THE MORPHOSYNTAX-LEXICON INTERFACE BREAKDOWN: AN ASPECTUAL ACCOUNT OF THE L2 ACQUISITION OF SER AND ESTAR BY L1 ENGLISH SPEAKERS

Inmaculada Gómez-Soler

A thesis submitted to the faculty of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Arts in the Department of Linguistics

Chapel Hill
2009

Approved by:
Misha Becker
Randall Hendrick
Larry King
Julia Cardona Mack
ABSTRACT

GÓMEZ-SOLER INMACULADA: The Morphosyntax-Lexicon Interface Breakdown: An Aspectual Account of the L2 Acquisition of *ser* and *estar* by L1 English speakers

(Under the direction of Misha Becker)

This thesis analyzes the L2 acquisition of *ser* and *estar* by L1 English speakers. My results showed the following patterns: overgeneralization of *ser*, omission of *estar*, difficulty with semantic constraints and with locations of events and better performance in the written task. These facts can be explained by means of the *Missing Surface Inflection Hypothesis* (Prévost and White 2000). I claim that the problems with *ser* and *estar* stem from processing difficulties and an impossibility to retrieve *estar* from the lexicon due to the difficulty that L1 English learners of Spanish have identifying its aspectual properties. Interestingly, L1 learners show the opposite pattern: they overgeneralize *estar*. This fact can be explained through the *Aspect First Hypothesis*, which proposes that children use inflectional morphology to mark aspect. So, the aspectual element seems to be the key to understanding both the L1 and the L2 processes of acquisition of *ser* and *estar*. 
ACKNOWLEDGMENTS

First and foremost, I would like to thank my director Misha Becker because her effort and endless patience have made this project possible. I would also like to thank her for being an inspiration of hard work and dedication. Also, I would like to thank the members of my committee Randall Hendrick, Larry King and Julia Mack for their availability and their wise comments. I would like to give a special thanks to Julia Mack for her generous commitment to my project and for helping me find my way back when I was lost.

Secondly, I would like to thank Carmen Pérez, Pablo Maurette, Rosario Colchero, Vinodh Venkatesh and Encarnación Cruz for providing subjects for my research.

Finally, I would like to thank my parents and my sisters for their love and for their unconditional support. Also, I would like to thank my friends who have shared with me all the frustration and the happiness of the writing process.
A mis padres
TABLE OF CONTENTS

LIST OF TABLES ............................................................................................................ vii

Chapter

I. INTRODUCTION ..................................................................................................1

II. LITERATURE REVIEW ......................................................................................4

  2.1 History of the copula ................................................................................4

  2.2 The ser/estar contrast in Spanish .............................................................5

  2.3 The acquisition of ser andestar .............................................................15

III. EXPERIMENTS .................................................................................................24

  3.1 Introduction ............................................................................................24

  3.2 Experiment 1: (Guided) Picture Description Task .................................27

  3.3 Experiment 2: Grammaticality Judgment Task ......................................36

IV. THE L2 ACQUISITION OF SER AND ESTAR AND THE MISSING
    SURFACE INFLECTION HYPOTHESIS ..........................................................44

  4.1 Introduction ............................................................................................44
4.2 The Missing Surface Inflection Hypothesis .............................................46

4.3 The Missing Surface Inflection Hypothesis and the L2 Acquisition of *ser* and *estar* .................................................................48

V. FIRST LANGUAGE ACQUISITION OF SER AND ESTAR .......................63

4.1 Introduction ........................................................................................................63

4.2 Background ...........................................................................................................63

4.3 First Language Acquisition of *ser* and *estar* and the Missing Surface Inflection Hypothesis .............................................................71

4.4 First Language Acquisition of *ser* and *estar* and the Aspect First Hypothesis .................................................................................72

4.5 Similarities between the L1 and L2 Acquisition of *ser* and *estar* .......73

VI. CONCLUSION ....................................................................................................77

APPENDIX ......................................................................................................................82

BIBLIOGRAPHY .............................................................................................................88
LIST OF TABLES

Table

2.1 Several authors’ views on the ser and estar contrast.....................................................7

3.1 Percentage of frequency values of ser and estar ..........................................................32

3.2 Percentage of frequency values of ser and estar by level............................................33

3.3 Percentage of error rate in correct responses for ser and estar........................................33

3.4 Percentage of error rate in correct responses for ser and estar........................................33

3.5 Percentage of error rate by type........................................................................................34

3.6 Percentage of error rate in students’ use of syntactic, pragmatic and semantic constraints ..............................................................................................34

3.7 Percentage of error rate in students’ performance with subtypes................................35

3.8 Percentage of copula omission........................................................................................36

3.9 Percentage of frequency values of ser and estar ..........................................................39

3.10 Percentage of frequency values of ser and estar by level..............................................40

3.11 Percentage of error rate in correct responses for ser and estar......................................40

3.12 Percentage of error rate in correct responses for ser and estar......................................41

3.13 Percentages of error rate by type ..................................................................................41
3.14 Percentages of error rate in students’ use of syntactic, pragmatic and semantic constraints ..............................................................42

3.15 Percentages of error rate in students’ performance with subtypes .........................42

3.16 Percentage of copula omission................................................................................43

4.1 Error rate in the subtypes whose errors yielded overgeneralization of estar .............59

4.2 Total error rate in the picture description task and
in the grammaticality judgment task ......................................................................60

4.3 Error rate by type in the picture description task and
in the grammaticality judgment ............................................................................60

5.1 Percentages of estar by age..................................................................................64

5.2 Lexical Homonymy ...............................................................................................68
CHAPTER 1
INTRODUCTION

Mirrors and the copula are abominable because
they multiply the number of people

J. L. Borges

I am one of those ‘multiplied people’ who has been fascinated by the copula and has
decided to focus her research on this topic. In particular, this thesis centers on the second
language acquisition of *ser* and *estar* by L1 English speakers. The first and main goal of this
thesis is to find a theoretical rationale able to explain the facts found in my research, most of
which are widely confirmed by the L2 literature. The second goal of this thesis consists in
finding the points of similarity and dissidence between the L1 and the L2 acquisition of *ser*
and *estar*. So far, this explicit comparison has not been made in the literature.

This thesis is organized as follows. In chapter two I will present a comprehensive
literature review on the topic. First of all, I will start with an overview of the history of
accounts of the copula. Secondly, I will present several authors’ view of the nature of the *ser*
and *estar* contrast. Finally, I will provide an account of the findings in the L2 literature on the
acquisition of *ser* and *estar*. 
Chapter three is a report on my two experiments which consist of a picture description task and a grammaticality judgment task. The goals of the experiments will be presented, the participants described, the procedure and methodology followed to complete the experiments will be disseminated in detail and finally a statistical analysis of the results will be provided. The main results found in this section are the overgeneralization of *ser* in the oral task, the omission of *estar*, the difficulty with the integration of lexical constraints in the copula task, the problematic case of *ser* used with locations of events and the different performance of the students in the oral vs. the written task.

Chapter four presents the *Missing Surface Inflection Hypothesis* as the logical theoretical explanation of the results found in chapter three. The problematic nature of *ser* and *estar* for native-English speakers seems to lie in processing difficulties and not in problems at the level of syntactic representation. Even if the right syntactic structure is present and the lexical items *ser* and *estar* are inserted in the lexicon, there is a breakdown between the morphosyntax-lexicon interfaces that causes problems with lexical retrieval. I will attribute the source of these problems to students’ inability to recognize the aspectual nature of *estar*, a characteristic that is morphologically covert in its English counterpart ‘to be’.

Chapter five compares my results with the findings in the L1 literature. This chapter tries to answer the following question: what are the similarities and differences between the L1 and the L2 processes of acquisition of *ser* and *estar*? The main finding in the L1 acquisition literature is that, contrary to what was found in the L2 literature, children seem to overgeneralize *estar*. The findings in the L1 literature cannot be explained by means of the
Missing Surface Inflection Hypothesis since this hypothesis is unable to account for the overgeneralization of *estar*. On the other hand, the Aspect First Hypothesis (Wagner, 2001), that is, the belief that children start using verbal morphology to mark aspect, seems to be the theoretical justification of the L1 facts. On the other hand, the L1 and the L2 processes also have some points in common: both children and L2 learners find syntactic constraints to be the best cue for correct copula choice. Also, L1 and L2 learners encounter difficulty using *ser* with locations of events.

Next, I will draw conclusions from the current work.

I will finalize this thesis with an Appendix in which I will provide the Power Point slides used in the picture description task and the questionnaire used for the grammaticality judgment task.
2.1 History of the copula

Studies on the copula date back to Aristotle. Since then, multiple theories have tried to provide theoretical definitions of the term. Moro (1997) presents an overview of the different theories that have tried to account for the syntactic and semantic nature of the copula. There are three main traditional approaches: in the Aristotelian approach the copula is considered an inflectional element which provides tense marking in declarative sentences. For Abelard and later on for the Port Royal School, the copula is the element that allows predicational linking. Conversely, Russel considers the copula a predicate which in particular carries the meaning of identity. Another way in which the copula is considered a predicate is when it is assumed to indicate existence. The latter concept started with Abelard.

In more modern approaches to grammar the copula has played a central role in the analysis of clause structure. From their study of copular constructions Jespersen and Chomsky concluded that clause structure is rigid and that the subject is always the element which appears in a preverbal position. However, they found different explanations for this fact: whereas Jespersen considered that the subject triggered agreement on the verb, Chomsky saw the subject as the element preceding the verb because that is the position where the subject is spelled out in the syntactic structure of the sentence. As we have seen, defining the copula is not an easy process and numerous theories and authors have
endeavored to this undertaking over the centuries. The question of what the copula is and what it represents still remains open nowadays (Moro 1997: 249-261).

2.2 The *ser/estar* contrast in Spanish

I would like to open our discussion of the *ser/estar* contrast in Spanish by quoting their respective entries in the *Diccionario de uso del español* by Maria Moliner\(^1\) (1998):

- **Estar** (*del lat. <<stare>>*) \(^1\) *atrib. Su función es la de atribuir al sujeto una manera circumstancial de existir, bien con un adverbio de modo o un gerundio, bien con un atributo.* ‘\(^1\) atrib. Its function is attributing a circumstantial way of existing to the subject, either with a modal adverb or a gerund, or with an attribute’ (volume 1, p.1219).

- **Ser** (*el infinitivo, así como el futuro de indicativo, el potencial, el presente de subjuntivo, el imperativo y las formas impersonales proceden del ant. <<seer>>, del lat. <<sedēre>>; las formas restantes proceden del lat. <<esse>>). \(^4\) *atrib. Sirve para atribuir a un sujeto una cualidad o circunstancia.* ‘(the infinitive as well as the conditional, the present subjunctive, the imperative and the impersonal forms come from ant. (ancient) <<seer>>, from lat. <<sedēre>>; the rest of the forms come from lat. <<esse>>). \(^4\) atrib. Serves to attribute a quality or circumstance to a subject’ (volume 2, p. 1064).

---

\(^1\) These are the abbreviations used in the *Diccionario de uso del español* by María Moliner:
- Atrib.=Attributive verb
- Ant. =Ancient
- Lat. =Latin
Simply by looking at these definitions we can realize that the division between *ser* and *estar* is far from being transparent. In fact, the meaning and distribution of the copulative verbs *ser* and *estar* has been (and still is) one of the most debated topics in Spanish grammar. In this section I will present an overview of some of the theories that have tried to account for the different behavior of these two copulas.

Navas Ruiz presents the difference between attribution and predication in the following way:

> La predicación indica un proceso y la atribución un estado o cualidad. Pero estos son conceptos insuficientes.’ [...]. ‘En la predicación el significado de proceso, acción o estado permanece externo al sujeto, independiente de su manera de ser, de su esencia. En la atribución el significado de proceso, acción o estado afecta a la naturaleza íntima del sujeto, modificando sus notas características. En yo duermo dormir es un accidente de mi ser; en yo soy bueno, la bondad es la esencia de mi ser.’

‘Predication indicates a process and attribution indicates a state or quality. But these concepts are insufficient. [...] ‘In predication the meaning of process, action or state remains outside the subject, independent from its way of being, its essence. In the attribution the meaning of the process, action or state affects the intimate nature of the subject, modifying its characteristic notes. In I sleep sleeping is an accident of my being; in I am good, goodness is the essence of my being’ (1977: 20).

These concepts also seem to be too vague to help us understand the complexities of the attributive system.

Fernando Lázaro Carreter’s definition of the copulative verb does not seem to shed light into these complexities either: “El que sirve de nexo entre el sujeto y el atributo sin que añada nada al significado de la oración” ‘It is the one which serves as a nexus between the...
subject and the attribute without adding anything to the meaning of the sentence’ (1968: 117).

However, the mere fact that we have several copulative verbs is an indication that these verbs do entail different connotations and actually add different nuances to the sentences in which they are included. Next, we will look at how other authors have explained the different connotations between copulative verbs, in particular, *ser* and *estar* which is the focus of this study.

Falk (1979) presents an outline of the different views that previous researchers have held in regard to the distinction between these two copulas. This will help us understand what has been the traditional division between the two verbs.

Table 2.1 Several authors’ views on the *ser* and *estar* contrast

<table>
<thead>
<tr>
<th>TO BE (SER)</th>
<th>TO BE (ESTAR)</th>
<th>Authors (non exhaustive list)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Permanent, durative</td>
<td>Transitory, passing.</td>
<td>Academia, Bello, Morley</td>
</tr>
<tr>
<td>2. Inherent, essential</td>
<td>Accidental, accessory, circumstantial, contingent.</td>
<td>Academia, Bello, Morley, Anssen, Monge, <em>Esbozo</em></td>
</tr>
<tr>
<td>3. Imperfective</td>
<td>Perfective</td>
<td>Hanssen, (Gili y Gaya)</td>
</tr>
<tr>
<td>4. Quality (inherent)</td>
<td>State (acquired)</td>
<td>Salvá, Cirot, Roca Pons, Alonso y Henríquez Ureña, Moellering</td>
</tr>
<tr>
<td>5. Conceptual, logical, objective, defining.</td>
<td>Perceptive, immediate experience, affective, subjective.</td>
<td>Andrade, Morley, Gili y Gaya, Arnaud, Navas Ruiz</td>
</tr>
</tbody>
</table>

---

2 This table is originally in Spanish. All of the translations from Spanish into English in this thesis have been done by me.
<table>
<thead>
<tr>
<th></th>
<th>Normal</th>
<th>Non-normal (change)</th>
<th>Bull, Bolinger, Alonso y Henríquez Ureña.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>Not susceptible to change</td>
<td>Susceptible to change</td>
<td>Gili y Gaya, Navas Ruiz, Esbozo…</td>
</tr>
<tr>
<td>8.</td>
<td>Timeless (mere attributive relationship)</td>
<td>Inserted in duration (permanence)</td>
<td>Navas Ruiz</td>
</tr>
<tr>
<td>10.</td>
<td>Interior form of language</td>
<td>Navas Ruiz, <em>Esbozo</em></td>
<td></td>
</tr>
</tbody>
</table>

(Falk 1979:60)

As we can see in the preceding table, many of the traditional explanations for the *ser/estar* dichotomy have centered around concepts such as permanency vs. temporariness or inherency vs. accidentality. Other researchers in the field considered that new explanations were necessary to account for the different behavior of the Spanish copulas at hand. These researchers consider that these differences arise from the complex interaction of diverse linguistic factors. Trying to find more convincing explanations for this issue, researchers have made new proposals in this field.

Next, I will proceed to analyze Falk’s resolution with regards to the *ser/estar* opposition. Falk (1979) focuses on the distinction between *ser* and *estar* when they co-occur with adjectives in both Spanish and Catalan. Falk considers that “*estar* signals that the semantic frame S-cop-A (*Sujeto-copula-Atributo* ‘Subject-copula-Attribute’) relates to time in a specific sense. The *estar*-relation is based on a conception of subject as an entity varying in the course of time with respect to a qualifying dimension. […] On the other hand, the *ser*-
relation could be seen as a classificatory one” (Falk 1979: 152). This classification is reminiscent of the traditional accounts previously described.

However, he also adds a new dimension to the study of the *ser/estar* contrast by taking into account a factor ignored in previous studies: the speaker’s intention. The speaker can see the subject as presented within a class frame of reference (*ser*) or presented within an individual frame of reference (*estar*). That is, *ser* will be used when we observe a deviation from the norm that the speaker sees as common for a class of objects or individuals. If on the contrary, we encounter a deviation from the individual norm, that is, an individual changes with respect to itself at a previous stage; then *estar* would be the appropriate copula.

This can be illustrated with the following example in which Falk explains the difference between the sentences *La carretera es ancha* ‘The road is-SER wide’ and *La carretera está ancha* ‘The road is-ESTAR wide’. “De este modo se analizaría *La carretera es ancha* como una comparación implícita con respecto a lo que yo (el hablante) considero como normal para carreteras en general. Esta carretera a que me refiero sobrepasa la norma.” ‘In this way we would analyze *The road is-SER wide* as an implicit comparison with respect to what I (the speaker) consider normal for roads in general. This road to which I am referring exceeds the norm’.

Conversely, he explains the sentence *La carretera está ancha* ‘The road is-ESTAR ancha’ in the following way: “*Hay razón para creer que la norma de la que está ancho es una desviación está conceptualizada a nivel individual. El punto de referencia del adjetivo está en el objeto específico que se aparta de lo que yo-hablante-tengo entendido como normal para él*” ‘There is reason to believe that the norm from which *is-ESTAR wide* is a
deviation is conceptualized at an individual level. The reference point of the adjective is in
the specific object that separates from what I-speaker-understand as normal for it’ (Falk
1979: 73). In this second example the speaker is comparing the road to that same road at a
previous stage, that is, we are comparing the road to itself at a different point in time. Maybe
the road is-ESTAR wide because there has been construction to widen the road. I can say then
‘The road is-ESTAR wide’ if it is the first time I am driving through that road after the
construction. So, the road is wide compared to itself before the construction work. This is
what Falk called the individual frame of reference However, the road can still be-SER
narrow compared to other roads (class frame of reference).

Another explanation for the ser and estar contrast is found in the difference between
stage-level predicates and individual-level predicates. Carlson (1977) considered that stage-
level predicates are properties of stages defined as a “spatio-temporal slice” of an individual
whereas individual-level predicates are properties of individuals. For instance, as Kratzer
(1995: 125) proposes “That I am sitting on this chair is a very transitory property of mine.
That I have brown hair is not”. So, the fact that I have brown hair is a property of me. On the
other hand, the fact that I am sitting on a chair corresponds to a stage of my individual
person. Kratzer (1995) analyzed this distinction in syntactic terms. In her view, stage-level
predicates have an extra argument position for events or spatiotemporal locations. In contrast,
individual-level predicates lack this position. Diesing (1990) applied these concepts to the
analysis of the Spanish copula: ser selects individual-level predicates while estar selects
stage-level predicates. Becker (2000) also supported this position: “Ser is used with
individual-level predicates (permanent or inherent properties […]), and estar is used with
stage-level predicates (temporary or accidental properties)” (Becker 2000: 63).
Some authors decided to look for the difference between *ser* and *estar* in the aspectual properties of either the copulas themselves or the predicates that occur with them. Next, I will present the views of Luján (1981), Schmitt (1992), Lema (1992), whose studies focus on aspectual analysis of the copulas.

Luján (1981) rejected the view that *ser* and *estar* “are in perfect complementary distribution” (Stockwell et al. 1960:170). On the contrary, she presented an aspectual account of *ser* and *estar* that was able to explain both the distinct distribution of the two copulas and the cases where these could be considered as partial synonyms such as *ser elegante* and *estar elegante* ‘to be elegant’:

1. **Ser elegante** → **estar elegante**

   **Estar elegante** → **ser elegante**

   The fact that you are-SER always elegant might imply that you are-ESTAR elegant. However, the fact that you are-ESTAR elegant at a specific moment does not imply that you are-SER always elegant.

   The contrast between *ser* and *estar* lies in the fact that they combine with predicates which bear distinct aspectual properties. *Ser* combines with imperfective predicates that refer to an “undelimited period of time covering a number of distinct occasions or delimited time periods, that is, a stretch of time with indefinite beginning and end” (1981: 204). On the other hand, *estar* appears with perfective predicates which refer to a “delimited time period i.e. a period of time whose beginning or end (or both) are assumed” (1981 203). For instance, the
difference between *ser* obeso ‘to be-SER obese’ and *estar* obeso ‘to be-ESTAR obese’ can be explained through the predicate’s lexical features in (2).

\[ (2) \text{ } \begin{array}{c}
\text{ser – obeso} \\
+\text{Adjective} \\
+\text{STATIVE} \\
+\text{-PERFECTIVE}
\end{array} \quad \begin{array}{c}
\text{estar – obeso} \\
+\text{Adjective} \\
+\text{STATIVE} \\
+\text{-PERFECTIVE}
\end{array} \]

\[(\text{Luján 1981: 174})\]

Cristina Schmitt (1992), unconvinced by traditional accounts proposed an aspectual explanation for the *ser*/*estar* contrast. Schmitt, as well as Luján proposed an aspectual account of *ser* and *estar*. However, whereas Luján claims that both *ser* and *estar* have aspectual features, but they are different from each other; Schmitt claims that *ser* possesses no aspectual features. In particular, Schmitt ascribes the distinct behavior of *ser* and *estar* to a major aspectual difference between the two copulas: whereas *estar* has aspectual properties, *ser* is devoid of those. This means that *estar* is always temporally anchored; on the other hand, *ser* needs the support of aspectual operators in order to have a temporal interpretation. (Schmitt 1992: 421). Also, ‘*estar* contributes to the VP with a subevent of the type state’ (Schmitt 2007:1913) ‘*ser* has no subevent property’ (Schmitt 2007:1914).

For all the above reasons, *estar* can be used only in situations where properties are only true at that specific moment, that is, they are temporary properties. On the other hand, *ser* can be used in all kinds of contexts: it can indicate permanence/inherence but it can
indicate temporariness if it is supported by adverbials. For instance, the sentence *El gato es gordo* ‘The cat is-SER fat’ indicates that being fat is a permanent characteristic of the cat. On the other hand, in both *El gato está gordo* ‘The cat is-ESTAR fat’ and *El gato es gordo ahora* ‘The cat is-SER fat NOW’ being fat can be regarded as a temporary characteristic. Thus, according to Schmitt, we can find a plausible explanation for the divergent behavior of *ser* and *estar* if we have a closer look at their different aspectual nature.

Lema (1992) also described the differences between Spanish *ser* and *estar* in terms of aspect. He considered that while *ser* is a copula, *estar* is, actually, an aspectual auxiliary. *Ser* is semantically empty and it is only specified for tense but not aspect. On the other hand, *estar* has aspectual content and contributes to the sentence both tense and aspectual content.

Lema provided several tests as evidence for the aspectual nature of *estar*. First of all, *estar* can appear in predicate constructions but not in equative constructions. For instance, *Tu tía está la Señora Martínez* ‘Your aunt is-ESTAR Mrs. Martínez’ is ungrammatical whereas *Tu tía está contenta* ‘Your aunt is-ESTAR happy’ (1992: 260) is perfectly grammatical. Conversely, *ser* can appear in both kinds of constructions: *Tu tía es la Señora Martínez* ‘Your aunt is-SER Mrs. Martínez’ *Tu tía es mayor que la mía* ‘Your aunt is-SER older than mine’ (1992:259). The reason for this is that *ser* acts only as a link between the subject and the attribute without adding any semantic information. However, because *estar* is not semantically empty, it cannot appear in equative constructions. Secondly, he looked at Movement operations: whereas *estar* cannot undergo VP-preposing or Long Head Movement, *ser* can. An example of this is the following:
(3) *...y [estado atentos] habrían [] los niños de ser interesante ‘...and been attentive would have the boys had it been interesting’ (Lema 1992:264).

(4) ...y [siendo atentos] estaban [] los meseros después del regaño ‘...and being corteous were the waiters after the reprimand.’ (Lema 1992:264).

The reason for this is that Aspect cannot take scope over Tense *[Asp...[T]] (1992:261). That is, taking into account that estar projects an AspP, we assume that it cannot be preposed because that would imply that Asp will take scope over T. Again, this hints at the aspectual nature of estar.

Thirdly, estar has a distribution similar to other aspectual verbs which are not considered copulas such as habitual andar ‘to be in the process of’ and seguir ‘to go on’. Fourthly, estar cannot function as the complement of a perception verb since these verbs already add aspectual properties to the construction:

(5) Su hermana vió a Oscar (*estar) trabajando en la fábrica ‘Her sister saw Oscar *be working in the factory’ (Lema 1992: 270)

Finally, Lema concluded that the permanent or temporary property of the adjectives accompanying ser and estar respectively comes from the interpretation of the tense and aspect elements imbued in the copulas themselves. The tense feature of ser allows a generic reading of the adjective while the aspectual properties of estar allow a temporary reading of the adjective. Thus the different uses, meanings and distributions of ser and estar can be explained if we look at the aspectual properties of the two verbs: whereas estar is aspectual, ser is not.
In the next section I will focus on how this intrinsically difficult problem is handled in the acquisition literature.

2.3 The acquisition of *ser* and *estar*

An extensive body of research has focused on the acquisition of *ser* and *estar* in Second Language Acquisition (VanPatten, 1985 and 1987; Ryan & Lafford, 1992; Gunterman, 1992; Briscoe, 1995; Ramírez-Gelpi, 1995; Geeslin 2002 and 2003; Woolsey, 2006; Francis, 2007). On the other hand, much less attention has been paid to the acquisition of the copula by monolingual Spanish children. As far as I know, only few authors have conducted research on this area (Sera, 1992; Schmitt, Holtheuer and Miller, 2004; Schmitt & Miller, 2007). The FLA literature will be reviewed in detail in chapter 5.

2.3.1 Second Language Acquisition of *ser* and *estar*

VanPatten was the first researcher who established a series of transitional stages for the acquisition of *ser* and *estar* for English native learners of Spanish as a Second Language. These stages were claimed to be universal and independent from factors such as L1 or type of instruction. Next, I will present the mentioned stages:

I. Absence of copula in learner speech.

II. Selection of *ser* to perform most copula functions.

III. Appearance of *estar* with progressive.

---

3 In this work I will consider the terms *Second Language Acquisition* and *Foreign Language Learning* as equivalent, although some researchers regard them as different processes: “SLA refer[s] to language acquisition in a native-speaker environment and FLL in a non-native classroom environment.” (VanPatten 1990:17)
IV. Appearance of *estar* with locatives.

V. Appearance of *estar* with adjectives of condition.

(VanPatten 1987, 64)

These stages were established through the analysis of data coming from three different sources in which different students were tested: a longitudinal study of six-college students, a grammaticality judgment task and classroom observations.

Next, I would like to provide a summary of his theoretical rationale. The development of the copula following the stages proposed above is not accidental. According to VanPatten these stages are the result of the complex interaction of several factors and processes that are important in the course of Second Language Acquisition.

The first process that we have to take into account is simplification: the L2 learner tries to come up with “a grammar in which the fewest number of rules do the maximum amount of work” (Richards 1975:118). Thus, it is not surprising that the first stage in this acquisition process is the omission of the copula followed by a stage when one of the copulas performs all of the functions. Explaining why the students overgeneralize *ser* over *estar* requires the addition of another process which acts in conjunction with the one mentioned previously: frequency. Given that *ser* and *estar* have the same communicative value (both of them are copulas), the copula which the student will select to perform most of the functions will be the one which is more frequent in the input. “While actual counts need to be done in order to support empirically the suggestion offered here, most of us would agree that *ser* occurs much more frequently in learner-directed input that does *estar.*” (VanPatten 1985:
The reason why students from an English-L1 background seem to linger at that stage is due to the interaction of a different factor: L1 transfer. VanPatten used Andersen’s “Transfer to Somewhere Principle”:

Andersen’s principle claims that transfer operates only where there are similarities between the L1 and the developing interlanguage [...] Furthermore, the interaction between the L1 and the interlanguage cannot violate the natural processes of acquisition that are in progress [...]. Andersen also claims that when transfer is triggered in this manner, the resultant structure in the learner’s interlanguage will be more resistant to change (1987: 69).

He claims that the reason why learners linger on stage II (selection of ser to perform most copula functions) is that the L1 and L2 are overlapping at that point (the existence of just one copula) and thus transfer is operating at that specific stage (VanPatten 1987:69).

Finally, the learner abandons that stage and starts using estar for different functions. The order in which the learner starts using the different functions of estar is governed by how frequent that particular structure is in the input he receives (VanPatten 1987:70).

VanPatten’s research has been followed by a series of studies which have tried to confirm/reject and elaborate on the claims proposed by this author. Some of these studies include those by Ryan & Lafford, 1992; Gunterman, 1992; Briscoe, 1995; Ramírez-Gelpi, 1995; Francis, 2007.

Ryan and Lafford (1992) studied the acquisition of ser and estar in a study-abroad context. The different environment and input received by the students in a Spanish-speaking town (Granada) seemed not to be a conditioning factor for the natural stages of acquisition. That is, Ryan and Lafford found mainly the same transitional stages found by VanPatten,
even if the latter studies were conducted in a classroom setting. Theses are the stages described by Ryan and Lafford:

1. Absence of the copula
2. Overuse of *ser* in *estar* Locative and Conditional Contexts
3. Absence of the copula in *estar* Conditional contexts
4. *Estar* in Progressive constructions
5. Replacement of zero copula errors by errors with *estar* when *ser* is required
6. *Estar* replaces zero copula in Conditional contexts
7. *Estar* in Conditional contexts
8. *Estar* replaces *ser* in Locative contexts

(Ryan and Lafford 1992: 718)

There are three main differences between VanPatten’s and Ryan and Lafford’s results. First of all, the omission stage is extended to contexts where *estar* appears with adjectives of condition. Secondly, there is a stage in which it is actually the *estar* copula which is overused appearing in *ser*-required contexts. Thirdly, the order of acquisition of the conditional and the locative structures was reversed. However, these differences do not prevent us from drawing the conclusion that the general pattern of acquisition of the copula for L2 learners of Spanish is mainly the same regardless of the context in which the language is acquired.

Gunterman (1992) conducted her research of *ser* and *estar* with nine Peace Corps volunteers who were living in a Central American country. They were interviewed once after
260 to 300 hours of in-service training and a second time, at least, nine and a half months later. Her stages closely resemble those found in previous studies:

1. Omission of the copula
2. Overgeneralization of *ser*
3. Absence of the copula in conditional contexts (as described by Ryan and Lafford): this stage was not found
4. *Estar* with progressives
5. Replacement of zero copula errors by errors with *estar* when *ser* is required (as described by Ryan and Lafford) was only found in small numbers.
6. *Estar* replaces zero copula in conditional contexts (as described by Ryan and Lafford) was not found
7. *Estar* in conditional contexts
8. *Estar* in locative contexts

(Gunterman 1992: 1299-1300)

Gunterman found some differences with respect to VanPatten: she found a longer-lasting omission stage and found a reversed order of acquisition of locatives and conditional contexts with conditional structures being acquired first (this replicates Ryan and Lafford’s findings). Also, some of Ryan and Lafford’s findings were not confirmed by Guterman’s results: she did not find stages 3 and 6 described by these authors. However, the overall pattern of acquisition seems remarkably similar to those found by VanPatten and Ryan and Lafford.
Briscoe’s work (1995) also confirmed VanPatten’s transitional stages. This study presented a more detailed picture of the copula functions. These functions correlate to the functions of *ser* and *estar* presented in most Spanish L2 textbooks. This research was able to shed light especially on the second stage proposed by VanPatten: overgeneralization of *ser*. Briscoe proposed that not all functions of *ser* are acquired at the same time and that some of them are acquired even after some functions of *estar*. Next I provide the stages proposed by Briscoe:

1. *ser*/telling time
   - *ser*/profession
   - *ser*/copula
   - [*ser*+de/origin] until mid-2$^{nd}$ year
   - [*ser*+de/possession]
   - [*ser*+de/composition]
   - *ser*/impersonal expressions
   - *ser*/characteristic

2. *estar*/progressive from mid-second year until 4$^{th}$ year
3. *estar*/location begins in 4$^{th}$ year
4. *estar*/condition soon after 4$^{th}$ year
Ramírez-Gelpi examined L2 learners’ use of *ser* and *estar* in written compositions. Interestingly, she found a similar pattern of acquisition to those presented by other researchers:

1. *Ser* performs most copula functions
2. *Ser* with Predicate nominatives and *estar* with Progressive constructions
3. *Estar* with Prepositional phrases
4. *Estar* with Adverbial phrases
5. *Estar* with Predicate adjectives

(Francis 2007: 206)

Francis (2007) is the most recent study of L2 acquisition of the copula. As Briscoe (1995) did, he also extended the functions analyzed by VanPatten and used functions of *ser* and *estar* taken from pedagogy. The natural stages of copula acquisition found in the previous studies were again replicated in Francis’ findings. These were the stages he found in L2 copula acquisition:
1. Omission of the copulas
2. Use of *ser* for most communicative functions requiring a copula
3. Discriminate use of *ser* to tell time
4. Correctly replacing *ser* with *estar* for locating entities
5. Correctly replacing *ser* with *estar* for forming progressive
6. Discriminate use of *ser* for describing a referent’s natural or inherent qualities
7. Discriminate use of *ser* for stating origin
8. Discriminate use of *ser* for identifying a subject or describing a referent’s affiliation
9. Discriminate use of *ser* for describing a referent’s physical make-up
10. Use of *estar* for conditions and resultant states
11. Use of *estar* for describing a change from the norm

(Francis 2007: 164)

All these studies confirm VanPatten’s claim that there are a series of transitional stages which are independent of environment, L1 background or method of instruction. Even if there are some differences in the results of the experiments this might be due to the fact that the researchers were using different methodologies to categorize the data. The important conclusion to be drawn from these studies is that although some differences were found among them, the overall development of the copula is remarkably similar.

Geeslin and Guijarro-Fuentes (2005) studied the effect of linguistic background (L1 and additional L2s), length of exposure and type of input on the acquisition of *ser* and *estar*. They examined data coming from learners whose L1 was French, German or English. The learners’ additional L2s were English, French, Italian, Portuguese and Turkish. The
participants had been exposed to Spanish in both naturalistic contexts and classroom settings and had been learning the language for various periods of times. They found out that none of these factors were relevant for the acquisition of the copula. This corroborates the hypothesis that L2 learners go through similar stages of acquisition which are naturally driven and unaffected by external factors.

In the next chapter I will present the findings of my own research on the L2 acquisition of *ser* and *estar* by L1 English native speakers
CHAPTER 3

EXPERIMENTS

3.1 Introduction

In this chapter I will present a description of the studies that I conducted on the L2 acquisition of *ser* and *estar*. The goals, participants, procedures and statistical analysis will be analyzed in detail. I would like to start this chapter with some introductory comments about the three levels tested and why the experiments were conducted at a specific point during the semester.

Three levels of Spanish instruction were considered for these experiments. Next I present a brief description of each of these courses:

- **Spanish 105 (Spanish for High Beginners):** This course is usually considered a review course. It goes over the material covered in Spanish 101 (1) and Spanish 102 (2) (Introductory Courses) in just one semester. So, the pace of this course is more accelerated than other courses. Due to the nature of this course, the students taking Spanish 105 have diverse language backgrounds. Typically they are students who have some previous basic knowledge of Spanish. They have usually taken Spanish 1 or Spanish 2 in high school.

- **Spanish 203 (Intermediate Spanish):** It is the course immediately following Spanish 105. This is usually students’ third semester of Spanish. At this point, students have
already been exposed to all of the major grammar topics and they try to develop their listening and speaking skills during this semester.

- Spanish 255 (Conversation): This is a conversation course which focuses on the development of the students’ speaking abilities. Students take Spanish 255 after Spanish 204, that is, there is one course in between Spanish 203 and Spanish 255. This is not a required course for the students, so those taking it are usually majoring or minoring in Spanish and have a special interest in learning the foreign language.

Regarding *ser* and *estar*, in Spanish 105 this topic is taught explicitly at the beginning of the year. In Spanish 203 *ser* and *estar* is the main grammar topic introduced in the first chapter but it is presented as review since students are already supposed to be familiar with the topic. In Spanish 255 it is also introduced at the beginning of the course. However, it is not presented as a grammar explanation but integrated in a natural way in the speech of the class. From this point onwards I will refer to Spanish 105, 203 and 255 as beginner, intermediate and advanced respectively. This seems a more general and intuitive way of referring to the specific courses which might be easier to grasp for the reader unaware of the UNC numeric course system.

The students were tested at the end of the semester for several reasons. First of all, it was necessary to take into account the fact that students placed at a specific level can start out with very different levels of Spanish and can have various linguistic backgrounds (some have taken two semesters in high school, others two years, others have taken two semesters in college, others just one). This is especially true for the beginners’ course. However, the differences among students get leveled out as the course advances since they are exposed to
the same material, complete the same assignments, take the same tests and are in contact with the same teacher. The experiments were conducted three months into the semester. At this time the students should all have been at a similar level of language learning. There is indeed a great deal of individual variation among students but conducting the experiment at the end of the semester minimized these differences. This allowed me to make strong general claims about the patterns of acquisition observed at each level of instruction.

The second reason why the experiments were conducted at the end of the semester is that I was trying to study an acquisition process and not a learning process. Krashen defined these two terms in the following way: “Language acquisition is a subconscious process; language acquirers are usually not aware of the fact that they are acquiring language, but are only aware of the fact that they are using the language for communication.” On the other hand, learning “refer[s] to conscious knowledge of a second language, knowing the rules, being aware of them and being able to talk about them” (Krashen 1992: 10).

The claim in the literature about the acquisition of *ser* and *estar* is that all second language learners go through the same process of acquisition. As we saw in the previous chapter VanPatten (1985, 1987) was the first person to present a series of stages of acquisition which were not related to the way *ser* and *estar* was introduced in the class. Other authors confirmed the existence of these or similar stages. VanPatten noticed that sporadically students would not follow these stages of acquisition. He claimed that the reason for this is that the students were acting under the effect of the monitor. According to Krashen, “Learning has only one function and that is as a Monitor, or editor. Learning comes into play only to make changes in the form of our utterance, after it has been ‘produced’ by
the acquired system. This can happen before we speak or write, or after (self-correction)” (Krashen 1992: 15). Three factors are needed in order for the learner to be able to access the Monitor: time, focus on form and knowing the rule (Krashen 1992: 16). The learner needs to have enough time to access the rules and this is especially true of writing. Also, the task should focus on correctness and not on meaning. Finally, the learner needs to know the rule in question. The perfect context for the use of the Monitor would be an untimed writing assignment. However, the Monitor can also act in oral tasks.

Specifically, VanPatten presented an example of the interference of the Monitor with the process of acquisition when the students started overusing *estar* in a couple of taping sessions. This goes against the general behavior which is overgeneralizing *ser*. VanPatten explained these deviations from the norm in the following way: “[…] it was possible that somehow the learners were ‘acutely’ aware of *estar*, perhaps due to a review lesson that week. This awareness may have caused the Monitor to ‘put in’ more *estar* in the learners’ speech than would have occurred naturally” (1985: 401). Since *ser* and *estar* were introduced at the beginning of the semester in the three courses tested in my experiments, I was able to study the real acquisition process and to avoid the skewing effects of the monitor.

3.2 Experiment 1: (Guided) Picture Description Task

3.2.1 Goal

The main goal of this experiment was to confirm the claims in the L2 literature about overgeneralization of *ser* and determine what kind of linguistic information was available to students at the time of copula choice: syntactic, semantic or pragmatic information. Also, I
wanted to find out which of these types of information was more helpful for students when they are faced with the task of deciding which copula is the correct one in a specific context.

Another goal of this experiment was to get (semi-)spontaneous speech samples from the students. I considered that this was the most reliable way of trying to discover if there is indeed an omission stage. This belief was based on VanPatten’s claim “copula omission seems to surface more often in oral language than in written language” (VanPatten 1987:64). However, instead of having a task where spontaneous speech was recorded, I decided to have a guided task so that the specific structures being tested could be elicited in the minimal amount of time.

In order to reach these goals, this and the following experiment were designed following Schmitt et. al. (2004) and Schmitt and Miller (2007)’s methodology. Their experiments will be discussed in sections 5.2.2 and 5.2.3 respectively. Following their procedures closely allowed me to draw clearer comparisons between this study and the findings in the FLA literature, which is one of the main purposes of this thesis.

3.2.2 Participants

Forty eight college students from the University of North Carolina at Chapel Hill participated. Twenty of those students were enrolled in the beginners’ level, 20 in an intermediate Spanish course and 8 in an advanced Spanish course. All the participants were native speakers of English and all of them were learning Spanish in a formal classroom setting. The participants received extra-credit for their participation in this and the following experiment. The experiment took place in a quiet office.
3.2.3 Procedure

First of all the students were shown a Power Point slide with instructions. They were asked to answer the questions in Spanish and to use complete sentences when doing so. They were given a couple of examples to make sure that they understood the task. Secondly, the participants were shown 3 Power Point slides which contained one or more pictures accompanied by a series of questions about the pictures, formulated in English, that the students had to answer. The questions were given in English so that no clues were provided to the learner about copula use. The translation of some words into Spanish was given to the students so that they could easily form their answer in spite of possible vocabulary deficits. One of the slides contained one picture and four questions, another contained 4 pictures and two questions and another one contained 3 pictures and 4 questions. The experiment was designed so that, regardless of the number of questions in the slide, the questions always elicited the same number of uses of ser and estar from students in each slide. Four responses were obtained from each slide. Out of those four responses, there were two whose correct response was ser and two whose correct response was estar; that way, the number of tokens of each item, that is, ser and estar, was controlled. The order of the slides was randomized to make sure this would not skew the results. (The Power Point slides are provided in the Appendix).

The sentences in each slide were constructed in such a way that all of the sentences in one slide represented structures where the students would have to ascertain the uses of the copula by taking into account a specific set of linguistic constraints: one slide represented syntactic constraints, one tested the students’ use of semantic constraints and another one
studied the learners’ accessibility to pragmatic information. The students were not aware of this division since I did not provide them with that information before carrying out the experiment.

More specifically, the sentences trying to obtain information about syntactic constraints were constructed in such a way that learners should be able to distinguish between the two copulas only by looking at the syntactic structure of the sentences. For instance, sentences with NP attributes are only possible with *ser* and sentences with progressive are only possible with *estar*. Thus, when a learner encounters this type of sentence, the syntactic frame should be enough information to ascertain which copula is correct in that specific context. Following this criterion, in the slide representing syntactic constraints, I tried to elicit from students two sentences with NP attributes and two sentences with the progressive construction. In (1), I provide the stimuli in the syntactic slide:

(1) a. Is Bart a girl or a boy?  
b. What is Bart doing? (*jump= saltar*)  
c. Is Lisa a student?  
d. What is Homer doing? (*drink= beber*)

In order to test the availability of pragmatic constraints in learners’ copula choice I decided to closely follow the design of Experiment 1 in Schmitt and Miller (2007). In this experiment Schmitt and Miller tested children’s knowledge of the temporary and permanent character of colors of certain body parts by manipulating the pragmatic context. In the slide corresponding to pragmatic constraints in my experiment, I had four pictures which were photographs of real people. Two of the pictures represented a young man: one depicted a
temporary property of the subject (his face painted blue when he dressed up as a smurf for Halloween) and the other one depicted a permanent property of the same subject (his normal (white) face). The other two pictures were photographs of two children: one with his tongue green (temporary property) and other with his tongue red (permanent property). In this example the students needed to rely on pragmatic clues to ascertain the correct copula, that is, they needed to look at the context of the sentence and determine if it is a kind of context that favors *ser* or a type of context that favors *estar*. These were the sentences in the pragmatic slide:

(2) a. What color is his face in each picture?
   b. What color is his tongue (*lengua*) in each picture?

The slide testing students’ use of semantic information presented two questions about the location of events and two questions about the location of objects. In particular, *ser* is used with locations of events and *estar* is used with locations of objects. So, in order to determine the right copula students should be aware of the semantics of these words and how they specifically relate to the copula. This experiment is inspired in Sera’s (1992) study where she found that children have special difficulty in producing the copula when this decision was only based on semantic constraints. She used locations of objects/events to prove this difficulty with semantic constraints and discovered that children had a very hard time using *ser* with locations of events. Sera’s experiments will be discussed in detail in section 5.2.1. This part of experiment 2 tries to examine whether if Sera’s claims about semantic constraints also hold for L2 learners. In (3) I give the questions in the semantic slide:
(3)  a. Where are the books?
    b. Where is the picture of the lemons?
    c. Where is the game against NC State?
    d. Where is the concert?

3.2.4 Analysis

The contrasts were done within a logistic regression model adjusting for multiple observations within subjects except for a few cases in which multiple observations could not be taken into account (this will be indicated when necessary).

First of all, I compared the frequency of overall production of *ser* vs. *estar*. Taking into account that there were equal numbers of target contexts for *ser* and *estar*, correct production would have resulted in 50% of responses being *ser* and 50% being *estar*. However the frequency values I found are significantly different from each other ($\chi^2=15.27$, $p<.0001$, df=1). This means that students seem to be using *ser* more frequently than *estar*.

<table>
<thead>
<tr>
<th></th>
<th>Percentage of frequency values of <em>ser</em> and <em>estar</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>ser</em></td>
<td>61.43 (344/560)</td>
</tr>
<tr>
<td><em>est</em></td>
<td>38.57 (216/560)</td>
</tr>
</tbody>
</table>

If we look at the different levels we do not find a significant difference in the way students performed (Overall Effect $\chi^2=3.85$, $p=0.15$, df=2) (Beginner vs. Intermediate $\chi^2=2.09$, $p=0.15$, df=1, Beginner vs. Advanced $\chi^2=0.28$, $p=0.6$, df=1; Intermediate vs. Advanced $\chi^2=2.69$, $p=0.1$, df=1). That is, students at all levels overgeneralized *ser* over *estar*. 


Table 3.2 Percentage of frequency values of *ser* and *estar* by level

<table>
<thead>
<tr>
<th></th>
<th>Beginner</th>
<th>Intermediate</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Ser</em></td>
<td>64.35 (148/230)</td>
<td>55.56 (130/234)</td>
<td>68.75 (66/96)</td>
</tr>
<tr>
<td><em>Estar</em></td>
<td>35.65 (82/230)</td>
<td>44.44 (104/234)</td>
<td>31.25 (30/96)</td>
</tr>
</tbody>
</table>

Secondly, I was interested in discovering if the students performed better in the *ser*-condition, that is, when the appropriate response should have been *ser*; or in the *estar*-condition, that is, when the appropriate response should have been *estar*. The error rate in *estar*-contexts was significantly higher than the error rate in the *ser*-contexts ($\chi^2=14.69$, p=0.0001, df=1).

Table 3.3 Percentage of error rate in correct responses for *ser* and *estar*

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Ser</em></td>
<td>22.81 (65/285)</td>
</tr>
<tr>
<td><em>Estar</em></td>
<td>45.09 (124/275)</td>
</tr>
</tbody>
</table>

The students across different levels showed a similar pattern of behavior. The p-values of advanced students are high because of the fact that I had a very reduced sample of advanced students. This gives me very little power in this calculation (Overall Effect $\chi^2=15.12$, p=0.0098, df=5). The effect in the individual comparisons is not significant because all of the groups behaved in a very similar way (Beginner vs. Intermediate $\chi^2=2.05$, p=0.15, df=1; Beginner vs. Advanced $\chi^2=0.6$, p=0.44 df=1; Intermediate vs. Advanced $\chi^2=2.56$, p=0.11, df=1).

Table 3.4 Percentage of error rate in correct responses for *ser* and *estar*

<table>
<thead>
<tr>
<th></th>
<th>Beginner</th>
<th>Intermediate</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Ser</em></td>
<td>22.03 (26/118)</td>
<td>28.57 (34/119)</td>
<td>10.42 (5/48)</td>
</tr>
<tr>
<td><em>Estar</em></td>
<td>50.00 (56/112)</td>
<td>39.13 (45/115)</td>
<td>47.92 (23/48)</td>
</tr>
</tbody>
</table>

Thirdly, I analyzed the behavior of students in the three different levels with respect to the type of constraints they were using in their copula choice. The students performed significantly better when the choice between the copulas could be ascertained by means of
the syntactic frame in which they were embedded. If we examine the students’ responses we can see that there is a significant difference in how students used syntactic constraints when compared to either pragmatic or semantic constraints (Overall Effect $\chi^2=38.06$, $p<.0001$, df=2) (Syntactic vs. Pragmatic $\chi^2=37.93$, $p<.0001$, df=1; Syntactic vs. Semantic $\chi^2=22.06$, $p<.0001$, df=1). On the other hand, the difference in the way learners made use of the semantic and the pragmatic information in the sentences was only marginally significant (pragmatic vs. semantic $\chi^2=3.63$, $p=0.057$, df=1).

Table 3.5 Percentage of error rate by type

<table>
<thead>
<tr>
<th>Type</th>
<th>Percentage (Error/Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syntactic</td>
<td>16.16 (32/192)</td>
</tr>
<tr>
<td>Pragmatic</td>
<td>48.96 (94/192)</td>
</tr>
<tr>
<td>Semantic</td>
<td>41.15 (79/192)</td>
</tr>
</tbody>
</table>

If we look at the results broken down by levels it is interesting to notice that we find a stable pattern of behavior across the three different levels (Overall Effect $\chi^2=43.77$, $p<.0001$, df=8) (Beginner vs. Intermediate $\chi^2=3.27$, $p=0.19$, df=2; Beginner vs. Advanced $\chi^2=1.98$, $p=0.37$, df=2; Intermediate vs. Advanced $\chi^2=0.78$, $p=0.68$, df=2).

Table 3.6 Percentage of error rate in students’ use of syntactic, pragmatic and semantic constraints

<table>
<thead>
<tr>
<th>Type</th>
<th>Beginner</th>
<th>Intermediate</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syntactic</td>
<td>25.00 (20/80)</td>
<td>11.25 (9/80)</td>
<td>9.38 (3/32)</td>
</tr>
<tr>
<td>Pragmatic</td>
<td>47.50 (38/80)</td>
<td>51.25 (41/80)</td>
<td>46.88 (15/32)</td>
</tr>
<tr>
<td>Semantic</td>
<td>42.50 (34/80)</td>
<td>43.75 (35/80)</td>
<td>31.25 (10/32)</td>
</tr>
</tbody>
</table>

In the fourth place, I looked the effects of subtype across levels. The variable subtype stands for the different structures that were tested in each of the categories: syntactic, pragmatic and semantic constraints.

---

4 This is the meaning of the abbreviations used in the subtype variable:
- NP=Noun Phrase attribute.
- Progressive= Progressive construction (estar+gerund).
- AP permanent= Adjective Phrase attribute which denotes a permanent characteristic of a subject.
- AP temporary= Adjective Phrase attribute which denotes a temporary characteristic of a subject.
semantic and pragmatic, respectively. It was found that the effect of subtype was consistent across level (Overall Effect $\chi^2=132.15$, $p>.0001$, df=17). In this specific case, the logistic regression model did not take into account the repeated measures due to a lack of power. The subtypes AP temporary and PP location of an event seem to have a particularly high error rate in the three levels. There is a significant difference in the performance of beginner students and intermediate students (Beginner vs. Intermediate $\chi^2=22.92$, $p=0.0004$, df=5). Also, beginner students performed poorly with the progressive and advanced students performed surprisingly badly with the location of objects. I marked in boldface the highest percentages of error rate for each level of instruction.

<table>
<thead>
<tr>
<th></th>
<th>Beginner</th>
<th>Intermediate</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Syntactic</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NP</td>
<td>2.50 (1/40)</td>
<td>7.50 (3/40)</td>
<td>6.25 (1/16)</td>
</tr>
<tr>
<td>Progressive</td>
<td><strong>47.50 (19/40)</strong></td>
<td>15.00 (6/40)</td>
<td>12.50 (2/16)</td>
</tr>
<tr>
<td><strong>Pragmatic</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AP Permanent</td>
<td>20 (8/40)</td>
<td>10.00 (4/40)</td>
<td>0.00 (0/16)</td>
</tr>
<tr>
<td>AP Temporary</td>
<td><strong>75 (30/40)</strong></td>
<td><strong>92.50 (37/40)</strong></td>
<td><strong>93.75 (15/16)</strong></td>
</tr>
<tr>
<td><strong>Semantic</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PP Location of an event</td>
<td><strong>47.50 (19/40)</strong></td>
<td><strong>70.00 (28/40)</strong></td>
<td><strong>25.00 (4/16)</strong></td>
</tr>
<tr>
<td>PP Location of an object</td>
<td>37.50 (15/40)</td>
<td>17.50 (7/40)</td>
<td><strong>37.50 (6/16)</strong></td>
</tr>
</tbody>
</table>

Finally, I analyzed the cases where the copula was omitted. There were not many cases of omission (the sample size was 12 omissions out of 576 sentences) (Overall Effect $\chi^2=3$, $p=0.08$, df=1). However an interesting pattern arises from these omissions: 75% of the omissions involved an omission of *estar*. On the other hand, only 25% of the omissions involved an omission of *ser*. The relevance of this fact will be explained in chapter 4.

- PP location of an event=Prepositional Phrase which denotes the location of an event.
- PP location of an object= Prepositional Phrase which denotes the location of an object.
In the following section I will report on a very similar experiment but this time the experiment consists of a written task. This will allow us to see if any differences arise in the students’ performance when we switch from the oral code to the written code.

### 3.3 Experiment 2: Grammaticality Judgment Task

#### 3.3.1 Goal

The goals of this experiment are the same as the goals of the previous experiment: to confirm the claims about copula omission and overgeneralization of *ser* and ascertain which kinds of constraints (syntactic, semantic or pragmatic) play a role in L2 learners’ acquisition of the Spanish copulas *ser* and *estar*.

The difference between this experiment and the previous one is that this is a written task instead of a spoken one. The relevance of the different types of tasks will be discussed in Chapter 4.

#### 3.3.2 Participants

The same participants who took part in Experiment 1 took part in Experiment 2.

#### 3.3.3 Procedure

The students completed a questionnaire consisting of 24 sentences. Twelve sentences contained *ser* and *estar* and 12 were fillers. Fillers consisted of agreement questions (article-
noun-adjective agreement and subject-verb agreement). (Fillers are presented in the appendix along with the full set of test items). Each question had 3 options a)-c). The three options offered in the test sentences were the following ones: in one of them the sentence was presented with *ser*, in another one with *estar*, and in another one no copula was used. This last option was included so that it would be possible to study the omission of the copula in a written task. The order of the 3 options was randomized. The translation of all of the sentences was provided in English in order to make sure that the students were not misinterpreting the sentences.

The test sentences were classified into 3 categories as we explained in experiment 2: syntactic, semantic and pragmatic. In the syntactic category there were two sentences which contained NP attributes and two sentences which contained the progressive construction.

(4)

1) *José is a doctor*
   a. José médico
   b. José es médico
   c. José está médico

2) *Javier is walking*
   a. Javier andando
   b. Javier es andando
   c. Javier está andando

3) *Beatriz is a model*
   a. Beatriz modelo
   b. Beatriz es modelo
   c. Beatriz está modelo

4) *The girl is eating*
   a. La niña es comiendo
   b. La niña comiendo
   c. La niña está comiendo
In the pragmatic category, there were two sentences with an adjectival attribute which indicated a permanent property and two others that indicated a temporary property. In (5) I provide the test sentences in this category:

(5)

1) My Spanish teacher is a really nice person  
   a) Mi profesor de español está muy simpático  
   b) Mi profesor de español muy simpático  
   c) Mi profesor de español es muy simpático  

2) My biology teacher is always really unfriendly but today he is being friendly  
   a) Mi profesor de Biología siempre es muy antipático, pero hoy está simpático  
   b) Mi profesor de Biología siempre es muy antipático, pero hoy simpatico  
   c) Mi profesor de Biología siempre es muy antipático, pero hoy es simpatico  

3) Cristina is very pretty. She has won the Miss Spain contest  
   a) Cristina es muy guapa. Ha ganado el concurso de Miss España  
   b) Cristina está muy guapa. Ha ganado el concurso de Miss España  
   c) Cristina muy guapa. Ha ganado el concurso de Miss España  

4) Clara is very pretty with that red dress  
   a) Clara está muy guapa con ese vestido rojo  
   b) Clara es muy guapa con ese vestido rojo  
   c) Clara muy guapa con ese vestido rojo  

In the semantic category there was one sentence which presented the location of an event, one which presented the location of an object, and two which dealt with the semantic ambiguity of the word *listo* (*estar listo*='be ready' and *ser listo*='be smart’). These were the stimulus sentences:

(6)

1) María is very smart. She always gets good grades  
   a) María muy lista. Siempre saca muy buenas notas  
   b) María es muy lista. Siempre saca muy buenas notas
c) María está muy lista. Siempre saca muy buenas notas

2) The party is at my house
   a) La fiesta es en mi casa
   b) La fiesta está en mi casa
   c) La fiesta en mi casa

3) The pencil is on the table
   a) El lápiz es en la mesa
   b) El lápiz está en la mesa
   c) El lápiz en la mesa

4) Ana is ready to go to the party. She has already gotten dressed and put her make-up on
   a) Ana es lista para ir a la fiesta. Ya se ha vestido y se ha maquillado.
   b) Ana lista para ir a la fiesta. Ya se ha vestido y se ha maquillado
   c) Ana está lista para ir a la fiesta. Ya se ha vestido y se ha maquillado

3.3.4 Analysis

As in Experiment 1, the contrasts were done within a logistic regression model adjusting for multiple observations within subjects. There were a few cases in which multiple observations could not be taken into account. This will be indicated explicitly in the part of the analysis corresponding to those items.

In the first place, I analyzed how frequent ser and estar were respectively in the students’ written answers. If we examine the responses of the three groups of students together, the difference between the number of times they used ser vs. the number of times they used estar was not significant ($\chi^2=0.85, p=0.36, df=1$).

Table 3. 9 Percentage of frequency values of ser and estar

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ser</td>
<td>48.32 (273/565)</td>
</tr>
<tr>
<td></td>
<td>Estar</td>
<td>51.68 (292/565)</td>
</tr>
</tbody>
</table>
However, if we look at the responses of the students broken down by level, there seems to be a significantly different pattern of behavior (Overall Effect $\chi^2=14.43$, $p=0.0007$, df=2). Beginner students use *ser* more frequently than *estar*; on the other hand, intermediate and advanced students use *estar* more often than *ser*. Thus, the responses of beginner students are significantly different from those of intermediate and advanced students (Beginner vs. Intermediate $\chi^2=13.70$, $p=0.0002$, df=1; Beginner vs. Advanced $\chi^2=9.52$, $p=0.0020$, df=1). On the contrary, intermediate and advanced students performed similarly; hence their behavior is not significantly different (Intermediate vs. Advanced $\chi^2=0.75$, $p=0.39$, df=1).

<table>
<thead>
<tr>
<th></th>
<th>Beginner</th>
<th>Intermediate</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Ser</em></td>
<td>56.03 (130/232)</td>
<td>42.19 (100/237)</td>
<td>44.79 (43/96)</td>
</tr>
<tr>
<td><em>Estar</em></td>
<td>43.97 (102/232)</td>
<td>57.81 (137/237)</td>
<td>55.21 (53/96)</td>
</tr>
</tbody>
</table>

Secondly, I looked at the percentage of correct responses in the *ser*-condition and in the *estar*-condition ($\chi^2=9.9$, $p=0.0016$, df=1). Overall, we can see that the error rate in this task is lower than the error rate in the spoken task.

<table>
<thead>
<tr>
<th></th>
<th>Ser</th>
<th>Estar</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Ser</em></td>
<td>19.79 (57/288)</td>
<td></td>
</tr>
<tr>
<td><em>Estar</em></td>
<td>15.16 (42/277)</td>
<td></td>
</tr>
</tbody>
</table>

Again we see that beginner students exhibit a different pattern of behavior than intermediate and advanced students (Overall Effect $\chi^2=17.76$, $p=0.0033$, df=5). Whereas beginner students provide correct responses with *ser* more frequently, intermediate and advanced students are more often right when they use *estar* (Beginner vs. Intermediate...
$\chi^2 = 10.47, p = 0.0012, df = 1$; Beginner vs. Advanced $\chi^2 = 7.22, p = 0.0072, df = 1$; Intermediate vs. Advanced $\chi^2 = 0.40, p = 0.53, df = 1$.

Table 3.12 Percentage of error rate in correct responses for *ser* and *estar*

<table>
<thead>
<tr>
<th></th>
<th>Beginner</th>
<th>Intermediate</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Ser</em></td>
<td>19.83 (24/121)</td>
<td>21.01 (25/119)</td>
<td>16.67 (8/48)</td>
</tr>
<tr>
<td><em>Estar</em></td>
<td>29.73 (33/111)</td>
<td>5.08 (6/118)</td>
<td>6.25 (3/48)</td>
</tr>
</tbody>
</table>

Thirdly, I examined students’ use of syntactic, pragmatic and semantic information at the time of copula choice in the written task (Overall Effect $\chi^2 = 33.83, p = .0001, df = 2$). The students performed significantly worse when they needed to use semantic information to decide between the two copulas (syntactic vs. semantic $\chi^2 = 15.02, p = 0.0001, df = 1$; pragmatic vs. semantic $\chi^2 = 23.45, p < .0001, df = 1$). Their use of syntactic and pragmatic constraints seemed not to be significantly different (syntactic vs. pragmatic $\chi^2 = 0.07, p = 0.79, df = 1$).

Table 3.13 Percentages of error rate by type

<table>
<thead>
<tr>
<th>Type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Syntactic</td>
<td>13.54 (26/192)</td>
</tr>
<tr>
<td>Pragmatic</td>
<td>12.50 (24/192)</td>
</tr>
<tr>
<td>Semantic</td>
<td>31.25 (60/192)</td>
</tr>
</tbody>
</table>

If we analyze the students’ responses looking at the individual levels, we can see that there is a general pattern (Overall Effect $\chi^2 = 56.39, p < .0001, df = 8$). Even if beginners show a much higher error rate, across the three levels the students had a higher error rate when they had to use semantic constraints. The performance of beginner students vs. intermediate students seems to be significantly different because of the higher error rate that beginner students show. The performance between beginner and advanced students seems not to be significantly different; however, this is an effect of the small sample of advanced students. Intermediate and advanced students do not behave significantly differently as can be seen in the high p-value (Beginner vs. Intermediate $\chi^2 = 9.14, p = 0.01, df = 2$; Beginner vs. Advanced
\( \chi^2 = 2.85, \ p = 0.24, \ df = 2 \); Intermediate vs. Advanced \( \chi^2 = 1.30, \ p = 0.52, \ df = 2 \). Notwithstanding, the important conclusion to be drawn from this is that the three groups performed significantly better with the syntactic and pragmatic constraints than with the semantic ones.

Table 3.14 Percentages of error rate in students’ use of syntactic, pragmatic and semantic constraints

<table>
<thead>
<tr>
<th></th>
<th>Beginner</th>
<th>Intermediate</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syntactic</td>
<td>23.75 (19/80)</td>
<td>7.50 (6/80)</td>
<td>3.13 (1/80)</td>
</tr>
<tr>
<td>Pragmatic</td>
<td>22.50 (18/80)</td>
<td>5.00 (4/80)</td>
<td>6.25 (2/80)</td>
</tr>
<tr>
<td>Semantic</td>
<td>35.00 (28/80)</td>
<td>30.00 (24/80)</td>
<td>25.00 (8/80)</td>
</tr>
</tbody>
</table>

Fourthly, I will examine students’ performance with respect to the different sentence subtypes (Overall Effect \( \chi^2 = 91.62, \ p = 0.0001, \ df = 23 \)). PP Location of an event was the subtype which produced the highest error rate consistently in the three levels. Beginner students also have difficulty with the progressive construction, AP Temporary and Listo (ready). The subcategories which were especially difficult for students have been marked in boldface.

Table 3.15 Percentages of error rate in students’ performance with subtypes

<table>
<thead>
<tr>
<th></th>
<th>Beginner</th>
<th>Intermediate</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syntactic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NP</td>
<td>7.50 (3/40)</td>
<td>5.00 (2/40)</td>
<td>6.25 (1/16)</td>
</tr>
<tr>
<td>Progressive</td>
<td><strong>40.00 (16/40)</strong></td>
<td>10.00 (4/40)</td>
<td>0.00 (0/16)</td>
</tr>
<tr>
<td>Pragmatic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AP Permanent</td>
<td>10.00 (4/40)</td>
<td>10.00 (4/40)</td>
<td>0.00 (0/16)</td>
</tr>
<tr>
<td>AP Temporary</td>
<td><strong>35.00 (14/40)</strong></td>
<td>0.00 (0/40)</td>
<td>12.50 (2/16)</td>
</tr>
<tr>
<td>Semantic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PP Location of an event</td>
<td><strong>75.00 (15/20)</strong></td>
<td><strong>85.00 (17/20)</strong></td>
<td><strong>87.50 (7/8)</strong></td>
</tr>
<tr>
<td>PP Location of an object</td>
<td>20.00 (4/20)</td>
<td>10.00 (2/20)</td>
<td>0.00 (0/8)</td>
</tr>
<tr>
<td>Listo (Smart)</td>
<td>10.00 (2/20)</td>
<td>15.00 (3/20)</td>
<td>0.00 (0/8)</td>
</tr>
<tr>
<td>Listo (Ready)</td>
<td><strong>35.00 (7/20)</strong></td>
<td>10.00 (2/20)</td>
<td>12.50 (1/8)</td>
</tr>
</tbody>
</table>

In the last place, I looked at omissions of the copulas. There are only 11 sentence choices (out of a total of 576) that did not present an overt copula. However, I found an interesting result which confirms the findings of the previous experiment (Overall Effect \( \chi^2 = 0.0000, \ p = ., \ df = 0 \)). There is a systematic pattern of omission: the copula is omitted in
sentences where the correct response was *estar* but not in sentences where the correct response was *ser*.

Table 3.16 Percentage of copula omission

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Ser</em></td>
<td>0 (0/11)</td>
</tr>
<tr>
<td><em>Estar</em></td>
<td>100 (11/11)</td>
</tr>
</tbody>
</table>

In the next chapter I will provide a theoretical rationale by means of which the following facts can be explained and understood.
CHAPTER 4
THE L2 ACQUISITION OF SER AND ESTAR AND THE MISSING SURFACE INFLECTION HYPOTHESIS

4.1 Introduction

In the previous chapter it was found that the L2 acquisition of ser and estar by L1 English speakers is mainly characterized by the following facts: ser is overgeneralized over estar, the use of pragmatic and especially, semantic constraints seems to be specially problematic when determining copula choice, the subtype PP Location of an event, that is, the use of ser with locations of events, yielded the highest error rate, there was a clear pattern of copula omission where estar was omitted most of the times and, finally, the general better performance of the students in the written task when compared to the oral task. In this chapter I will argue that the behavior exhibited by the L2 learners with respect to the Spanish copulas ser and estar can be best accounted for by means of the Missing Surface Inflection Hypothesis (MSIH). This hypothesis, first named Missing Inflection, was proposed by Haznedar and Schwartz (1997): “the absence of verbal morphology indicates nothing more than the absence of surface manifestation of inflection” (White 2003: 193). Later, Prévost and White (2000) changed the name of this theory to Missing Surface Inflection “to emphasize the point that abstract morphosyntactic features are not lacking” (White 2003: 193).
I decided to use a morphological theory for explaining the acquisition of *ser* and *estar* based on the idea that *ser* and *estar* can be considered as different morphological inflections of the copula in Spanish. This theory is able to explain the main facts in this specific process of acquisition: 1) why the copula is sometimes missing, 2) why *ser* is overgeneralized, 3) why we see a difference in the students’ performance in the oral vs. the written task and 4) why the semantic constraints were the most difficult to integrate as linguistic cues for copula choice.

This chapter is organized as follows. In 4.2 I will provide a summary of the theoretical rationale used in this thesis for the study of the acquisition of *ser* and *estar*, that is, the *MSIH*. In 4.3 I will analyze how the data presented in chapter 3 can be examined under the *MSIH* framework. This subsection is divided in the further subsections: in 4.3.1 I will explain how the omissions of the copula, mainly of *estar*, can be explained by means of the *MSIH*. In 4.3.2, I will study the overgeneralization of *ser* and how it is considered a default form, that is, an underspecified lexical item. In 4.3.2.1 I will explain how the apparent counterargument for the *MSIH*, the overgeneralization of *estar*, can actually be explained under this theoretical framework if we consider it as an exception to the rule. In 4.3.3 I will argue that the difference in performance in the oral vs. the written task comes from the higher processing demands imposed by the oral task. Finally in 4.3.4 I will analyze why students find semantic constraints especially problematic at the time of copula choice. This can be explained by the fact that, under the *MSIH*, we assume that there is a breakdown at the morphosyntax-lexicon interface.
4.2 The Missing Surface Inflection Hypothesis

In this section I will provide a summary of the theory. The Missing Surface Inflection Hypothesis considers that “even in the absence of consistent or appropriate inflectional morphology, functional categories and features are fully specified in the grammar, with certain ‘visible’ syntactic consequences” (White 2003: 194). Notwithstanding, there is disagreement in regards to the source of those functional representations and features. Some advocates of this theory consider that the abstract functional structure and features come from UG. These are supporters of the Full Access without Transfer Hypothesis (Epstein et al., 1996). On the other hand, some advocates of the MSIH consider that this abstract structure is transferred from the L1. These are supporters of the Full Transfer/Full Access Hypothesis (Haznedar and Schwartz, 1997).

The MSIH finds the reason for absent (or substituted, as we will see later) morphology in mapping problems, that is, there is a communication failure between the syntax and the lexicon:

the divergence between surface morphology and abstract morphosyntactic features reflects a problem in mapping from abstract categories and features to their particular surface morphological manifestations […] even when learners have acquired the surface morphological manifestations of more abstract features, such that these forms are entered in the mental lexicon, they might not be able to retrieve the appropriate form for lexical insertion into a syntactic representation (White 2003: 196).

Access to that specific form might be blocked because the form has certain properties which make it difficult to learn. When a specific form cannot be retrieved there are two options: one, inflection might be absent and two, the form might be substituted by a default
form. Default forms are underspecified lexical items. The MSIH predicts that the distribution of the forms is not random but there is a specific pattern that emerges: the underspecified form is used instead of the fully specified form but the reverse only takes place in exceptional cases.

The theoretical frame for this theory comes from Distributed Morphology (DM) and its mechanism for lexical insertion. According to DM both the nodes in the syntactic tree and the lexical items have features. Lexical insertion takes place when the features of the lexical item match the features of the terminal node. However, that is not the only case when a lexical item can be inserted into the syntactic representation. Lexical items can be underspecified, that is, you can insert a lexical item in a terminal node even if the features of the lexical item are only a subset of the features in the tree. This is the process that takes place with defaults. The only case when lexical insertion fails is when there is a feature mismatch. In DM there is a competition for lexical insertion. The item which is fully specified and matches all of the features of the terminal node will be the winner of the competition. This is true in native grammars. All these ideas are expressed in the Subset Principle:

The phonological exponent of a vocabulary item is inserted into a morpheme…if the item matches all or a subset of the grammatical features specified in the terminal morpheme. Insertion does not take place if the Vocabulary Item contains features not present in the morpheme. When several Vocabulary Items meet the conditions for insertion, the item matching the greatest number of features specified in the terminal node must be chosen (Halle, 1997).

However, L2 learners do not always show the right inflection and, even in steady grammars, we can find omissions of inflection or default forms even in advanced stages of
the acquisition process. So, how can this fact be explained? The reason why sometimes the underspecified element is the winner in the competition for lexical insertion in L2 grammars is that the access to the more detailed item is blocked for some reason. In those cases, learners will resort to default forms or they will omit the inflection.

4.3 The Missing Surface Inflection Hypothesis and the L2 Acquisition of *ser* and *estar*

I think that the *MSIH* is the perfect theoretical explanation for the acquisition of *ser* and *estar* by L1 English speakers for the four reasons mentioned in the Introduction section. This theory is able to account for the omission of the copula in certain circumstances, the frequent replacement of *estar* by *ser* in the L2 grammar, the lower performance of students in the spontaneous-speech task when compared to the written task and the fact that students have special difficulty integrating lexical constraints in the copula task.

I agree with this theory that while words and morphology have to be learned by the L2 learners, syntactic structure is included in their language repertoire when they face the L2 acquisition task. In the particular case I am looking at, I think it is safe to assume that these abstract representations are directly transferred from the L1 since the copula ‘to be’ projects the same syntactic trees *ser* and *estar* do. *Ser* and *estar* are imbued in the same syntactic representation: they both project AspP because this position is needed for adverbs to adjoin to and to get the appropriate aspectual interpretation semantically. However, the difference lies in the fact that *estar* possesses an [+aspect] feature which allows the copula to have an aspectual reading permanently. On the other hand, *ser* lacks this [+aspect] feature and it can only have an aspectual interpretation when it appears with adverbs. In (1-2), I provide the
syntactic structures for *ser* and *estar* in the sentences *Yo soy inteligente* ‘I am intelligent’ vs. *Yo estoy enfermo* ‘I am sick.’

(1)

---

5 In (1-4) I assume that *soy, estoy* and *am* move through Asp on its way to I based on the idea that a head cannot skip over another open head position on its way up the structure.
We can say that this same dichotomy is seen in English although here it is the same lexical item ‘to be’ which possesses different features according to the context in which it is found. Next, I provide the English counterparts of the Spanish sentences just presented above: *I am intelligent* vs. *I am sick.*
We can also assume that the lexical items *ser* and *estar* have been acquired through formal instruction and have been stored in the mental lexicon. Since the syntactic structure is present in the L2 grammar and the lexical items *ser* and *estar* have been stored in the mental dictionary, we can assume that the mistakes in the acquisition of *ser* and *estar* are due to processing failures, in particular, an inability to retrieve a form from the lexicon in order to
insert it in the syntactic structure of the sentence. In 4.1 we saw how *estar* is usually replaced by *ser* and also sometimes omitted. This indicates that *estar* is the copula which cannot be accessed from the lexicon. The fact that the problem from *ser* and *estar* stems from processing problems has certain implications. Mainly that when the situation or the linguistic task has higher processing demands (e.g. longer and more complex sentences, oral tasks etc.) the error rates will increase because the information will be harder for the students to process. I will illustrate this in 4.3.3 when I talk about the better performance of the students in the written task.

The question that remains to be answered now is: why is access to *estar* sometimes blocked? Hyams, discussing the reason for missing categories in First Language Acquisition, states that “the lexical items are missing, essentially because they have properties that make them difficult to learn, for example, lack of referentiality or meaning, etc.” (Hyams 1994: 45). The question now is what is that property of *estar* which makes it difficult to learn and the answer is ASPECT. According to Comrie (1976: 3) aspect can be defined as the “way of viewing the internal temporal constituency of a situation.”

As we saw in chapter 2, *estar* is considered the aspectual copula in Spanish because it carries aspectual properties. On the other hand, *ser* lacks aspectual properties. English learners of Spanish have problems understanding the nuanced aspectual distinctions of the Spanish language such as the difference between *preterite* and *imperfect* (Ayoun and Salaberry 2005). But why is aspect a problematic category for L1 English L2 Spanish learners? According to Ayoun and Salaberry “Whereas tense distinctions are easily identified and comprehended by native speakers of English, aspectual distinctions are less transparent.
This is mostly because aspectual distinctions in English are not as consistently or explicitly marked on inflectional morphology as they are in Romance languages” (Ayoun and Salaberry 2005: 2).

It is true that the verb ‘to be’ in English has certain uses which require an aspectual reading and certain uses that require a non-aspectual reading such as *Mary is running* vs. *Mary is my sister*. Hence, students should not have problems projecting the correct syntactic structure of Spanish sentences containing *ser* and *estar* since they are able to project it in their own L1 grammar.

The problem with *estar* lies in the lack of overt representation of the English ‘aspectual be’. Since in English the aspectual and the non-aspectual copula are conflated in the same lexical item ‘to be’, it is difficult for the L2 learner to link the [+aspect] feature to a specific overt lexical item.

Now I proceed to present how the individual facts described in the previous chapter can be analyzed by means of the *MSIH*.

4.3.1 Omission of the copula

First of all, I have previously said that this theory can account for the omissions of the copula which are supposed to take place due to processing demands. Before analyzing the omissions of the copula under this theoretical framework I would like to repeat the facts found in my experiments and in the previous L2 literature in this topic. I only found a very small number of sentences (12 and 11 out of 576 in the oral and the written task respectively) which presented omission of the copula. This could indicate that students had already passed
the omission stage that according to VanPatten takes place in “the first weeks of instruction and is not a stage that seems to last for long” (1987: 63-64). However, in spite of the scarce number of omissions, we can see an interesting pattern: in the interview 25% of omissions were omissions of *ser* and 75% of omissions were omissions of *estar*. In the questionnaire all of the cases of omission (100%) corresponded to *estar*. The existence of a stage of copula omission in the L2 acquisition of *ser* and *estar* is well documented in the literature. In particular, four studies confirmed the existence of an omission stage which also happened to be the first stage in the acquisition process (VanPatten, 1985 and 1987; Ryan and Lafford, 1992; Gunterman, 1992 and Francis, 2007). However, in this stage it seems that both copulas are omitted. Ryan and Lafford (1992) found an extra stage (stage 3) in which the copula is omitted in conditional contexts. This means that there is a stage where *estar* but not *ser* is omitted. This stage found by Ryan and Lafford mirrors my findings.

The *MSIH* perfectly accounts for the pattern of omissions that I found in my experiments. Due to the fact that *ser* and *estar* are copulas and as such lack semantic content, they could potentially be elements hard to retrieve from the mental lexicon. This results in a lack of inflection which, in this specific case, translates into absence of the copula. However we saw that the aspectual copula *estar* is the one which is omitted as a general rule. As it was said in 4.3 access to this form is blocked because of students’ inability to recognize its aspectual properties. In the case of *estar* aspect might be another factor (on top of lack of semantic content) that facilitates interface breakdown and that is why we see a much larger number of omissions of *estar*. According to the *MSIH* we still assume that the syntactic representation is intact even in the absence of inflection.
4.3.2 The overgeneralization of *ser*

Secondly, the most important contribution of this theory to my project and the study of those who, for years, have studied the acquisition of *ser* and *estar* by L2 Spanish learners is the explanation of the overgeneralization of *ser*. The overgeneralization of *ser* has been confirmed by all of the researchers studying the acquisition of *ser* and *estar* (VanPatten, 1985 and 1987; Ryan & Lafford, 1992; Gunterman, 1992; Briscoe, 1995; Ramírez-Gelpi, 1995; Francis, 2007). In my experiments, *ser* was clearly overgeneralized in the first experiment (picture description task). In the second experiment (grammaticality judgment task) the general claim found in the L2 literature that students overgeneralize *ser* over *estar* was only partially confirmed here. Beginner students showed this trend; however, intermediate and advanced students showed the opposite behavior. I think this still argues for the overgeneralization of *ser* in the first stages of L2 acquisition.

According to the MSIH *ser* would be considered a default form. According to DM we can say that (5) is the representation of the *ser* and *estar* lexical items:

(5) /Ser/→ [+verb, +copula, +tense]

/Estar/→[+verb, +copula,+tense, +aspect]

The syntactic structure where these items have to be inserted is the following (6-7):
So, the lexical item *ser* can be inserted in the two trees. It can be inserted in the first tree because the features of the lexical item represent a perfect match with the features of the terminal node. Also, it can be inserted into the second tree since it is underspecified for that terminal node: it properly matches a subset of the features that are represented in the node. Conversely, *estar* can only be inserted into the second tree because it contains all of the features included in the node. On the other hand, it cannot be inserted into the first tree because that will provoke a feature clash due to the fact that the feature [+ aspect] is not represented in the syntactic node. This theory provides a nice account of the overgeneralization of *ser*: *ser* is overused because it is the default form and can be inserted into both the *ser* and *estar* terminal nodes. *Estar*, on the other hand can only be inserted in the appropriate terminal node.

4.3.2.1 The overgeneralization of *estar*

The apparent problem for this theory is how to explain the counterexamples, that is, the cases where *estar* actually substitutes *ser*. As we just saw in the previous section this is an impossible lexical insertion option because it produces a feature mismatch.

However, if we have a look at my experiments, cases like those abound (*estar* substitutes *ser* 45.09% in the picture description task and 15.16 % in the grammaticality judgment task). So the question now is how we can explain these examples while still maintaining that the *MSIH* is the most appropriate explanation for the L2 acquisition of *ser* and *estar*. 


If we analyze closely the substitutions of *ser* by *estar* in both the description task and the grammaticality judgment task a clear phenomenon seems to emerge. There are three subtypes in which an incorrect answer consists of the substitution of *ser* by *estar*: NP, AP Temporary and PP location of an event. We can analyze the percentage of error rate in these three subtypes to see how frequent the overgeneralization of *estar* was:

Table 4.1 Error rate in the subtypes whose errors yielded overgeneralization of *estar*

<table>
<thead>
<tr>
<th>Subtype</th>
<th>Picture Description Task</th>
<th>Grammaticality Judgment Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP</td>
<td>5.25</td>
<td>6.5</td>
</tr>
<tr>
<td>AP Temporary</td>
<td>12.50</td>
<td>8.33</td>
</tr>
<tr>
<td>PP Location of an Event</td>
<td>53.13</td>
<td>81.25</td>
</tr>
</tbody>
</table>

If we look carefully at the above table we can see that errors in the categories NP and AP Temporary are really rare. On the other hand, the error rate in the subtype PP Location of an event is really high (53.13% in the picture description task and 81.25% in the grammaticality judgment task). The errors in this category constitute 75% and 84.56% of all of the erroneous *estar*-for-*ser* substitutions in the picture description task and the grammaticality judgment task respectively. This indicates that if we put aside this category, substitutions of *ser* by *estar* are really scarce and can be considered as simple exceptions such as the MSIH predicts.

Actually, most researchers who have worked in the acquisition of *ser* and *estar* have not included the category PP location of an event in their experiments claiming that this structure is not taught and thus not acquired until later in the process of learning a second language (in higher levels of instruction). I decided to include this category because the structure is indeed taught even in the basic levels; however, it has been proven with these
results that L2ers are not even on the threshold of acquisition with respect to this structure. The question we need to address now is why there are such high error rates in the category PP Location of an event. This issue will be discussed in section 5.5.2.

4.3.3 Picture Description Task vs. Grammaticality Judgment Task

In the third place, I would like to present why the MSIH is successful in explaining why the students performed significantly worse in the picture description task than in the grammaticality judgment task. This performance issue can be seen in the lower error rate in the grammaticality judgment task. Also, the learners showed better use of constraints in the written task: in the grammaticality judgment task they exhibited problems only with lexical constraints whereas they had problems with both lexical and pragmatic constraints in the picture description task. The following contrasts were done within a logistic regression model adjusting for multiple observations.

Table 4.2 Total error rate in the picture description task and in the grammaticality judgment task

<table>
<thead>
<tr>
<th></th>
<th>Picture Description Task</th>
<th>Grammaticality Judgment Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ser</td>
<td>22.81</td>
<td>19.79</td>
</tr>
<tr>
<td>Estar</td>
<td>45.09</td>
<td>15.16</td>
</tr>
</tbody>
</table>

Table 4.3 Error rate by type in the picture description task and in the grammaticality judgment

<table>
<thead>
<tr>
<th></th>
<th>Picture Description Task</th>
<th>Grammaticality Judgment Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syntactic</td>
<td>16.67</td>
<td>13.54</td>
</tr>
<tr>
<td>Pragmatic</td>
<td>48.96</td>
<td>12.50</td>
</tr>
<tr>
<td>Semantic</td>
<td>41.15</td>
<td>31.25</td>
</tr>
</tbody>
</table>
These facts can be explained by means of the MSIH. If the errors in the acquisition of ser and estar can be traced to a mapping problem, it is a prediction of this theory that students will perform differently in tasks with different processing demands. In the picture description task, I recorded spontaneous speech samples of the students. In spontaneous speech the processing load is higher because the students have to retrieve the form from their mental lexicon and also they are doing it under time constraints. The grammaticality judgment task was an untimed written task. Not only was the form of the copula provided to them but also they had an unlimited amount of time to check in the mental lexicon if the form provided was the correct one. Obviously, the lower processing demands of the grammaticality judgment task resulted in students’ higher rate of success in the mentioned task.

4.3.4 Syntactic, Lexical and Pragmatic Constraints as Cues for Copula Choice in L2

In this section I will present an explanation for the fact that some linguistic devices are more readily available to the students at the copula-learning task. We will see what linguistic cues are more useful to overcome the morphosyntax-lexicon breakdown. In the first experiment it was found that syntactic frame is the most reliable cue that the students were able to use when they have to face the task of copula choice. On the other hand, the students seemed to have more difficulty in ascertaining what the correct form of the copula is based on pragmatic and lexical constraints. In the second experiment students performed better with pragmatic constraints than they did in Experiment 1 but they still presented deficient use of the copula when semantic constraints were the only hint available.
The reason for this might be that syntactic constraints are usually reinforced in the L2 classroom; hence, it is not surprising that this is the most salient hint for the learners. Pragmatic constraints seem to become a better cue when the time for copula choice becomes unlimited in a written task. What seems to be a problem in both tasks is the fact that when the student needs to decide between *ser* and *estar* based only on semantic constraints, he seems to be lost. Since those examples need to be learned in a one-by-one basis, they become the most difficult to use. As we have seen with *MSIH* most of the problems with copula choice come from a breakdown in the lexicon and this is confirmed in my experiments by the fact that the students had great difficulty integrating semantic constraints into the copula task.

To sum up, I have argued in this chapter that the *MSIH* is the theoretical rationale able to explain the facts about the L2 acquisition of *ser* and *estar*: omissions of the copula, overgeneralization of *ser*, better performance in the written task and difficulty with semantic constraints. According to this hypothesis we assume that even in the absence of inflection or in the cases when L2 learners substitute the correct form with a default, they still have an intact syntactic representation of sentences. The problem seems to be a breakdown at the morphosyntax-lexicon interface, that is, an impossibility for retrieving the appropriate form for lexical insertion. I have also claimed that the difficulty for retrieving *estar* stems from an inability to associate the aspectual feature of *estar* with its overt morphological representation.

In the next chapter I will draw parallels between the findings described in chapter three and the theoretical rationale presented in chapter four and the facts from the First Language Acquisition literature on *ser* and *estar*.
CHAPTER 5
FIRST LANGUAGE ACQUISITION OF SER AND ESTAR

5.1 Introduction

In this chapter I will explore the L1 acquisition of *ser* and *estar* by looking at the research conducted by Sera (1992), Schmitt and al. (2004) and Schmitt and Miller (2007). In sections 5.3, 5.4 and 5.5 I will draw some comparisons between these and my own findings in the L2 acquisition of *ser* and *estar*. I believe it is worth looking at the First Language Acquisition of *ser* and *estar* since, interestingly, the opposite pattern emerges: *estar* is the form which is overgeneralized in children’s speech. The mechanisms and processes involved in the acquisition of *ser* and *estar* are very different in L1 and L2 and lead to different results. These differences point to the idea that the maturational state of the learner is a key factor in the process of acquisition which needs to be taken into account when making claims about the acquisition process.

5.2 Background

Research on the acquisition of *ser* and *estar* is scarce in the First Language Acquisition literature. We find mainly the studies by Sera, 1992; Schmitt et al., 2004 and Schmitt & Miller, 2007. Sera’s experiments focused on the production of the copula. On the other hand, Schmitt et al.’s goal was to investigate children’s comprehension of these two verbs. Hence, the findings of these two lines of research complement each other.
5.2.1 Sera (1992)

Sera (1992) carried out four experiments in which she tested adults’ and children’s knowledge of the copulas. In studies 2 and 3 only adults were tested, thus I will ignore the results of these experiments since they are irrelevant for the present study. However, I will focus on studies 1 and 4 in which the knowledge of children is compared to that of adults. This has important repercussions for my research.

Before presenting her results I would like to briefly mention the syntactic distribution of *ser* and *estar*: only *ser* can appear with NPs, only *estar* can appear in the progressive construction; both *ser* and *estar* can occur with adjectives depending on the adjective type; with locations, *ser* is used for locations of events and *estar* is used with locations of objects. Next, I will expose how children in Sera’s studies behaved with respect to these different syntactic frames.

In study 1 she found an important asymmetry in the acquisition of the two copulas: “uses of *estar* decrease with age and/or [...] uses of *ser* increase with age” (Sera 1992:414). It is not specified in the article if children produce more contexts in which *estar* is the required copula or if they produce *estar* in contexts that require *ser*.

<table>
<thead>
<tr>
<th>Age</th>
<th>Percentage of <em>estar</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>3-year olds</td>
<td>88</td>
</tr>
<tr>
<td>4-year olds</td>
<td>87</td>
</tr>
<tr>
<td>5-year olds</td>
<td>91</td>
</tr>
<tr>
<td>9-year olds</td>
<td>76</td>
</tr>
<tr>
<td>adults</td>
<td>63</td>
</tr>
</tbody>
</table>

(Sera 1992:414)
In study 4 Sera tested children’s knowledge of the semantic contrast existing between *ser* and *estar* with both adjectives and locations. Children seemed to perform better with adjectives than with locations. “Correct use of Spanish copulas with adjectives steadily increases with age, although even the youngest children performed above chance’ (1992:423). On the other hand, children’s use of locatives seemed to show a different pattern: “Children of all ages performed almost perfectly when asking about the location of an object (percentage correct ranged from 90 to 100). However, they performed very poorly when asking about the locations of events (percentage correct ranged from 15 to 28)” (1992:423). Sera believes that children seem to be considering events the same kind of entity as objects and thus treating them equally (1992: 424-5).

From these studies Sera concludes that while adults can use both syntactic and semantic information to determine the uses of the copulas, children have a much harder time integrating semantic factors into the interpretation of *ser* and *estar*. This can be clearly illustrated by how children were aware of the syntactic distribution of *ser* and *estar* and correctly patterned *ser* with nominals or *estar* as an auxiliary and with locations (although there were important mistakes in these contexts as we discussed in the previous paragraph) and both *ser* and *estar* with adjectives (1992: 414). The reason for this is that in these contexts the syntactic frame was enough information to ascertain the functions of the copula. Sera (1992: 424) considers that this argues for a syntactic bootstrapping hypothesis of language acquisition as proposed by Landau and Gleitman (1985), that is, children take advantage of structural constraints in order to learn the intended meanings of abstract words. It is when other kinds of information (i.e., semantic and pragmatic information) need to be used that children make mistakes in their performance with *ser* and *estar*. 
As for why children overgeneralize *estar* over *ser*, Sera provides four possible explanations: children might be favoring *estar* since it is simply more likely to be correct because “*estar* carries little or no implication about the status of certain attributes with adjectives” (1992:425). Another option might be that children are not able to differentiate conceptually between objects and events. The third possibility is that, even if children are able to assign different interpretations to objects and events respectively, it might be the case that they apply temporariness to a broader range of attributes compared to adults. Finally, Sera considers the possibility that methodological issues might have caused children to use *estar* disproportionately. She thinks that the fact that events were depicted with objects (she used a dollhouse and plastic and wooden figurines to represent events) and that the copulas were elicited through questions might have skewed the results of this experiment.

5.2.2 Schmitt et al. (2004)

Schmitt et. al. (2004) and Schmitt and Miller (2007) also studied the acquisition of the copula by Spanish children. Their goal was to shed some light on the following questions: do children encounter difficulties when interpreting *ser* and *estar*? And if they do, do they overuse one of the copulas? That is, when offered different options to choose between *ser* and *estar*, do they tend to choose one copula over the other consistently? which one and why?

Now, I will present an overview of this new line of research by analyzing each article individually. Schmitt et. al. (2004) presents two different studies. Study 1 is a Picture Matching Task. In this experiment children had to choose a picture of a character showing a permanent property or a temporary property that had been manipulated by the experimenter.
by changing the pragmatic context. Children overgeneralized *estar*: they were prone to use *estar* with the permanent property (78%). This indicates that children are still not aware of the pragmatic differences between the two copulas. Next I present the sentences tested in this experiment. Children hear either (1a) followed by (2a) and (2b) or (1b) followed by (2a) and (2b):

(1)

a. Mira las jirafas. ¿Me puedes describer una jirafa? Altas las jirafas ¿no? Pero aquí hay una más alta que la otra. La jirafa chiquita se encuentra encima de una mesa y la alta en el suelo.

‘Look at the giraffes. Can you describe a giraffe? Pretty tall giraffes, eh? But here we have one taller than the other. The small giraffe is on the table and the tall one is on the floor.’

b. Mira las jirafas. ¿Me puedes describer una jirafa? Altas las jirafas ¿no? Pero aquí hay una más alta que la otra. Esta solucionó su problema subiéndose a esta mesa.

‘Look at the giraffes. Can you describe a giraffe? Pretty tall giraffes, eh? But here we have one taller than the other. This one solved her problem by climbing on top of the table.’

(2)

a. ¿Cuál jirafa es alta?

‘Which giraffe is SER alta’

b. ¿Cuál jirafa está alta?

‘Which giraffe is ESTAR alta’

(Schmitt et al. 2004: 5)

The second study was an acceptability judgment task and consisted of three different experiments. The goal of this study was to find out what kind of information was available to children when predicting the different distributions of *ser* and *estar*. Experiment 1 tested
children’s use of semantic information, experiment 2 syntactic information and experiment 3 pragmatic information. In table 5.2 I provide a sample of Experiment 1 (Lexical homonymy):

Table 5.2. Lexical Homonymy

<table>
<thead>
<tr>
<th>Context favouring ESTAR</th>
<th>Context favouring SER</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pedro tocó el gato pero el gato no se movió. Pedro pensó que el gato se había muerto y lo tocó de nuevo. Esta vez el gato se estiró y bostezó. Pedro respiró aliviado cuando vió al gato vivo.</strong></td>
<td><strong>Pablo tiene un gato muy inteligente. Cuando destroza las flores del jardín le echa la culpa a otros gatos, cuando pelea dice que él no empezó la pelea. Siempre queda como el que no hizo nada malo. ¡Qué gato tan vivo!</strong></td>
</tr>
<tr>
<td>Pedro thought the cat was dead but then he realized that the cat was alive.</td>
<td>The cat is very intelligent and never takes the blame for anything.</td>
</tr>
</tbody>
</table>

**Experimental sentences**

A ver Pepe, descríbeme al gato de Pedro.  

A. El gato está vivo ‘The cat is alive.’  
B. El gato es vivo ‘The cat is smart.’

A ver Pepe, descríbeme al gato de Pablo.  

A. El gato está vivo ‘The cat is alive.’  
B. El gato es vivo ‘The cat is intelligent.’

(Schmitt et al. 2004: 7)

The results of these experiments are partly inconclusive. However, some conclusions can still be drawn about children’s use of the different linguistic clues, especially from experiment 3. In this experiment children again overused estar and were happy to use estar in contexts where ser would have been the appropriate copula (they rejected estar in ser favoring contexts only 7.1%). This again hints at the fact that children might have special difficulty incorporating pragmatic information into their understanding of copula choice.
5.2.3 Schmitt and Miller (2007)

Schmitt and Miller (2007) tried to answer some of the unresolved questions of the studies just mentioned. The researchers kept exploring the hypothesis that children have trouble making use of the pragmatic information available to them. They carried out two experiments to test this hypothesis in children’s understanding of the Spanish copulas *ser* and *estar*. For the first task, children were shown pictures of body parts with temporary or permanent colors which the experimenter had manipulated by changing the pragmatic circumstances and then they had to complete a sentence which contained *ser* and *estar* with the correct attribute.

(3) Este es Manolo. Su lengua se puso verde porque estaba tomando este jugo de kiwi, pero el tiene la lengua roja.

This is Manolo. His tongue turned green because he was drinking this kiwi juice but he has a red tongue (picture of a red tongue with green shading on the top of it).

a. La lengua de Manolo es __________.

“Manolo’s tongue is __________.”

b. La lengua de Manolo está __________.

“Manolo’s tongue is __________”

(Schmitt and Miller 2007:1919)

In these experiments children behaved similarly to adults in that they were able to use *ser* and *estar* distinctively. However, we cannot rush into concluding that children are able to use pragmatic clues in their copula choice. The reason for this adult-like behavior might have
been that children were not relying on pragmatic constraints but on semantic constraints. That is, it was just necessary to use their knowledge of the world to choose the appropriate color. Conversely, children patterned differently from adults in one of the aspects of this task: they were more inclined to accept *estar* with permanent properties. As we saw in Schmitt et al. (2004) this can be an indication of an inability to recognize pragmatic clues.

In the second experiment children behaved differently from adults: “children are fairly restrictive in their use of *estar* while adults are not” (Schmitt and Miller 2007: 1925). Schmitt and Miller considered this a sign of the children’s understanding of the aspectual nature of *estar*. They concluded that the process of decision making carried out by children when ascertaining the meanings and distributions of the copula has two stages: 1) If the child can use his knowledge of the world to choose between the copulas, he would do so; 2) if only pragmatic information is available to him, then he seems to have an understanding of the distinct aspectual nature of the copulas: *estar* is temporally anchored whereas *ser* is not.

Schmitt and Miller provided an aspectual account for children’s overgeneralization of *estar*. Children might find it easier to understand the properties of *estar* because these properties are more stable than the properties of *ser*. *Estar* always adds a subevent property and thus always has a temporary interpretation. On the other hand, we can have a temporary or a permanent reading with *ser* depending on the presence or absence of adverbials. It is not hard to understand how the first option is a much more straightforward meaning to grasp. As Crain and Thornton (1998) predicted children will select the option that is the most falsifiable option and the one that appears in the smaller number of contexts; here *estar* seems to be the most falsifiable hypothesis: “a statement using *estar* asserts that a certain property holds at
some time t and therefore is more falsifiable than a generic statement” (Schmitt and Miller 2007: 1917-18).

5.3 First Language Acquisition of **ser** and **estar** and the Missing Surface Inflection Hypothesis

I made use of the **MSIH** to explain the behavior of L2 learners regarding the acquisition of **ser** and **estar**. This hypothesis has also been used in FLA stating that children, like L2 learners, experience processing difficulties because:

For young children […] accessing morphological form is presumably not an automatic process to begin with, and as a result the cost of accessing a given form might outweigh the cost of failing to realize it…The transition…to adult-like performance can thus be seen as a transition from controlled to automatic processing of the task of accessing morphological knowledge (Phillips 1995: 360).

Notwithstanding, if we apply this theory to the data presented in 5.2 we can see how the derivation crashes. **Estar** cannot be the default form because it is not the form that is lexically underspecified. It is impossible to insert the lexical item **estar** into a **ser** terminal node because it has a feature that is not present in the terminal node, specifically [+aspect]. Also, no omissions have been reported in the literature so it is impossible to judge the appropriateness of the **MSIH** for FLA in this respect.

It is, however, not surprising that the same theory cannot be applied to the process of acquisition of L1 and L2 learners. After all, these two processes are intrinsically different if we take into account factors such as the maturational state of the learner, the access to an L1 in the case of the L2 learner, etc. Thus, it is logical that the mechanisms used by these
learners when facing the copula task are intrinsically different. In the next section I will examine what processes underlie the acquisition of *ser* and *estar* by Spanish children.

**5.4 First Language Acquisition of *ser* and *estar* and the Aspect First Hypothesis**

In section 4.3 we saw that the root of the problem that L2 learners have with *estar* lies in a difficulty in ascertaining its aspectual properties. We have to take into account that my L2ers were English native speakers. English is a language with scarce overt aspectual distinctions; Spanish, on the other hand, is a language with a rich aspectual system that is overtly marked through inflection. It is not surprising then that, whereas L2 learners have problems with aspect, L1 learners make use of this tool in order to learn the distribution and use of the two Spanish copulas.

We can make sense of these facts if we look at the **Aspect First Hypothesis (AFH)** which states that “children initially use verbal morphology to mark aspect and not tense” (Wagner 2001:661). However, before going into a deeper explanation of the AFH I would like to provide definitions for the two types of aspect considered in the literature: lexical and grammatical aspect. Lexical aspect “represents inherent lexical meaning of the verb as determined by the temporal features intrinsic in the semantics of the verbal predicate.” (Ayoun and Salaberry 2005: 3). On the other hand, grammatical aspect is “obligatorily encoded in the form of auxiliaries (eg. passé composé in French), inflectional morphology (imperfecto-pretérito in Spanish), periphrasis (progressive in English, French and Spanish)” (Ayoun and Salaberry 2005: 5). Since *estar* is a copula and as such is devoid of lexical meaning, we cannot say that it possesses lexical aspect. Conversely, because of the semantic
contribution that *estar* makes to the sentence in terms of temporal boundedness, we can say that *estar* encodes grammatical aspect.

There are two versions of the *AFH*. The strongest version considers that “verbal morphology initially marks lexical aspect for […] children” (Wagner 2001: 663). The weakest version of the *AFH* claims that “children are using the verbal morphology to encode grammatical aspect” (Wagner 2001: 663). What seems to be playing a role in the L1 acquisition of *ser* and *estar* is the weakest version of the *AFH*, that is, children are using the copula *estar* to mark grammatical aspect.

We cannot conclude that children are marking grammatical aspect at the expense of tense because the variable tense has not been taken into account in this thesis. However, we can claim that it is the aspectual properties of *estar* that constitute stronger hints for children in the copula-learning task. That is, when children are faced with the decision of choosing between *ser* and *estar*, they will more often use *estar* because it is the aspectually marked form and this form seems to be the most salient for them. Since *ser* only indicates tense, *estar* is the preferred copula according to the *AFH* because it also possesses aspectual properties.

### 5.5 Similarities between the L1 and L2 acquisition of *ser* and *estar*

In spite of the differences between Spanish children and American students with respect to the copula-learning task, these subjects also exhibit remarkable similarities.
5.5.1 Syntactic, Lexical and Pragmatic Constraints as Cues for Copula Choice in L1

In my experiments I found that L2 learners seem to have difficulty ascertaining the right copula when the choice was based on pragmatic (only in the picture description task) and semantic constraints. On the other hand, the option was much clear when it was based on the syntactic frame of the sentence. These facts seem to be in accordance with the findings in Sera (1992), Schmitt et. al. (2004) and Schmitt and Miller (2007).

Sera’s experiments pointed to the hypothesis that children may acquire the copula through a syntactic bootstrapping strategy; that is, they ascertain the meaning of the copulas by looking at the syntactic structure of sentences (1992:424). According to Sera, semantic information seems to be difficult to recognize as cues for copula choice. Schmitt et. al. (2004) and Schmitt and Miller (2007) mainly focus on children’s difficulty integrating pragmatic information in their decisions in copula-related tasks. L2 learners also seem to have difficulty in understanding the pragmatic nuances implied in the use of the Spanish copula.

This leads me to reach a very interesting conclusion: Although L2 learners of Spanish and children acquiring Spanish as their first language utilize very different mechanisms in their acquisition process, they make use of the linguistic resources available to them at the time of copula choice in fairly the same way: whereas it is easy for them to use syntactic information, they experience greater difficulty understanding pragmatic and semantic cues when they need to process the use and distribution of *ser* and *estar*. 
5.5.2 Difficulties with PP Location of an Event

If we focus on the subtype variable, that is, the different types of structures considered within the categories syntactic, pragmatic and semantic respectively; we will find again interesting similarities with the L2 acquisition process. Sera’s results show that children experience special difficulty using the appropriate copula with locations of events and their performance does not seem to improve significantly with age (1992:423). As we saw in the previous chapter, L2 learners also have a really hard time with the items which involved locations of events.

I believe that the reason why both L1 and L2 learners encounter difficulties with this structure stems from semantic complexities intrinsic to this structure. Even if I do not have a completely satisfying explanation for the phenomenon I would like to present some of the possible reasons causing the high error rate in the subtype location of event. First of all, we can easily see that the use of ser with locations of events seems to be counterintuitive. L2 learners of Spanish learn that locations are temporary properties that are grammatically encoded in estar. This is the case for mobile and non-mobile objects but not for events. However, if they consider locations of events as a subcategory of the broader category location, they will incorrectly use estar with locations of events. Secondly, if we take into account that both the progressive and locations of events involve events and that events are aspectual in nature, we can understand why the students link these expressions with the aspectual copula estar. Also, because the progressive is one of the first structures presented in the L2 classroom, this connection between events and estar is reinforced before the introduction of locations of events. However, in the case of locations of events this yields an
ungrammatical pattern. Thirdly, the latter hypothesis can also be supported by the fact that there is a delay both in L1 and L2 (Briscoe, 1995) in learning other structures involving events such as the passive construction. Notwithstanding, I believe that further research will need to undertake the task of fully clarifying this issue in the future.

Finally, even if we find great differences in the L1/L2 copula-acquisition processes, there are some similarities which hint at the fact that, in spite of the differences, there might be some universal mechanisms at work in the acquisition process.
CHAPTER 6
CONCLUSION

I started this thesis by stating that my major goal was to find a theoretical rationale that could account for my findings regarding the L2 acquisition of *ser* and *estar* by English native speakers. I reached this goal by explaining my data by means of the *Missing Surface Inflection Hypothesis* (Prévost and White, 2000a, b).

In particular, it was found in this thesis that the main characteristics of the L2 acquisition process of *ser* and *estar* were the following: overgeneralization of *ser* (mainly in the oral task), difficulty with pragmatic and especially with semantic constraints, difficulty using *ser* with locations of events, omissions of the copula (mainly *estar*) and different performance levels in the oral vs. the written task.

In chapter 4 I argued that all these facts could be best understood under the theoretical frame of the *Missing Surface Inflection Hypothesis*. It was claimed that the problem with *ser* and *estar* for L1 English speakers comes from a processing failure, that is, an inability to retrieve the correct copula from the lexicon for insertion in a given syntactic structure. According to Distributed Morphology, the overgeneralization of *ser* can be explained because *ser* is a default form, that is, a form lexically underspecified that can be inserted into its own terminal node as well as in the *estar* terminal node. The problematic use of semantic cues comes from a breakdown in the morphosyntax-lexicon interface. The omissions of the copula can be explained by a failure in accessing these forms in the lexicon. The better
performance of the students in the written task as compared with the oral task is due to the lower processing demands of the latter. The restricted access to estar seems to arise from the fact that estar is an aspectually marked form and English speakers have great difficulty identifying aspectual distinctions that are not morphologically marked in their L1.

In the Introduction section I also claimed that the second goal of my thesis was to draw a comparison between the L2 and the L1 processes of acquisition. In order to do this I made use of both my own research and the FLA literature (Sera, 1992; Schmitt et. al., 2004; Schmitt and Miller, 2007). When I compared the L2 and the L1 acquisition process of ser and estar a very different pattern emerged: children overgeneralize estar. Thus the L1 acquisition pattern cannot be explained by means of the Missing Surface Inflection Hypothesis since this hypothesis does not allow overgeneralizations of the non-default form. The Aspect First Hypothesis seems to be the appropriate theoretical framework in which we can understand the children’s acquisition process. Children tend to overgeneralize estar because estar is the aspectually marked form and that characteristic makes it more salient for children. In spite of those differences we can find certain similarities between the two processes of acquisition: both children and L2 learners have special difficulty integrating semantic factors into their copula task. Also, within those constructions that depend on semantic constraints, the use of ser with locations of events seems to present the greatest rate of difficulty. Lexical constraints might be difficult to use as cues for copula choice because they need to be learned on a one-by-one basis. In my opinion, the use of ser with locations of events stems from the fact that events are aspectual in nature and thus they are incorrectly associated with estar.
In the next paragraphs I would like to illustrate the implications of this work for the SLA, language teaching and FLA fields. I will start by talking about the contributions of this thesis to the SLA and the language teaching fields and I will proceed to address the need to compare the SLA and FLA research on *ser* and *estar* in order to answer the big questions about the acquisition process.

I believe this thesis will help researchers to have a better comprehension of how the Spanish copulas are acquired. It would be interesting if further research could confirm the cogency of the *MSIH* as an explanation for the L2 acquisition process of *ser* and *estar* for learners with other language backgrounds. On the other hand, I found a language-specific explanation for why access to the lexicon is restricted (i.e. aspect, for native-English speakers learning Spanish). Researchers studying learners with different language backgrounds will have to find language-specific explanations for why access to the lexicon is blocked in the particular languages they are working on. They could also look for a universal kind of explanation for why retrieving failure takes place. This will confirm or reject the universal validity of this theory.

I also believe that this work represents a further step in the understanding of the mental architecture of the L2 learner and the processes and mechanisms underlying the interlanguage grammar. In this thesis Aspect has been considered a key issue for learners of Spanish whose first language is English. As it was pointed out in chapter 4 I believe that this aspectual difficulty is also illustrated in the difficulty that L1 English L2 Spanish learners have with other structures such as *preterite* and *imperfect*. I believe that this issue has been underestimated both in the SLA literature and in the methods used for teaching of Spanish as
a second language. However, it needs to be taken into account both in research and in practical teaching methods because it is the common element able to explain some of the major obstacles that English speakers find when facing the task of learning Spanish.

Now, I would like to address the lack of research in the first language acquisition of ser and estar and also the lack of comparison between this field and the SLA field. As we have seen through this thesis, many SLA researchers have investigated the issue of the acquisition of ser and estar in Second Language Acquisition (VanPatten, 1985 and 1987; Ryan & Lafford, 1992; Briscoe, 1995; Ramírez-Gelpi, 1995; Geeslin 2002 and 2003; Woolsey, 2006; Francis, 2007). On the other hand, research on the first language acquisition process of ser and estar is really scarce (Sera, 1992; Schmitt, Holtheuer and Miller, 2004; Schmitt & Miller, 2007). Hitherto nobody has attempted to draw parallels between the findings of these two fields, which has been one of the goals of my MA thesis. I think that future research should undertake the endeavor of investigating in more detail the mechanisms underlying the L1 acquisition process of ser and estar. Specifically it would be really interesting if future research would be able to answer open questions like: is there a copula-omission stage in L1? Are children really only representing aspect when they use estar or are they also encoding tense? What about when they use ser, at what point do they start marking tense and how does this compare to the development of estar?

In this thesis I have stated that the processes and mechanisms underlying the L1 and L2 acquisition process are intrinsically different from each other. Whereas L2 learners’ behavior is explained by a lack of understanding of the aspect category, children’s behavior is guided by exactly the opposite process: a natural saliency of the aspectual marker over the non-
aspectual marker. Also, it was claimed that there were some universal mechanisms at work in the two acquisition processes. I believe that further research in the L1 literature in this field will allow us to draw more clear comparisons between the two acquisition processes. This will be a small step in answering the big questions in the field of SLA such as: are L1 and L2 acquisition essentially the same or different processes? Are there universal mechanisms guiding the two acquisition processes or are those mechanisms only active during first language acquisition?

Also, since I was not able to explain the facts found in the FLA literature by means of the Missing Surface Inflection Hypothesis, does that mean that the theory is not valid as a theory of acquisition because it is unable to explain the two processes? Or is that a sign that the L1 and L2 processes are intrinsically different and thus cannot be explained under the same theoretical framework? I opt for the second option but I leave the reader the option to choose.

Finally, I feel that the investigation of the acquisition of ser and estar is still a subject worth exploring because it represents like no other structure the morphology/syntax/semantics/pragmatics interfaces and allow us to draw valuable conclusions about how all these fields interconnect. As we have also seen the copula is an invaluable source of information about the development of aspect and tense morphology. I believe I have made a small contribution to the field of Second Language Acquisition with my study of L2 acquisition of ser and estar by L1 English speakers. However the contributions of further researchers in this field will allow us to achieve a better understanding of the interlanguage grammar, the process of acquisition, and it will take us a step further to resolve all of those unanswerable questions in the SLA field.
Appendix

Experiment 1

Instructions

• Consent Form
• You will be shown 3 PowerPoint slides with pictures
• You will be asked 4 questions per slide in English
• You have to answer in Spanish and your answers should be COMPLETE SENTENCES.
  – For instance:
    • How many brothers and sisters do you have?
    • Tengo 3 hermanos
• Name/Course/Instructor

Los Simpsons

• Is Bart a girl or a boy?
• What is Bart doing?
  (jump=saltar)
• Is Lisa a student?
• What is Homer doing?
  (drink=beber)
What color is his face in each picture?

What color is his tongue (lengua) in each picture?

Where are the books?

Where is the picture of the lemons?

Where is the game against NC State?

Where is the concert?

Event Info
Host: UNC-CH
Type: Concert
Network: UNC

Time and Place
Date: December 3, 2008
Time: 8:00pm
Location: Memorial Hall
City/Town: Chapel Hill
Experiment 2

Name:_________________________
Course:________________________
Instructor:_____________________
First Language:_________________

QUESTIONNAIRE

Please circle the correct answer for each question (There is only one correct answer per question).

1) The hard-working man
   a) El hombre trabajador
   b) El hombre trabajadora
   c) La hombre trabajadora

2) Carlos sings very well
   a) Carlos cantas muy bien
   b) Carlos canta muy bien
   c) Carlos cantan muy bien

3) My Spanish teacher is a really nice person
   a) Mi profesor de español está muy simpático
   b) Mi profesor de español muy simpático
   c) Mi profesor de español es muy simpático

4) José is a doctor
   a) José médico
   b) José es médico
   c) José está médico

5) María is very smart. She always gets good grades
   a) María muy lista. Siempre saca muy buenas notas

84
b) María es muy lista. Siempre saca muy buenas notas  
c) María está muy lista. Siempre saca muy buenas notas

6) **Ana runs 5 miles every day**  
a) Ana corre 5 millas todos los días  
b) Ana corremos 5 millas todos los días  
c) Ana corren 5 millas todos los días

7) **The small notebook**  
a) El cuaderno pequeño  
b) El cuadernos pequeña  
c) La cuaderno pequeña

8) **The party is at my house**  
a) La fiesta es en mi casa  
b) La fiesta está en mi casa  
c) La fiesta en mi casa

9) **A long experiment**  
a) Un experimento largo  
b) Una experimento larga  
c) Una experimento largo

10) **My biology teacher is always really unfriendly but today he is being friendly**  
a) Mi profesor de Biología siempre es muy antipático, pero hoy está simpatico  
b) Mi profesor de Biología siempre es muy antipático, pero hoy simpatico  
c) Mi profesor de Biología siempre es muy antipático, pero hoy es simpatico

11) **Julio plays basketball**  
a) Julio juega al baloncesto  
b) Julio juegas al baloncesto  
c) Julio juego al baloncesto

12) **My friend studies Economics**  
a) Mi amigo estudian económicas  
b) Mi amigo estudia económicas  
c) Mi amigo estudio económicas
13) Javier is walking
   a) Javier andando
   b) Javier es andando
   c) Javier está andando

14) Cristina dances on the weekends
   a) Cristina bailamos los fines de semana
   b) Cristina bailas los fines de semana
   c) Cristina baila los fines de semana

15) Beatriz is a model
   a) Beatriz modelo
   b) Beatriz es modelo
   c) Beatriz está modelo

16) A good grade
   a) Una buena nota
   b) Una buen nota
   c) Un buen nota

17) Cristina is very pretty. She has won the Miss Spain contest
   a) Cristina es muy guapa. Ha ganado el concurso de Miss España
   b) Cristina está muy guapa. Ha ganado el concurso de Miss España
   c) Cristina muy guapa. Ha ganado el concurso de Miss España

18) The pencil is on the table
   a) El lápiz es en la mesa
   b) El lápiz está en la mesa
   c) El lápiz en la mesa

19) The girl is eating
   a) La niña es comiendo
   b) La niña comiendo
   c) La niña está comiendo

20) The yellow house
   a) El casa amarillo
   b) La casa amarilla
   c) El casa amarilla
21) Ana is ready to go to the party. She has already gotten dressed and put her make-up on.
   a) Ana es lista para ir a la fiesta. Ya se ha vestido y se ha maquillado.
   b) Ana lista para ir a la fiesta. Ya se ha vestido y se ha maquillado.
   c) Ana está lista para ir a la fiesta. Ya se ha vestido y se ha maquillado.

22) A sunny morning
   a) Una mañana soleada
   b) Un mañana soleada
   c) Una mañana soleado

23) Carmen works at Elmo’s
   a) Carmen trabajas en Elmo’s
   b) Carmen trabajamos en Elmo’s
   c) Carmen trabaja en Elmo’s

24) Clara is very pretty with that red dress
   a) Clara está muy guapa con ese vestido rojo
   b) Clara es muy guapa con ese vestido rojo.
   c) Clara muy guapa con ese vestido rojo.
BIBLIOGRAPHY


