

# Semantic Redistribution of Copulas *ser* and *estar* in Catalan/Spanish Bilingual Children

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## 1. Introduction

The acquisition of the semantic distribution of copula verbs *ser* and *estar* in Spanish ('to be' in English) has been found challenging in bilingual children (Arnaus-Gil & Müller, 2015; Silva-Corvalán & Montanari, 2008) and adult L2 learners (Bruhn de Garavito & Valenzuela, 2008; Geeslin & Guijarro-Fuentes, 2006; VanPatten, 1985). Although some canonical uses are easily acquired, variability often remains in less frequent domains of use. We contribute to previous research by examining the acquisition of *ser* and *estar* in Catalan and Spanish among simultaneous bilingual children and adults born and raised in Palma de Mallorca, Spain. Spanish and Catalan behave differently in certain contexts but similarly in others in regard to copula distribution. In Spanish, *estar* is required in strict locative constructions with prepositional phrases (*Los libros están sobre la mesa* "The books are on the table") (Demonte & Masullo, 1999), while in Catalan both copulas are allowed depending on the animacy features of the subject (Brucart, 2012). Moreover, Spanish allows only *estar* with stage level predicates (*La sopa está fría* "The soup is cold"), while Catalan allows both copula verbs. However, both languages overlap in their restrictive use of *ser* with event locatives with prepositional phrases (PPs) (*La boda es en la iglesia* "The wedding is at the church"), where *estar* is not allowed (Camacho, 2012). In addition to previous acquisition work, we examine the extent to which bilingual children pattern with bilingual adults, and analyze the distribution of *ser* and *estar* in frequent and less frequent domains, including adverbial locatives, adjectival predicates and event locatives with prepositional phrases (PP) (Sera, 1992). Finally, we present data from Spanish monolingual children to analyze the extent to which they behave compared with child bilinguals.

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In what follows, we provide a background on the semantic properties of copulas *ser* and *estar* in Spanish and Catalan. Section 3 highlights previous acquisition work among monolingual children, bilingual children and adults, followed by our research questions and hypotheses. Section 4 presents the study, and the results. The discussion and conclusions are presented in section 5.

## 2. Theoretical background

The distribution of copula verbs *ser* and *estar* in Spanish has been often analyzed in the literature in terms of individual-level (IL) vs. stage-level (SL) predicates respectively (Camacho, 2012; Diesing, 1992; Fernández-Leborans, 1999). According to this view, copula *estar* represents the lexical exponent of stage-level predicates, as it denotes temporary conditions that typically fluctuate. Copula *ser*, in contrast, represents the lexical component of individual-level predicates, as it denotes more permanent properties. This can be shown in (1a-1b) below:

- (1) a. *Mario está/\*es contento.* (temporary property)  
       “Mario is happy”  
       b. *Los estudiantes son/\*están inteligentes.* (permanent property)  
       “The students are intelligent.”

An individual level vs. stage level analysis is helpful from a descriptive perspective but this is not categorical across the board and falls short from being a grammatical feature (see Schmitt, Holtheuer and Miller, 2004 for discussion). For example, although *estar* is often used to describe temporary characterizations, there are cases where it is used to describe inherent properties (e.g., *El anciano está muerto* “The old man is dead”), leading to variability in the input. Furthermore, many adjectival predicates (e.g., *guapo* “good looking”, *flaco* “thin”, *viejo* “old”, *alto* “tall”) overlap with either *ser* or *estar* depending on the intended meaning of the speaker and knowledge of the world (Schmitt & Miller, 2007). The distinction appears to be more aspectual in nature than syntactic-semantic (Fernández-Leborans, 1995; Schmitt et al., 2004). In addition to the more canonical contexts of *ser* or *estar* use in Spanish (adverbial locatives, predicate adjectives), there is also the case of event locatives with prepositional phrases (ELPPs), where *ser* is required:

- (2) *El concierto es/\*está en la Plaza Mayor.* (event locative with PP)  
       “The concert is at the Plaza Mayor”

In (2), copula verb *estar* is not allowed, as the subject DP is interpreted as an event (not an object). *Ser* is required to imply that this event will take place in a specific location. Camacho (2012) argues that eventive subjects DPs as in (2) are aspectually marked, and therefore, they block agreement between *estar* and the PP. Event locatives are interesting to examine because they are not as

frequent in day-to-day input, compared with more canonical uses. In their seminal study, Silva-Corvalán & Montanari (2008) found only one instance of eventive locatives out of 696 tokens produced by the child (e.g., *Mi cumpleaños está en mayo* “My birthday is in May”, Nico, 2;7), and only three instances out of 510 tokens produced by the adults. Sera (2008) argues that the tendency to use *estar* for the location of events might stem from the incorrect interpretation of the event as an object by the child, given the existent dominance of *estar* use with spatial locations in the input.

Like Spanish, copulas *ésser/ser* and *estar* in Catalan typically denote permanent and circumstantial properties of an object or person, as well as spatial location, among other uses (Brucart, 2012). However, in contrast with Spanish, the use of one copula versus the other is variable as far as adjectives and spatial locatives are concern, and both can be used indistinctively without affecting the aspectual meaning of the phrase, as shown in (3a-3c) below:

- (3) a. La sopa *és/està* calenta. (adjectival predicate)  
“The soup is hot”
- b. Dora *és/està* a la platja. (locative adverb, animate)  
“Dora is at the beach.”
- c. Les claus *estan/són* en la taula. (locative adverb, inanimate)  
“The keys are on the table.”

In (3a), the intended meaning is that the soup is hot at that specific moment, and not a permanent condition; however, in contrast with Spanish, either *ésser/ser* or *estar* can be used in Catalan. In (3b-3c), the intended meaning is that of a spatial location, but in contrast with Spanish where *estar* is required, Catalan allows both copula verbs.

Brucart (2012) argues that the animacy of the subject DP plays a role in copula selection in spatial locatives. Others have argued that in ‘standard’ Catalan, only *ésser/ser* is allowed in locative constructions (Solá 1987), and that the use of *estar* is the result of contact with Spanish and internal language change (Sanz & González, 1995). As discussed earlier for Spanish, previous research also proposes an aspectual distinction for Catalan copulas. Brucart (2012) argues that copula *estar* in Catalan is aspectually specified for [+bounded] eventualities (terminal relation), while *ésser/ser* is not (aspectually unmarked). Like Spanish, *ésser/ser* is also required with eventive locatives with prepositional phrases (*La festa és/\*està a la casa dels Simpsons* “The party is at the Simpsons”).

### 3. Previous acquisition research

Children's acquisition of *ser* and *estar* distinctions in Spanish has been examined by numerous studies (Holtheuer, Miller & Schmitt, 2011; Holtheuer, 2011; Schmitt & Miller, 2007; Silva-Corvalán & Montanari, 2008). The primary

aim of many of these studies has been to determine the age at which children show adult-like distributions of the copulas, and the age at which they make the temporary vs. inherent distinction of certain copulas plus adjective combinations. Researchers have found adult-like behaviour by 3;0 years of age, producing both copulas in a variety of syntactic constructions. For example, Sera (1992) reports that Spanish children as young as 3;0 years of age use *ser* with NPs and *estar* with locative PPs just as adults do, and argues that children use syntactic clues in order to determine which copula they should use. However, children as old as 11;0 years of age incorrectly use *estar* to locate events, which suggests lack of sensitivity to semantic clues. Sera concluded that children, as well as adults, seem to classify adjectives as either holding a *ser* or an *estar* status. Young children preferred *ser* with adjectives that typically appear with *ser* in the adult grammar 78% of the time, and used *estar* with adjectives that typically appear with *estar* 62% of the time. Other researchers (e.g., Schmitt & Miller, 2007) have found that monolingual Spanish children are restrictive in their interpretation of *estar*, associating *estar* predicates to temporary properties, but are more flexible in their interpretation of *ser* predicates, associating them to both temporary and inherent properties. In this regard, Schmitt and Miller (2007) examined children's ability to distinguish between the Spanish copulas when copula choice depends on the properties of the context; furthermore, they tested the extent to which children are able to restrict the temporal domain of evaluation. The authors argue that the children are able to distinguish between the two copulas in an almost adult-like manner, but encounter problems when required to restrict the domain of evaluation of each copula. This supports the hypothesis that children have difficulties with domain restrictions.

In regard to child bilinguals, the presence of non-adult patterns in the distribution of copula verbs, and the potential role of crosslinguistic influence, have occupied a central place. Silva-Corvalán and Montanari (2008) studied the acquisition of copulas *ser* and *estar* by a Spanish–English bilingual child from the age of 1;6 to 3;0. The authors examined the role of crosslinguistic influence, and considered the distributional frequencies of copular constructions among the child and his adult care providers. The authors found that copular constructions develop autonomously, but with a slight delay in the acquisition of *estar*, which suggests crosslinguistic interaction. The distributional analysis reveals parallels between the children's and the adults' uses of copulas, thus supporting a process of acquisition guided by the nature of the interactions that the child enters into with the adults. More recently, Arnaus-Gil and Müller (2015) examined the early acquisition of Spanish predicative adjectives accompanied with copula selection, and the position of attributive adjectives in simultaneous Spanish–German and Spanish–French bilinguals and Spanish–Catalan–German trilingual children. Regarding copula selection, the authors found crosslinguistic influence in the Spanish–German/French bilinguals, resulting in a delay in the acquisition of Spanish copulas. Bilingual children overgeneralize the less complex analysis, mainly if it competes with the more complex analysis in one language.

In regard to adult Spanish-Catalan bilinguals, Sanz & González (1995) examined *ésser/ser* and *estar* distinctions in Tortosí Catalan. The author found evidence of linguistic change favouring the use of *estar* over *ésser/ser*. The generalization of *estar* was favoured by the animacy of the discourse topic and syntactic subject and by the use of adjectives denoting physical description. The author also found that the younger the speaker, the higher the chance of finding *estar* in the data. Recent work by Perpiñán (2015) examining the development of locative and existential predicates in Catalan shows a delayed development of *estar* to express location, and incorrect use of *ésser/ser* to locate objects. Perpiñán argues that given the case of complex semantics but simple syntax, the phenomenon is relatively unproblematic for L2 learners even at intermediate proficiency.

### 3.1. Research Questions and Predictions

Based on previous work in the acquisition of copula distribution in Spanish, as well as the existing differences between Spanish and Catalan, we pose the following research questions:

**RQ1:** To what extent do Spanish-Catalan simultaneous bilingual children acquire the semantic restrictions of copula use in each language?

**RQ2:** Are some domains of use more difficult to acquire than others?

**RQ3:** To what extent do bilingual children exposed to Catalan and Spanish from birth diverge from their adult counterparts and from monolingual children of similar age?

If overextension of copula *ser* to contexts where *estar* should be used or vice-versa stems from cross-language interaction (Sanz & González, 1995; Silva-Corvalán & Montanari, 2008), we hypothesize an overextension of *estar* in Catalan with stage level predicates and strict locatives due to cross-linguistic influence from Spanish. However, we do not predict difficulties in either Spanish or Catalan with event locatives with PP, as in both languages *ser* is restricted in this domain (Müller & Hulk, 2001). However, it is also possible that crosslinguistic influence is only partially responsible, and other factors like input frequency effects and processing load vulnerability at the syntax-semantics interface might lead to delays in the complete specification of less frequent subclasses of copula use. Furthermore, we expect bilingual children to behave significantly different from adults and from monolingual children stemming from a developmental delay in early child bilingual development.

## 4. The study

### 4.1. Participants

There were a total of 61 participants in the study: 21 simultaneous bilingual children, 19 adult bilinguals, and 21 Spanish monolingual children. The bilingual children and adults were born and raised in Mallorca, Spain. The monolingual children were born and raised in Madrid. All of the children were tested in a quiet room in their school setting, and completed the necessary consent forms.

The bilingual children ( $R=6;7-11;0$ ;  $M=9;6$ ;  $SD=2.04$ ) were exposed to both languages from an early age at home, in social situations and at school. Language of instruction at school was primarily in Catalan. The parents reported their children to speak both Spanish and Catalan with friends and siblings. The majority of the mothers and the fathers also reported to be completely fluent or quite fluent in both languages. The adult bilinguals ( $R=18-27$ ;  $M=21;4$ ;  $SD=2.7$ ) were university students at a major research university in Palma de Mallorca. All of them have been exposed to Spanish and Catalan from birth at home, at school, and in social settings, and were completely fluent in both languages. The monolingual children ( $R=7;5-10;9$ ;  $M=9;7$ ;  $SD=0.58$ ) were born and raised in the Autonomous Community of Madrid, Spain.

### 4.2. Structures under analysis

We examined copula use and distribution in the following contexts: (1) locative adverbs with animate subjects (4a-4b); (2) locative adverbs with inanimate subjects (5a-5b); (3) adjectival predicates (6a-6b); (4) event locatives with PP (7a-7b):

**Table 1: Structures examined**

Condition	Spanish	Catalan	Copula
Locative animate	(4a) Dora <i>está</i> en la playa “Dora is at the beach”	(4b) Dora <i>és/està</i> a la platja “Dora is at the beach”	SPAN: <i>estar</i> CAT: <i>estar/ser</i>
Locative inanimate	(5a) Las llaves <i>están</i> en la mesa “The keys are on the table”	(5b) Les claus <i>estan/són</i> en la taula. “The keys are on the table”	SPAN: <i>estar</i> CAT: <i>estar</i> or <i>ser</i>
Adjectives	(6a) La sopa <i>está</i> caliente “The soup is hot”	(6b) La sopa <i>és/està</i> calenta “The soup is hot”	SPAN: <i>estar</i> CAT: <i>estar</i> or <i>ser</i>
Event locatives w/PP	(7a) La boda <i>es</i> en la iglesia “The wedding is at the church”	(7b) El casament <i>és</i> a l'església “The wedding is at the church”	SPAN: <i>ser</i> CAT: <i>ser</i>

### 4.3. Tasks

#### 4.3.1. Elicited production task

We implemented an elicited production task to elicit copula use. The participants were presented with a preamble followed by a prompt asking them to provide a response. The response had to be consistent with the preamble and the photo provided. This is represented in (8) and (9) below:

(8) *Locative animate -Spanish (ESTAR required)*

**Preamble:** *Dora ha salido a dar un paseo por Palma. Bart quiere jugar con ella pero no sabe dónde y te pregunta. “Dora has gone out for a walk around Palma. Bart wants to play with her but he does not know where she is and he asks you.”*

**Prompt:** *Dile a Bart dónde... “Tell Bart where...”*  
*(here a photo a Dora playing at the beach)*

**Expected response:** *Dora está en la playa. “Dora is at the beach”*

(9) *Event locative with PP -Catalan (SER required)*

**Preamble:** *Avui hi ha una gran festa per a Lisa. Dora vol anar a la festa però no sap on i et pregunta. “Today there is a big party for Lisa. Dora wants to go but does not know where and she asks you.”*

**Prompt:** *Digues-li a Dora on... “Tell Dora where...”*  
*(here a photo of a birthday party at the Simpson’s)*

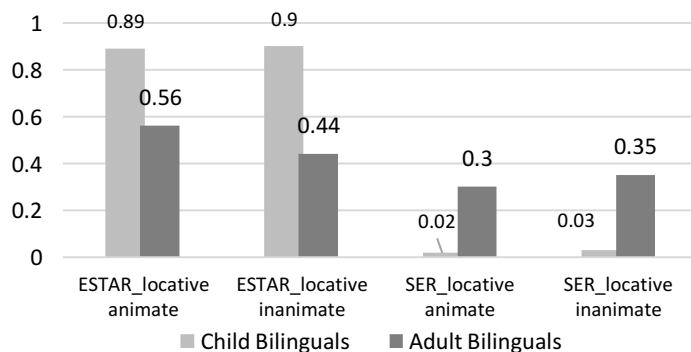
**Expected response:** *La festa és a la casa dels Simpsons.*  
*“The party is at the Simpsons”*

The participants were tested by two native speakers of Spanish and Catalan respectively. The task was counterbalanced across participants and randomized. In what follows we discuss our results.

### 4.4. Results for Catalan

#### 4.4.1. Locative constructions

We predicted Catalan bilingual children to show overextension of *estar*, as well as limited use of *ésser/ser* in locative constructions due to crosslinguistic influence from Spanish where *estar* is required. As expected, results showed *estar* overuse among the bilingual children with both animate (89%) and inanimate (90%) subjects. The use of *ésser/ser* was restricted regardless of the animacy features of the subject (around 0.2% for both animates and inanimate). The adults, in contrast, showed a more optional pattern (animate, *estar*=56%; *ser*=30%; inanimate, *estar*=44%; *ser*=35%). This is represented in Figure 1 below:

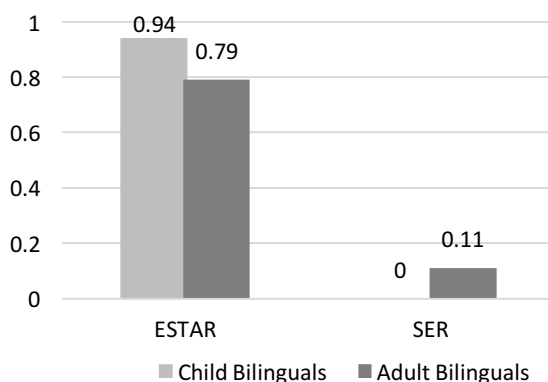


**Figure 1: Proportion of copula use in locative constructions in Catalan**

Child bilinguals overextended copula *estar* with locative constructions regardless of animacy features. The adults, however, showed a more balanced distribution of the two copulas, and a few cases of ‘other’ responses. An independent samples T-test showed significant differences between the two groups in regard to their proportion of *estar* use with animate,  $t(37) = 4.2$ ,  $p < .001$  and inanimate subjects,  $t(37) = 6.4$ ,  $p < .001$ . The two groups also behaved significantly different from each other in regard to their proportion of *ser* use with animate  $t(36) = -4.2$ ,  $p < .001$  and inanimate subjects ( $t(36) = -4.3$ ,  $p < .001$ ).

#### 4.4.2. Adjectival predicates

With stage-level predicates, both bilingual groups preferred *estar* (children, 94%; adults, 79%), as represented in Figure 2:



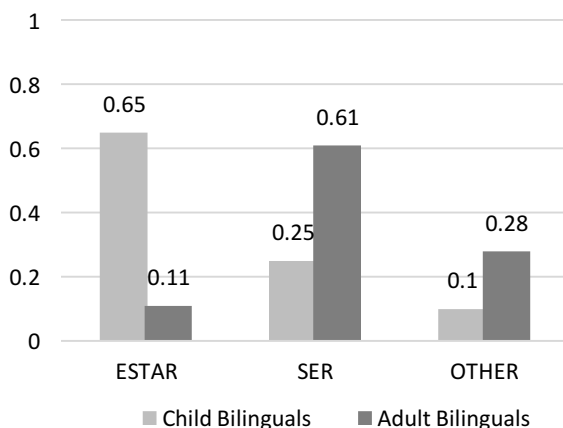
**Figure 2: Proportion of copula use with stage-level predicates in Catalan**



There were also a few cases of ‘other’ structures among the children and the adults. Although both groups preferred *estar* over *ser*, the child bilinguals did so significantly more than the adults ( $t(37) = 3.4, p < .002$ ), which suggests a pattern of *estar* overextension with adjectival predicates in Catalan children, as predicted.

#### 4.4.3. Event locatives with PP

The bilingual children, once again, overextended *estar* (*estar*=65%) and showed a very decreased use of *ser* (25%). In contrast, the adult bilinguals preferred *ésser/ser* most of the time (61%), and showed a decreased use of *estar* (11%). This counters our expectations, as both Spanish and Catalan disallow copula *estar* with event nominals. This is represented in Figure 3:



**Figure 3: Proportion of copula use with event locatives in Catalan**

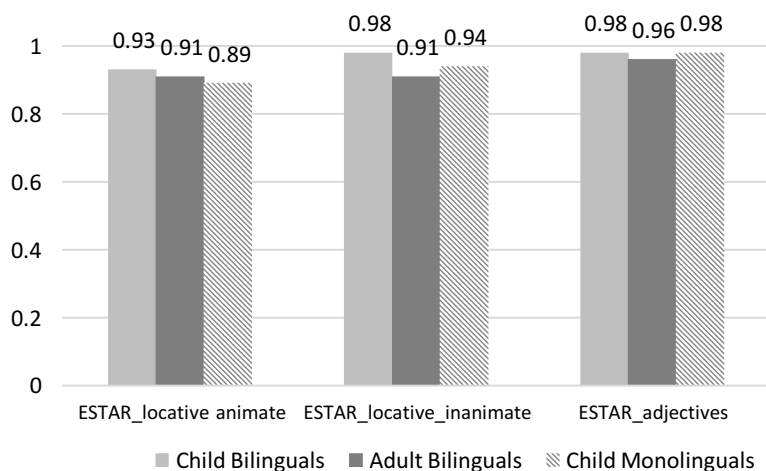
In contrast with other uses of *ésser/ser* and *estar*, event locatives with PP are also possible with a variety of other verbs expressing the same meaning of “taking place” (*celebrarse*; *tener lugar*; *realizarse*). The bilingual children use these other verbs 10% of the time and the adult bilinguals 28% of the time. An independent samples T-test showed significant differences between the two groups in their proportion of copula use (*estar*,  $t(37) = 5.9, p < .001$ ; *ser*,  $t(37) = -3.4, p < .001$ ).

## 4.5. Results for Spanish

### 4.5.1. Locative constructions and adjectival predicates

Both the child and adult bilinguals preferred *estar* categorically with animate and inanimate locative constructions. Similar results were found with stage-level predicates, where both bilingual groups categorically preferred *estar*.

The Spanish monolingual children also behaved target like, using *estar* categorically over *ser* in both locative constructions and adjectival predicates. This is shown in Figure 4:



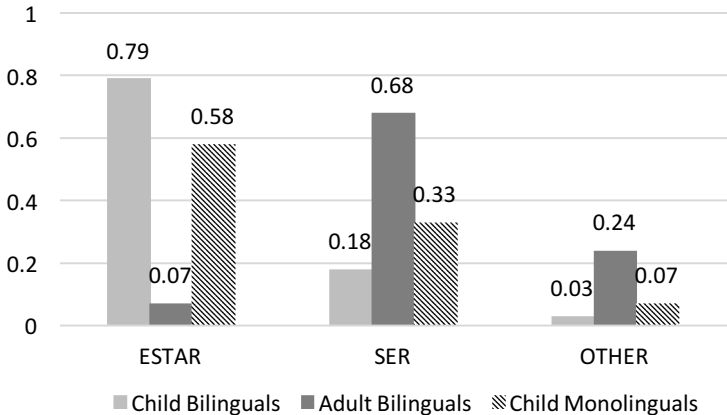
**Figure 4: Proportion of copula use in locative constructions and adjectival predicates in Spanish**

There was only one instance of *ser* use among the child bilinguals with inanimate locative constructions (*La Biblioteca Nacional es en Madrid* ‘The National Library is in Madrid’), and zero instances of *ser* use with adjectival constructions. There were a few instances of ‘other’ structures with both locatives and adjectives. An independent samples T-test showed no significant differences among the child and the adult bilinguals with locative constructions (animate,  $t(34) = .47$ ,  $p = .635$ ; inanimate,  $t(34) = 1.83$ ,  $p = .077$ ). The two bilingual groups did not show any significant differences in their use of *estar* with stage level predicates either,  $t(34) = .879$ ,  $p = .386$ . To examine whether the child bilinguals behaved differently from their monolingual counterparts, we also compared these two groups in regard to their use of copula *estar*; results showed no significant differences with either locatives (animate,  $t(37) = .78$ ,  $p = .439$ ; inanimate,  $t(37) = 1.042$ ,  $p = .304$ ) or stage level predicates,  $t(37) = -.159$ ,  $p = .875$ .

#### 4.5.2. Event locatives with PP

As in the case of Catalan, the bilingual children overextended copula *estar* to event locatives (79%), and showed restricted use of *ser* (18%). The adult bilinguals, however, behaved target-like in their preference for *ser* (68%) vs. *estar* (.07%). In contrast to what we expected, the monolingual children also preferred *estar* (58%) over *ser* (33%) although to a lesser extent than the

bilingual children. This is interesting, as it counters strong predictions of cross-linguistic influence in early child bilingual development. This is shown in Figure 5:



**Figure 5: Proportion of copula use with event locatives in Spanish**

An independent samples T-test revealed significant differences between the child bilinguals and the adult bilinguals in regard to copula use with event locatives (*estar*,  $t(34) = 9.64, p < .001$ ; *ser*,  $t(34) = -4.77, p < .001$ ). There were also significant differences between the child bilinguals and the child monolinguals in their use of *estar* with event locatives ( $t(37) = 1.98, p < .05$ ) but not with *ser*,  $t(37) = -1.462, p = .152$ .

### 5. Discussion and Conclusions

The main research question that motivated the present study was the extent to which simultaneous bilingual children have adult-like knowledge of the semantic restrictions of copula use in Catalan and Spanish. Our results show that as far as Catalan is concerned, they do not, not even in children as old as 11;0 years of age. The bilingual children overextended *estar* significantly more than the adult bilinguals in locatives and adjectival predicates in Catalan, and showed limited use of *ésser/ser* in these two contexts. These results confirm our expectations of crosslinguistic influence from Spanish. We did not find instances of bidirectional transfer in our data; the bilingual children did not behave significantly different from the adults or from the Spanish monolingual children as far as copula use in Spanish was concerned. With locatives and stage level predicates in Spanish, all groups behaved at ceiling, using *estar* categorically.

In contrast to our expectations, we found overextension of *estar* among the bilingual children with event locatives in both Catalan (65%) and Spanish (79%), compared to the adult bilinguals and the Spanish monolingual children. The bilingual children showed restrictive use of *ser*, which is the required copula in this context. However, unexpectedly, the Spanish monolingual children from Madrid also overextended *estar* with event locatives, although in a lesser extent than the child bilinguals (58%). The adult bilinguals behaved target like in their restricted use of *estar* with event locatives in both Catalan (11%) and Spanish (0.07%). This indicates that a change in progress in the use of *estar* with event nominals is not taking place in either language and that the asymmetries shown by the bilingual and monolingual children go beyond crosslinguistic influence effects, as far as event locatives are concerned.

We would like to argue for developmental delays in the complete specification of the semantic features constraining copula selection in Catalan locatives and adjectival predicates, leading to a restrictive use of *ser* in bilingual children. In regard to event locatives, our data support previous research arguing for difficulties among young children with domain restrictions, and the target specification of fine-grained interpretative properties (Schmitt & Miller, 2007). The use of copula *ser* with event locatives is also much less frequent in day-to-day input than are locative or adjectival predicates. Furthermore, *ser* competes with other verb forms expressing the same event locative meaning (e.g., *tendrá lugar*, *se realizará*, *se hará*, *se llevará a cabo*), leading to reduced input, and consequent developmental delays in the specification of this less frequent subclass of copula *ser* use (Yang, 2016).

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