

## AGE-RELATED FACTORS IN COPULA CHOICE IN STEADY STATE L2 SPANISH GRAMMARS\*

PEDRO GUIJARRO-FUENTES  
*University of Plymouth (UK)*  
KIMBERLY GEESLIN  
*Indiana University (USA)*

**ABSTRACT.** *This study investigates whether different age factors (i.e., age of arrival, number of years of exposure and chronological age) have an effect on ultimate attainment of copula choice in L2 Spanish. A group of 19 native speakers from Spain, 10 native Spanish speakers from 9 different origins, and two groups of 22 near-native speakers of Spanish (i.e., 11 Portuguese and 11 English native speakers respectively) took part in the study. Results from a grammaticality preference task of 28 items show that Portuguese native speakers do not have any advantage over their English counterparts as we predicted. Portuguese shares some properties related to copula choice with the Spanish language, but this is not the case for the English which does not have copula choice at all. Furthermore, our statistical analyses clearly indicate that the linguistic variation found between the native and non-native speakers can not be explained in relation to age factors alone. The present study, however, contributes to the understanding of the Critical Period Hypothesis (Lenneberg 1967), and ultimately to the study of Spanish as L2.*

**KEYWORDS:** *Critical Period Hypothesis, age factors, copula choice, ultimate attainment, native and near-native speakers, language transfer and language learning setting.*

**RESUMEN.** *Este estudio investiga si diferentes factores de edad (o sea, la edad de llegada, el número de años de exposición a la lengua y la edad cronológica) determinan las últimas etapas de adquisición de la elección de la cópula en el español como segunda lengua. Un grupo de 19 hablantes nativos de España, 10 hablantes nativos de diferentes orígenes, y dos grupos compuestos de 22 hablantes casi nativos de español (es decir, 11 hablantes portugueses y otros 11 hablantes de inglés respectivamente) participaron en el estudio. Los resultados de una prueba de preferencia gramatical compuesta de 28 ítems señalan que los portugueses no muestran ninguna ventaja sobre los hablantes ingleses como habíamos predicho. El portugués comparte con el español*

*muchos de los rasgos asociados con la elección de la cópula, no siendo este el caso con el inglés que no posee la elección de la cópula. Además, nuestros análisis estadísticos claramente apuntan que la variación lingüística entre los hablantes nativos y no nativos no se puede explicar teniendo en cuenta solamente factores de edad. El presente estudio, sin embargo, contribuye al estudio de la Hipótesis del Periodo Crítico (Lenneberg 1967), y de forma explícita al estudio del español como segunda lengua.*

PALABRAS CLAVE: Hipótesis del Periodo Crítico, factores de edad, elección de la cópula, último periodo, nativos y casi-nativos, transferencia y contexto de aprendizaje de la lengua.

## 1. INTRODUCTION

There has been a great deal of debate in second language acquisition (SLA) research about the implications of age-related factors in learning a second language. The question of whether a Critical Period exists has been approached from different angles by researchers working on different disciplines: linguistic theory, language processing and so on. During the 80s and 90s the research done on the Critical Period Hypothesis focused mainly on theories of access or lack of access to Universal Grammar parameters. Researchers have argued that both post-maturational age effects and language transfer effects play a role when a second language (L2) learner tries to master a second language (Bley-Vroman 1989, 1990). Bley-Vroman posits the Fundamental Difference Hypothesis according to which L1 acquisition is primarily different from L2 acquisition due to a lack of access to Universal Grammar by L2 adult learners. Within this scenario, L2 adult learners have to resort to different learning mechanisms. Currently, while discussion continues to focus on the maturational constraints on acquisition, the discussion has also moved to the investigation of the different aspects of the ultimate stages of an L2 grammar. On the one hand, studies which focus on the critical period have considered whether L2 acquisition may be affected by maturational factors. On the other hand, studies on near-nativeness have paid particular attention to the linguistic competence of those L2 adults, and whether or not such language learners can behave as native speakers in a language which is not their mother tongue.

The aim of the present paper is to examine the linguistic competence of late-state language learners, while considering the age of acquisition of these learners. Hence, we seek to explore the issue of whether or not L2 adult learners converge on the target grammar in their final states. The study was inspired, as were similar studies on ultimate attainment in the domain of grammatical competence by Geeslin (2003a), White and Genesee (1996), Bruhn de Garavito (1999), by the assumption that there was not a significant difference between near-natives and natives' performance. Thus, we have compared two groups of subjects, American English native speakers and Portuguese native speakers, both acquiring Spanish as a second language. Whether these subjects have attained native-like grammatical features will be determined through a comparison of each group to appropriate target norms. Two research questions guide the present study:

1. In the acquisition of L2 Spanish competence (semantic and pragmatic knowledge of copula choice) by adult learners, are there age effects? In other words, do learners who begin the acquisition process after puberty attain native-like behaviour? If native-like behaviour is possible, does L1 transfer play a role? If ultimate attainment of this structure is possible, we would not expect to see significant differences between native and non-native groups for overall copula use.
2. Which individual variables (e.g., age of arrival, actual age) account for variation in learner language? Is there evidence of the influence of age-related variables on copula choice?

The paper is organised as follows: Firstly, we report on current studies which have focused on the effect of age, and in particular in the final states of L2 acquisition. In the second part, we give an account of our own study. The third part summarises the main findings of the present study and considers future directions for the examination of the ultimate attainment in SLA.

### 1.1. *Near-native competence and the critical period in SLA*

The idea that there is a maturational period during which adult L2 learners are more *sensitive* to linguistic input and after which there is a clear decline in their language learning ability has provoked a great deal of research in SLA. The age threshold proposed for such a decline has been puberty (namely after age 12). It has been proposed that L2 language learning is not fully successful after the critical period due to the progressive lateralization of cerebral functions in the Broca's area and throughout the cortex (Lenneberg 1967). Referring to L2 adult acquisition, Lenneberg posits a partial L2 acquisition after closure of the critical period. That is, puberty is seen as the determining point in language learning capacity and neural reorganizational capabilities. Studies carried out with L1 and L2 learners indicated that age of immersion is one of the variables that influence the ultimate linguistic proficiency. However, there are areas which are more affected than others: whereas grammatical functions (or syntactic properties) of the language are more impacted by delays, semantic (or lexical processing) is relatively unaffected by delays in language immersion. We also have to bear in mind that the critical period for language acquisition may vary across L2 learners (Long 1990).

One of the most influential works related to age factors in SLA is the study carried out by Johnson and Newport (1991). They studied the interlanguage of 46 native Chinese and Korean L2 learners of English who had been residing in the US for a minimum of 5 years. They used a grammaticality judgement task which contained sentences representing different morphological and syntactic grammatical elements. According to their results, there was a decrease in the L2 adults' performance depending on their age of arrival, with only the youngest subjects performing in a similar fashion to the native speaker control group. Accuracy amongst the subjects showed a great deal

of variance. The grammatical elements most affected were the plurals and the determiners. Although one may argue that many of the problems could be attributable to L1 influence (because these elements are also missing in the L1 Chinese and Korean), Johnson and Newport did not contemplate this plausible explanation. Moreover, following Kellerman (1995), this study presents problems in relation to both the methodology (only responses to ungrammatical sentences were scored) and with the stimuli sentences, since in some cases they do not seem to test what they were supposed to test. The ages of the subjects also were grouped rather arbitrarily.

Similar results were obtained by Flege *et al.* (1999) in testing the correlation between the critical period and the acquisition of phonological and morphosyntactic properties. 240 native speakers of Korean who differed according to the age of arrival in the United States (1 to 23 years) took part in the study. Participants carried out two tasks: an English pronunciation task and a grammaticality judgement task which contained 144 items in relation to English morphosyntax. Flege *et al.* found that age of arrival and level of education played a very important role in the acquisition of the phonology and morphosyntax of the target language. However, Flege *et al.*'s study (1999) differed from that of Johnson and Newport (1991) in that in the former study the correlation between age of arrival and proficiency achieved continued after the age of 12. Moreover, Flege *et al.* (1999) found a few post critical period L2 subjects whose results indeed were similar to the native speakers. Their results seem to indicate that the rate of accuracy in phonological and morphosyntactic properties in L2 acquisition declines linearly with age.

One of the first studies that investigated ultimate attainment was carried out by Coppieters (1987). In his study, 27 near-native speakers of French, whose level in the target language was determined on the basis of the ACTFL oral interview guidelines, took part. A group made up of 20 native French speakers was used as baseline. The test consisted of 107 items representing different grammatical structures, although the number of sentences varies from one structure to another. The sentences were presented either in a grammaticality preference task or in a grammaticality judgement task format. Subjects were asked to comment orally as to why they accepted or rejected each sentence. In order to interpret the results, Coppieters considered that a sentence was grammatical if half or more of the native speakers accepted it, and if they rejected it, then the sentence was scored as ungrammatical. Both the near-natives and the control group received a score on their rate of deviance from this established norm. In sum, these results lead Coppieters to conclude that the non-native speakers do not show evidence of having attained native-like competence in the domains of both syntax and discourse semantics.

Sorace (1993) has argued that near-native grammars may be different from L1 grammars. Certain learners from different L1s may notice properties of the L2 input because of the L1. Sorace compared two groups of near-native speakers –English and French– speaking learners of Italian: 24 English native speakers and 20 French native speakers. They all were aged between 23 and 46, and had all started learning Italian after the age of 15. The test Sorace used was a grammaticality judgement task involving 48 sentences representing unaccusative verbs of different types, modal verb constructions,

and clitic climbing constructions. According to her results, the two groups differ in how they represent unaccusatives (verbs with only one argument), in particular the choice of auxiliary in the L2. Sorace found that French speakers were more *sensitive* to auxiliary choice with accusative verbs than English speakers, because French (in some respects) is similar to Italian in relation to auxiliary selection with accusatives. However, the near-native grammars are incomplete since there is clear evidence of a lack of some of the properties of the target grammar. In addition, the near-native grammars are divergent in that, upon comparing the near-natives with the natives, there were differences in their judgements.

The results of Birdsong (1992) are in direct contrast to the above studies. In particular, Birdsong strongly criticises Coppieters' study in an attempt to replicate it. Birdsong bases his criticisms on the testing procedures. Birdsong compared a group of 20 near-native speakers of French, who have been immersed in the French language for a considerable amount of time (that is, they all have been living in France for at least 3 years), with a group of 20 native speakers. Although Birdsong found significant differences between the grammaticality judgements of both groups, he also found a great deal of similarities between the near-natives and the natives in terms of their performance. Furthermore, Birdsong found a positive correlation between the two variables under investigation: age of arrival in France and performance on the test. Overall, Birdsong's findings are more in line with Flege et al.'s findings than with Johnson and Newport's study in which the correlation between age of arrival and performance vanished after puberty. As in Birdsong (1992), Birdsong and Mollis (1998) replicated the Johnson and Newport's (1989) study employing the same materials, procedures and tasks as in the original study, but with different L2 learner backgrounds (i.e., Spanish). Sixty-two native speakers of Spanish took part in the study. In contrast to Johnson and Newport (1989), they found a positive significant correlation between age and performance on the grammaticality judgement task. Furthermore, the results seem to indicate that the early arrivals in the country perform better than the late.

Another study in which near-natives and natives do not differ (or differ very little) was the investigation carried out by Ioup *et al.* (1994). They looked at the performance of an adult learner of Egyptian Arabic in a naturalistic setting (or untutored setting) and at the performance of an advanced learner of Egyptian Arabic who had received extensive formal instruction in the target language. Both near-natives were speakers of English. The near-natives had to judge several tasks which focus on phonological and syntactic features: an oral grammaticality task composed of 11 different grammatical structures, an anaphoric interpretation task with 18 recorded sentences, a grammaticality judgement task which included 37 items representing different syntactic structures, a translation task of 12 English sentences into Egyptian Arabic, and an accent recognition task. According to their results, Ioup *et al.* (1994: 91) claimed that both non-natives "[...] seem to be very close to a native level of proficiency in perceptual abilities, production skills, and underlying linguistic competence". They attribute learners' success to their talent in learning the target language.

Working within the framework of the Universal Grammar, White and Genesee (1996) looked at the acquisition of English by 45 French native speakers residing in Montreal. Sixteen of the 45 had been exposed to English after age 12. The 45 participants had to judge stimuli sentences related to various constraints contained in Universal Grammar: the Empty Category Principle (ECP) and Subjacency. They used two measures: a grammaticality judgement task with 60 items, presented on a computer, which allows the researchers to measure the reaction time, and a question-formation task requiring subjects to front Wh-words. According to White and Genesee's findings, the near-natives and the native control group did not show any significant differences, nor an effect of age. Hence, White and Genesee claimed that there is no age-related decline in access to UG and no critical period that may affect L2 competence. However, as Eubank and Gregg (1999: 81) point out "[...] it is also possible that White and Genesee's choice of tasks, along with their selection of only L2 participants with near-native proficiency, resulted in findings that are not entirely revealing".

In another study which looked at specific grammatical properties in near-native grammars, Bruhn de Garavito (1999) studied the acquisition of different structures related to the clitics *se* (in impersonal constructions and in unaccusative constructions) and *le* (in dative constructions) by two groups of near-native speakers (English and French native speakers of L2 Spanish, 10 participants from each language) and by one group of advanced learners composed of 10 English native speakers. Additionally, there was a control group of Spanish native speakers. All the non-native speakers had to perform different tasks: an oral interview task (following the ACTFL guidelines) in order to establish their level of proficiency and several grammaticality judgement tasks which tested subjects' knowledge of the grammatical properties under investigation. All L2 subjects began learning Spanish in a formal setting after puberty. According to her results, although L2 grammars are similar to Spanish native speaker grammars, English native speakers do not perform as well as French native speakers due to L1 effect.

More recently, Montrul (2002) sought to investigate the effect of age of onset on ultimate attainment within a bilingual population of 8 individuals born in Latin-America who moved to the United States before puberty. According to her results of various production and judgement tests (i.e., an oral production, a written completion, and two meaning-interpretation tasks), the acquisition of tense/aspect morphological and semantic distinction in Spanish is affected. In particular, ultimate attainment is determined by the age of onset of bilingualism and the number of years of exposure to the majority language. There was great variability between the monolingual group and the bilingual groups in terms of their competence and performance. More specifically, these findings lead Montrul to claim (2002: 57) that "[...] such ample range of variation in ultimate attainment is typical of second language acquisition, [...], and is one of the main arguments in favour of a critical period for second language acquisition".

Very little research has been conducted on the ultimate attainment of copula choice in L2 Spanish. Geeslin (2003a) investigated the differences between a native-speaking control group (N=25) and English-speaking learners of Spanish (N=28). This subject

population included speakers who ranged in proficiency from intermediate high (very few cases) to near-native. Thus, this study cannot be compared directly to studies such as Johnson and Newport (1991) and Birdsong (1992) which use 5 and 3 years of continuous living experience in the L2 environment respectively, as a criterion for inclusion in the study. Nevertheless, based on an analysis of a grammaticality preference task, it was found that the non-native subjects varied in their sensitivity to contextual cues that determine copula choice. For example, many learners were overly sensitive to contextual cues and were more willing to override semantic constraints, such as properties of the referent and the adjective, than the native-speaking group. Although this study raises important questions regarding the differences between native and non-native speakers, the range of proficiency of the participants makes it difficult to compare these results directly to the studies mentioned previously.

In a related study, Guijarro-Fuentes and Geeslin (to appear) investigated the second language Spanish of Portuguese-speaking learners (N=11) who had been living in Spain for at least 6 years. Although that study did not examine the linguistic features associated with copula choice as Geeslin (2003a) did, overall rates of use on a similar instrument indicated significant differences between native and non-native use. That study also showed that, despite the evidence that post-pubescent learners do not attain native-like competence, other age-related factors (e.g., age of arrival) did not predict copula use for non-native speakers. In other words, although the non-native speakers did not behave like the native speakers, age was not the sole determiner of second language variation. The study concludes with a call for future research that compares language learning populations with different first languages and in different acquisition settings. Thus, the work to date on the ultimate attainment of copula choice suggests that there are important differences between native and non-native speakers of Spanish, but further research is required.

### 1.2. *Summary of age factors in L2 learning*

It has been argued that a critical period exists for first and second language acquisition (Lenneberg 1967). However, the findings from experimental studies on the ultimate attainment of near-native speakers are rather contradictory. On the one hand, some L2 studies have found that fluent L2 adults do not achieve native-like competence in certain domains of the target language, even though they show clear evidence of being near-native speakers (Coppieters 1987; Sorace 1993). On the other hand, others have shown few or no differences between near-natives and natives (Birdsong 1992; Ioup *et al.* 1994). Furthermore, whereas some researchers working within the Universal Grammar framework do not accept that a critical period exists on the acquisition of Universal Grammatical knowledge (White and Genesee 1996; Bruhn de Garavito 1999), others seem to be inclined to acknowledge the existence of age effects (Montrul 2002). Within this scenario, Lardiere (1998a, 1998b) claims that there are clear differences between adult L2 speakers with final-state grammars and native speakers in terms of L2

performance. Lardiere studied the L2 English end-state grammar of a Chinese woman, Patty, who had been living in an English-speaking environment for a considerable amount of time and who appeared to have fossilised at certain points. Spontaneous production data led Lardiere to argue that Patty was having difficulties in mapping the abstract feature specifications of lexical items onto their morphological realisations. However, the underlying grammar converges with the native grammar, even though there is evidence of divergence in the surface morphology.

The conflicting data reported in previous studies, and the lack of comparative studies on second language copula choice, motivate the current investigation. Specifically, we seek to examine the second language competence of two groups of near-native speakers by comparing them to appropriate native-speaking control groups. We will compare the rates of use for these two groups and examine the results of this comparison in light of the features of the first languages, English and Portuguese, and the acquisition setting, classroom and naturalistic respectively. Statistically significant differences between either near-native group and their respective control group will support the hypothesis that native-like attainment after puberty has not been achieved.

There are other age-related variables that serve to further examine the Critical Period Hypothesis. For example, it has been hypothesised that although adult learners do not reach the same level of competence as child learners, there is not a steady decline after about age fifteen (Johnson and Newport 1989)<sup>1</sup>. In the current study, as in Guijarro-Fuentes and Geeslin (To appear), we will examine the variables age of arrival (or beginning of study), the number of years of study (and/or years of residence), and the actual chronological age of each participant. Within the comparative framework, the results of these tests will help to further address the issue of ultimate attainment and the difference between the two groups of learners.

## 2. THE STUDY

This empirical study looks at the grammar of L2 adult learners who appear to have reached an end state in their second language, insofar as each participant uses Spanish successfully to interact professionally on a daily basis. In short, the livelihood of each of the participants depends on their daily use of Spanish. In particular, we will investigate the language use of each participant and examine the correlation between such use and individual variables such as age of onset and L1 influence.

### 2.1. *Copula choice in Spanish*

For the purpose of the present paper we focus on the analysis of the copula constructions with adjectival attributes, leaving aside other types of constructions, (e.g., adverbial phrases or past participles), because adjectival constructions show the greatest amount of variability between the two copular verbs, *ser* 'to be' and *estar* 'to be'. In fact, it has been stated that as many as 80% of Spanish adjectives are permissible with both



*ser* and *estar* (Mesa Alonso *et al.* 1993). As a result of this variability, the [copula + adjective] structure has been shown to be acquired late, and is a reasonable structure to be investigated in studies of ultimate attainment (VanPatten 1987; Ryan and Lafford 1992). The purpose of the current section is to describe what is known about those semantic and pragmatic features that determine native-speaker copula choice.

An early analysis of the [copula + adjective] structure claimed that *ser* and *estar* could be characterised by the feature [+/- perfective] because *ser* was imperfective and *estar* was perfective (Luján 1981). This approach has recently been reformulated in terms of Carlson's (1977, 1989) contrast in predicate types, where *ser* denotes an individual-level property (on-going) and *estar* denotes a stage-level property (temporally limited) (Leonetti 1994; Fernández-Leborans 1999). This contrast explains why *estar* is used to indicate temporary states and *ser* is used to indicate more permanent characteristics. This contrast is illustrated in example (1a-b).

- (1) a. Marta es inteligente.  
Marta is (*ser*) intelligent (individual-level predicate).  
b. Marta está enojada.  
Marta is (*estar*) angry (stage-level predicate).

Because the majority of adjectives in Spanish are permissible with both copulas, depending on the meaning expressed, it has been further claimed that additional analyses are necessary to describe which adjectives allow a shift from individual to stage-level predicates and under what conditions this is possible (Geeslin 2003b).

Research in semantics and in sociolinguistics has provided additional means through which copula contrast can be described. It should be made clear that these additional variables do not replace predicate type, but rather they interact together to determine when shifts in predicate type may be possible due to pragmatic and semantic contextual influences. Clements (1988) makes the claim that the features of the referent, the adjective and the attribute must be considered. To this end, the current study distinguishes animate referents (i.e., living things) from inanimate ones, and takes the properties of all of these elements into account in designing the test instrument. Silva-Corvalán (1986; 1994) found that Mexican-American Spanish could be described using the following variables: frame of reference, susceptibility to change, and adjective class. Frame of reference refers to whether or not a referent is being compared to a group (class frame) or to itself at another point in time (individual frame). This is shown in example (2a-b).

- (2) a. El niño es alto.  
The child is (*ser*) tall (class frame).  
b. El niño está alto.  
The child has gotten/become (*estar*) tall (individual frame).

Susceptibility to change describes a relationship between the referent and the attribute, such that the size of a building is susceptible to change whereas the size of a

boy is not. Finally, each adjective can be classified as a member of a lexical group of adjectives that describe similar properties. Each category of this variable, along with an example of an adjective that belongs to that category is provided in Table 1.

Category	Example
Age	<i>Joven</i> 'young'
Size	<i>Grande</i> 'big'
Physical Appearance (animate referent)	<i>Bonito</i> 'handsome'
Description/evaluation (inanimate)	<i>Difícil</i> 'difficult'
Description of a person(ality)	<i>Simpático</i> 'nice'
Colour	<i>Azul</i> 'blue'
Mental state	<i>Sorprendida</i> 'surprised'
Physical state	<i>Enfermo</i> 'sick'
Sensory characteristic	<i>Frio</i> 'cold'
Status / class	<i>Rico</i> 'rich'

Table 1. *Categories in the variable Adjective Class.*

One final variable employed in the description of copula choice is the variable dependence on experience. This variable distinguishes first hand commentary from those that are not based on personal experience with the referent. This is illustrated in example (3a-b).

- (3) a. Me dicen que la gente en España es muy simpática.  
They tell me that the people in Spain are (*ser*) very nice (no direct experience).
- b. Durante el viaje noté que la gente era/estaba muy simpática.  
During my trip I noticed that the people are (*ser/estar*) very nice (direct experience).

In sum, each of these variables contributes to the description of which copula is selected by native speakers of Spanish in a given context. Because each feature is associated with a tendency toward one copula or the other (e.g., contexts which are susceptible to change are associated with *estar*), the greater the number of contextual features that are often associated with a particular copula, the more likely a shift in predicate type is to occur.

It is worth mentioning that copula choice is not governed by absolute rules that are universal for all native Spanish-speakers. Instead, copula choice varies across geographic areas, between individuals and from one social context to another (Silva-Corvalán 1986; Gutiérrez 1992, 1994). Consequently, this variation must be addressed when native speaker and non-native speaker copula use is assessed.

## 2.2. *Participants*

The participants included two groups of non-native speakers of Spanish. One group was composed of Portuguese-speaking learners of Spanish who can pass for

native speakers<sup>2</sup>. The second group included American English-speaking learners of Spanish who range from advanced to near-native in ability. Although these participants meet the institutional demands placed upon them (i.e., they meet academic standards for academic/professional interaction), they would not necessarily be mistaken for native speakers of Spanish. Both groups of speakers have learned Spanish as a second language after puberty. The reason for choosing these two groups of near-native speakers is that they appear to have reached a very high level of proficiency, which is crucial in determining whether L2 adult learners can in fact acquire a target language after puberty. It has been suggested (Johnson and Newport 1991) that L2 adults performed significantly below native speakers and that there is a clear correlation between L2 adults' performance and age of arrival in the country. While the Portuguese subjects have been exposed to Spanish from the Iberian Peninsula, the American English-speakers have been received input from Latin American Spanish varieties in addition to Peninsular Spanish. In interpreting our data we have to consider these external variables. In order to account for the different targets of the two groups, two different groups of native-speakers of Spanish were included in the study. The first group is comprised of native Spanish-speakers residing in Spain, and the second group includes native Spanish-speakers from 9 different countries of origin, all residing in the United States. Each group will be described individually<sup>3</sup>.

#### 2.2.1. Portuguese-speaking learners of Spanish

At the time of the study, the native Portuguese-speaking group (N=11) had lived in Spain for a considerable amount of time (mean=11.73; s.d.=2.8). Most of the participants indicated that they speak more Spanish than Portuguese on a daily basis. The participant group was made up of 5 females and 6 males, all but one of whom came to Spain from Brazil (one speaker was from Portugal). The participants ranged in age from 22 to 40 (mean = 32.27; s.d. = 6.5), and scored at least a 90% on the placement test (range = 39-43; mean = 41.36; s.d. = 1.56). Although some subjects reported that they had begun learning Spanish prior to coming to Spain (mean age of beginning to learn = 11.45; s.d. = 2.64), no participant arrived in Spain prior to puberty. The age of arrival for this group ranged from 12 to 28 (mean = 20.18; s.d. = 5.25).

#### 2.2.2. English-speaking learners of Spanish

The English-speaking group was comprised of L2 speakers of Spanish residing in the United States (N=11) who were pursuing graduate education in Spanish and teaching Spanish in an academic setting. All but two participants were pursuing a Ph.D. (two were pursuing an MA). Five of the participants were male and 6 were female. The participants ranged in age from 27 to 42 (mean = 33.36, s.d. = 5.42). The minimum criterion for inclusion in the study was a full year of experience living in a Spanish-speaking country. The years of continuous study in a Spanish-speaking country ranged from 1 to 3 years (mean = 2.1; s.d. = .88) and the range of years spent studying Spanish was from 8 to 26

(mean = 15.82; s.d. = 5.71). It is clear that this group of participants has more academic experience with the language and less in-country experience than their Portuguese-speaking counterparts. Based only on the location of time spent abroad this group had experience with the following target varieties of Spanish: Argentine, Honduran, Peruvian, Puerto Rican, Iberian Peninsular, Chilean, and Paraguayan. Several participants had lived in more than one Spanish-speaking country and all were exposed to a wide variety of native Spanish-speakers in the United States.

### 2.2.3. Native Spanish-speakers residing in Spain

In order to assess the copula use of the group of non-native speakers living in Spain, 19 native Spanish-speakers in the same country were also included in the study. These participants ranged in age from 20 to 46 (mean = 32.47; s.d. = 6.60) and lived in Granada, Jaén, León, Madrid, Murcia and Sabadel. Thirteen of the participants were female and 6 were male, and 15 had higher education. All had completed secondary education. In addition to being native speakers of Spanish, these participants had experience with the following second languages: Catalan, French, German, Portuguese and English.

### 2.2.4. Native Spanish-speakers residing in the United States

The target groups for the non-native speakers in the United States were varied. Consequently, it would be inappropriate to compare the data collected from this group to native speaker use of those residing only in Spain. To compensate for this, a group of 10 native Spanish-speakers working in the same environment as the English-speaking participants, and representing 9 countries of origin was also included in the study. These countries of origin were Argentina, Chile, Colombia, Costa Rica, Mexico, Puerto Rico, Spain, the United States (Mexican), and Venezuela. The participants had been in the United States for an average of 5.65 years (range = 1-23; s.d. = 6.68) and had been studying English for a range of 1 to 21 years (mean = 13.90, s.d. = 6.77). The age of arrival to the United States ranged from zero (born in US) to 42 (mean = 23.10; s.d. = 10.94). The group included 4 males and 6 females, who were pursuing higher degrees (one a BA, 4 an MA, and 5 a Ph.D.). The participants ranged in age from 23 to 44 (mean = 29.1, s.d. = 6.15).

## 2.3. *Tasks*

All four groups completed a background questionnaire and a contextualized grammaticality preference task. Due to slight variation in the instruments and the procedure, each research environment will be described independently.

### 2.3.1. Data collection in Spain

Participants in this group, both Portuguese-speaking and native Spanish-speaking, were recruited through social networks. Each participant completed a background questionnaire through which information regarding social variables and linguistic

experience was requested. Additionally, participants completed a written proficiency evaluation, comprised of multiple choice grammatical items<sup>4</sup> and a contextualized grammaticality preference instrument. This second instrument provided paragraph-length contexts in which the variables described to be associated with copula choice (see section 2.1) were varied randomly. Each category of each variable was represented with regularity throughout the instrument. Following the context, one character in the story posed a question to the other, and participants were asked to indicate a preference for one or both of the responses listed. The two options differed only in that one contained *ser* and the other contained *estar*. The order of presentation of the two copulas was varied randomly throughout the instrument. The instrument as a whole contained 28 items and took the form of a story. Figure 1 shows two such items, along with their translations.

1. Paula y Raúl van a un restaurante esta noche. Paula habla desde su habitación mientras se viste y hace los planes con Raúl, quien está en la sala. Cuando sale de la habitación le pregunta a Raúl: Paula: ¿Quieres que vayamos en mi coche?	
Paula and Raúl are planning to go out to a restaurant tonight. Paula is yelling from the bedroom while she gets ready in order to make plans with Raúl. As she comes out of her room she asks: Paula: Would you like to go in my car?	
A. Raúl: ¡Ay! ¡Qué bonita estás!	<input type="checkbox"/> Prefiero la frase A.
Raúl: Ay! How pretty you are!	<input type="checkbox"/> I prefer sentence A.
B. Raúl: ¡Ay! ¡Qué bonita eres!	<input type="checkbox"/> Prefiero la frase B.
Raúl: Ay! How pretty you are!	<input type="checkbox"/> I prefer sentence B.
	<input type="checkbox"/> Prefiero A y B.
	<input type="checkbox"/> I like both A and B.
10. Paula sabe que Raúl saca muy malas notas en la universidad. El padre de Raúl trabaja mucho para pagar los gastos de la universidad y Raúl tiene miedo de decirle que va mal con las clases. Paula le pregunta si puede evitar hablar con su papá sobre las notas. Paula: ¿Tienes que hablar con tu papá?	
Paula knows that Raúl is doing poorly at the University. Raúl's father is working hard to pay for the university and Raúl is afraid to tell him that his subjects are not going well. Paula wonders if he can keep his grades a secret. Paula: Do you have to talk to your dad?	
A. Raúl: Sí, claro, mi papá no está estúpido.	<input type="checkbox"/> Prefiero la frase A.
Raúl: Yes, of course, my dad is not stupid.	<input type="checkbox"/> I prefer sentence A.
B. Raúl: Sí, claro, mi papá no es estúpido.	<input type="checkbox"/> Prefiero la frase B.
Raúl: Yes, of course, my dad is not stupid.	<input type="checkbox"/> I prefer sentence B.
	<input type="checkbox"/> Prefiero A y B.
	<input type="checkbox"/> I like both A and B.

Figure 1. *Examples from the grammaticality preference task.*

### 2.3.2. Data collection in the United States

Participants in this group were recruited through academic networks, rather than social ones. Each participant completed a background questionnaire that provided details

regarding social and linguistic experience. Both native and non-native speakers also completed a contextualized grammaticality preference task. The instrument employed in this task was identical in format to that described previously. Nevertheless, the instrument used for the United States data collection was an earlier version of the one employed in Spain so a few items had been changed in order to remedy previous ambiguities.

#### 2.4. *Coding and analysis*

It will be recalled that the first research question asks whether or not the non-native participants in the study have achieved native-like copula choice. In order to assess whether or not this was the case, the average rates of use for each copula for the native and non-native groups were tabulated and compared statistically, using a  $X^2$  test. It will be recalled that each non-native group will only be compared to its respective target group. A statistically significant difference in the rates of use for the two groups (i.e., a correlation between group and copula choice) will constitute evidence that the non-native groups do not use copulas in a native-like manner.

The second research question asks whether or not age-related variables, such as the age of a participant, or the age of learning of a second language contribute to differences in use. Three variables were examined in the current study: the actual age of the participant, the age at which learning began (for Portuguese-speaking participants this is the age of arrival in Spain), and the number of years of study (for Portuguese-speaking participants this is the number of years of residence in Spain). Each of these variables was examined individually in a bi-variate one-tailed correlation analysis. This statistical test assesses whether or not there is a relationship between the two variables such that each moves steadily in a single direction (e.g., as age increases, use decreases or increases steadily). In order to perform these tests, it is necessary that the dependent variable be numerical rather than categorical. To accomplish this, each participant was given a score for the percentage of use of *estar*. This rate of use was then compared to each of the independent variables.

#### 2.5. *Results*

It will be recalled that the current study seeks to examine the differences between the native and non-native groups and the role that age-related factors may play in such differences. Each of these issues will be addressed individually in the following sections.

##### 2.5.1. *Native vs. Non-native competence*

The overall use of each copula was tabulated for all four participant groups and these data are presented in Table 2 and represented graphically in Figure 2. The response choices on the written instrument were *ser*, *estar*, or both. In the case of two tokens, a participant wrote in a different response, and these are coded as 'other'.

AGE-RELATED FACTORS IN COPULA CHOICE IN STEADY STATE L2 SPANISH GRAMMARS

Group	<i>Ser</i>	<i>Estar</i>	Both	Other	Total
US, native	119 (42.5%)	126 (45%)	33 (11.8%)	2 (1%)	280
US, non-native	134 (44%)	153 (50%)	21 (7%)		308
Spain, native	275 (51.7%)	233 (43.8%)	24 (4.5%)		532
Spain, non-native	113 (36.7%)	182 (59.1%)	13 (4.2%)		308

Table 2. Summary of copula use for all four participant groups. Note: percentages are supplied in parenthesis after raw totals.

The data in Table 2 show that both non-native speaking groups use *estar* more than their native-speaking target groups, and the US group appears to use the ‘both’ option less than the native-speakers in that same context. In addition, the non-native group in Spain appears to use *ser* less than the native speakers whereas the US non-native speakers appear to use *ser* slightly more than the native speakers. These results demonstrate that the learners in the current study are well past the initial stages of acquisition where *ser* is overgeneralized and *estar* is slowly incorporated into the grammar (Geeslin 2000). Instead, these learners use *estar* frequently and it is a well-established part of their L2 competence. Nevertheless, these descriptive results indicate the possibility that the two non-native groups are significantly different from their native-speaking targets. To establish whether this is the case, two X<sup>2</sup> tests were conducted.

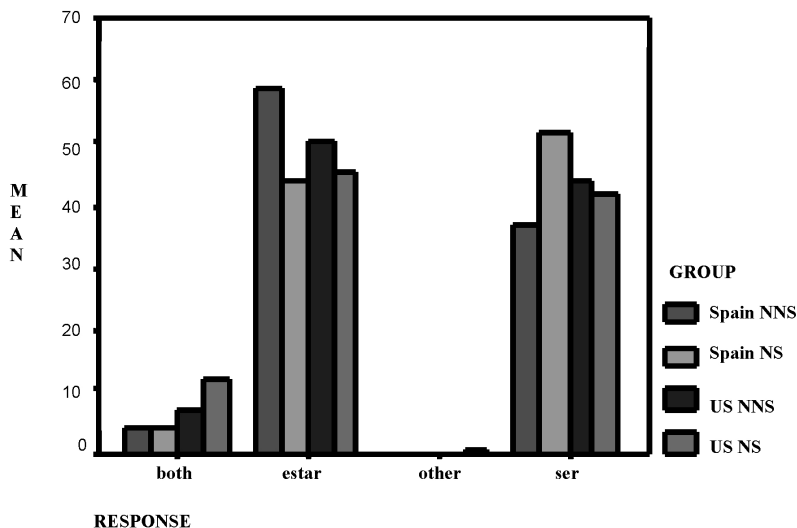


Figure 2. Summary of copula use for all four participant groups.

The X<sup>2</sup> test, which compares the response frequencies for each group, asks whether or not there is a correlation between response type and first language. In other words, if such a correlation exists, there are significant differences between the two groups. If the

results of the test are not significant, it will not be possible to conclude that the two groups behave in a statistically different manner. The  $X^2$  test that compared the frequency of response types between the Portuguese-speaking learners of Spanish and the native Spanish-speakers in Spain, showed that these two groups are significantly different ( $X^2 = 18.78$ ,  $df = 2$ ,  $p < 0.001$ , [Cramer's  $V = 0.15$ ,  $p < .001$ ]). A similar test comparing the response frequencies for the English-speaking learners of Spanish and the native Spanish-speakers in the United States showed that the difference between these groups is not as strong ( $X^2 = 6.85$ ,  $df = 3$ ,  $p = 0.078$  [Cramer's  $V = 0.11$ ,  $p = .08$ ]). Initially it was believed that this result was due to the two tokens of the response 'other' that left one cell with too few items. Nevertheless, a  $X^2$  test that excluded these two tokens showed an even weaker distinction between the two groups. In sum, the two groups of participants in Spain show significant differences while the groups of participants in the United States do not. The difference between the Portuguese and the Spanish-speaking groups indicates that these participants may not have acquired native-like competence. Given that one would expect that the United States learners of Spanish to be less proficient than the Portuguese learners due to living in an English-speaking environment, it is likely that there is greater variation in both the native and non-native speaking United States groups and this explains the lack of significant differences between the two.

In addition to knowing the percentage of use for each group, it is important to know in which contexts such deviation occurs. An item analysis of the questionnaire instrument revealed a great deal of individual variation for many of the preference task items. Because the preference task was designed to present contexts in which linguistic features were in conflict and it was necessary to select one copula over the other, variation was expected. Of the 28 items on the instrument, the native-speaking group from Spain provided unanimous results on 14 items. The native-speaking United States group agreed on 12 items. Table 3 presents a list of items on which one pair of native and non-native speakers agreed unanimously and these data are represented graphically in Figure 3. In such cases, there is no variation between the native and non-native speakers. In many cases, all four groups agreed on the response. This table shows that native and non-native pairs were in agreement on only 8 items, and all 4 groups agreed on only 6 items. This number is just over half the number of items on which all native-speakers in a single group were unanimous.

Item	US, native	US, non-native	Spain, native	Spain, non-native
2	<b>100% estar</b>	<b>100% estar</b>	<b>100% estar</b>	<b>100% estar</b>
4	100% estar	91% estar	<b>100% estar</b>	<b>100% estar</b>
7	<b>100% ser</b>	<b>100% ser</b>	<b>100% ser</b>	<b>100% ser</b>
10	<b>100% ser</b>	<b>100% ser</b>	100% ser	82% ser
12	<b>100% estar</b>	<b>100% estar</b>	<b>100% estar</b>	<b>100% estar</b>
18	<b>100% estar</b>	<b>100% estar</b>	<b>100% estar</b>	<b>100% estar</b>
21	<b>100% ser</b>	<b>100% ser</b>	<b>100% ser</b>	<b>100% ser</b>
22	<b>100% estar</b>	<b>100% estar</b>	<b>100% estar</b>	<b>100% estar</b>

Table 3. Responses for items with unanimous responses within one group.

Note: Bold indicates unanimous agreement between native and non-native comparison groups. Items described in Table 3 were identical on both versions of the instrument.



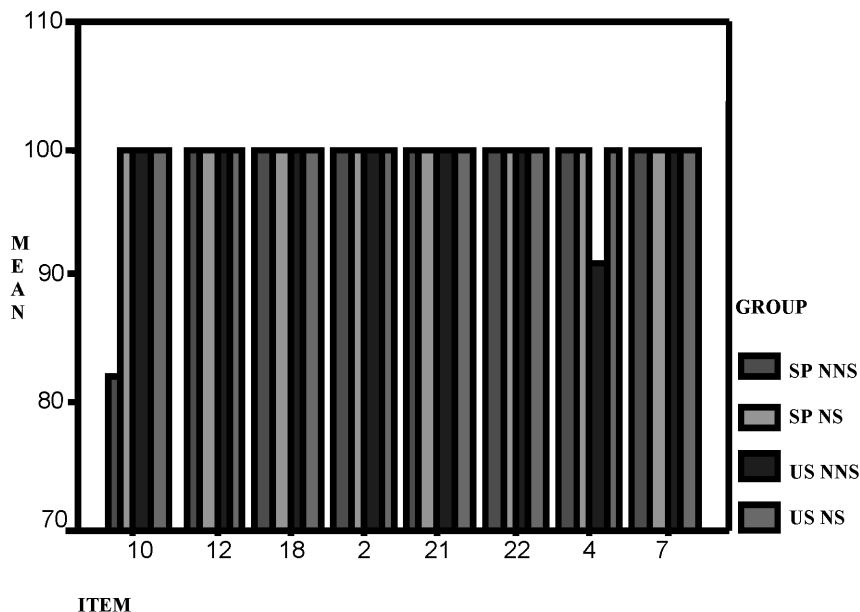


Figure 3. Responses for items with unanimous responses from one group.

In addition to the 8 items described above, for which there are unanimous responses from native speakers, and agreement within groups, there are several items where one group responds unanimously but this response is not identical to the comparison group response. These remaining tokens are presented in Table 4 and Figure 4.

Item	US, native	US, non-native	Spain, native	Spain, non-native
1	90% Estar	<b>100% Estar</b>	90% Estar	55% Estar
5	<b>100% estar</b>	91% estar	68% estar	<b>100% estar</b>
6	90% ser	91% ser	<b>100% ser</b>	73% ser
8	70% ser	<b>100% ser</b>	<b>100% ser</b>	73% ser
13	<b>100% ser</b>	82% ser	<b>100% ser</b>	73% ser
16	<b>100% estar</b>	91% estar	90% estar	82% estar
*17			<b>100% ser</b>	<b>82% ser</b>
19	70% estar	91% estar	68% estar	<b>100% estar</b>
20	70% ser	82% ser	<b>100% ser</b>	82% ser
23	<b>100% estar</b>	91% estar	84% estar	<b>100% estar</b>
*25			<b>100% ser</b>	73% ser
*26	<b>100% Ser</b>	73% Ser		
*27	90% estar	<b>100% estar</b>		

Table 4. Responses for items with unanimous responses for at least one group.

Note: Bold indicates a unanimous group response. \* = items are not identical on the two instruments and results are only reported for the item that produced unanimous results (see Appendix A).

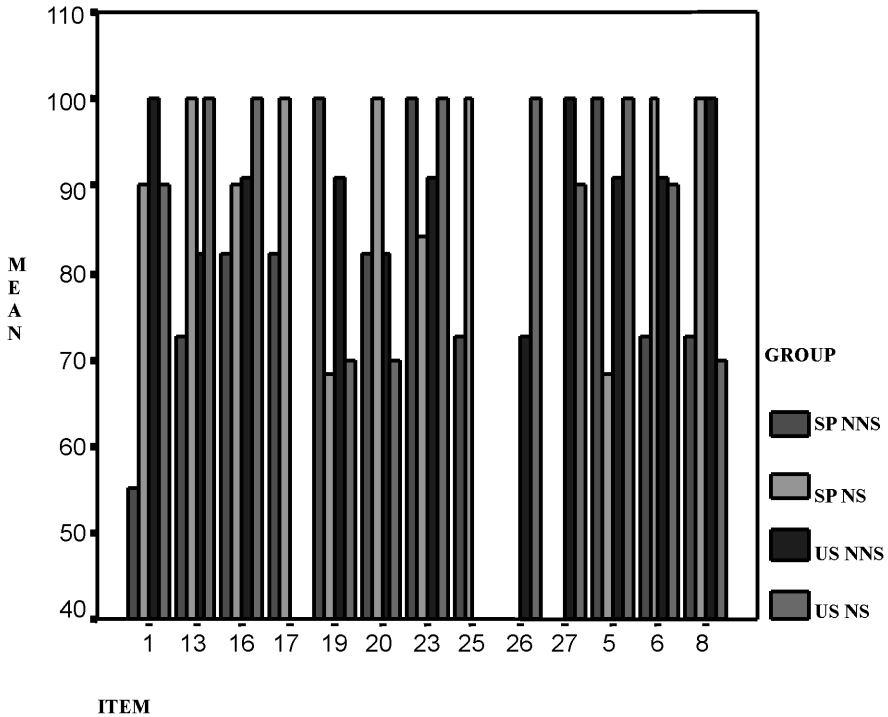


Figure 4. Responses for items with unanimous responses from at least one group.

In addition to the 8 items that produced unanimous responses and agreement within at least one group (Table 3), Table 4 illustrates that 13 more items produced unanimous results for one group of participants but no agreement between the native and non-native pairs. It is interesting to note that both native and non-native groups can produce a unanimous result, even when their comparison group does not. For example, on item number five, the non-native speakers in Spain and the native speakers in the US group both provided unanimous responses while their comparison groups did not. The opposite result is found for item number 8 where the native Spanish-speakers in Spain and the non-native speakers in the US provide unanimous results while the Portuguese speakers and the native-Spanish speakers in the US do not.

The individual analysis of items, presented in Tables 3 and 4, shows that variation can be characterized in three ways. On some items, there is variation between participants such that no group provides a unanimous response (see Appendix B). On some items, there is variation between groups such that some groups provide unanimous responses while others do not. Finally, there are a few items on which participants in the two relevant comparison groups produce unanimous results. In sum, variation in copula choice in contexts where linguistic features are in conflict produces variation for both

native and non-native speakers. The subsequent analysis will be dedicated to the investigation of the age-related sources of this variation.

### 2.5.2. Age-related variables in L2 Spanish

Although our results indicate that the Portuguese-speaking group is significantly different from their native-speaking comparison group whereas this is not the case for the English-speaking learners, both groups exhibit quite a bit of variation. In fact, it is likely that the English-speaking group was not significantly different from their native-speaking comparison group because both groups exhibited so much variation. It is possible that for both second language groups, age-related variables may contribute to such variation. The three age-related variables that were investigated in the current study will be examined individually below.

The age at which learning began for a second language learner may contribute to the overall use of a grammatical form. Nevertheless, it has been proposed that once a learner has reached puberty, age does not continue to cause a decline in acquisition (Johnson and Newport 1989). In order to test this the age of arrival (for Portuguese-speakers) and the age of learning (for English-speakers) were examined in terms of their relationship to copula use, using a correlation test. A significant effect will show a relationship between age of learning and copula use, such that as one increases (or decreases) the other factor also increases or decreases (it is not necessary that each variable move in the same direction). It should be clear that such a correlation is not necessarily a relationship between age of learning and accuracy, or native-like use, because the current study does not deal exclusively with judgement items that have unanimously chosen ‘correct’ answers. Due to the variation that exists between native speakers, it is impossible to identify a target and evaluate accuracy as one might for a more objective construct such as grammatical gender. The results for this first correlation test are shown in Table 5.

	English-speakers	Portuguese-speakers
Pearson Correlation	.09	.26
p-value	.40	.22
Sum of Squares and Cross-Products	39.73	60.64
Covariance	3.97	6.06
N	11	11

Table 5. Results of correlation tests for age of learning and copula use.

Table 5 indicates that there is no statistically significant correlation between the rate at which the copula *estar* was selected and the age at which learning began for either group of participants. Because all learners began acquisition after puberty, this result is not surprising. It is also possible that the number of years of study corresponds to the rate at which the copulas are selected. For example, if learners began studying at the same

age (e.g., 20) but one learner has been studying for 10 years and another for 15, it may be the case that the number of years of study is more important in determining variation than the age at which acquisition began. In order to see if this second variable, the number of years of study (years of residence for the Portuguese-speakers), correlates with copula use, a second set of correlation tests was performed, one for each group of participants. The results of this test are presented in Table 6.

	English-speakers	Portuguese-speakers
Pearson Correlation	.04	-.20
p-value	.46	.28
Sum of Squares and Cross-Products	18.09	-23.46
Covariance	1.81	-2.35
N	11	11

Table 6. *Results of correlation tests for years of study and copula use.*

As with the variable Age of Learning, the variable Years of Study did not correspond to the variation in copula use for either group of speakers. This can be interpreted as evidence that after a certain number of years of study, learners no longer modify their grammars continuously. Had these groups of participants included learners with lower levels of proficiency, it would have been expected that a correlation would exist between rates of use and number of years of study. In the case of these learners, however, there is no such relationship. Several studies of sociolinguistics have shown that age functions as a social variable, such that members of different age groups use particular variants with different frequencies (see Eckert 1997, for a review). It is possible (but not likely) that the variation shown in the current study is due to age, but that age is a social variable, not one linked to proficiency. In this case, the older the participant the higher (or lower) copula use might be. To test this, a final set of correlation tests was run and these results are presented in Table 7.

	English-speakers	Portuguese-speakers
Pearson Correlation	.09	.26
p-value	.40	.22
Sum of Squares and Cross-Products	39.73	60.64
Covariance	3.97	6.06
N	11	11

Table 7. *Results of correlation tests for actual age and copula use.*

Table 7 shows that the variable Actual Age also failed to correlate with copula use. It appears that this social variable also falls short of explaining the variation in copula use that exists within groups of second language learners. Previous research has suggested that what is of interest in both native and learner grammars are those contexts

where *estar* is allowed (Geeslin 2000). Consequently, it could be argued that the correlation tests based on the use of *estar* do not produce the same results as correlation tests based on the allowance of *estar*. Such allowance would call for the categorisation of the options ‘*estar*’ and ‘both’ into a single category. To ensure that these results did not differ from those reported here, a second series of correlation tests was performed. For all three variables and for both participant groups the results were similar using this other dependent variable. In no case did the correlation reach significance, regardless of the categorisation of the dependent variable.

### 2.5.3. Summary of results

In sum, the results of the current study have shown that second language learners do not always reach native-like competence in copula choice. In fact, copula use for the Portuguese-speaking group was significantly different from copula use by native Spanish speakers in Spain. The difference between the English-speaking learners and the native Spanish speakers in the United States did not reach significance, but this is likely due to variation within both groups. In fact, all groups showed variation such that no group produced unanimous results on as many as half of the questionnaire items. Moreover, no native + non-native comparison group agreed unanimously on more than 7 of the 28 items. Finally, age-related variables, such as age of learning, years of study or chronological age, do not explain the variation between learners. This indicates that the difference in the ability to apply semantic and pragmatic constraints in a native-like way cannot be explained by age alone. These results will be discussed in the following section and suggestions for future research that identifies the sources of this variation will be made.

## 3. DISCUSSION

In the current study, we sought to test the well-known assumption that L2 learners who begin the process of acquisition after childhood do not seem to achieve the same grade of competence as native speakers (i.e., the Critical Period Hypothesis). The results from 28 contextualised items from a grammaticality preference task suggest that there are remarkable differences between native speakers and near-native speakers, and between speakers in any single group, in terms of their use of copulas in the Spanish language. Furthermore, it does not appear that age-related factors can explain such variation, since there was no correlation between age of learning, years of study or chronological age and the use of the copula within either group of language learners.

One result of the current study that merits further consideration is the differences that may exist between the Portuguese-speaking group and the English-speaking group. The statistical tests suggest that while the Portuguese-speaking group is clearly different from their native-speaker comparison group, the same could not be shown for the English-speaking group. In sum, the hypothesis that the English-speakers had not yet reached native-like competence could not be supported. Many of the social variables,

such as level of education, are quite similar for both groups. Two variables that are different, however, are the learning context and the first language of the speakers. In the case of the Portuguese-speakers, formal instruction was not the primary mode for language acquisition. Instead language acquisition occurred in a naturalistic setting, and the language used most by these speakers was Spanish. In the case of the English-speaking learners, each participant was engaged in an academic setting and, despite several years of experience in a Spanish-speaking environment, the participants were living in an English-speaking environment at the time of the study. The expectation is generally that those learners in a naturalistic setting have a better possibility of gaining native-like proficiency. Our results are therefore somewhat surprising, and merit further investigation. Future studies should address learners with the same first language, the same target group, and differences only in the settings in which input was gained.

The second variable that distinguishes our two groups of learners is the first language: Portuguese or English. We hypothesised that convergence on the target grammar would depend on the similarity or difference of the grammatical features of the L1 and L2 grammars. That is to say, speakers of certain L1s (e.g., Portuguese) may be more *sensitive* to properties of the L2 input than other learners with different L1s (e.g., English) because of the similarities between features of their L1 and L2 (Sorace 1993). Specifically, a copula distinction exists in Portuguese, even in pre-adjectival contexts, whereas no such contrast exists in English. Although there are some differences between Spanish and Portuguese (e.g., *ser* is used for permanent locations in Portuguese whereas *estar* is used in Spanish), the way the two copular verbs are employed with adjectives is generally quite similar as illustrated in (4a-b). As can be observed, Portuguese behaves like Spanish, with just minor differences (Examples taken from Schmitt 1991: 412).

- (4) a. Bombeiros são/\*estão altruístas.  
Firemen are altruistic (Individual-level predicate).
- b. Bombeiros \*são/estão disponíveis.  
Firemen are available (Stage-level predicate).

On the contrary, in English there is no copula choice unlike Spanish or Portuguese, English has one copular verb, *be* as illustrated in (5a-b):

- (5) a. Peter *is* tall (permanent/individual-level).
- b. Peter *is* sick (temporary/stage-level).

What is not known for Portuguese (and not entirely clear for Spanish) is if speech communities are currently participating in the expanding use of *estar* with adjectives and, if so, at what rate this change is moving. In fact, to our knowledge no study in this area exists to date. Nevertheless, it is clear that Portuguese-speakers come to the task of learning Spanish with considerably greater knowledge of copula contrast than English-speakers.

There are studies, however, that have shown that similarities in the L1 and L2 do not always lead to easy acquisition of a particular structure (Bini 1993). In fact, in the

current study it was found that language transfer does not seem to play a facilitory role in acquisition. In the case of the two non-native groups considered in this study, the Portuguese group may have sounded more native-like than the English-speaking group and had greater contact with Spanish-speakers. The finding that this group was more like native-speakers than the English-speaking group would not have clearly demonstrated the effects of L1 transfer because of the other variables that may have given this group an advantage. Nevertheless, the result that this group appears to be less like the native-speakers to whom they were compared does imply that first language similarities should not be viewed as the sole predictor of success in ultimate attainment. This result appears to go against Sorace's (1993) claims, but one important remark is needed at this stage. Sorace's study and the present study differ in the grammatical features tapped: the present study focused on the semantic and pragmatic features involved in copula choice in Spanish, whereas Sorace focused on the acquisition of syntactic features. One may claim that L2 learners could be more sensitive to syntactic properties where the two languages coincide. It would be interesting to compare these same two populations on additional features of the grammar that are related to other linguistic domains.

Although other features of the grammar are likely to show interesting differences between groups, it is not likely that other copular functions will do so. This is because most other copular functions, such as the use of *estar* for location are acquired much earlier. While earlier research disagreed as to whether the [copula + adjective] function was fully acquired prior to the [copula + locative] function (VanPatten 1987; Ryan and Lafford 1992), this is largely because the adjectival categories were not examined using individual features. Consequently, the overall rate of accuracy for adjectives reached the acceptable rate of 90% correct even though certain structures (e.g., those that show a conflict between semantic and pragmatic cues) remain difficult to acquire. Briscoe (1995) showed that when the locative functions (*estar* + location vs. *ser* + event) are distinguished from one another, the locative can be seen to be acquired relatively early. It is only the small set of contexts where *ser* is required to denote the location of an event that remain difficult. Given these results from earlier research, it is likely that the pre-adjectival context is the most likely to yield interesting results in studies of ultimate attainment.

One limitation of the current study is that all analyses are based only on the overall rates of use of each copula. These data do not examine copula selection in a given context. For example, previous research on English-speaking learners of Spanish has shown that such learners do not respond to the same pragmatic and semantic cues that native-speakers do, or fail to rank such cues in the same order. Moreover, it has been shown that advanced learners of Spanish, even those who do not differ statistically in rates of use from native-speakers, are not native-like when the role of contextual features is considered (Geeslin 2003a). Future research should include an analysis that addresses the interaction of copula use with particular discourse features. It is probable that such an analysis would show that even the English-speaking group was not native-like. Furthermore, it would be possible to compare all four groups in terms of how the copulas are used, rather than just how often each copula is chosen. Despite this limitation, this

study is of interest because even the rate of selection varies between the two groups, suggesting that further research would reveal even greater differences.

#### 4. CONCLUSION

Overall, our findings show that copula choice in Spanish is an area of research that promises to reveal important findings regarding ultimate attainment. In describing the competence of two very advanced groups of learners, it was shown that all groups showed intersubject variability as well as differences between groups. One group showed evidence that it had not reached native-like frequencies of use for copula choice, even after more than 10 years in residence. The results support the claim that L2 learners (i.e., English native speakers who do not possess the copula contrast in their L1) are not restricted to grammatical features of their mother tongue, but further research is needed to see whether those groups that do show similar frequencies in use are indeed using copulas in a native-like way (i.e., responding to contextual cues the same way that native speakers do). Moreover, the range of variation in ultimate attainment is one of the main arguments put forward in support of the critical period for second language acquisition (Long 1990; Birdsong 1999). Our conclusion, therefore, is that at least in the area of semantic and pragmatic interpretations of copula choice in Spanish, many non-native speakers do not seem to converge on the Spanish grammar of the native speakers, even though they are exposed to the target language for a considerable amount of time.

#### NOTES

- \* We want to thank all participants without whom the study would not have been possible to carry out. Thanks are also due to the audience of 8th ELIA Conference held in Seville, Spain in March 2003, where an earlier version of this paper was presented, and to the anonymous RESLA reviewers and to the editorial staff. All remaining errors are our own.
1. Flege (1999) cites evidence from his own research that shows a linear decline in ability, even after the critical age has been passed. This further justifies the investigation of this issue in the present study.
  2. Their level in Spanish was determined on the basis of informal conversations on diverse topics between one of the researchers and the participants.
  3. The data described in the current study belong to a larger database, portions of which have been described in previous studies. The comparison of the Portuguese-speaking group to the native Spanish group in Spain was described earlier in Guijarro-Fuentes and Geeslin (to appear). The English-speaking learners included in the current analysis are a subset of those described in Geeslin (2003a). They were selected for the current study because they represented those participants with the longest continuous time spent in a Spanish-speaking environment. The native speakers from the US were selected because they best reflect the wide variety of Spanish with which the non-native participants had personal contact. What distinguishes this study from previous work is the following: 1. This study presents a comparative framework where the effects of L1 and learning context can be addressed, 2. This study connects the data set with other research on ultimate attainment, and 3. The analysis of age-related factors for the US group has not been reported elsewhere.
  4. Test adapted from the University of Wisconsin Spanish Placement Test (Test Form 96M).



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APPENDIX A

Item	US, native	US, non-native	Spain, native	Spain, non-native
17	Ser (70%); Estar (10%); Both (20%)	Ser (91%); Both 9%)	See Table 4	See Table 4
25	Ser (60%); Estar (10%); Both (20%); Other (10%)	Ser (18%); Estar 64%); Both (18%)	See Table 4	See Table 4
26	See Table 4	See Table 4	Ser (36%); Estar (64%)	Ser (95%); Both (5%)
27	See Table 4	See Table 4	Ser (27%); Estar 73%)	Ser (11%); Estar (79%); Both (11%)

Responses for items where one group is unanimous and the items were different on the two instruments. For example item 17 included in Table 4 above.

APPENDIX B

Item	US native	US non-native	Spain, native	Spain, non-native
*3	Ser (30%); estar (70%)	Ser (46%); Estar (46%); Both (9%)	Ser (21%); Estar (68%); Both (11%)	Estar (91%); Both (9%)
*9	Ser (40%); Estar (40%); Both (20%)	Ser (64%); Estar (18%); Both (18%)	Ser (95%); Both (5%)	Ser (55%); Estar (46%)
*11	Ser (70%); Estar (20%); both (105)	Ser (55%); Estar (36%); Both (9%)	Ser (84%); Estar (16%)	Ser (27%); Estar (55%); Both (18%)
14	Ser (30%); Estar (20%); both (40%); other (10%)	Ser (46%); Estar (46%); Both (9%)	Ser (68%); Estar (21%); Both (11%)	Estar (73%); Both (27%)
15	Ser (40%); Estar (20%); Both (40%)	Ser (46%); Estar (46%); Both (9%)	Ser (32%); Estar (58%); Both (11%)	Ser (36%); Estar (64%)
24	Ser (70%); Estar (10%); Both (20%)	Ser (36%); Estar (46%); Both (18%)	Ser (84%); Estar (5%); Both (11%)	Ser (55%); Estar (46%)
28	Ser (50%); Estar (10%); Both (40%)	Ser (55%); Estar (9%); Both (36%)	Estar (79%); Both (21%)	Ser (9%); Estar (91%)

Responses where variation occurs within all groups \*= items are not identical on the two instruments.