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Author(s): Karen Miller and Cristina Schmitt

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SQUIBS AND REPLIES

An Experimental Study on Child Comprehension of Spanish Indefinites and Bare Singulars

Karen Miller and Cristina Schmitt
Michigan State University

1. INTRODUCTION

Since the work of Carlson (1977), it is impossible to treat the bare plural *dogs* in English as the counterpart of the indefinite singular *a dog*. Whereas the indefinite singular in object position allows both wide- and narrow-scope readings with respect to operators such as negation, bare plurals are always under the scope of negation. As is well known, Spanish has an indefinite singular that is identical in form to the number *one* (*un auto* ‘a/one car’). Moreover, in a more restricted but productive set of contexts, many dialects of Spanish allow bare singulars in object position. Much like bare plurals in English, Spanish bare singulars under negation (and other operators) only allow a narrow-scope interpretation, as illustrated in (1a). In (1a) the bare singular is within the scope of negation, and this sentence can only mean that the boy didn’t buy any dogs. The indefinite singular in (1b), on the other hand, has three possible interpretations: the indefinite can have a narrow scope (the boy didn’t buy any dogs), a wide scope (there is a particular dog the boy didn’t buy), or a number reading (the boy didn’t buy one dog, he bought more, two or three). In English, the latter reading is not possible with the indefinite *a*.

- (1) a. El niño no se compró perro.
The boy NEG RFL bought dog
‘The boy didn’t buy any dogs.’ (neg>dog; *dog>neg)

- b. El niño no se compró un perro.
 The boy NEG RFL bought a dog
 'The boy didn't buy a dog.' (neg>dog; dog>neg;
 number reading)

The goal of this study was to test children's interpretation of bare singulars and indefinites under negation in a dialect of Spanish that uses bare singulars productively. More specifically, we ask whether (i) young children understand the lack of scope ambiguities in Spanish bare singulars and (ii) whether they treat indefinites and bare singulars differently.

Several studies have shown that although 4- to 7-year-old children have difficulty accessing the wide-scope interpretation of indefinite noun phrases under negation (but see Miller and Schmitt (2004)), they have little difficulty with the scopeless interpretation of singular indefinites and bare singulars (Krämer (2000), Pérez-Leroux and Roeper (1999), Su (2001)). Of interest, Su (2001) showed that whereas English-speaking children differed significantly from English-speaking adults by preferring a narrow-scope interpretation of indefinite noun phrases, Chinese-speaking children patterned with Chinese-speaking adults by preferring what appeared to be a number reading for indefinites—a justified option for Chinese but not for English.

We hypothesize that if children are unable to access the wide-scope interpretation for indefinites under negation as previous studies have shown (Krämer (2000), Lidz and Musolino (2002), Musolino (1998)), Spanish children should always interpret bare singulars and indefinite singulars as having a narrow-scope reading. In other words, they should treat bare singulars and indefinites identically with respect to scope. On the other hand, if the possible number reading of the Spanish indefinite is playing a role in child comprehension, then Spanish-speaking children, like Chinese-speaking children, should pattern with adults on their interpretation of indefinite singulars. In this case, they should not treat bare singulars and indefinites identically.

2. LINGUISTIC BACKGROUND

Bosque (1996) observed that Spanish bare singulars, in the dialects where they are found, are allowed as objects in certain contexts: as objects of intensional predicates such as *buscar* 'to look for', *querer* 'to want', and *necesitar* 'to need'; as objects under negation; and in constructions that denote inherent properties of a particular entity or where the object has a unique interpretation (as in *Llevaba chaqueta* 'he was wearing a jacket', *Tenía casa en la montaña* 'he had a house in the mountains'). In our fieldwork, we found that Chilean Spanish (more specifically, the dialect of Punta Arenas) also allows nonintensional verbs to take bare singular objects (*Me compré auto* 'I bought myself a car', *Me conseguí perro* 'I got a dog', *Hicimos muralla* 'We put up a fire wall' (between our house and the

neighbor's house)).¹ One noticeable characteristic linking together several of these predicates is possession. The preceding predicates allowing bare singular objects all seem to denote some type of possession, lack of possession, or intention of possession.²

In the literature, bare singulars have been treated as names of kinds as in Carlsonian accounts (Carlson (1977), Chierchia (1998), Schmitt and Munn (2003)) or as incorporated predicates (Masullo (1992)). In both cases, however, it is necessary to treat bare singulars as only allowing narrow-scope readings.

3. EXPERIMENT 1

The goal of Experiment 1 was to test whether given the same context (same experimental story), Spanish-speaking children would treat bare singulars differently from indefinites.

3.1. Participants

Twenty-four Spanish-speaking Chilean children (4;5–5;11; *M* age = 5;0) passed a pretest and participated in the experiment.³ All children were recruited from day care centers and kindergartens in the city of Punta Arenas, Chile. In addition, we tested 30 Spanish-speaking undergraduates from the Universidad de Magallanes located in Punta Arenas, Chile.

3.2. Procedure

We tested children's interpretations of sentences like (1a) and (1b) by using the Truth Value Judgment Task (Crain and Thornton (1998)) in an experiment mod-

¹A reviewer pointed out that in his or her dialect, bare singulars are very marginal. This is not the case for Chilean Spanish of Punta Arenas. These examples are taken from Chilean speakers living in the XXII Region of Chile, the same area that the participants in this study are from. Furthermore, our free speech data from both mothers and children show a pretty productive use of bare singulars in object position in this dialect (see Miller and Schmitt (2005)).

²See also Neidle (1988), Van Geenhoven (1998), Matthewson (1999), and Farkas and de Swart (2003) for a description in which bare nominals in other unrelated languages are allowed in a similar set of contexts, which shows that we are not talking about idiosyncratic properties of a couple of frozen expressions in Spanish.

³In the pretest, the puppet had to guess the name and age of the child. Each time the first guess was wrong and the second guess was right. After guessing the name and age, the child was presented with two practice trials in which the puppet had to guess what was in a card (that was shown only to the child). The puppet guessed right the first time and wrong the second time, allowing children to provide both *yes* responses and *no* responses.

eled after Su's (2001) experiment so that the results of both studies could be compared. We presented experimental stories on cards, and they were read by a native Spanish-speaker who was from Punta Arenas, Chile. At the end of the story, a puppet makes a statement about what he believes happened in the story. Participants had to determine whether the puppet's statement accurately described the story.

We tested all children individually in a quiet classroom. We presented the children with 18 stories. There were 4 experimental stories that involved sentences with bare singulars such as those in (1a), 4 experimental stories that involved sentences with singular indefinites such as those in (1b), 4 controls, and 6 fillers.⁴ We presented stories in pseudo-random order.

We tested adult participants in quiet classrooms in groups of three to five. An experimenter presented stories on cards in the same way they were presented to children. However, instead of feeding the puppet, we gave participants a score sheet, and we instructed them to indicate whether the puppet's statement was an accurate or inaccurate description of the story.

3.3. Materials

The experimental stories were the same in both the Bare Singular and Indefinite conditions. The stories were written so that either an answer of *true* or *false* was possible in the Indefinite condition. An answer of *true* indicated a wide-scope or a number interpretation for the indefinite, whereas an answer of *false* indicated a narrow-scope interpretation for the indefinite. In the Bare Singular condition, *false* (a narrow-scope interpretation) was the only correct answer. All experimental stories were presented on three cards (as in Figure 1).

The scenario of the target stories involves a main character who is thinking about doing something (e.g., buying pets at a pet shop). The character first looks at a set of objects (dogs) on which to perform the action (buy), as in Card 1. At first the character does not want to perform the action on the first set of objects, preferring more the second set of objects (Cats in Card 2). However, there is a problem with the second set of objects (the cats are all dirty and wet), so the character cannot perform the action on them. Finally, the main character returns to the first set of objects (dogs) and performs the action on only three of the four objects because one of the objects is not qualified (the fourth dog is unfriendly and keeps barking in Card 3). After hearing the story, a puppet says either target sentence (2a) or (2b).

⁴In the filler trials, children were shown pictures and had to decide whether the puppet described the picture accurately or not. The control trials were identical to the target trials except that the outcome of the story only supported a narrow-scope reading. Two control trial stories were only consistent with a *true* response, and two were only consistent with a *false* response.

- (2) a. El niño no se compró perro.
 The boy NEG RFL bought dog
 'The boy didn't buy a dog.' (neg>dog; *dog>neg)
- b. El niño no se compró un perro.
 The boy NEG RFL bought a dog
 'The boy didn't buy a dog.' (neg>dog; dog>neg;
 number reading)

In this context, (2a) is false and (2b) can be true or false depending on the scope of the indefinite. Participants who rate (2b) as *true* are accessing a wide-scope reading or a number reading of the indefinite. Participants who rate this sentence as *false* are accessing a narrow-scope reading of the indefinite. All eight experimental sentences are shown in Table 1. To make sure that a particular noun was not responsible for participant responses, we divided the sentences into two groups.

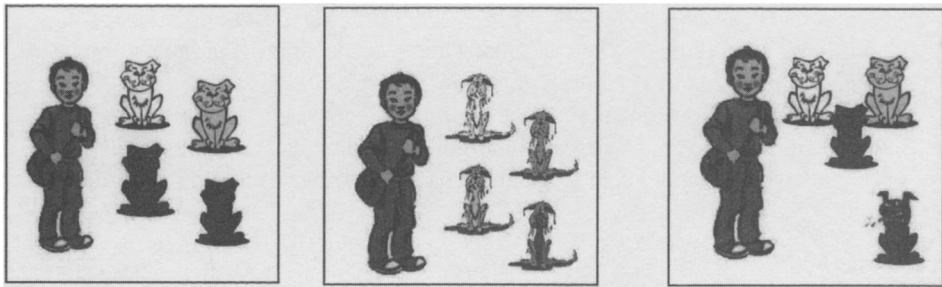


FIGURE 1 Experimental story, Cards 1, 2, and 3: "El niño no se compró (un) perro."

TABLE 1
 Target Sentences in the Bare Singular and Singular Indefinite Conditions

Set A	Set B
La niñita no se compró (una) polera. The girl NEG RFL bought (a) shirt 'The girl didn't buy a shirt.'	El chico no se compró (un) perro. The boy NEG RFL bought (a) dog 'The boy didn't buy a dog.'
El niño no usó (un) lápiz. The boy NEG used (a) pencil 'The boy didn't use a pencil.'	La niña no usó (un) computador. The girl NEG used (a) computer 'The girl didn't use a computer.'
El chico no trajo (una) pelota. The boy NEG brought (a) ball 'The boy didn't bring a ball.'	El chico no trajo (una) bicicleta. The boy NEG brought (a) bike 'The boy didn't bring a bike.'
La niña no se puso (un) vestido. The girl NEG RFL try on (a) dress 'The girl didn't try on a dress.'	La señora no se puso (una) chaqueta. The lady NEG RFL try on (a) jacket 'The lady didn't try on a jacket.'

Half of the participants received the sentences in Set A in the Bare Singular condition and the sentences in Set B in the Indefinite Singular condition, whereas the other half of the participants received the sentences in Set A in the Indefinite Singular condition and those in Set B in the Bare Singular condition.

3.4. Results

Children incorrectly accepted bare singular targets 24% of the time, whereas adults accepted them only 1% of the time. On the other hand, children accepted indefinite targets 64% of the time, whereas adults accepted these sentences 57% of the time. The proportion of *true* responses for each child was entered into a 2 (Age: adults, 4- to 5-year-old children) \times 2 (Condition: bare singulars, singular indefinites) mixed design analysis of variance (ANOVA) with Condition as a within-subjects variable and Age as a between-subject variable. The analysis revealed a main effect for Age, $F(1, 52) = 4.388, p < .041$, and a main effect for Condition, $F(1, 52) = 61.781, p < .0005$. There was no significant interaction between Age and Condition, $F(1, 52) = 1.641, p = .206$.

Experiment 1 showed that although children did not reach adult levels on their interpretation of bare singulars and indefinites, children clearly distinguished between the two by treating bare singulars as having narrow scope and indefinites as ambiguous.

4. EXPERIMENT 2

A reviewer correctly pointed out that children could be answering *false* for the bare singular target sentences for independent reasons, namely, bare singulars are perhaps less frequent in the input. To make sure that children can and will judge sentences with bare singulars as true, we designed Experiment 2. The goal of Experiment 2 was to determine whether when presented with different contexts (experimental stories), Spanish-speaking children would both accept and reject sentences involving bare singulars under negation.⁵

4.1. Participants

Eighteen Spanish-speaking children (4;10–6;1; M age = 5;6) recruited from day care centers and preschools in Punta Arenas, Chile and 22 Spanish-speaking undergraduates from the Universidad de Magallanes, Chile participated in this experiment.

⁵We thank a reviewer for suggesting this experiment.

4.2. Procedure and Materials

The experimental task and experimental sentences were identical to those used in Experiment 1. Unlike Experiment 1, however, in Experiment 2, we only tested bare singulars under negation and not indefinites. There were eight experimental stories involving bare singulars. Four of the target sentences were true given the experimental story (Figure 2). We call this condition BareTrue. Four stories were false given the experimental story (Figure 1). We call this condition BareFalse. In addition, there were six fillers.

The scenario for Figure 1 was the same in both Experiments 1 and 2. The scenario for Figure 2 involved a main character who is thinking about doing something (e.g., buying clothing in a department store). The character first looks at a set of objects (pants) on which to perform the action (buy). At first the character does not want to perform the action on the first set of objects (Card 1), preferring more the second set of objects (shirts; Card 2). However, there is a problem with the second set of objects (the shirts are all too small), so the character cannot perform the action on them. Finally, in Card 3, the main character returns to the first set of objects (pants) and performs the action on all four objects (she buys the pants but not the shirts).

After hearing the story, a puppet says target sentence (3).

- (3) La niña no se compró polera.
 The girl NEG RFL bought shirt
 'The girl didn't buy any shirt.'

4.3. Results

Children accepted target sentences in the BareTrue condition 96% of the time but only accepted them 21% of the time in the BareFalse condition. Adults accepted target sentences in the BareTrue condition 97% of the time and only accepted

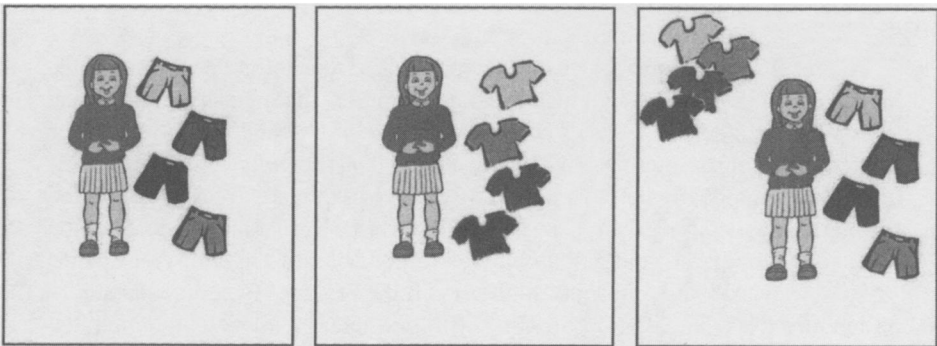


FIGURE 2 Experimental story, Cards 1, 2, and 3: "La niña no se compró polera."

them in the BareFalse condition 6% of the time. The proportion of *true* responses for each child was entered into a 2 (age: adults, 4- to 5-year-old children) \times 2 (condition: BareFalse, BareTrue) mixed design ANOVA with condition as a within-subjects variable and age as a between-subject variable. The analysis revealed a main effect for Condition, $F(1, 38) = 350.719, p < .01$, but no main effect for Age, $F(1, 38) = 1.954, p = .170$. There was no significant interaction between Age and Condition, $F(1, 38) = 2.642, p = .112$.

Although children treated bare singulars significantly different from indefinites, children incorrectly accepted sentences in the BareFalse condition 24% of the time in Experiment 1 and 21% of the time in Experiment 2. Given that the experimental stories in BareFalse conditions always favored a number reading or wide-scope reading (because only one object was left unaffected), it may be the case that children were trying to “fix up” the sentences so that they would be felicitous with the context provided. In any case, this does not take away from the fact that overall, children treat bare singulars differently from indefinites. In fact, Experiment 2 clearly shows that children know that bare singulars must have narrow scope and are able to judge sentences with bare singulars as both true and false.

5. DISCUSSION AND CONCLUSION

The purpose of this study was to determine whether Chilean Spanish-speaking children understand that in the scope of negation, bare singulars have a narrow-scope reading, whereas indefinites are ambiguous. Given previous studies on child interpretation of indefinites and bare singulars in other languages, we predicted that Chilean children would assign a narrow-scope reading to bare singulars. For indefinites, we predicted that if the number reading of the indefinite played a role in child interpretation (as suggested by Su (2001)), children would treat indefinites differently from bare singulars. If Chilean children did not access a number reading for indefinites and did not allow, as do English children, wide-scope readings of the indefinite, then we predicted that they would treat bare singulars and indefinites in a very similar way.

The results from Experiment 1 and Experiment 2 (see Figure 3) show that like Spanish-speaking adults, Spanish-speaking children distinguish between bare singulars and indefinites, which indicates that 4- to 6-year-old children understand the scopeless nature of bare singulars and the ambiguity of indefinites. Although it is not clear whether Spanish-speaking children are accessing a number reading or a wide-scope reading of indefinites, it appears that the possible number reading of the Spanish indefinite object is responsible for the ability of Spanish children to perform like Spanish adults, given the previous experimental studies on indefinites under negation. In other words, whereas Chilean children are accessing a narrow-scope reading for bare singulars, they are accessing a number reading for indefinites under negation.

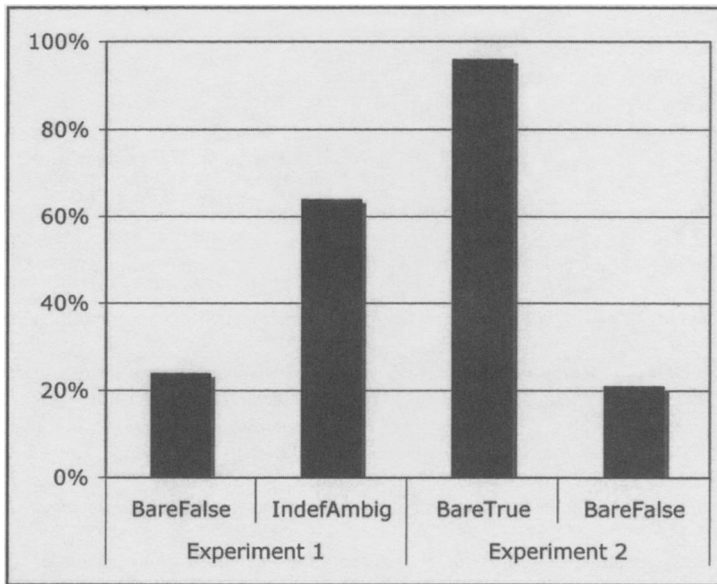


FIGURE 3 Percentage of *true* responses.

This study furthermore shows that Spanish-speaking children's behavior supports Carlson's (1977) claim that bare nominals and regular indefinites cannot be treated as the same. Further work should tease apart the differences between number readings and wide-scope readings.

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