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Person and number asymmetries in child comprehension of Spanish agreement and object clitics

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Introduction

Spanish verb inflection carries number and person information, and object clitics carry person, number, and gender. Children acquiring Spanish must learn to interpret these cues.

PRES verb inflection	Sg	PI	object clitics	Sg	PI
1 st person	-o	-mos		me	nos
2 nd person	-s	--		te	--
3 rd person	Ø	-n	masculine: lo feminine: la	lo las	los las

- Spontaneous Production:** Early and accurate production of agreement (Bel & Rosado 2005).
- Comprehension:** Some forms are acquired before others.
 - 3P /-n/ > 3S -Ø (Pérez-Leroux 2005, Legendre et al 2014)
 - 2S /-s/ > 3P /-n/ and 3S -Ø (Miller & Schmitt 2014)
 - 1st & 2nd person > 3rd; singulars > plurals (French subject clitics, Legendre et al 2011)

The Role of Implicated Presuppositions:

1st and 2nd person explicitly signal “speaker” and “hearer,” and singular specifies “one.” In contrast, 3rd person and the plural are semantically empty (Sauerland 2008). Assuming that speakers prefer to be explicit whenever possible, using 3rd (or plural) implies “not speaker or hearer” (or “not singular”).

Form used	Pragmatic assumption	Inference	Implicated Presupposition
plural	“Speakers use the most informative form possible.”	→ singular is impossible	> 1
3 rd		→ 1 st , 2 nd is impossible	[-speaker], [-hearer]

Sauerland et al (2005) claim that children fail to make this assumption and hence do not interpret 3rd person and plurals like adults.

Results

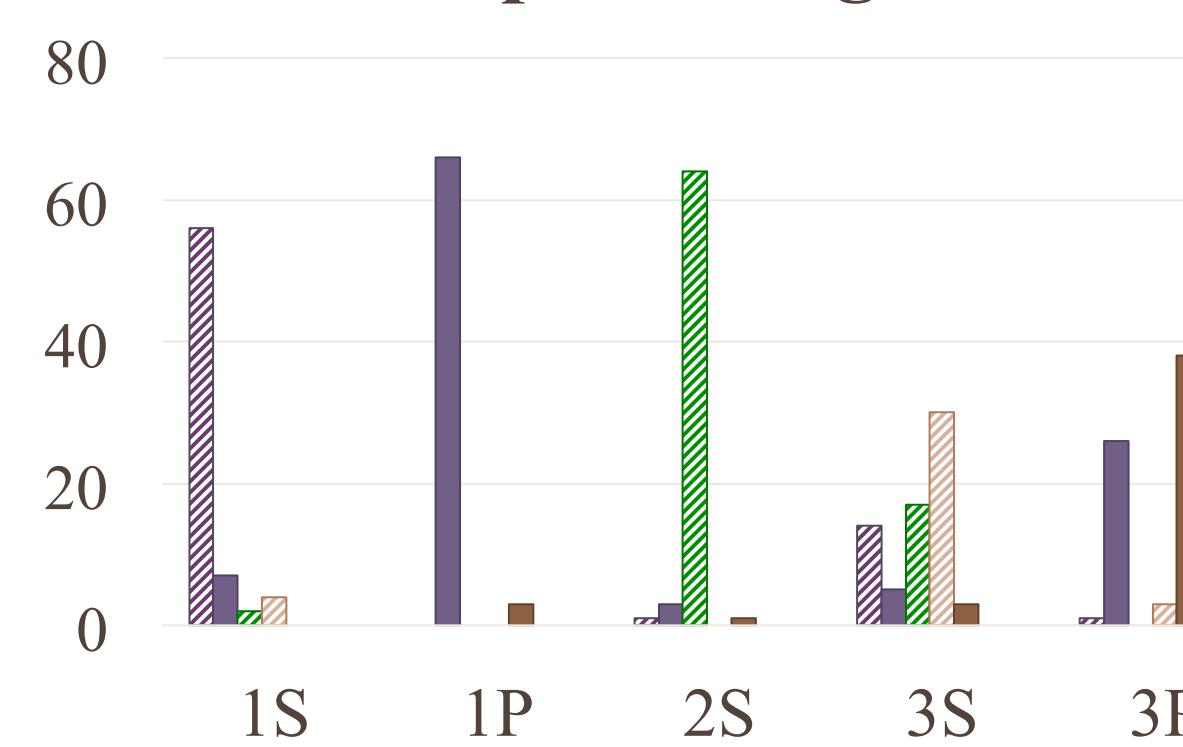
Person & Number analysis

- Number asymmetry (Sg > PI):** Among younger children (2;3-4;3, N = 21), sensitivity to number marking was above chance for plural agreement (chance = 0.4, $M = 0.47$, $t(20) = 2.63$, $p < 0.01$) but not singular (chance = 0.6, $M = 0.67$, $t(20) = 1.73$, $p = 0.09$).
- Person asymmetry (1st/2nd > 3rd):** Children and adults were much more likely to produce a 1st or 2nd -person response in the 3rd-person condition than vice-versa (all $p < 0.001$).

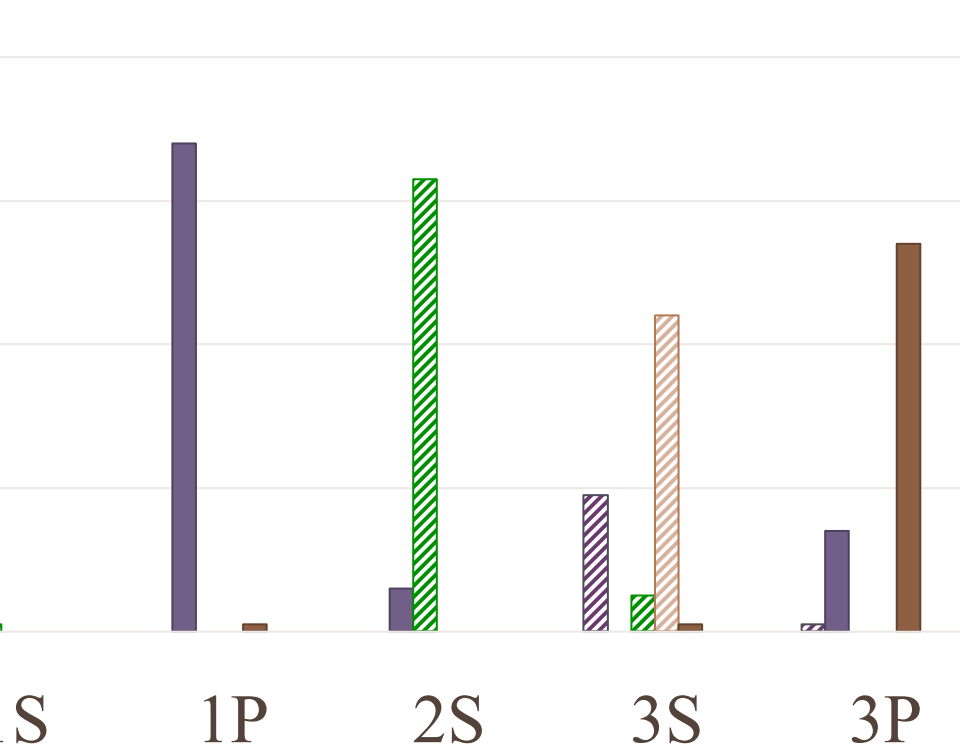
Conclusions:

- No evidence for a Sg > PI number asymmetry in Spanish.
- Both children and adults allow a picture of themselves or the speaker to be referred to in the 3rd person.

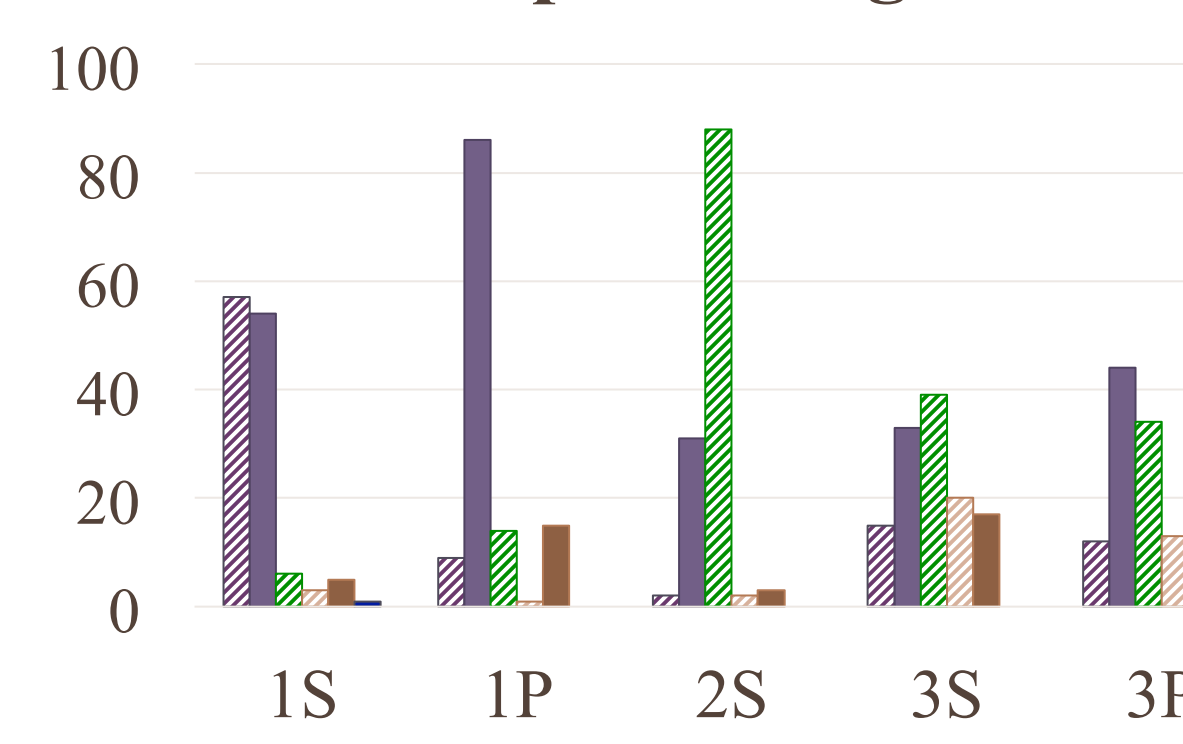
Adult responses: agreement



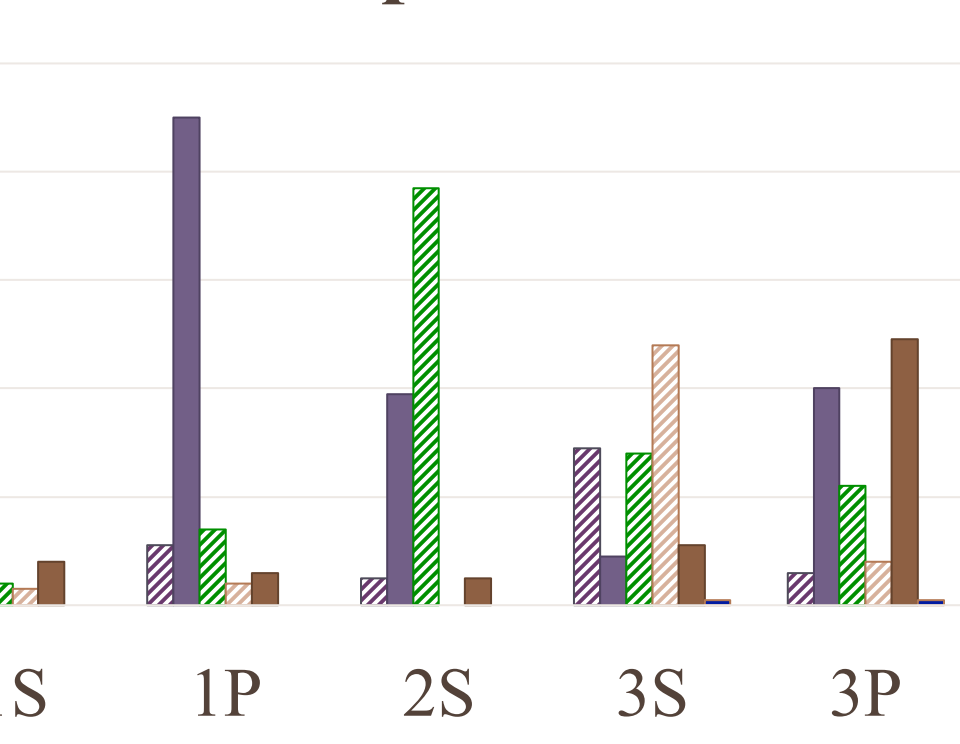
Adult responses: clitics



Child responses: agreement



Child responses: clitics



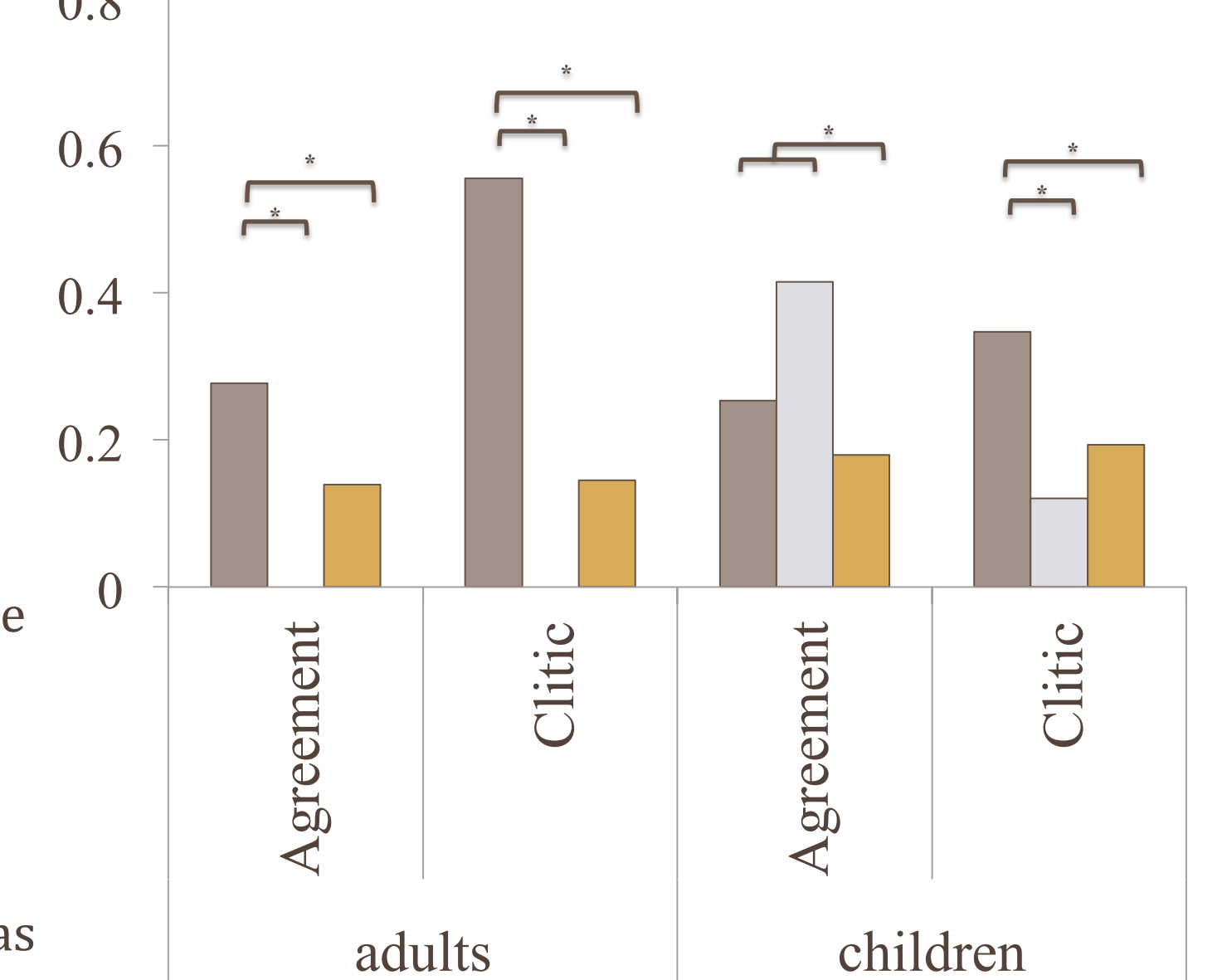
■ investigator (1S) ■ participant & investigator (1P) ■ participant (2S)
 ■ other woman (3S) ■ two other women (3P) ■ other response

Antecedent analysis

Hypothesis: Adults and children look to the most recently mentioned referent as the antecedent of a 3rd-person form. Hence we expect their responses in 3rd-person conditions to match their response to the immediately preceding filler as long as it has compatible number and/or gender features.

- 1st & 2nd person:** preceding filler response was not chosen more often than chance (chance = 0.2, all p 's > 0.28)
- Adult responses:** Likelihood of choosing the preceding filler response is
 - higher for compatible than incompatible fillers in 3rd person (agreement: $M1 = 0.27$, $M2 = 0$, $t(46) = 4.19$, $p < 0.001$; clitics: $M1 = 0.55$, $M2 = 0$, $t(44) = 7.42$, $p < 0.001$).
 - higher for compatible fillers in 3rd than for 1st/2nd person overall (agreement: $M1 = 0.27$, $M2 = 0.14$, $t(78.46) = 1.79$, $p = 0.04$, clitics: $M1 = 0.55$, $M2 = 0.15$, $t(73.11) = 4.63$, $p < 0.001$)

Proportion of responses matching the preceding filler



■ 3rd person: compatible filler features
 ■ 3rd person: incompatible filler
 ■ 1st&2nd

- Child responses:** Likelihood of choosing the preceding filler response is
 - higher for compatible than incompatible fillers in 3rd person ($M1 = 0.36$, $M2 = 0.13$, $t(72.87) = 2.78$, $p = 0.003$); and higher for compatible fillers in 3rd than for 1st/2nd person ($M1 = 0.36$, $M2 = 0.19$, $t(60.69) = 2.12$, $p = 0.02$), but **only in the clitic block**.
 - higher for 3rd person agreement overall than for 1st/2nd agreement overall, **regardless of filler features** ($M1 = 0.18$, $M2 = 0.32$, $t(229.85) = -2.74$, $p = 0.007$).

Experimental Question: Does child comprehension of Spanish verb agreement and object clitics show evidence of difficulty calculating Implicated Presuppositions?

Hypothesis & predictions

Children struggle to calculate Implicated Presuppositions.

- Child performance: Singular > Plural
- Child performance: 1st & 2nd person > 3rd person
- Adult performance: ceiling (no asymmetries)

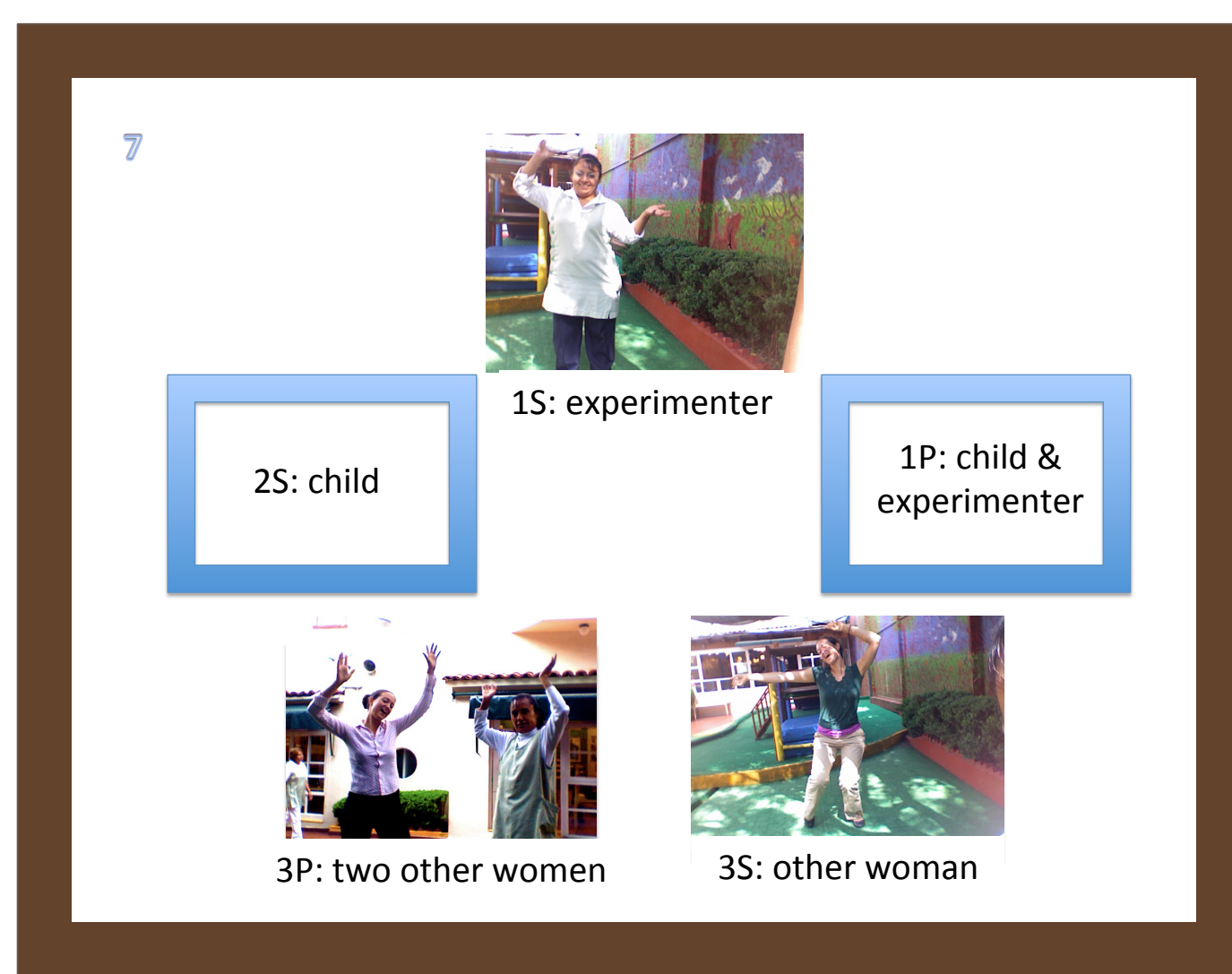
- Test items for agreement (a) and clitic (b) blocks.
 - Muéstrame la foto en donde bailamos/o/as/a/an
Show me the photo where **we/I/you/she/they** are dancing.
 - Muéstrame la foto en donde Nemo está besándonos/me/te/la/las.
Show me the photo where Nemo is kissing **us/me/you/her/them**.
- Filler items for agreement (a) and clitic (b) blocks.
 - Muéstrame la foto en donde hay alguien bailando.
Show me the photo where there is someone dancing.
 - Muéstrame la foto en donde Nemo está besando a alguien.
Show me the photo where Nemo is kissing someone.

Methods

Subjects: 42 children ages 2;3-6;7 (mean 4;3.5), 23 adults (12 women) from Mexico.

Materials and Procedure: Participants chose one photo from an array in which each of the five grammatical person/number combinations was depicted performing the same action (see figure at left). All experimenters were female.

Design: 30 test items (5 person/number forms x 3 trials x 2 blocks). Agreement block (1a) preceded clitic block (1b). Each test item was followed by a filler (7 items) depicting each actor performing a different action (2a-b), or by a distractor (7 items) depicting two cartoon characters. Fillers were re-randomized after every other subject.



Discussion

- No evidence that children acquiring Spanish agreement and clitics struggle to calculate the Implicated Presuppositions associated with plural and 3rd person forms.
- Children's behavior in the 3rd person is adult-like in that both adults and children are **sensitive to recency of mention when locating antecedents**.
- The difference is that children do not integrate recency of mention with number information in 3rd person agreement conditions.
 - This is consistent with the claim that null subjects require a more highly salient antecedent than clitics (Ariel 2001). The need for a salient antecedent may override the need for an antecedent with the right number features.

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Acknowledgements: Many thanks to the teachers, children, and administrators at SEDI, Mexico City, MX, in particular Patricia de la Fuente and Beti López Juárez. Thanks to Antoinette Hawayek and Camila Alfonso for help with adult participants, and to Cristina Schmitt, Alan Munn, Jessica Gamache, Curt Anderson, Ni La Le, and the rest of the MSU language acquisition lab.