

GENERICITY AND THE INTERPRETATION OF THE COPULAS BY SPANISH-SPEAKING CHILDREN*

LA GENERICIDAD Y LA INTERPRETACIÓN DE LAS CÓPULAS EN
EL ESPAÑOL INFANTIL

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ABSTRACT

In Spanish the copulas *ser* and *estar* correlate with generic and specific interpretations, respectively. Likewise, both adjective types (scalar vs. non-scalar) and animacy of the sentential subject have been found to impact generic vs. specific interpretations in speakers. The current study extends upon previous research by investigating the interplay between copula, adjective type, and animacy in children's ability to access the generic vs. specific readings of the two copulas. The results of two comprehension experiments indicate that children treat the two copulas differently, associating *ser* + adjective constructions to generic interpretations significantly more often than they do for *estar* + adjective constructions. Nevertheless, the results also show that children do not reach adult levels on their interpretation of *estar* + adjective constructions. Instead, children's performance also depends on adjective type (scalar vs. non-scalar) and animacy of the subject. The results suggest that children have knowledge of the generic and existential interpretations

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associated with *ser* and *estar*, but that, in addition, they use the semantic structure of adjectives and their knowledge of the world (typicality of properties and how they apply to animate v. inanimate subjects) to assign generic and existential interpretations to the copulas.

Keywords: Semantics, generic interpretation, Spanish copulas, adjective type.

RESUMEN

En español, las cópulas *ser* y *estar* se asocian con interpretaciones genéricas y específicas, respectivamente. Además, existe evidencia de que tanto la clase de adjetivo (escolar, no escolar) como la animación del sujeto oracional influyen en cómo los hablantes interpretan oraciones de manera genérica o específica. El presente estudio investiga cómo estos factores inciden en la capacidad de asignar interpretaciones genéricas o específicas a las dos cópulas. Los resultados de dos experimentos de comprensión indican que los niños interpretan las cópulas de manera diferente al asignar significativamente más interpretaciones genéricas a la construcción “*ser* + adjetivo” que a la construcción “*estar* + adjetivo”. Sin embargo, los resultados muestran que los niños no alcanzan niveles adultos en la interpretación de la construcción “*estar* + adjetivo”. Esto se debe a que la clase de adjetivo y la animación del sujeto influyen en la asignación de interpretaciones genéricas a construcciones con *estar*. Los resultados sugieren que los niños saben que *ser* y *estar* se asocian con interpretaciones genéricas y específicas respectivamente, pero que, además, hacen uso de la estructura semántica del adjetivo y su conocimiento del mundo (tipicidad de las propiedades y cómo se aplican a sujetos animados y no animados) para asignar interpretaciones a oraciones con *ser* y *estar*.

Palabras clave: Semántica, interpretación genérica, cópulas en español, clase de adjetivos.

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1. INTRODUCTION

Generic statements express generalizations that apply to members of a kind rather than to individuals (Carlson & Pelletier, 1995) and languages use a variety of ways to express generic meanings (Krifka et al., 1995). In English, generic statements (as opposed to specific instances of an exemplar) can be expressed by the use of bare nouns (e.g. *Grapes are sweet* vs. *The grapes are sweet*). While the bare noun *grapes* is interpreted as referring to grapes as a kind of fruit, the noun phrase headed by the determiner *the* is interpreted as referring to a particular set of grapes, and not to grapes more generally.

Unlike English, Spanish definite noun phrases can occur in generic statements;

bare plural noun phrases are ungrammatical in subject position in Spanish (Chierchia, 1998; Longobardi, 1994, 2001; Pérez-Leroux, Munn, Schmitt y DeIrish, 2004). One way to distinguish between the generic v. specific readings of sentences with definite noun phrases is through the use of the Spanish copula verbs, *ser* and *estar*. While *ser* predicates can refer to both existential and generic facts, *estar* predicates refer exclusively to existential facts, as the sentences in (1) illustrate.

- (1) a. Las uvas son dulces.
 The-PL grapes-PL are.SER sweet-PL
 ‘Grapes are sweet/ The grapes are sweet’ (generic & specific)
- b. Las uvas están dulces.
 The-PL grapes-PL are.ESTAR sweet-PL
 ‘The grapes are sweet’ (specific only)

Several experimental studies indicate that Spanish-speaking children associate stable and inherent properties with *ser* and unstable and temporary properties with *estar*; although there is disagreement on the age at which children do so (Alonqueo & Soto, 2011; Alonqueo, 2007; Heyman & Diesendruk, 2002; Holtheuer, Miller & Schmitt, 2011; Requena, Román-Hernández & Miller, 2014; Schmitt & Miller, 2007; Sera, 1992). Given that stable and inherent properties are more prone to be generalized as representative of a kind, one question is whether children interpret the copulas as expressing generic and/or existential interpretations.

Two other factors that have been shown to play a role in children’s interpretation of generic statements are adjective type and animacy. In particular, studies indicate that children’s interpretation of the Spanish copulas may depend on the adjective with which they occur. It has been reported that children more readily assign inherent interpretations to copula + color adjectives combinations than they do to copula + scalar adjectives combinations (Schmitt, Holtheuer & Miller, 2004; Schmitt & Miller, 2007); although, the authors are hesitant to argue that adjective type plays a role given the large differences in their various experiments –some experiments used elicitation tasks while others used comprehension tasks. Moreover, their later work found that adjective type had no impact in children’s interpretation of the copulas (Holtheuer et al., 2011).

Scalar adjectives differ from color adjectives in that the former are gradable while the latter are absolute. Gradable adjectives can be further classified as to whether they refer to an open or closed scale. Gradable open scale adjectives refer to a scale that lacks minimal or maximal values (e.g. big, little) while gradable closed scale adjectives have minimal and/or maximal values (e.g. empty, full) (Kennedy & McNally, 2005). The interpretation of gradable adjectives varies with context.

In other words, interpretation is dependent on comparison between instances of the kind under discussion (e.g. a short giraffe is considered short in comparison to other giraffes more generally, but not in comparison to dogs) while this is not the case for color adjectives (e.g. a black cat is black, regardless of the color of other cats). As such, the listener must determine the standard of comparison against which to evaluate whether the degree has been reached or not by an individual being modified by the adjective. In contrast, color adjectives do not require a context-dependent standard of comparison (i.e., we can determine that a cat is black without having to compare it to other cats more generally). This means that the use of scalar adjectives forces the listener to take into consideration other instances of the kind and, as such, we might predict that scalar adjectives would bias speakers toward a generic interpretation more often than color adjectives would. With respect to animacy, research with English-speaking children has found that children produce more generic sentences with animate objects than they do for inanimate objects. As such, we might predict that animacy of the sentential subject would bias children toward a generic interpretation.

In this paper, we use two comprehension tasks to explore the impact of the Spanish copula on children's interpretation of generic v. existential sentences. We ask whether children interpret differently sentences like those presented in (1) above. Moreover, we examine the impact that the semantic structure of the adjective and the animacy of the sentential subject have on children's ability to associate generic v. specific interpretations to *ser* and *estar*. The following study is, to the best of our knowledge, the first to directly examine Spanish-speaking children's ability to assign generic v. existential interpretations to predicates with *ser* or *estar* (Ionin, Montrul & Crivos, 2013; Ionin & Montrul, 2011) for a study on L2 Spanish). We set out to answer the following two research questions:

- (i) Do children interpret differently sentences like those presented in (1) above. In particular, do they associate *ser* to generic readings more often than they do so for *estar*?
- (ii) Do scalar adjectives and/or animacy bias children toward a generic interpretation of the Spanish copulas *ser* and *estar*?

2. LINGUISTIC BACKGROUND

2.1. Semantics of *ser* and *estar*

Traditionally, the use of *ser* is associated with stable and inherent properties of predicates (2a, c) while the use of *estar* is associated with temporary or non-inherent properties (2b, d) (Gaya, 1955; Vaño-Cerdá, 1982).

- (2) a. Mariana es ingeniosa/cubana. 'M. is (*ser*) ingenious/Cuban.'
b. Macarena está embarazada/enferma. 'M. is (*estar*) pregnant/sick.'
c. La Maite es alta. 'Maite is (*ser*) tall.'
d. La Maite está alta. 'Maite is (*estar*) tall (right now).'

There are innumerable accounts of the distribution of *ser* and *estar* (see Clements, 1988; Diesing, 1990, 1992; Falk, 1979; Holtheuer et al., 2011; Holtheuer, 2011; Kratzer, 1995; Luján, 1981; Maienborn, 2005; Marín, 2004; Marín (in press); Roby, 2007; Schmitt & Miller, 2007; Schmitt, 2005; Zagona, 2010). We focus on Schmitt's (2005) analysis of the copulas in which *ser* is an atemporal copula that can be interpreted as a state by default and therefore implies permanence in contrast with *estar*. *Ser* is a transparent verbalizer that does not contribute aspectual information (Schmitt, 2005, p. 129). *Estar*, on the other hand, has aspectual features and must be interpreted as anchored in time.

According to Schmitt (2005), *estar* is associated with a subevent type STATE and needs to combine with eventive predicates. Since *estar* introduces an eventuality that holds at a time *t*, it is always anchored in time and presupposes a topic situation (Maienborn, 2005). As such, *estar* implies temporariness in opposition to *ser*.

- (3) a. Las jirafas son altas. 'Giraffes are (*ser*) tall.'
b. Las tortugas están altas porque se subieron a la escalera.
'The turtles are (*estar*) tall because they climbed the ladder.'

Importantly, for Schmitt the association of *ser* with permanency and *estar* with temporariness arises because *ser* associates with generic and characterizing statements that hold independent of time. *Estar*, on the other hand, is associated with non-generic statements that are contextually restricted, as illustrated in (3).

2.2. Acquisition of *ser* and *estar*

Children's acquisition of the Spanish copulas *ser* and *estar* has been the focus of a number of recent studies (Alonqueo & Soto, 2011; Alonqueo, 2007; Holtheuer et al., 2011; Holtheuer & Rendle-Short, 2013; Holtheuer, 2009; Holtheuer, 2013; Licerias, Fernández-Fuertes & Alba de la Fuente, 2012; Requena *et al.*, 2014; Schmitt & Miller, 2007; Silva-Corvalán & Montanari, 2008). The primary aim of this previous research has been to determine the age at which children show adult-like distributions of the copulas in production and the age at which they make the temporary v. inherent distinction of certain copula + adjective combinations in comprehension. No work, as far as we know, has examined *ser* and *estar* with

respect to generic/existential interpretations in child language.

In production, children are adult-like by three years of age, producing both copulas in a variety of syntactic constructions (Holtheuer, 2009, 2013; Sera, 1992; Silva-Corvalán & Montanari, 2008). Holtheuer's (2013) corpus study found that overall children make very few errors in their use of the copulas and that – with respect to the use of the copulas with adjectives – show almost a complementary distribution, producing adjectives with only one or the other copula, but less often with both. With respect to scalar v. color adjectives, Holtheuer found that both types occurred with *ser*, while only color adjectives occurred with *estar*. Does this mean that scalar adjectives will bias against specific readings (since they rarely occur with *estar*) and toward generic readings (since they only occur with *ser*)? Not necessarily. It is important to point out that while certain adjectives may occur more frequently with one copula over the other in corpus studies, both color and scalar adjectives can occur with both copulas in adult speech. While corpus studies can provide information about the frequency of certain copula + adjective combinations, they cannot provide evidence for the existence (or lack thereof) of copula + adjective combinations in the input. Combinations that are not frequently produced, may not show up in the data; moreover, certain genres may bias toward the use of particular combinations over others.

In comprehension, many studies have found that 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. This finding holds when both real adjectives (Schmitt & Miller, 2007) and novel adjectives (Requena et al., 2014) are paired with the copulas, suggesting that it is the copula alone, and not the adjective, that impacts children's interpretation.

2.3. Acquisition of Genericity

Generic statements refer to kinds of things and therefore are a way to refer to conceptual categories (e.g. animals, objects, ideas) rather than to particular instances of a thing (Carlson, 1977; Gelman, 2003; Krifka et al., 1995; Pelletier, 2010; Prasada, Salajegheh, Bowles & Poeppel, 2008), among others. Although there is no unified analysis of genericity, there is consensus that generics are not linked to a particular context and therefore are not constrained by spatial and temporal relations; and that they express properties that are essential of the particular type of kind involved (e.g. *cats meow*).

From a language acquisition perspective, several research studies demonstrate that young English-speaking children have begun to understand the distinction

between generic and non-generic utterances from a very young age (Gelman, Coley, Rosengren & Hartman, 1998; Gelman, Hollander, Star & Heyman, 2000; Gelman & Tardif, 1998; Hollander & Gelman, 2002; Pappas & Gelman, 1998). Gelman & Raman (2007) examined 2- to 4-year old children's ability to associate bare v. definite noun phrases with generic v. specific interpretations, respectively. In one of their experiments, children were presented with a picture of two tiny elephants and asked either a specific question (e.g. Are the elephants big or small? – Answer: small) or a generic question (e.g. Are elephants big or small? – Answer: big). The experiment revealed that children distinguished between specific and generic questions –interpreting bare noun phrases as generic and definite noun phrases as specific at high levels.

In contrast to the growing body of evidence about the acquisition of genericity in English, there are only a few studies that address this issue in Spanish-speaking children (but see Bruhn de Garavito & Valenzuela, 2006; Geeslin & Guijarro-Fuentes, 2003; Geeslin, 2002; Ionin & Montrul, 2011; Serratrice, Sorace, Fillaci & Baldo, 2009) for work with bilingual and L2 speakers), and this work has focused primarily on whether children show a generic v. specific preference in their interpretation of definite noun phrases occurring with lexical verbs (e.g. *Los tigres comen carne*. 'The tigers eat meat/Tigers eat meat'), but has not focused on the impact of the Spanish copulas in children's interpretations. Pérez-Leroux et al. (2004) investigated how English- and Spanish-speaking children interpret generics when morphosyntactic variables like determiner and tense are taken into account. They were particularly interested in the cross-linguistic comparison of functional elements such as determiners (definite v. bare plurals) that have overlapping but not identical distribution and/or semantics in English and Spanish. In their first study with English-speaking participants, they found that unlike adults, many children accepted a generic reading of the definite determiner but were adult-like in assigning a generic interpretation to bare plurals. The second experiment showed that –although Spanish definite plural noun phrases are consistent with both a generic and existential interpretation– Spanish-speaking children preferred to interpret the definite noun phrase + lexical verb as generic 80-95% of the time. This differed from their control condition where noun phrases headed by a demonstrative received generic responses only between 17% and 42% of the time, indicating that children distinguished noun phrases headed by demonstratives v. definite determiners. Importantly, this study differs from the present study in that they did not investigate the impact of the copulas on children's interpretation nor did they examine the impact of animacy in children's preference for a generic reading. Instead, in their study all subjects were animate, which may have biased children toward the generic reading of the Spanish definite noun phrase. The following two experiments extend upon this previous research by asking whether Spanish-speaking children understand the impact of the copulas on generic v.

specific interpretations and whether adjective type and animacy play a role.

We repeat below the two research questions to be addressed in this study.

- (i) Do children interpret differently sentences like those presented in (1) above. In particular, do they associate *ser* to generic readings more often than they do so for *estar*?
- (i) Do scalar adjectives and/or animacy bias children toward a generic interpretation?

3. EXPERIMENT 1

Spanish plural definite noun phrases occurring in subject position of *ser*-predicates are consistent with both generic and specific interpretations while predicates with *estar* receive specific interpretations in adult speech. The goal of Experiment 1 is to determine children's knowledge of the generic/specific interpretations of the two copulas and the impact of adjective type and animacy on children's ability to access the generic/existential reading.

3.1. Method

3.1.1. Participants

Twenty-seven children (3;08-5;08, $M = 4;09$) and twenty adults participated in this study. The children were recruited from a public childcare center in Santiago, Chile. All children were tested individually in a small classroom in the childcare facility. There were two groups of adults. Ten adults were employees of the childcare center and took the test individually just like the children. The other ten adult participants were undergraduate students that took a paper and pencil version of the test in a classroom at the University of Santiago, Chile.

3.1.2. Procedure

A truth value judgment task was used. The experimental procedures were modeled on those in previous studies on the acquisition of generics (Gelman & Raman, 2007; Pérez-Leroux et al., 2004). Children were presented with a short story about two characters (i.e., animate) or objects (i.e., inanimate) that displayed atypical properties (e.g. tiny elephants, gigantic ants, short giraffes, blue strawberries, blue bananas, and black clouds). After each story, children were asked a series of four yes-no questions about the story. Atypical properties were used because they provided a context for testing the generic/specific interpretation of the copula. A sample experimental trial is shown in (4). For each story children were tested

either on *ser* or *estar*, but not both copulas. All experimental conditions and trials are shown in Appendix (A).

(4) **Story 1. Big Elephants**

Experimenter (E): *¡Mira!, Lucía tiene dos elefantes enanos. Como no crecieron como los normales, a Lucía la dejan tener los dos elefantes como mascotas en su casa. Mira, si hasta los saca a pasear con correa como si fueran perros.* Look! Lucia has two tiny elephants. Because they didn't grow to be normal-sized, Lucia is able to keep the two elephants in her house as pets. Look! She even takes them out for walks as if they were her pets.

Filler 1 (F1): *¿Tú has visto elefantes en el zoológico?* Have you seen elephants in the zoo?

Filler 2 (F2): *¿En tu casa vive un elefante?* Does an elephant live in your house?

Target Ser: *¿Son grandes los elefantes?* Are-SER (the) elephants big?

Target Estar: *¿Están grandes los elefantes?* Are-ESTAR the elephants big?

Control Question: *¿Estos elefantes son grandes?* Are-SER these elephants big?

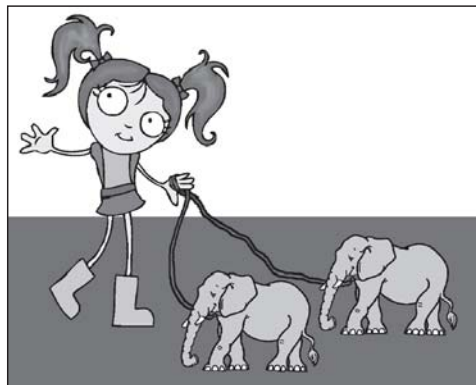


Figure 1. Experiment 1 Sample Picture.

A 'yes' response in the Target-*ser* Condition was taken to indicate that a generic interpretation was assigned to the utterance, while a 'no' response was taken to indicate a specific interpretation. While both a generic and specific interpretation are felicitous in the Target-*ser* Condition, in the Target-*estar* Condition only a 'no' response is adult-like; a 'yes' response would indicate a generic interpretation, which is not consistent with the adult grammar.

3.1.3. Materials

There were two target conditions, one control condition, and one set of distractors. The two target conditions, the Target-*ser* Condition and the Target-*estar* Condition, each contained 3 trials involving the adjectives *grande* 'big', *chica* 'small', *alta* 'tall', *amarillo* 'yellow', *rojo*, 'red' and *blanco*, 'white'. Given that animacy and scalar adjectives are predicted to bias more strongly toward a generic interpretation, all scalar adjectives occurred with animate subjects, while color adjectives occurred with inanimate subjects. In this way, we could examine whether animacy and scalar adjectives, in combination, boost children's preference for a generic interpretation of *ser*. The control sentences were similar to the target sentences except they included the demonstrative 'these' so that we could ensure that children would access a specific interpretation. The distractor trials were general questions about the objects in the story but not related to the interpretation of the Spanish copulas. A within subjects design was used so that every participant was presented with three *ser* questions and three *estar* questions.

The order of the conditions was counterbalanced across the experiment to ensure that the target experimental question was not always in the same position. However, the control question was always the last question presented. The control sentence served several purposes. First, since it included a demonstrative it forced a specific interpretation of the question, which allows us to access whether children have paid attention to the story during the course of the trial. Second, since the context set by the picture was always atypical, the appropriate answer for the control question was 'no' and hence it controlled for a potential yes-bias. Finally, since the only difference between the control and the target question was the presence of the demonstrative versus the definite determiner, a correct answer to the control and an incorrect answer to the target question would reveal a problem with the knowledge of the relationship between the copula and the type of subject. Because Pérez-Leroux et al. (2004) found a high rate of adult-like responses in children for similar sentences with demonstratives, it was predicted that children would perform well on the controls.

3.2. Results

The first finding to highlight is that overall children treated *ser* as associated to a generic interpretation more often than *estar*. They preferred generic responses in the Target-*ser* Condition 84% of the time and specific responses in the Target-

estar Condition 62% of the time. In other words, 38% of the time children also gave an incorrect generic response, a ‘yes’ response, in the Target-*estar* Condition. Adults behaved as expected – they gave generic responses to *ser* 77% and specific responses to *estar* 92% of the time. Performance in the control items was at ceiling, children obtained a mean of 94 % correct and adults a mean of 98%.

Participant’s correct responses in this experiment were entered into a Generalized Linear Model with Logit Link for analyzing binomial data. As noted above, a ‘no’ was considered the correct response in the Target-*estar* Condition while either a ‘yes’ or a ‘no’ response were considered correct in the Target-*ser* Condition. The analysis revealed a main effect of Age ($F(1, 215) = 8.90, p < .01$) and marginally significant effect for Copula ($F(1, 215) = 3.78, p = .053$). There was also a significant interaction of Copula x Age ($F(1, 215) = 31.57, p < .001$), which indicates that children’s performance on *estar* becomes more adult-like (i.e., they prefer more specific interpretations) across development. Table I shows the mean generic responses in both conditions for adults and children.

Table I.

Experiment 1. Mean Generic Interpretations in Target Conditions.

Copula	N	Mean	SD
Children			
<i>ser</i>	27	.84	.23
<i>estar</i>	27	.38	.39
Adults			
<i>ser</i>	20	.77	.27
<i>estar</i>	20	.08	.15

Turning to the question of adjective-type and animacy, the results indicate that both children and adults assigned more generic interpretations to animate subjects described with scalar adjectives than to inanimate subjects described with colors, as we predicted. This is illustrated in Table II.

Table II.

Experiment 1. Mean Generic Interpretations by Adjective Type.

	Colors/Inanimate	Scalar/Animate
Children		
<i>ser</i>	.70	.98
<i>estar</i>	.25	.53
Adults		
<i>ser</i>	.57	.97
<i>estar</i>	0	.17

Children assigned more generic interpretations to [*ser* + scalar adjective + animate] combinations than to [*ser* + color adjective + inanimate combinations], which was predicted if animacy and scalar adjectives together bias toward generic interpretations. The effect of animacy and scalar adjectives is strong in children as we see they even erroneously accept generic interpretations with the copula *estar* when the subject is animate and scalar adjectives are used, which was found for the youngest children. Nevertheless, the copula is playing role as differences are still found between *ser* and *estar*. While Experiment 1 indicates that the combination of animacy and scalar adjectives together increase the number of generic responses, one fallback is that we were unable to determine what impact either factor alone might have on interpretation. With this in mind, Experiment 2 examines children's comprehension of *ser* and *estar* as associated to a generic interpretation, but alters the adjective type-animacy combinations in order to further examine their impact on children's generic interpretations.

4. EXPERIMENT 2

Experiment 2 presented children with animate + color adjective combinations and inanimate + scalar adjective combinations to determine the impact of adjective type and animacy on children's generic interpretation of the copulas. If scalar adjectives more strongly bias toward a generic interpretation, we should find still children preferring this interpretation in the *ser* condition, regardless of animacy. Likewise, if animacy is playing a role, it should still impact interpretation, regardless of adjective type. In the *estar* condition, there should be no generic interpretations because *estar* is not associated with genericity in the adult grammar.

4.1. Methods

4.1.1. Participants

Twenty-eight different children (4;3-5;2, M=4;8) participated in this study. The children were recruited from public and private childcare centers in Santiago de Chile. They took the test individually in a small classroom of the childcare facility.

4.1.2. Materials and Procedure

The following adjectives were used: *grande* 'big', *chica* 'small', *alta*, 'tall', *amarillo* 'yellow', and *blanco*, 'white'. Similar to Experiment 1 children were presented with a short story describing a drawing of two main characters or objects that displayed atypical properties (e.g. blue chickens, green polar bears, small mountains, big grapes, small watermelons, and short buildings). A sample trial is shown in (5). All trials are shown in the Appendix.

(5) Story 1. Yellow Chickies

Experimenter (E): *Mira los pollitos. La mamá gallina los mira mucho porque salieron azules. Mira, de nombre les puso Azulín y Azulón.* Look at the chickies! The mother hen is looking at them because they came out blue. Look, she named them Little Blue and Big Blue.

Target Ser: *¿Son amarillos los pollitos?* Are-SER (the) chickies yellow?

Target Estar: *¿Están amarillos los pollitos?* Are-ESTAR the chickies yellow?

Control Ser: *¿Estos pollitos son amarillos?* Are-SER these chickies yellow?

Control Estar: *¿Estos pollitos están amarillos?* Are-ESTAR these chickies yellow?

For each story children were presented with either the *ser* or *estar* condition, but not with both. Given the context set by the story and picture, both an answer of 'yes' (i.e., generic interpretation) or 'no' (i.e., specific interpretation) is correct in the *ser* condition. The task allows us to determine if the child has preference for a generic v. specific reading. The correct response in the *estar* questions was 'no' (i.e., specific interpretation).

4.2. Results

The most important finding to highlight is that while children associated *ser* with both generic and specific interpretations overall, *estar* was associated with specific interpretations.

Table III.

Experiment 2. Mean Generic Interpretations in Target Conditions.

Copula	N	Mean	SD
<i>ser</i>	28	.55	.29
<i>estar</i>	28	.29	.31

A paired Samples t-test that compared children’s generic responses to *ser* and to *estar* indicates that children were more likely to assign a generic interpretation to *ser* than to *estar* ($t(27) = 3.47, p < .01$). With respect to animacy and adjective type, the data indicate that scalar adjectives bias more strongly toward a generic interpretation than does animacy. This is illustrated in Table IV where *ser* + scalar adjective combinations continue to show a high mean of generic interpretations, even though the subject is inanimate (i.e., compare to *ser* + scalar + animate in Table II), while *ser* + animate combinations show a decrease in generic interpretations when compared to *ser* + inanimate in Experiment 1, which goes in the opposite direction expected if animacy is playing a role. If animacy plays any role at all, it is only when the adjective is scalar, as we see a slight decrease in generic responses between Experiment 1 and 2.

Table IV.

Experiment 2. Mean Generic Interpretations by Adjective Type.

	Colors/Animate	Scalar/Inanimate
Children		
<i>ser</i>	.57	.75
<i>estar</i>	.25	.30

5. DISCUSSION

The goal of this paper was to examine children’s acquisition of the Spanish copulas *ser* and *estar* with a focus on their generic/specific interpretations. Two questions were posed at the beginning of this paper and, in what follows, we will address each of them in turn.

Do children interpret differently sentences like those presented in (1) above (repeated below in (6))? In particular, do they associate ser to generic readings more often than they do so for estar?

- (1) a. Las uvas son dulces.
The-PL grapes-PL are.SER sweet-PL
'Grapes are sweet/ The grapes are sweet' (generic & specific)
- b. Las uvas están dulces.
The-PL grapes-PL are.ESTAR sweet-PL
'The grapes are sweet' (specific only)

Overall, when presented with *ser*, children preferred a generic interpretation. This was not found for *estar*, indicating that children have knowledge that the copula *ser* (but not *estar*) is associated to a generic interpretation by at least 4 years of age. On the other hand, the use of *estar* in the experimental prompt pushes children toward a specific (non-generic reading); however, there is evidence that is still developing in the youngest children.

Previous acquisition research on *ser* and *estar* has focused on children's ability to use the copulas to distinguish between transitory and inherent properties. That work found that children were quite restrictive in their interpretation of *estar*, associating it to only transitory properties, but more flexible in their interpretation of *ser*, associating it to both transitory and inherent properties. This previous work indicated that children have knowledge that *estar* is always temporally anchored and, as such, implies temporariness in opposition to *ser*. The findings for *estar* in the present study are consistent with this previous work in that overall children in the present study continue to treat *estar* as linked to the discourse time (i.e., *estar* predicates refer to the characters depicted in the story and not to the kind more generally). What is not clear from previous studies is how flexible children really are with *ser*. This is because in most of the previous experimental studies, children did not show a preference for one interpretation over the other (i.e., a transitory interpretation v. an inherent interpretation), but rather showed about 50% distribution in response types. The present study differs from this previous research in that we find that children show a strong bias toward the generic interpretation of the copula *ser*, even though both specific and generic interpretations are felicitous. This indicates that *ser* is not so flexible, because if it were, we might expect the experimental story to bias the child toward the specific reading –since the experimental story is about the characters with odd properties. Instead, we take this as evidence that *ser*, in contrast to *estar*, strongly biases children toward a generic reading by 4 years of age.

Do scalar adjectives and/or animacy bias children toward a generic interpretation when they occur with ser?

While children associated *ser* with a generic interpretation more often than they did for *estar*, the effect for *ser* was stronger when it occurred with both animate subjects + scalar adjectives together, but was weakest when *ser* occurred with animate subjects + color adjectives, where the generic interpretation was preferred only 57% of the time. This indicates that adjective type plays a role in children's preference for a generic interpretation of *ser* predicates. Scalar adjectives bias more strongly toward a generic interpretation than do color adjectives, and in the latter case, animacy did not seem to play a role.

Why do we find that *ser* + scalar adjectives favor generic interpretations? We hypothesized that because children know that the interpretation of scalar adjectives is dependent on a comparison between instances of a kind (e.g. a short giraffe is considered short in comparison to other giraffes but not in comparison to dogs) while this is not the case for color adjectives (e.g. a black cat is black, regardless of the color of other cats), scalar adjectives would bias the child toward a generic interpretation more so than color adjectives. This is because the scalar adjective would force the child to consider the experimental question with respect to a comparison set, the set which is consistent with the generic interpretation. For example, upon hearing the story about the small elephants, the child must consider the comparison set of normal-sized elephants because small elephants are only small compared to normal-sized elephants (and not compared to dogs, for example). Upon hearing the story about blue polar bears, however, the child does not need to take into consideration any comparison set because the blue polar bears are blue regardless of the color of other polar bears. Since in the *ser* condition the child has already generated the comparison, she tends more often to prefer the generic interpretation. This is not true in the color case. Animacy appears to boost the effect in the scalar case which may be consistent with previous work illustrating that children prefer to make generic statements about animates (Gelman & Tardif, 1998).

6. CONCLUSION

The main objective of our experimental study was to examine whether children assign generic interpretations to noun phrases in subject position when copula *ser* is used and specific interpretations to sentences with *estar*. We also investigated the role of adjective type and animacy of the subject in children's assignment of generic/specific readings to copular sentences. That children associated *ser* to generic readings more often than they did for *estar* suggests that they have knowledge of the different interpretations assigned to each copula. Moreover,

the fact that the association of generic meanings with *ser* was stronger when the sentential subject was animate and the adjective was scalar suggests that factors such as type of adjective and animacy predispose children to interpret sentences with *ser* as generic. Cimpian & Markman (2009) note that “exploring how the generic/non-generic distinction interacts with different types of properties would be worthwhile, as it would demonstrate that children filter the linguistic information they receive through their theoretical knowledge (instead of accepting it indiscriminately) (p. 24). In our investigation of the children’s interpretation of *ser* and *estar*, we have taken a step in this direction. It does not appear to be the case that *ser* indiscriminately obtains a generic interpretation. Instead, other linguistic information –such as adjective type and, to a lesser degree, animacy– appear to impact children’s ability to associate *ser*, but not *estar*, to a generic interpretation.

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Appendix

Experiment 1: Target Stories and Fillers

Story 1. Big Elephants

Experimenter (E): *¡Mira!, Lucía tiene dos elefantes enanos. Como no crecieron como los normales, a Lucía la dejan tener los dos elefantes como mascotas en su casa. Mira, si hasta los saca a pasear con correa como si fueran perros.* Look! Lucía has two tiny elephants. Because they didn't grow to be normal-sized, Lucía is able to keep the two elephants in her house as pets. Look! She even takes them out for walks as if they were her pets.

Filler 1 (F1): *¿Tú has visto elefantes en el zoológico?* Have you seen elephants in the zoo?

Filler 2 (F2): *¿En tu casa vive un elefante?* Does an elephant live in your house?

Target *Ser*: *¿Son grandes los elefantes?* Are-SER (the) elephants big?

Target *Estar*: *¿Están grandes los elefantes?* Are-ESTAR the elephants big?

Control Question: *¿Estos elefantes son grandes?* Are-SER these elephants big?

Story 2. Tall Giraffes

E: ¡Mira! *A Juanito le regalaron dos jirafas bajitas. Juanito está contento porque con ese porte chico, las jirafas hasta se pueden meter en la casa de muñecas que él tiene en su pieza.* Look! Someone has given Juanito two short giraffes. Juanito is happy because they are so small. The giraffes can even fit in the doll house that he has in his bedroom.

F1: ¿*Tú has visto jirafas en el zoológico?* Have you seen giraffes in the zoo?

F2: ¿*Tienen colmillos las jirafas?* Do giraffes have horns?

Target Ser: ¿*Son altas las jirafas?* Are-SER (the) giraffes tall?

Target Estar: ¿*Están altas las jirafas?* Are-ESTAR the giraffes tall?

Control Question: ¿*Estas jirafas son altas?* Are-SER these giraffes tall?

Story 3. Tiny Ants

E: ¡Mira! *llegaron dos hormigas gigantes y llamaron a los bomberos para que las echaran.*

Pedro, el bombero, les echa agua para que se vayan porque unas hormigas tan grandes pueden ser muy peligrosas. Look! Two gigantic ants arrived and (the people) called the firemen to get rid of them. Pedro, the fireman, sprays water on them so that they go away because such big ants could be dangerous.

F1: ¿*Tú has visto hormigas gigantes?* Have you seen gigantic ants?

F2: ¿*Te ha picado una hormiga alguna vez?* Has an ant ever bitten you?

Target Ser: ¿*Son chicas las hormigas?* Are-SER (the) ants small?

Target Estar: ¿*Están chicas las hormigas?* Are-ESTAR the ants small?

Control Question: ¿*Estas hormigas son chicas?* Are-SER these ants small?

Story 4. Red Strawberries

E: ¡Mira! *El hada se aburrió de que todas las frutillas tuvieran el color rojo que normalmente tienen y les cambió el color a estas frutillas. Mira, las convirtió en frutillas azules.* Look! The fairy was bored because all of the strawberries were the same color red and so she changed the color of the strawberries. Look, she changed them into blue strawberries.

F1: ¿*Tú has visto frutillas azules?* Have you seen blue strawberries?

F2: ¿*Y te gustan las frutillas?* Do you like strawberries?

Target Ser: ¿*Son rojas las frutillas?* Are-SER (the) strawberries red?

Target Estar: ¿*Están rojas las frutillas?* Are-ESTAR the strawberries red?

Control Question: ¿*Estas frutillas son rojas?* Are-SER these strawberries red?

Story 5. White Clouds

E: *¡Mira! Pedro y Diego están mirando el cielo porque empezó a llover. Las nubes se pusieron negras porque se llenaron de agua.* Look! Pedro and Diego are looking at the sky because it started to rain. The clouds turned black because they are full of water.

F1: *¿Se ve el sol cuando hay nubes?* Can you see the sun where there are a lot of clouds?

F2: *¿Tú crees que va a llover hoy día?* Do you think it will rain today?

Target Ser: *¿Son blancas las nubes?* Are-SER (the) clouds white?

Target Estar: *¿Están blancas las nubes?* Are-ESTAR the clouds white?

Control Question: *¿Estas nubes son blancas?* Are-SER these clouds white?

Story 6. Yellow Bananas

E: *¡Mira! La jirafita tiene mucha hambre y el caracol le ofrece dos plátanos azules para que coma. Jirafita mira los plátanos pero le dice no, muchas gracias porque no le gustan los plátanos de colores raros.* Look! The giraffe is very hungry and the snail offers him two blue bananas to eat. The giraffe looks at the bananas but tells him no thank you because she doesn't like strange-colored bananas.

F1: *¿Te gustan los plátanos?* Do you like bananas?

F2: *¿Has visto plátanos azules?* Have you seen blue bananas?

Target Ser: *¿Son amarillos los plátanos?* Are-SER (the) bananas yellow?

Target Estar: *¿Están amarillos los plátanos?* Are-ESTAR the bananas yellow?

Control Question: *¿Estos plátanos son amarillos?* Are-SER these bananas yellow?

Experiment 2: Target Stories and Fillers

Story 1. Yellow Chickies

E: *Mira los pollitos. La mamá gallina los mira mucho porque salieron azules. Mira, de nombre les puso Azulín y Azulón.* Look at the chickies! The mother hen is looking at them because they came out blue. Look, she named them Little Blue and Big Blue.

Target Ser: *¿Son amarillos los pollitos?* Are-SER (the) chickies yellow?

Target Estar: *¿Están amarillos los pollitos?* Are-ESTAR the chickies yellow?

Control Ser: *¿Estos pollitos son amarillos?* Are-SER these chickies yellow?

Control Estar: *¿Estos pollitos están amarillos?* Are-ESTAR these chickies yellow?

Story 2. Small Grapes

Mira, al niño le regalaron unas uvas gigantes. Mira, él puede poner en el plato la manzana y los plátanos pero no puede poner la uvas porque no caben. Look, someone gave the boy some giant grapes. Look, he can put the apple and banana on the plate but the grapes don't fit.

Target Ser: *¿Son chicas las uvas?* Are-SER (the) grapes small?

Target Estar: *¿Están chicas las uvas?* Are-ESTAR the grapes small?

Control Ser: *¿Estas uvas son chicas?* Are-SER these grapes small?

Control Estar: *¿Estas uvas están chicas?* Are-ESTAR these grapes small?

Story 3. White Bears

Mira los osos polares. Pingüín les quiere sacar una foto porque tienen un color verde muy raro los osos polares. Look at the polar bears. Pínguino wants to take a picture of them because they are green which is strange for polar bears.

Target Ser: *¿Son blancos los osos polares?* Are-SER (the) polar bears white?

Target Estar: *¿Están blancos los osos polares?* Are-ESTAR the polar bears white?

Control Ser: *¿Estos osos polares son blancos?* Are-SER these polar bears white?

Control Estar: *¿Estos osos polares están blancos?* Are-ESTAR these polar bears white?

Story 4. Big Watermelons

Mira, a María le regalaron unas sandías enanas. Mira, no pesan nada y por eso puede jugar con ellas. Mira, si son del porte de las manzanas. Look someone gave María some very tiny watermelons. Look, they don't weigh a thing and she can easily play with them. Look, they are the same size as apples.

Target Ser: *¿Son grandes las sandías?* Are-SER (the) watermelon big?

Target Estar: *¿Están grandes las sandías?* Are-ESTAR the watermelon big?

Control Ser: *¿Estas sandías son grandes?* Are-SER these watermelon big?

Control Estar: *¿Estas sandías están grandes?* Are-ESTAR these watermelon big?

Story 5. Big Mountains

Juanito está sorprendido de encontrar unas montañas enanitas. Ah, claro, son montañas donde viven las hormigas, por eso tienen ese porte tan chico. Juanito is surprised to find some very tiny mountains. Oh, that's right, these are mountains where the ants live, that is why they are so small.

Target Ser: *¿Son grandes las montañas?* Are-SER (the) mountains big?

Target Estar: *¿Están grandes las montañas?* Are-ESTAR the mountains big?

Control Ser: *¿Estas montañas son grandes?* Are-SER these mountains big?

Control Estar: *¿Estas montañas están grandes?* Are-ESTAR these mountains big?

Story 6. Tall Buildings

Marta tiene dos edificios de juguete en su jardín. Como son de juguete son diferentes de los edificios normales donde vive la gente. Marta has two play buildings in her garden. Because they are for playing they are different from the normal-sized building that people live in.

Target Ser: *¿Son altos los edificios?* Are-SER (the) buildings big?

Target Estar: *¿Están altos los edificios?* Are-ESTAR the buildings big?

Control Ser: *¿Estos edificios son altos?* Are-SER these buildings big?

Control Estar: *¿Estos edificios están altos?* Are-ESTAR these buildings big?