1. Introduction

Acquiring Spanish copula selection is difficult for second language (L2) learners of Spanish from an English background (Van Patten, 1987; Geeslin, 2002; Bruhn de Garavito & Valenzuela, 2008). We present an exploratory study on the L2 acquisition of the Spanish copula verbs *ser* and *estar*. Drawing both from insights about the L1 acquisition of copula selection, and from current aspectual analyses of *ser/estar*, we investigate potential predictions about the path of development in L2 acquisition. Specifically, we consider two ideas: (a) that the semantically richer copula is acquired first in state and change-of-state contexts (1), and (b) that there is an interaction between grammatical aspect and lexical aspect encoded in the copula distinction, so that copula choice is more difficult for learners when sentences are in the past, where they have to select one of the two aspectual past tenses, preterite or imperfect (2).

(1)  
[ahora] María está bonita > María es [una niña] bonita  
[now] María ESTAR.3SG pretty Maria SER.3SG [a girl] pretty  
“Maria is pretty (now)” > “Maria is (a) pretty (girl)”

(2)  
La comida está rica > La comida estaba/ estuvo rica.  
The food ESTAR.3SG delicious the food ESTAR.IMP/ESTAR.PRET delicious  
“The food is delicious” > “The food was delicious”

2. The grammatical basis for the copula distinction

2.1. Problems characterizing the distinction

A common but incorrect description of the two copulas characterizes them as encoding a permanent/transitory distinction, corresponding to *ser* and *estar* respectively, as illustrated by (3). Such characterization immediately elicits obvious counterexamples such as in (4), where *estar* selects an adjective that refers to a permanent condition (death), and (5), where youthfulness, although generally considered to be a transitory state, appears with *ser*.

(3)  
 a.  Juan es inteligente  
John SER.3SG intelligent  
“John is intelligent”

 b.  Juan está enojado  
John ESTAR.3SG angry/annoyed  
“John is angry/annoyed”

(4)  
El presidente está muerto, pero los ministros se niegan a comunicárselo al pueblo.  
“The president is dead, but the ministers refuse to inform the public.”

(5)  
Juan es joven.  
“John is young.”

This data clearly requires a more complex account, which can address both the selectional facts, as well as the meaning shift observed with some adjectival predicates that may occur with either copula, where the choice results in different meanings. Deciding if sentences such as (6b) are true requires access to pragmatic information such as background knowledge of Maria, what counts as ‘now’, and the understanding that \( \text{estar} \) makes a reference to a stage of Maria, whereas \( \text{ser} \) does not.

(6) a. María es gorda.
   “Maria is fat.”

b. María está gorda.
   “Maria is fat (now).”

Locative contexts are another case where copula choice is semantically (as opposed to distributionally) determined. The contrasting element here is the subject of the sentence and involves the type of element located (object vs. event), while the predicate is semantically the same across contexts: a location. \( \text{Ser} \) is used for event nominals (7a), whereas \( \text{estar} \) is employed for objects (7b).

(7) a. El concierto \( \text{es} \) en la playa./*El concierto \( \text{está} \) en la playa.
   “The concert is (\( \text{ser} / \text{estar} \)) at the beach.”

b. El edificio de correos \( \text{está} \) a dos cuadras./*El edificio de correos \( \text{es} \) a dos cuadras.
   “The post office is (\( \text{estar} / \text{ser} \)) two blocks from here.”

2.2. An aspectual analysis of the copula (Schmitt, 1996; Schmitt & Miller, 2007)

The aspectual nature of the Spanish copula distinction has been explicitly understood since at least Luján (1981). It is thus best to start by situating them within the larger picture of aspectual meanings of verbs. Vendler (1967) classifies verb classes by the properties of dynamicity and telicity (8).

(8) \( \text{stativity/dynamicity} \)

<table>
<thead>
<tr>
<th>STATES</th>
<th>ACTIVITIES,</th>
<th>ACCOMPLISHMENTS,</th>
<th>ACHIEVEMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{amar/saber} )</td>
<td>( \text{correr} )</td>
<td>( \text{construir una casa} )</td>
<td>( \text{morir} )</td>
</tr>
<tr>
<td>“to love/to know”</td>
<td>“to run”</td>
<td>“to build a house”</td>
<td>“to die”</td>
</tr>
</tbody>
</table>

Given that both \( \text{ser} \) and \( \text{estar} \) are stative predicates, how can the distinction be characterized within an aspectual framework? A finer-grained definition of what a STATE is recognizes that there are two ways of being stative: by having no temporality, or by referring to a temporally delimited state. Some analyses map the copula distinction directly onto the individual vs. stage-level predicate distinction. Stage-level properties (SLPs) describe a spacio-temporal slice or stage of an individual (Angelika is in her office) and individual-level properties (ILPs) describe individuals without referring to their temporal stages (Angelika has brown hair) (Kratzer, 1996). These analyses have empirical problems. According to Schmitt & Miller (2007), they are too weak if they define the copula property in terms of selection (i.e., ‘\( \text{estar} \) selects an SLP’), and too strong if they define the copulas as a function (i.e., ‘\( \text{estar} \) takes a predicate and turns it into an SLP’). How can these basic intuitions be made to work? Schmitt (1996) proposes that while \( \text{ser/estar} \) are semantically distinct, they do not encode temporariness/permanence directly. Crucially, \( \text{ser} \) and \( \text{estar} \) have overlapping but non-identical distributions (Schmitt & Miller, 2007). Some predicates are used exclusively with one or the other copula, while others can select either copula in certain contexts (9).
The approach in Schmitt and Miller (2007) achieves the desired contrast: one description of a state defines it as not having temporality, while another, more complex description, views the denotation of a state as a property $S$ which is true of an interval $I$ so that every open subinterval $I'$ within $I$ possesses the property denoted by $S$. This distinction establishes that *ser* has no inherent meaning, and does not make reference to temporal intervals/subevents. In other words, it is a minimal copula whose only role is to lexicalize tense. Because it is semantically empty, it can be used atypically with participles, as in the case of the famous title by García Márquez where *estar indocumentado* becomes *ser indocumentado*. *Ser* can shifted via adverbs into temporary, inchoative readings (e.g., *De mañana en adelante, seré buena, te lo prometo*.

From tomorrow on, I’ll be good, I promise”), activity readings such as ACT BE readings (e.g. *¿Fuiste buena con la abuela? * “Were you good with Grandma?”) (Schmitt & Miller, 2007). *Estar*, on the other hand, contributes to the VP a subevent of the type STATE, so it carries the implicature that the state does not always hold beyond the relevant interval.

The structures in (10) represent these properties, where the additional meaning introduced by *estar* in (6) is explained by the explicit encoding of a relevantly defined STATE sub-event, which leads to an implicit, implied contrast with an alternative state of affairs (i.e., one where Maria was not fat).

\[
(10) \begin{align*}
\text{a. } & \text{AspP} \\
& \text{Asp} \quad \text{VP= Aspectually Unmarked} \\
& \quad \text{V} \quad \text{AP} \\
& \quad \text{ser} \\
\text{b. } & \text{AspP} \\
& \text{Asp} \quad \text{VP = state} \\
& \quad \text{V+state} \quad \text{AP} \\
& \quad \text{estar}
\end{align*}
\]

2.3. Grammatical vs. lexical aspect

The next step is to try to understand how the copula’s aspectual meaning interacts with grammatical aspect. A common view is that while the source of grammatical and lexical aspect is different, they can be subsumed under a simple distinction: whether an event is heterogeneous or homogeneous, or quantized/non-quantized, in analogy to the mass/count distinction of the nominal domain. Aspect is considered to be compositional and layered (11) (de Swart, 1998). The various aktionsart classes (state, activity, accomplishment, achievement) describe the eventuality as ±quantized. At the lexical level, a predicate and its complements (i.e., a VP), introduce an eventuality description (12).

\[
(11) \ [\text{Tense [aspect* [eventuality description]]]}
\]

\[
(12) \text{Eat: ACTIVITY (-Quant) Eat the apple: ACCOMPLISHMENT (+Quant)}
\]

The aspect layer is recursive, and contains functions that output eventuality types. These can be adverbs or grammatical aspect markers which modify the basic eventuality description (i.e., the perfect
outputs a state \textit{ha comido} “has eaten” = [ ] resultant \textit{STATE} after end of the event of eating []). Finally, tense markers select either type of eventuality (=quantized). If there is a selectional mismatch, type-shifter operations reconcile the mismatches. Each layer in the aspectual composition contributes to the eventuality type. So, both \textit{run} and \textit{has been running a mile} are temporally homogeneous characterizations, but the layers change the granularity of the event description. De Swart proposes an approach to French \textit{imparfait/passé simple} that describes them not as markers of grammatical aspect (i.e., not functions), but as aspectually sensitive tenses which may be used to refer to events in the case of the \textit{passé simple} or to unbounded situations in the case of the \textit{imparfait}. That is, the grammatical contrast reflects a selectional distinction between homogeneous and quantized predicates. This approach has the advantage of explaining why ungrammaticality arises from the combination of \textit{in/for} adverbials with other aspectual operators, but no ungrammaticality with the aspectual tenses:

(13) Anne joua du piano pendant deux heures (bounded event of A playing the piano for 2 hours) ‘Anne played (passé simple) the piano for two hours.’

This analysis can be applied straightforwardly to Spanish preterite/imperfect, as in Cuza (2007), who associates the respective episodic/habitual readings of the preterite and imperfect with this property.

2.4. \textit{Ser} and \textit{estar} in interaction with preterite and imperfect

The preterite feature of selecting quantized events allows it to express the meanings that a situation is temporally delimited (i.e., has a beginning and an end). By contrast, the imperfect tense selects non-quantized eventualities and is thus employed to describe an ongoing situation, whose temporal beginning and ending are left unspecified (see Table 1).

### Table 1: Past tense and aspect in English and Spanish

<table>
<thead>
<tr>
<th>Interpretations</th>
<th>English</th>
<th>Spanish</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-time events</td>
<td>Diego ate tacos (yesterday). [simple past]</td>
<td>Diego comió tacos (ayer). [preterite]</td>
</tr>
<tr>
<td>Habitual events</td>
<td>Diego ate tacos (every Sunday). [simple past]</td>
<td>Diego comía tacos (los domingos). [imperfect]</td>
</tr>
<tr>
<td>Continuous events</td>
<td>Diego was eating tacos. [past continuous]</td>
<td>Diego comía tacos. [imperfect]</td>
</tr>
</tbody>
</table>

The two copula verbs can appear in both past tenses. However, because the notion of the temporal delimitation of an event is already encoded by grammatical aspect in the preterite, the contrast between the lexical semantics of \textit{ser} and \textit{estar} appears neutralized in certain contexts (e.g. either option in 14a can be uttered at the end of a meal, but that is not true of (14b)). In other words, the aspectual anchor which is lexically provided by \textit{estar} is superfluous in the context of the higher aspectual layer encoded in the syntax, that is, the selectional feature in preterite contexts.

(14) Context: a person just getting up from a restaurant table:

a. \textit{La comida estuvo/fue buena.} “The food was good.”
b. \textit{La comida está/#es buena.} “The food is good.”

In other contexts, the copula contrast is retained. In the imperfect, the lexical contrast between the copula verbs appears relevant to the aspectual anchoring of the event. The lexical contribution of \textit{estar} can provide indication that there was an additional sub-event, with the familiar implicature that there has been a change in the characterization of the individual, so that (15a) is a description of a child who used to be generally cute, and (15b) that the child happened to look cute on the occasion.

(15) a. \textit{El niño era bonito.} “The child was cute.”
b. \textit{El niño estaba bonito.} “The child was cute.”
3. Previous studies

3.1. Copula acquisition

A variety of studies suggest both that language (L2) learners of Spanish from an English background experience difficulties in learning to differentiate the copula, but that these difficulties are not random, but follow specific paths of development instead (Van Patten, 1987; Geeslin, 2002; Bruhn de Garavito & Valenzuela, 2008). Using longitudinal data, Van Patten (1987) identified five stages in the acquisition of ser and estar: 1) total omission of copula; 2) overgeneralization of ser; 3) estar as an auxiliary verb in the present progressive; 4) estar to express location; 5) estar with adjectival predicates. Subsequent work has sought to explore explanations for these stages, and to correlate the stages with the semantics of the copulas, or their contexts of use. Geeslin (2002) adopts the notion of semantic transparency in an effort to predict which contexts are acquired first by L2 learners. Semantic transparency is a scalar parameter that bundles heterogeneous features, including some properties clearly aspectual in flavour (inherent nature, perfectivity, permanence, susceptibility to change, class vs. individual orientation), but generally refers to the degree that selection is obvious to learners in the input. Her study suggests that semantic transparency was not a good predictor of the target use of estar at the early L2 stages, but a good predictor of success at more advanced levels. Some contexts with ser showed significant development, but not those where there is lexically fixed selection. The author concludes that some of the categories falling under transparency are more explanatory in L2 development than others, and that fixed-selection contexts should be set aside from variable contexts. Woolsey’s (2008) study tried to isolate the questions of situational context and viewpoint with respect to copula selection by manipulating a temporal delimitation (characterization then, vs. characterization at the relevant temporal slice). His design manipulates directly the aspectual interpretation by eliciting descriptions of characters in a general, decontextualized manner, contrasting them with situations where the general description might differ (i.e., how an actor generally looks vs. how he looked in a given film, or contrasting how he looked in two specific pictures). However, the study was unable to elicit clear developmental trends, and lacked a native speaker baseline.

Bruhn de Garavito and Valenzuela (2008) examine to what extent speakers who have mastered copula choice with adjectives can extend this selectional knowledge. Their study finds that L2 learners understand the semantic distinctions between the copulas in adjectival contexts, but have not attained clear competence in the case of passives, where the copula reflects the grammatical distinction between adjectival and eventive passives. Their learners were generally able to distinguish grammatical from ungrammatical cases in eventive and stative passives, but their performance was significantly different from those of native speakers. L2 speakers also had some problems making choices in generic (16a) and specific contexts (16b), which require ser and estar, respectively.

(16) a. En Inglaterra, el té es/#está servido sin azúcar.
   “In England tea is served without sugar.”

b. Julia se enfada porque el café no está/#es servido.
   “Julia gets mad because the coffee is not served.”

One startling aspect of the results by Bruhn de Garavito and Valenzuela (2008) is the low performance of L2 speakers with the interaction of grammatical aspect and passive type, a fact observed by Montrul (2008). Learners were unable to differentiate the ungrammatical use of preterite with the grammatical use of the imperfect in these contexts (17), due to their low rates of acceptance of imperfect with estar.

(17) Ayer la comida #estuvo/√estaba servida en la mesa.
   “Yesterday the food was served on the table.”

It is not clear how far learners went beyond distributional associations, as they were unable to extend their success with semantic classes of adjectives to passive contexts. In sum, the evidence suggests that L2 learners start production with the semantically underspecified copula, ser, while acquisition of estar is initiated with locatives, and the selection of estar with adjectives is a gradual, later process. This pattern is contrary to the literature on children, which suggests early mastery of
selectional properties in production (Sera, 1992). However, children also have difficulties in restricting the temporal domain of interpretation of predicates, due to the demands of processing implicatures (Schmitt & Miller, 2007). Interestingly, in contexts where a subject changes or retains a property, children acquire the semantics of estar before that of ser. Schmitt and Miller attribute this to estar’s less variable meaning.

3.2. Copulas and grammatical aspect

Andersen (1986, 1991) describes an intermediate Spanish L2 stage characterized by a tendency to associate imperfect with states and activities, and preterite with achievements and accomplishments. This type of data has been associated with a view, known as the Aspect First Hypothesis, that suggests that at the initial stage, learners do not have grammatical tense and directly associate the markers with lexical aspect classes. The substantive interpretation of the Aspect First Hypothesis has been rejected, given that children at the narrow-selection stage show access to finiteness (Gavruseva, 2002). However, the observation remains that both child and adult learners show narrow lexical distribution of tense/aspect markers. Contemporary assessments will suggest that Aspect before Tense patterns reflect, not a fundamental difference in the substantive elements at the initial stage (i.e., children or L2 adults do not possess the category tense), but instead, a hierarchy of acquisition difficulties, with the more complex, or less robust aspectual combinations emerging later. What is important for our purpose is that these types of observations link both ser and estar, which are states, to the imperfect tense and predicts that learners should show initial difficulty with the preterite tense, in cases like (18):

(18) a. El domingo pasado fue tan ocupado que no salimos de casa.
   “Last Sunday was (SER.PRET) so busy that we didn’t leave the house.”
   b. El día estuvo más ajetreado que de costumbre.
   “The day was (ESTAR.PRET) more hectic than usual.”

Also of interest are studies on the L2 acquisition of Spanish tense and aspect (Slabakova & Montrul, 2002; Montrul & Slabakova, 2002; 2003), which find that the acquisition of morphology of grammatical aspect is followed by steady emergence of distinct semantic interpretations of aspect markers in association with different lexical classes. Although these authors conclude there is no actual correlation between the telicity of the verb and the selection of grammatical aspect in acquisition, their results did show persistent difficulty with the more complex combinations of grammatical and lexical aspect. A topic yet to be investigated is whether there is effect of selection of the aspectual tenses on learners’ acquisition of copula choice.

4. Study

4.1. Hypothesis and Predictions

Based on the previous studies and assuming the aspectual analysis we developed the following four hypotheses. Our first hypothesis proposes that estar should be acquired first, and that learners should have no difficulty with context with little variability, such as location of objects, as suggested in the previous literature on L2. Following the observations in Schmitt & Miller (2007), we predict learners will have more difficulties acquiring sensitivity to the context for the less specified ser, and these difficulties will appear with the selection of ser for locatives with event nominals. We can formulate a second hypothesis with regards to copula choice in change-of-state properties versus properties where no change of state has taken place, because of its marked status that directly introduces its aspectual properties. This predicts the order in the acquisition process will be as described in (1), with the more transparent, more highly specified member mastered first.

The third and fourth hypotheses have to do with the interaction of lexical aspect (copula choice) and grammatical aspect (aspectually-sensitive Spanish past tenses, preterite and imperfect). Here we see that there is neutralization in some contexts and preservation of copula sensitivity in others. In principle, once the aspectual values of preterite and imperfect have been acquired, learners should be able to extend what they know about ser and estar to past tense. However there is also the possibility
that we may find no convergence upon native-like interpretation due to the existence of ambiguous input, and the interaction between lexical aspect and grammatical aspect. We propose that both the variability, as well as the interaction in the computation of lexical and grammatical aspect will lead to an acquisitional delay. We expect learners will show better performance with copula verbs in present versus past tense, so that acquisition will proceed as in (2). Last, on the basis of the Aspect First lexical trends, we predict that imperfect would be favored over preterite for both copulas. Developmentally, hypothesis four predicts that once the aspectual values of preterite and imperfect have been acquired (in advanced learners), L2 speakers will show gradual acquisition of the lexical semantics of *ser and *estar in the imperfect (where there is no selectional mismatch between aspectual tense and stative predicate). At the same time, it predicts difficulties with the preterite, where there is a selectional mismatch between tense and copula. As a result of this neutralization of lexical information by the syntax, the input to learners will be ambiguous and they will have no basis for choosing between the copulas in preterite contexts. Thus, we predict learners may show little success in selecting correct interpretations of *ser and *estar in the preterite.

4.2. Methods and Participants

For the purpose of this study, we developed six different conditions, summarized in Table 2. The questionnaire had a total of 60 sentences: 48 with the copula verbs, 8 per each examined context, and 12 distractors. Sentences were randomized and each version of the questionnaire presented just one copula choice sentence per context.

Table 2: Summary of conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>Set up</th>
<th>Token</th>
<th>Target copula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location contexts</td>
<td>Object is at location</td>
<td>*(Está en la calle 10. Estar</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>*Es en la calle 10. Estar</td>
<td></td>
</tr>
<tr>
<td>Spatio-temporal</td>
<td>Event happened at</td>
<td>*(Está en el salon 201. Ser</td>
<td></td>
</tr>
<tr>
<td>location contexts</td>
<td>location</td>
<td>*Es en el salon 201. Ser</td>
<td></td>
</tr>
<tr>
<td>Change of state</td>
<td>She no longer is as she</td>
<td>*(Está gorda Estar</td>
<td></td>
</tr>
<tr>
<td>contexts</td>
<td>used to be</td>
<td>*Es gorda Estar</td>
<td></td>
</tr>
<tr>
<td>Non-change of State</td>
<td>She is as she has</td>
<td>*(Está gorda Ser</td>
<td></td>
</tr>
<tr>
<td>contexts</td>
<td>always been</td>
<td>*Es gorda Ser</td>
<td></td>
</tr>
<tr>
<td>Preterite contexts</td>
<td>Ser grammatical</td>
<td>*(Fue/*estuvo bonita Ser</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Estar grammatical</td>
<td>*(Estuvo/*fue amable Estar</td>
<td></td>
</tr>
<tr>
<td>Imperfect contexts</td>
<td>Ser grammatical</td>
<td>*(Era /*estaba bonita Ser</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Estar grammatical</td>
<td>*(Estaba/*era amable Estar</td>
<td></td>
</tr>
</tbody>
</table>

The first portion of the study contrasts events vs. objects in location contexts, which require *ser for the spatiotemporal situation of an event, as shown in (19a), but *estar for object location. This contrast is both the target of explicit instruction, and also the result of direct lexical association, as we assume there is little competition from selection in event nominals, which are less frequent. The second case examined is that of change-of-state contexts, such as in (6), above. This case contrasts copula use when there is no reference to a change in the property, with contexts where a change of condition is explicitly introduced, such as illustrated in (20) below. The third set of conditions were a mix of these, but situated in the past tense, in order to examine a) whether the interaction of copula choice and grammatical aspect, as encoded in the aspectually sensitive Spanish past tenses, created an additional layer of difficulty for the L2 speakers, and b) whether the copula contexts exhibited the association with grammatical aspect as would be predicted by the Aspect First literature.

(19)   a. El concierto es/#está en la playa.
        “The concert is on the beach.”

b. El edificio de correos está/#es a dos cuadras.
        “The postal office is two blocks from here.”
We used an acceptability judgment task, which consisted on a context plus a target sentence to judge with a scale from -2 to 2, where -2 is unacceptable and 2 acceptable. Example (20) illustrates a change-of-state context and the two possible answers. To control for item effects, the copulas were counterbalanced across participants, as shown in (20).

(20)  Carmen siempre andaba bien vestida… “Carmen was generally well-dressed…”
[Version A] Pero el día de su graduación era elegantísima.
[Version B] Pero el día de su graduación estaba elegantísima.

-2 -1 0 1 2

“But on her graduation day, (she) was extremely elegant.”

Participants were 24 L2 learners of Spanish from the University of Toronto, divided into an intermediate and an advanced group on the basis of a lexical test using an online word recognition task. Control participants were 12 monolingual speakers from Cuba. The acceptability judgment task was administered as a pencil and paper task, with unlimited time for response. Participants completed the questionnaire in a quiet room without assistance.

4.3. Results and discussion

We first examine group performance on the object vs. event location contexts. Figure 1 shows the acceptability rates for each copula in object and event location contexts. Native speakers perform as predicted, clearly discriminating between the two verbs in these two cases. Learners, on the other hand, show differences between the contexts. Their ability to contrast the two copulas for object location is very clear, although the intermediate learners do not have as low scores as the other two groups. The data show some differentiation between copulas for the event location contexts, but acceptances fall short of the native baseline, and do not seem to improve. Neither does the level of rejection of estar seem to improve. This apparent absence of a developmental trend contrasts with the data from the object location condition. A repeated measure ANOVA over raw scores yields a significant main effect of copula choice ($F_{1,33}=7.520$, $p=.010$), along with a significant group by copula interaction ($F_{2,33}=3.631$, $p=.038$), a highly significant interaction of context type by copula ($F_{1,33}=110.415$, $p<.000$) and a highly significant interaction of group, copula and context type ($F_{2,33}=7.996$, $p=.001$). We suggest that despite the existence of explicit instruction, learners continue to have difficulty with the expression of locations for event, which are both less frequent than objects, and also potentially more complex.

Learner’s inability to match the negative judgments of native speakers could be explained based on the semantics of estar. Estar is temporally anchored and once it is used in locative constructions becomes spatially fixed, since it combines a temporal slice with a location. This makes it more difficult to reject the constructions in which the verb appears locating something in space regardless of its event-like meaning. The copula choice in the event/object contexts is lexically conditioned, but the semantics of the verbs interact with their fixed uses, yielding variations in their canonical uses.\(^1\) For instance, it is possible to say “La biblioteca es frente al gimnasio” or “El espectáculo está ahora en Nueva York, pero la semana próxima estará en Toronto”. While the object meaning of espectáculo could be argued for, it is hard to justify an event meaning for biblioteca. These particular results suggest that L2 learners are using the semantic cues of estar, whereas L1 speakers have what can be described as a more lexically determined choice of the copula in this context.

\(^{1}\) It has been proposed that L1 speakers do not acquire these two contexts until later on (Sera 1989).

\(^{2}\) Some contexts are quite variable. If we think of a scenario in which someone is giving us a ride home, but that person does not know the exact location of our house a sentence like, it is acceptable to use ser for the spatial location of the building. Example (i) sounds quite natural.

(i) Párate, mi casa es en esta esquina. “Stop, my house is at this corner.”
We then consider the canonical case of the copula distinction with adjectives, the static vs. change-of-state contexts. Recall that the static context represents the neutral case, where predicates of type (7c) or (7d) would appear naturally with *ser to indicate things as they normally are, so that the use of *estar should be marked. Change-of-state contexts make special reference to a temporal stage and emphasize a contrast, and should be avoided with *ser. Figure 2 shows that native controls perform, again, as expected, showing a contrast in acceptability for the two copulas in both contexts.

Rejection of *ser in change-of-state contexts is stronger that rejection of *estar in static contexts. This result is not surprising, suggesting that *estar can cover part of the semantic space of *ser of *ser since *estar X can be interpreted as a point in the state of *ser X, with X being an ambiguous adjective. Interestingly, learners reject *estar in static contexts more than native speakers. This more evident semantic complementarity could attest to the effect of instruction. For native speakers, *ser can function as the opposite of *estar in change-of-state contexts, but *estar is not the opposite of *ser in static contexts. We also note a trend for L2 learners of accepting *ser more than *estar generally. These observations are supported by our statistical analysis. We conducted a repeated measure ANOVA on mean rating per condition. There was a significant main effect of context type (F_{1,33}=4.605, p=.039), and a significant group by context type interaction (F_{2,33}=4.761, p=.015). Finally, there was also a highly significant interaction of group by copula (F_{2,33}=19.844, p<.000).

As a final step, we turn to the contexts where copulas were presented in the aspectually sensitive past tenses. Data for imperfective contexts is presented in Figure 3. L2 speakers approximate native speakers in differentiating acceptable from non-acceptable contexts, thus showing native-like patterns.
from the outset. Nevertheless, while intermediate learners seem confident in the use of *ser* in acceptable contexts, in the case of *estar* we observe a gradual increase in the acceptability of the target contexts. This is similar to the data in the first two conditions. For the ungrammaticality conditions, in contrast, we note there is a developmental trend with the context where *ser* is rejected, and target-like, steady performance in the contexts where *estar* is not deemed acceptable. A repeated measures ANOVA shows a highly significant main effect of grammaticality ($F_{1,33}=10.578, p<.000$). The interaction between grammaticality and group approached significance ($F_{2,33}=3.122, p=.057$), but there was no overall effect of copula $F_{1,33}=.792, p=.380$).

Figure 3. Mean acceptability rating per group for SER and ESTAR contexts in the imperfect.

![Figure 3](image3.png)

Preterite contexts present more of a challenge for L2 learners, who, for the most part, fail to distinguish which contexts are acceptable and which are not. Native speakers accept the copulas in target contexts, and reject them in the unacceptable contexts, but the distinction is small. Scores of the unacceptable cases are around zero and, for the case of acceptable context with *estar*, natives give the weakest acceptances of the acceptable cases across all conditions.

Figure 4. Mean acceptability ratings per group for SER and ESTAR contexts in the preterite.

![Figure 4](image4.png)

Overall, L2 learners’ acceptance of *ser* in target contexts is very low, undistinguishable from unacceptable contexts. For *estar*-contexts, intermediate learners accept at the same rate as native speakers, but the advanced learners do not. They are equally reluctant to accept *estar* in ungrammatical contexts. We find a significant main effect of grammaticality ($F_{1,33}=9.216, p=.005$), a significant grammaticality by group interaction ($F_{2,33}=7.031, p=.015$), and again, no effect of copula.

To address the last hypothesis, we analyze the effect of tense and copula for acceptable contexts only. The statistical analysis shows a highly significant effect of group, with the native speakers showing the higher, most robust levels of acceptances, and the advanced speakers showing the most
uncertainty. As predicted, we find a highly significant effect of tense (F_{1,33}=19.165, p<=.000), with both copulas rated higher on the average when presented in the imperfective than when presented in the preterite. The tense by group interaction is significant (F_{2,33}=8.329, p=.001), but this is not the case in the three-way interaction between copula, group and tense (F_{2,33}=2.300, p=.116).

5. Conclusions

Overall, our findings suggest that even though *estar* has a lexical semantics that expresses a more stable meaning than *ser* by anchoring the predicate to a point in time, the L2 learners do not clearly benefit from this in their acquisition process. The results from the event/object location contexts appear to contrast with the results of change-of-state versus static contexts in this regard, since it may seem that performance with *estar* is at target in the former, whereas performance with *ser* is target-like for the change-of-state/static stage comparison. However, it is important to note that in each of these cases, these results pattern along the most robust usage. So the correct inference is that *estar* is acquired earlier only when the construction specifies the copula distribution. This is the case of object location with *estar*, which points to lexically-driven learning. Nonetheless, the observation that L2 speakers do not reject *estar* in contexts in which they have to locate an event regardless of its non-object characteristics suggests that they are using the semantic cues of *estar*. In contrast, they are quite keen on rejecting the use of *ser* with object location. Furthermore, L2 learners fail to take advantage of their knowledge of the semantic specifications of *estar* in change-of-state contexts, and have a performance quite divergent from that of natives. A similar observation can be made about the past tense imperfect contexts, where we note gradual convergence on the acceptability of *estar*, but early acceptance of *ser* at target levels. The results with preterite contexts do not show interpretable developmental trends, so they cannot be considered for this particular question. We thus conclude, contrary to our first hypothesis, that the L2 acquisition of *estar* is not facilitated by it being more semantically transparent than *ser*. This conclusion also runs contrary to received knowledge on copula acquisition, as in Geeslin 2002, and subsequent work.

Learners demonstrate earlier mastery of the interpretations of *ser* and *estar*, and clearer developmental trends in present than in the past tenses. This result confirms our third hypothesis, which predicts that the copulas will be acquired earlier in the present tense due the interaction of lexical and grammatical aspect in the past. Participants in our study correctly reject *estar* in non-target contexts from the intermediate level onwards in the imperfect, and seem to overgeneralize this rejection at the advanced stage, beyond native baselines. However, intermediate learners fail to reject *ser* in non-target contexts in either preterite or imperfect. In the preterite, learners generally do not seem to be making the copula contrast at all. As for native speakers, they clearly accept both verbs in target contexts in both past tenses, but neither *ser* nor *estar* is strongly rejected in non-target contexts. This suggests that the interaction of lexical and grammatical aspect in the past tense neutralizes the relevant distinctions between the two copula verbs. Last, we note a trend towards higher acceptance of both copulas with the Spanish imperfect over the preterite, when we consider only grammatical scenarios. This observation lends support to our fourth hypothesis. Finally, we note that the observed difficulty with interaction between aspectual copula choice and grammatical aspect in the past tense can be interpreted on different grounds. It could be claimed that the complexity of processing multiple aspectual layers would lead to decreased performance. Although this remains a plausible interpretation of the past tense facts, testing it is beyond the limits of this type of study.

From this data we can conclude that although learners are sensitive to the semantic differences between the two copulas in Spanish, the acquisition path that they follow is quite complex. There are indications in our data that the semantic representation of the two verbs by L2 and L1 speakers are divergent, beyond the obvious observation that native speakers have stronger, more robust intuitions of both what is acceptable and what is not. Finally, and most importantly, unlike children in the Schmitt and Miller (2007) study, adult L2 learners did not exploit the semantic transparency of *estar* in change of state contexts.

As an ancillary remark, we note the variability in some contexts in the native speaker group, specifically in change-of-state/static and past tense contexts in which there is low rejection rate of the non-target copula. This variability suggests a need to examine these contexts in more detail before
making conclusions about the nature of L2 acquisition. This line of research would benefit in the future from the study of spontaneous production of native and learners in the mentioned contexts, with careful control, as advocated by Woolsey (2008), of the syntactic and semantic elements that influence the interpretation of aspectual copulas.

References


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