

# Elided questions in child Spanish: Where do prepositions go?

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# Outline

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1. Introduction
2. Corpus study
3. Experimental study
4. Discussion and theoretical implications
5. Summary and conclusion

# Goals

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- We examine the acquisition of Spanish sluices.
- Spanish questions do not allow P-stranding (1a), but sluices can feature wh-remnants with omitted Ps (1b).

(1) a. \*¿Quién está María hablando *con* \_?  
‘Who is Maria talking *with* \_?’

b. *María está hablando con alguien, pero no sé **quién** <está María hablando *con* \_>.*  
‘Maria is talking with someone, but I don’t know **who** <Maria is talking *with* \_>.’

- A central goal is to provide acquisition evidence to evaluate competing hypotheses about the underlying structure of this construction.

# Sluicing

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- Sluicing (Ross, 1969): Ellipsis of TP that leaves a remnant *wh*-phrase.
  - Syntactic approaches can be grouped into:
    - A) Structure & Movement:** The remnant *wh*-phrase has moved from a full-fledged TP that is either identical to its correlate (e.g. Merchant, 2011; Ross, 1969) (2a) or not (2b), and this structure is deleted at PF.
    - B) No Movement:** Some posit structure (2c) (e.g. Abe, 2015; Kimura, 2010, Stigliano, 2022), some do not (2d) (e.g. Culicover & Jackendoff, 2005).
- (2)
- Someone is typing, but I can't see* [<sub>CP</sub> *who*<sub>i</sub> [<sub>TP</sub> ~~*t*<sub>f</sub> *is typing*~~]].
  - Someone is typing, but I can't see* [<sub>CP</sub> *who*<sub>i</sub> [<sub>TP</sub> *it is t*<sub>f</sub>]].
  - Someone is typing, but I can't see* [<sub>CP</sub> *C*<sub>[Q]</sub> [<sub>TP</sub> ~~*who is typing*~~]].
  - Someone is typing, but I can't see who.*

# Intervention effects

- Children exhibit a robust subject>object asymmetry in other A'-structures:
  - *Wh*-questions (de Vincenzi et al., 1999; Friedmann et al., 2009; Yoshinaga, 1996)
  - Relative clauses (Adani, 2011; Friedmann et al., 2009)
  - Topicalizations (Friedmann & Lavi, 2006; Manetti et al., 2016)
- **Intervention effects** (Friedmann et al., 2009; Hyams & Snyder, 2005): Children are particularly susceptible to Relativized Minimality violations (RM, Rizzi, 1990, 2018).
  - RM: In an X...Z...<Y> configuration, the dependency between the moved element (X) and the gap (Y) is disrupted if the intervening element (Z) shares some crucial morphosyntactic feature with X (e.g., Number, Animacy).

# Previous studies

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- If sluices involve structure and movement (Merchant, 2001), children should also perform better on subject (3a) than object sluices (3b).

- (3) a. *Someone is pushing Ben, can you see who < \_\_ is pushing Ben > ?*  
b. *Ben is pushing someone, can you see who < Ben is pushing \_\_ > ?*

- Consistent with this analysis, Mateu & Hyams (2021) found that English-speaking 3-6-year-olds also show a subject>object asymmetry with sluices (Subject = 92%, Object = 79%).
- Similar results have been obtained for Mandarin (Liu, Hyams, & Mateu, 2022) and Italian (Pettenon, Sanfelici, & Mateu, Poster Session at 3:30 PM!)

# Spanish and P-stranding

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- Spanish poses a problem for the standard structure and movement analysis.
- According to the *P(reposition)-Stranding Generalization*, non-P-stranding languages cannot P-strand under sluicing (Merchant, 2001).
- Spanish is a non-P-stranding language (4a,b), but allows *wh*-remnants to appear without a P (4c) (Rodrigues et al., 2009; Stigliano, 2022; Vicente, 2008, 2019)

(4) a. \*¿Cuál chico está María hablando **con** \_?  
'Which boy is Maria talking with\_?'

b. ¿**Con** cuál chico está hablando María \_?  
'With which boy is Maria talking \_?'

c. *María está hablando con un chico, pero no sé (**con**) cuál <...?...>.*  
'Maria is talking with a boy, but I can't see (with) which <...?...>.'

# Evasion strategies: P-stranding repair

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- Different analyses have been proposed to account for the Spanish data. We review four of them. The first:
  - **Identity:** Sluicing always involves an isomorphic structure and movement, P-stranding violations are repaired under ellipsis (Sato, 2011).
- (5) *María está hablando con un chico, pero no sé cuál* <María está hablando **con**\_\_>  
'Maria is talking with a boy, but I don't know 'which (one)' <Maria is talking with \_\_>

Analysis	Will children perform differently with...	
	S vs. O	Overt vs. Omitted P
Identity	Yes → S > O	No



# Evasion strategies: Long pseudosluice

- **Long Pseudosluice:** P-less sluices involve a Last Resort (re)analysis with a non-isomorphic structure – a long copular cleft (6) (Rodrigues et al., 2009).

(6) *María está hablando con un chico pero no sé...*  
'Maria is talking with a boy but I don't know...'

*cuál* < *es el chico con el que María está hablando* \_\_ \_\_ >  
'which < is the boy with whom María is talking \_\_ \_\_'

Analysis	Will children perform differently with...	
	S vs. O	Overt vs. Omitted P
Long Pseudosluice	Yes → S > O	Yes → Overt (wh-Q) > Omitted (cleft-Q)

# Evasion strategies: Short pseudosluice

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- **Short Pseudosluice:** P-less sluices involve a Last Resort (re)analysis with a non-isomorphic structure, a short specificational copular structure (7) (Vicente, 2008; van Craenenbroeck, 2010).

(7) *María está hablando con un chico pero no sé cuál < es [pro \_\_]>*  
'Maria is talking with a boy but I don't know 'which (one) < is [it \_\_]>'

- In copular structures the DP subject and DP predicate form a small clause and are not in c-command relation (Moro, 1997). No Intervention should arise.

Analysis	Will children perform differently with...	
	S vs. O	Overt vs. Omitted P
Short Pseudosluice	Yes → S > O (w/ P)	Yes → Overt (wh-Q) < Omitted (copula)

# Spanish (P-less)Sluices: No Movement

- **No Movement:** ALL (Spanish) sluices involve structure but not movement (8) (e.g., Abe, 2015; Stigliano, 2022).

(8) *María está hablando con un chico pero no sé <María está hablando con> cuál<sub>[F]</sub>*  
'Maria is talking with a boy but I don't know <Maria is talking with> which  
(one)<sub>[F]</sub>' >

Analysis	Will children perform differently with...	
	S vs. O	Overt vs. Omitted P
No Movement	No	No

# Summary of Predictions

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Table 1. Summary of predictions by analysis

Analysis	Will children perform differently with...	
	S vs. O	Overt P vs. Omitted P
Identity	Yes → S > O	No
Long Pseudosluice	Yes → S > O	Yes → Overt (wh-Q) > Omitted (cleft-Q)
Short Pseudosluice	Yes → S > O (w/ P)	Yes → Overt (wh-Q) < Omitted (copula)
No Movement	No	No

# Corpus study: Procedure

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- We conducted a corpus study and manually coded 852 sluices according to:
  - (i) Group: Adult, Child
  - (ii) Extraction Type: Subject, Object, Other
  - (iii) For PP correlates, whether the P was overt or omitted in the sluice
- Compared to adults, children produce proportionally fewer object sluices with featural overlap ( $p = .023$ ), in line with **movement accounts**.
- Children's proportion of omitted (27%) vs. overt Ps in P-sluices is not different from adults (35%) ( $p = 0.571$ ), in line with **identity analysis**.

# Experimental study

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- **Participants:**

- 46 Spanish-speaking children aged 3-6 ( $M_{age} = 5;5$ , target  $n = 60$ ) (+17 excluded).
- Tested remotely (Mexico, Spain, U.S.) via Zoom.
- >80% Spanish exposure

- **Materials and Procedure:**

- Yes/No character selection task with one hidden character to make question felicitous (Mateu & Hyams, 2021)
- 4 training items + 28 test items
- 4 verbs that select for a PP complement: *chocar con* (bump into), *recargarse en* (lean on), *fijarse en* (stare at), *reirse de* (laugh at)

# Experimental study

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- Manipulations:

- *Trial Type*: Sluices and Control cleft questions
- *Extraction Site*: Subject, Object
- *P-Type* (Object sluices): Overt P, Omitted P

- (10) a. *Un niño está chocando con María, ves cuál?* (S Sluice)  
'A boy is bumping into María, can you see which?'
- b. *María está chocando con un niño, ves **con** cuál?* (O Sluice, Overt P)  
'Maria is bumping into a boy, can you see with which?'
- c. *María está chocando con un niño, ves cuál?* (O Sluice, Omitted P)  
'Maria is bumping into a boy, can you see which?'

# Sluices: S vs. O

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- (11) a. *Un niño está chocando con María, ves ...*  
'A boy is bumping into María, can you see...  
cuál <\_\_ está chocando con María >?  
'which <\_\_ is bumping into Maria>?'
- b. *María está chocando con un niño, ves ...*  
'Maria is bumping into a boy, can you see ....  
con cuál <María está chocando \_\_ >?  
'into which (one) <Maria is bumping \_\_ >?'



Figure 1. Sample images for character-selection task. No scenario for (11a), Yes scenario for (11b)



# Sluices: Overt vs. Omitted P

(12) a. *María está chocando con un niño, ves ...*  
'Maria is bumping into a boy, can you see ...  
*con cuál* <María está chocando \_\_ >?  
'with which <Maria is bumping \_\_ >?'

b. *María está chocando con un niño, ves ...*  
'Maria is bumping into a boy, can you see ...

*cuál* <María está chocando con \_\_ >?

'which <Maria is bumping into \_\_ >?

*cuál* <es el niño con el que María está chocando \_\_ \_\_ >?

'which <is the boy into which Maria is bumping >?'

*cuál* <es pro \_\_ >?

'which (one ) <is it \_\_ >?'



Figure 2.  
Sample  
images for  
character-  
selection task.  
No scenario  
for (12a,b)

(Identity)

(Long Pseudosluice)

(Short Pseudosluice)

# Controls

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- Long clefts with reversed arguments (13), to ensure they were paying attention to the question and not simply resolving the indefinite in the first clause.
- Only children that performed above chance with S Controls were included.

(13) a. *María está chocando con un niño, ves cuál es... (S Control)*  
*el niño que \_\_ está chocando con María?*

'Maria is bumping into a boy. Can you see which is...  
the boy that \_\_ is bumping into Maria?

b. *Un niño está chocando con María, ves cuál es.... (O Control)*  
*el niño con el que María está chocando \_\_?*

'A boy is bumping into Maria. Can you see which is...  
the boy that Maria is bumping into \_\_?

# Results: Age, Trial Type

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- Mixed effects logistic regression (glmer) models with (anova, emmeans) comparisons reveal children did better:
  - as they got older ( $Age = \chi^2(1) = 20.48, p < 0.001$ )
  - in Sluices than Control items ( $TrialType = \chi^2(2) = 15.08, p < 0.001$ )
    - Likely because long clefts controls are more complex than the simple sluiced wh-questions.

Table 3. Results from character-selection task by Trial Type and Age group.

	Controls	Sluices
3-4yo (n = 19)	71.2%	73.4%
5-6yo (n = 27)	87%	96.2%
All (n = 46)	80.5%	86.9%

# Results: Subject > Object

Analysis	S vs. O
Identity	Yes → S > O
Long PS	Yes → S > O
Short PS	Yes → S > O (overt P)
No Mvt	No

- Children also did better:
  - In Subject extraction than in Object extraction, ( $ExtractionSite = \chi^2(2) = 36.22, p < 0.001$ ), both in the Controls ( $p < 0.001$ ) and the Sluices ( $p = .005$ )
    - In line with the Intervention Hypothesis and in support of a Movement analysis

Table 4. Results from character-selection task by Trial Type, Extraction Site and Age Group.

	Controls		Sluices	
	S	O	S	O
3-4yo (n = 19)	84%	58%	86%	68%
5-6yo (n = 27)	94%	79%	98%	95%
All (n = 46)	89.8%	71.2%	93.7%	83.8%

# Results: Object Sluices

Analysis	Overt P vs. Omitted P
Identity	No
Long PS	Yes → Overt > Omitted
Short PS	Yes → Overt < Omitted
No Mvt	No

- Children did **not** perform differently in Overt and Omitted P Object sluices ( $PType = \chi^2(1) = 2.73, p = 0.1$ )
- If Object sluices with omitted Ps involve a reanalysis into a:
  - Long Pseudosluice (cleft), children should perform worse than when the P is Overt.
  - Short Pseudosluice (copula), children should perform better than when the P is Overt.

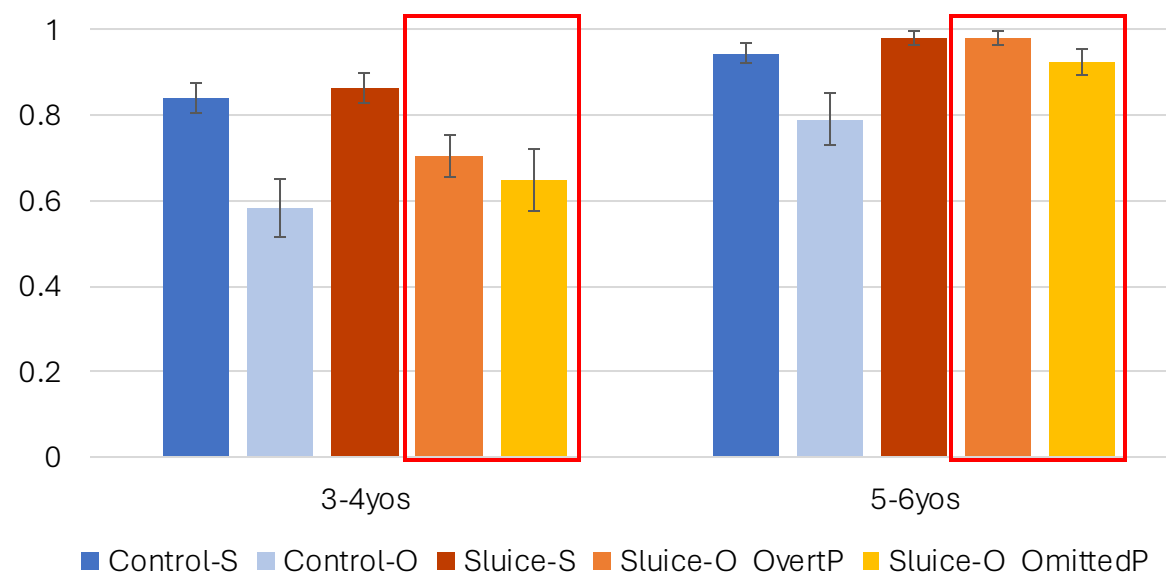


Figure 3. Results by condition and age group

Analysis	Overt P vs. Omitted P
Identity	No
Long PS	Yes → Overt > Omitted
Short PS	Yes → Overt < Omitted
No Mvt	No

# Results: Object Sluices

- Moreover, there was a positive correlation between Overt and Omitted P Object sluices:  $r_s(44) = .79, p < .001$
- No correlation between Object Controls (clefts) and Omitted P Object sluices ( $p = .1$ )
  - In support of analyses that posit an identical structure, not a pseudosluice.

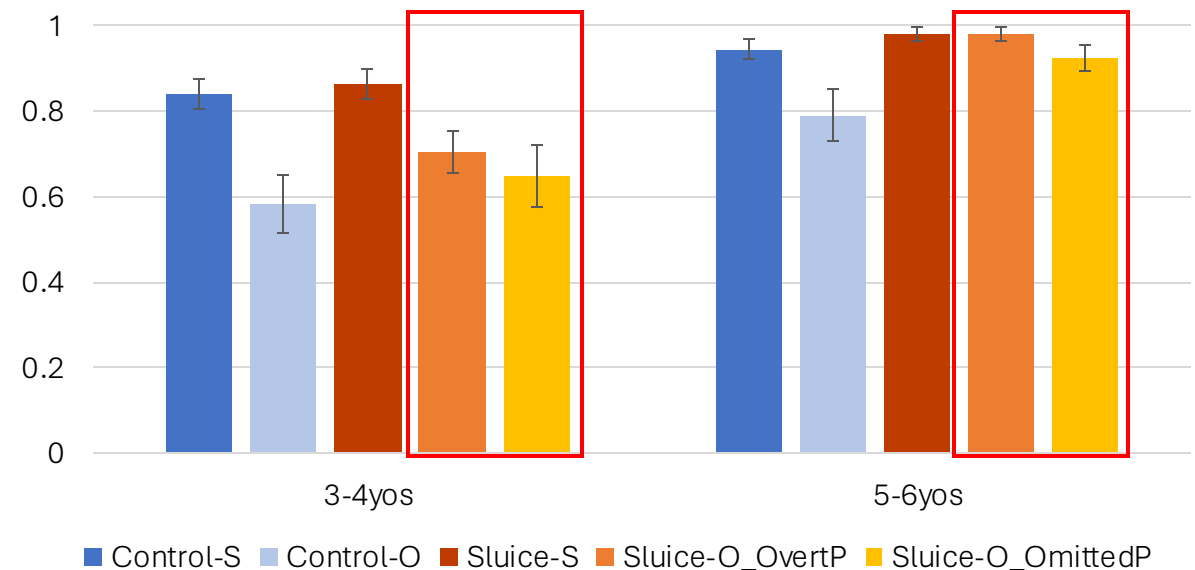


Figure 3. Results by condition and age group

# Discussion

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- Spanish-speaking children exhibit a Subject > Object asymmetry, consistent with Structure and Movement analyses (5) (e.g., Merchant, 2001),
- and against No Movement accounts (8) (e.g., Stigliano, 2022)
  - replicates results found for English, Mandarin, Italian (Mateu & Hyams, 2021; Liu et al, 2022; Pettinato et al., 2024).

# Discussion

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- Children perform similarly when the P is overt (14a) and when it is omitted (14b-d).

(14) *María está chocando con un niño pero no sé...*

'Maria is bumping into a boy but I don't know...'

a. con cuál < *María está chocando \_\_* >

'into which (one) < María is bumping \_\_ >'

(+P, Id)

b. cuál < *María está chocando con \_\_* >

'which (one) < María is bumping into \_\_ >'

(-P, Id+Repair)

c. cuál < *es el niño con el que María está chocando \_\_ \_\_* >

'which < is the boy into whom María is bumping \_\_ \_\_ >'

(-P, Long Pseudosluice)

d. cuál < *es pro \_\_ \_\_* >

'which < it is \_\_ \_\_ >'

(-P, Short Pseudosluice)



# Discussion

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- This suggests that sluices with an Overt P and an Omitted P involve similar structures and derivations, and
- that P-less sluices likely do not involve reanalysis into a much more complex cleft (Rodrigues et al., 2009)
- nor a much simpler short copula structure (Vicente, 2008).

# Discussion

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- What's in the ellipsis site of P-less sluices?
- **P-stranding:** Failure to percolate the wh-feature to P is repaired by ellipsis because it is a violation at the syntax-phonology interface (Sato, 2011). Like other islands (Merchant, 2001), this violation is a PF phenomenon.
  - Spanish-speaking children **never** P-strand in other A'-structures (Sugisaki & Snyder, 2003)
  - Open question: Do children allow other island violation repairs under sluicing?

# Discussion

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- **P-chopping:** It is possible that children are dropping the P entirely and not stranding it under sluicing.
  - Some languages allow for Ps to delete in A'-structures (French, Portuguese, colloquial Greek) (Bouchard, 1981; Kato, 2008; Mailing, 1977)
  - Omitted Ps have been attested in adult Peruvian and Rioplatense Spanish relative clauses (Cerrón-Palomino, 2014; Alba de la Fuente & Pato, 2020)
  - Omitted Ps in A'-structures have been reported to be part of the interlanguage grammars of adult L2ers, even when the L1 doesn't allow null or stranded Ps (Perpiñán & Cardinaletti, 2024; Espírito Santo, 2024).
  - Open question: Do Sp-speaking children allow P-less wh-questions to have a PP answer? (e.g., What is the boy painting? A house/\*With a brush)

# Summary

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- According to the *P(reposition)-Stranding Generalization*, non-P-stranding languages cannot strand under sluicing.
- Spanish does not allow P-stranding, but nevertheless appears to allow it under sluicing, posing a challenge for isomorphic structure and movement analyses.
- We presented new evidence from child data (corpus + experiment) showing that Spanish-speaking children:
  - Exhibit a subject>object asymmetry, consistent with structure and movement analyses, and against No Movement analyses (e.g., Stigliano , 2020).
  - Do not perform worse when the P is omitted compared to when it is pronounced, suggesting that sluices with a P and without a P involve similar analyses, contra Pseudosluice analyses (e.g., Rodrigues et al., 2009)

# Thank you

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