, (13-24) as lower intermediate, (25-36) as intermediate, (37-46) as upper intermediate and (47-50) as advanced.

Students whose score, in either the Spanish level test or in the English version, was in the lowest category (see the classification above), namely, absolute beginners, were eliminated from the subsequent data analysis as I believe that to be able to complete task 4 in a satisfactory manner (the Truth Value Judgement Task) it is necessary to have at least a lower intermediate level. The following chapter will include a detailed analysis of the results obtained in the level test.

4.3.3. Lexical identification task

Clear and simple written instructions in the participants' L1 are provided for the lexical identification task, as for the rest of the tasks carried out by the participants, to ensure thereby that they can complete the task correctly. The task is simple; participants must draw a circle (any other type of mark that correctly identifies the words is also accepted) around the words that they think are real, excluding non-words (made up words).

During the design stage of the test the distribution of blank spaces, characters and words on the sheet were taken into account to try to ensure that there was an approximate balance between the English version and Spanish version. Taking this factor into consideration, I included 14 real words in Spanish and 14 in English, which included the spatial particles from my study and the same number of other prepositions, 24 non-words in English and 25 in Spanish, depending on the total number of characters written (195 on average), and blanked out in each of the documents. The non-words respect the morphological and phonetic/orthographic rules of acceptable words in English and Spanish respectively, and were previously checked by two linguists from the University of Nottingham, where the author was affiliated during the data collection period, to ensure compliance with these criteria.

When evaluating the responses, the number of correct answers was calculated out of a total of 14. Although this was not mentioned in the instructions to avoid putting pressure on the participants, it was decided that if the number of non-words marked as real words was greater than three, and the result obtained in the linguistic command text was under 15 points, the subject would be eliminated from the sample as, in my opinion, there could be a risk of the test having been done by guesswork, thereby invalidating the results.

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As stated above, when talking about the linguistic command tests, the primary purpose of the Lexical Identification Task is to complement these tests, making more specific the level diagnosis provided by the more general Oxford test, as well as the self-evaluation by the students and their teachers, that is more subjective and harder to compare.

When designing this test, the existing literature in the field of language teaching on different ways of determining the proficiency level of foreign language students was taken into account. In particular, the work by Harrington and Carey (2009) on the usefulness of yes/no tests when using a placement test to distribute students by levels was taken as a basis for the study. The authors designed an application test by computer in which a series of words (in this case 200) and non-words are presented and the students have to decide whether or not they know these words. The results of this computer test were then compared with the results of other more traditional placement tests (listening, grammar, writing and speaking), and a correlation study established the high reliability of the Lexical Identification Task administered initially. Based on this, I designed the test in a paper format (owing to the limitations I faced when data collection, as there is no internet access in the classrooms in many universities, nor are there sufficient computers for the participants, and in the universities where it was possible to access language laboratories equipped with computers it was excessively complicated) and in a smaller number, given that I had other additional diagnostic tests.

In the data analysis present in the next chapter, it is apparent that the number of correct answers, in almost all cases, matched the result obtained in the Oxford tests, so that a correlation can be established between the total number of correct answers (14/14) in the Lexical Identification Task and a minimum score of +15/50 in the Oxford tests.

4.3.4. Prototypical meaning elicitation task

To prepare this task I followed Guarddon (2005: 302) in a study on the status of the literal and figurative meanings of the spatial preposition desde. Guarddon (2005) studies the level of activation of the spatial, temporal and figurative meanings (a distinction that, as I mentioned above, is reduced to spatial v. figurative in this thesis) with a group of native Spanish participants. To do so, the author, following the activation model proposed by Boguess (1979) in which the most prototypical uses are the first to be activated in the mind of the speakers, asked her 12 participants to write five phrases with the preposition desde, the first five phrases that occurred to them. The result of the research, according to the author, emphasises the fact that spatial and temporal meanings are the most activated ones.

When designing this task, I took into account the fact that the interlanguage of foreign language students follows a non-linear evolutionary acquisition process. The working hypothesis was, therefore, that the meanings of the spatial particles proposed by the focus group of students in the research would display variation with regards to meanings proposed by the control group. It should not be forgotten, as various models for language acquisition and processing in L2s suggest (deBot, Paribakht, & Wesche 1997; Jiang, 2000), that the grammatical class and meaning of a word contribute jointly to the acquisition of a new word in a foreign language, and that the process of acquiring the two elements does not necessarily occur in parallel or simultaneously.

Taking this experiment as a starting point, in this study participants were asked to write five phrases for each of the suggested words, eight in total comprising the five spatial particles being studied and 3 fillers or distractors to avoid conditioning the responses. The fillers were not taken into account when analysing the results.

The phrases obtained were analysed by the author and two linguists specialising in the linguistics of English and Spanish as a foreign language, who are native speakers of their respective languages, to guarantee the reliability of the classification. The analysis criterion was the same one followed throughout the thesis; differentiation between spatial and figurative meanings, those that do not refer to a situation of localization in space being figurative, by exclusion. When assigning a verdict to the phrases, a decision was made between literal v. figurative, and acceptable or unacceptable in English or Spanish. Grammar, spelling and other types of mistake were not taken into account as long as the example suggested was communicatively acceptable.

4.3.5. Gap-filling picture task

In this task the participants received 15 cartoons followed by a phrase containing a gap; their task is to fill in this gap. In the instructions that, as seen above, were in the participants' L1 and included an example to avoid any type of uncertainty, no mention of any type was made of the number of words or the category or type of words required so that the participants' responses would not be conditioned.

This exercise is based on the cloze tasks that are very common in foreign language teaching, that in turn draw on Gestalt psychology and its closure principle. This principle claims that when we see incomplete information we naturally tend to fill this lack or gap with patterns, experiences, words derived from our previous experience and knowledge (Graham, 2008).

Cloze tasks are normally divided into two types: "open cloze" and "closed cloze" (Skory & Eskenazi, 2010). In my research I used the first type, open cloze, that allowed participants to give any form of answer that they felt was acceptable, regardless of whether or not it was a spatial particle. Various theories (Perfetti & Hart, 2001) have emphasised the usefulness of exercises of this type to attain greater knowledge of vocabulary both when studying L1 and studying foreign languages, as it is possible to break lexical knowledge down into subcomponents, such as the semantic, syntactic and phonetic.

While preparing this task, special attention was paid to a series of factors that Skory & Eskenazi (2010: 50) consider to be of the utmost importance when designing this type of exercise, specifically, the choice of the type of phrase so that the phrases are as natural as possible. For this purpose I again used various corpora, including the CREA and the Bank of English, and I ensured that each of the phrases was piloted with native speakers, both in English and Spanish. When the examples obtained raised doubts about the level of difficulty of a phrase, the Google search engine was used and representative examples from the media were acquired in order to guarantee that all of the participants were able to understand them.

While took all of these factors into account, and thought that my phrases were simple and clear enough that the participants could complete the phrases without the help of visual support, the literature on acquisition of spatial particles in the field of psycholinguistics has abundant examples of the frequent use of visual support in its study tests (Bowerman & Choi, 2001; Coventry & Garrod, 2004; Coventry & Guijarro, 2004). Consequently, the linguistic simplicity of the phrases and the highly schematic drawings that

supported the vocabulary presented in the phrases made it is very hard to misinterpret the required meaning.

The photographs were designed by the author based on Zhang's study (2009) on the acquisition of spatial particles in English. While I took the sketches from Zhang's work (2009) as a model, a series of changes were incorporated into my study. The first of them I added a total of 15 different sketches. The design was developed in a totally different manner to ensure that the drawings were not vulnerable to differing interpretations owing to the low pictorial quality (as happens in the case of Zhang where, on occasions, it was necessary to write notes on the drawing so that the participants could understand them). The second change relates to the presentation of the phrases. In Zhang's study the phrases were presented in English along with the phrases in Chinese, one below the other, and both below the drawing. I believe that this form of presentation is susceptible to generating code switching phenomena, altering the results hoped for. Therefore, in my study, nothing other than the phrase in the language for which data is being obtained is shown, whether in English or Spanish.

This task, as it shall be seen in the following chapter, was analysed by comparing the results of the Chinese focus group with the responses from the two control groups, and in turn important information was obtained about the error analysis in each sketch, providing a clear overview of the acquisition of spatial values at the different levels of linguistic command of Chinese-speaking students of Spanish as a foreign language.

4.3.6. Truth value judgement task

The final task carried out by the participants was a Truth Value Judgement Task, or more specifically an Interpretation Task (Mackey & Gass, 2005; 2012). Participants received a short story or set of phrases and then another phrase about which they were asked to make an acceptability judgement using a Likert scale with five descriptors: at the least acceptable end 1 if the phrase sounded very bad to them, and at the fully acceptable end 4 if it sounded very good to them. In addition a value of 100 was given, distanced numerically from the previous ones, to indicate that they did not know.

The meanings of the phrases for which participants were asked to make a judgement about their acceptability are divided into four categories: literal versus figurative and acceptable versus unacceptable. As is stated above, this distinction, that can initially seem rather broad, responds to logical grounds such as the lack of studies that clearly delimit the geometrical conditions for use of spatial particles in Spanish. Consequently, alternation of the different spatial and figurative meanings listed in the studies on prepositional semantics mentioned above was favoured.

The total number of phrases of which the participants were asked to judge the acceptability is from 70, 60 corresponding study phrases and 10 fillers. The distribution of phrases was random and was different in the English and Spanish tests to ensure that participants could not make any type of inference, such as attempting to infer that the incorrect ones were in a particular order. Twelve phrases were included for each of the spatial particles studied: three acceptable figurative ones and three non-acceptable figurative ones, three acceptable spatial ones and three non-acceptable spatial ones. The

fillers were indiscriminately acceptable or unacceptable, and were not, in any case, taken into consideration when analysing the results.

When analysing the Truth Value Judgement Tasks, special attention was given to ensuring that students who had either not completed all the tasks or who showed signs of having completed them at random (for example if 50% of the phrases had been marked with a score of 100) were eliminated from the final study.

The instructions, based on the Bley-Vroman, Felix and Ioup model (1988, as cited in Mackey & Gass, 2005), were translated into Chinese and explained orally by the participants' teachers before the task was carried out.

I am aware that some authors (Mackey & Gass, 2005) suggest including an extra requirement of the participants of correcting the phrases that they consider non-acceptable, and I agree that said information can be important. In my case it seemed excessive to ask the participants to do this, given the total duration of the tests. The possibility also existed that candidates would feel intimidated if they did not know how to correct the sentence that did not "sound" right to them. However, it should not be forgotten that fear of ridicule and of making errors is deep-rooted in Chinese student society, as is the idea of keeping face in Chinese society in general. Consequently, I felt that the Prototypical Meaning Elicitation task was sufficient to measure productive skills, leaving the receptive skills to the Truth Value Judgement Tasks.

All of the items were initially piloted by a group of ten native-speakers: vocational education students from the province of Burgos, and students from the health sector in London, none of whom were linguists. After eliminating a series of items that were prone to misinterpretation, I proceeded to run a pilot test with students from the University of

Nottingham. The resulting final task, after making a series of changes to simplify the stories, is the one submitted to the participants.

In the next chapter a detailed analysis is given individually for each preposition and its relationship with the study variables.

4.4. DATA ANALYSIS PROCEDURES

The IBM SPSS Statistics 22 software has been used for the statistical analysis. The statistical tools and techniques used are: frequency tables and percentage tables for qualitative and categorical variables, with a Chi-squared test of homogeneity to verify possible differences between categories; contingency tables with Chi-squared test of independence between two qualitative variables to determine the level of association between these variables that explains the difference between response rates; appropriate graphical representations for each type of variable and analysis: histograms, bar charts; exploratory and descriptive analysis of quantitative variables with tests of the goodness of fit of the normal Gaussian distribution to verify the level of approximation of these variables to the normal distribution and box-plot diagrams for detecting outliers that might distort later analyses; tests of significance of difference of means: Student's t-test (independent and paired samples) when variables match the normal model and two averages are compared and Anova fixed effect factor tests as well if it matches the normal distribution but more than two averages are compared, as well as the respective non-parametric alternatives (e.g.:

Mann-Whitney, Kruskal-Wallis, etc.) if a clear deviation from the normal model is observed for the variable; estimating the effect size with Eta2 (R2) and in appropriate cases accompanied by the Cohen "d" equivalent to quantify the level of relationship between variables so that it is possible to compare these differences when the units of measurement are different.

In the following analyses (and in some of the previous ones) the term "effect size" is used. The effect size is an indicator of the size of changes observed in the variables being measured (dependent variable) owing to the influence (effect) of the independent variable which is manipulated (in my case between the groups being compared). This value is expressed using Cohen's d scale or on the R-squared scale. In the case of the former the range is: 0 – 2.5 although in exceptional cases it can pass this upper limit. Its valuation is as follows: between.000-.200 small size, from.300 it starts to be relevant, up to.600 it is considered medium, from there to 1.2 it is large, and above 1.200 it is very large. On the R-squared scale it is small at around.050, medium around.150, high around.250, large around.350 and very large from.450 (up to 1).

The "medium" size shows differences which are real and which can be detected even with samples as small as 50<N<100. A small effect size indicates that there might be something, but to detect it with some certainty samples of around N=500 are needed. A "large" size evidently reflects differences which exist with a high degree of confidence and which can be seen "at a glance" and with very small samples.

CHAPTER 5: ANALYSIS OF RESULTS

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The purpose of the statistical analysis performed is to compare the execution of the different tasks carried out by the participants depending on the group to which they belong: Chinese versus Spanish/English control groups. The results are presented by task.

5.1 RESULTS OF THE LEVEL TESTS FOR THE CHINESE FOCUS GROUP

The level test is based on the placement test used by the University of Oxford's Language Centre which is available on-line. It is a grammar and vocabulary competence test comprising 50 items. Performance is measured by the number of correct answers. The descriptive summary of these results is provided in table 1 below.

The results of both tests display a clear left-hand skew, indicative of the presence of many participants with high values within the scale (0-50) and a small number of cases with low scores, hence the significant (P<.01) difference from a normal Gauss bell-curve. The mean score in the case of the English test is 36.47 ±8.22 within a range of 9-50 (median 39), enabling two subjects to be identified (numbers 83 and 97 in the data base; see fig. 5.1) who have a level within what would be considered absolute beginners and who should therefore be eliminated from the rest of the study. With regards to the Spanish test, the mean is very similar: 36.53 ±7.78 within a range of 12-47 (again with a median of 39) and again one case is found with a "beginner's" score, who turns out to be one of the same people as in the

English test (number 83 in the data base; fig. 5.1), confirming the appropriateness of dispensing with this person for the rest of the study. Student's t-test for paired samples confirms that there are no significant differences as P>.05 (T=0.14; 136 df; P=.891) among the averages of the tests of command of English and Spanish.

Table 1. Descriptive and exploratory analysis. Level Test

Chinese Focus Group		N = 138	N = 137
	Variable	Level of English	Level of Spanish
Mean		36.47	36.53
95% CI	Upper level	35.09	35.21
	Lower level	37.85	37.84
Median		39.00	39.00
Minimum		9	12
Maximum		50	47
Standard Deviation		8.22	7.78
Interquartile Range		10	11
Skew		-1.26	-1.13
Kurtosis		1.56	0.70
P-value (KS test)		.002**	<.000**

NS = not significant (p>,050)   * Significant at 5% slight deviation
** Highly significant at 1% large deviation

Figure 5.1 Box-plot diagram of English and Spanish level tests (Chinese focus group)

Prepared by the author using IBM SPSS Statistics 22

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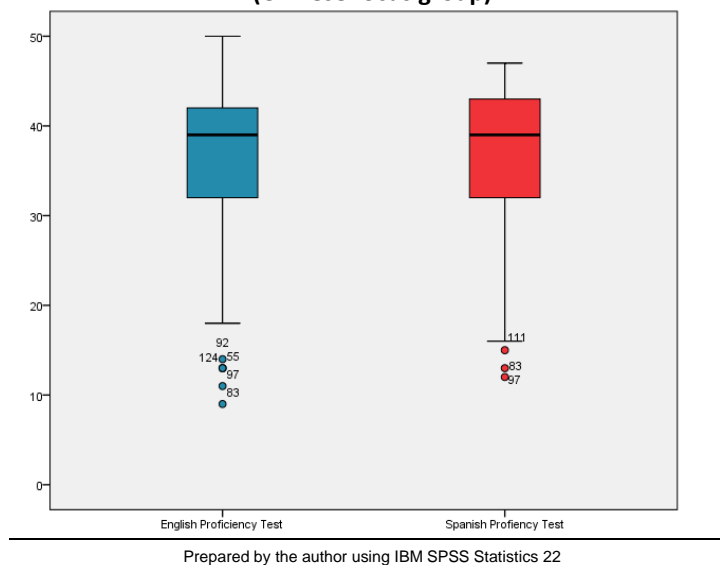
The results are categorized with the following cut-off points: (0-12) absolute beginners, (13-24) lower intermediate, (25-36) intermediate, (37-46) upper intermediate and (47-50) advanced.

The distribution of cases presented in table 2 is found, showing that a large majority of participants (almost 90%) are of the intermediate and upper-intermediate levels.

Table 2. Distribution of groups. Level Test Categories

Chinese Focus Group	N = 138	N = 137
Category Variable	English Level	Spanish Level
Absolute Beginners	2 (1.40 %)	1 (0.70 %)
Lower Intermediate	11 (8.00 %)	9 (6.60 %)
Intermediate	40 (29.00 %)	38 (27.70 %)
Upper Intermediate	82 (59.40 %)	86 (62.80 %)
Advanced	3 (2.20 %)	3 (2.20 %)

In accordance with the conditions established for the study, the decision was taken to exclude the subjects previously identified as beginners from the rest of the statistical analyses in this research.

5.1.1 Final valid sample for statistical analysis

Consequently the final sample for analysis consists of 190 participants divided into groups as follows:

Table 3. Distribution of groups. Valid sample for statistical analysis

Chinese Focus Group	136 (71.60 %)
With immersion in Spanish	18 (9.50 %)
Without immersion in Spanish	118 (62.10 %)
Native Spanish control group	27 (14.20 %)
Native English control group	27 (14.20 %)

5.1.2 Analysis of self-evaluation of command of the language (study group)

The subjects for the focus group in the study were asked to evaluate their level of command of both English and Spanish. Firstly, on a 7 point Likert scale (from 0=bad to 6=very good) they were asked to rate their speaking, listening, reading and writing for both languages. They were then asked to place themselves into overall categories (beginner – intermediate – advanced – near native) similar to those established by the official test analysed above which also has 4 levels.

The descriptors of the self-evaluation levels for the four basic skills mentioned for command of English and Spanish are summarised in table 4.

As can be seen, the values of the arithmetic means are broadly similar and are closely grouped around the centre of the scale (0-6). The following stand out as the highest values: English listening (3.91) and reading (3.85), and as the lowest values Spanish speaking (3.19) and writing (2.97). In other words, the participants in the sample see themselves as better at understanding English and worse at producing Spanish. Furthermore, the variability is somewhat less in English (the most uniform group) than in Spanish (greater differences between individuals). See also fig. 5.2 and 5.3.

Table 4. Descriptive and exploratory analysis. Self-evaluation of level of command of the language (N=135)

Language		ENGLISH				SPANISH			
Variable		Speaking	Listening	Reading	Writing	Speaking	Listening	Reading	Writing
Mean		3.61	3.91	3.85	3.47	3.19	3.36	3.31	2.97
95% CI	Upper level	3.44	3.75	3.68	3.32	2.97	3.14	3.10	2.77
	Lower level	3.77	4.07	4.03	3.64	3.40	3.57	3.53	3.17
Median		4	4	4	4	3	3	3	3
Minimum		1	2	1	1	0	0	0	0
Maximum		5	6	6	5	5	6	6	5
Standard Deviation		0.96	0.96	1.03	0.98	1.24	1.28	1.27	1.20
Interquartile Range		1	2	2	1	2	2	1	2
Skew		-0.34	-0.18	-0.41	-0.20	-0.43	-0.32	-0.36	-0.26
Kurtosis		-0.35	-0.82	-0.15	-0.59	-0.59	-0.43	-0.32	-0.63
P-value (KS test)		<.000**	<.000**	<.000**	<.000**	<.000**	<.000**	<.000**	<.000**

NS = not significant (p>,050)   * Significant at 5% slight deviation**   Very significant at 1% large deviation***

Figure 5.2. Self-evaluation of command of basic English skills (Chinese focus group)
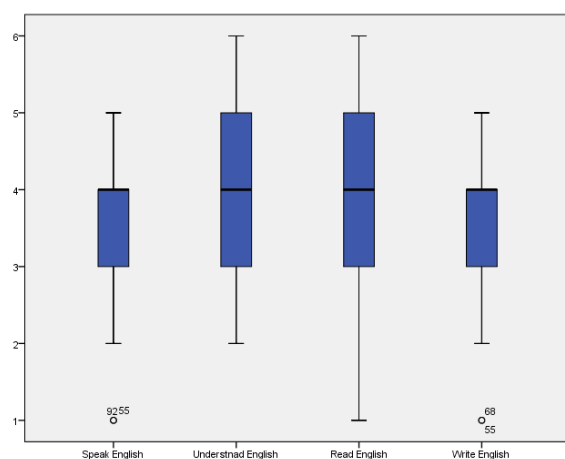
Figure 5.3. Self-evaluation of command of basic Spanish skills (Chinese focus group)
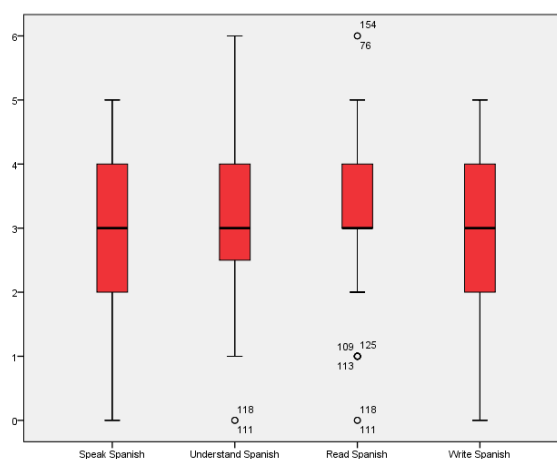
Prepared by the author using IBM SPSS Statistics 22

The Anova repeated measures test was used to compare the differences between self-evaluation of these language skills.

In English, highly significant differences with $P<.001$ were found (F=16.05; 3 and 123 df; $P<.000$; effect size: $R2=.267$) such that the self-perception of skills can be ordered as follows: listening (3.91) = reading (3.85) > speaking (3.61) > writing (3.47). In other words, they rate themselves highest in listening and reading without differences between them

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(P>.05), and they see themselves as significantly worse (P<.01) at speaking and even worse (P<.01) at writing English.

In Spanish, statistically significant differences with P<.001 were also observed (F=17.51; 3 and 123 df; P<.000; effect size: R2=.285) such that the subjects' perception of their own skills follows the same order as in English: listening (3.36) = reading (3.31) > speaking (3.19) > writing (2.97); with the same interpretation therefore. They believe that their Spanish listening and reading (P>.05 between them) are better than their speaking (P<.01) and writing (P<.01).

Next, the matching skills in each language were put into pairs. The Student t-test for paired data was used and the existence of highly significant differences with P<.001 was proved, such as:

- They believe that their English listening comprehension (3.91) is significantly (T=5.16; 134 df; P<.000) better than that for Spanish (3.36).

- They believe that they read English (3.85) significantly (T=4.91; 134 df; P<.000) better than Spanish (3.31)

- They believe that they speak English (3.61) significantly (T=3.69; 134 df; P<.000) better than Spanish (3.19)

- They also believe that they write English (3.47) significantly (T=4.41; 134 df; P<.000) better than Spanish (2.97)

Meaning, in summary, that they believe that their command of English is clearly better than their command of Spanish.

This belief was clearly reflected when they were asked to self-classify on the 4-level scale mentioned above. Figures 5.4 and 5.5 show these data. As can be seen, the number of

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cases who regard themselves as beginners is greater in Spanish (18.5%) than in English (0.7%), and in contrast the number of subjects who believe they have an intermediate or advanced level is greater for English (71.1% and 28.1%) than for Spanish (64.4% and 17%). There is a raised statistical significance with P<.001 (Chi2=618.42; 2 df; P<.000) between these differences.

Figure 5.4. Self-evaluation of level of command of English (Chinese focus group)
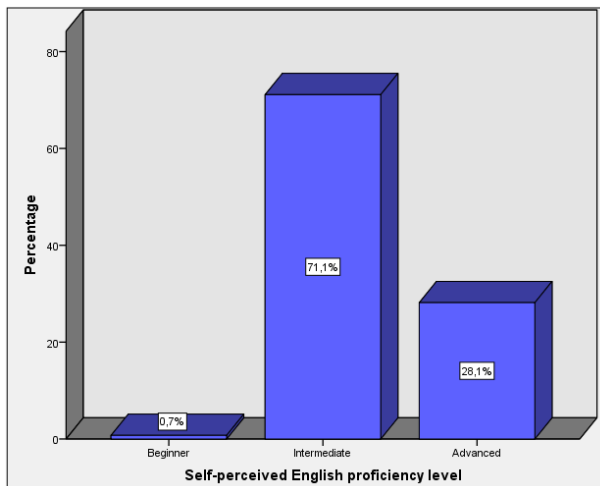
Figure 5.5. Self-evaluation of level of command of Spanish (Chinese focus group)
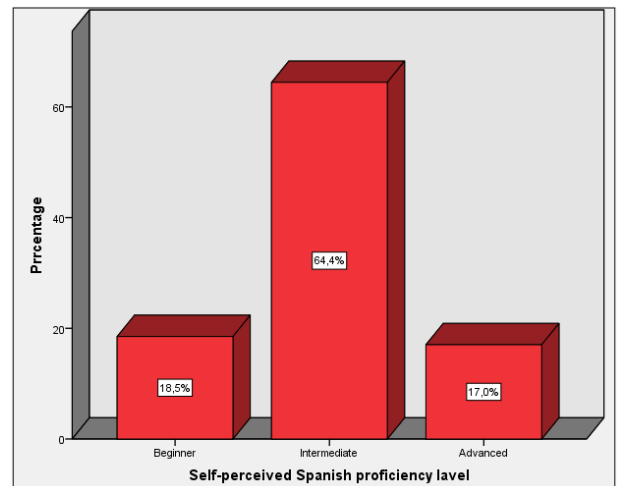
Prepared by the author using IBM SPSS Statistics 22

Finally, this subjective perception of their level of command of the language was compared with the real level they showed in the objective test, with a highly significant (P<.001) relation being found between them.

In the case of English: 100% of the lower intermediate subjects (11) and 89.7% (35) of the intermediate cases self-classified as intermediate; 61% (50) of the upper intermediate subjects also described themselves as intermediate, plus 39% (32) who consider themselves

to have an advanced level; 100% (3) of those who are genuinely advanced described themselves as such. The intensity of the relationship is medium/high (R=.407) and significant (Chi2=31.63; 6 df; P<.000).

For Spanish: the subjects with a real medium-low level were equally divided (4+4) between describing themselves as beginners (50%) and intermediate (50%); the intermediate and intermediate-high level participants on the test primarily described themselves as intermediate (63.2%; 24 and 68.2%; 58); and two of the advanced level cases on the test (66.7%) described themselves as such. The relationship is somewhat stronger than for English (R=.451) and also highly significant (Chi2=38.98; 6 df; P<.000).

In conclusion, there is considerable concordance for both languages between participants' subjective perception of their command and the command they showed in the level test. Even so, it was decided to use the results from the objective test as a reference for their level of language, trusting in its greater reliability.

5.2 TASK 1: LEXICAL IDENTIFICATION TASK

It is important to remember that the purpose of this task is to identify prepositions in both Spanish and in English. In both languages the total number of prepositions to identify is 14. The number of correct answers was collected and converted into a percentage of the total.

Comparison of focus group versus English native group

The exploratory analysis of the "percentage of correct answers in recognising prepositions" variable shows a clearly skewed distribution, with the majority of the values concentrated at the higher end of the continuum, that is, close to 100%. For this reason, the significance of the difference of means has been checked with two tests: Student's parametric t-test which also allows us to estimate the effect size in the case that there is significance, and the alternative (non-parametric) Mann-Whitney test. The results are summarised in table 1. It was observed that with the control group, 100% of the answers given were correct from all participants, this therefore being the mean with a standard deviation of 0. On the other hand, the Chinese focus group has a mean of 97.06 % ±5.39 which although very high is somewhat lower (fig. 5.6). This difference is statistically significant with p<.01 both in the Student test for unequal variances (T=6.36; 161 df; P<.000) and in the Mann-Whitney test (Z=3.21; P=.001). Therefore, it is confirmed that the Chinese group identifies almost 3% fewer prepositions within a 95% CI: 2.03 -0.32; with a small effect size (table 5).

Comparison of focus group versus Spanish native group

Given the peculiarity found above of the presence of subjects in the Chinese group who might be considered to have had linguistic immersion in Spanish, these two subgroups will initially be compared with each other. If there are differences, the two groups will be treated separately, and if there are no differences, they will be included as a single group as in the previous comparison. This is the analysis rule that will be followed in the rest of the study for these subjects.

This initial comparison shows no significant differences with P>.05 (table 5) in either of the statistical tests used and so they will be included as a single group, even though the mean for the subjects with immersion (99.60%) is slightly higher than the mean for those who have not been in Spain (97.94%).

Therefore, by comparing the complete focus group with the native control group it was found that while in the case of the controls 100% of the answers the subjects gave were correct. In the Chinese group the mean was somewhat lower at 98.16% ±4.76 (fig. 5.7), a difference which is statistically significant with p<.001 in the T test (T=4.50; 161 df; p<.000) but only P<.05 in the non-parametric alternative (Z=2.23; P=.025). The difference in this case is smaller than in the case mentioned before, with 1.84% fewer correct answers in the Chinese group, within a 95% CI: 1.03 – 2.65, which is equivalent to a smaller effect size than before (table 5).

Table 5. Difference of means test: Percentage of correct answers on Lexical Identification Task

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R^2	Cohen
% correct answers in English	Chinese	136	97.06 (96.14 – 97.97)	5.39	6.36	161	<.000**	.001**	2.03 – 3.86	.047	0.446
	English	27	100 (-)	0.00							
% correct answers in Spanish	Chinese, no immersion.	118	97.94 (97.02 – 98.86)	5.04	0.53	134	.596 NS	.177 NS	--	--	--
	Chinese, with immersion.	18	99.60 (98.77 – 100)	1.68							
% correct answers in Spanish	Chinese	136	98.16 (97.35 – 98.97)	4.76	4.50	161	<.000**	.025 *	1.03 – 2.65	.024	0.315
	Spanish	27	100 (-)	0.00							

NS = not significant (p>,050)   * Significant to 5%   ** Highly significant to 1%

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Figure 5.6. Lexical Identification Task in Chinese/English
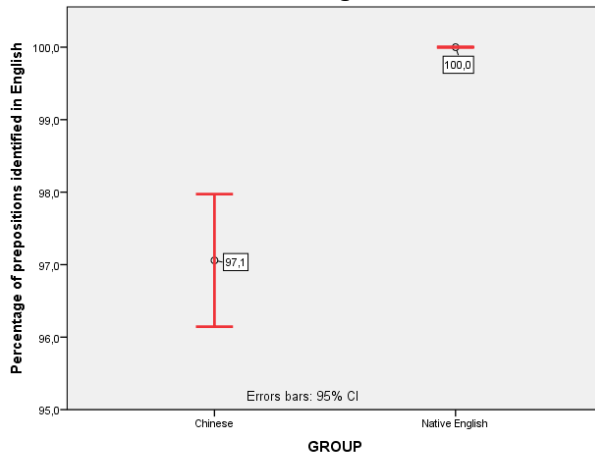
Figure 5.7. Lexical Identification Task in Chinese/Spanish
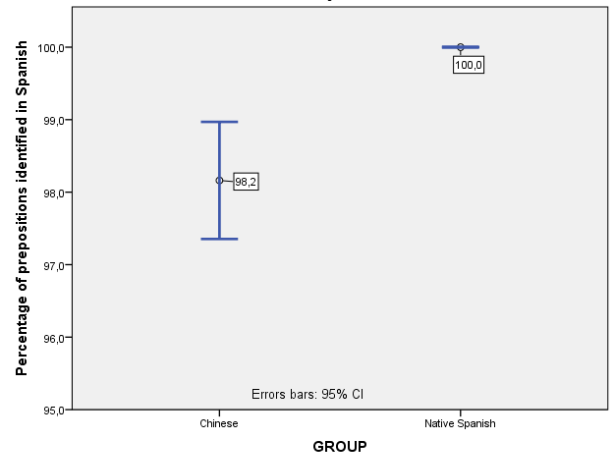
Prepared by the author using IBM SPSS Statistics 22

5.3 TASK 2: GAP-FILLING PICTURE TASK

It should be recalled that this test consists of 15 pictures of very schematic scenes which the participants must complete with one or more words so that the phrase below the image reflects what is in the picture.

For each of them, a record is made of whether the answer is correct or not, and then which term/word has been chosen. The results are presented as percentages of subjects who gave each response and are shared between the focus group and the corresponding native-speakers. They are displayed graphically below. It should be noted that the N of cases for the Chinese group varies slightly from one picture to another as some participants did not respond to all of them.

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5.3.1 English – Picture 1

The response which the majority of the control group stated was correct was "over" (96.3%). 54.8% of this subjects in the Chinese group gave this answer, considerably below what was expected, the difference between the two groups is highly significant with P<.000 (see table 6). The remaining 45.2% gave answers which must be considered incorrect. These include one, "above", which is what was most frequently used (25.0%) and is highly significant (P<.000; table 6) with regards to the other incorrect answers.

Table 6. Percentage of answers given. Comparison between groups. English Item 1 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=135)			Chi-squared test
Correct	100 %	Correct	54.8 %	Incorrect	45.2 %	Between groups: Chi^2=19.57 1 df P <.000**
Over	96.3 %	Over	54.8 %	Above	25.0 %	Between incorrect options:
Verb	3.7 %			Across	7.4 %	Chi^2=31.13 3 df P <.000**
				Under	7.4 %	
				On	5.1	

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.2 English – Picture 2

For this item there are three correct options according to the control group, the most frequently identified being "under" (85.2%). A high percentage of correct responses can be seen in the Chinese group (95.6%) which does not differ significantly (P>.05) from what was expected. Therefore, in this case there is no difference between groups (table 7). Analysing the incorrect answers (just 4.4%) no differences were found amongst those given (P>.05) so there is no error which can be listed as most common (table 7).

Table 7. Percentage of answers given. Comparison between groups. English Item 2 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=136)				Chi-squared test
Correct	100 %	Correct	95.6 %	Incorrect	4.4 %	Between groups: Chi^2=0.30 1 df P =.581 NS
Under	85.2 %	Under	74.3 %	Across	1.5 %	Between incorrect options:
Below	11.1 %	Below	19.1 %	Over	1.5 %	Chi^2=0.67 3 df P =.881 NS
Beneath	3.7%	Beneath	2.2 %	Through	0.7 %	
				Above	0.7 %	

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.3 English – Picture 3

In this case there are two correct answers with almost equal percentages according to the native-English speakers: "above" (55.6%) and "over" (44.4%). In the focus group, 89.7% gave one of these two answers, which despite being a lower rate than in the control group is not statistically significant with p>.05 (table 8). Amongst the 10.3% of answers which were not accepted, "on" (7.4%) stands out significantly (P<.05).

Table 8. Percentage of answers given. Comparison between groups. English Item 3 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=136)				Chi-squared test
Correct	100 %	Correct	89.7 %	Incorrect	10.3 %	Between groups: Chi^2=1.87 1 df P =.171 NS
Above	55.6 %	Above	55.1 %	On	7.3 %	Between incorrect options:
Over	44.4 %	Over	34.6 %	Up	1.5 %	Chi^2=9.14 2 df P =.010 *
				Below	1.5 %	

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.4 English – Picture 4

There are 4 possible answers for this picture (table 9) although the one selected most by the control group is "across" (81.5%). In the study group, 85.3% gave a correct

answer, almost half of these being the word just mentioned, "across" (42.6%), while the rest were equally divided between "on" and "in". The difference between the rate of correct answers and the control value is not statistically significant (P>.05) although only by a small margin, being what is normally called a nearly significant difference (P<.10) which could be said to indicate possible significance (table 9). Among the incorrect answers there are none which are dominant (P>.05).

Table 9. Percentage of answers given. Comparison between groups. English Item 4 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=136)				Chi-squared test	
Correct	100 %	Correct	85.3 %	Incorrect	14.7 %	Between groups: Chi^2=3.26 1 df P =.071 NS	
Across	81.5 %	Across	42.7 %	Over	8.8 %	Between incorrect options:	
Down	7.4 %	Down	--	Through	5.9 %		Chi^2=0.80 1 df P =.371 NS
On	7.4 %	On	21.3 %				
In	3.6 %	In	21.3 %				

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.5 English – Picture 5

For this drawing, "through" is the term most frequently identified as acceptable by the native participants (85.2%), although 2 other answers are accepted. Just 68.4% of the subjects in the focus group gave one of these correct answers, principally the aforementioned one (55.9%). The difference compared to the control value is highly significant with P<.01 (table 10). The most frequently chosen incorrect answers are "in" (11.8%) and "across" (10.3%), displaying a significant difference compared to the others (table 10).

Table 10. Percentage of answers given. Comparison between groups. English Item 5 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=136)				Chi-squared test
Correct	100 %	Correct	68.4 %	Incorrect	31.6 %	Between groups: Chi^2=11.60 1 df P =.001**
Through	85.0 %	Through	55.9 %	In	11.8 %	Between incorrect options:
Under	7.5 %	Under	6.6 %	Across	10.3 %	Chi^2=19.91 4 df P =.001**
Into	7.5 %	Into	5.9 %	Over	6.6 %	
				Below	1.5 %	
				To	1.5 %	

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.6 English – Picture 6

For this drawing the answer identified as correct by the majority is "above" (92.6%). 69.5% of the Chinese members of the study group gave either this answer (63.4%) or another correct answer. This rate of correct answers is significantly lower than expected (P<.01). Amongst the incorrect answers (table 11), "over" stands out significantly (P<.001), having been given by 18.3% of participants.

Table 11. Percentage of answers given. Comparison between groups. English Item 6 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=131)				Chi-squared test
Correct	100 %	Correct	69.50 %	Incorrect	30.5 %	Between groups: Chi^2=11.04 1 df P =.001**
Above	92.6 %	Above	63.4 %	Over	18.3 %	Between incorrect options:
On	7.4 %	On	6.1 %	To	6.9 %	Chi^2=28.60 3 df P <.000**
				Under	3.8 %	
				Around	1.5 %	

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.7 English – Picture 7

In this case, "after" is the word most frequently identified as correct (92.6%). Members of the Chinese sample gave this or another acceptable answer just 69.8% of the time, so I can state that this percentage is significantly lower (P<.01) than that expected from the control group. Among the incorrect answers one again stands out in a highly significant way (P<.001), "by" which was given by 15.1% of the group (table 12).

Table 12. Percentage of answers given. Comparison between groups. English Item 7 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=126)			Chi-squared test
Correct	100 %	Correct	69.8 %	Incorrect 30.2 %	Between groups: Chi^2=10.83 1 df P =.001**
After	92.6 %	After	65.0 %	By	15.1 %	Between incorrect options:
Behind	3.7 %	Behind	4.8 %	To	7.9 %	Chi^2=28.04 4 df P <.000**
Before	3.7 %	Before		And	4.8 %	
				On	1.6 %	
				In front of	0.8 %	

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.8 English – Picture 8

For this drawing there are no fewer than 7 correct words, according to the control group (table 13). Of these, "behind" is the one used most (44.4%). In the study group, 80.6% of the participants gave one of the possible acceptable terms, a rate which is significantly lower than expected (P<.05). Only one incorrect word was give, "near", used in 19.4% of the answers.

Table 13. Percentage of answers given. Comparison between groups. English Item 8 Gap-filling picture task.

Native Group (N=27)		Chinese Group (N=129)				Chi-squared test
Correct	100 %	Correct	80.6 %	Incorrect	19.4 %	Between groups: Chi^2=4.87 1 df P =.027*
Behind	44.4 %	Behind	34.9 %	Near	19.4 %	
Beside	18.5 %	Beside	9.3 %			
Around	14.8 %	Around	26.4 %			
Next to	7.4 %	Next to	1.6 %			
To the side	7.4 %	To the side	--			
In	3.7 %	In	8.5 %			
By	3.7 %	By	--			

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.9 English – Picture 9

In this drawing there is only one correct word: "in". This answer was given by 78.9% of the participants in the Chinese focus group, an answer which is significantly lower (P<.05) than expected compared with the control. In the analysis of the control answers, "on" and "over" stand out significantly (P<.05, table 14).

Table 14. Percentage of answers given. Comparison between groups. English Item 9 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=133)				Chi-squared test
Correct	100 %	Correct	78.9 %	Incorrect	21.1 %	Between groups: Chi^2=5.51 1 df P =.019*
In	100%	In	78.9 %	On	7.5 %	Between incorrect options:
				Over	7.5 %	Chi^2=11.17 4 df P =.025*
				Through	3. 7 %	
				Across	1.50 %	
				Above	1.5 %	

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.10 English – Picture 10

In this case there are three correct words, the principal one being "in" (63%), followed by "under" (33.3%). 90.8% of the subjects in the Chinese focus group gave one of the answers considered correct, a percentage which, while somewhat lower than expected in comparison with the control group, is not statistically significant with P>.05. One thing worth mentioning is that in the focus group's answers, the second response given by the control group ("under", 58%) is more common than the first ("in", 32.1%). The only incorrect answer given was "below" (9.2%).

Table 15. Percentage of answers given. Comparison between groups. English Item 10 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=131)			Chi-squared test
Correct	100 %	Correct	90.8%	Incorrect 9.2 %	Between groups: Chi^2=1.53 1 df P =.216 ^{NS}
In	63.0 %	In	32.0 %	Below 9.2 %	
Under	33.3 %	Under	58.0 %		
Beneath	3.7 %	Beneath	0.8 %		

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.11 English – Picture 11

For this image there is again only one correct answer, which is "on". This answer was given by 90.4% of the subjects in the study group, a difference which is not statistically significant with P>.05. There are various incorrect answers (table 16), but all of them are present at similar low rates (P>.05).

Table 16. Percentage of answers given. Comparison between groups. English Item 11 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=135)			Chi-squared test
Correct	100 %	Correct	90.4 %	Incorrect 9.6 %	Between groups: Chi^2=1.67 1 df P =.196 ^{NS}
On	100%	On	90.4 %	In 4.4 %	Between incorrect options:
				Above 2.2 %	Chi^2=6.62 4 df P =.158 ^{NS}
				Over 1.5 %	
				At 0.7 %	
				Below 0.7 %	

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.12 English – Picture 12

As in the previous example there is only one correct answer, "on", which was given by 63% of the study participants, a percentage which shows a highly significant difference (P<.001). Although there were several different incorrect answers (table 17), one stood out above the others in a highly significant way (P<.001): "in" (25.9%).

Table 17.Percentage of answers given. Comparison between groups. English Item 12 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=135)			Chi-squared test
Correct	100 %	Correct	63.0 %	Incorrect 37.00%	Between groups: Chi^2=14.46 1 df P <.000**
On	100%	On	63.0 %	In 25.9 %	Between incorrect options:
				Over 5.2 %	Chi^2=130.60 6 df P <.000**
				Around 2.2 %	
				Above 1.5 %	
				Among 0.7 %	
				Across 0.7 %	
				Before 0.7 %	

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.13 English – Picture 13

Again there is one single correct answer, "on", and this was given by 95.6% of the subjects in the analysis group, a difference which is not statistically significant with P>.05. The only incorrect answer was "in", given by the rest of the participants (4.4%).

Table 18. Percentage of answers given. Comparison between groups. English Item 13 Fill in the blanks picture task

Native Group (N=27)		Chinese Group (N=136)			Chi-squared test
Correct	100 %	Correct	95.6 %	Incorrect	4.4 %	Between groups: Chi^2=0.30 1 df P =.581 ^{NS}
On	100%	On	95.6 %	In	4.4 %	

<p align="center">NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%</p>

5.3.14 English – Picture 14

For the item in drawing 14 there were three correct answers although two of them were the most expected, "in" and "on" which have the same level of expectation (48.1%). 100% of the participants in the study group gave one of these correct answers, matching the result from the control group. Nonetheless, it is notable that "in" was given by almost 2/3 (63.4%) of the subjects, twice as many those who said "on" (table 19).

Table 19. Percentage of answers given. Comparison between groups. English Item 14 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=134)			Chi-squared test
Correct	100 %	Correct	100 %	Incorrect	0 %	--
In	48.1 %	In	63.4 %			--
On	48.1 %	On	36.6 %			
Through	3.8 %	Through	--			

<p align="center">NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%</p>

5.3.15 English – Picture 15

Finally, in picture 15 there is again a single correct answer, "on", which was given by 83.7% of the people in the Chinese study group, a difference which does not attain statistical significance (P>.05) but comes so close to doing so (table 20) that it should clearly be seen as a value which indicates significance, nearly significant (P<.10) in other words. Amongst the incorrect words observed "over" and "above" were more frequently chosen (P<.05) than the other two which were also observed (table 20).

Table 20. Percentage of answers given. Comparison between groups. English Item 15 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=135)			Chi-squared test
Correct	100 %	Correct	83.7 %	Incorrect 16.3 %	Between groups: Chi^2=3.80 1 df P =.051 ^{NS}
On	100 %	On	83.7 %	Over 8.2 %	Between incorrect options:
				Above 5.2 %	Chi^2=10.73 3 df P =.013*
				Under 2.2 %	
				In 0.7 %	

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.16 Comparison by level of English

The results of the performance observed in the previous 15 images will now be compared according to the level obtained in the language level test. The hypothesis is that the number of correct answers should be related to the level of command of English and should increase where this command is greater. Chi-squared tests for association between categorical variables will be used. The results for all the items are summarised in table 21. As

can be seen, only some of them show a statistically significant relationship with P<.05, specifically:

Item 2: surprisingly, the rate of correct responses is lower for the subgroup of Chinese subjects from the advanced-level focus group (66.7%) than for the rest of the groups where it is above 90% correct answers. Although the difference is significant (P<.05) this is because in the advanced group there are only 3 subjects, 2 of whom gave an incorrect answer. As such this result should not be taken into account.

Item 3: in this case, it can be seen that the rate of correct responses is greater in the higher (98.8%) and advanced (100%) levels than in the other two, with high significance (P>.001) and a medium effect size.

Item 7: the percentage of correct responses clearly and significantly (P<.001) increases as the level of command of the language rises, from just 12.5% in the low-level group to 100% in the advanced group. The effect size in this case is high.

Item 12: something similar to the previously mentioned item 2 occurs here where there seems to be a significance which is the opposite of what was expected (with P<.05) but again this is because amongst the three advanced-level cases, two subjects gave an incorrect answer. Therefore, as was stated in that case, this difference should not be taken into account.

Item 15: It can be seen that as the level of knowledge of the language increases, the rate of correct answers increases significantly (P<.01), from 45.5% to 100%. The effect size of this relationship is moderate.

For the rest of the items, the percentages of correct answers remain similar across the levels of command of English (table 21), indicating the absence of a significant relationship (P>.05).

The analysis continues by repeating the same study but with the cartoon drawings in Spanish and, obviously, making a comparison with the Spanish-native control group. As is mentioned above, a subgroup of subjects who have had linguistic immersion in Spanish was found within the Chinese group. Therefore, it will first be determined whether there is a difference between the focus group members with/without immersion, and acting in consequence to this result, comparisons will then be made between one or other group and the control group.

Table 21. Chi2 test of association. Relationship between correct/incorrect answers and level of command of English

Answer to item / Level of English		Lower Intermediate.	Intermediate	Upper Intermediate.	Advanced	Chi-squared test			Effect size R²
						Value	df	P	
Item 1	Correct	36.4 %	53.8 %	57.3 %	66.7 %	1.91	3	.592 NS	--
	Incorrect	63.6 %	46.2 %	42.7 %	33.3 %				
Item 2	Correct	100 %	90.0 %	98.8 %	66.7 %	8.56	3	.036 *	.077
	Incorrect	0 %	10.0 %	1.2 %	33.3 %				
Item 3	Correct	63.6 %	77.5 %	98.8 %	100 %	22.92	3	<.000**	.141
	Incorrect	36.4 %	22.5 %	1.2 %	0 %				
Item 4	Correct	81.8 %	75.0 %	90.2 %	100 %	5.73	3	.125 NS	--
	Incorrect	18.2 %	25.0 %	9.8 %	0 %				
Item 5	Correct	72.7 %	57.5 %	72.0 %	100 %	4.96	3	.175 NS	--
	Incorrect	27.3 %	42.5 %	28.0 %	0 %				
Item 6	Correct	25.0 %	60.5 %	76.8 %	100 %	12.46	3	.006**	.086
	Incorrect	75.0 %	39.5 %	23.2 %	0 %				
Item 7	Correct	12.5 %	44.4 %	86.1 %	100 %	35.02	3	<.000**	.216
	Incorrect	87.5 %	55.6 %	13.9 %	0 %				
Item 8	Correct	100 %	84.6 %	75.3 %	100 %	7.32	3	.062 NS	--
	Incorrect	0 %	15.4 %	24.7 %	0 %				
Item 9	Correct	80.0 %	74.4 %	82.7 %	33.3 %	4.09	3	.252 NS	--
	Incorrect	20.0 %	25.6 %	17.3 %	66.7 %				
Item 10	Correct	100 %	89.2 %	91.5 %	66.7 %	3.23	3	.358 NS	--
	Incorrect	0 %	10.8 %	8.5 %	33.3 %				
Item 11	Correct	80.0 %	85.0 %	93.9 %	100 %	4.07	3	.254 NS	--
	Incorrect	20.0 %	15.0 %	6.1 %	0 %				
Item 12	Correct	81.8 %	45.0 %	70.4 %	33.3 %	10.22	3	.017 *	.071
	Incorrect	18.2 %	55.0 %	29.6 %	66.7 %				
Item 13	Correct	81.8 %	97.5 %	96.3 %	100 %	3.66	3	.300 NS	--
	Incorrect	18.2 %	2.5 %	3.7 %	0 %				
Item 14	Correct	100 %	100 %	100 %	100 %	--	--	--	--
	Incorrect	0 %	0 %	0 %	0 %				
Item 15	Correct	45.5 %	75.0 %	92.6 %	100 %	17.11	3	.001**	.125
	Incorrect	54.5 %	25.0 %	7.4 %	0 %				

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

The comparison of both Chinese subgroups was made based on the number of correct answers, without making further considerations about any incorrect answers given. As can be seen in table 22, in general the subjects who have had immersion in Spain (6 months or more) show higher percentages of correct answers than Chinese participants who have not had immersion. However, the differences are not statistically significant with P>.05 in any of the cases.

Table 22. Chi2 test of association. Comparison between subgroups of the focus group with regards to percentage of correct answers to the drawings in Spanish

Answer to item / Subgroup		Chinese, NO immersion.	Chinese, WITH immersion.	Chi-squared test		
				Value	df	P
Item 1	Correct	84.7 %	87.5 %	0.09	1	.763 NS
	Incorrect	15.3 %	12.5 %			
Item 2	Correct	97.4 %	100 %	0.88	1	.347 NS
	Incorrect	2.6 %	0 %			
Item 3	Correct	93.2 %	100%	2.24	1	.134 NS
	Incorrect	6.8 %	0 %			
Item 4	Correct	97.3 %	100 %	0.85	1	.356 NS
	Incorrect	2.7 %	0 %			
Item 5	Correct	90.7 %	76.5 %	2.44	1	.118 NS
	Incorrect	9.3 %	23.5 %			
Item 6	Correct	93.4 %	100 %	2.03	1	.154 NS
	Incorrect	6.6 %	0 %			
Item 7	Correct	67.9 %	61.1 %	0.31	1	.575 NS
	Incorrect	32.1 %	38.9 %			
Item 8	Correct	70.8 %	72.2 %	0.02	1	.899 NS
	Incorrect	29.2 %	27.8 %			
Item 9	Correct	95.7 %	100 %	1.48	1	.223 NS
	Incorrect	4.3 %	0 %			
Item 10	Correct	95.7 %	100 %	1.47	1	.225 NS
	Incorrect	4.3 %	0 %			
Item 11	Correct	99.1 %	100%	0.29	1	.592 NS
	Incorrect	0.9 %	0 %			
Item 12	Correct	96.4 %	100 %	1.21	1	.271 NS
	Incorrect	3.6 %	0 %			
Item 13	Correct	90.4 %	100 %	1.88	1	.170 NS
	Incorrect	9.6 %	0 %			
Item 14	Correct	92.5 %	100 %	1.37	1	.241 NS
	Incorrect	7.5 %	0 %			
Item 15	Correct	100 %	100 %	--	--	--
	Incorrect	0 %	0 %			

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

Consequently, for the following analyses the subjects are considered as a single group exactly as in the previous comparison between the study group and the English-speaking control group.

The results of the comparison with the Spanish control group are given below, drawing by drawing, as in the previous analysis. The N of the focus group varies as in some cases no answer was given by the participant.

5.3.17 Spanish – Picture 1

There are two correct answers according to the control group: "encima de" (55.6%) and "sobre (44.4%). 85% of the participants in the study group gave one of these, although they gave the one which was least often mentioned by the Spanish group ("sobre"), this being the opposite of what was expected. In any case, the percentage of correct answers is lower than expected, and although the difference is not completely significant P>.05 (table 23) it can be regarded as nearly significant (P<.10) and indicative of a possible trend. Amongst the incorrect answers given, "debajo de" and "bajo" are those mentioned the most, although this is not significant (P>.05).

Table 23. Percentage of answers given. Comparison between groups. Spanish. Item 1 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=127)				Chi-squared test
Correct	100 %	Correct	85.0 %	Incorrect	15.0 %	Between groups: Chi^2=3.33 1 df P =.068 NS
Encima de	55.6 %	Encima de	39.4 %	Debajo de	5.5 %	Between incorrect options:
Sobre	44.4 %	Sobre	45.6	Bajo	5.5 %	Chi^2=5.21 3 df P =.157 NS
				En	3.1 %	
				Ante	0.9 %	

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.18 Spanish – Picture 2

For this image "bajo" (55.6%) was primarily accepted although "debajo de" (40.7%) was also acceptable. Amongst the Chinese group, almost 98% gave one of these two answers, with more giving the second one (table 24). The difference with the control group was not significant with P>.05. The few errors were equally spread across 3 misused terms.

Table 24. Percentage of answers given. Comparison between groups. Spanish. Item 2 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=133)				Chi-squared test	
Correct	100 %	Correct	97.7 %	Incorrect	2.3 %	Between groups: Chi²=1.12 1 df P =.290 ^{NS}	
Bajo	55.6 %	Bajo	30.1 %	Encima	0.8 %	Between incorrect options:	
Debajo de	40.7%	Debajo de	67.6 %	Dentro de	0.8 %		Chi²=0.00 2 df P =.999 ^{NS}
Verb Form	3.7 %	Verb Form	--	Delante	0.8 %		

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.19 Spanish – Picture 3

In this case, the term "encima de" (63%) was primarily accepted as a correct answer, although "sobre" (37%) was also accepted. The participants in the analysis group gave one of these answers in 94% of cases, in broadly similar numbers for each of them (table 25). The difference compared with what was expected is not statistically significant with P>.05. On examining the incorrect answers, there are none which stand out significantly (P>.05).

Table 25. Percentage of answers given. Comparison between groups. Spanish. Item 3 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=134)				Chi-squared test
Correct	100 %	Correct	94.0 %	Incorrect	6.0 %	Between groups: Chi²=0.67 1 df P =.414 NS
Encima de	63.0 %	Encima de	51.5 %	Bajo	2.3 %	Between incorrect options:
Sobre	37.0 %	Sobre	42.5 %	Arriba de	2.3 %	Chi²=0.67 2 df P =.717 NS
				Debajo de	1.4 %	

NS = not significant (p>.050)　　* Significant to 5%　　** Highly significant to 1%

5.3.20 Spanish – Picture 4

There are several correct answers for this drawing, a total of 4. The most frequently mentioned are "en" and a verb form. Almost 98% of the subjects in the Chinese study group gave one of the answers considered correct, so the difference with the control group is clearly not significant with P>.05 (table 26).

Table 26. Percentage of answers given. Comparison between groups. Spanish. Item 4 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=130)				Chi-squared test
Correct	100 %	Correct	97.7 %	Incorrect	2.3 %	Between groups: Chi²=0.00 1 df P =.980 NS
En	37.0 %	En	79.2 %	Encima de	2.3 %	
Verb Form	37.0 %	Verb Form	12.4 %			
En medio de	14.8 %	En medio de	3.8 %			
Sobre	11.1 %	Sobre	2.3 %			

NS = not significant (p>.050)　　* Significant to 5%　　** Highly significant to 1%

5.3.21 Spanish – Picture 5

Although there are various correct answers (5) according to the control group, the most frequently identified is "por". Around 90% of the study cases gave one of the valid answers, however the difference is not statistically significant with P>.05 (table 27). Amongst the incorrect answers it is not possible to detect any which stand out significantly with P>.05, although "debajo de" is the most common.

Table 27. Percentage of answers given. Comparison between groups. Spanish Item 5 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=136)				Chi-squared test
Correct	100 %	Correct	89.7 %	Incorrect	10.3 %	Between groups: Chi^2=0.67 1 df P =.414 NS
Por	48.1 %	Por	44.1 %	Debajo de	6.6 %	Between incorrect options:
Bajo	22.2 %	Bajo	5.1 %	Entre	3.7 %	Chi^2=1.14 1 df P =.285 NS
En	18.5 %	En	27.2 %			
A través de	7.4 %	A través de	1.5 %			
Dentro de	3.7 %	Dentro de	2.9 %			

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.22 Spanish – Picture 6

The correct answer given most often for this picture is "sobre" (77.8%). Practically 95% of the study subjects gave a correct response, with similar numbers for the two available possibilities (table 27). Although it is a lower rate than expected it cannot be said that the difference is statistically significant with P>.05. Amongst the few errors corresponding to incorrect answers an "a" principally stands out which, although it is not significant (P>.05), is on the threshold of being so (P<.10).

Table 28. Percentage of answers given. Comparison between groups. Spanish Item 6 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=122)				Chi-squared test
Correct	100 %	Correct	94.9 %	Incorrect	5.1 %	Between groups: Chi²=0.60 1 df P =.440 NS
Sobre	77.8 %	Sobre	49.6 %	A	4.9 %	Between incorrect options:
Encima de	22.2 %	Encima de	45.3 %	Entre	0.2 %	Chi²=3.57 1 df P =.059 NS

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.23 Spanish – Picture 7

For this image the most commonly accepted word is "detrás de" (63%). Only 67% of the subjects in the Chinese study group gave one of the answers considered correct, so the difference with regards to the expected control value can be confirmed as highly significant with P<.001 (table 29). On the other hand, amongst the answers which were not accepted there is one which was particularly common, "por" (20%), which was significantly more prevalent than the others (P<.01).

Table 29. Percentage of answers given. Comparison between groups. Spanish Item 7 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=125)				Chi-squared test
Correct	100 %	Correct	66.9 %	Incorrect	33.1 %	Between groups: Chi²=12.28 1 df P =.000**
Detrás de	63.0 %	Detrás de	3.7 %	Por	20.0 %	Between incorrect options:
Tras	33.3 %	Tras	63.2 %	A	12.0 %	Chi²=15.04 2 df P =.001**
Después de	3.7 %	Después de	--	En	1.1 %	

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.24 Spanish – Picture 8

The control group gave a wide range of possible answers for this drawing, although three were particularly common. Even so, only 69.4% of the study sample gave one of the correct answers, a rate which is logically significantly lower P<.01 (table 30) than that expected. Amongst the answers not accepted it is worth noting that one principally, and significantly (P<.001), stands out: "cerca de" (25%).

Table 30. Percentage of answers given. Comparison between groups. Spanish Item 8 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=124)				Chi-squared test	
Correct	100 %	Correct	69.4 %	Incorrect	30.6 %	Between groups: Chi^2=10.29 1 df P=.001**	
En	33.3 %	En	16.1 %	Cerca de	25.0 %	Between incorrect options:	
Al lado de	29.6%	Al lado de	21.0 %	Frente a	4.0 %		Chi^2=40.16 2 df P <.000**
Detrás de	25.9 %	Detrás de	22.6 %	Junto a	1.6 %		
Tras	7.4 %	Tras	7.2 %				
Alrededor de	3.7 %	Alrededor de	2.5 %				

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.25 Spanish – Picture 9

The preposition most commonly identified by the control group for this image is "en" (63%). A correct answer was given in 96.2% of cases by the Chinese study group, therefore the difference with what was expected is clearly not significant P>.05 (table 31). Amongst the few erroneous answers, none stand out (P>.05).

Table 31. Percentage of answers given. Comparison between groups. Spanish. Item 9 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=133)			Chi-squared test
Correct	100 %	Correct	96.2 %	Incorrect	3.8 %	Between groups: Chi²=0.17 1 df P =.677 NS
En	63.0 %	En	84.2 %	Entre	1.5 %	Between incorrect options:
Por	18.5 %	Por	7.5 %	Al	0.8 %	Chi²=0.60 3 df P =.896 NS
Sobre	18.5 %	Sobre	4.5 %	Encima de	0.8 %	
				Dentro de	0.8 %	

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.26 Spanish – Picture 10

In this case there are again several correct answers, in particular "bajo" (48%) and "debajo de" (44.4%). Slightly more than 96% of study subjects gave one of the correct answers, so the difference with regards to the control group is not statistically significant P>.05 (table 32). The few incorrect answers given were equally distributed (table 32).

Table 32. Percentage of answers given. Comparison between groups. Spanish. Item 10 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=134)			Chi-squared test
Correct	100 %	Correct	96.3 %	Incorrect	3.7%	Between groups: Chi²=0.17 1 df P =.680NS
Bajo	48.1 %	Bajo	64.1 %	Por	1.8 %	Between incorrect options:
Debajo de	44.4 %	Debajo de	23.1 %	Verb Form	1.8 %	Chi²=0.00 1 df P =.999 NS
Detrás de	3.7 %	Detrás de	--			
En	3.7 %	En	5.1 %			

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.27 Spanish – Picture 11

There are three valid prepositions for this drawing, and 99.3% of the subjects in the study gave one of them, so it is clear that the success rate is almost total and there cannot be any P>.05 significance (table 33).

Table 33. Percentage of answers given. Comparison between groups. Spanish. Item 11 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=135)			Chi-squared test
Correct	100 %	Correct	99.3 %	Incorrect 0.7 %	Between groups: Chi^2=0.00 1 df P >.999 [NS]
En	40.7 %	En	71.3 %	Debajo de 0.7 %	
Encima de	29.6 %	Encima de	6.0 %		
Sobre	29.6 %	Sobre	21.3 %		

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.28 Spanish – Picture 12

The most frequently used preposition here is "en", given by 85.2% of the Spanish controls. The Chinese study group gave one of the correct answers (table 34) in almost 97% of cases, so again the difference is not statistically significant with P>.05.

Table 34. Percentage of answers given. Comparison between groups. Spanish. Item 12 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=130)			Chi-squared test
Correct	100 %	Correct	96.9 %	Incorrect 3.1 %	Between groups: Chi^2=0.06 1 df P =.801 [NS]
En	85.2 %	En	77.0 %	Delante 0.8 %	Between incorrect options:
Sobre	7.4 %	Sobre	6.9 %	Entre 0.8 %	Chi^2=0.50 2 df P =.779 [NS]
Por	3.7 %	Por	12.3 %	Cerca de 1.5 %	
Encima de	3.7 %	Encima de	0.7 %		

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.29 Spanish – Picture 13

For this drawing the most frequently identified correct preposition is "en" (88.9%). In the study group, 92.5% of cases gave a correct answer, which while it is a lower rate than expected is not significant P>.05 (table 35). Amongst the small number of incorrect responses given, "encima de" is significantly more common.

Table 35. Percentage of answers given. Comparison between groups. Spanish Item 13 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=121)			Chi-squared test	
Correct	100 %	Correct	92.5 %	Incorrect 7.5 %	Between groups: Chi^2=1.24 1 df P =.265 NS	
En	88.9 %	En	82.6 %	Encima 5.8 %	Between incorrect options:	
Sobre	11.1 %	Sobre	9.9 %	Abajo de 0.7 %		Chi^2=8.00 2 df P =.018*
				Verb Form 0.7 %		

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.30 Spanish – Picture 14

Again, "en" is the answer given most often by the control group (96.3%), and the Chinese focus group gave one of the correct answers 93.5% of the time, which again while being a lower rate is not a significant difference with P>.05 (table 36). Amongst the incorrect answers given, "hacia" occurred significantly (P<.05) more often than the others (table 36).

Table 36. Percentage of answers given. Comparison between groups. Spanish. Item 14 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=123)			Chi-squared test	
Correct	100 %	Correct	93.5 %	Incorrect	6.5 %	Between groups: Chi^2=0.79 1 df P =.374 NS
En	96.3 %	En	89.4 %	Hacia	4.9 %	Between incorrect options:
Sobre	3.7 %	Sobre	4.1 %	A	0.8 %	Chi^2=6.25 2 df P =.044*
				Frente a	0.8 %	

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.31 Spanish – Picture 15

Finally, in the last drawing there were various options for the answer and 100% of the study group chose one of them (table 37).

Table 37. Percentage of answers given. Comparison between groups. Spanish. Item 15 Gap-filling picture task

Native Group (N=27)		Chinese Group (N=135)			Chi-squared test
Correct	100 %	Correct	100 %	Incorrect 0 %	--
Encima de	44.4 %	Encima de	14.8 %		--
Sobre	44.4 %	Sobre	48.1 %		
En	11.1 %	En	37.1 %		

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.3.32 Comparison by level of Spanish

The results of the performance observed in the previous 15 images will now be compared according to the level obtained in the language level test, in Spanish in this second case. As before, the hypothesis is that the number of correct answers should be related to

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the level of command of English and should increase where this command is greater. The results for the Chi-squared tests performed for all items are summarised in table 38. As can be seen, only three of the figures show a statistically significant relationship with at least $P<.05$, specifically:

Item 7: the percentage of correct answers clearly increases from the low level of command (25%) to the advanced level (100%) in a significant manner $P<.05$ albeit with a small effect size.

Item 10: in this case, the increase of the percentage of correct answers is smaller than in the previous case given that it is rising from rates of around 80-90% for the two lower levels of command to 100% in both higher levels. However, the presence of more cases in the higher categories with 100% correct answers confers more power on the $P<.01$ significance, and in fact the effect size is somewhat larger as well.

Item 14: In a similar way to the previous cases, as the level of command of Spanish increases an increase in the percentage of correct answers from 71.4% to 100% can be seen, a significant increase with $P<.01$ and a medium effect size.

In the other 12 items, the percentages of correct answers remain similar across the levels of command of Spanish (table 38), indicating the absence of a significant relationship ($P>.05$). It is worth noting that these rates are, in general, high.

In order to compare the overall performance in correctly producing answers in both languages, a total percentage of correct answers (any of them) was estimated for each Chinese participant from the total number of pictures answered by each of them (in some

cases, 15, for others, 14, 13, etc.). This way two numerical variables were created: the percentage of drawings with an acceptable response, in English and in Spanish. The statistical descriptions of them are presented in table 39. In the case of English a certain leftward skew can be seen with a significant (P<.05) but tolerable deviation from the normal Gauss bell curve (fig. 5.8), while in Spanish this deviation is much more striking, and so the significance is greater (P>.001) and therefore there is a clear departure from the mentioned model.

Table 38.Chi2 test of association. Relationship between correct/incorrect answer and level of command of English

Answer to item / Level of Spanish		Lower Int.	Intermediate	Upper Int.	Advanced	Chi-squared test			Effect size R^2
						Value	df	P	
Item 1	Correct	85.7 %	83.3 %	85.0 %	100 %	1.05	3	.788 NS	--
	Incorrect	14.3 %	16.7 %	15.0 %	0 %				
Item 2	Correct	100 %	97.2 %	97.6 %	100 %	0.55	3	.908 NS	--
	Incorrect	0 %	2.8 %	2.4 %	0 %				
Item 3	Correct	87.5 %	91.9 %	95.3 %	100 %	1.37	3	.712 NS	--
	Incorrect	12.5 %	8.1 %	4.7 %	0 %				
Item 4	Correct	100 %	94.4 %	98.8 %	100 %	2.22	3	.527 NS	--
	Incorrect	0 %	5.6 %	1.2 %	0 %				
Item 5	Correct	100 %	87.5 %	89.0 %	100 %	2.14	3	.543 NS	--
	Incorrect	0 %	12.5 %	11.0 %	0 %				
Item 6	Correct	100 %	100 %	91.5 %	100 %	5.65	3	.130 NS	--
	Incorrect	0 %	0 %	8.5 %	0 %				
Item 7	Correct	25.0 %	54.3 %	72.6 %	100 %	9.02	3	.029 *	.062
	Incorrect	75.0 %	45.7 %	27.4 %	0 %				
Item 8	Correct	40.0 %	66.7 %	73.2 %	100 %	4.60	3	.203 NS	--
	Incorrect	60.0 %	33.3 %	26.8 %	0 %				
Item 9	Correct	85.7 %	91.7 %	98.8 %	100 %	5.25	3	.154 NS	--
	Incorrect	14.3 %	8.3 %	1.2 %	0 %				
Item 10	Correct	83.3 %	89.5 %	100 %	100 %	11.64	3	.009**	.078
	Incorrect	16.7 %	10.5 %	0 %	0 %				
Item 11	Correct	100 %	100 %	98.8 %	100 %	0.89	3	.828 NS	--
	Incorrect	0 %	0 %	1.2 %	0 %				
Item 12	Correct	100 %	91.7 %	98.8 %	100 %	4.19	3	.242 NS	--
	Incorrect	0 %	8.3 %	1.2 %	0 %				
Item 13	Correct	85.7 %	90.9 %	92.3 %	100 %	0.86	3	.835 NS	--
	Incorrect	14.3 %	9.1 %	7.7 %	0 %				
Item 14	Correct	71.4 %	83.9 %	98.8 %	100 %	12.51	3	.006**	.104
	Incorrect	28.6 %	16.1 %	1.2 %	0 %				
Item 15	Correct	100 %	100 %	100 %	100 %	--	--	--	--
	Incorrect	0 %	0 %	0 %	0 %				

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

Table 39. Descriptive and exploratory analysis. Correct answers

Chinese Focus Group		N = 136	N = 136
	Variable	English drawings	Spanish drawings
Mean		81.05	91.30
95% CI	Upper level	79.15	89.85
	Lower level	82.95	92.74
Median		80.00	93.33
Minimum		53.33	58.33
Maximum		100	100
Standard Deviation		11.19	8.53
Interquartile Range		19.39	13.33
Asymmetry		-0.32	-1.05
Kurtosis		-0.46	1.22
P-value (KS test)		.014 *	<.000**

NS = not significant (p>,050)   * Significant at 5% slight deviation
** Highly significant at 1% major deviation

Figure 5.8. Box-plot diagram of correct answers for the English and Spanish drawings (Chinese focus group)
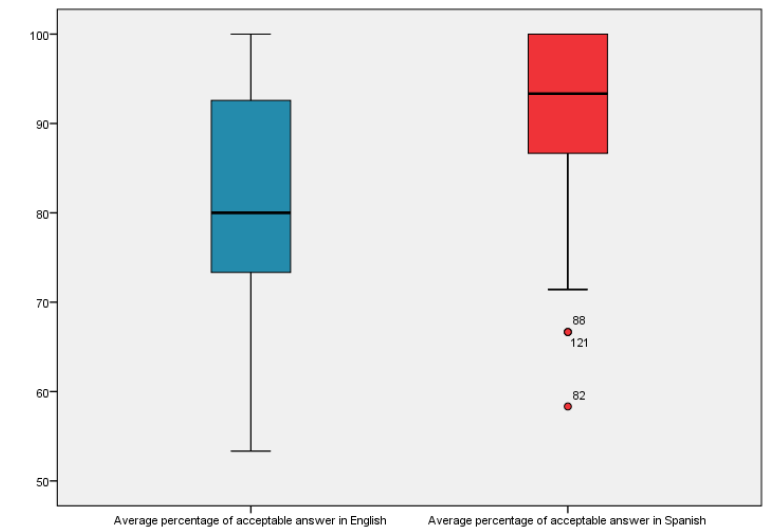
Prepared by the author using IBM SPSS Statistics 22

It can also be seen that in the overall performance for the drawings in English the mean is 81.05% ±11.19% correct answers within a range of 53.33% to 100% with a median of 80%. In contrast, in Spanish the mean increases to 91.30% ±8.53% within the range 58.33%-100% with a median of 93.33%. This seems to indicate a better performance (both mean and

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median) by the group when giving answers in Spanish. To check whether this difference is statistically significant the Student paired sample t-test was used (as they are the same subjects) and the results were compared with the alternative non-parametric Wilcoxon test given the lack of complete correspondence with the normal model. The results are displayed in table 40 and, as is shown by both statistical tests, the difference is highly significant with P<.001 and a very large effect size. This therefore confirms that in Spanish the production of correct answers is between 8.27% and 12.23% higher than in English with a confidence of 95%, even though it has been shown that the self-evaluated level of Spanish is lower than the level of English, and objectively the means for the level test are almost identical for both languages (see table 1).

Table 40. Difference of means test: Total percentage of correct answers (Chinese group N=136)

Variable /	Language	Mean (95% CI)	S.D.	T Student			Wilc. Test: P	95% CI diff.	Effect size	
				T	df	P			R^2	Cohen
% of correct answers	English Spanish	81.05 (79.15 – 82.95) 91.30 (89.85 – 92.74)	11.19 8.53	- 10.23	135	<.000**	<.000**	8.27 – 12.23	.661	1.20

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4 TASK 3: PROTOTYPE ELICITATION TASK

In this task the participants have to produce examples of use in the form of acceptable statements, both in English and in Spanish, for a list of words provided. The subjects were given 7 words, but 2 of these were a distraction and so only the 5 spatial particles are analysed. For each of the words studied (5 in English and 5 in Spanish) 5 phrases

are requested and each of these is evaluated as acceptable/unacceptable, and as literal/figurative. Furthermore, in the case of 2 of the Spanish particles, the final classification has an extra category, being divided into literal / figurative / homonyms.

From this data collection, the following statistical variables have been generated.

Number of correct sentences/statements (between 0 and 5)

Number of literal statements (0 – 5)

Number of figurative statements (0 – 5)

Number of homonymous statements (0 – 2)

The data analysis will be performed by contrasting the means of these variables between groups.

5.4.1.1 Comparison of focus group versus English native group

Firstly, an explanatory analysis was performed using the data collected for the different variables. Its results show notably skewed distributions for the majority of variables, in some cases to the right and in others to the left. Therefore, as in the previous part of the study, the significance of the differences will be examined with 2 alternative statistical tests: The Student (parametric) t-test which also enables estimates of the effect size if there is significance and the Mann-Whitney (non-parametric) test which is more efficient for non-normal variables. The results are presented separated by words for more clarity.

5.4.1.2 Over

Obviously, 100% of the phrases given by all members of the control group were acceptable, and so their mean is 5.00 with a standard deviation of 0. In the Chinese focus group the mean is 4.79 ±0.65 which although very high is somewhat lower. This difference is statistically significant with p<.001 in the Student test for unequal variances (T=3.72; 160 df; P<.000) but is not (P>.05) in the Mann-Whitney test (Z=1.94; P=.052) even though it is on the very limit of significance, and so it could be said that this test is nearly significant. As such I can conclude that the Chinese group's production is slightly worse for this preposition (95% CI: 0.10 -0.32) and the effect size is small (table 41). This explains the discrepancy existing between the statistical tests: the difference seems to exist, but in any case is very small.

With regards to the type of statement, the mean values for literal and for figurative ones do not display any significant difference with P>.05 in any of the statistical tests used.

Table 41. Difference of means test: Number of statements in the Prototype Elicitation Task: OVER

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R^2	Cohen
Acceptable statements	Chinese	135	4.79 (4.68 – 4.90)	0.65	-3.72	160	.000**	.052 NS	0.10 – 0.32	.080	0.488
	English	27	5.00	0.00							
Literal statements	Chinese	135	2.10 (1.91 – 2.30)	1.14	0.58	160	.564 NS	.589 NS	--	--	--
	English	27	1.96 (1.47 – 2.46)	1.26							
Figurative statements	Chinese	135	2.76 (2.56 – 2.96)	1.18	-1.12	160	.263 NS	.298 NS	--	--	--
	English	27	3.04 (2.54 – 3.53)	1.26							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

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5.4.1.3 Under

In a similar way to above (table 42) the mean of the Chinese study group is somewhat lower (4.82 ±0.56) than the mean (5) of the control group. The difference is statistically significant P<.001 according to the Student test for unequal variances (T=3.70; 161 df; P<.000) but not according to M-W P>.05 (Z=1.87; P=.062). According to this the production of acceptable phrases by the Chinese group could be slightly worse than expected in comparison with the control group, with a small effect size. For their part, the means do not show significant (P>.05) differences according to their type, literal and figurative (table 42).

Table 42. Difference of means test: Number of statements in the Prototype Elicitation Task: UNDER

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R^2	Cohen
Acceptable statements	Chinese	136	4.82 (4.73 – 4.92)	0.56	-3.70	161	<.000**	.062 NS	0.08 – 0.27	.078	0.483
	English	27	5.00	0.00							
Literal statements	Chinese	136	3.33 (3.10 – 3.56)	1.36	-1.32	161	.191 NS	.184 NS	--	--	--
	English	27	3.70 (3.20 – 4.20)	1.27							
Figurative statements	Chinese	136	1.51 (1.28 – 1.75)	1.39	0.76	161	.451 NS	.502 NS	--	--	--
	English	27	1.30 (0.80 – 1.80)	1.27							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4.1.4 Below

In this case differences have been observed which can be considered statistically significant with more grounds than in the previous ones. This is corroborated by the two statistical tests used (See table 43).

For the number of acceptable phrases, the mean of the Chinese group (4.37 ±1.30) is lower than the mean for the control group which is also below 5 (4.93 ±0.38) a difference which is highly significant according to the Student test P<.001 (T=4.18; 161 df; P<.000) and is at least significant P<.05 according to M-W (Z=2.50; P=.012). Therefore a reduction in correct answers of between 0.30 and 0.82 can be estimated with 95% confidence interval, albeit with an effect size which is only small.

With regards to the number of literal statements, the Chinese have a higher mean (2.97 ±1.41) than the native English-speakers (2.19 ±1.18). This is significant with P<.01 in both statistical tests (table 43). The estimated difference could be 1 phrase (95% CI: 0.21 – 1.36) although the effect size is small. In contrast, as is expected the number of figurative statements is lower in the Chinese group (1.49 ±1.27) than in the native control group (2.74 ±1.23), a difference which again is highly significant with P<.001 on both tests (table 43). The effect size - medium - is somewhat greater and the difference is estimated at around 1 or more phrases (95% CI: 0.73 to 1.78).

Table 43. Difference of means test: Number of statements in the Prototype Elicitation Task: BELOW

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R^2	Cohen
Acceptable statements	Chinese	136	4.37 (4.15 – 4.59)	1.30	-4.18	161	<.000**	.012 *	0.29 – 0.82	.100	0.559
	English	27	4.93 (4.77 – 5.00)	0.38							
Literal statements	Chinese	136	2.97 (2.73 – 3.21)	1.41	2.70	161	.008**	.006**	0.21 – 1.36	.043	0.326
	English	27	2.19 (1.72 – 2.65)	1.18							
Figurative statements	Chinese	136	1.49 (1.27 – 1.70)	1.27	-4.72	161	<.000**	<.000**	0.73 – 1.78	.122	0.644
	English	27	2.74 (2.26 – 3.23)	1.23							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4.1.5 Above

For this preposition, significant differences were found only (table 44) in the number of acceptable statements. As can be seen, the mean for the Chinese focus group (4.38 ±1.36) is again lower than the mean for the control group (4.89 ±0.19) with a difference which is significant according to the Student test with P<.001 (T=4.74; df; P<.000) and the MW test with P<.05 (Z=2.27; P=.023). With a medium effect size, the difference is slightly under 1 phrase (95% CI: 0.34 – 0.82). With regards to the type of statement, differences which can be considered significant P>.05 have not been found for literal or figurative phrases (table 44).

Table 44. Difference of means test: Number of statements in the Prototype Elicitation Task: ABOVE

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R^2	Cohen
Acceptable statements	Chinese	136	4.38 (4.15 – 4.61)	1.36	-4.74	161	<.000**	.023 *	0.34 – 0.82	.122	0.647
	English	27	4.96 (4.89 – 5.00)	0.19							
Literal statements	Chinese	136	2.88 (2.64 – 3.12)	1.41	-0.15	161	.880 NS	.909 NS	--	--	--
	English	27	2.93 (2.49 – 3.36)	1.11							
Figurative statements	Chinese	136	1.66 (1.45 – 1.87)	1.25	-1.45	161	.149 NS	.102 NS	--	--	--
	English	27	2.04 (1.61 – 2.47)	1.09							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4.1.6 In

With the last word in this group there is again a situation similar to the first ones. The mean production of the Chinese group (4.78 ±0.80) is slightly lower than that of the English native-speaker group (5). This difference is significant with P<.01 on the Student test (T=3.20; 161

df; P=002) but not on the MW alternative P>. (Z=1.74; P=.083) although it is near the limit and could be an indicator of differences. As such, the result raises doubts. If there are differences, these will in any case be minimal as the effect size is small (table 45). For the other two variables of the type of statement, significant P>.05 differences (table 45) have not been found.

Table 45. Difference of means test: Number of statements in the Prototype Elicitation Task: IN

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R^2	Cohen
Acceptable statements	Chinese	136	4.78 (4.64 – 4.92)	0.80	-3.20	161	.002**	.083 NS	0.08 – 0.36	.060	0.404
	English	27	5.00	0.00							
Literal statements	Chinese	136	2.90 (3.67 – 3.13)	1.36	0.28	161	.780 NS	.980 NS	--	--	--
	English	27	2.81 (2.19 – 3.44)	1.57							
Figurative statements	Chinese	136	1.96 (1.73 – 2.18)	1.33	0.80	161	.428 NS	.633 NS	--	--	--
	English	27	2.19 (1.56 – 2.81)	1.57							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4.2.1 Analysis based on English proficiency level

Having seen the previous conclusions, the Chinese group was divided according to level of command of English. The objective here is to determine whether there is evidence that with a higher level of English there is a greater rate of acceptable production and if this is greater for one type of phrase or another. To do this and given that for this factor 4 levels have been established, the Anova one-way test was chosen, followed by the Tukey post-hoc tests only where significant differences were found. Given the lack of normality of the variables, the results of this technique are compared with the alternative non-parametric Kruskal-Wallis test. Again, the results for each preposition will be displayed separately, for greater clarity.

5.4.2.2 Over

The results of all the tests mentioned are summarized in table 46. As can be seen in this table, there are only significant differences P<.001 for the number of acceptable statements, something which is detected with both statistical tests (Anova: F=7.37; P<.000) and the Kruskal-Wallis alternative (Chi2=16.54; P<.000). The mean values for the number of correct phrases increase as the level of English increases, although the post-hoc tests are only able to establish significance in the lower group (L.I.) and the two higher groups (U.I. and Advanced) with P<.000. The effect size is moderate.

Where differences which can be considered statistically significant P>.05 were found is in the type of statement, literal or figurative.

Table 46. Difference of means test: ANOVA. No. of statements in the Prototype Elicitation Task: OVER

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova			Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
					F value	df	P				
Correct	Lower I.	10	4.10 (3.72 – 4.48)	1.66							
	Int.	40	4.62 (4.44 – 4.81)	0.68	7.37	3; 131	<.000**	.125	.983	L.I. < U.I. P<.000*	<.000**
	Upper I.	82	4.95 (4.82 – -09)	0.67						L.I. <Adv. P<.000**	
	Adv.	3	5.00	0.00							
Literal	Lower I.	10	1.90 (1.19 – 2.61)	0.99							
	Int.	40	2.22 (1.87 – 2.58)	1.19	0.56	3; 131	.639 NS	--	--	--	.690 NS
	Upper I.	82	2.05 (1.80 – 2.30)	1.12							
	Adv.	3	2.67 (1.36 – 3.97)	1.53							
Figurative	Lower I.	10	2.20 (1.47 – 2.93)	1.23							
	Int.	40	2.55 (2.19 – 2.91)	1.20	1.99	3; 131	.118 NS	--	--	--	.097 NS
	Upper I.	82	2.94 (2.68 – 3.19)	1.13							
	Adv.	3	2.33 (1.01 – 3.66)	1.53							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4.2.3 Under

The results presented in table 47 indicate that for the three variables significant differences have been found of at least P<.05. More specifically:

For the number of acceptable statements the significance is with P<.001, both in Anova (F=12.06; P<.000) and in K-W (Chi2=24.19: P<.000). The effect size is medium-high. The Tukey post-hoc tests establish that the L.I. group has a production significantly lower than any of the other three (P<.000) who do not have significant differences between each other.

With regards to the type of phrase there is also significance. For literal ones with P<.05 in Anova (F=3.48; P=.018) and with P<.01 in KW (Chi2=11.78; P=003) with a small effect size. And for figurative phrases with P<.001 in both tests (Anova: F=8.70; P<.000 and KW: Z=28.28; P<.000) with a medium effect size. The Tukey a posteriori tests establish that in the two lower levels more literal phrases and fewer figurative ones are given, while in the two higher levels the opposite is true.

Table 47. Difference of means test: ANOVA. No. of statements in the Prototype Elicitation Task: UNDER

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova			Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
					F value	df	P				
Correct	Lower I.	11	4.00 (3.70 – 4.30)	1.18						L.I. < Int. P<.000**	
	Int.	40	4.78 (4.62 – 4.93)	0.62	12.06	3; 132	<.000**	.215	>.999	L.I. < U.I. P<.000*	<.000**
	Upper I.	82	4.95 (4.84 – 5.06)	0.22						L.I. <Adv. P<.000**	
	Adv.	3	5.00	0.00							
Literal	Lower I.	11	3.73 (2.94 – 4.52)	1.49						L.I. & Int. > U.I. & Adv.	
	Int.	40	3.82 (3.41 – 4.24)	1.43	3.48	3; 132	.018 *	.073	.768		.003**
	Upper I.	82	3.05 (2.76 – 3.34)	1.23						P<.05	
	Adv.	3	3.00 (1.49 – 4.51)	2.00							
Figurative	Lower I.	11	0.27 (0.00 – 1.04)	0.91						L.I. & Int. < U.I. & Adv.	
	Int.	40	0.98 (0.57 – 1.38)	1.40	8.70	3; 132	<.000**	.165	.994		<.000**
	Upper I.	82	1.93 (1.65 – 2.21)	1.24						P<.05	
	Adv.	3	2.00 (0.53 – 3.47)	2.00							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4.2.4 Below

As can be seen in table 48, significant differences with a very small effect size are found only for the number of acceptable phrases with P<.05 according to Anova (F=2.80; P=.043) and with P<.01 according to KW (Chi2=11.03; P=.004). It appears that the level of correct production increases as the level of English raises, however, the post-hoc tests are only able to establish significance between the L.I. group with less production and the two higher groups. With regards to the type of statement, significant P>.05 differences were not detected for the literal or figurative ones, although it is important to note that for the latter two there are indications (P<.10) that the L.I. group tends to produce fewer phrases of this type than any of the other level groups.

Table 48. Difference of means test: ANOVA. No. of statements in the Prototype Elicitation Task: BELOW

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova			Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
					F value	df	P				
Correct	Lower I.	11	3.55 (2.79 – 4.30)	1.51							
	Int.	40	4.15 (3.75 – 4.55)	1.49	2.80	3; 132	.043 *	.060	.663	L.I. < U.I. P=.046*	.004**
	Upper I.	82	4.56 (4.28 – 4.84)	1.13						L.I. <Adv. P=.049*	
	Adv.	3	5.00	0.00							
Literal	Lower I.	11	3.00 (2.15 – 3.85)	1.61							
	Int.	40	3.00 (2.55 – 3.45)	1.26	0.01	3; 132	.998 NS	--	--	--	.987 NS
	Upper I.	82	2.95 (2.64 – 3.26)	1.47							
	Adv.	3	3.00 (1.37 – 4.63)	1.73							
Figurative	Lower I.	11	0.73 (0.00 – 1.47)	1.10							
	Int.	40	1.28 (0.88 – 1.67)	1.09	2.50	3; 132	.063 NS	--	--	--	.072 NS
	Upper I.	82	1.67 (1.40 – 1.94)	1.32							
	Adv.	3	2.00 (0.57 – 3.43)	1.73							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4.2.5 Above

This preposition has results which are very similar to the previous ones. Statistical significance is only detected but with a small effect (table 49) in the number of phrases which are acceptable with P<.05 in Anova (F=5.46; P=.030) and with P<.01 according to KW (Chi2: 10.59; P=.005). Again it appears that the higher the level of English the more correct production, but post-hoc tests are only capable of establishing significance between the Lower Intermediate group and the two higher groups, with P<.05. With regards to the types of statements, no significant differences have been found with P>.05.

Table 49. Difference of means test: ANOVA. No. of statements in the Prototype Elicitation Task: ABOVE

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova			Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
					F value	df	P				
Correct	Lower I.	11	3.64 (2.84 – 4.43)	1.80							
	Int.	40	4.05 (3.63 – 4.47)	1.62	5.46	3; 132	.030 *	.066	.711	L.I. < U.I. P=.036* L.I. <Adv. P=.049*	.005 *
	Upper I.	82	4.62 (4.33 – 4.91)	1.11							
	Adv.	3	5.00	0.00							
Literal	Lower I.	11	2.55 (1.70 – 3.39)	1.75							
	Int.	40	2.88 (2.43 – 3.32)	1.59	0.48	3; 132	.868 NS	--	--	--	.784 NS
	Upper I.	82	2.93 (2.61 – 3.24)	1.27							
	Adv.	3	3.00 (1.38 – 4.62)	1.73							
Figurative	Lower I.	11	1.09 (0.34 – 1.84)	1.22							
	Int.	40	1.58 (1.18 – 1.97)	1.39	1.72	3; 132	.354 NS	--	--	--	.160 NS
	Upper I.	82	1.77 (1.50 – 2.04)	1.17							
	Adv.	3	2.00 (0.57 – 3.43)	1.73							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4.2.6 In

The results are summarised in table 50. According to Anova there are no significant P>.05 differences in the number of acceptable phrases. Nonetheless, the alternative KW test

does detect them with P<.05 (Chi2=9.00; P=.011) so that the L.I. level subjects would have lower production than any of the other groups. Where significant differences are present is in the type of statement. In particular for literal phrases with P<.01 in both statistical tests (Anova: F=4.76; P=.004 and KW: Chi2=13.14; P=.001) the mean is greater in the intermediate group than in the others. Logically for figurative statements it should be the opposite, with P<.01 again in both tests (Anova: F=5.58; P=.001 and KW: Chi2=15.18; P=.001) these same subjects have a lower mean, although only in comparison with the two higher level groups.

Table 50. Difference of means test: ANOVA. No. of statements in the Prototype Elicitation Task: IN

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova			Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
					F value	df	P				
Correct	Lower I.	11	4.19 (3.71 – 4.65)	1.33							
	Int.	40	4.75 (4.50 – 5.00)	0.93	2.51	3; 132	.061 ^{NS}	--	--	--	.011 *
	Upper I.	82	4.87 (4.69 – 5.00)	0.62							
	Adv.	3	5.00	0.00							
Literal	Lower I.	11	2.54 (1.77 – 3.23)	1.57							
	Int.	40	3.55 (3.14 – 3.96)	1.15	4.76	3; 132	.004**	.098	.893	Int. > (L.I. & U.I. & Adv.) P<.05	.001**
	Upper I.	82	2.63 (2.35 – 2.92)	1.34							
	Adv.	3	2.67 (1.18 – 4.16)	1.16							
Figurative	Lower I.	11	1.64 (0.88 – 2.39)	1.12							
	Int.	40	1.32 (0.93 – 1.72)	1.14	5.58	3; 132	.001**	.113	.938	Int. < (U.I. & Adv.) P<.05	.001**
	Upper I.	82	2.29 (2.02 – 2.57)	1.34							
	Adv.	3	2.33 (0.89 – 3.78)	1.16							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4.3.1 Comparison of focus group versus Spanish native group

The analysis continues, repeating the same study but with the cartoon drawings in Spanish and, obviously, comparing with the Spanish-native control group.

An initial explanatory analysis was performed with the data collected for the different variables. Similarly to what happened in the previous analyses notably skewed distributions appear for a good number of the variables, some towards the right and others to the left. As a result, the statistical study will again be approached with a double analysis using parametric tests and their non-parametric alternatives.

It is again important to remember that in the Chinese group there is a small subgroup (18 cases) of subjects with linguistic immersion in this language. Therefore, it will first be determined whether there is a difference between the focus group members with/without immersion, and then depending on this result comparisons will be made between one or other group and the control group.

Table 51 summarises the statistical tests of the Chinese groups with/without immersion in all variables for all the prepositions. As can be seen the results of both statistical tests are very similar. Significant (P>.05) differences owing to linguistic immersion in Spanish have not been detected, with one exception. In the figurative use of the preposition "bajo", with P<.01 the results indicate that the Chinese with linguistic immersion have a tendency to produce more statements of this type.

These results, despite the exception mentioned, lead to the conclusion that for the comparison with the native-Spanish control group it is not necessary to divide the subjects from the focus group depending on whether or not they have had immersion in Spanish. Therefore, for the following analyses the Chinese subjects will be considered as single group, as in the previous comparison with the English native-speakers.

Table 51. Difference of means test: Number of statements in the Prototype Elicitation Task

Preposition / Variable / Group			N	Mean (95% CI)	S.D.	T Student			MW test:
						T	df	P	P
Encima	Correct	Ch. WITH immersion	18	4.61 (4.10 – 5.00)	0.70	0.49	134	.622 NS	.868 NS
		Ch. NO immersion	118	4.47 (4.18 – 4.67)	1.14				
	Literal	Ch. WITH immersion	18	3.83 (3.18 – 4.49)	1.25	1.49	134	.139 NS	.138 NS
		Ch. NO immersion	118	3.31 (3.05 – 3.56)	1.42				
	Figurative	Ch. WITH immersion	18	1.17 (0.60 – 1.74)	1.25	-0.45	134	.656 NS	.617 NS
		Ch. NO immersion	118	1.31 (1.08 – 1.53)	1.22				
Bajo	Correct	Ch. WITH immersion	18	4.94 (4.49 – 5.00)	0.24	1.67	134	.097 NS	.091 NS
		Ch. NO immersion	118	4.53 (4.36 – 4.71)	1.04				
	Literal	Ch. WITH immersion	18	1.94 (1.28 – 2.60)	1.16	-0.23	134	.821 NS	.870 NS
		Ch. NO immersion	118	2.03 (1.77 – 2.28)	1.45				
	Figurative	Ch. WITH immersion	18	1.67 (1.20 – 2.14)	1.24	3.50	134	.001**	.002**
		Ch. NO immersion	118	0.77 (0.59 – 0.96)	0.97				
	Homonyms	Ch. WITH immersion	18	1.39 (0.74 – 2.03)	1.14	-1.19	134	.237 NS	.227 NS
		Ch. NO immersion	118	1.80 (1.55 – 2.06)	1.42				
Sobre	Correct	Ch. WITH immersion	18	4.89 (4.46 – 5.00)	0.32	1.20	134	.234 NS	.341 NS
		Ch. NO immersion	118	4.61 (4.44 – 4.78)	0.98				
	Literal	Ch. WITH immersion	18	1.78 (1.23 – 2.33)	0.88	0.79	134	.432 NS	.250 NS
		Ch. NO immersion	118	1.54 (1.33 – 1.78)	1.22				
	Figurative	Ch. WITH immersion	18	2.72 (2.18 – 3.27)	0.67	-0.45	134	.653 NS	.461 NS
		Ch. NO immersion	118	2.86 (2.64 – 3.07)	1.23				
	Homonyms	Ch. WITH immersion	18	0.50 (0.24 – 0.76)	0.62	1.28	134	.495 NS	.183 NS
		Ch. NO immersion	118	0.32 (0.22 – 0.42)	0.54				
Debajo	Correct	Ch. WITH immersion	18	4.50 (3.92 – 5.00)	0.86	0.74	131	.462 NS	.830 NS
		Ch. NO immersion	115	4.27 (4.04 – 4.50)	1.28				
	Literal	Ch. WITH immersion	18	4.44 (3.86 – 5.00)	0.86	1.17	131	.243 NS	.382 NS
		Ch. NO immersion	115	4.07 (3.84 – 4.30)	1.31				
	Figurative	Ch. WITH immersion	18	0.50 (0.16 – 0.84)	0.86	1.59	131	.415 NS	.467 NS
		Ch. NO immersion	115	0.35 (0.21 – 0.48)	0.71				
En	Correct	Ch. WITH immersion	18	4.94 (4.67 – 5.00)	0.24	1.35	134	.179 NS	.162 NS
		Ch. NO immersion	118	4.75 (4.64 – 4.85)	0.62				
	Literal	Ch. WITH immersion	18	2.61 (1.98 – 3.24)	1.50	-1.18	134	.239 NS	.219 NS
		Ch. NO immersion	118	3.02 (2.77 – 3.27)	1.33				
	Figurative	Ch. WITH immersion	18	2.39 (1.75 – 3.03)	1.50	1.58	134	.116 NS	.112 NS
		Ch. NO immersion	118	1.84 (1.59 – 2.09)	1.35				

NS = not significant (p>,050)   * Significant to 5%   ** Highly significant to 1%

Once again, the results are displayed separately, word by word, for greater clarity.

5.4.3.2 Encima

Table 52 shows the first results. The presence of statistically significant differences has been observed with P<.001 according to the Student test (T=5.44; 161 df; P<.000) and with P<.01 according to MW (Z=2.84; P=.005) in the number of acceptable statements, production by the Chinese participants being lower than that by the Spanish control group with a medium effect size. With regards to the type of statement, the parametric test has detected significant differences with P<.05 but they are not corroborated by the parametric test (P>.05) so they cannot be considered as any more than a possible indicator. In this case the Spanish made more literal use of this preposition. In contrast, in its figurative use, no significant differences (P>.05) were found by either test.

Table 52. Difference of means test: Number of statements in the Prototype Elicitation Task: ENCIMA

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R^2	Cohen
Acceptable statements	Chinese	136	4.49 (4.31 – 4.68)	1.09	-5.44	161	<.000**	.005**	0.32 – 0.69	.155	0.757
	Spanish	27	5.00	0.00							
Literal statements	Chinese	136	3.38 (3.14 – 3.61)	1.41	-2.50	161	.015 *	.189 NS	0.10 – 0.86	.034	0.294
	Spanish	27	3.85 (3.55 – 4.16)	0.77							
Figurative statements	Chinese	136	1.29 (1.08 – 1.49)	1.22	0.76	161	.448 NS	.950 NS	--	--	--
	Spanish	27	1.15 (0.84 – 1.45)	0.77							

NS = not significant (p>.050)　　* Significant to 5%　　** Highly significant to 1%

5.4.3.3 Bajo

The results for this preposition are summarised in table 53. Statistically significant differences in the number of acceptable phrases produced were found, with P<.001 (T=4.91;

161 df; P<.000) and with P<.05 (Z=2.51; P=12) with the mean of the Chinese group being lower than that of the control group, and with a medium effect size, as is habitual.

With regard to the types, significant differences with P<.05 were only found in both test (Student: T=2.48; 161 df; P=.014; MW: Z=2.43; P=.015) in the number of figurative statements. With a small effect size it was found that the mean is greater in the Chinese group than in the Spanish control group. In the other types, literal and homonyms, P>.05 significance has not been found.

Table 53. Difference of means test: Number of statements in the Prototype Elicitation Task: BAJO

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R^2	Cohen
Correct statements	Chinese	136	4.59 (4.42 – 4.75)	0.98	-4.91	161	<.000**	.012 *	0.25 – 0.58	013	0.674
	Spanish	27	5.00	0.00							
Literal statements	Chinese	136	2.01 (1.78 – 2.25)	1.41	-1.60	161	.122 NS	.053 NS	--	--	--
	Spanish	27	2.48 (1.99 – 2.98)	1.25							
Figurative statements	Chinese	136	0.89 (0.71 – 1.07)	1.05	2.48	161	.014 *	.015 *	.11 -.93	.037	0.291
	Spanish	27	0.37 (0.12 – 0.62)	0.63							
Homonym statements	Chinese	136	1.75 (1.51 – 1.99)	1.39	-1.40	161	.165 NS	.172 NS	--	--	--
	Spanish	27	2.15 (1.69 – 2.61)	1.17							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4.3.4 Sobre

The results for this word are summarised in table 54. Highly significant differences with p<.001 were found in both statistical tests. Specifically, for the number of acceptable phrases production by the Chinese group is lower with P<.001 in the Student test (T=4.46; 161 df; P<.000) and with P<.05 in MW (Z=2.41; P=016). The effect size is medium.

With regard to the type of statement, there is also significance with P<.001 for the three types and both statistical tests. Production by the Chinese group is greater in the figurative type (T=8.52; 161 df; P<.000 and Z=6.78; P<.000) with a large effect size; and in contrast the production is smaller for literal statements (T=5.18; 161 df; P<.000 and Z=4.79; P<.000) with a medium effect size, and in the homonym utterances (T=5.39; 161df; P<.000 and Z=5.61; P<.000) with a medium effect size again.

Table 54. Difference of means test: Number of statements in the Prototype Elicitation Task: SOBRE

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R^2	Cohen
Acceptable statements	Chinese	136	4.65 (4.49 – 4.80)	0.92	-4.46	161	<.000**	.016 *	0.20 – 0.51	.110	0.603
	Spanish	27	5.00	0.00							
Literal statements	Chinese	136	1.57 (1.37 – 1.77)	1.18	-5.18	161	<.000**	<.000**	0.79 – 1.77	.143	0.716
	Spanish	27	2.85 (2.40 – 3.30)	1.13							
Figurative statements	Chinese	136	2.84 (2.64 – 3.04)	1.17	8.52	161	<.000**	<.000**	1.55 – 2.49	.311	1.243
	Spanish	27	0.81 (0.47 – 1.16)	0.88							
Homonym statements	Chinese	136	0.35 (0.25 – 0.44)	0.55	-5.39	161	<.000**	<.000**	0.61 – 1.36	.153	0.750
	Spanish	27	1.33 (0.97 – 1.70)	0.92							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4.3.5 Debajo

With this preposition statistical significance with P<.001 has been found in the Student test (T=6.55, 158 df; P<.000) and with P<.01 in the MW alternative (Z+3.39; P=.001) in the number of correct utterances, the production of the Chinese focus group being smaller, with moderate-high effect sizes (table 55). In this type of phrase, no differences which can be considered statistically significant (P>.05) were found.

Table 55. Difference of means test: Number of statements in the Prototype Elicitation Task: DEBAJO

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R²	Cohen
Acceptable statements	Chinese	133	4.30 (4.09 – 4.51)	1.23	-6.55	158	<.000**	.001**	0.49 – 0.91	.210	0.932
	Spanish	27	5.00	0.00							
Literal statements	Chinese	133	4.12 (3.90 – 4.34)	1.26	-1.59	158	.114 NS	.253 NS	--	--	--
	Spanish	27	4.52 (4.24 – 4.80)	0.70							
Figurative statements	Chinese	133	0.37 (0.24 – 0.49)	0.73	-0.74	158	.448 NS	.288 NS	--	--	--
	Spanish	27	0.48 (0.20 – 0.76)	0.70							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4.3.6 En

Table 56 displays a summary of the results for this preposition. As can be seen, significant differences were found for all three variables with both statistical tests. In the number of acceptable phrases the production by the Chinese group is lower than that of the control group with P<.001 in the Student test (T=4.56; 161 df; P<.000) and with P<.05 in MW (Z=2.29; P=022). The effect size is medium.

With regard to the type, the number of literal utterances is significantly lower in the Chinese group with P<.01 in both tests (T=3.54; 161 df; P=.001; and Z=3.45; P=.001) with a small effect size; and at the same time, the number of figurative utterances is significantly higher in the Chinese focus group with P.<01 on both tests (T=3.05 161 df; P=.003), again with a small effect size.

Table 56. Difference of means test: Number of statements in the Prototype Elicitation Task: EN

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R^2	Cohen
Acceptable statements	Chinese	136	4.77 (4.67 – 4.87)	0.58	-4.56	161	<.000**	.022 NS	0.13 – 0.33	114	0.619
	Spanish	27	5.00	0.00							
Literal statements	Chinese	136	2.96 (2.73 – 3.19)	1.36	-3.54	161	.001**	.001**	0.44 – 1.56	072	0.458
	Spanish	27	3.96 (3.47 – 4.46)	1.26							
Figurative statements	Chinese	136	1.91 (1.68 – 2.15)	1.38	3.05	161	.003**	.003**	0.31 – 1.44	055	0.381
	Spanish	27	1.04 (0.54 – 1.53)	1.26							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4.4.1 Analysis based on Spanish proficiency level

Having finished this comparison, and as before, the analysis continues by dividing the Chinese group depending on their command of Spanish according to the level test. As is obvious, this is to determine whether there is evidence that with a higher level there is a greater quantity of acceptable production and if this is greater for one type of phrase or another. This will be measured using the Anova one-way test followed by the Tukey post-hoc test only when significant differences are found. Given how the variables differ from the normal model the results of this technique are compared using the non-parametric alternative (Kruskal-Wallis).

Again, the results for each preposition will be displayed separately, for greater clarity.

5.4.4.2 Encima

The results are summarised in table 57 and, it shows statistically significant (P>.05) results have not appeared. As such, the production for this preposition does not depend on the level of command of Spanish of the participants in the Chinese focus group.

Table 57. Difference of means test: ANOVA. No. of statements in the Prototype Elicitation Task: ENCIMA

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova			Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
					F value	df	P				
Correct	Lower I.	8	4.13 (3.36 – 4.89)	1.46							
	Int.	38	4.60 (4.25 – 4.96)	1.03	0.48	3; 131	.701 NS	--	--	--	.448 NS
	Upper I.	86	4.46 (4.23 – 4.70)	1.10							
	Adv.	3	4.67 (3.41 – 5.92)	0.58							
Literal	Lower I.	8	2.25 (1.28 – 3.22)	1.83							
	Int.	38	3.29 (2.84 – 3.74)	1.33	2.02	3; 131	.114 NS	--	--	--	.100 NS
	Upper I.	86	3.50 (3.20 – 3.80)	1.35							
	Adv.	3	3.33 (1.75 – 4.92)	2.08							
Figurative	Lower I.	8	2.12 (1.28 – 2.97)	1.64							
	Int.	38	1.37 (0.98 – 1.76)	1.24	1.67	3; 131	.176 NS	--	--	--	.204 NS
	Upper I.	86	1.17 (0.92 – 1.43)	1.13							
	Adv.	3	1.67 (0.28 – 3.05)	2.08							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4.4.3 Bajo

The analyses of this preposition are summarised in table 58. Statistically significant differences with P<.05 were not found between the groups by either of the two statistical procedures employed.

Table 58. Difference of means test: ANOVA. No. of statements in the Prototype Elicitation Task: BAJO

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova			Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
					F value	df	P				
Correct	Lower I.	8	4.12 (3.44 – 4.81)	1.46							
	Int.	38	4.47 (4.16 – 4.79)	1.06	1.17	3; 131	.323 NS	--	--	--	.236 NS
	Upper I.	86	4.67 (4.47 – 4.88)	0.90							
	Adv.	3	5.00	0.00							
Literal	Lower I.	8	1.50 (0.52 – 2.48)	1.51							
	Int.	38	1.90 (1.44 – 2.35)	1.56	0.83	3; 131	.480 NS	--	--	--	.188 NS
	Upper I.	86	2.12 (1.82 – 2.42)	1.33							
	Adv.	3	1.33 (0.00 – 2.94)	1.16							
Figurative	Lower I.	8	0.75 (0.01 – 1.49)	1.04							
	Int.	38	0.76 (0.42 – 1.10)	1.00	0.81	3; 131	.491 NS	--	--	--	.635 NS
	Upper I.	86	0.93 (0.71 – 1.16)	1.07							
	Adv.	3	1.67 (0.46 – 2.88)	1.53							
Homonyms	Lower I.	8	1.88 (0.90 – 2.85)	1.55							
	Int.	38	1.84 (1.39 – 2.29)	1.46	0.13	3; 131	.943 NS	--	--	--	.868 NS
	Upper I.	86	1.71 (1.41 – 2.01)	1.36							
	Adv.	3	2.00 (0.40 – 3.60)	1.00							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4.4.4 Sobre

These results are summarised in table 59. Significant differences have appeared for all variables except the literal category (P<.05, for this type). Therefore, with regard to the number of acceptable phrases, there is significance with P>.001 in Anova (F=7.32; P<.000) and with P<.05 (Chi2=8.63; P=.013) in the Kruskal-Wallis alternative. The effect size is medium. The post-hoc Tukey tests establish the relationships between groups from the intermediate to advanced levels (P>.05) which all produce more phrases than the participants in the lower intermediate group (with P<.05).

With regard to the type of phrase, while it has already been stated that there are no differences for the literal statements, there are for the other two types. With the figurative phrases, differences were found with P<.05 in Anova (F=2.86; P=.039) which the KW

alternative was not able to detect (P>.05), although by a very small margin (Chi2=5.71; P=.058). This is because the significance is only visible for the group with most figurative utterances (the A.I. group) and the group with the lowest mean value (the L.I. group); the significance cannot be confirmed with the other groups. With regards to the homonym utterances, there is significance with P<.05 in Anova (F=3.50; P=.017) which is confirmed by KW with P<.05 again (Chi2=6.74; P=034). According to the Tukey a posteriori test the subjects from the intermediate to L.I. levels form one single sub-group without differences between them (P>.05) whose means are significantly lower, for this variable (P<.05) than the advanced level cases. The U.I. group falls between the two but does not have a significant relationship with one or the other.

Table 59. Difference of means test: ANOVA. No. of statements in the Prototype Elicitation Task: SOBRE

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova			Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
					F value	df	P				
Correct	Lower I.	8	3.38 (2.77 – 3.98)	2.07							
	Int.	38	4.50 (4.22 – 4.78)	1.13	7.32	3; 131	<.000**	.144	.982	L.I. < (Int. & U.I. & Adv.) P<.05	.013 *
	Upper I.	86	4.83 (4.64 – 5.00)	0.49							
	Adv.	3	4.67 (3.68 – 5.00)	0.58							
Literal	Lower I.	8	2.00 (1.17 – 2.83)	1.20							
	Int.	38	1.68 (1.30 – 2.06)	1.58	0.64	3; 131	.589 NS	--	--	--	.453 NS
	Upper I.	86	1.49 (1.24 – 1.74)	0.96							
	Adv.	3	1.33 (0.00 – 2.69)	1.53							
Figurative	Lower I.	8	1.88 (1.07 – 2.68)	1.73							
	Int.	38	2.66 (2.29 – 3.03)	1.46	2.86	3; 131	.039 *	.061	.673	L.I. < U.I. P<.05	.058 NS
	Upper I.	86	3.01 (2.77 – 3.26)	0.93							
	Adv.	3	2.67 (1.35 – 3.98)	0.58							
Homonyms	Lower I.	8	0.00	0.00							
	Int.	38	0.24 (0.06 – 0.41)	0.49	3.50	3; 131	.017 *	.074	.769	Adv. > (Int. & U.I,) P<.05	.034 *
	Upper I.	86	0.41 (0.29 – 0.52)	0.56							
	Adv.	3	1.00 (0.39 – 161)	1.00							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4.4.5 Debajo

These results are shown in table 60. It was found that for the number of acceptable words there are statistically significant differences with P<.01 in both Anova (F=4.79; P=.003) and KW (Chi2=9.32; P=.009) and a medium effect size. The Tukey post-hoc tests determine the connection in a group of the participants with levels from Intermediate to Advanced (P>.05) who have significantly higher means (P<.05) than the L.I. cases.

With regard to the type of phrase, there is also significance P<.01 according to Anova (F=3.98; P=.009) and with P<.05 according to KW (Chi2=8.04; P=.018) with a medium-low effect size for literal statements. Tukey only detected this significance (P<.01) between the L.I. group with the smaller mean and the U.I. group with the larger mean; there should also be significance with the Advanced group, but this could not be statistically proven due to the small number of subjects in this group. Finally, differences that can be described as statistically significant with P<.05 were not found in the number of figurative phrases.

Table 60. Difference of means test: ANOVA. No. of statements in the Prototype Elicitation Task: DEBAJO

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova			Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
					F value	df	P				
Correct	Lower I.	8	2.88 (2.05 – 3.70)	1.64							
	Int.	37	4.19 (3.80 – 4.57)	1.47	4.79	3; 128	.003**	.101	.894	L.I. < (Int. & U.I. & Adv.) P<.05	.009**
	Upper I.	84	4.45 (4.20 – 4.71)	1.00							
	Adv.	3	5.00	0.00							
Literal	Lower I.	8	2.88 (2.02 – 3.73)	1.64							
	Int.	37	3.89 (3.49 – 4.29)	1.47	3.98	3; 128	.009**	.085	.826	L.I. < U.I. P<.01	.018 *
	Upper I.	84	4.33 (4.06 – 4.59)	1.06							
	Adv.	3	4.33 (2.94 – 5.73)	1.16							
Figurative	Lower I.	8	0.00	0.00							
	Int.	37	0.35 (0.11 – 0.59)	0.68	0.91	3; 128	.440 NS	--	--	--	.184 NS
	Upper I.	84	0.40 (0.25 – 0.56)	0.78							
	Adv.	3	0.67 (0.00 – 1.50)	1.16							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.4.4.6 En

Finally, the results for this preposition can be seen in table 61. As it shows, in the number of acceptable words the Anova test does detect significant differences with P<.05 (F=3.89; P=.011) and a medium-small effect size. Nonetheless, with the KW alternative these differences are not significant with P>.05. As such the results should be treated with caution. They could indicate a significance such that the participants in the L.I. group would have a lower mean than any of the other groups.

With regard to the type, there is no significant difference in literal phrases (P>.05 on both tests) but there is one for figurative phrases (P<.05 in both: F=2.86; P=.039, and Chi2=8.61; P=.013) although the effect size is small. In fact the post-hoc Tukey tests only detect a significant relationship between the lowest mean of all (the L.I. cases) and the highest mean (Advanced) with P<.05.

Table 61. Difference of means test: ANOVA. No. of statements in the Prototype Elicitation Task: EN

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova			Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
					F value	df	P				
Correct	Lower I.	8	4.13 (3.73 – 4.52)	1.46							
	Int.	37	4.76 (4.58 – 4.94)	0.54	3.89	3; 131	.011 *	.082	.817	L.I. < (Int. & U.I. & Adv.) P<.05	.187 NS
	Upper I.	84	4.83 (4.71 – 4.95)	0.44							
	Adv.	3	5.00	0.00							
Literal	Lower I.	8	3.25 (2.31 – 4.19)	1.28							
	Int.	37	3.24 (2.80 – 3.67)	1.42	1.09	3; 131	.355 NS	--	--	--	.158 NS
	Upper I.	84	2.80 (2.51 – 3.09)	1.32							
	Adv.	3	2.67 (1.12 – 4.21)	1.53							
Figurative	Lower I.	8	0.88 (0.00 – 1.82)	1.13							
	Int.	37	1.66 (1.23 – 2.09)	1.44	2.86	3; 131	.039 *	.061	.674	L.I. < Adv. P<.05	.013 *
	Upper I.	84	2.13 (1.84 – 2.42)	1.32							
	Adv.	3	2.33 (0.80 – 3.87)	1.53							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5 TASK 4: TRUTH VALUE JUDGEMENT TASK

In this final task, the participants are given a set of 70 brief stories (10 of which are distractors; the other 60 are the ones which can be analysed) followed by a phrase. Each subject has to evaluate the adequacy/acceptability of the phrase in relation to the story previously presented using a four-point Likert scale. The values of this scale run from 1: unacceptable, to 4: acceptable. Each statement is previously classified into one of these four groups:

−   Acceptable Literal
−   Unacceptable Literal
−   Acceptable Figurative
−   Unacceptable Figurative

Amongst the 60 items which can be analysed there are 12 for each group: 3 of each for the 4 groups mentioned above. For this purpose, the values assigned to the 3 items from the same group are grouped according to the average points-value assigned to them, thus generating 4 variables (AL, UL, AF and UF) for each of the five prepositions; both in English and in Spanish. Consequently there will be a total of 20 quantitative variables. The calculation is performed as an average due to the lack of answers to some of the items by some of the subjects, meaning that simply adding the answers would introduce errors. Therefore, this way the resultant values are still on the same 4 point scale used for preparing the answers.

The objective of this analysis is to determine, in the same way as above, the existence of differences between the Chinese focus group and each of the native groups, and after that whether the level of knowledge of the language has an effect or not. To do so statistical means difference tests will be used as in the previous task.

5.5.1.1 Comparison of focus group versus English native

The exploratory analysis of the data for the variables constructed once again shows markedly skewed distributions for most variables. Therefore, as in the previous parts of this work, the significance of the differences will be examined using two alternative statistical tests: the Student t-test (parametric) and the Mann-Whitney test (non-parametric). It is perhaps worth noting here that the results were very similar on all the comparisons performed.

The results are presented below, separated by preposition for more clarity. As the value of the mean increases, the items suggested are more acceptable.

5.5.1.2 Over

Differences which can be considered statistically significant have been found in 3 of the 4 variables compared (see table 62). The only one in which they are not present is Acceptable Literal where the means are practically identical ($P>.05$). Specifically, for the others:

In Acceptable Figurative the mean of the native control group (3.51 ±0.48) is significantly higher with P<.01 in Student (T=3.29; 161 df; P=001) and with P<.001 on the Mann-Whitney alternative (Z=3.60; P<.000) than the mean of the participants from the Chinese focus group (3.13 ±0.55). The difference is estimated to be between 0.15 and 0.60 with a confidence of 95% and a small effect size.

But, in contrast, for the Unacceptable Literal and Unacceptable Figurative variants the mean of the Chinese subjects is higher. In the case of UL, the Chinese have a mean of 3.10 ±0.57, significantly higher with P<.01 (Student: T=3.34; 161 df; P=.002; MW: Z=3.33; P=.001) than that of the control cases (2.56 ±0.81), the effect size being slightly higher than in the previous case, but still small; with a difference in the 95% CI: 0.21-0.88 In the case of UF the difference is highly significant with P<.001 on both tests (T=6.10; 160 df; P<.000; MW: Z=4.58; P<.000), the mean of the Chinese group (2.96 ±0.54) being greater than that of the English (2.23 ±0.69) so that the effect size is medium.

Table 62. Difference of means test: Average Likert values on the Truth Value Judgement Task: OVER

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R^2	Cohen
A.L.	Chinese	136	3.16 (3.07 – 3.26)	0.56	-0.09	161	.927 NS	.924 NS	--	--	--
	English	27	3.17 (2.93 – 3.41)	0.60							
U.L.	Chinese	136	3.10 (3.00 – 3.20)	0.57	3.34	161	.002**	.001**	0.21 – 0.88	.099	0.662
	English	27	2.56 (2.23 – 2.88)	0.81							
A.F.	Chinese	136	3.13 (3.04 – 3.22)	0.55	-3.29	161	.001**	<.000**	0.15 – 0.60	.063	0.518
	English	27	3.51 (3.31 – 3.70)	0.48							
U.F.	Chinese	135	2.96 (2.87 – 3.05)	0.54	6.10	160	<.000**	<.000**	0.49 – 0.96	.189	0.964
	English	27	2.23 (1.96 – 2.51)	0.69							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.1.3 *Under*

For this preposition there is also a single variable where there is no significance with P>.05 (table 63) which is UF. For the others significant differences have appeared (table 63).

For UL, the Chinese mean is one point lower (3.35 ±0.50) than the English (3.74 ±0.41) a difference which is significant with P<.001 in both statistical tests (T=3.81; 159 df; P<.000 and MW: Z=3.78; P<.000) with a small effect size. The mean of the Chinese subjects (3.01 ±0.59) is also significantly lower with P<.001 for AF (=3.75; 161 df; P<.000 and in MW: Z=3.78; P<.000) than the mean of the subjects in the control group (3.47 ±0.55), a difference which corresponds with a small effect size and is very similar to the previous one.

However, in the remaining variable, UL, the opposite is true. The Chinese group has a mean (3.11 ±0.58) which is greater than that of the English-speaking group (2.09 ±0.71) with a high statistical significance for P<.001 (T=8.01; df; P<.000 and MW: Z=5.99; P<.000) and a large effect size which indicates that this is a very solid difference.

Table 63. Difference of means test: Average Likert values on the Truth Value Judgement Task: UNDER

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R^2	Cohen
A.L.	Chinese	134	3.35 (3.26 – 3.43)	0.50	-3.81	159	<.000**	<.000**	0.19 – 0.59	.084	0.606
	English	27	3.74 (3.58 – 3.90)	0.41							
U.L.	Chinese	136	3.11 (3.01 – 3.21)	0.58	8.01	161	<.000**	<.000**	0.77 – 1.27	.285	1.263
	English	27	2.09 (1.81 – 2.37)	0.71							
A.F.	Chinese	135	3.01 (2.91 – 3.11)	0.59	-3.75	160	<.000**	<.000**	0.22 – 0.70	.081	0.594
	English	27	3.47 (3.25 – 3.69)	0.55							
U.F.	Chinese	135	2.96 (2.86 – 3.07)	0.62	1.64	160	.102 NS	.106 NS	--	--	--
	English	27	2.74 (2.46 – 3.02)	0.71							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.1.4 Below

The results are summarised in table 64 and as can be seen, there are two variables where the differences are highly significant with P<.001; these are UL and UF where the Chinese focus group scores higher. For UL, the Chinese have a mean of 3.22 ±0.64 while the English group has 2.26 ±0.87, a difference which, as I said above, is highly significant with P<.001 in both statistical tests (T=5.45; 159 df; P<.000 and in MW: Z=5.02; P<.000), corresponding to a high effect size. For AF, the mean of the Chinese (3.05 ±0.64) is considerably higher than that of the English control group (1.72 ±0.51) and so the difference is highly significant with P<.001 in both of the tests used (T=10.24; 160 df; P<.000 and MW: Z=7.28; P<.000) and so the effect size is large. Finally, for the AL variable there is no difference that can be considered statistically significant with P>.05.

Table 64. Difference of means test: Average Likert values on the Truth Value Judgement Task: BELOW

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R^2	Cohen
A.L.	Chinese	135	3.25 (3.16 – 3.34)	0.54	0.35	160	.728 NS	.920 NS	--	--	--
	English	27	3.20 (2.91 – 3.49)	0.73							
U.L.	Chinese	134	3.22 (3.11 – 3.33)	0.64	5.45	159	<.000**	<.000**	0.60 – 1.32	.220	1.062
	English	27	2.26 (1.91 – 2.60)	0.87							
A.F.	Chinese	135	3.29 (3.20 – 3.38)	0.54	-2.03	160	.044 *	.006**	0.01 – 0.47	.025	0.320
	English	27	3.53 (3.28 – 3.78)	0.64							
U.F.	Chinese	135	3.05 (2.94 – 3.16)	0.64	10.24	160	<.000**	<.000**	1.08 – 1.59	.396	1.619
	English	27	1.72 (1.51 – 1.92)	0.51							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.1.5 Above

The results are summarised in table 65. There are very significant differences in three of the variables again. The variable with no statistically significant difference is AL again with P>.05. For AF, the mean of the Chinese focus group (3.01 ±0.59) is lower than the mean of the English control group (3.44 ±0.50) with a significance of P<.001 in both tests (T=3.62; 162 df; P<.000 and MW: Z=3.60; P<.000) although the effect size is small. In contrast, for the other two variables the mean of the Chinese group is higher. Specifically, for UL the group has a mean value (3.03 ±0.63) which is greater than the mean of the control group (2.10 ±0.69) with significance for P<.001 (T=6.94; df; P<.000 and MW: Z=5.61; P<.000) and a high effect size. For UF, while the Chinese have a mean of 2.98 ±0.66, the control group has a considerably lower one of 1.77 ±0.63, which justifies the high significance P<.001 (T=8.81; 161 df; P<.000 and MW: Z=6.55; P<.000) and also the effect size is high.

Table 65. Difference of means test: Average Likert values on the Truth Value Judgement Task: ABOVE

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R^2	Cohen
A.L.	Chinese	136	3.20 (3.10 – 3.29)	0.56	-1.45	161	.150 NS	.104 NS	--	--	--
	English	27	3.37 (3.12 – 3.62)	0.64							
U.L.	Chinese	136	3.03 (2.92 – 3.14)	0.63	6.94	161	<.000**	<.000**	0.67 – 1.20	.230	1.093
	English	27	2.10 (1.83 – 2.37)	0.69							
A.F.	Chinese	136	3.01 (2.91 – 3.11)	0.59	-3.62	161	<.000**	<.000**	0.20 – 0.67	.075	0.569
	English	27	3.44 (3.25 – 3.64)	0.50							
U.F.	Chinese	136	2.98 (2.86 – 3.09)	0.66	8.81	161	<.000**	<.000**	0.94 – 1.48	.325	1.388
	English	27	1.77 (1.52 – 2.02)	0.63							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.1.6 In

As is shown in table 66, statistically significant differences can be seen for all variables. In particular, and from least important to most important:

For AL the Chinese participants score (3.04 ±0.57) lower than the controls (3.42 ±0.45), a difference which is significant with P<.01 (T=3.23; 161 df; P=.002 and MW: Z=3.19; P<.001) with a small effect size.

For AF, the Chinese group has a mean (3.12 ±0.52) which is lower than that of the control group (3.60 ±0.37), this difference being significant with P<.001 on both tests (T=7.61; 161 df; P<.000 and MW Z=4.54; P<.000) corresponding to a medium effect size.

For UL, on the other hand, the focus group has a mean value (3.18 ±0.56) which is greater than that of the English-speakers (2.23 ±0.70) with significance for P<.001 (T=7.61; df; P<.000 and MW: Z=5.83; P<.001) so that the effect size is large.

And for UF the study group again has a mean (2.99 ±0.66) which is greater than that of the control group (1.57 ±0.59) which is also significant for P<.001 (T=10.39; 161 df; P<.000 and MW: Z=7.18; P<.000) but with an effect size which is close to what is considered very large.

Table 66. Difference of means test: Average Likert values on the Truth Value Judgement Task: IN

Variable / Group		N	Mean (95% CI)	S.D.	T Student T	T Student df	T Student P	MW test: P	95% CI diff.	Effect size R²	Effect size Cohen
A.L.	Chinese	136	3.04 (2.95 – 3.14)	0.57	-3.23	161	.002**	.001**	0.15 – 0.61	.061	0.510
	English	27	3.42 (3.24 - 3.60)	0.45							
U.L.	Chinese	136	3.18 (3.08 – 3.27)	0.56	7.61	161	<.000**	<.000**	0.69 – 1.18	.265	1.210
	English	27	2.23 (1.96 – 2.51)	0.70							
A.F.	Chinese	136	3.12 (3.03 – 3.21)	0.52	-4.59	161	<.000**	<.000**	0.28 – 0.69	.116	0.724
	English	27	3.60 (3.46 – 3.75)	0.37							
U.F.	Chinese	136	2.99 (2.87 – 3.10)	0.66	10.39	161	<.000**	<.000**	1.15 – 1.69	.402	1.640
	English	27	1.57 (1.33 – 1.80)	0.59							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.2.1 Analysis based on English proficiency level

Following on from the preceding, and as was done in the previous parts of this study, it will now be established if differences in these variables depending on the level of English of the participants in the Chinese group can be seen. To do this the strategy of Anova analysis and Kruskal-Wallis alternative will be used. The results are presented below, organised for each preposition.

5.5.2.2 Over

The results are summarised in table 67. Statistically significant differences with P>.05 in the two unacceptable variables (UL and UF) were not found. For AF Anova does confirm the existence of differences with P<.05 (F=2.81; P=.42) although the non-parametric alternative does not confirm them (P>.05), and if they do exist the effect size would be very small; in fact the Tukey a posteriori test does not detect them Finally, for AL there do appear

to be differences which can be considered significant for P.05 in Anova (F=3.19; P=.026) and

for P<.01 in KW (Chi2=15.23; P=.002): The effect size is small and it can only be said that the

U.I. level subjects score higher than the L.I. ones, even though there seems to be a tendency

for the mean to increase as the level of knowledge increases. Nonetheless, the differences,

where they do exist, are small.

Table 67. Difference of means test: ANOVA. Average Likert values on the Truth Value Judgement Task: OVER

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova			Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
					F value	df	P				
A.L.	Lower I.	11	2.76 (2.56 – 2.96)	0.30							
	Int.	40	3.10 (2.96 – 3.24)	0.42	3.19	3; 132	.026 *	.066	.714	U.I > L.I P<.05	.002**
	Upper I.	82	3.26 (3.12 – 3.39)	0.63							
	Adv.	3	2.89 (2.41 – 3.37)	0.19							
U.L.	Lower I.	11	2.95 (2.70 – 3.21)	0.38							
	Int.	40	3.11 (2.96 – 3.26)	0.46	0.30	3; 132	.824 NS	--	--	--	.424 NS
	Upper I.	82	3.12 (2.98 – 3.26)	0.65							
	Adv.	3	3.00 (2.17 – 3.83)	0.33							
A.F.	Lower I.	11	2.76 (2.36 – 3.16)	0.60							
	Int.	40	3.06 (2.86 – 3.25)	0.61	2.81	3; 132	.042 *	.059	.656	--	.061 NS
	Upper I.	82	3.22 (3.11 – 3.33)	0.50							
	Adv.	3	3.00 (2.17 – 3.83)	0.33							
U.F.	Lower I.	11	3.03 (2.80 – 3.26)	0.35							
	Int.	40	3.02 (2.88 – 3.16)	0.43	0.34	3; 131	.798 NS	--	--	--	.880 NS
	Upper I.	81	2.93 (2.79 – 3.06)	0.61							
	Adv.	3	2.89 (2.41 – 3.37)	0.19							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.2.3 Under

As can be seen in table 68, in this case sufficient differences have not appeared for them to be considered statistically significant (P>.05) although it is true that for two of the variables this is by a narrow margin. Nonetheless, if they did exist the effect size would be very small, practically negligible.

Table 68. Difference of means test: ANOVA. Average Likert values on the Truth Value Judgement Task: UNDER

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova			Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
					F value	df	P				
A.L.	Lower I.	11	2.98 (2.69 – 3.28)	0.44							
	Int.	39	3.44 (3.29 – 3.60)	0.49	2.54	3; 130	.059 NS	--	--	--	.064 NS
	Upper I.	81	3.35 (3.24 – 3.46)	0.51							
	Adv.	3	3.44 (2.97 – 3.92)	0.19							
U.L.	Lower I.	11	2.70 (2.41 – 2.99)	0.43							
	Int.	40	3.14 (2.96 – 3.32)	0.56	2.46	3; 132	.065 NS	--	--	--	.058 NS
	Upper I.	82	3.16 (3.03 – 3.29)	0.59							
	Adv.	3	2.78 (0.87 – 4.00)	0.77							
A.F.	Lower I.	11	2.86 (2.55 – 3.18)	0.47							
	Int.	40	2.95 (2.76 – 3.15)	0.61	0.72	3; 131	.541 NS	--	--	--	.504 NS
	Upper I.	81	3.06 (2.93 – 3.19)	0.59							
	Adv.	3	2.78 (0.87 – 4.00)	0.77							
U.F.	Lower I.	11	2.97 (2.76 – 3.18)	0.31							
	Int.	39	2.98 (2.75 – 3.20)	0.69	0.10	3; 131	.962 NS	--	--	--	.875 NS
	Upper I.	82	2.96 (2.82 – 3.10)	0.63							
	Adv.	3	2.78 (1.05 – 4.00)	0.69							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.2.4 Below

The summary of the results is displayed in table 69 and shows there are significant differences for all variables except UF (P>.05). Specifically for the others:

For AL the differences are highly significant for P<.001 in both tests (F=16.36; P<.000 and in KW: Chi2=33.04; P <.000). With a large effect size it is clear that the mean increases as the level of knowledge of English increases. Although owing to the small sizes of the lowest and highest level groups, the Tukey post-hoc test struggles to find significant differences and can only show with P<.05 the difference between L.I. and the others.

For UL the differences are significant for P<.05 in Anova (F=3.18; P=.026) and appear more strongly for P<.01 in KW (Chi2=12.63; P=.006). Even so, the effect size is small and the means suggest that its value increases as the level of English rises, although the post-hoc Tukey tests only manage to show a significant difference with P<.05 for the lower and highest level groups.

And for AF significant differences for P<.001 have been found in both tests (F=2.91; P<.036 and in KW: Chi2=8.60; P=.035) so that with a small effect size it appears that the mean values fall as the level of knowledge of English increases.

Table 69. Difference of means test: ANOVA. Average Likert values on the Truth Value Judgement Task: BELOW

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova F value	df	P	Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
A.L.	Lower I.	11	2.44 (2.15 – 2.72)	0.42							
	Int.	40	3.11 (2.96 – 3.26)	0.47	16.36	3; 131	<.000**	.271	>.999	L.I < (I. & U.I. & Adv.) P<.05	<.000**
	Upper I.	81	3.42 (3.32 – 3.52)	0.46							
	Adv.	3	3.44 (1.72 – 4.00)	0.69							
U.L.	Lower I.	11	2.71 (2.43 – 3.00)	0.42							
	Int.	39	3.19 (3.01 – 3.36)	0.53	3.18	3; 130	.026 *	.070	.725	L.I. < Adv. P<.05	.006**
	Upper I.	81	3.30 (3.15 – 3.45)	0.68							
	Adv.	3	3.56 (1.64 – 4.00)	0.77							
A.F.	Lower I.	11	2.98 (2.68 – 3.29)	0.45							
	Int.	40	3.18 (3.00 – 3.37)	0.58	2.91	3; 131	.037 *	.067	.704		.035 *
	Upper I.	81	3.37 (3.26 – 3.49)	0.52							
	Adv.	3	3.67 (2.84 – 4.00)	0.33							
U.F.	Lower I.	11	2.70 (3.32 – 3.08)	0.57							
	Int.	39	3.22 (3.07 – 3.38)	0.47	2.21	3; 131	.090 NS	--	--	--	.101 NS
	Upper I.	82	3.02 (2.86 – 3.17)	0.70							
	Adv.	3	3.00 (2.17 – 3.83)	0.33							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.2.5 *Above*

Table 70 summarises the results. Genuinely solid differences were only found for the AL variable. The significance is for P<.01 in both tests (F=6.20; P=.001 and KW: Chi2=16.28; P=.001) so that with a medium-small effect size it can be said that the participants with lower levels of English (L.I. and I.) score less than the subjects with higher levels (U.I. and Adv.), which is confirmed by the post-hoc tests.

For the UL and UF variable there are significant differences with P<.05 on both tests, but the Tukey post-hoc tests are unable to determine where they are and, if they do exist, the effect size would be very small, while for AF it cannot be said that there are significant differences (P<.05).

Table 70. Difference of means test: ANOVA. Average Likert values on the Truth Value Judgement Task: BELOW

Table 70:

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova			Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
					F value	df	P				
A.L.	Lower I.	11	2.62 (2.31 – 2.93)	0.46							
	Int.	40	3.10 (2.93 – 3.28)	0.54	6.20	3; 132	.001**	.124	.960	(L.I & I.) < (U.I. & Adv.) P<.05	.001**
	Upper I.	82	3.31 (3.19 – 3.43)	0.53							
	Adv.	3	3.44 (2.49 – 4.00)	0.38							
U.L.	Lower I.	11	2.61 (2.31 – 2.90)	0.44							
	Int.	40	3.17 (3.00 – 3.33)	0.52	2.73	3; 132	.046 *	.058	.651	--	.036 *
	Upper I.	82	3.03 (2.89 – 3.18)	0.67							
	Adv.	3	2.67 (0.48 – 4.00)	0.88							
A.F.	Lower I.	11	2.82 (2.45 – 3.18)	0.54							
	Int.	40	3.03 (2.84 – 3.21)	0.59	2.45	3; 132	.067 NS	--	--	--	.085 NS
	Upper I.	82	3.05 (2.93 – 3.18)	0.58							
	Adv.	3	2.22 (0.96 – 3.49)	0.51							
U.F.	Lower I.	11	2.48 (2.20 – 2.77)	0.43							
	Int.	40	3.13 (2.96 – 3.30)	0.54	2.92	3; 132	.036 *	.062	.684	--	.023 *
	Upper I.	82	2.97 (2.81 – 3.13)	0.71							
	Adv.	3	2.89 (2.41 – 3.37)	0.19							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.2.6 In

The results for this preposition are shown in table 71. It is apparent that no differences which be considered significant with P.05 have appeared in AL, AF or UF. Only UL is significant for P<.01 in both tests (F=3.69; P=.014 and in MW: Chi2=10.17; P=.017); however the effect size is again small and although it appears that there could be a tendency for the means to increase as the level of English increases, the Tukey post-hoc tests have only found significance with P>.05 between the lowest level (L.I.) and the U.I. level. With the Advanced group it is unable to demonstrate significance due to the small number of cases in this group.

Table 71. Difference of means test: ANOVA. Average Likert values on the Truth Value Judgement Task: IN

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova			Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
					F value	df	P				
A.L.	Lower I.	11	2.67 (2.39 – 2.95)	0.41							
	Int.	40	3.01 (2.81 – 3.22)	0.64	2.17	3; 132	.095 NS	--	--	--	.083 NS
	Upper I.	82	3.11 (2.99 – 3.23)	0.55							
	Adv.	3	2.89 (2.41 – 3.37)	0.19							
U.L.	Lower I.	11	2.67 (2.28 – 3.05)	0.58							
	Int.	40	3.16 (3.02 – 3.30)	0.44	3.69	3; 132	.014 *	.077	.793	L.I. < U.I P <.05	.017 *
	Upper I.	82	3.24 (3.11 – 3.37)	0.58							
	Adv.	3	3.33 (1.90 – 4.00)	0.58							
A.F.	Lower I.	11	2.82 (2.59 – 3.05)	0.35							
	Int.	40	3.07 (2.88 – 3.25)	0.59	1.84	3; 132	.143 NS	--	--	--	.093 NS
	Upper I.	82	3.19 (3.08 – 3.30)	0.51							
	Adv.	3	3.11 (2.63 – 3.59)	0.19							
U.F.	Lower I.	11	2.79 (2.58 – 2.99)	0.31							
	Int.	40	3.07 (2.89 – 3.24)	0.54	1.22	3; 132	.305 NS	--	--	--	.174 NS
	Upper I.	82	2.99 (2.83 – 3.16)	0.74							
	Adv.	3	2.44 (1.18 – 3.71)	0.51							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.3.1 Comparison of focus group versus Spanish native

The analysis continues here, applying the same study methods to the Spanish prepositions to compare the focus group with the Spanish-native control group.

In the regular preliminary exploratory analysis of the data collected about the variables, noticeably skewed distributions appear as in the previous cases. Consequently, the statistical study will again be approached with a double analysis using parametric tests and their non-parametric alternatives.

Also, once again, it should be remembered that within the Chinese group there is a small subgroup of subjects with linguistic immersion in Spanish. Therefore, to start off a check will be made about whether this creates internal differences in the focus group.

The statistics from the tests of the Chinese group with/without immersion are displayed for the 4 variables for each of the prepositions. As can be seen, the results of both statistical tests are very similar, as is seen above, one confirms the conclusions of the other. Significant differences with $P>.05$ which can be explained by linguistic immersion in Spanish were not found, except in one variable. This is the category of Acceptable Literal use (AL) of the preposition "sobre", where with $P<.05$ the means indicate that participants with immersion tend to emit higher (more acceptable) values for the phrases proposed. Nonetheless, the difference corresponds to a small effect size (.041) so it can be considered negligible for the following statistical analyses.

Consequently, the Chinese focus group will be considered as a single group, without being separated depending on the aforementioned linguistic immersion in Spanish.

The Chinese group will now be compared with the Spanish-native controls. Once again, the results are displayed separately, word by word, for greater interpretative clarity.

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Table 72. Difference of means test: Average Likert values on the Truth Value Judgement Task

Preposition / Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test:
					T	df	P	P
Encima	A.L.	Ch. WITH immersion	18	3.11 (2.80 – 3.42)	0.62	0.66	133	.508 NS	.442 NS
		Ch. NO immersion	117	3.01 (2.91 – 3.12)	0.57				
	U.L.	Ch. WITH immersion	18	3.13 (2.83 – 3.43)	0.60	0.51	134	.610 NS	.693 NS
		Ch. NO immersion	118	3.06 (2.95 – 3.16)	0.56				
	A.F.	Ch. WITH immersion	18	3.03 (2.70 – 3.36)	0.66	0.65	133	.516 NS	.617 NS
		Ch. NO immersion	117	2.93 (2.83 – 3.04)	0.56				
	U.F.	Ch. WITH immersion	18	2.91 (2.52 – 3.30)	0.78	-0.87	134	.386 NS	.399 NS
		Ch. NO immersion	116	3.05 (2.94 – 3.17)	0.65				
Bajo	A.L.	Ch. WITH immersion	18	3.00 (2.66 – 3.34)	0.69	-0.20	133	.984 NS	.744 NS
		Ch. NO immersion	117	3.00 (2.90 – 3.10)	0.54				
	U.L.	Ch. WITH immersion	18	3.28 (3.00 – 3.56)	0.56	1.80	134	.074 NS	.070 NS
		Ch. NO immersion	118	2.99 (2.87 – 3.10)	0.65				
	A.F.	Ch. WITH immersion	18	3.10 (2.81 – 3.39)	0.59	-0.04	134	.964 NS	.797 NS
		Ch. NO immersion	118	3.11 (3.00 – 3.22)	0.61				
	U.F.	Ch. WITH immersion	18	2.81 (2.47 – 3.16)	0.69	-0.71	134	.479 NS	.455 NS
		Ch. NO immersion	118	2.93 (2.82 – 3.04)	0.61				
Sobre	A.L.	Ch. WITH immersion	18	3.38 (2.99 – 3.18)	0.57	2.41	134	.017 *	.011 *
		Ch. NO immersion	118	3.04 (2.94 – 3.14)	0.56				
	U.L.	Ch. WITH immersion	18	3.06 (2.80 – 3.33)	0.53	0.37	134	.711 NS	.823 NS
		Ch. NO immersion	118	3.01 (2.90 – 3.12)	0.61				
	A.F.	Ch. WITH immersion	18	2.87 (2.49 – 3.25)	0.77	-1.27	134	.207 NS	.412 NS
		Ch. NO immersion	118	3.06 (2.96 – 3.16)	0.56				
	U.F.	Ch. WITH immersion	18	3.00 (2.66 – 3.34)	0.69	-0.32	133	.326 NS	.846 NS
		Ch. NO immersion	111	3.05 (2.94 – 3.15)	0.56				
Debajo	A.L.	Ch. WITH immersion	18	3.50 (3.28 – 3.72)	0.45	0.90	131	.368 NS	.437 NS
		Ch. NO immersion	115	3.38 (3.29 – 3.48)	0.52				
	U.L.	Ch. WITH immersion	18	3.20 (2.94 – 3.47)	0.54	0.96	134	.337 NS	.273 NS
		Ch. NO immersion	118	3.01 (2.96 – 3.17)	0.57				
	A.F.	Ch. WITH immersion	18	3.11 (2.84 – 3.38)	0.55	0.67	131	.506 NS	.524 NS
		Ch. NO immersion	115	3.02 (2.91 – 3.12)	0.56				
	U.F.	Ch. WITH immersion	18	3.07 (2.76 – 3.39)	0.64	-0.16	131	.874 NS	.722 NS
		Ch. NO immersion	115	3.10 (2.99 – 3.20)	0.56				
En	A.L.	Ch. WITH immersion	18	3.34 (3.06 – 3.63)	0.57	0.97	134	.335 NS	.270 NS
		Ch. NO immersion	118	3.19 (3.08 – 3.31)	0.62				
	U.L.	Ch. WITH immersion	18	3.25 (3.02 – 3.48)	0.47	1.26	133	.211 NS	.246 NS
		Ch. NO immersion	117	3.06 (2.95 – 3.17)	0.60				
	A.F.	Ch. WITH immersion	18	3.24 (2.95 – 3.53)	0.58	-0.03	134	.980 NS	.769 NS
		Ch. NO immersion	118	3.24 (3.14 – 3.35)	0.56				
	U.F.	Ch. WITH immersion	18	3.08 (2.84 - 3.33)	0.50	0.97	134	.336 NS	.365 NS
		Ch. NO immersion	118	2.93 (2.81 – 3.05)	0.64				

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.3.2 Encima

Table 73 displays the results for the first preposition. As can be seen, the presence of statistically significant P<.001 differences for all variables has been shown and with some level of effect. Specifically:

In the items for acceptable variables (AL and AF) the subjects from the Chinese group scored below the Spanish. For AL, the Chinese have a mean of 3.03 $\pm$0.58 and the Spanish mean is 3.56 $\pm$0.56, the difference being significant for P<.001 in both tests (T=4.37; 160 df; P<.000 and MW: Z=4.02; P<.000) with a medium effect size. While for AF, the mean of the Chinese group is 2.95 $\pm$0.57, compared with that of the control group (3.57 $\pm$0.56), the difference being significant with P<.001 in both tests (T=5.17; 160 df; P<.000 and MW: Z=4.74; P<.000) but with a somewhat higher effect size, albeit still medium.

In the items from the unacceptable variables (UL and UF), the Chinese participants clearly score higher than the Spanish, as is to be expected following the previous cases. For UL, the Chinese group has a mean of 3.07 $\pm$0.56 and the Spanish group of 2.12 $\pm$1.05, which is significant for P<.001 in both tests (T=4.53; 161 df; P<.000 and MW: Z=4.22; P<.000) corresponding to a nearly large effect size. In the UF variable while the mean of the study group is 3.03 $\pm$0.67, that of the control group is somewhat lower 1.33 $\pm$0.50 and so the difference is not only significant for P<.001 (T=12.56; 159 df; P<.000 and MW: Z=7.67; P<.000) but also has a large effect size.

Table 73. Difference of means test: Average Likert values on the Truth Value Judgement Task: ENCIMA

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R²	Cohen
A.L.	Chinese	135	3.03 (2.93 – 3.13)	0.58	-4.37	160	<.000**	<.000**	0.29 – 0.77	.107	0.692
	Spanish	27	3.56 (3.33 – 3.78)	0.56							
U.L.	Chinese	136	3.07 (2.97 – 3.16)	0.56	4.53	161	<.000**	<.000**	0.66 – 1.22	.219	1.059
	Spanish	27	2.12 (1.71 – 2.54)	1.05							
A.F.	Chinese	135	2.95 (2.85 – 3.04)	0.57	-5.17	160	<.000**	<.000**	0.38 – 0.86	.143	0.817
	Spanish	27	3.57 (3.35 – 3.79)	0.56							
U.F.	Chinese	134	3.03 (2.92 – 3.15)	0.67	12.56	159	<.000**	<.000**	1.44 – 1.97	.498	1.992
	Spanish	27	1.33 (1.14 – 1.53)	0.50							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.3.3 Bajo

These results are summarised in table 74. The situation found has considerable similarities with that of the previous preposition as there are highly significant differences for all variables, and in the same direction as the previous ones. Therefore:

For the AL and AF variables the Chinese participants show lower means that the Spanish natives. For AL, the Chinese have a mean of 3.00 ±0.56 and the Spanish of 3.53 ±0.65, therefore the difference is significant with P<.001 in both tests (T=4.35; 160 df; P<.000 and MW: Z=4.39; P<.000) with a medium effect size. For AF, the mean of the Chinese focus group (3.11 ±0.61) is lower than that of the control group (3.59 ±0.50), so the difference is significant with P<.001 in both tests (T=3.89; 161 df; P<.000 and MW: Z=3.84; P<.000) but with an effect size which can be measured as medium-low, smaller than the previous one.

For the UL and UF variables, in contrast, the means for the Chinese focus groups are higher than the means for the Spanish control group. For UL, the Chinese have a mean of

3.02 ±0.65 and the Spanish of 2.00 ±1.06, there being significance for P<.001 in the two tests

(T=4.84; 161 df; P<.000 and MW Z=4.56; P<.000) with a nearly high effect size. For the UF

variable, the mean of the focus group is 2.91 ±0.62, which is much higher than that of the

control group 1.17 ±0.28, so the difference is significant for P<.001 in both tests (T=22.83;

161 df; P<.000 and MW: Z=8.06; P<.000) and the effect size is undoubtedly very high.

Table 74. Difference of means test: Average Likert values on the Truth Value Judgement Task: BAJO

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R^2	Cohen
A.L.	Chinese	135	3.00 (2.91 – 3.10)	0.56	-4.35	160	<.000**	<.000**	0.25 – 0.80	.106	0.689
	Spanish	27	3.53 (3.27 – 3.79)	0.65							
U.L.	Chinese	136	3.02 (2.92 – 3.13)	0.65	4.84	161	<.000**	<.000**	0.59 – 1.46	.216	1.050
	Spanish	27	2.00 (1.58 – 2.42)	1.06							
A.F.	Chinese	136	3.11 (3.00 – 3.21)	0.61	-3.89	161	<.000**	<.000**	0.24 – 0.73	.086	0.613
	Spanish	27	3.59 (3.39 – 3.79)	0.50							
U.F.	Chinese	136	2.91 (2.81 – 3.02)	0.62	22.83	161	<.000**	<.000**	1.59 – 1.89	.557	2.243
	Spanish	27	1.17 (1.06 – 1.28)	0.28							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.3.4 Sobre

The summary of the comparison of the variables for this preposition appears in table

75 and as can be seen from it I again find a very similar situation to the previous ones. There

are highly significant differences for all variables and in the same directions already

mentioned:

For the acceptable AL and AF variables the Chinese subjects have lower means than

the Spanish natives. For AL, the Chinese group has a mean of 3.08 ±0.57 while that of the

Spanish is 3.74 ±0.37, the difference being significant with P<.001 in both tests (T=5.75; 161

df; P<.000 and MW: Z=5.46; P<.000) with a medium-high effect size. For AF, the mean of the Chinese group (3.03 ±0.59) is lower than that of the control group (3.62 ±0.49), a difference which is significant for P<.001 in both tests (T=4.82; 161 df; P<.000 and MW: Z=4.58; P<.000) with an effect size somewhat smaller than the previous one, albeit still medium.

For the UL and UF variables the means of the Chinese group are higher than the means of the Spanish control group. For UL, the Chinese have a mean of 3.02 ±0.60 and the Spanish of 1.50 ±0.55, there being significance for P<.001 in the two tests (T=13.04; 161 df; P<.000 and MW Z=7.64; P<.000) with a very large effect size. For UF the mean of the Chinese focus group (3.04 ±0.58), is clearly greater than that of the control group (1.54 ±0.65), and so the difference is significant for P<.001 (T=12.02; 160 df; P<.000 and MW: Z=7.34; P<.000) with a somewhat smaller but still very large effect size.

Table 75. Difference of means test: Average Likert values on the Truth Value Judgement Task: SOBRE

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R^2	Cohen
A.L.	Chinese	136	3.08 (2.99 – 3.18)	0.57	-5.75	161	<.000**	<.000**	0.43 – 0.88	.170	0.905
	Spanish	27	3.74 (3.59 – 3.89)	0.37							
U.L.	Chinese	136	3.02 (2.91 – 3.12)	0.60	13.04	161	<.000**	<.000**	1.37 – 1.87	.514	2.057
	Spanish	27	1.40 (1.18 – 1.61)	0.55							
A.F.	Chinese	136	3.03 (2.93 – 3.13)	0.59	4.82	161	<.000**	<.000**	0.34 – 0.82	.126	0.759
	Spanish	27	3.62 (3.42 – 3.81)	0.49							
U.F.	Chinese	135	3.04 (2.94 – 3.14)	0.58	12.02	160	<.000**	<.000**	1.25 – 1.74	.474	1.899
	Spanish	27	1.54 (1.29 – 1.80)	0.65							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.3.5 Debajo

The corresponding statistical analyses are summarised in table 76, again showing a situation which is completely similar to the previous prepositions.

For the AL and AF variables the Chinese participants show lower means that the Spanish natives. For UL, the Chinese have a mean of 3.40 ±0.51 and the Spanish of 3.88 ±0.21, there being significance for P<.001 in the two tests (T=7.97; 158 df; P<.000 and MW Z=4.94; P<.000) and a medium effect size. For AF, the mean of the focus group (3.03 ±0.56) is lower than that of the control group (3.85 ±0.25), the difference being significant for P<.001 (T=7.46; 158 df; P<.000 and MW: Z=6.78; P<.000) and a somewhat high effect size.

For their part the UL and UF variables have higher means for the Chinese group than for the control group. For UL, the Chinese have a mean of 3.08 ±0.56 and the Spanish of 2.02 ±0.95, a difference which is significant for P<.001 in both tests (T=7.85; 161 df; P<.000 and MW Z=5.11; P<.000) with a large effect size. For AF, the mean of the focus group (3.09 ±0.57) is lower than that of the control group (1.40 ±0.62) and so the difference is significant for P<.001 in both tests (T=13.94; 158 df; P<.000 and MW: Z=7.57; P<.000) and with a very high effect size.

Table 76. Difference of means test: Average Likert values on the Truth Value Judgement Task: DEBAJO

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test: P	95% CI diff.	Effect size	
					T	df	P			R²	Cohen
A.L.	Chinese	133	3.40 (3.31 – 3.49)	0.51	-7.97	158	<.000**	<.000**	0.35 – 0.60	.125	0.756
	Spanish	27	3.88 (3.79 – 3.96)	0.21							
U.L.	Chinese	136	3.08 (2.99 – 3.18)	0.56	7.85	161	<.000**	<.000**	0.67 – 1.45	.277	1.238
	Spanish	27	2.02 (1.65 – 2.40)	0.95							
A.F.	Chinese	133	3.03 (2.93 – 3.13)	0.56	-7.46	158	<.000**	<.000**	0.69 – 0.95	.260	1.185
	Spanish	27	3.85 (3.75 – 3.95)	0.25							
U.F.	Chinese	133	3.09 (3.00 – 3.19)	0.57	13.94	158	<.000**	<.000**	1.46 – 1.94	.551	2.216
	Spanish	27	1.40 (1.15 – 1.64)	0.62							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.3.6 En

The results for this preposition are summarised in table 77. As in the previous cases there are highly significant differences in the same directions.

For AL and AF the participants from the focus group have lower means than those of the Spanish control group. For AL, the Chinese have a mean of 3.21 ±0.61 and the Spanish of 3.89 ±0.18, there being significance for P<.001 in the two tests (T=5.66; 161 df; P<.000 and MW Z=5.95; P<.000) with a moderate effect size. For AF, the mean of the Chinese group (3.24 ±0.56) is lower than that of the control group (3.94 ±0.13), the difference being significant for P<.001 (T=6.43; 161 df; P<.000 and MW: Z=6.54; P<.000) and with a somewhat higher effect size, medium high.

Once again higher averages appear in the UL and UF variables for the Chinese group than for the native Spanish group. For UL, the Chinese have a mean of 3.09 ±0.59 while the Spanish have 1.64 ±0.67, a difference which is significant for P<.001 (T=11.36; 160 df; P<.000 and MW Z=7.32; P<.000) with a high effect size. For AF, the mean of the focus group (2.95 ±0.57) is lower than that of the control group (1.90 ±0.96), a difference which is significant for P<.001 in both tests (T=7.21; 161 df; P<.000 and MW: Z=4.86; P<.000) but this time with an effect size which, despite being high, is lower.

Table 77. Difference of means test: Average Likert values on the Truth Value Judgement Task: EN

Variable / Group		N	Mean (95% CI)	S.D.	T Student			MW test:	95% CI diff.	Effect size	
					T	df	P	P		R^2	Cohen
A.L.	Chinese	136	3.21 (3.11 – 3.32)	0.61	-5.66	161	<.000**	<.000**	0.55 – 0.80	.166	0.892
	Spanish	27	3.89 (3.82 – 3.96)	0.18							
U.L.	Chinese	135	3.09 (2.99 – 3.19)	0.59	11.36	160	<.000**	<.000**	1.19 – 1.70	.446	1.794
	Spanish	27	1.64 (1.38 – 1.91)	0.67							
A.F.	Chinese	136	3.24 (3.15 – 3.34)	0.56	-6.43	161	<.000**	<.000**	0.59 – 0.80	.204	1.012
	Spanish	27	3.94 (3.89 – 3.99)	0.13							
U.F.	Chinese	136	2.95 (2.85 – 3.06)	0.62	7.21	161	<.000**	<.000**	0.76 – 1.34	.244	1.136
	Spanish	27	1.90 (1.52 – 2.28)	0.96							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.4.1 Analysis based on Spanish proficiency level

And to complete this part of the study, the possible effect of the level of knowledge of Spanish on the preceding variables will again be checked. The statistical processes are the same ones previously used in this type of situation: Anova with its extra and alternative tests. The results for each preposition are presented below.

5.5.4.2 Encima

The results are summarised in table 78 and as can be seen, statistically significant (P>.05) results have not appeared. As such, the evaluation of the acceptability of this preposition does not depend on the level of command of Spanish of the participants in the Chinese focus group.

Table 78. Difference of means test: ANOVA. Average Likert values on the Truth Value Judgement Task: ENCIMA

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova			Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test
					F value	df	P				P
A.L.	Lower I.	8	2.79 (2.24 – 3.35)	0.67							
	Int.	38	2.97 (2.78 – 3.17)	0.59	0.74	3; 130	.530 NS	--	--	--	.693 NS
	Upper I.	85	3.07 (2.95 – 3.19)	0.56							
	Adv.	3	3.00 (0.81 – 4.00)	0.88							
U.L.	Lower I.	8	3.17 (2.77 – 3.56)	0.47							
	Int.	38	3.05 (2.87 – 3.23)	0.56	0.22	3; 131	.886 NS	--	--	--	.896 NS
	Upper I.	86	3.08 (2.96 – 3.20)	0.56							
	Adv.	3	2.89 (0.81 – 4.00)	0.84							
A.F.	Lower I.	8	2.58 (2.29 – 2.87)	0.35							
	Int.	38	3.08 (2.91 – 3.26)	0.54	1.87	3; 130	.137 NS	--	--	--	.122 NS
	Upper I.	85	2.93 (2.80 – 3.05)	0.59							
	Adv.	3	2.89 (0.98 – 4.00)	0.77							
U.F.	Lower I.	8	2.94 (2.31 – 3.57)	0.76							
	Int.	38	3.28 (3.12 – 3.44)	0.48	2.52	3; 129	.061 NS	--	--	--	.112 NS
	Upper I.	84	2.95 (2.80 – 3.10)	0.68							
	Adv.	3	2.67 (1.00 – 4.00)	1.53							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.4.3 Bajo

As can be seen from table 79, significant differences (>.05) owing to the effect of the level of knowledge of Spanish do not appear for this preposition either, and so this variable does not affect the results above or the comparison of groups.

Table 79. Difference of means test: ANOVA. Average Likert values on the Truth Value Judgement Task: BAJO

Variables / Level		N	Mean (95% CI)	S.D.	F value	df	P	Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
A.L.	Lower I.	8	3.02 (2.78 – 3.26)	0.29							
	Int.	38	3.11 (2.94 – 3.28)	0.53	1.07	3; 130	.365 NS	--	--	--	.365 NS
	Upper I.	85	2.95 (2.82 – 3.08)	0.59							
	Adv.	3	3.33 (2.51 – 4.00)	0.33							
U.L.	Lower I.	8	2.77 (2.23 – 3.31)	0.64							
	Int.	38	3.01 (2.76 – 3.25)	0.75	0.50	3; 131	.685 NS	--	--	--	.613 NS
	Upper I.	86	3.06 (2.93 – 3.19)	0.60							
	Adv.	3	3.11 (1.39 – 4.00)	0.69							
A.F.	Lower I.	8	3.25 (2.64 – 3.86)	0.73							
	Int.	38	3.05 (2.87 – 3.24)	0.57	0.31	3; 131	.818 NS	--	--	--	.646 NS
	Upper I.	86	3.13 (3.00 – 3.26)	0.61							
	Adv.	3	3.22 (1.31 – 4.00)	0.77							
U.F.	Lower I.	8	2.75 (2.12 – 3.38)	0.75							
	Int.	38	3.04 (2.84 – 3.25)	0.62	1.77	3; 131	.156 NS	--	--	--	.153 NS
	Upper I.	86	2.85 (2.72 – 2.98)	0.61							
	Adv.	3	3.44 (2.97 – 3.92)	0.19							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.4.4 Sobre

Again, differences which can be considered statistically significant with P>.05 have not been found for any of the variables (table 80) so that there is no effect on the comparisons of groups previously carried out, as the answers do not depend on the level of Spanish.

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Table 80. Difference of means test: ANOVA. Average Likert values on the Truth Value Judgement Task: SOBRE

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova F value	df	P	Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
A.L.	Lower I.	8	2.81 (2.39 – 3.23)	0.50							
	Int.	38	3.10 (2.94 – 3.26)	0.49	1.36	3; 131	.260 NS	--	--	--	.163 NS
	Upper I.	86	3.10 (2.97 – 3.23)	0.60							
	Adv.	3	3.56 (3.08 – 4.00)	0.19							
U.L.	Lower I.	8	3.13 (2.84 – 3.41)	0.34							
	Int.	38	2.90 (2.70 – 3.11)	0.63	0.66	3; 131	.580 NS	--	--	--	.444 NS
	Upper I.	86	3.06 (2.93 – 3.19)	0.61							
	Adv.	3	3.00 (1.57 – 4.00)	0.58							
A.F.	Lower I.	8	3.04 (2.64 – 3.45)	0.49							
	Int.	38	3.06 (2.85 – 3.26)	0.62	0.67	3; 131	.572 NS	--	--	--	.405 NS
	Upper I.	86	3.01 (2.89 – 3.14)	0.60							
	Adv.	3	3.50 (3.09 – 3.91)	0.17							
U.F.	Lower I.	8	2.94 (2.39 – 3.48)	0.65							
	Int.	38	3.16 (3.01 – 3.31)	0.46	0.79	3; 131	.501 NS	--	--	--	.414 NS
	Upper I.	86	3.00 (2.87 – 3.13)	0.60							
	Adv.	3	3.00 (1.00 – 4.00)	1.20							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.4.5 Debajo

As can be seen from table 81, significant P>.05 differences owing to the effect of the level of knowledge of Spanish do not appear for this preposition either, and so this variable does not affect the previously found results or the comparison between groups.

Table 81. Difference of means test: ANOVA. Average Likert values on the Truth Value Judgement Task: DEBAJO

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova F value	df	P	Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test P
A.L.	Lower I.	8	3.06 (2.54 – 3.59)	0.63							
	Int.	37	3.36 (3.17 – 3.54)	0.54	2.01	3; 128	.116 NS	--	--	--	.178 NS
	Lower I.	84	3.44 (3.34 – 3.55)	0.48							
	Adv.	3	3.78 (3.30 – 4.00)	0.19							
U.L.	Lower I.	8	3.00 (2.48 – 3.52)	0.62							
	Int.	38	3.00 (2.82 – 3.19)	0.55	1.43	3; 131	.238 NS	--	--	--	.165 NS
	Upper I.	86	3.10 (2.98 – 3.23)	0.57							
	Adv.	3	3.67 (2.84 – 4.00)	0.33							
A.F.	Lower I.	8	2.92 (2.43 – 3.40)	0.58							
	Int.	37	2.95 (2.78 – 3.13)	0.52	0.48	3; 128	.698 NS	--	--	--	.475 NS
	Upper I.	84	3.07 (2.94 – 3.20)	0.59							
	Adv.	3	3.11 (2.63 – 3.59)	0.19							
U.F.	Lower I.	8	3.13 (2.63 – 3.62)	0.59							
	Int.	37	3.00 (2.80 – 3.20)	0.59	0.69	3; 128	.560 NS	--	--	--	.851 NS
	Upper I.	84	3.14 (3.02 – 3.27)	0.56							
	Adv.	3	2.89 (0.98 – 4.00)	0.77							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

5.5.4.6 En

Finally, there are again no significant differences with P>.05 for any of the variables, ruling out the effect of the level of Spanish on the evaluations made.

Table 82. Difference of means test: ANOVA. Average Likert values on the Truth Value Judgement Task: EN

Variables / Level		N	Mean (95% CI)	S.D.	1 factor Anova			Effect size	Power	POST-HOC: Tukey Significant pairs	K-W Test
					F value	df	P				P
A.L.	Lower I.	8	2.88 (42 – 3.33)	0.54							
	Int.	38	3.10 (2.88 – 3.31)	0.65	1.95	3; 131	.125 NS	--	--	--	.083 NS
	Upper I.	86	3.28 (3.15 – 3.41)	0.60							
	Adv.	3	3.56 (3.08 – 4.00)	0.19							
U.L.	Lower I.	8	2.98 (2.53 – 3.43)	0.54							
	Int.	38	3.28 (3.08 – 3.48)	0.61	1.77	3; 130	.156 NS	--	--	--	.108 NS
	Upper I.	85	2.99 (2.87 – 3.11)	0.57							
	Adv.	3	3.67 (2.84 – 4.00)	0.33							
A.F.	Lower I.	8	3.04 (2.61 – 3.47)	0.52							
	Int.	38	3.09 (2.90 – 3.28)	0.57	2.35	3; 131	.075 NS	--	--	--	.051 NS
	Upper I.	86	3.31 (3.19 – 3.43)	0.55							
	Adv.	3	3.67 (2.84 – 4.00)	0.33							
U.F.	Lower I.	8	2.65 (2.14 – 3.15)	0.61							
	Int.	38	3.00 (2.82 – 3.18)	0.54	0.90	3; 131	.443 NS	--	--	--	.511 NS
	Upper I.	86	2.96 (2.81 – 3.10)	0.66							
	Adv.	3	3.22 (1.50 – 4.00)	0.69							

NS = not significant (p>.050)   * Significant to 5%   ** Highly significant to 1%

Summary:

In this chapter I have presented the results of the statistical tests conducted after the data collection and analyses described in Chapter 4.

In the first of these tasks, that is, in the Lexical Identification Task, which, as indicated, serves as a complement to the corresponding language proficiency test, the results show, first, that regardless of the level of language proficiency (and this is the case even for the most advanced students) there is always, both in the Spanish version of the test and in the

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English version, a difference regarding the degree of accuracy or deviation in the answers of the participants in this study, with respect to those of the native speaker. On the other hand, it can also be seen that the participants, although with a very small difference, obtained better and higher results in the test in the Spanish version than those obtained in the English version.

In the second task, that is, in the Gap Filling Picture Task, the results highlight some important aspects about the level of acquisition of spatial mappings in the spatial domain. On the one hand, it provides data about the degree of acquisition, as well as on the degree of divergence or preference for a particular spatial conceptualization scene and its relationship to the level of proficiency. Furthermore, analysis of the unacceptable responses provides information about those spatial schemas that posed greater difficulty for the participants and informs about the misuse of certain prepositions.

An overall analysis of the answers of this test shows that participants perform noticeably better in the Spanish version than in the English version of the test. From a viewpoint of error analysis, despite the fact that there are scenes that cause confusion to the participants in both languages, the English version has the highest number of unacceptable responses by far. In picture 7 participants struggle to express the concept correctly in both languages. The particles that show the highest number of errors are *above* and *below,* in the English version, and *encima* and *debajo,* in the Spanish version of the test.

The third task, that is, the Prototype Elicitation Task or Sentence Generation Task, is the first task that yields results relevant to both the expression of spatial relationships and the figurative competence of the participants. The results of this test provide both qualitative data, that is, about the nature of the utterances produced by the participants and

their relationship with the preferred answers chosen by the native control group, and also quantitative data, that is, the greater or lesser number of utterances not acceptable, as an indication of the difficulty of a particular preposition. The results indicate that in the English version, again, *above* and *below* are the prepositions that generate greater difficulties for the participants. Among the Spanish prepositions, *encima* and *debajo* are the two that produce most errors. From a qualitative point of view, in relation to the answers given by the respective native control groups, it can be observed that in the case of English the production of figurative statements is slightly inferior to that of the control group, while in the case of Spanish, the number of figurative statements is higher than the average produced by the Spanish control group.

The fourth and final task, that is, the Truth Value Judgment Task, provides information, like the previous task, in two directions: on the one hand, it provides information on the spatial uses of prepositions, and, on the other, about the figurative uses depicted by these particles. This task yielded results that confirm what has been seen in the previous test. The Spanish prepositions *debajo* and *encima* occupied the top position in the ranking of errors made by the participants. In English, again, the preposition *below* followed closely by the prepositions *above* and *under* occupy the highest positions. In the case of English, the literal uses of prepositions are the most difficult for the participants. In Spanish, however, the difficulty seems to be shared equally between the two meanings.

Overall, these results seem to suggest that there is no evidence that in English, which the participants began to study well before puberty and that have been exposed to for a greater number of years, the mastery achieved is above that reached in Spanish. There is no

evidence either that the answers provided are more similar to the native control group in English than in Spanish.

These results do not seem to support the idea that there is a parallel between the acquisition of a first language and what happens, in acquiring a foreign language, in particular in the case of prepositional meanings. That is, the spatial and figurative meanings of prepositions are not acquired sequentially, or so it seems from the data presented here, but in parallel, at last in the case of acquisition of a foreign language.

In the next chapter I proceed to discuss in more detail these data while noting some of the limitations of this study.

CHAPTER 6: DISCUSSION OF RESULTS

CHAPTER 6: DISCUSSION OF RESULTS

This chapter contains a detailed discussion of the results presented in chapter 5. In order to do this, the results obtained from the groups of participants are analysed in relation to the research questions and the working hypotheses presented above. The results obtained in the study are also compared with the results of previous studies on the acquisition of the spatial preposition system in both English and in Spanish. In the first part of this chapter the existence of the pattern of acquisition of spatial and figurative meanings of prepositions in both languages is considered. The second part of this chapter studies the relationship between the age of acquisition and differences in the level of command of the particles of spatial expression that are studied here. In the third part, a brief analysis of the main errors made by the participants is provided and an attempt is made to provide an explanation for their causes. The final part comprises a summary of the main conclusions that can be extracted from the analysis carried out in this thesis.

6.1 THE PROCESS OF ACQUISITION OF SPATIAL PREPOSITIONS IN ENGLISH AND SPANISH

In this doctoral thesis, in response to the previously- mentioned lack of studies, I aim to offer an initial approach to studying the process of acquisition of the literal and figurative meanings of spatial prepositions in Spanish by Chinese-speaking students. In order to carry

out this task, a set of data collection tools have been designed that make it possible to provide samples of the processes of understanding and production of a series of spatial prepositions that occur frequently and are highly representative of the category. The patterns of acquisition of these prepositions can thus be compared across languages, in this case, across the two additional languages of the Chinese participants, English and Spanish. In this way, it is possible to test whether the patterns of acquisition of prepositions are specific to a given language or whether, on the contrary, acquisition is a constant phenomenon with similar or comparable patterns occurring in both English and in Spanish.

In general, and to facilitate the analysis, the results obtained from this research can be divided into three sections: the first relates to the results obtained in the Lexical Identification Task and the Fill in the Blanks Picture Task, the data from which provide information that is primarily of a spatial nature; the second section corresponds to the results of the Prototype Elicitation Task or Sentence Generation Task and the Truth Value Judgement Task, the results of which provide more specific information about the relationships between spatial and figurative meanings; and the third section includes the combined results of all the tests, and their relationship with different variables such as levels of command, age of onset and errors or deviations with regard to the answers from the control groups, providing information on the acquisition process as a whole.

6.1.1. The acquisition of literal and figurative meanings of spatial prepositions

As explained above, the research topic of this thesis, namely the process of acquisition of spatial and figurative meanings of a set of Spanish prepositions by intermediate and upper intermediate level Chinese SFL university students, is structured

around two main questions and the hypotheses relating to each of the questions. The first of these questions is as follows:

Is there a pattern in the acquisition of spatial and figurative meanings of prepositions by intermediate and upper intermediate level Chinese students of Spanish as a Foreign Language, and, if so, what are the features of this pattern?

A first hypothesis maintains that there are a series of parallels between L1 acquisition and the processes involved in the acquisition of a foreign language (Hyltenstam, 1977; Zobl, 1980, Ortega, 2013). Findings from the field of L1 acquisition (Peronard, 1985; Quinn, 1994, 2005; Castro and Sandoval, 2009; López Ornat, 1999; Tomasello, 2000, 2003) reveal the existence of gradual process of evolution, characterised by an increase in the number of meanings of spatial particles acquired. This increase is initially linked to spatial uses; abstract uses are added later. Studies on the acquisition of figurative competency (Levorato and Cacciari, 1992, 1995, 1999, 2002; Crespo Allende and García Escala, 2009) also point towards the same process.

A second source of support for this order-of-appearance hypothesis, with literal meanings appearing first followed by abstract meanings, is provided by studies into the history of language broadly, and semantic development in particular. In both the case of English (Tyler and Evans, 2003) and that of Spanish (Lapesa, 1991; Morera Pérez, 1988), etymological and historical dictionaries initially only record spatial uses and other abstract ones emerge from these meanings. The later increase in meanings occurs through

conceptual metaphor mechanisms (Johnson and Lakoff, 1980; Brugman and Lakoff, 1988) and other lexical phenomena that are documented in the processes of diachronic evolution of Spanish and English.

In the field of second language acquisition (almost exclusively the acquisition of English as a foreign language), the results are much less coherent. There are variety of reasons for this lack of definition: in many of the studies here reviewed (Ijaz, 1986; Correa Beningfield, 1988; Krzeskowski, 1990) the concept of preposition used in each study is much broader than the one used in this thesis (in many cases they are collocations or verb valency), the methodology used in some of these studies (Campillos Llanos, 2014) is questionable, and, furthermore, in none of the studies reviewed here has the process of acquisition of more than one language by the same group of participants been examined. The logical consequence of this last factor is the difficulty of separating the results of a specific phenomenon connected to the acquisition of a particular language, from what is seen as being almost an almost universal constant in process of second language acquisition.

Nonetheless, amongst the studies reviewed, Ijaz (1986), as well as Correa Beningfield (1988), Krzeskowski (1990), Giraldo Silverio (1997) and Campillos Llanos (2014), to mention just a few, identify initial acquisition of the spatial meanings and, depending on the studies, subsequent acquisition of the abstract and peripheral meanings, as causing the greatest rate of transference from the respective L1s.

6.1.2 The Prototype Elicitation Task or Sentence Generation Task

As explained above, this task involves presenting the spatial particles that are the subject of study alongside two distractors. The participants were asked to write the first utterance that came to mind without thinking too much and without revising the utterance once it was written, as Navarro i Ferrando and Tricker (2001) and Guarddon Anelo (2005) did. The resulting utterances were evaluated by British and Spanish native speakers with training in English linguistics and SFL and put into categories: on the one hand acceptable/unacceptable, and on the other hand literal/figurative. These results were in turn compared to the grades obtained in the level tests to try to see if there is a potential pattern of acquisition of literal and figurative meanings as competence in English or Spanish improves. This test gives participants the opportunity to produce utterances with which they feel comfortable as the test is administered without predetermining the answers, unlike the rest of the tests where the type of answer sought is predetermined.

The results of the English version of the test provide data that seem to support the idea maintained by Kemmerer (2005), Navarro i Ferrando & Tricker (2001) and Lam (2010), namely the second hypothesi, that there is no pattern of acquisition resembling what happens in a first language. In fact, in only two of the English spatial particles studied, *under* and *in*, is any type of pattern of acquisition observed, specifically a very weak pattern that seems to indicate that as subjects advance along the continuum of linguistic command they experience an increase in skill and frequency of use of figurative utterances. However, this has a small effect size. For the rest of the prepositions studied (*over, below* and *above*) there are no differences that can be deemed to be significant in any of the statistical tests carried out between the type of utterance that the participants produce and the different levels of

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linguistic command. Consequently, **there appears to be sufficient evidence to opt for the second of the hypotheses: that there is no identifiable pattern of acquisition similar to the one present in the acquisition of a first language**.

These results should be considered in light of the comparison established with each of the groups of linguistic command into which the participants have been divided. The measure of linguistic command can to some extent be seen as a tool that makes it possible to trace a line of chronological development, even though this is a cross- sectional study that also makes it possible to see if the different linguistic levels really have their own defining characteristics. In the case of this test, in particular, and with regard to the distinctive characteristics between the production of literal and figurative utterances across different levels, the results reported here confirm that there is no such differentiation.

These results also show that, except for the spatial particle *below* (the results for which do display a significant difference), the particles do not present a difference that can be considered to be statistically significant. However, there are still signs that the production of figurative utterances by the Chinese participants in comparison with the corresponding activity by the native English-speaking control grou, is different and of a lower standard. The control group tends to produce a greater number of figurative utterances than the participant group.The results of the Spanish version of the test provide data that, while differing from the performance of the participants in the corresponding English version, still appear to support the idea that Kemmerer (2005), Navarro i Ferrando & Tricker (2001) and Lam (2010) upheld, namely the second of my hypotheses, that there is no identifiable pattern of acquisition similar to the one that is present in the acquisition of a first language. I shall now consider this in greater detail.

The first difference that these results demonstrate, and that should be highlighted, is the difference in the responses of the control groups. The Spanish control group provided responses that were equally acceptable to those given by the native English-speaking control group, as is to be expected logically. Nonetheless, the nature of the responses differs considerably.[30] While the English-speaking control group had an overall average of 2.26 for figurative utterances, the Spanish-speaking control group only had an average of 0.92. With regards to literal utterances, the English control group had an overall mean of 2.71 and the Spanish control group had a mean of 3.53. Consequently, I can conclude that in Spanish, at least with the control group used in this study, greater use is made of the literal meanings of spatial prepositions than in English.

This difference is probably related to the particular characteristics of the linguistic systems of the two languages, something that I do not intend to analyse here but that is a valid argument and that would relate to the results obtained by Becker and Carroll (1997) that indicate that spatial prepositions in Spanish display greater spatial usage, and that their geometric, functional and combinatory characteristics are simpler than those in English, thus meaning that their acquisition might be simpler than in the case of English.

A second difference that can be observed in this test, and that matches what is seen in the English version of the test, is that there is no clear and defined pattern linked to the level of linguistic command. That is to say, in contrast with what was stated in the first hypothesis, there are no signs that learning of literal and figurative meanings occurs in a similar fashion to the diachronic development that is characteristic of L1 acquisition. In the

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[30] This type of qualitative difference in the use of spatial prepositions has, as far as the author is aware, not been examined in any study that contrasts the two languages (Whitley, 2002), even though it is known to have a high rate.

case of the prepositions *encima de* and *bajo* there are no statistically significant differences. For the other particles studied, the significance is a small effect that is consequently of little relevance.

A third difference is linked to the production of utterances with meanings based on the homonymous sense. In this regard, it has been shown that only at the most advanced levels are utterances with homonymous meanings produced. This is especially marked in the case of *sobre* and somewhat less so in the case of *bajo*. This result is similar to what Navarro i Ferrando & Tricker (2001) and Guijarro Fuentes & Marinis (2007) found in their studies, namely, that the knowledge that SFL students have of spatial particles (and by extension of this homonymous usage) even at very advanced levels, is not comparable to that of native speakers.

A fourth interesting piece of data is that for three of the particles studied (*encima, bajo* and *deb*ajo) a certain development of the interlanguage of the participants in a particular direction can be observed: As their level increases there is also an increase in the number of literal utterances (leaving to one side the higher level participants that I have called upper intermediate, as they are less numerically representative). That is to say, participants not only can produce more acceptable utterances (as is to be expected and as occurs in all of the tests, that is, as the level increases there is a smaller number of unacceptable utterances), but that the type of production they perform is also more similar to that produced by native speakers. It can be seen that the production of acceptable literal utterances increases as the level of linguistic command increases.

A fifth interesting piece of data relates to the production of figurative utterances, a form of production that is considerably higher for all the spatial particles in the control group

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participants. This differs notably from what is observed in the English version of the test. In the case of English, the production of acceptable figurative utterances is very close to the levels produced by the control group (although always lower), albeit always maintaining the distance that has been previously mentioned that differentiates the production by native speakers from that of L2 students. In the case of Spanish, the Chinese participants display a preference for or over-generalisation of figurative uses in comparison with the production of the control group. Various explanations can be offered for this phenomenon.

Firstly, this over generalisation could result from a number of causes. On the one hand, it could be a transference effect since, as explained above, it is at the lower levels that less use is made of spatial meanings. That is to say, students whose level of Spanish is lower produce more figurative utterances that, while acceptable, did differ from the trend towards literal uses shown by the Spanish control group. Consequently, it could be concluded that this trend is an example of a transfer of the idiosyncrasies of the English language motivated by a low level in the L3. However, I feel that more experiments would be needed to be able to confirm this option. Jarvis & Pavlenko (2008) provided an overview of research on the acquisition of L2s and L3s in which they show that there are mixed and sometimes contradictory results with regards to the influence of the proficiency level factor when acting as a deciding factor in cases of transference. These results, the authors note, are fundamentally due to three factors: the methodology for measuring linguistic command; the impossibility or difficulty of collating these studies as they focus on different levels of the continuum of linguistic command; and, finally, the fact that they approach different areas of language.

Secondly, another factor that must be taken into account when analysing these data, as Jarvis & Pavlenko (2008) note, is the fact that as this exercise is a production test whose participants have carried out their learning process in a different context to that in which the language is spoken, the gap between production and comprehension is greater. For these authors, this difference would be due to the fact that with typologically closer languages, learners outperform in terms of comprehension over production, due to the limited input to which they usually have been exposed, mostly in academic contexts, as is the case of these participants. In fact, it is precisely this explanation that I consider to be most feasible in accordance with what the participants produced. Another additional argument for the importance of the quantity and quality of appropriate input in influencing production by students of foreign languages is given by the results of the group of students with linguistic immersion. It is necessary to remember that, compared to the majority of the participants who did not have any experience of immersion, there was a group, albeit not as numerous as I might have liked, of 18 students who have had this experience. While the statistical value of the results is not sufficiently marked for us to be able to talk of true statistical significance, it is also, nonetheless, true that from the data it is visible that the production of acceptable utterances is greater than the rest of the participants, even at higher levels. And although this superiority is not entirely statistically significant, it is a trend that cannot be ignored.

Although the analysis carried out in this thesis is fundamentally quantitative, from a qualitative perspective I can state that a reasonably high proportion of students produced similar or identical phrases based on the materials that they had used while learning. This is a very important phenomenon and is specific to the language learning methods used in China, as Santos Rovira notes (2011). Owing to large classes sizes on the one hand, and, until

recently, the lack of bibliographic resources that was mentioned previously on the other, teaching of Spanish has some distinctive characteristics in China that should be remembered.

In both secondary education and at degree level it is very common to encounter language classes with 40 or 50 students (or even with more students at lower ranking universities). The methods used, therefore, are often based on memorising formulaic linguistic structures as examples of the grammatical or lexical points that the students learn in their classes, as well as translation and memorising long bilingual glossaries.[31] The coincidence of some utterances could be explained by this particular factor, that is to say, by the common use of the same series of textbooks that are relatively unknown in the Western world, called El Español Moderno. This book is a benchmark in SFL teaching in mainland China, and without a doubt is the most widely sold and used book in Chinese university Spanish classrooms (Dalin, W. & Garayzábal Heinze, E., 2006).

A number of authors have carried out studies on this SFL teaching manual,[32] and they have reached similar overall conclusions: it is a textbook that gives students a basic grammatical, lexical and phonetic knowledge but that is unable to develop their communicative abilities and so the students' written and oral production is often based on stock phrases, collocations and memorised fragments.

These results highlight the importance of quality language teaching. The literature on SLA provides numerous examples of the importance of this factor. The studies reviewed

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[31] It is worth recalling that this type of skill is practiced by Chinese students during almost all of their time in education, as Santos Rovira notes (2011). Indeed, it is quite surprising to see the capacity for memorisation that Chinese students have. During the several years that this author spent working in China as an examiner on SFL diplomas he has witnessed real feats of the capacity to memorise long presentations and recite them in oral and written exams.

[32] See the work of Galloso Camacho, M.V, Lin & Garrido Domené (2015) for an extensive list of the criticisms it has received and for further detail on its methodological design.

earlier by Ioup et al. (1994) or by Bongaerts (1999), to cite some of the most representative, show that beyond the existence (or otherwise) of a critical period and the limitations that the age factor might have on the achievemnet of native-like levels, there are three factors that determine success in learning languages: the quality and quantity of input that the student receives; the quality of the teaching that she receives; and the motivation with which she approaches studying. Even in areas such as phonology, it has been observed that it is possible to reach a level of command similar to that of a native speaker when these conditions are adequately met.

Thus, while the results of level tests evaluate the general competency of the students, as Jarvis & Pavlenko (2008) recognise, evaluating linguistic command is more complicated than the simple result of a level test. In this way it can be seen how input is a factor that creates observable differences in production tests, even though more work is required on this matter to be able to establish solid conclusions.

Having revised the results from the Prototype Elicitation Task (PET) or Sentence Generation Task, the results obtained in the last test, the Truth Value Judgement Task (TVJT), shall now be considered.

6.1.3 Truth Value Judgement Task

It is worth remembering that in the TVJT participants were shown 70 small drawings (12 per spatial particle, 6 acceptable and 6 unacceptable ones, split between literal and

figurative meanings, alongside which 10 distractors were included) and they were then shown an utterance and had to make a judgement about its acceptability.

These two tests comprise a complementary block of information. This complementarity derives from the fact that in both tests the results obtained make it possible to make inferences about the performance and level of competence of the participants with regards not only to their knowledge about literal meanings but also, and more importantly, their knowledge of the figurative meanings of the spatial particles. The main difference between the two tests lies in type of result obtained; while the PET is a free production test, in the TVJT the responses are of bounded comprehension and there is no such freedom of choice.

The results of the English version of this test again seem to support the second hypothesis stated in this study's first research question, namely, that it is not possible to observe a pattern of acquisition for literal and figurative meanings of the spatial particles studied here. In the case of the particle *over*, while it is true that there is a certain trend, the statistical results lack the required robustness to state that it is a pattern. This is also the case of the results for the particle *below*, in which there are significant differences between the different levels of command. However, these differences do not reflect a similar pattern of development to that set out in theories that defend a process of acquisition similar to that of the L1. There is an increase in the correct identification of both acceptable figurative and literal utterances, but there is also an increase in the number of errors that, as was expected, is not inversely proportional to the trend just described.

The results of the Spanish version of the test are even stronger, if possible, than those of the English version. No relationship of any type was identified that indicatesthe

existence of a pattern between the level of acquisition of figurative or literal uses and the respective levels of linguistic command for any of the spatial particles studied.

Consequently, in evaluating the results of both tests it can be concluded that, in the absence of further studies with upper intermediate level participants (in this research, there were only three such participants), there is no pattern of acquisition of literal and figurative meanings linked with levels of linguistic command as an indicator of a gradual pattern. That is to say, it cannot be stated from the data available in this research that in a foreign language it is necessary to acquire literal meanings first in order to be able to acquire and use figurative meanings subsequently.

6.2 AGE AS A FACTOR IN THE PROCESS OF ACQUISITION OF SPATIAL PREPOSITIONS IN ENGLISH AND SPANISH

In the field of L2 acquisition, Johnson and Newport's study (1989) led to the spread of the idea that the existence of a critical period shapes the level of acquisition that students can attain in a foreign language. This work was followed by long list of studies (Long, 1990; DeKeyser, 2000; Birdsong and Molis, 2001, to mention just a few) that seemed to support these authors' conclusions. Munich (2003) and Munich and Landau (2010), in particular, in their study on the acquisition of English by an immigrant population the USA also reached similar conclusions with Spanish as the subject of study. However, other authors, especially in the cognitive field and the field of bilingualism have recently raised doubts about both the

extension of this phenomenon and its real influence. Birdsong (1992), Birdsong and Molis (2001), García Mayo and García Lecumberri (2003) and Muñoz (2006) have reached conclusions that bring into question the findings of the first authors. In this research, albeit indirectly, I also consider this factor.

This analysis now focuses on the evaluation of the results of the tests in relation to whether there is (or is not) a developmental decline that makes age of acquisition the greatest deciding factor in the level of acquisition of prepositions. If this were the case, taking into account that the mean age for starting to study English is 8 and for Spanish it is 18, and that the time spent studying English is 14 years compared with 4 years for Spanish, it would be expected that performance in the English tests would be clearly superior to in the Spanish ones.

To do so, special attention will be paid to two tests, the Lexical Identification Task and the Picture Fill in the Blanks Task.

6.2.1 The Lexical Identification Task

The Lexical Identification Task, a general test that complements the respective level tests used to determine the general level of linguistic command of the participants, is used in this study to ensure specific measurement of knowledge of prepositions. The participants had to identify a series of prepositions in English and Spanish among a number of words that were morphologically, orthographically and phonetically possible but were invented. The results leave no doubt that in the case of English the number of errors is statistically higher with almost 3% fewer prepositions identified (compared with control group) compared with

an error rate of just 1.8% in Spanish. One possible explanation for this difference lies in the characteristics of the English prepositional system itself, as its number of units is clearly much higher than in the Spanish system, meaning that less frequently used prepositions were ignored when correctly identifying them, especially by those participants with a lower level of command.

6.2.2 The Gap Filling Picture Task

It is worth recalling that the Picture Fill in the Blanks Task is a test in which participants receive 15 sketches under which there is a short phrase that includes the Figure and the Ground and a small gap where the students must put a word (not exclusively a preposition, although that is the most natural option).

This is a very valuable test for obtaining a measure of the overall level attained in the expression of spatial relationships by the participants. The images are very schematic and show highly prototypical situations. This is an improvement on other experiments from the field of psychology where geometric vectors and functional relationships are forced and participants are asked to make value judgements that even in their own L1 would be difficult. These images also do not require the participants to make use of special lexical or syntactic knowledge;[33] they simply have to be able to express an everyday relationship between the Figure and the Ground shown in the sketch. As with the other tests, the participants completed both Spanish and English versions, allowing us to compare the overall level attained in the two languages.

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[33] This is similar, for example, to what Coventry and Garrod (2004) do, intended for English native speakers, or in the L2 field what Munich (2008) and Munich and Landau (2010) do.

The results from Chapter five, when taken as an aggregated mean, reveal data that leave no room for doubt; in the English version of the test the participants obtained an aggregate mean of correct answers of 80.66% compared with the results from the Spanish version of the test, where the result was 91.4%, a clearly significant difference that indicates that a higher level of competence was attained in Spanish.

As has already been shown, the majority of the participants started studying English at very early ages, specifically, almost 20% of the participants started studying English before the age of 7, with some subjects starting at ages as early as 3 or 4.

These results appear to suggest that, even though they started to study English before the onset of puberty, and although the results in the overall proficiency tests seem to be similar, their command of Spanish is still better, with the correct responses provided by the participants matching the answers provided by the Spanish native control group more closely than those provided by the English control group.

6.2.3 The Prototype Elicitation Task or Sentence Generation Task

The results of this test, appear to support my second hypothesis, namely the idea that there is no evidence that early acquisition (in my case starting to study English before puberty) affects the level of command attained in the use of spatial particles in their literal and figurative uses. The participants' performance in the English version of the test displays similar results to those obtained in the Spanish version, and so I believe that there is sufficient evidence to be able to state that the age of onset factor is not a determining factor in the level attained by the participants in the use of spatial prepositions.

Nevertheless, these results must be approached with a certain degree of caution, as, respecting a strictly rigorous methodology will only be able to state that the developmental factor does not come into play in absolute terms when research has been carried out on participants who started to study Spanish in a similar age band to those who study English, and vice versa. However, this type of participant is rare in non-immersion contexts.

However, there is sufficient evidence to be able to state that command of the prepositional component, even at advanced levels is not comparable with that of native speakers, something that has also already been made apparent in the work of Navarro i Ferrando & Tricker (2001) and Guijarro Fuentes & Marinis (2007), for example. While age is a factor whose influence is not completely ruled out, it does appear that there may be other more important factors affecting the greater or lesser command of spatial expression. This is apparent in my study, where participants, including those who started studying the language at ages before puberty (when most studies usually place the existence of critical periods) obtained better results with a clearly significant difference in their command of spatial expression in Spanish with regards to their performance in English.

6.3 ANALYSIS OF ERRORS IN THE PROCESS OF ACQUISITION OF SPATIAL PREPOSITIONS IN ENGLISH AND SPANISH

6.3.1 The Gap-filling picture task

The results of the Gap-filling picture task indicate better performance by the participants in the Spanish version than in the English version, meaning that for each of the

sketches, the number of acceptable responses and their similarity to the response given by the native control group is greater.

One sketch however (number 7) showed virtually the same percentage of errors in both versions (69.8% of answers were correct in the English version compared with 67% in the Spanish version). The sketch does not seem to be especially difficult, and so it is interesting to observe such a high percentage of errors. If the corresponding term in Chinese, 后,[34] is analysed, it can be seen that there is a loss of semantic differences. Consequently, 后 includes the meanings of the English prepositions *after* and *behind*. Furthermore, the same occurs in Spanish with *tras, detrás de* and *después de* (all of which are acceptable responses given by the control group in both languages). That is to say, even though some participants did not know the difference between these particles and their areas of application, as all of them are possible (according to the responses given by the native speakers in the control group) a greater proportion of correct answers would have been expected.

Therefore, I believe that the cause of these errors can be attributed to a mismatch between the functional properties that are established between the Figures represented in the sketch and their Ground, that is to say, the idea of order and control in which one subject appears behind another is not interiorised until very advanced levels. Indeed, in both Spanish and English the preferred incorrect response was *by/por*, which indicates an individualised concept of the Figures, opting for prepositions without the capacity to express a relationship of control, as would be appropriate for a queue and would be expressed by the preposition *detrás de* or *tras.* These results seem to match what has been observed in

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[34] In Chinese this type of construction would be expressed using the particle 接着 that is adverbial and verbal in nature, as follows: 他们一个接着一个地走进教室

other studies on the acquisition of prepositions (Navarro i Ferrando & Tricker, 2001; Guijarro Fuentes & Marinis, 2007) in which the results, while correct, differ from those given by the native speakers, as happens here. Thus, for example, the favoured option for the native control group in Spanish is *detrás de* with 63% compared with the Chinese group who opted for this answer in just 3% of cases, mainly (63.2%) opting for *tras,* an answer given to a lesser extent by the control group.

A second source of errors, as shown for example by sketch 1 and 6, corresponds to the distinction between the particles *above* and *over*. I shall now consider what the cause of these errors might be.

6.3.2 Prototype Elicitation Task or Sentence Generation Task

The error analysis of the Prototype Elicitation Task or Sentence Generation Task confirms that even at advanced levels (which in this research are referred to as intermediate and upper intermediate), and despite it being a test in which respondents are free to choose the answer with which they feel most comfortable, it is still apparent that the production of acceptable utterances is systematically considerably lower amongst the group of Chinese participants than in the respective English-speaking control group. It is, however, true that the group of upper intermediate participants reaches acceptable levels of production that are comparable with of the control group, but these require further research to verify their validity as in the study group I only had three participants of this level.

6.3.3 The Truth Value Judgement Task

The error analysis in the Truth Value Judgement Task reveals similar characteristics to the results found in the previous tests, suggesting that they are not isolated errors associated with a particular test but rather a shortcoming in the complete acquisition of these prepositions.

The results of the error analysis of the English version of the test indicate that the prepositions that create the most difficulties for the participants are *over, below* and *under.* In particular, the unacceptable figurative uses of the preposition *below* are harder for the participants to identify as atypical. This result is not surprising as it was already apparent from the previous test that the participants displayed the highest aggregate mean of errors with this preposition. Where there is a small difference, however, is in the case of the particle *above* that has figures for unacceptable meanings that are very similar to those of the preposition *over*. This result differs from what was seen in the previous test in which *above* showed a mean rate of errors that was much higher than that of *over.*

The results of the Spanish version of this test, in turn, indicate that the prepositions that create the greatest difficulties are the spatial particles *debajo* and *encima.* These results fully coincide with those seen in the previous test, where the same prepositions had the highest error rates.

These results fully match those seen in the previous test and highlight the participants' tendency to favour figurative uses of prepositions over literal uses. Nevertheless, in this test, unlike in the previous one, participants were not given freedom of usage, and so it can be seen that the participants had more difficulties in expressing spatial

uses than figurative ones. As is explained above, this preference for figurative uses is likely to be related to the type of input and the teaching model that the participants have received.

6.3.4 Overall error analysis

As has previously been mentioned, in two of the tests the results display a high level of similarity in their performance, namely the Sentence Generation Task and the Truth Value Judgement Task. This similarity, as is stated above, is evidence that independently of the age at which the participants started to study English, or the greater number of years they have spent studying it, the results are comparable once a similar level of command is attained in both languages, or, as shown by the results of the Picture Fill in the Blanks Task, they are even better in the case of Spanish.

If a global analysis of the results is performed, it becomes clear that the errors that the participants most frequently make principally relateto the English spatial particles: *below, above* and, to a lesser extent, *in;*[35] and to the Spanish nominal adverbs *encima* and *debajo.*[36]

These results (at least in the case of English) display a large degree of similarity with those found in the previous research. Nonetheless, as i mentioned in Chapters 2 and 3 of this study, depending on the focus of each piece of research, these errors tend to be attributed to different factors such as the age of acquisition, the length of exposure,

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[35] I do not intend to claim that the prepositions *over* and *under* are free from errors, nor that they are of lesser importance, but these are the three particles that are involved in most of the examples of unacceptable production.

[36] It was also noted that in comparison with the native speakers in the Spanish control group, in the Gap-Filling Picture Task the participants produced a greater number of figurative utterances, however, this cannot be regarded as an error and so is not analysed here.

methodology or the features of the linguistic systems previously interiorised by the students. Therefore, the question that concerns us here, after excluding, at least initially, the age of acquisition and length of exposure factors is: why do these particular particles cause the participants the greatest difficulty?

I believe that these errors are fundamentally due to three closely related factors: firstly, the teaching methodology used that is different for English and for Spanish, where students have native teachers for a large number of university courses and greater importance is given in these courses to communicative methodologies and cognitive grammar teaching; secondly, as has already been mentioned on a number of occasions, to the quality and quantity of input received, a factor that is closely linked to the first one; and thirdly, owing to the deficiency resulting from the previous factors, a process of substitution by transfer occurs (in the field of L3 acquisition, cross linguistic influence) of meanings from the L1, in this case from the linguistic system of Chinese. No outline of this third factor is provided.

Spatial expression in Chinese, as explained in Chapter 2 of this study, to some extent shares a greater similarity with the simplicity of the Spanish prepositional system. That is to say that, unlike in English, a single term represents spatial relationships with more vagueness or imprecision than is denoted by English spatial prepositions. For example the Chinese spatial particle 下 combines three meanings. The first of these meanings describes a relationship of inferiority of an F with regards to a G with contact. A second meaning refers to a relationship of inferiority of an F with regards to a G but without contact, although in the same vertical axis. The third meaning refers to an F that is in a position of inferiority with regards to a G but without contact and displaced from the vertical axis.

In comparison with 下, in English three particles exist, namely *under, below* and *beneath*. As stated in chapter 2 (Brala, 2002), each language operates at different levels of generality. This means that the geometric and functional relationships established between the f-s and the g-s are, very often, different in each language. Consequently, as Brala (2002) and Lam (2010[37]) observe, owing to deficiencies in teaching[38] and input, many of the participants were unable to select the appropriate particle to transmit the required function at both the literal and figurative levels. From this it follows that the most frequent errors correspond to the confusion between *under* and *below,* as English operates with lower levels of generality than Chinese.

The same process occurs with the Chinese spatial particles 上 and 在. The meaning of the particle 上 is that of indicating that an F is superior to a G and, like 下, it combines various English prepositions, principally, *above, over* and *on*. That is to say, 上 indicates a relationship in which an F is above a G with contact, or above in the same vertical axis but without contact or even above but in limits that are outside the vertical field defined by the G. Identifying the appropriate function is crucial to making adequate use of these particles. For example, one of the most common errors found in this study is the use of *above*[39] in

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[37] The teaching model based on the translation method can be identified as something that introduces errors.

[38] In the English teaching curriculum in China (Zhang, 2009), as stipulated by the education department of each province, under and over are taught earlier and in greater detail, as they are considered to be more useful and more frequently occurring.

[39] The distinctions expressed in English through its prepositional system do not always have an equivalent prepositional construction in Chinese or Spanish. For example, in Chinese to indicate the difference between *above* and *over* when the F is in the same vertical axis and there is an attempt to specify the absence or not of contact, a verb (放/悬) is usually put in front of the spatial expression, for example:

1.书放在桌子上

2. 吊灯悬在桌子上

A similar preference to that seen in Chinese also occurs in Spanish. There is a tendency to avoid spatial expressions that depend solely on prepositions in favour of a more verbal or adjectival construction. A clear

situations in which the F is in movement instead of using the preposition over, as Chinese spatial particles usually express an absence of movement (Zhang, 2009).

The errors made with the preposition *in* are only of marginal importance in the TVJT, given that the central schema of the English preposition in corresponds very closely with the spatial construction 在 。。。里. The possible reason for which a small rate of errors has been observed in the TVJT for this preposition might be a result of over-generalisation and confusing the uses of *in* and *on*,[40] principally for non-literal uses.

In the case of Spanish, even though errors were observed, these are much rarer in statistical terms than in the case of English because although the input factor and instructional factor are still not ideal (albeit better than in the case of English), Spanish operates at higher levels of generality, in a similar way to Chinese, and so it is easier for the participants to choose the appropriate preposition to express a particular function. Consequently, as Becker and Carroll (1997) state, it is the idiosyncratic internal characteristics of the three linguistic systems that participants have internalised that create the greatest difficulties for acquisition. Most of the errors recorded are the result of lack of knowledge of the figurative conceptualisation of some idiomatic or highly conventionalised expressions in Spanish. Although the particles *encima* and *sobre,* on the one hand, and *bajo* and *debajo,* on the other, function as synonyms in most cases, as is explained in chapter 2, it

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example is given by the English spatial particles *up* and *down* that are generally translated into Spanish, on most occasions, with a verbal construction. For example:

3. Prices are going up.

Los precios están subiendo.

Nonetheless, this type of distinction is not generally made in conventional usage, unless it is not possible to deduce the meaning from contextual clues.

[40] A verbal expression can also frequently be found to express the central meaning of the preposition on. For example, 放在。。。上 or 搁在。。。上 (Zhang, 2009).

is important to mention that there are certain restrictions on their figurative use that some of the participants have still not internalised and that serve to distinguish between the use of both participles.

6.4 CONCLUSION

This doctoral thesis comprises a study with two main objectives: to try to establish whether there is a pattern in the acquisition of spatial and figurative meanings of Spanish prepositions by Chinese students of Spanish as a Foreign Language and to identify whether there are observable differences between the level of acquisition and use of prepositions in English and in Spanish. Furthermore, by comparing the process of acquisition of spatial particles in Spanish and English, the ages of acquisition of which were significantly different for the participants, the possible influence of factors such as the existence of a critical period for the acquisition of spatial expression has been indirectly evaluated.

The first conclusion derived from the data from this research agrees with the results obtained in previous studies showing that there is no diachronic development of the semantic networks of spatial particles (Kemmerer, 2005; Lam 2010). That is to say, with the data available here and with those from the aforementioned works, it is possible to state that in foreign language acquisition there is no pattern of acquisition similar to the acquisition that takes place in the mother tongue. There is no evidence to state (Rice 1996, 1999, 2003) that primary meanings are acquired before the less prototypical ones.

In answer to the second research question of whether there are observable differences between acquisition and use of prepositions in English and Spanish, the data presented here do not indicate any clear patterns of difference.

The participants generally display a similar performance in the tasks in Spanish and English, and indeed in some cases, performance is better in Spanish, although the age of acquisition was later and length of exposure to this language lower. Thus, in this study, unlike some previous research (Munich 2002; Munich & Landau, 2010), the age factor in second language acquisition does not seem to have the importance that has traditionally been attributed to it, or at least, the importance that it had been given in immersion contexts. The data in this thesis support the idea that, independently of the age at which one starts studying a foreign language, as García Mayo & García Lecumberri (2003) and Muñoz (2006) have already observed, the level of command obtained, at least in the prepositional component studied here, depends on other factors apart from age.

A third conclusion that can be derived from this study shows, as Navarro i Ferrando & Tricker (2001) and Guijarro Fuentes & Marinis (2007) have already done, that regardless of the level of linguistic command attained by these students in the foreign language, or the fact that they have experienced periods of immersion in contexts in which the language is spoken, the level of command and of production by these participants differs from that of the native speakers. This raises several questions, on the one hand, why this difference exists and whether it can be overcome through correct instruction, and, on the other hand, if it cannot, as many voices from the field of study of bilingualism and multilingualism claim

(see Singleton, 2003 for a detailed overview), can a referent for comparison be found, other than the production of monolingual native speakers?

Within the field of SLA this question, what role native speakers play in research into the acquisition of L2s as a standard of comparison with learners of a L2, has been one of the most hotly debated topics in recent years. It is especially important to note Cook's work (1997, 1999, 2009). This author reviewed a large part of the SLA methodology and research performed towards the end of the 1990s. In this review, using a variety of arguments (fundamentally taken from sociolinguistic theories), Cook suggests a need to abandon the so-called "monolingual bias" in favour of a concept of the student of second languages as an autonomous entity, decoupling it from the comparison with the native. This argument is based on demonstrating that, while many SLA theories do recognise the independence of the grammar of L2 learners, in practice, most SLA research methodologies adopt a vision that is counter to the independence of the grammar and so the production of L2 learners is either compared with what native speakers produce, or with a rule extracted from the production of the educated native speaker. The solution that Cook proposes involves changing the approach and terminology used to discuss L2 learners in research, favouring the term "user" and adopting a concept derived from studies of bilingualism. In studies of bilingualism, again following Cook, emphasis is placed on recognition of the user of an L2 as an entity in his or her self who should only be compared with members of the same group, that is to say, with other users of this L2. In this way, students of an L2 are no longer regarded as defective or incomplete monolingual speakers, but are considered to be a phenomenon deserving study in their own right. The objective of studying an L2 is not conceived as knowledge of this language, but rather as use of it.

Similar approaches have appeared in various research groups, principally those dedicated to studying bilingualism and multilingualism (Cenoz, 2013; Sridhar, 2012 for a more detailed review of the main criticisms and contributions from these currents). The basic underlying idea that is common to these schools is consideration of the bilingual or multilingual speaker not as the sum of different monolingual speakers who have not reached full development but rather as a multilingual speaker with his or her own characteristics that differentiate him or her from the monolingual native speaker. Amongst these characteristics, the fact that the L2s also have an influence on the knowledge/use of the speaker's own L1 is cited as especially important.

This topic has been debated for almost thirty years in the field of SLA studies in general, and more specifically in the circles of study of bilingualism and multilingualism. Nonetheless, from a practical viewpoint, oriented towards both research and on teaching, very little has changed, if indeed anything has. This is not a new phenomenon. The lack of harmony between advances in linguistics and psycholinguistics and their practical implementation in the classroom, in teaching and in evaluation has been a constant factor for several decades.

In the teaching of Spanish in China the native speaker is still the reference point in almost all Spanish as a foreign language textbooks. The native speaker's pronunciation, syntax and lexical preferences continue to form the objective towards which the teaching that students receive in classrooms is directed. This is also the case with the evaluation of the knowledge of the student of a L2. Both the CEFR and the Curriculum Plan of the Instituto Cervantes include a series of linguistic requirements for each level of command that corresponds with and makes continuous reference to the educated native speaker and the

norms that this speaker uses. What is even more disheartening is the lack of initiatives, corpora or indices that might open up new methodological pathways for teaching L2 students and for evaluating their knowledge.

Nonetheless, despite the criticisms it has received, as can be seen in this thesis and in the methodology that I have decided to use to carry out my research, I do not believe that completely abandoning the native in SLA acquisition studies is the answer. There are various reasons for this:

a) A language is the product of how its speakers use it, and it is on this product that students of an L2 draw most of the time. Relating the production of natives with that of the students/users of a L2 is, therefore, unquestionable.

b) On top of this, the linguistic knowledge that native monolingual and bilingual speakers possess is still not fully understood.

c) Furthermore, if we were to eschew the concept of native speaker in research it would be impossible to verify the existence of critical or sensitive periods.

d) Neither would it be possible to account for the cognitive and linguistic development of bilingual and multilingual speakers or the changes in which they are immersed (Montrul, 2013).

Where I do agree with those voices that criticise the so-called "monolingual bias"[41] is in the need to reconsider how command of a L2 is conceived. That is to say, instead of seeing the L2 learner as an incomplete native speaker who has not managed to reach the threshold

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[41] It is important not to forget that what is known as monolingual bias is not exclusive to the field of SLA, as is sometimes cited in the literature, but that also in studies on bilingualism and multilingualism we encounter a multitude of articles in which native control groups are used with a similar perspective (Montrul, 2013).

for command of the language set by the native, it would be more appropriate to describe and study the margin of deviation in his or her production with regards to the parameters of acceptability in that language. This would mean abandoning the negative view that is criticised in the "monolingual bias" while at the same time involving recognising the linguistic heritage that the native affords. In fact, in this thesis, two factors have been taken into account on this regard: on the one hand, the norms and usage that are the fruit of academic works and corpus of use of the language; on the other hand, the variance in the responses that natives themselves give has also been taken into account, responses that in some linguistic currents (as in the prescriptive school) would be considered inappropriate or even incorrect. Nonetheless, I believe that these are authentic responses produced by natives and, as such, they are acceptable (as they are not isolated cases). They are an example of the creative force of the language and into which the rigid categories of norms, rules and acceptable uses do not always fit well.

With regards to future research and with the focus on the implementation of some of these ideas in teaching practice, in future works it would be appropriate to take into account some of the following reflections:

Firstly, as Cook observes (1997: 16) citing Dörnyei (1990), it is necessary to recognise that many students of a foreign language do not aspire to become native speakers of that language, but rather they study it for a series of different motives, that is to say, with an instrumental motivation. It is, therefore, erroneous to submit the student of a foreign language to continuous comparisons with the native.

Secondly, as Cook also notes (1997: 23), the objective of SLA research would have to be directed at researching the reasons for which students of a foreign language attain the

level they attain, instead of systematically comparing this level with that of the native speaker of that language, always adopting a negative perspective, as Ortega notes (2014).

Thirdly, from an empirical viewpoint, to study exhaustively the linguistic knowledge of the two or more languages that the student/user has, evaluating their domains of use and the relationship of dominance established within the subject's linguistic melting pot.

Fourthly, as in this thesis, to consider the possibility of comparing the levels and characteristics of acquisition of Spanish as a foreign language by students who started to study it before puberty and those (as is the case with our participants) who started to study it after passing this stage. In other words, the comparison must be established with members of his or her own same class.

Finally, as Montrul suggests (2013), it appears to be necessary to guide research towards studying the advantages that the knowledge of another language gives to the individual at a cognitive, educational, economic or social level, instead of focussing solely in the differences that exist with the native speaker.

Considering future research, it will be important to study the acquisition of spatial particles in SFL by groups of students who display a variation in the age at which they started studying Spanish, to see if there really is a specific difference between those participants who started studying Spanish before puberty (Johnson and Newport, 1989, Munich and Landau, 2010) and those who commenced their studies after that age. As noted above, finding Chinese-speaking participants with this type of profile and in non-immersion contexts is currently very difficult. Nonetheless, the number of secondary schools that are starting to add Spanish to their curriculum is clearly increasing, and so it is to be expected that in the

next three to four years there will be a sufficient number of schools and students with the required level to be able carry out this type of research.

Another of the shortcomings of this study that I hope can be overcome in future research is the fact that it was not possible to obtain a sample that was sufficiently numerically representative at the advanced level (comparable to C2 on CEFR scale) to reach firm conclusions about the level of command reached by this upper group. However, as mentioned above, in two or three years when the cohort of students of Spanish from secondary schools reaches these levels, it should be possible to carry out larger studies covering this group.

From an instructional perspective, especially based on the results from the PET task, a deficiency in the section on production of authentic samples of Spanish has been highlighted. The literature on the acquisition of second languages emphasises the importance of the quantity and also the quality of input that foreign language students receive when improving production by these students in non-immersive settings. Therefore, in the field of foreign language pedagogy and teaching it appears to be pertinent to introduce a series of changes with this objective in mind.

In the same way, the importance of choosing an appropriate methodology for teaching the prepositional component has been noted, as Lam has already indicated (2003), given that if the quantity of input, its quality, and the type of explanation (or lack of it) that students receive is not appropriate, the time of acquisition and the complete acquisition of this component become very difficult tasks for the SFL student. Although Lam's work (2003) was unable to demonstrate the efficacy of a particular teaching methodology for better acquisition of prepositions or for a reduction in the number of errors, it did, however, lay the

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foundations for carrying out future studies. In fact, I believe that SFL pedagogy should make use of studies such as Brala's (2002) and create a pedagogic adaptation to allow students to internalise the different levels of generality at which languages operate and the characteristic functions of each language, showing the differences between these and the ones of the student's L1.

Although more studies with a broader range of linguistic content and participants are required, the results of this thesis do reveal a series of pieces of pedagogical data that must be taken into consideration with regards to teaching practice.

Firstly, despite the large amount of publicity that linguistic immersion receives with regards to the planning of language courses abroad, this thesis, more specifically with regards to the acquisition of the spatial component of the prepositions that is under scrutiny, appears to show that despite the importance of living and studying in a context of immersion in the acquisition of a foreign language, it is not sufficient for attaining a higher level of command of the language. In other words, while immersion is valuable, it is not the be all and end all and is not as decisive as the amount and quality of input received.

Secondly, from a methodological viewpoint, a teaching model based on presenting the cognitive frameworks underlying spatial prepositions and their relationship with the figurative meanings that they usually display in everyday communication is more useful than a teaching model based on showing examples and providing bilingual glossaries (Lam, 2003).

Thirdly, when presenting the prepositional cognitive frameworks, I strongly recommend using figures that are as abstract and basic as possible, and presenting the general meanings of the greatest possible number of prepositions, so that the students can see the buffer zones between prepositions. In this regard, one error that some grammars

and text books make, in my opinion, is presenting prepositions using different objects or people. As we saw in the Gap Filling Picture Task, sketch number 7, apparently contains no type of complexity; nonetheless, participants produced a large number of errors in both Spanish and English. This might be because of the way in which each community of speakers, each language, codifies the prototypical relationship between objects (Carlson & Van Der Zee, 2005). What might seem like a somewhat banal and simple spatial configuration to the publisher or author of pedagogical materials, and also apparently to the student, might contain a source of misunderstanding of the rule that is being taught because of the difference between the prototypical relationships that are attributed to said objects.

Finally, it is worth emphasising the idea that while there are critical or sensitive periods in which a second language can be more easily acquired, this is not a decisive factor. A correct methodology, based on a systematic grammatical presentation, continuous activation through quality input in the necessary quantity that favours intensive programmes over less intensive ones, and with the regular provision of feedback, results in satisfactory acquisition, without deficiencies or absences that can be attributed to the age at which the student started to study a given language.

APPENDIX

PARTICIPANT CONSENT FORM

Project title The Role of Proficiency in the Acquisition of Spanish (L3) Spatial Particles

Researcher's name Pablo Encinas Arquero

Supervisor's name Dr. Pedro Guijarro Fuentes

- I have read the Participant Information Sheet and the nature and purpose of the research project has been explained to me. I understand and agree to take part.
- I understand the purpose of the research project and my involvement in it.
- I understand that I may withdraw from the research project at any stage and that this will not affect my status now or in the future.
- I understand that while information gained during the study may be published, I will not be identified and my personal results will remain confidential.
- I understand that data will be stored in accordance with data protection laws.
- I understand that I may contact the researcher or supervisor if I require more information about the research, and that I may contact the Research Ethics Sub-Committee of the University of Nottingham, Ningbo and the University of Plymouth (UK) if I wish to make a complaint related to my involvement in the research.

Signed …………………………………………………………………… (Participant)

Print name ………………………………………………………… **Date** …………………………………

Contact details

Researcher: Pablo-encinas.arquero@nottingham.edu.cn
Supervisor: pedro.guijarro-fuentes@plymouth.ac.uk
UNNC Research Ethics Sub-Committee Coordinator: Doris.du@nottingham.edu.ucn

APPENDIX B. PARTICIPANT CONSENT FORM (CHINESE)

参与者同意书

项目标题 The Role of Proficiency in the Acquisition of Spanish (L3) Spatial Particles

研究者姓名 Pablo Encinas Arquero

导师姓名 Dr. Pedro Guijarro Fuentes

- 本人已阅读声明，项目组织者已经我解释了研究项目的性质和宗旨。本人理解并同意参与。
- 本人理解项目的目的和在项目中的参与作用。
- 本人明白可以在研究项目的任何阶段退出，不会因此影响现在以及将来的状况
- 本人明白研究过程中信息可能会被公开，但本人身份不会被确认，个人的调查结果始终是被保密。
- 本人知道面谈/数据采集（酌情省略）将会被录音/拍摄（酌情省略）
- 本人了解数据会根据数据保护相关法律进行存储
- 本人知道，如果需要进一步有关研究的信息可以联系研究者或者导师，如果需要对参与研究提出投诉则可以联系宁波诺丁汉大学科研伦理小组委员会。

参与者签名……………………………………………………………………………………..

日期………………………………………………………………………………………….

联系方式

研究者：Pablo-encinas.arquero@nottingham.edu.cn

导师：pedro.guijarro-fuentes@plymouth.ac.uk

诺丁汉大学研究道德委员会秘书：Ms Doris Du (Doris.du@nottingham.edu.cn)

AUTORIZACIÓN DEL PARTICIPANTE

Título del proyecto: The Role of Proficiency in the Acquisition of Spanish (L3) Spatial Particles

Nombre del investigador: Pablo Encinas Arquero

Nombre del supervisor: Dr. Pedro Guijarro Fuentes

Confirmo que:

- He leído el documento de Información para el Participante y que se me han explicado tanto la naturaleza como el objetivo del proyecto. Lo entiendo y estoy dispuesto a participar en el mismo.
- Entiendo el objetivo de este proyecto de investigación y mi participación en el mismo.
- Entiendo que puedo retirarme de dicho proyecto en cualquier momento y que dicha decisión no me afectará ni ahora ni en el futuro.
- Entiendo que aunque la información obtenida durante el proceso de recogida de datos pueda ser publicada, no seré identificado a título personal y mis resultados serán confidenciales.
- Entiendo que los datos serán almacenados de acuerdo con las leyes de protección de datos.
- Entiendo que puedo contactar con el investigador o su supervisor en caso de necesitar más información sobre la investigación, y que puedo ponerme en contacto con el sub-comité de Ética Investigadora de la Universidad de Nottingham, Ningbo y de la Universidad de Plymouth, en el supuesto de querer presentar una reclamación en relación con mi participación en este estudio.

Firma ……………………………………………………………………… (participante)
Nombre ………………………………………………………… **Fecha** …………………………………

Datos de contacto:

Investigador: Pablo Encinas Arquero pablo-encinas.arquero@nottingham.edu.cn
Supervisor: Dr. Pedro Guijarro Fuentes pedro.guijarro-fuentes@plymouth.ac.uk
Administradora del Comité de Ética Investigadora de la Universidad de Nottingham: Doris Du Doris.du@nottingham.edu.cn

APPENDIX D. PARTICIPANT INFORMATION SHEET (ENGLISH)

Participant Information Sheet: The Role of Proficiency in the Acquisition of Spanish (L3) Spatial Particles

Dear Participant,

Thank you for agreeing to participate in this questionnaire survey in connection with my *PhD dissertation* at the University of Plymouth. The project is a study of the acquisition of Spanish as a foreign language.

Your participation in the survey is voluntary. You are able to withdraw from the survey at any time and to request that the information you have provided is not used in the project. Any information provided will be confidential. Your identity will not be disclosed in any use of the information you have supplied during the survey.

The research project has been reviewed according to the ethical review processes in place in the University of Nottingham Ningbo and the University of Plymouth, UK. These processes are governed by the University's Code of Research Conduct and Research Ethics. Should you have any question now or in the future, please contact me or my supervisor. Should you have concerns related to my conduct of the survey or research ethics, please contact my supervisor or the University's Ethics Committee.

Yours truly,

Pablo Encinas Arquero

Contact details:

Student Researcher: Pablo-encinas.arquero@nottingham.edu.cn

Supervisor: pedro.guijarro-fuentes@plymouth.ac.uk

University Research Ethics Committee Administrator, Ms Doris Du

(Doris.du@nottingham.edu.cn)

声明

论文题目：The Role of Proficiency in the Acquisition of Spanish (L3) Spatial Particles

尊敬的参与者：

谢谢您参与这次问卷调查。这次问卷调查是我在宁波英国诺丁汉大学博士论文相联系的。研究题目是 西班牙语作为外语的习得研究.

　　您是自愿参与此次问卷调查的。您可以在任何时候选择放弃这次的问卷调查，并要求您提供的信息不被使用在此次调查中。您提供的所有信息都是保密的。在使用您提供的信息时不会涉及您的身份以及个人信息。

　　宁波诺丁汉大学已根据研究道德检查程序对这项研究项目进行检查。这一程序是在学校关于研究行为和研究道德的行为标准的指导下进行的。如果您现在或将来有任何疑问，请联系本人或我的导师。如果您对我在问卷中的研究行为或研究道德有任何质疑，请联系我的导师或者英国诺丁汉大学的道德委员会。

Pablo Encinas Arquero

联系方式：
研究员：Pablo-encinas.arquero@nottingham.edu.cn
导师：pedro.guijarro-fuentes@plymouth.ac.uk

诺丁汉大学研究道德委员会秘书：Ms Doris Du (Doris.du@nottingham.edu.cn)

INFORMACIÓN PARA EL PARTICIPANTE

The Role of Proficiency in the Acquisition of Spanish (L3) Spatial Particles

Estimado participante,

Gracias por acceder a participar en este cuestionario vinculado a mi tesis doctoral en la Universidad de Plymouth, Reino Unido. Dicho proyecto versa sobre el proceso de adquisición de una segunda lengua, y más específicamente del español como lengua extranjera.

Tu participación en este cuestionario es voluntaria. Tienes total libertad para abandonar la realización de este cuestionario en cualquier momento y solicitar que no se incluya en el proyecto tu colaboración en el mismo. Toda información suministrada será tratada confidencialmente. Tu identidad no será hecha pública en cualquiera de los usos que se haga de la información que has proporcionado en este cuestionario.

Este proyecto de investigación ha sido revisado de acuerdo con el proceso de ética investigadora en vigor en la Universidad de Plymouth, Reino Unido, y en la Universidad de Nottingham, Ningbo (China). Dichos procesos se encuentran auspiciados por el Código de Conducta Investigadora y el Código de Ética Investigadora de la Universidad. Si tuvieras alguna pregunta en estos momentos o tras la realización de la prueba, no dudes en ponerte en contacto conmigo o con mi supervisor. Si algún aspecto sobre la realización de este cuestionario o sobre ética investigadora te preocupa, puedes ponerte en contacto con mi supervisor o con el Comité de Ética Investigadora de la Universidad.

Atentamente,

Pablo Encinas Arquero

Datos de contacto:

Investigador: Pablo Encinas Arquero pablo-encinas.arquero@nottingham.edu.cn
Supervisor: Dr. Pedro Guijarro Fuentes pedro.guijarro-fuentes@plymouth.ac.uk
Administradora del Comité de Ética Investigadora de la Universidad de Nottingham: Doris Du Doris.du@nottingham.edu.cn

HISTORIAL LINGÜÍSTICO
(Esta información será tratada confidencialmente)

APPENDIX G. LANGUAGE PROFILE QUESTIONNAIRE (SPANISH)

I. Información personal:

Nombre:	
Sexo:	☐ Masculino ☐ Femenino
Fecha de nacimiento:	
Ocupación:	
Nivel de estudios:	☐ Secundaria ☐ Formación Profesional ☐ Universidad
País de origen:	
E-mail:	

II. Historial lingüístico:

En esta sección nos gustaría que contestaras a algunas preguntas sobre tu historial lingüístico.

¿Cuál es tu primera lengua? _____

¿Es esa lengua la primera lengua de tus padres? ☐ sí   ☐ no

¿Aprendiste la primera lengua desde tu nacimiento?   ☐ sí ☐ no

¿Qué lengua (s) hablabas en casa de pequeño? _____

¿Es tu primera lengua con la que más a gusto te sientes al comunicarte? ☐ sí ☐ no

Si has respondido no a alguna de las preguntas anteriores, indica la razón
_____

III. Educación y uso de lenguas:

¿En qué idioma (s) fuiste enseñado? ¿Dónde (v.g. país)? ¿Durante cuánto tiempo?

1. Escuela primaria: _____
2. Escuela secundaria: _____
3. Instituto: _____
4. Universidad: _____

HISTORIAL LINGÜÍSTICO
(Esta información será tratada confidencialmente)

¿Qué lengua (s) usas:
1. En casa? _____
2. En el trabajo/ centro de estudios? _____
3. Con los amigos? _____

IV. Segundas/Terceras Lenguas:

En esta sección nos gustaría que contestaras unas preguntas sobre tu aprendizaje de idiomas.

	Segundas/Terceras lenguas		
	Inglés	Francés	Otras _____
1-¿A qué edad comenzaste a estudiar esta lengua?			
2-¿Dónde aprendiste esta lengua?			
3-¿Estudiaste esta lengua como asignatura o como medio de instrucción?			
4-¿Has estado en algún lugar donde esta lengua sea hablada?	☐ sí ☐ no ¿Dónde? ¿Cuánto tiempo?	☐ sí ☐ no ¿Dónde? ¿Cuánto tiempo?	☐ sí ☐ no ¿Dónde? ¿Cuánto tiempo?
5-¿Cuántas horas a la semana, aproximadamente, hablas este idioma?			
6-¿Dónde usas este idioma?	☐ Universidad ☐ Trabajo ☐ Casa ☐ Ocio	☐ Universidad ☐ Trabajo ☐ Casa ☐ Ocio	☐ Universidad ☐ Trabajo ☐ Casa ☐ Ocio
7- ¿Estás en estos momentos estudiando este idioma? Si es así, ¿dónde?	☐ sí Dónde_____ ☐ no	☐ sí Dónde_____ ☐ no	☐ sí Dónde_____ ☐ no
8- Si has respondido "no", ¿dónde y cuándo hiciste el último curso en este idioma?	Cuándo_____ Dónde_____	Cuándo_____ Dónde_____	Cuándo_____ Dónde_____

9- Cuando piensas en alto, te hablas a ti mismo, ¿con qué frecuencia lo haces en los siguientes idiomas?

Español ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
0-10% 10-20% 20-30% 30-40% 40-50% 50-60% 60-70% 70-80% 80-90% 90-100%

Inglés ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
0-10% 10-20% 20-30% 30-40% 40-50% 50-60% 60-70% 70-80% 80-90% 90-100%

Francés ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
0-10% 10-20% 20-30% 30-40% 40-50% 50-60% 60-70% 70-80% 80-90% 90-100%

Otras ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
0-10% 10-20% 20-30% 30-40% 40-50% 50-60% 60-70% 70-80% 80-90% 90-100%

LANGUAGE PROFILE
(Information will remain confidential)

V. Dominio lingüístico:

1-En esta sección nos gustaría que te autoevaluaras del 0 al 6 de acuerdo con tu dominio de idiomas.

0= mal   *6= muy bien*

a.   ¿Qué tal hablas **inglés**?   ☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6

a.   ¿Qué tal hablas **francés**?   ☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6

a.   ¿Qué tal hablas _____ ?   ☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6

b.   ¿Qué tal entiendes **inglés**?   ☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6

b.   ¿Qué tal entiendes **francés**?   ☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6

b.   ¿Qué tal entiendes _____ ?   ☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6

c.   ¿Qué tal lees **inglés**?   ☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6

c.   ¿Qué tal lees **francés**?   ☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6

c.   ¿Qué tal lees _____ ?   ☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6

d.   ¿Qué tal escribes **inglés**?   ☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6

d.   ¿Qué tal escribes **francés**?   ☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6

d.   ¿Qué tal escribes _____ ?   ☐ 0   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6

2- ¿Cuál es tu nivel de dominio del **inglés**?

☐ Principiante   ☐ Intermedio   ☐ Avanzado   ☐ Nativo o casi nativo

3- ¿Cuál es tu nivel de dominio del **francés**?

☐ Principiante   ☐ Intermedio   ☐ Avanzado   ☐ Nativo o casi nativo

4- ¿Cuál es tu nivel de dominio del _____ **(otra lengua)**?

☐ Principiante   ☐ Intermedio   ☐ Avanzado   ☐ Nativo o casi nativo

LANGUAGE PROFILE

(Information will remain confidential)

APPENDIX H. LANGUAGE PROFILE QUESTIONNAIRE (ENGLISH)

I. Personal information:

Name:	
Sex:	☐ Male ☐ Female
Year of birth:	
Occupation:	
Highest level of schooling:	☐ Secondary ☐ College ☐ University
Country:	
E-mail:	

II. Language history:

In this section, we would like you to answer some factual questions about your language history.

What is (are) your first language (s)? _____

Is that language the first language of your parents? ☐ yes   ☐ no

Did you learn your first language from birth?   ☐ yes   ☐ no

Which language (s) did you speak at home as a child? _____

Is your first language the language with which you are the most comfortable? ☐ yes ☐ no

If you have answered "No" to any of the above questions, please explain
_____

III. Education and Language Use:

Which language (s) were you formally educated in? Where (i.e., country)? How long?

1. Primary school: _____
2. Middle school: _____
3. High school: _____
4. University: _____

LANGUAGE PROFILE
(Information will remain confidential)

Which language (s) do you use:

1. At home _____
2. At university _____
3. With friends _____

IV. Second Languages/Third Languages:

In this section, we would like you to answer some questions about your language learning history.

	Second/Third languages		
	French	Spanish	Others _____
1-At what age did you begin to learn this 2nd /3rd language?			
2-Where did you learn that 2nd /3rd language?			
3-Did you learn this language as a subject or was it the principal medium of instruction?			
4-Have you ever spent time in an area where this language was spoken?	☐ yes ☐ no Where? How long?	☐ yes ☐ no Where? How long?	☐ yes ☐ no Where? How long?
5-Approximately how many hours a week do you speak this language?			
6-Where do you use this language?	☐ University ☐ Work ☐ Home ☐ Leisure	☐ University ☐ Work ☐ Home ☐ Leisure	☐ University ☐ Work ☐ Home ☐ Leisure
7- Are you currently taking a course in this language? If so where?	☐ yes Where_____ ☐ no	☐ yes Where_____ ☐ no	☐ yes Where_____ ☐ no
8- If you answered "no", when and where did you last take a course in this language?	When_____ Where_____	When_____ Where_____	When_____ Where_____

9- When you talk to yourself, how often do you **talk to yourself/think aloud** in the following languages?

French
☐ 0-10% ☐ 10-20% ☐ 20-30% ☐ 30-40% ☐ 40-50% ☐ 50-60% ☐ 60-70% ☐ 70-80% ☐ 80-90% ☐ 90-100%

Spanish
☐ 0-10% ☐ 10-20% ☐ 20-30% ☐ 30-40% ☐ 40-50% ☐ 50-60% ☐ 60-70% ☐ 70-80% ☐ 80-90% ☐ 90-100%

German
☐ 0-10% ☐ 10-20% ☐ 20-30% ☐ 30-40% ☐ 40-50% ☐ 50-60% ☐ 60-70% ☐ 70-80% ☐ 80-90% ☐ 90-100%

Other
☐ 0-10% ☐ 10-20% ☐ 20-30% ☐ 30-40% ☐ 40-50% ☐ 50-60% ☐ 60-70% ☐ 70-80% ☐ 80-90% ☐ 90-100%

LANGUAGE PROFILE
(Information will remain confidential)

V. Language proficiency:

1-In this section, we would like you to rate your language proficiency by giving marks from 0 to 6.

0= not well at all   *6= very well*

e.   How well do you speak **English**?   ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
f.   How well do you speak **Spanish**?   ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
g.   How well do you speak _____ ?   ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

a.   How well do you understand **English**?   ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
b.   How well do you understand **Spanish**?   ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
c.   How well do you understand _____ ?   ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

a.   How well do you read **English**?   ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
b.   How well do you read **Spanish**?   ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
c.   How well do you read _____ ?   ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

a.   How well do you write **English**?   ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
b.   How well do you write **Spanish**?   ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
c.   How well do you write _____ ?   ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

2- How is your overall competence in **English**?

☐ Beginner   ☐ Intermediate   ☐ Advanced   ☐ Native or native-like

3- How is your overall competence in **Spanish**?

☐ Beginner   ☐ Intermediate   ☐ Advanced   ☐ Native or native-like

4- How is your overall competence in **_____ (other language)**?

☐ Beginner   ☐ Intermediate   ☐ Advanced   ☐ Native or native-like

个人语言资料
(信息会被保密)

APPENDIX I. LANGUAGE PROFILE QUESTIONNAIRE (CHINESE)

I. 个人信息:

姓名: (中文和拼音)	
性别:	□ 男　　□ 女
出生日期:	
职业:	
最高教育程度:	□ 中学　□ 专科　□ 本科
国家:	
电子邮箱:	

II. 语言历史:

这一部分，我们希望您回答一些关于您语言历史的真实问题

您（们）的第一语言是? _____

这个语言是您父母的第一语言吗？ □ 是　□ 否

您从一出生就学习这门语言吗？ 　□ 是　□ 否

您小的时候在家是说什么语言的呢？ _____

您的第一语言是否是让您感到最舒服的语言？ □ 是 □ 否 （如果没有解释）

如果你对以上任何问题的回答是'否'，请解释。
_____

III. 教育和语言运用:

您被正式教育的语言是哪一种（哪几种）？在哪里（如哪个国家）？多久？

1. 小学: _____
2. 初中: _____
3. 高中: _____
4. 大学: _____

以下地点您使用哪一种（哪几种）语言:

个人语言资料
(信息会被保密)

1. 在家里 _____
2. 在大学_____
3. 和朋友 _____

IV. 第二语言/第三语言：

这一部分，我们希望您回答一些有关于您语言学习的经历。

	第二语言/第三语言		
	英文	西班牙语	其他 _____
1-您在几岁的时候开始学习第二/三语言的？			
2-您是从哪里学习第二/三语言的？			
3-这门语言是作为一个学科而学习的还是作为教学的主要语言来学习的？			
4-您曾经在说这种语言的地方呆过吗？	□ 有 □ 没有 哪里？ 多久？	□ 有 □ 没有 哪里？ 多久？	□ 有 □ 没有 哪里？ 多久？
5-一个星期大概多少个小时您会使用这种语言？			
6-您在哪里使用这门语言？	□ 学校 □ 工作 □ 家里 □ 闲暇时	□ 学校 □ 工作 □ 家里 □ 闲暇时	□ 学校 □ 工作 □ 家里 □ 闲暇时
7- 您目前有参加学习这个语言的课程吗？如果有，在哪？	□ 有 哪里_____ □没有	□ 有 哪里_____ □没有	□ 有 哪里_____ □没有
8- 如果您的回答是'没有'，那您最后一次参加这门语言的课程是在什么时候和在哪里？	什么时候_____ 在哪里_____	什么时候_____ 在哪里_____	什么时候_____ 在哪里_____

9- 当您自言自语的时候,您使用以下语言的频率是多少？

中文
□ 0-10%　□ 10-20%　□ 20-30%　□ 30-40%　□ 40-50%　□ 50-60%　□ 60-70%　□ 70-80%　□ 80-90%　□ 90-100%

英文
□ 0-10%　□ 10-20%　□ 20-30%　□ 30-40%　□ 40-50%　□ 50-60%　□ 60-70%　□ 70-80%　□ 80-90%　□ 90-100%

西班牙语
□ 0-10%　□ 10-20%　□ 20-30%　□ 30-40%　□ 40-50%　□ 50-60%　□ 60-70%　□ 70-80%　□ 80-90%　□ 90-100%

其他
□ 0-10%　□ 10-20%　□ 20-30%　□ 30-40%　□ 40-50%　□ 50-60%　□ 60-70%　□ 70-80%　□ 80-90%　□ 90-100%

个人语言资料
(信息会被保密)

V. 语言熟练程度:

1-这一部分，请您给自己的语言熟练程度从 1 到 6 来做一个评分

0= 一点都不好　　　　　　*6= 非常好*

h.　您说英语的程度?　　□0 □1 □2 □3 □4 □5 □6

i.　您说西班牙语的程度?　□0 □1 □2 □3 □4 □5 □6

j.　您说 _____ 语的程度 ?　□0 □1 □2 □3 □4 □5 □6

d.　您对英语理解能力的程度?　□0 □1 □2 □3 □4 □5 □6

e.　您对西班牙语理解能力的程度? □0 □1 □2 □3 □4 □5 □6

f.　您对 _____ 语理解力的程度 ?　□0 □1 □2 □3 □4 □5 □6

d.　您阅读英语的程度?　　□0 □1 □2 □3 □4 □5 □6

e.　您阅读西班牙的程度?　□0 □1 □2 □3 □4 □5 □6

f.　您阅读 _____ 的程度 ?　□0 □1 □2 □3 □4 □5 □6

d.　您对英语写作的程度?　□0 □1 □2 □3 □4 □5 □6

e.　您对西班牙语写作的程度?　□0 □1 □2 □3 □4 □5 □6

f.　您对 _____ 语写作的程度 ?　□0 □1 □2 □3 □4 □5 □6

2- 您英语的综合能力?

□初学者　　□中级　□高级　□母语或母语水平

3- 您西班牙语的综合能力?

□初学者　　□中级　□高级　□母语或母语水平

4- 您_____ (其他语言)的综合能力?

□初学者　　□中级　□高级　□母语或母语水平

Nombre del participante: _____

A continuación, encontrará un número de palabras reales y no reales en español. Su trabajo es hacer un círculo alrededor de aquellas palabras que sean palabras reales en español.

encima de   ud   cerca   ludu

isde   mute   pirus   junto   debajo

tercit   pas   en   dintra   surqui

sabra   bajo   rosi   al lado de

sod   gresa   losu   frente a

desde   quintra   durie   seci

estrupior   detrás   silce

unde   por   lluz   serti

hacia   resme   sinse

furca   delante   de

APPENDIX K. LEXICAL IDENTIFICATION TASK (ENGLISH VERSION FOR CONTROL GROUP)

Participant's name: _____

LEXICAL IDENTIFICATION TASK: ENGLISH

You will find below a few words and non-words in English. Your task is to circle only those words that are real words in English.
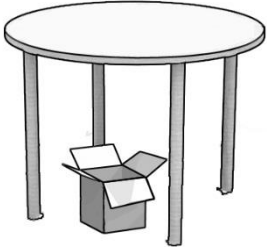

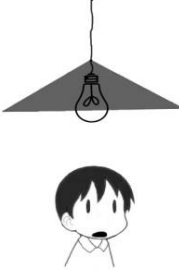a   frews   sweeldorp   above

        stumpf

around   breep   behind

in   hodneycrip   ches   near   blurth

over   lackletate   slish   creds

   shur   up   snoff   beneath

     shang   soffix
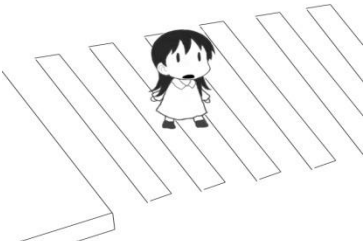
below   burf   cuttlish

                        groatrie

     swreg   from   to

        nuar   sunce   pernet

        under   fure

slemming   for   snike

Nombre del participante: _____

以下您会看到一些西语和非西语单词。您只需要圈上那些真正西班牙语的单词。

encima de   ud   cerca   ludu

isde   mute   pirus   junto   debajo

tercit   pas   en   dintra   surqui

sabra   bajo   rosi   al lado de

sod   gresa   losu   frente a

desde   quintra   durie   seci

estrupior   detrás   silce

unde   por   lluz   serti

hacia   resme   sinse

furca   delante   de

APPENDIX M. LEXICAL IDENTIFICATION TASK (ENGLISH VERSION FOR PARTICIPANTS)

Participant's name: _____

LEXICAL IDENTIFICATION TASK: ENGLISH

以下您会看到一些英语和非英语单词。您只需要圈上那些真正英语的单词。

a   frews   sweeldorp   above

        stumpf

around   breep   behind

in   hodneycrip   ches   near   blurth

over   lackletate   slish   creds

    shur   up   snoff   beneath

    shang   soffix
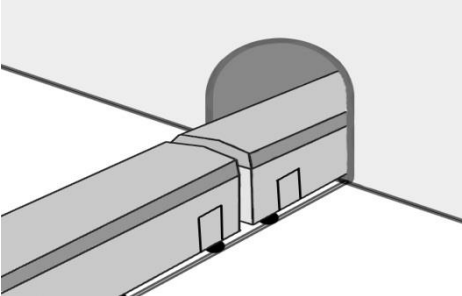
below   burf   cuttlish

                        groatrie

    swreg   from   to

        nuar   sunce   pernet

        under   fure   slemming   for
snike

APPENDIX N. PICTURE ELICITATION TASK (SPANISH VERSION FOR CONTROL GROUP)

Instrucciones: *Complete las siguientes oraciones según el dibujo de cada foto.*

	1.
Hay una caja_____ la mesa. Hay una caja <u>debajo de</u> la mesa.	**1.** Hay un puente _____ el rio.

2.	3.
2. Hay un barco _____el puente.	3. Hay una lámpara _____mí.

4.	5.
4. Está _____la calle.	5. El tren está circulando _____el túnel.

Nombre del participante: _____
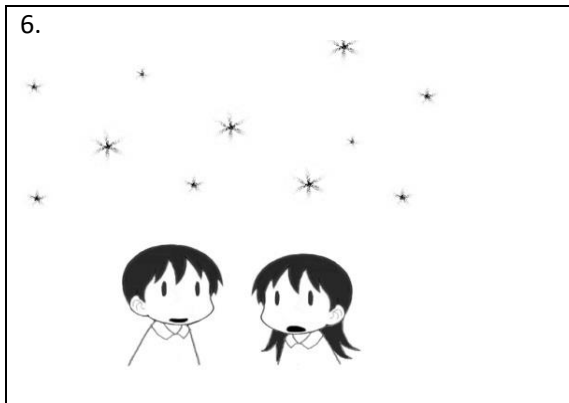
6.	7.
6. Las estrellas brillan _____nosotros en el cielo.	7. Entran a clase uno_____ otro.
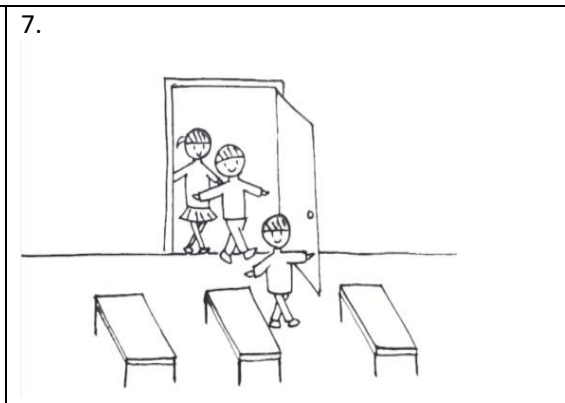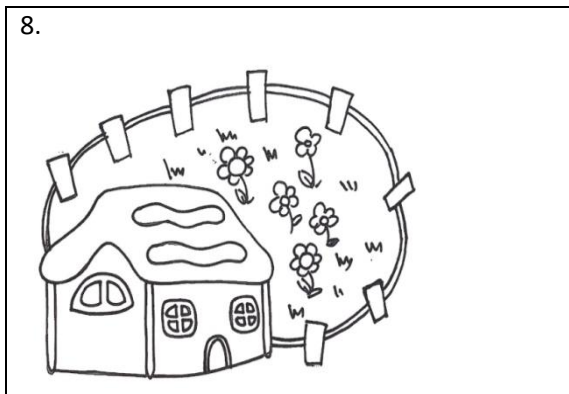
8.	9.
8. Hay un jardín _____ la casa.	9. Unos pájaros están volando _____ el cielo.
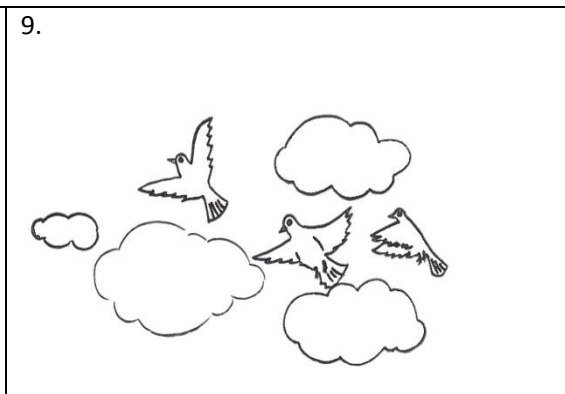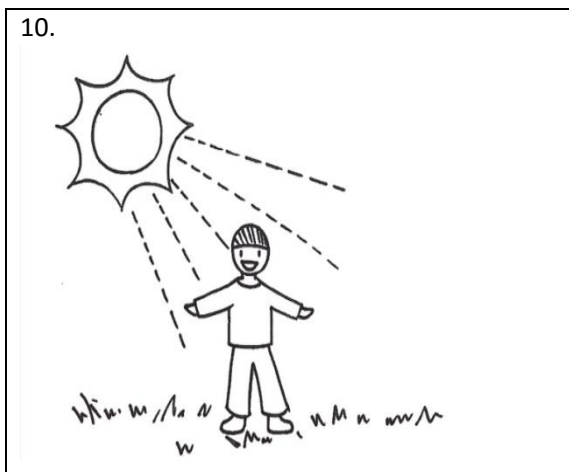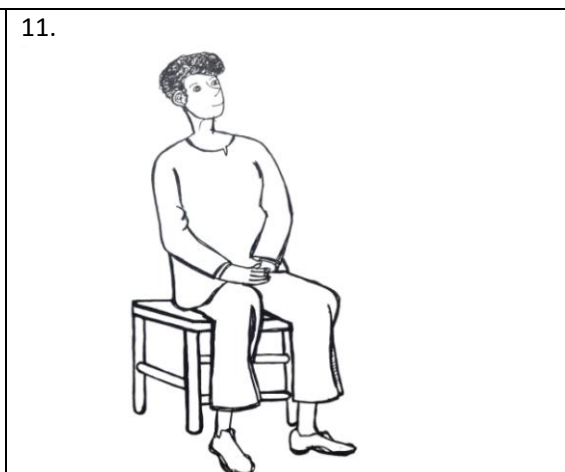
10.	11.
10. Está _____ el sol.	11. Él está sentado _____ una silla de madera.

Nombre del participante: _____

12.	13.
12. Hay muchos árboles _____ la montaña.	13. Hay un cuadro _____ la pared.

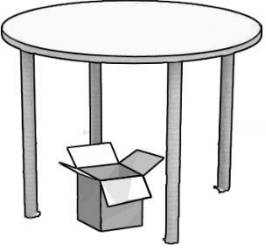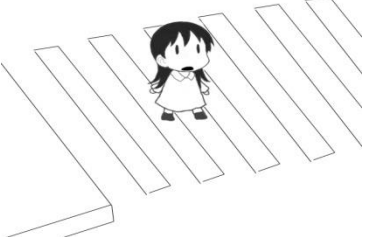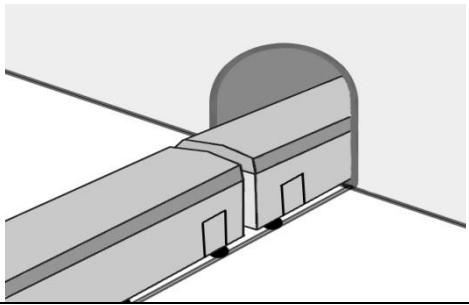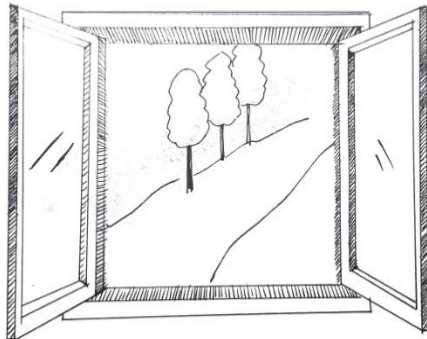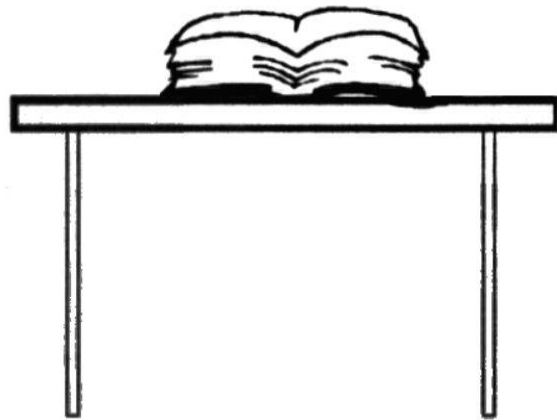|	
14.	15.
14. Hay una ventana _____ la pared.	15. Hay un libro _____ la mesa.

Participant's name: _____

APPENDIX O. PICTURE ELICITATION TASK (ENGLISH VERSION FOR CONTROL GROUP)
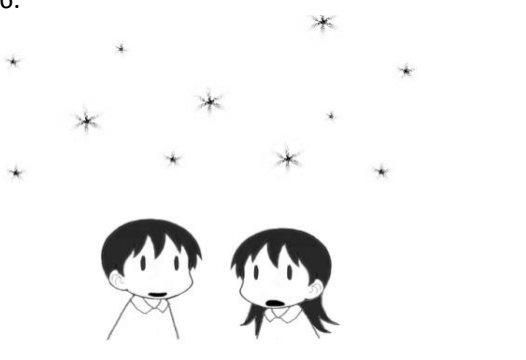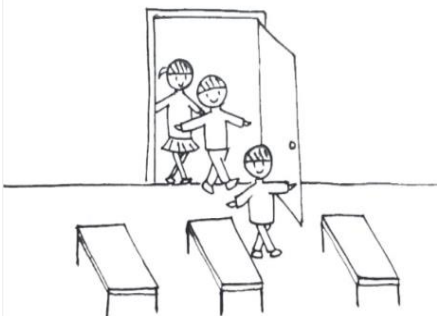
Instructions: Complete the following sentences according to the pictures.

	1.
There is a box _____ the table. There is a box <u>under</u> the table.	1. There is a bridge _ the river.

2.	3.
2. There is a boat _ the bridge.	3. A lamp hanging ___ me.

4.	5.
4. She walked ___ the street.	5. The train is running ____ the tunnel.

6.	7.
6. Some stars are shinning ___ us in the sky.	7. They walked into the room one ___ another.

8.	9.
8. There is a garden ___ the house.	9. A bird is flying ___ the sky.

10.	11.
10. I stand ___ the sun.	11. He is sitting ___ the wooden bench.

12.	13.
12. There are lots of trees ___the hill.	13. There is a picture ___ the wall.
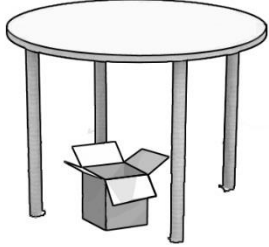
14.	15.
14. There is a window _____ the wall.	15. There is a book _____the table.

Nombre del participante: _____

APPENDIX P. PICTURE ELICITATION TASK (SPANISH VERSION FOR PARTICIPANTS)

指示：根据图片完成以下的句子

	1.
Hay una caja_____ la mesa. Hay una caja <u>debajo de</u> la mesa.	**1.** Hay un puente _____ el rio.

2.	3.
2. Hay un barco _____el puente.	3. Hay una lámpara _____mí.

4.	5.
4. Está _____la calle.	5. El tren está circulando _____el túnel.

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6.	7.
6. Las estrellas brillan _____ nosotros en el cielo.	7. Entran a clase uno_____ otro.

8.	9.
8. Hay un jardín _____ la casa.	9. Unos pájaros están volando _____ el cielo.

10.	11.
10. Está _____ el sol.	11. Él está sentado _____ una silla de madera.

12.	13.
12. Hay muchos árboles _____ la montaña.	13. Hay un cuadro _____ la pared.

14.	15.
14. Hay una ventana _____ la pared.	15. Hay un libro _____ la mesa.

APPENDIX Q. PICTURE ELICITATION TASK (ENGLISH VERSION FOR PARTICIPANTS)
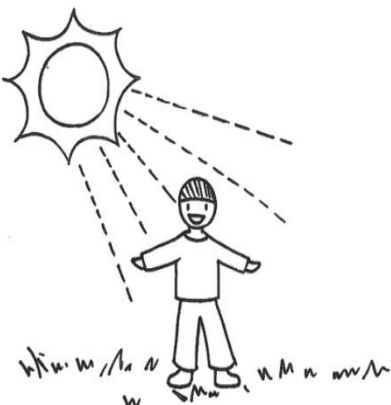
指示：根据图片完成以下的句子

	1.
There is a box _____the table. There is a box <u>under</u> the table.	1. There is a bridge _the river.

2.	3.
2. There is a boat _ the bridge.	3. A lamp hanging ___ me.

4.	5.
4. She walked ___ the street.	5. The train is running ____ the tunnel.

Participant's name: _____

6. 6. Some stars are shinning ___ us in the sky.	7. 7. They walked into the room one ___ another.

8. 8. There is a garden ___ the house.	9. 9. A bird is flying ___ the sky.

10. 10. I stand ___ the sun.	11. 11. He is sitting ___the wooden bench.

12.	13.
12. There are lots of trees ____the hill.	13. There is a picture ____ the wall.

14.	15.
14. There is a window _____ the wall.	15. There is a book _____the table.

APPENDIX R. PROTOTYPICAL MEANING ELICITATION TASK (SPANISH VERSION FOR CONTROL GROUP)

Nombre del participante: _____

*En el siguiente ejercicio tiene que escribir las primeras **cinco** frases que se imagine.*

Por ejemplo. AZUL

Me gusta el azul/ Quiero un boli azul/ Ese azul es bonito/ El cielo es azul/ El azul es mi color preferido.

CLASE
1-
2-
3-
4-
5-

ENCIMA
1-
2-
3-
4-
5-

BAJO
1-
2-
3-
4-
5-

ESPAÑOL
1-
2-
3-
4-
5-

SOBRE
1-
2-
3-
4-
5-

DEBAJO
1-
2-
3-
4-
5-

GRANDE
1-
2-
3-
4-
5-

EN
1-
2-
3-
4-
5-

APPENDIX S. PROTOTYPICAL MEANING ELICITATION TASK (ENGLISH VERSION FOR CONTROL GROUP)

Participant's name: _____

PROTOTYPE ELLICITATION TASK: ENGLISH

In the following exercise you need to write down the first **5 sentences** that come to your mind with the given word.

For example. BLUE

I like blue/ I want a blue pen/ The blue one is nice/ The sky is blue/ I have a blue car

GREEN
1-
2-
3-
4-
5-

OVER
1-
2-
3-
4-
5-

UNDER
1-
2-
3-
4-
5-

ENGLISH
1-
2-
3-
4-
5-

BELOW
1-
2-
3-
4-
5-

ABOVE
1-
2-
3-
4-
5-

LITTLE
1-
2-
3-
4-
5-

IN
1-
2-
3-
4-
5-

APPENDIX T. PROTOTYPICAL MEANING ELICITATION TASK (SPANISH VERSION FOR PARTICIPANTS)

Nombre del participante: _____

在以下的测试中，您需要写下在您脑海里最先出现的五个句子，并且用到''单词。

例： *AZUL*

Me gusta el azul/ Quiero un boli azul/ Ese azul es bonito/ El cielo es azul/ El azul es mi color preferido.

CLASE
1-
2-
3-
4-
5-

ENCIMA
1-
2-
3-
4-
5-

BAJO
1-
2-
3-
4-
5-

ESPAÑOL
1-
2-
3-
4-
5-

SOBRE
1-
2-
3-
4-
5-

DEBAJO
1-
2-
3-
4-
5-

GRANDE
1-
2-
3-
4-
5-

EN
1-
2-
3-
4-
5-

APPENDIX U. PROTOTYPICAL MEANING ELICITATION TASK (ENGLISH VERSION FOR PARTICIPANTS)

Participant's name: _____

PROTOTYPE ELLICITATION TASK: ENGLISH

在以下的测试中，您需要写下在您脑海里最先出现的五个句子，并且用到''单词。

例：BLUE

I like blue/ I want a blue pen/ The blue one is nice/ The sky is blue/ I have a blue car

GREEN
1-
2-
3-
4-
5-

OVER
1-
2-
3-
4-
5-

UNDER
1-
2-
3-
4-
5-

ENGLISH
1-
2-
3-
4-
5-

BELOW
1-
2-
3-
4-
5-

ABOVE
1-
2-
3-
4-
5-

LITTLE
1-
2-
3-
4-
5-

IN
1-
2-
3-
4-
5-

Nombre del participante: _____

Test de frases aceptables

En las siguientes páginas encontrará una lista de pequeñas historias seguidas de una frase. Para cada una de estas historias nos gustaría que usted decidiera <u>qué tal le suena la frase que termina la historia, en relación con las frases precedentes.</u> Para ello nos gustaría que hiciera un círculo indicando lo aceptable que le parece esa frase. Cada hablante tiene una opinión diferente sobre este tipo de oraciones, por tanto, no hay respuestas correctas o incorrectas. Por favor, díganos cuáles de estas oraciones le parecen aceptables o no aceptables en español, sin tratar de utilizar su conocimiento gramatical. No le preste atención al estilo, o a la posibilidad de que estas oraciones puedan ser escritas de una forma más elegante. <u>En estas oraciones no hay problemas con el vocabulario usado.</u>

Recuerde que las oraciones son aceptables o no aceptables en relación con el contexto precedente, por ello es muy importante que lea bien la historia que las precede. Después de la última oración encontrará cinco números. Para cada oración haga un solo círculo en el número que mejor se ajuste a su opinión sobre lo aceptable o no de esa oración. Trate de responder tan rápido como pueda. Por favor, no retroceda, ni cambie las respuestas ya dadas. A continuación le explicamos cómo interpretar la escala numérica:

1	*=*	*suena muy mal*
2	*=*	*suena relativamente mal*
3	*=*	*suena relativamente bien*
4	*=*	*suena muy bien*
100	*=*	*No lo sé*

Ejemplo:

1. Mi amiga Luisa tiene una entrevista. El tráfico está muy mal, y ella está muy preocupada porque tiene una reunión muy importante. Dice:

– Espero que llegue a tiempo.

1   2   ③   4   100

2. Mi amiga Luisa tiene una entrevista. El tráfico está muy mal, y ella está muy preocupada porque tiene una reunión muy importante. Dice:

– Espero no llegar a tiempo.

①   2   3   4   100

1. La asociación de fútbol de China está bastante preocupada por la falta de buenos entrenadores que puedan llevar a su selección nacional a ganar la Copa de Asia en los próximos años. En estos momentos

la asociación está buscando un entrenador extranjero.

1   2   3   4   100

2. Ayer alguien me robó el bolso cuando estaba en la fiesta de Pedro. En realidad, fue culpa mía, porque no hice caso a lo que la gente me decía, incluso mi novio me dijo que

no pusiera el bolso sobre, que lo pusiera debajo.

1   2   3   4   100

3. Hace cuatro años hubo un terremoto muy serio en Sichuan y mucha gente murió. Nosotros estábamos en el coche, aun así, sentimos el terremoto. De hecho,

todavía recuerdo el temblor de la carretera bajo nosotros.

1   2   3   4   100

4. Juan está entrenando todos los días para correr el maratón. Sin embargo, Juan está demasiado gordo y queda poco tiempo para el maratón. Es muy difícil lo que quiere.

no creo que pueda correr el maratón en bajo de dos horas.

1   2   3   4   100

5. Ricardo ha estado de viaje por Galicia y ha visitado muchos lugares interesantes. En su viaje ha hecho muchas fotos, a Ricardo le gusta hacer fotos de

los paisajes naturales con muchos árboles.

1   2   3   4   100

6. Ayer un ladrón entró en mi casa, iba vestido de negro y era muy rápido, intenté cogerlo pero se subió al tejado de mi vecino y corrió de tejado en tejado hasta que al final

se lanzó desde sobre el tejado y huyó corriendo por la calle.

1   2   3   4   100

7. El museo de Ningbo tiene una colección especial sobre Picasso. El próximo día 1 de mayo habrá una serie de actividades especiales.

Los niños que visiten el museo en ese día recibirán un regalo.

1   **2**   **3**   **4**   **100**

8. El otro día fui a IKEA y compré una lámpara nueva para poder trabajar con más luz en mi escritorio porque antes no se veía bien, la colgué ayer mismo, y ahora se ven muy bien los documentos y planos.

La lámpara está encima de mi cabeza, en el lugar perfecto.

1   **2**   **3**   **4**   **100**

9. En algunos países los presidentes del gobierno tienen control sobre todos los aspectos del país, y a veces se vuelven corruptos, por eso…

No es bueno dejar tanto poder en manos de una sola persona.

1   **2**   **3**   **4**   **100**

10. Todos los ciudadanos de China, independientemente de donde vivan, está de acuerdo en que

Mao es el padre y fundador de la nueva China.

1   **2**   **3**   **4**   **100**

11. La Universidad de Nottingham quiere abrir un nuevo campus en Shanghai. Durante varios meses el gobierno de Shanghai y la Universidad de Nottingham han mantenido conversaciones.

Por fin, se llegó a un acuerdo en el mes pasado.

1   **2**   **3**   **4**   **100**

12. Los médicos de los hospitales chinos son muy estrictos. Ayer fui al médico y dejé mi tarjeta sanitaria sobre las otras tarjetas en la mesa del médico. El médico lo vio y me gritó:

"¡Pon tu tarjeta bajo éstas!"

1   **2**   **3**   **4**   **100**

13. En el centro comercial de al lado de mi casa están abriendo muchas tiendas de ropa. La próxima que va a abrir es Zara. Ya queda poco tiempo

Todos los preparativos están bajo camino.

1   2   3   4   100

14. Ayer el profesor se enfadó mucho porque los alumnos no había hecho sus ejercicios. Se despidió de los alumnos,

Dejó el libro sobre la mesa y se fue.

1   2   3   4   100

15. Mi casa es muy bonita y está cerca del centro. Lo único malo es que no puedo levantarme tarde. Por las mañanas hay mucho ruido

Porque hay una carnicería justo bajo mi casa.

1   2   3   4   100

16. Rosa y Paco se han divorciado. La relación ha acabado muy mal. Ninguno de ellos quiere cuidar a los hijos, así que han decidido que

Los niños estén bajo el cuidado de sus abuelos.

1   2   3   4   100

17. Ayer estábamos en un bar varios amigos bebiendo unas cervezas y charlando. Se acercó a nosotros un miembro del equipo de seguridad y nos pidió el pasaporte o carné de identidad. Nos dijo que era porque

Estaba prohibido beber allí si éramos bajo 21 años.

1   2   3   4   100

18. Los restaurantes chinos son muy populares en la ciudad, la comida es buena y barata, pero siempre hay mucha gente que no puede reservar mesa por falta de espacio.

El restaurante quiere un nuevo local para su ampliación.

1   2   3   4   100

19. Vivimos muy cerca del aeropuerto, así que ya estamos acostumbrados a los ruidos de los aviones, durante

Todo el día hay aviones pasando sobre nuestra casa.

1　　**2**　　**3**　　**4**　　**100**

20. A ninguno de mis compañeros de trabajo le gusta mi jefe porque es una persona muy maleducada, pero nadie puede decir nada. Y es que,

Los jefes siempre están sobre los empleados.

1　　**2**　　**3**　　**4**　　**100**

21. Ayer en las noticias dijeron que durante la semana la gente prefiere comer y cenar en casa, pero durante los fines de semana, esto cambia y

Se come más en los restaurantes.

1　　**2**　　**3**　　**4**　　**100**

22. Muchas personas no tienen educación. Ayer estuve en una celebración en un hotel, y tan pronto como los camareros acabaron de servir, muchos de los invitados

Se lanzaron sobre la comida.

1　　**2**　　**3**　　**4**　　**100**

23. Pedro y María siempre están discutiendo. Ayer, por ejemplo, mientras cenábamos, tuvieron una fuerte discusión. No sé por qué, pero vi a Pedro muy enfadado

Salió dando un portazo y desapareció debajo de la lluvia.

1　　**2**　　**3**　　**4**　　**100**

24. La gente cada vez se preocupa más por su salud. Antes en mi ciudad había muy pocos gimnasios, pero en los últimos meses han abierto muchos. Esto indica que

Las personas estamos cambiando de mentalidad.

1　　**2**　　**3**　　**4**　　**100**

25. Hoy era la fiesta de mi pueblo y había mucha gente en la plaza. Por la tarde, cuando toda la gente estaba en la plaza, comenzó a llover, así que

Todos fueron muy rápido a meterse bajo los árboles de la plaza.

1   **2**   **3**   **4**   **100**

26. Ayer vi el IPhone 5s en el supermercado de mi barrio con una oferta muy buena. Quería comprarlo pero

En esos momentos no tenía ni un euro en mí. ¡Qué lástima!

1   **2**   **3**   **4**   **100**

27. Me ha llamado mi madre y me ha dicho que hay problemas en la estación de tren, al parecer su tren ha sido retrasado casi dos horas, así que

Su tren llegará sobre las diez de la noche.

1   **2**   **3**   **4**   **100**

28. Ayer cuando llegué a casa me asusté mucho. Vi que alguien había entrado en mi casa y todo estaba desordenado. Vi a alguien salir por la ventana, era un ladrón. Intenté cogerlo pero

El ladrón desapareció corriendo bajo la lluvia.

1   **2**   **3**   **4**   **100**

29. María y Pedro siempre están comprando cosas caras para presumir delante de sus amigos. Les gusta que la gente piense que tienen mucho dinero, pero no es cierto. Por desgracia, hay mucha gente a la que,

Le gusta vivir sobre sus posibilidades.

1   **2**   **3**   **4**   **100**

30. Paco es un gran amante del arte y de las cosas extrañas. Lo último que ha decidido comprar es un trozo del muro de Berlín. A veces, pienso que Paco

Es realmente un caprichoso.

1   **2**   **3**   **4**   **100**

31. Ángel es muy valiente. Sus amigos me dijeron que una vez un ladrón intentó robarle el coche y Ángel no se asustó. Contestó al ladrón que

Tendría que pasar por encima de él para llevarse su coche.

1   2   3   4   100

32. Nuestras últimas vacaciones en Corea del Norte fueron un poco tristes, había mucha pobreza en las calles y la gente parecía muy infeliz. Llevaban muy poca roca y estaban muy delgados. Por eso

Estuvimos en muy mal humor durante todo el viaje.

1   2   3   4   100

33. Ayer al volver de la compra, dejamos las bolsas y fuimos a ver la televisión. Mientras tanto, Toby, nuestro perro, estuvo jugando con las bolsas y todo quedó desordenado. Al final,

Encontramos las naranjas debajo del cuadro del salón. ¡Qué travieso!

1   2   3   4   100

34. Todo el mundo me está preguntado por Juan, pero yo tampoco sé dónde está. Esta mañana me dijo que llegaría tarde a la fiesta. Lo acabo de llamar y

Juan me ha confirmado que vendrá encima de las siete.

1   2   3   4   100

35. Mi padre echa mucho de menos a nuestro vecino. Ya no vive en mi barrio porque se ha mudado de ciudad. Antes, todos los días al salir de casa para ir a trabajar era muy amable y

Saludaba a mi padre por encima de la valla de su jardín.

1   2   3   4   100

36. Últimamente, ha habido muchos robos en mi barrio. Mi vecino, que es un hombre muy rico, ha pensado que no es seguro tener cosas de valor en casa, así que

Ahora tiene las joyas y los relojes en el banco.

1   2   3   4   100

37. El abuelo de Paco fue un héroe en la guerra. Luchó en muchas batallas contra los enemigos. Sin embargo, no sobrevivió ya que en un ataque sobre la ciudad

Murió bajo las bombas de los enemigos.

1   **2**   **3**   **4**   **100**

38. Pedro es muy despistado, no presta atención a lo que le dicen sus padres. La semana pasada se perdió dos veces por esto motivo. Aunque se lo habían repetido muchas veces, no dio la mano a sus padres y

Se perdió en los invitados a la fiesta.

1   **2**   **3**   **4**   **100**

39. El hijo de Marta es muy travieso, siempre está corriendo y saltando en casa. Ayer vi como después de romper un jarrón

El niño pasó debajo de la cama y siguió corriendo, como si nada hubiera pasado.

1   **2**   **3**   **4**   **100**

40. Acaban de publicar los informes sobre la calidad de la enseñanza en los países de la Unión Europea, de nuevo en España

La educación está por debajo de la media europea.

1   **2**   **3**   **4**   **100**

41. La comida china es una comida muy variada y rica en sabores. Cada región tiene unas características diferentes. Por ejemplo,

La comida de Sichuan es muy picante.

1   **2**   **3**   **4**   **100**

42. Hoy he tardado mucho tiempo en volver a casa desde el trabajo. Había mucho tráfico y además estaba poniéndose el sol. Tenía que conducir muy despacio porque

El sol me daba en la cara y no podía ver bien.

1   **2**   **3**   **4**   **100**

43. La decoración de la biblioteca ha cambiado mucho. Han pintado las paredes, hay alfombras nuevas y ya no hay cuadros. Sin embargo, creo que es una pena, porque

Antes había algunos cuadros realmente interesantes bajo las lámparas.

1　　　**2**　　　**3**　　　**4**　　　**100**

44. Este año la primavera está siendo muy cálida. El hombre del tiempo de la CCTV1 ha dicho que las temperaturas seguirán subiendo. No hay duda,

Ya tenemos el verano encima de nosotros.

1　　　**2**　　　**3**　　　**4**　　　**100**

45. La fiesta nacional fue muy emotiva este año. Hubo muchos asistentes al evento. Cuando sonó el himno nacional la gente guardó silencio y en ese momento

Todos miraban a la bandera moviéndose en el viento.

1　　　**2**　　　**3**　　　**4**　　　**100**

46. Los padres de Luis están muy preocupados. No estudia nada. Sus notas en el colegio son muy malas. Sus padres han decidido

Estar todo el día encima de él para que estudie.

1　　　**2**　　　**3**　　　**4**　　　**100**

47. Últimamente, hay muchas reuniones en la empresa para hablar de un nuevo proyecto. Es muy importante para nuestra empresa, por eso, hay que analizar bien todos los aspectos. Hoy, por ejemplo,

Mis jefes han estado hablando toda la tarde encima de ese tema.

1　　　**2**　　　**3**　　　**4**　　　**100**

48. María, mi jefa, es una mujer muy responsable y trabajadora. Todos los días llega muy pronto al trabajo y se asegura de que todo está bien. No se le olvida nada, de hecho, es un poco pesada, ya que

Ella siempre está en todo.

1　　　**2**　　　**3**　　　**4**　　　**100**

49. José ya no puede coger el coche, la policía le ha retirado el carné de conducir durante un año. Según dice la gente

Lo cogieron conduciendo debajo de los efectos del alcohol.

1   2   3   4   100

50. La psiquiatría ha avanzado mucho en los últimos treinta años. Ahora enfermedades como la adicción al juego son consideradas una enfermedad. En el pasado, las personas que sufrían de este mal

Bajo un punto de vista médico, no eran considerados enfermos.

1   2   3   4   100

51. María está acostumbrada a que su gato rompa cosas en casa. El otro día estábamos tomando un café en la cocina, y de repente se oyó un golpe y un ruido de algo rompiéndose. María sin extrañarse mucho dijo:

"Ya se ha roto el jarrón de sobre la mesa".

1   2   3   4   100

52. Cuando Juan va de vacaciones siempre compra algún regalo a sus compañeros de oficina. Pero cuando le preguntan qué tal se lo pasó, no suele decir mucho, y es que, por lo general,

No suele entrar en detalles.

1   2   3   4   100

53. Hace unos días escuché una noticia sorprendente, unos científicos han descubierto una vacuna contra la malaria efectiva en animales de laboratorio. Pero

Todavía no se puede usar con personas.

1   2   3   4   100

54. Me gusta mucho mi nueva casa, está en una calle llena de tiendas. Los fines de semana siempre me despierta un olor muy agradable a pasteles y pan ya que

Debajo de mi casa hay una pastelería muy grande.

1   2   3   4   100

55. Pedro tiene muy mal carácter. Hoy he intentado hablar con él para explicarle mi idea, y se ha negado a escucharme. Simplemente me ha respondido:

"Encima de lo que te dije ayer, no tengo nada que añadir".

1   2   3   4   100

56. Hace dos semanas Pedro empezó a trabajar en mi empresa. Él es muy buen empleado y siempre llega a tiempo, además se lleva bien con todos. Creo que tengo mucha suerte de que,

Pedro esté debajo de mi supervisión.

1   2   3   4   100

57. Ayer estuvimos en el cine, en el estreno de la nueva película de Pedro Almodóvar. A casi todos los espectadores les pareció que se trata de

La película más interesante de su carrera.

1   2   3   4   100

58. Mi hijo está un poco triste porque ha perdido su nuevo helicóptero de juguete. Ayer estábamos en el jardín probándolo, y después de un rato

El helicóptero voló encima de mi cabeza y al rato desapareció.

1   2   3   4   100

59. Mis hijos son muy traviesos, cada vez que juegan en el salón esconden las cosas en sitios diferentes. Ayer, mientras barría el suelo, vi que

Mis zapatillas de deporte estaban debajo del sofá.

1   2   3   4   100

60. Ayer tuvimos un picnic en el jardín. En un momento dado, toda la gente empezó a mirar a María, y ella no sabía por qué. Luego le dijimos que era porque

Tenía dos mosquitos muy grandes encima de su cabeza.

1   2   3   4   100

61. El hijo de María es muy rebelde. Todos los días se enfrenta a ella y tienen unas discusiones muy violentas. Ayer oí a María gritarle a su hijo,

"Si quieres salir de casa, tendrás que salir sobre mí".

1　　　**2**　　　**3**　　　**4**　　　**100**

62. La semana pasada estuve en un juicio. Era la primera vez que veía a un criminal ante la justicia. No contestó a ninguna pregunta del juez. Lo único que pasó fue que

El acusado se echó la culpa sobre, y se mantuvo en silencio.

1　　　**2**　　　**3**　　　**4**　　　**100**

63. Ayer María y yo estábamos saliendo del restaurante, con tan mala suerte, que cuando pasamos al lado de un camarero, su bandeja cayó al suelo y

Toda la comida fue a dar encima de la falda de María.

1　　　**2**　　　**3**　　　**4**　　　**100**

64. Este invierno está haciendo mucho frío. Hay mucha gente enferma con resfriados y gripes. La semana que viene será aún más fría. Dicen que en Madrid

La temperatura estará por debajo de los ocho grados.

1　　　**2**　　　**3**　　　**4**　　　**100**

65. Juan es muy religioso. Todos los domingos le gusta ir a la iglesia. Le gusta ayudar a los demás y siempre lleva

Un collar con una pequeña cruz sobre el pecho.

1　　　**2**　　　**3**　　　**4**　　　**100**

66. La crisis económica ha afectado mucho a las empresas. En mi ciudad, muchas compañías están en dificultades. Incluso en mi empresa

Los resultados están por debajo de los del año pasado.

1　　　**2**　　　**3**　　　**4**　　　**100**

67. La historia de España es una historia muy larga y con muchas guerras e invasiones, como resultado, los españoles somos una mezcla de

Los muchos pueblos que llegaron hasta nuestro país.

1   2   3   4   100

68. Arturo va a tener problemas si su jefe sabe que por las tardes está trabajando para otra empresa. No se puede trabajar para más de una empresa si se

Trabaja debajo de contrato en una empresa como la de Arturo.

1   2   3   4   100

69. Ayer por la noche estuvimos nadando en la piscina de nuestro jardín. Al salir, tuvimos que esperar un buen rato porque tenemos miedo de los mosquitos y anoche, de verdad,

Había muchos moviéndose encima de la piscina.

1   2   3   4   100

70. A mi perro le gusta jugar con mis cosas. La cosa que más le gusta a mi perro son mis zapatos. Juega con ellos por toda la casa. La última vez

Encontré uno de mis zapatos debajo de la mesa.

1   2   3   4   100

APPENDIX W. TRUTH VALUE JUDGEMENT TASK (ENGLISH VERSION FOR CONTROL GROUP)

Participant's name: _____

Truth Value Judgment Task

In the following pages you will find a list of short stories followed by a sentence. For each story, we would like you to decide how <u>the concluding sentence sounds to you given the context of the story</u> by indicating with a circle the acceptability rating of the sentences. Native speakers often have different intuitions regarding this type of sentences, and there are no correct or incorrect responses. Please tell us which of these sentences seem to you to be possible or impossible in Spanish, without trying to apply any grammar rule that you might have learned. You should not pay attention to style, or to the possibility that there may be a more elegant way of forming the sentence. <u>There are no vocabulary problems with the sentences either!</u>

The sentences may be possible or impossible only in relation to the story, so you must read the story carefully. After each sentence you will find five numbers. For each sentence, circle only **one** of the numbers to indicate your opinion about the sentence. You must provide your answer as quickly as possible. Please do not go back, and do not change any answers previously given. Interpret the numbers in the following manner as the example given:

1	=	sounds very bad
2	=	sounds relatively bad
3	=	sounds relatively good
4	=	sounds very good
100	=	I don't know

Example:

1. My friend John has a job interview today. There is a big traffic jam on the road and he is very worried because he has a very important meeting. He says:

-I hope I can make it.

1   2   3   4   100

2. My friend John has a job interview today. There is a big traffic jam on the road and he is very worried because he has a very important meeting. He says:

- I hope I cannot make it.

1   2   3   4   100

1. Last night Peter came to have supper to my house. He said that he has changed his job:

He works in the library now.

1   **2**   **3**   **4**   **100**

2. I have been dating Mary for a year already. Mary works with me at the office. She is a very intelligent woman. Her personality is very mysterious though.

Mary has a strange power over me.

1   **2**   **3**   **4**   **100**

3. We have bought a new house by the seaside. The house was a bit old so it needed some renovation. My friends came over to help me last weekend.

My friends painted the walls in one hour.

1   **2**   **3**   **4**   **100**

4. Every morning I follow the same routine. First of all, I wake up, then I go to take a shower and then I have breakfast. Finally, I brush my teeth, before I go to work, I also make my bed and

I place the quilt over my bed.

1   **2**   **3**   **4**   **100**

5. Last weekend my father bought a dog. The dog is still very young, so it likes to play all the time, it often hides in different places and it is difficult to find it. Last time:

The dog was hiding under my bed.

1   **2**   **3**   **4**   **100**

6. The economic crisis is bringing a lot of changes to small companies, some of them have been forced to close down. Other companies have experienced many changes. Due to these changes,

Our company is under new management.

1   **2**   **3**   **4**   **100**

7. I have moved to a new house near the city center, everything is new and clean. However, I cannot have a good rest at night because

The people in the apartment above mine are always having parties at night.

1   2   3   4   100

8. The Spanish economy has significantly improved after the last policies implemented by the government. However, unemployment is still a major concern for the Spanish people, in fact

Inflation is above 6%.

1   2   3   4   100

9. Our school has a new principal. She is a very old woman with some strict ideas. She is determined to change our students' bad behavior by, in the first place, changing their uniforms. Now

Skirts will be worn to below the knee.

1   2   3   4   100

10. I was looking for my father all day. I called him many times but he didn't answer his phone either. I was a bit worried. However, when I came back home,

My father was in the kitchen singing happily.

1   2   3   4   100

11. Peter decided to undergo some surgery to solve his breathing problems. He was a bit nervous so his doctor decided that it was better for him not to be awake, therefore

He was put below general anesthetic.

1   2   3   4   100

12. Winter has come a little bit earlier this year. Snow has been falling since last weekend and the roads are covered by snow. Today

The temperatures remained below freezing all day.

1   2   3   4   100

13. When I was a child I used to spend my summers with my grandparents in the countryside. The beauty of that scenery was indeed due to the fact that

The mountain village lay under a thick forest.

1   **2**   **3**   **4**   **100**

14. Las weekend I was watching the Olympic Winter Games on television. It reminded me of Linda, she was a famous cross-country skier in my country.

She often skimmed above the snow and amazed everyone.

1   2   3   4   100

15. The other day I was watching a TV programme about food safety. I learnt some interesting facts, did you know that

 Vegetables should be stored under 20 degrees?

1   **2**   **3**   **4**   **100**

16. My promotion was really strange. My boss called me to his office and explained the new conditions of my job. He, then, handed a contract to me and said

If you agree with the conditions stated over, just sign here.

1   **2**   **3**   **4**   **100**

17. Last night my wife and I were at a party in a new bar in the city centre. I drank too much and I ended up drunk. My wife was very embarrassed. Today

My wife is in a very bad mood.

1   **2**   **3**   **4**   **100**

18. Mr. Wu is a very successful businessman. He is always busy with work. I asked his wife about him today and she just answered, "He is the same as usual", which means that

He has been in the phone all day discussing new business.

1   **2**   **3**   **4**   **100**

19. Linda is really obsessed with her appearance. She is always looking in her mirror to make sure she looks pretty. Today, she went to the toilet in the middle of the lunch, because she forgot her little mirror and in the toilet

There is a mirror over the washbasin

1   2   3   4   100

20. I know now why John was so sad today. His wife told me that his computer had a serious virus; John was really scared of losing all his work because

All his files were stored in that computer.

1   2   3   4   100

21. Mary didn't know where I lived, so today when we were walking back home, we stopped at the pub near my house, I pointed to the big flashing neon on the wall and said to her

My window is the one just over it.

1   2   3   4   100

22. Some companies have very badly trained customer service staff. The other day, my father went to complain about a DVD player he bought in the supermarket, and he was treated really badly. They just handed a form to him and said,

Send it to the address below.

1   2   3   4   100

23. Today I went to the hospital to visit Peter, he was very weak. When I came into the room there was a nurse

Slipping a pillow below his head because he was too weak to do it himself.

1   2   3   4   100

24. Last night I was staying at Peter's. I couldn't sleep much really; it was so noisy at night. Many police cars and ambulances were passing by all night as his house

Is just in the main road to the hospital.

1   2   3   4   100

25. I went to visit Peter to see how he was doing because recently he has been quite poorly. However, when I arrived to his home, I was very happy to see that

He is above the flu already.

1   **2**   **3**   **4**   **100**

26. Yesterday I was at the local museum, their collection is really impressive. Everything was clean and well displayed. The museum kept the pictures

Hanging in the gallery below glass to protect them.

1   **2**   **3**   **4**   **100**

27. Peter is not doing well in his studies recently. The other day, his parents had to attend a meeting at school because his teacher was a bit concerned about his performance in class. The teacher said to his parents that

His work was below average for the class.

1   **2**   **3**   **4**   **100**

28. Sometimes my desk is a little bit messy, so it is difficult for me to find things when I need them. The other day, for example, it took me one hour to find my diary, eventually it turned out that

It was just somewhere below all my paperwork.

1   **2**   **3**   **4**   **100**

29. I really like Jackie Chan; he is a good actor in every single role he plays. I still remember one of his lines in his last movie, looking at his corrupt superior in the eyes and telling him

"No one is over suspicion in this matter, boss".

1   **2**   **3**   **4**   **100**

30. A group of twelve women are working hard to become the first all-female crew to sail around the world. At the moment, the crew is busy trying to raise funds to make the record attempt. The crew is also busy

Training to get fit for their sailing race.

1   **2**   **3**   **4**   **100**

31. Swimming in the rivers of some regions of South America can be dangerous. Our guide told us that although the waters may seem clean and calm, there are often hidden animals or strong currents

Below the surface of the water.

1   **2**   **3**   **4**   **100**

32. Peter has recently moved to a new place because his landlord had increased the rent. Peter thought it was too expensive for that little flat so he moved near my place. In fact, now

We both live under Jack's, our best friend.

1   **2**   **3**   **4**   **100**

33. Everyone knows that Joaquin likes to eat seafood very much. He cannot live too far from the seaside. This is because

Joaquin was born in a town in the Northern coast of Spain.

1   **2**   **3**   **4**   **100**

34. Many people think that the older you get, the harder it is to learn a new language. That is why they believe that children learn more easily than adults. However, a friend of mine read in a book that

Teenagers learn more and in less time than children.

1   **2**   **3**   **4**   **100**

35. I heard on the news that smoking related diseases are a serious problem for most countries' national health systems and the first cause of death. In fact, it was claimed that

Tobacco will kill above four million people worldwide this year.

1   **2**   **3**   **4**   **100**

36. Peter likes to take his dog for a walk to a park with a big lake. The dog can run, swim and play with many people; however, the happiest moment for both, Peter and his dog, is when

The dog is in the water swimming.

1   **2**   **3**   **4**   **100**

37. Apple is always trying to improve the quality of their products. The company has introduced important changes in their software as well as a brand new range of products, for example, the new iPhone 5s and iPhone 5c. However, this strategy is not working so well, because so far

Sales are below last year's level.

1   2   3   4   100

38. Peter has always been very lucky with women. He is not very handsome but he is funny and can always make women laugh and feel at ease with him. I cannot understand it, but

He really has a strange power above women.

1   2   3   4   100

39. A new study has discovered that during the working week, Chinese fathers spend less than one hour a day with their children. On the other hand, Chinese mothers spend over two hours a day. Many people still believe that

Looking after the children is a woman's responsibility.

1   2   3   4   100

40. The other day while I was shopping I saw a lady buying a lot clothes at the mall. There was also a man helping her to carry her bags. It was very funny, when she came to the counter to pay for her clothes; she turned and said to the man

"Where is my wallet, honey?"

1   2   3   4   100

41. Some foreign teachers in China have difficulties in bringing their families here because of the language barriers. Because of this, many

Chinese schools cannot accept foreign boys over the age of ten.

1   2   3   4   100

42. Last Christmas Peter broke up with his girlfriend, he was really sad for quite a long time. He started to date some girls but none of them seemed to match his expectations. Recently, however, things seem to have changed and Peter is very happy, I think

Peter is in love with a new girl.

1   2   3   4   100

43. According to some information in yesterdays' newspaper, much of the population is becoming concerned about threats to their privacy. The public in general believe that

CCTV technology should be subjected to stricter controls.

1   2   3   4   100

44. When I was a kid, my family used to live near the airport and, although it was a bit noisy sometimes, my brother and I loved to go out and watch

The planes fly over the city.

1   2   3   4   100

45. Psychologists say that the first kiss is one of the most memorable experiences in life. It is so powerful, that it will be recalled more accurately than any other joys in life. Experts claim that couples remember up to 90% of

The details surrounding their first kiss.

1   2   3   4   100

46. In some countries, young people have certain restrictions to go out at night. For example, in Spain

You are not allowed to go into bars if you are below 18.

1   2   3   4   100

47. Because of the fast pace of life, many families cannot eat together around the family table every evening any more. Many people have to work during the normal dinner hours. For this reason, in recent years

Fast food restaurants have become very popular.

1   2   3   4   100

48. Fluffy, our dog, is really naughty. He likes to chase cats. Today, Fluffy was chasing a street cat around the garden, but the cat was faster than Fluffy. Fortunately,

The cat managed to jump above the wall and run away.

1   2   3   4   100

49. Many people tend to leave their belongings unattended when travelling in public transport. There have been a few incidents recently targeting tourists. The City Council has ordered all his bus drivers

To place warning signs over the doors of their buses.

1   **2**   **3**   **4**   **100**

50. I was watching a documentary about food habits yesterday. The presenter said that our relationship with food is changing dramatically and people are more aware of what a good diet is made of. The presenter claimed that one day people will select what they eat

According to their particular health needs.

1   **2**   **3**   **4**   **100**

51. Last night I couldn't sleep much, I could hear some birds cheeping on the roof. It was really annoying but I looked outside and I couldn't see anything.

I am sure that the birds were somewhere over us.

1   **2**   **3**   **4**   **100**

52. Those days in Greece were wonderful. Long days at the beach, gorgeous food, friendly people.. Every day we came back to the hotel when

The sun had already sunk under the horizon.

1   **2**   **3**   **4**   **100**

53. John has always been my best friend since we were kids. I still remember when we went to school together, we were inseparable

He used to sit in my left in every single class.

1   **2**   **3**   **4**   **100**

54. Many students want to find friends on the internet as a way of practicing their language skills and learning more about new cultures. However, I always remind my students that

Care and consideration should be given when finding friends on the internet.

1   **2**   **3**   **4**   **100**

55. This year was a bit busy at work, so I didn't really have much time to take any holidays; however, I had a great time because

My boss sent me to London over the summer for a meeting.

1   2   3   4   100

56. Peter is not very happy about the way Linda is treating him recently. She is a bit snobbish; she refuses to talk to him just because

He is under her in the company.

1   2   3   4   100

57. I don't know what happened at the party. I just saw Linda and John having an argument. All of a sudden, Peter stopped talking to Linda, turned around,

Looked above his shoulder with contempt and left.

1   2   3   4   100

58. Peter is a very famous journalist. He started to work in a local station in my city, but his skills helped him to secure a good job at the national television, and lately, you can see that

Peter is in the television all day.

1   2   3   4   100

59. Medical authorities are worried about the noise levels in the streets of London. It is so noisy that in some areas residents have been forced to install double glazing in their houses to be able to sleep. The other day I was waiting for the bus with my mother and

I couldn't hear her above the noise of the traffic.

1   2   3   4   100

60. Lisa has been playing the lottery recently; she hasn't won anything so far. The other day, though, I went to see her to her house and she told me that she had won a small prize,

She was over the moon about it.

1   2   3   4   100

61. You really need to leave now if you want to arrive on time. It is rush hour, and the traffic is really bad so

You cannot go to Shaoxing below one hour, at least.

1   **2**   **3**   **4**   **100**

62. Many people experience difference feelings when travelling by plane. There are people very excited about flying. Other people are a bit scared, and sometimes they need to take medication. I always fall sleep before taking off and when I wake up

The plane is already flying above the clouds.

1   **2**   **3**   **4**   **100**

63. My boyfriend and I like to go to the swimming pool. I cannot swim very well so he always likes to tease me.

He often hides under the water for a few seconds and then surprises me.

1   **2**   **3**   **4**   **100**

64. Paul wants to go out at night with his friends. Paul's mother is a bit worried, however, since he is still a kid in her eyes. Paul is unhappy because his best friend Charlie is allowed to go out at night, but he isn't. His mother tells to him

"Charlie is a grade above you, darling".

1   **2**   **3**   **4**   **100**

65. The CEO of Nokia was really stressed out recently, despite efforts to innovate and improve the quality of Nokia's mobile phones

Year after year, the company is performing under par.

1   **2**   **3**   **4**   **100**

66. Robert was a great writer. Unfortunately, many people only read his novels. He also published several poems but not many readers know about this. Because

These poems were written under his wife's name.

1   **2**   **3**   **4**   **100**

67. John is so messy. The other day he spent the whole afternoon looking for one of his books. He told me that he was sure that someone had stolen it. After a few hours he called me and said that he found it. He said that

The book was under the table.

1   **2**   **3**   **4**   **100**

68. One month ago, a powerful typhoon hit our city. There was heavy rain for about three days. It was also very windy. It was very difficult to go to work because

The water came above our knees on the roads.

1   **2**   **3**   **4**   **100**

69. I have been shopping all day. I had to buy vegetables and some fruit. I also passed by the bakery to order a cake for my father's birthday. It was a very busy day. When I came back home

I was really exhausted.

1   **2**   **3**   **4**   **100**

70. Peter still remembers those days when people could enjoy freedom but nowadays he has to follow countless rules and regulations. He can barely have a break at work, whenever he wants to take a break; he needs to report to his manager because

Under the new regulations, he is not even allowed to

1   **2**   **3**   **4**   **100**

Nombre del participante: _____

您将会在下文看到一系列的小故事，每个故事后都有一个总结性的句子。结合故事上下文，我们希望您判断最后那个总结性的句子对之前所叙述的故事发生的可能性。判断将会以圈出等级的方式进行。说母语的人士通常会对这类的句子会有不同的第一反应，答案没有真确与非正确之分，所以请您在不用考虑任何语法规则的情况下，告诉我们以下哪些句子对于您来说是有可能或者不可能的。您也不用注意句子的风格或者其他能使句子看起来更讲究的因素。句子中的单词同样没有任何问题。

因为只有与故事联系才能看出句子的可能性与非可能性，所以请认真阅读以下故事。在其后的每一个句子，您会看到五个数字，请您只需要在其中一个数字上画圈来表达您对句子的观点。请您以尽可能最快的速度回答，并且不要返回或者修改之前给出的答案。请按照以下给出的例子作答。

1	=	听起来很不可能
2	=	听起来比较不可能
3	=	听起来比较可能
4	=	听起来很有可能
100	=	不知道

Ejemplo:

1. Mi amiga Luisa tiene una entrevista. El tráfico está muy mal, y ella está muy preocupada porque tiene una reunión muy importante. Dice:

–Espero que llegue a tiempo.

1   2   ③   4   100

2. Mi amiga Luisa tiene una entrevista. El tráfico está muy mal, y ella está muy preocupada porque tiene una reunión muy importante. Dice:

- Espero no llegar a tiempo.

①   2   3   4   100

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1. La asociación de fútbol de China está bastante preocupada por la falta de buenos entrenadores que puedan llevar a su selección nacional a ganar la Copa de Asia en los próximos años. En estos momentos

La asociación está buscando un entrenador extranjero.

1   **2**   **3**   **4**   **100**

2. Ayer alguien me robó el bolso cuando estaba en la fiesta de Pedro. En realidad, fue culpa mía, porque no hice caso a lo que la gente me decía, incluso mi novio me dijo que

No pusiera el bolso sobre, que lo pusiera debajo.

1   **2**   **3**   **4**   **100**

3. Hace cuatro años hubo un terremoto muy serio en Sichuan y mucha gente murió. Nosotros estábamos en el coche, aun así, sentimos el terremoto. De hecho,

Todavía recuerdo el temblor de la carretera bajo nosotros.

1   **2**   **3**   **4**   **100**

4. Juan está entrenando todos los días para correr el maratón. Sin embargo, Juan está demasiado gordo y queda poco tiempo para el maratón. Es muy difícil lo que quiere.

No creo que pueda correr el maratón en bajo de dos horas.

1   **2**   **3**   **4**   **100**

5. Ricardo ha estado de viaje por Galicia y ha visitado muchos lugares interesantes. En su viaje ha hecho muchas fotos, a Ricardo le gusta hacer fotos de

Los paisajes naturales con muchos árboles.

1   **2**   **3**   **4**   **100**

6. Ayer un ladrón entró en mi casa, iba vestido de negro y era muy rápido, intenté cogerlo pero se subió al tejado de mi vecino y corrió de tejado en tejado hasta que al final

Se lanzó desde sobre el tejado y huyó corriendo por la calle.

1   **2**   **3**   **4**   **100**

7. El museo de Ningbo tiene una colección especial sobre Picasso. El próximo día 1 de mayo habrá una serie de actividades especiales.

Los niños que visiten el museo en ese día recibirán un regalo.

1   **2**   **3**   **4**   **100**

8. El otro día fui a IKEA y compré una lámpara nueva para poder trabajar con más luz en mi escritorio porque antes no se veía bien, la colgué ayer mismo, y ahora se ven muy bien los documentos y planos.

La lámpara está encima de mi cabeza, en el lugar perfecto.

1   **2**   **3**   **4**   **100**

9. En algunos países los presidentes del gobierno tienen control sobre todos los aspectos del país, y a veces se vuelven corruptos, por eso…

No es bueno dejar tanto poder en manos de una sola persona.

1   **2**   **3**   **4**   **100**

10. Todos los ciudadanos de China, independientemente de donde vivan, está de acuerdo en que

Mao es el padre y fundador de la nueva China.

1   **2**   **3**   **4**   **100**

11. La Universidad de Nottingham quiere abrir un nuevo campus en Shanghai. Durante varios meses el gobierno de Shanghai y la Universidad de Nottingham han mantenido conversaciones.

Por fin, se llegó a un acuerdo en el mes pasado.

1   **2**   **3**   **4**   **100**

12. Los médicos de los hospitales chinos son muy estrictos. Ayer fui al médico y dejé mi tarjeta sanitaria sobre las otras tarjetas en la mesa del médico. El médico lo vio y me gritó:

"¡Pon tu tarjeta bajo éstas!"

1   **2**   **3**   **4**   **100**

13. En el centro comercial de al lado de mi casa están abriendo muchas tiendas de ropa. La próxima que va a abrir es Zara. Ya queda poco tiempo

Todos los preparativos están bajo camino.

1   2   3   4   100

14. Ayer el profesor se enfadó mucho porque los alumnos no había hecho sus ejercicios. Se despidió de los alumnos,

Dejó el libro sobre la mesa y se fue.

1   2   3   4   100

15. Mi casa es muy bonita y está cerca del centro. Lo único malo es que no puedo levantarme tarde. Por las mañanas hay mucho ruido

Porque hay una carnicería justo bajo mi casa.

1   2   3   4   100

16. Rosa y Paco se han divorciado. La relación ha acabado muy mal. Ninguno de ellos quiere cuidar a los hijos, así que han decido que

Los niños estén bajo el cuidado de sus abuelos.

1   2   3   4   100

17. Ayer estábamos en un bar varios amigos bebiendo unas cervezas y charlando. Se acercó a nosotros un miembro del equipo de seguridad y nos pidió el pasaporte o carné de identidad. Nos dijo que era porque

Estaba prohibido beber allí si éramos bajo 21 años.

1   2   3   4   100

18. Los restaurantes chinos son muy populares en la ciudad, la comida es buena y barata, pero siempre hay mucha gente que no puede reservar mesa por falta de espacio.

El restaurante quiere un nuevo local para su ampliación.

1   2   3   4   100

19. Vivimos muy cerca del aeropuerto, así que ya estamos acostumbrados a los ruidos de los aviones, durante

Todo el día hay aviones pasando sobre nuestra casa.

1   2   3   4   100

20. A ninguno de mis compañeros de trabajo le gusta mi jefe porque es una persona muy maleducada, pero nadie puede decir nada. Y es que,

Los jefes siempre están sobre los empleados.

1   2   3   4   100

21. Ayer en las noticias dijeron que durante la semana la gente prefiere comer y cenar en casa, pero durante los fines de semana, esto cambia y

Se come más en los restaurantes.

1   2   3   4   100

22. Muchas personas no tienen educación. Ayer estuve en una celebración en un hotel, y tan pronto como los camareros acabaron de servir, muchos de los invitados

Se lanzaron sobre la comida.

1   2   3   4   100

23. Pedro y María siempre están discutiendo. Ayer, por ejemplo, mientras cenábamos, tuvieron una fuerte discusión. No sé por qué, pero vi a Pedro muy enfadado

Salió dando un portazo y desapareció debajo de la lluvia.

1   2   3   4   100

24. La gente cada vez se preocupa más por su salud. Antes en mi ciudad había muy pocos gimnasios, pero en los últimos meses han abierto muchos. Esto indica que

Las personas estamos cambiando de mentalidad.

1   2   3   4   100

25. Hoy era la fiesta de mi pueblo y había mucha gente en la plaza. Por la tarde, cuando toda la gente estaba en la plaza, comenzó a llover, así que

Todos fueron muy rápido a meterse bajo los árboles de la plaza.

1   2   3   4   100

26. Ayer vi el IPhone 5s en el supermercado de mi barrio con una oferta muy buena. Quería comprarlo pero

En esos momentos no tenía ni un euro en mí. ¡Qué lástima!

1   2   3   4   100

27. Me ha llamado mi madre y me ha dicho que hay problemas en la estación de tren, al parecer su tren ha sido retrasado casi dos horas, así que

Su tren llegará sobre las diez de la noche.

1   2   3   4   100

28. Ayer cuando llegué a casa me asusté mucho. Vi que alguien había entrado en mi casa y todo estaba desordenado. Vi a alguien salir por la ventana, era un ladrón. Intenté cogerlo pero

El ladrón desapareció corriendo bajo la lluvia.

1   2   3   4   100

29. María y Pedro siempre están comprando cosas caras para presumir delante de sus amigos. Les gusta que la gente piense que tienen mucho dinero, pero no es cierto. Por desgracia, hay mucha gente a la que,

Le gusta vivir sobre sus posibilidades.

1   2   3   4   100

30. Paco es un gran amante del arte y de las cosas extrañas. Lo último que ha decidido comprar es un trozo del muro de Berlín. A veces, pienso que Paco

Es realmente un caprichoso.

1   2   3   4   100

31. Ángel es muy valiente. Sus amigos me dijeron que una vez un ladrón intentó robarle el coche y Ángel no se asustó. Contestó al ladrón que

Tendría que pasar por encima de él para llevarse su coche.

1   2   3   4   100

32. Nuestras últimas vacaciones en Corea del Norte fueron un poco tristes, había mucha pobreza en las calles y la gente parecía muy infeliz. Llevaban muy poca roca y estaban muy delgados. Por eso

Estuvimos en muy mal humor durante todo el viaje.

1   2   3   4   100

33. Ayer al volver de la compra, dejamos las bolsas y fuimos a ver la televisión. Mientras tanto, Toby, nuestro perro, estuvo jugando con las bolsas y todo quedó desordenado. Al final,

Encontramos las naranjas debajo del cuadro del salón. ¡Qué travieso!

1   2   3   4   100

34. Todo el mundo me está preguntado por Juan, pero yo tampoco sé dónde está. Esta mañana me dijo que llegaría tarde a la fiesta. Lo acabo de llamar y

Juan me ha confirmado que vendrá encima de las siete.

1   2   3   4   100

35. Mi padre echa mucho de menos a nuestro vecino. Ya no vive en mi barrio porque se ha mudado de ciudad. Antes, todos los días al salir de casa para ir a trabajar era muy amable y

Saludaba a mi padre por encima de la valla de su jardín.

1   2   3   4   100

36. Últimamente, ha habido muchos robos en mi barrio. Mi vecino, que es un hombre muy rico, ha pensado que no es seguro tener cosas de valor en casa, así que

Ahora tiene las joyas y los relojes en el banco.

1   2   3   4   100

37. El abuelo de Paco fue un héroe en la guerra. Luchó en muchas batallas contra los enemigos. Sin embargo, no sobrevivió ya que en un ataque sobre la ciudad

Murió bajo las bombas de los enemigos.

1   2   3   4   100

38. Pedro es muy despistado, no presta atención a lo que le dicen sus padres. La semana pasada se perdió dos veces por esto motivo. Aunque se lo habían repetido muchas veces, no dio la mano a sus padres y

Se perdió en los invitados a la fiesta.

1   2   3   4   100

39. El hijo de Marta es muy travieso, siempre está corriendo y saltando en casa. Ayer vi como después de romper un jarrón

El niño pasó debajo de la cama y siguió corriendo, como si nada hubiera pasado.

1   2   3   4   100

40. Acaban de publicar los informes sobre la calidad de la enseñanza en los países de la Unión Europea, de nuevo en España

La educación está por debajo de la media europea.

1   2   3   4   100

41. La comida china es una comida muy variada y rica en sabores. Cada región tiene unas características diferentes. Por ejemplo,

La comida de Sichuan es muy picante.

1   2   3   4   100

42. Hoy he tardado mucho tiempo en volver a casa desde el trabajo. Había mucho tráfico y además estaba poniéndose el sol. Tenía que conducir muy despacio porque

El sol me daba en la cara y no podía ver bien.

1   2   3   4   100

43. La decoración de la biblioteca ha cambiado mucho. Han pintado las paredes, hay alfombras nuevas y ya no hay cuadros. Sin embargo, creo que es una pena, porque

Antes había algunos cuadros realmente interesantes bajo las lámparas.

1   2   3   4   100

44. Este año la primavera está siendo muy cálida. El hombre del tiempo de la CCTV1 ha dicho que las temperaturas seguirán subiendo. No hay duda,

Ya tenemos el verano encima de nosotros.

1   2   3   4   100

45. La fiesta nacional fue muy emotiva este año. Hubo muchos asistentes al evento. Cuando sonó el himno nacional la gente guardó silencio y en ese momento

Todos miraban a la bandera moviéndose en el viento.

1   2   3   4   100

46. Los padres de Luis están muy preocupados. No estudia nada. Sus notas en el colegio son muy malas. Sus padres han decidido

Estar todo el día encima de él para que estudie.

1   2   3   4   100

47. Últimamente, hay muchas reuniones en la empresa para hablar de un nuevo proyecto. Es muy importante para nuestra empresa, por eso, hay que analizar bien todos los aspectos. Hoy, por ejemplo,

Mis jefes han estado hablando toda la tarde encima de ese tema.

1   2   3   4   100

48. María, mi jefa, es una mujer muy responsable y trabajadora. Todos los días llega muy pronto al trabajo y se asegura de que todo está bien. No se le olvida nada, de hecho, es un poco pesada, ya que

Ella siempre está en todo.

1   2   3   4   100

49. José ya no puede coger el coche, la policía le ha retirado el carné de conducir durante un año. Según dice la gente

Lo cogieron conduciendo debajo de los efectos del alcohol.

1   2   3   4   100

50. La psiquiatría ha avanzado mucho en los últimos treinta años. Ahora enfermedades como la adicción al juego son consideradas una enfermedad. En el pasado, las personas que sufrían de este mal

Bajo un punto de vista médico, no eran considerados enfermos.

1   2   3   4   100

51. María está acostumbrada a que su gato rompa cosas en casa. El otro día estábamos tomando un café en la cocina, y de repente se oyó un golpe y un ruido de algo rompiéndose. María sin extrañarse mucho dijo:

"Ya se ha roto el jarrón de sobre la mesa".

1   2   3   4   100

52. Cuando Juan va de vacaciones siempre compra algún regalo a sus compañeros de oficina. Pero cuando le preguntan qué tal se lo pasó, no suele decir mucho, y es que, por lo general,

No suele entrar en detalles.

1   2   3   4   100

53. Hace unos días escuché una noticia sorprendente, unos científicos han descubierto una vacuna contra la malaria efectiva en animales de laboratorio. Pero

Todavía no se puede usar con personas.

1   2   3   4   100

54. Me gusta mucho mi nueva casa, está en una calle llena de tiendas. Los fines de semana siempre me despierta un olor muy agradable a pasteles y pan ya que

Debajo de mi casa hay una pastelería muy grande.

1   2   3   4   100

55. Pedro tiene muy mal carácter. Hoy he intentado hablar con él para explicarle mi idea, y se ha negado a escucharme. Simplemente me ha respondido:

"Encima de lo que te dije ayer, no tengo nada que añadir".

1   **2**   **3**   **4**   **100**

56. Hace dos semanas Pedro empezó a trabajar en mi empresa. Él es muy buen empleado y siempre llega a tiempo, además se lleva bien con todos. Creo que tengo mucha suerte de que,

Pedro esté debajo de mi supervisión.

1   **2**   **3**   **4**   **100**

57. Ayer estuvimos en el cine, en el estreno de la nueva película de Pedro Almodóvar. A casi todos los espectadores les pareció que se trata de

La película más interesante de su carrera.

1   **2**   **3**   **4**   **100**

58. Mi hijo está un poco triste porque ha perdido su nuevo helicóptero de juguete. Ayer estábamos en el jardín probándolo, y después de un rato

El helicóptero voló encima de mi cabeza y al rato desapareció.

1   **2**   **3**   **4**   **100**

59. Mis hijos son muy traviesos, cada vez que juegan en el salón esconden las cosas en sitios diferentes. Ayer, mientras barría el suelo, vi que

Mis zapatillas de deporte estaban debajo del sofá.

1   **2**   **3**   **4**   **100**

60. Ayer tuvimos un picnic en el jardín. En un momento dado, toda la gente empezó a mirar a María, y ella no sabía por qué. Luego le dijimos que era porque

Tenía dos mosquitos muy grandes encima de su cabeza.

1   **2**   **3**   **4**   **100**

61. El hijo de María es muy rebelde. Todos los días se enfrenta a ella y tienen unas discusiones muy violentas. Ayer oí a María gritarle a su hijo,

"Si quieres salir de casa, tendrás que salir sobre mí".

1   2   3   4   100

62. La semana pasada estuve en un juicio. Era la primera vez que veía a un criminal ante la justicia. No contestó a ninguna pregunta del juez. Lo único que pasó fue que

El acusado se echó la culpa sobre, y se mantuvo en silencio.

1   2   3   4   100

63. Ayer María y yo estábamos saliendo del restaurante, con tan mala suerte, que cuando pasamos al lado de un camarero, su bandeja cayó al suelo y

Toda la comida fue a dar encima de la falda de María.

1   2   3   4   100

64. Este invierno está haciendo mucho frío. Hay mucha gente enferma con resfriados y gripes. La semana que viene será aún más fría. Dicen que en Madrid

La temperatura estará por debajo de los ocho grados.

1   2   3   4   100

65. Juan es muy religioso. Todos los domingos le gusta ir a la iglesia. Le gusta ayudar a los demás y siempre lleva

Un collar con una pequeña cruz sobre el pecho.

1   2   3   4   100

66. La crisis económica ha afectado mucho a las empresas. En mi ciudad, muchas compañías están en dificultades. Incluso en mi empresa

Los resultados están por debajo de los del año pasado.

1   2   3   4   100

67. La historia de España es una historia muy larga y con muchas guerras e invasiones, como resultado, los españoles somos una mezcla de

Los muchos pueblos que llegaron hasta nuestro país.

1　　**2**　　**3**　　**4**　　**100**

68. Arturo va a tener problemas si su jefe sabe que por las tardes está trabajando para otra empresa. No se puede trabajar para más de una empresa si se

Trabaja debajo de contrato en una empresa como la de Arturo.

1　　**2**　　**3**　　**4**　　**100**

69. Ayer por la noche estuvimos nadando en la piscina de nuestro jardín. Al salir, tuvimos que esperar un buen rato porque tenemos miedo de los mosquitos y anoche, de verdad,

Había muchos moviéndose encima de la piscina.

1　　**2**　　**3**　　**4**　　**100**

70. A mi perro le gusta jugar con mis cosas. La cosa que más le gusta a mi perro son mis zapatos. Juega con ellos por toda la casa. La última vez

Encontré uno de mis zapatos debajo de la mesa.

1　　**2**　　**3**　　**4**　　**100**

Participant's name: _____

您将会在下文看到一系列的小故事，每个故事后都有一个总结性的句子。结合故事上下文，我们希望您判断最后那个总结性的句子对之前所叙述的故事发生的可能性。判断将会以圈出等级的方式进行。说母语的人士通常会对这类的句子会有不同的第一反应，答案没有真确与非正确之分，所以请您在不用考虑任何语法规则的情况下，告诉我们以下哪些句子对于您来说是有可能或者不可能的。您也不用注意句子的风格或者其他能使句子看起来更讲究的因素。句子中的单词同样没有任何问题。

因为只有与故事联系才能看出句子的可能性与非可能性，所以请认真阅读以下故事。在其后的每一个句子，您会看到五个数字，请您只需要在其中一个数字上画圈来表达您对句子的观点。请您以尽可能最快的速度回答，并且不要返回或者修改之前给出的答案。请按照以下给出的例子作答。

1	=	听起来很不可能
2	=	听起来比较不可能
3	=	听起来比较可能
4	=	听起来很有可能
100	=	不知道

Example:

1. My friend John has a job interview today. There is a big traffic jam on the road and he is very worried because he has a very important meeting. He says:

-I hope I can make it.

1   2   ③   4   100

2. My friend John has a job interview today. There is a big traffic jam on the road and he is very worried because he has a very important meeting. He says:

- I hope I cannot make it.

①   2   3   4   100

1. Last night Peter came to have supper to my house. He said that he has changed his job:

He works in the library now.

1   **2**   **3**   **4**   **100**

2. I have been dating Mary for a year already. Mary works with me at the office. She is a very intelligent woman. Her personality is very mysterious though.

Mary has a strange power over me.

1   **2**   **3**   **4**   **100**

3. We have bought a new house by the seaside. The house was a bit old so it needed some renovation. My friends came over to help me last weekend.

My friends painted the walls in one hour.

1   **2**   **3**   **4**   **100**

4. Every morning I follow the same routine. First of all, I wake up, then I go to take a shower and then I have breakfast. Finally, I brush my teeth, before I go to work, I also make my bed and

I place the quilt over my bed.

1   **2**   **3**   **4**   **100**

5. Last weekend my father bought a dog. The dog is still very young, so it likes to play all the time, it often hides in different places and it is difficult to find it. Last time:

The dog was hiding under my bed.

1   **2**   **3**   **4**   **100**

6. The economic crisis is bringing a lot of changes to small companies, some of them have been forced to close down. Other companies have experienced many changes. Due to these changes,

Our company is under new management.

1   **2**   **3**   **4**   **100**

7. I have moved to a new house near the city center, everything is new and clean. However, I cannot have a good rest at night because

The people in the apartment above mine are always having parties at night.

1   **2**   **3**   **4**   **100**

8. The Spanish economy has significantly improved after the last policies implemented by the government. However, unemployment is still a major concern for the Spanish people, in fact

Inflation is above 6%.

1   **2**   **3**   **4**   **100**

9. Our school has a new principal. She is a very old woman with some strict ideas. She is determined to change our students' bad behavior by, in the first place, changing their uniforms. Now

Skirts will be worn to below the knee.

1   **2**   **3**   **4**   **100**

10. I was looking for my father all day. I called him many times but he didn't answer his phone either. I was a bit worried. However, when I came back home,

My father was in the kitchen singing happily.

1   **2**   **3**   **4**   **100**

11. Peter decided to undergo some surgery to solve his breathing problems. He was a bit nervous so his doctor decided that it was better for him not to be awake, therefore

He was put below general anesthetic.

1   **2**   **3**   **4**   **100**

12. Winter has come a little bit earlier this year. Snow has been falling since last weekend and the roads are covered by snow. Today

The temperatures remained below freezing all day.

1   **2**   **3**   **4**   **100**

13. When I was a child I used to spend my summers with my grandparents in the countryside. The beauty of that scenery was indeed due to the fact that

The mountain village lay under a thick forest.

1　　**2**　　**3**　　**4**　　**100**

14. Las weekend I was watching the Olympic Winter Games on television. It reminded me of Linda, she was a famous cross-country skier in my country.

She often skimmed above the snow and amazed everyone.

1　　2　　3　　4　　100

15. The other day I was watching a TV programme about food safety. I learnt some interesting facts, did you know that

 Vegetables should be stored under 20 degrees?

1　　**2**　　**3**　　**4**　　**100**

16. My promotion was really strange. My boss called me to his office and explained the new conditions of my job. He, then, handed a contract to me and said

If you agree with the conditions stated over, just sign here.

1　　**2**　　**3**　　**4**　　**100**

17. Last night my wife and I were at a party in a new bar in the city centre. I drank too much and I ended up drunk. My wife was very embarrassed. Today

My wife is in a very bad mood.

1　　**2**　　**3**　　**4**　　**100**

18. Mr. Wu is a very successful businessman. He is always busy with work. I asked his wife about him today and she just answered, "He is the same as usual", which means that

He has been in the phone all day discussing new business.

1　　**2**　　**3**　　**4**　　**100**

19. Linda is really obsessed with her appearance. She is always looking in her mirror to make sure she looks pretty. Today, she went to the toilet in the middle of the lunch, because she forgot her little mirror and in the toilet

There is a mirror over the washbasin

1   2   3   4   100

20. I know now why John was so sad today. His wife told me that his computer had a serious virus; John was really scared of losing all his work because

All his files were stored in that computer.

1   2   3   4   100

21. Mary didn't know where I lived, so today when we were walking back home, we stopped at the pub near my house, I pointed to the big flashing neon on the wall and said to her

My window is the one just over it.

1   2   3   4   100

22. Some companies have very badly trained customer service staff. The other day, my father went to complain about a DVD player he bought in the supermarket, and he was treated really badly. They just handed a form to him and said,

Send it to the address below.

1   2   3   4   100

23. Today I went to the hospital to visit Peter, he was very weak. When I came into the room there was a nurse

Slipping a pillow below his head because he was too weak to do it himself.

1   2   3   4   100

24. Last night I was staying at Peter's. I couldn't sleep much really; it was so noisy at night. Many police cars and ambulances were passing by all night as his house

Is just in the main road to the hospital.

1   2   3   4   100

25. I went to visit Peter to see how he was doing because recently he has been quite poorly. However, when I arrived to his home, I was very happy to see that

He is above the flu already.

1   2   3   4   100

26. Yesterday I was at the local museum, their collection is really impressive. Everything was clean and well displayed. The museum kept the pictures

Hanging in the gallery below glass to protect them.

1   2   3   4   100

27. Peter is not doing well in his studies recently. The other day, his parents had to attend a meeting at school because his teacher was a bit concerned about his performance in class. The teacher said to his parents that

His work was below average for the class.

1   2   3   4   100

28. Sometimes my desk is a little bit messy, so it is difficult for me to find things when I need them. The other day, for example, it took me one hour to find my diary, eventually it turned out that

It was just somewhere below all my paperwork.

1   2   3   4   100

29. I really like Jackie Chan; he is a good actor in every single role he plays. I still remember one of his lines in his last movie, looking at his corrupt superior in the eyes and telling him

"No one is over suspicion in this matter, boss".

1   2   3   4   100

30. A group of twelve women are working hard to become the first all-female crew to sail around the world. At the moment, the crew is busy trying to raise funds to make the record attempt. The crew is also busy

Training to get fit for their sailing race.

1   2   3   4   100

31. Swimming in the rivers of some regions of South America can be dangerous. Our guide told us that although the waters may seem clean and calm, there are often hidden animals or strong currents

Below the surface of the water.

1   **2**   **3**   **4**   **100**

32. Peter has recently moved to a new place because his landlord had increased the rent. Peter thought it was too expensive for that little flat so he moved near my place. In fact, now

We both live under Jack's, our best friend.

1   **2**   **3**   **4**   **100**

33. Everyone knows that Joaquin likes to eat seafood very much. He cannot live too far from the seaside. This is because

Joaquin was born in a town in the Northern coast of Spain.

1   **2**   **3**   **4**   **100**

34. Many people think that the older you get, the harder it is to learn a new language. That is why they believe that children learn more easily than adults. However, a friend of mine read in a book that

Teenagers learn more and in less time than children.

1   **2**   **3**   **4**   **100**

35. I heard on the news that smoking related diseases are a serious problem for most countries' national health systems and the first cause of death. In fact, it was claimed that

Tobacco will kill above four million people worldwide this year.

1   **2**   **3**   **4**   **100**

36. Peter likes to take his dog for a walk to a park with a big lake. The dog can run, swim and play with many people; however, the happiest moment for both, Peter and his dog, is when

The dog is in the water swimming.

1   **2**   **3**   **4**   **100**

37. Apple is always trying to improve the quality of their products. The company has introduced important changes in their software as well as a brand new range of products, for example, the new iPhone 5s and iPhone 5c. However, this strategy is not working so well, because so far

Sales are below last year's level.

1   **2**   **3**   **4**   **100**

38. Peter has always been very lucky with women. He is not very handsome but he is funny and can always make women laugh and feel at ease with him. I cannot understand it, but

He really has a strange power above women.

1   **2**   **3**   **4**   **100**

39. A new study has discovered that during the working week, Chinese fathers spend less than one hour a day with their children. On the other hand, Chinese mothers spend over two hours a day. Many people still believe that

Looking after the children is a woman's responsibility.

1   **2**   **3**   **4**   **100**

40. The other day while I was shopping I saw a lady buying a lot clothes at the mall. There was also a man helping her to carry her bags. It was very funny, when she came to the counter to pay for her clothes; she turned and said to the man

"Where is my wallet, honey?"

1   **2**   **3**   **4**   **100**

41. Some foreign teachers in China have difficulties in bringing their families here because of the language barriers. Because of this, many

Chinese schools cannot accept foreign boys over the age of ten.

1   **2**   **3**   **4**   **100**

42. Last Christmas Peter broke up with his girlfriend, he was really sad for quite a long time. He started to date some girls but none of them seemed to match his expectations. Recently, however, things seem to have changed and Peter is very happy, I think

Peter is in love with a new girl.

1   **2**   **3**   **4**   **100**

43. According to some information in yesterdays' newspaper, much of the population is becoming concerned about threats to their privacy. The public in general believe that

CCTV technology should be subjected to stricter controls.

1   2   3   4   100

44. When I was a kid, my family used to live near the airport and, although it was a bit noisy sometimes, my brother and I loved to go out and watch

The planes fly over the city.

1   2   3   4   100

45. Psychologists say that the first kiss is one of the most memorable experiences in life. It is so powerful, that it will be recalled more accurately than any other joys in life. Experts claim that couples remember up to 90% of

The details surrounding their first kiss.

1   2   3   4   100

46. In some countries, young people have certain restrictions to go out at night. For example, in Spain

You are not allowed to go into bars if you are below 18.

1   2   3   4   100

47. Because of the fast pace of life, many families cannot eat together around the family table every evening any more. Many people have to work during the normal dinner hours. For this reason, in recent years

Fast food restaurants have become very popular.

1   2   3   4   100

48. Fluffy, our dog, is really naughty. He likes to chase cats. Today, Fluffy was chasing a street cat around the garden, but the cat was faster than Fluffy. Fortunately,

The cat managed to jump above the wall and run away.

1   2   3   4   100

49. Many people tend to leave their belongings unattended when travelling in public transport. There have been a few incidents recently targeting tourists. The City Council has ordered all his bus drivers

To place warning signs over the doors of their buses.

1   **2**   **3**   **4**   **100**

50. I was watching a documentary about food habits yesterday. The presenter said that our relationship with food is changing dramatically and people are more aware of what a good diet is made of. The presenter claimed that one day people will select what they eat

According to their particular health needs.

1   **2**   **3**   **4**   **100**

51. Last night I couldn't sleep much, I could hear some birds cheeping on the roof. It was really annoying but I looked outside and I couldn't see anything.

I am sure that the birds were somewhere over us.

1   **2**   **3**   **4**   **100**

52. Those days in Greece were wonderful. Long days at the beach, gorgeous food, friendly people.. Every day we came back to the hotel when

The sun had already sunk under the horizon.

1   **2**   **3**   **4**   **100**

53. John has always been my best friend since we were kids. I still remember when we went to school together, we were inseparable

He used to sit in my left in every single class.

1   **2**   **3**   **4**   **100**

54. Many students want to find friends on the internet as a way of practicing their language skills and learning more about new cultures. However, I always remind my students that

Care and consideration should be given when finding friends on the internet.

1   **2**   **3**   **4**   **100**

55. This year was a bit busy at work, so I didn't really have much time to take any holidays; however, I had a great time because

My boss sent me to London over the summer for a meeting.

1   **2**   **3**   **4**   **100**

56. Peter is not very happy about the way Linda is treating him recently. She is a bit snobbish; she refuses to talk to him just because

He is under her in the company.

1   **2**   **3**   **4**   **100**

57. I don't know what happened at the party. I just saw Linda and John having an argument. All of a sudden, Peter stopped talking to Linda, turned around,

Looked above his shoulder with contempt and left.

1   **2**   **3**   **4**   **100**

58. Peter is a very famous journalist. He started to work in a local station in my city, but his skills helped him to secure a good job at the national television, and lately, you can see that

Peter is in the television all day.

1   **2**   **3**   **4**   **100**

59. Medical authorities are worried about the noise levels in the streets of London. It is so noisy that in some areas residents have been forced to install double glazing in their houses to be able to sleep. The other day I was waiting for the bus with my mother and

I couldn't hear her above the noise of the traffic.

1   **2**   **3**   **4**   **100**

60. Lisa has been playing the lottery recently; she hasn't won anything so far. The other day, though, I went to see her to her house and she told me that she had won a small prize,

She was over the moon about it.

1   **2**   **3**   **4**   **100**

61. You really need to leave now if you want to arrive on time. It is rush hour, and the traffic is really bad so

You cannot go to Shaoxing below one hour, at least.

1   2   3   4   100

62. Many people experience difference feelings when travelling by plane. There are people very excited about flying. Other people are a bit scared, and sometimes they need to take medication. I always fall sleep before taking off and when I wake up

The plane is already flying above the clouds.

1   2   3   4   100

63. My boyfriend and I like to go to the swimming pool. I cannot swim very well so he always likes to tease me.

He often hides under the water for a few seconds and then surprises me.

1   2   3   4   100

64. Paul wants to go out at night with his friends. Paul's mother is a bit worried, however, since he is still a kid in her eyes. Paul is unhappy because his best friend Charlie is allowed to go out at night, but he isn't. His mother tells to him

"Charlie is a grade above you, darling".

1   2   3   4   100

65. The CEO of Nokia was really stressed out recently, despite efforts to innovate and improve the quality of Nokia's mobile phones

Year after year, the company is performing under par.

1   2   3   4   100

66. Robert was a great writer. Unfortunately, many people only read his novels. He also published several poems but not many readers know about this. Because

These poems were written under his wife's name.

1   2   3   4   100

67. John is so messy. The other day he spent the whole afternoon looking for one of his books. He told me that he was sure that someone had stolen it. After a few hours he called me and said that he found it. He said that

The book was under the table.

1   **2**   **3**   **4**   **100**

68. One month ago, a powerful typhoon hit our city. There was heavy rain for about three days. It was also very windy. It was very difficult to go to work because

The water came above our knees on the roads.

1   **2**   **3**   **4**   **100**

69. I have been shopping all day. I had to buy vegetables and some fruit. I also passed by the bakery to order a cake for my father's birthday. It was a very busy day. When I came back home

I was really exhausted.

1   **2**   **3**   **4**   **100**

70. Peter still remembers those days when people could enjoy freedom but nowadays he has to follow countless rules and regulations. He can barely have a break at work, whenever he wants to take a break; he needs to report to his manager because

Under the new regulations, he is not even allowed to go out for a coffee.

1   **2**   **3**   **4**   **100**

APPENDIX Z. OXFORD PROFICIENCY TEST. SPANISH VERSION

Participant's name: _____

Choose the correct answer from a, b, c, or d: 指示：从 a, b, c, 或 d 选项里选出正确的答案

1. En mi tiempo libre (yo) _____el italiano.
   a) practicamos
   b) practico
   c) practicaban
   d) practicáis

2. ¿A ti te _____ jugar al fútbol?
   a) gustas
   b) gusto
   c) gusta
   d) gustan

3. ¿A qué hora (yo) _____ las clases de español?
   a) empiezo
   b) empezábamos
   c) empiezan
   d) empezó

4. ¿Dónde (tú) _____ las vacaciones de verano?
   a) pasaste
   b) pasasteis
   c) pasé
   d) pasó

5. Durante las últimas vacaciones de verano los estudiantes no _____ practicar el español.
   a) pudieron
   b) pude
   c) puedes
   d) pudo

6. Este agosto las tiendas _____ mucho dinero.
   a) he ganado
   b) ganaban
   c) han ganado
   d) ganabais

7. _____ mucho calor en Alicante este verano.
   a) Hacía
   b) Hacías
   c) Había
   d) Habían

8. ¿A qué hora _____ tú?
   a) te ducha
   b) te duchas
   c) se ducha
   d) se duchaban

9. ¿Cuándo (nosotros) _____ a España?
   a) irán
   b) iré
   c) iremos
   d) iréis

10. (Yo) _____ a Méjico la semana que viene.
   a) voy
   b) fui
   c) vas
   d) fue

11. ¿De dónde _____ tus padres?
   a) somos
   b) eres
   c) son
   d) sois

12. En este momento _____ escribiendo un test.
   a) estamos
   b) somos
   c) hemos
   d) estuvieron

13. ¿Has encontrado el libro que perdiste? –
No, no _____ he encontrado.
   a) me
   b) lo
   c) se
   d) le

14. Luis es _____ su hermano Juan.
   a) mayor de
   b) mayor a
   c) mayor que
   d) mayor como

15. Yo les _____ flores por su aniversario,
pero no tengo su dirección.
   a) enviaría
   b) enviaré
   c) envié
   d) enviaba

16. Ayer Sandra no vino al trabajo porque
_____ enferma.
   a) era
   b) estaba
   c) fue
   d) tenía

17. Cuando llegaron los invitados a la fiesta,
Oscar ya se _____ dos copas de vino.
   a) bebió
   b) bebía
   c) había bebido
   d) bebe

18. ¿Le darán la noticia al Sr. Gómez ustedes?
– Sí, _____ daremos nosotros.
   a) le la
   b) se la
   c) lo la
   d) les las

19. Para ir a la catedral, _____ a la
derecha después del semáforo.
   a) gires
   b) giran
   c) gira
   d) giremos

20. El gimnasio no _____ lejos de la
parada de autobús.
   a) es
   b) está
   c) hay
   d) estás

21. Mi marido y yo _____ tres años en
Colombia.
   a) vivíamos
   b) vivimos
   c) vividos
   d) vivirán

22. Ayer fui a un restaurante chino, me
_____ los rollitos de primavera.
   a) encanté
   b) encantó
   c) encantaron
   d) encantaste

23. Por favor, no _____ la ventana, hace
mucho frío.
   a) abres
   b) abras
   c) abre
   d) abro

24. Yo nunca _____ en América.
   a) estaba
   b) estuvo
   c) he estado
   d) estás

25. Llevo cinco años _____ español.
   a) estudiado
   b) estudiar
   c) estudiando
   d) estudianto

26. He visto a María esta mañana y _____
realmente morena.
   a) era
   b) estaba
   c) veía
   d) tenía

27. No sé qué pasa porque _____ ahora mismo.
   a) estoy llegando
   b) acabo de llegar
   c) acabo de llegando
   d) estuve llegando

28. _____ ejercicio cada día si quieres estar en forma.
   a) Haced
   b) Harías
   c) Haz
   d) Haré

29. No encuentro _____ artículo sobre este tema.
   a) ningún
   b) alguno
   c) ninguno
   d) nada

30. ¡Ojalá me _____ Aurora pronto!
   a) llamará
   b) llama
   c) llame
   d) llamé

31. Estudio español _____ poder trabajar en Argentina.
   a) por
   b) para
   c) de
   d) en

32. _____ sabía nada sobre el accidente todavía.
   a) Nadie
   b) Su madre
   c) Ella
   d) Alguien

33. Voy al trabajo en bicicleta _____ dos meses.
   a) desde hace
   b) desde
   c) hace
   d) para

34. Si queréis ir de viaje el próximo verano, _____ empezar a ahorrar dinero ahora.
   a) tenéis
   b) tenéis que
   c) tenéis de que
   d) tendré

35. Puedes venir a verme cuando _____.
   a) quieres
   b) quiera
   c) quieras
   d) quisieron

36. Ése que ves ahí es _____ de la clase.
   a) el chico el más listo
   b) chico el más listo
   c) el chico más listo
   d) el chico mejor listo

37. Después de que ese coche _____ a la derecha, tú giras a la izquierda.
   a) tuerce
   b) tuerza
   c) tuerzca
   d) tuerca

38. Si mi yerno _____ la próxima semana, yo tendría que anular todos mis compromisos.
   a) venga
   b) vendrá
   c) viniera
   d) venía

39. Puede que _____ la posibilidad de organizar una reunión mañana por la mañana.
   a) cabrá
   b) quepa
   c) cabe
   d) quepe

40. Tenéis mucha suerte de recibir ese sueldo, solo _____ de ayudantes.
   a) estáis
   b) sois
   c) siendo
   d) estás

41. Para viajar a Cuba, _____ pedir un visado.
   a) se debe
   b) se deben
   c) deberse
   d) me deben

42. Los dos niños _____ sanos y salvos.
   a) han encontrado
   b) son encontrados
   c) han sido encontrados
   d) está encontradas

43. No me molestes, no estoy _____ nadie.
   a) por
   b) para
   c) sin
   d) a

44. _____ claro que el volcán ha entrado en erupción; debemos irnos.

   a) Está
   b) Es
   c) Estamos
   d) Estoy

45. No creo que ese programa _____ la luz del día, es demasiado malo.
   a) vean
   b) ve
   c) vea
   d) veamos

46. Llame quien _____ no le contestes.
   a) llamo
   b) llame
   c) llamos
   d) llaman

47. No esperes que esta solución me _____.
   a) satisfaga
   b) satisface
   c) satisfaza
   d) satisface

48. ¿Quién ha decidido poner el cartel de _____ en el coche?
   a) vende
   b) se vende
   c) vendemos
   d) vendió

49. Si _____ granizado no habría venido a pie.
   a) habías
   b) habremos
   c) harías
   d) hubiera

50. Es probable que el proyecto _____ llegado a buen puerto.
   a) han
   b) haya
   c) hayan
   d) he

APPENDIX AA. OXFORD PROFICIENCY TEST. ENGLISH VERSION

Participant's name: _____

Choose the correct answer from a, b, c, or d:　　　指示：从 a, b, c, 或 d 选项里选出正确的答案

1. How many people _____in your family?
   a) are they
   b) is it
   c) are there
   d) is

2. What time is it? _____
   a) Ten and a quarter
   b) Ten minus the quarter
   c) A quarter past ten
   d) Fifteen after ten o'clock

3. I get up at 8 o'clock _____ morning.
   a) in the
   b) in
   c) the
   d) at the

4. How much _____where you live?
   a) do houses cost
   b) does houses cost
   c) does cost houses
   d) do cost houses

5. Where are you going _____ Friday?
   a) at
   b) in
   c) on
   d) the

6. _____ come to my party next Saturday?
   a) Do you can
   b) Can you to
   c) Can you
   d) Do you

7. What_____ in London last weekend?
   a) you were doing
   b) did you do
   c) you did
   d) did you

8. Is your English improving? _____
   a) I hope it.
   b) Hoping.
   c) I hope so.
   d) I hope.

9. I am going to Sainsbury's _____ some food.
   a) buy
   b) for buy
   c) to buy
   d) for to buy

10. Oxford is the most attractive city _____
    a) I've ever seen.
    b) that I see.
    c) I've never seen.
    d) that I saw already.

11. Oxford isn't _____ Bath.
    a) as beautiful than
    b) so beautiful than
    c) so beautiful that
    d) as beautiful as

12. He was mowing the lawn when I _____ him yesterday.
    a) saw
    b) had seen
    c) was seeing
    d) have seeing

13. Last Tuesday I _____ to the Passport Office.
    a) must gone
    b) must go
    c) had to go
    d) had go

14. What were you doing at 7: 30 on Wednesday evening? I _____ TV.
   a) was watching
   b) watched
   c) was watched
   d) watching

15. What time _____ to bed during the week?
   a) do you go
   b) are you go
   c) do you going
   d) you are going

16. Do you like Oxford? Yes, _____
   a) I like
   b) so I do
   c) I does
   d) I do

17. I'm afraid I haven't got _____
   a) any scissors
   b) scissor
   c) some scissors
   d) a scissor

18. This book is mine and that book is _____
   a) yours
   b) your
   c) your's
   d) you're

19. Would you mind _____ me that pencil?
   a) to pass to
   b) pass
   c) passing
   d) that you should pass

20. I live in Oxford now. I _____ to France for a long time.
   a) don't been
   b) didn't come
   c) haven't been
   d) don't come

21. I don't understand. What language _____
   a) speak you
   b) you speak
   c) you are speaking
   d) are you speaking

22. She came to Britain _____
   a) four days ago
   b) at four days
   c) before four days
   d) since four days

23. My mother never _____ out in the evenings.
   a) goes
   b) go
   c) is going
   d) going

24. _____ Oxford?
   a) Since when you live
   b) How much time you are living in
   c) How long have you been living in
   d) How long time are you living in

25. _____ car is the red Ford?
   a) Whose
   b) To whom
   c) Who's
   d) Of who

26. I'm sorry. I haven't done my report _____
   a) up to the now
   b) already
   c) until the present
   d) yet

27. My friend doesn't speak Chinese. I don't _____
   a) also
   b) neither
   c) either
   d) too

28. That's the house _____
   a) in the which Mr. Brown lives.
   b) in which Mr. Brown lives in that.
   c) Mr. Brown lives in.
   d) Mr. Brown lives in that.

29. If _____
   a) you come to my office, I'd pay you.
   b) you shall come to my office, I'll pay you.
   c) you came to my office, I would to pay you.
   d) you come to my office, I'll pay you

30. She asked me how big _____
   a) is your house
   b) my house was
   c) was my house
   d) is my house

31. My friend let _____ his bike yesterday.
   a) to borrow
   b) me borrowing
   c) me to borrow
   d) me borrow

32. _____, what would you spend it on?
   a) When you had a lot of money
   b) If you had a lot of money
   c) If you would have a lot of money
   d) If you shall have a lot of money

33. I _____ smoking last year, I didn't.
   a) ought to give up
   b) ought to have given up
   c) ought given up
   d) oughted to give up

34. I'm _____ the film on Wednesday.
   a) looking forward to see
   b) looking forward to seeing
   c) look forward seeing
   d) looking forward seeing

35. I'm not _____ grammar.
   a) interested to learn
   b) interested in learning
   c) interesting to learning
   d) interesting in learning

36. The film was very good. It's _____
   a) worth seeing
   b) worth to see
   c) worthwhile to see
   d) worthwhile see

37. I have difficulty _____ English.
   a) to write
   b) writing
   c) about writing
   d) to writing

38. When I lived in France, I _____ a lot of wine.
   a) was use to drinking
   b) was used to drink
   c) used to drink
   d) used to drinking

39. I wish _____ Russian.
   a) I could speak
   b) I would speak
   c) I can speak
   d) I'll be able to speak

40. What will you do when _____ studying?
   a) you're finishing
   b) you'll have finished
   c) you've finished
   d) you're going to finish

41. The Chancellor _____ the new wing yesterday, but it still isn't finished.
   a) had to open
   b) has to have opened
   c) was to have opened
   d) had to have opened

42. I'd rather _____ English than Swedish.
   a) you should learn
   b) you learnt
   c) that you might learn
   d) you learn

43. No sooner _____ in through the door that the phone rang.
   a) I had walked
   b) was walking
   c) had I walked
   d) I was walking

44. We're having the party at _____
    a) the house of Deborah
    b) the Deborah's house
    c) Deborah's
    d) house of Deborah

45. If he hadn't known the boss, he _____ the job.
    a) wouldn't get
    b) hadn't got
    c) wouldn't have got
    d) wouldn't had got

46. I'd sooner _____ a car that a motorbike.
    a) him to buy
    b) that he buy
    c) he bought
    d) he should buy

47. I need to go to _____ toilet.
    a) the
    b) a
    c) __
    d) Some

48. It's time _____ some work.
    a) for to do
    b) she would do
    c) she did
    d) she were to do

49. It's now 9 o'clock and the train _____ arrive at 8: 15.
    a) had to
    b) must
    c) was due to
    d) is going to

50. We regret _____ that the course has been cancelled.
    a) to tell
    b) telling
    c) to have said
    d) to say

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