SUBJECT-VERB INVERSION AND VERB FINITENESS ARE INDEPENDENT IN SPANISH

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The phenomenon

Inverted/Uninverted Questions	Percent Acceptance
When did Pooh have lunch?	100% (11/11)
When Pooh did have lunch?	0% (0/11)
¿Cuándo come panes el gato?	76% (16/21)
¿Cuándo el gato come panes?	24% (5/21)

Study in Progress

- There are many potentially relevant variables to be considered in comparing subject-auxiliary inversion in English and subject-verb inversion in Spanish:
  - tense marking element
    - main verb?
    - auxiliary?
    - modal?
    - do?
  - wh- pronoun
  - subject type
    - full DP
    - name
    - pronoun

- In this study, we inevitably consider only a subset of these variables.

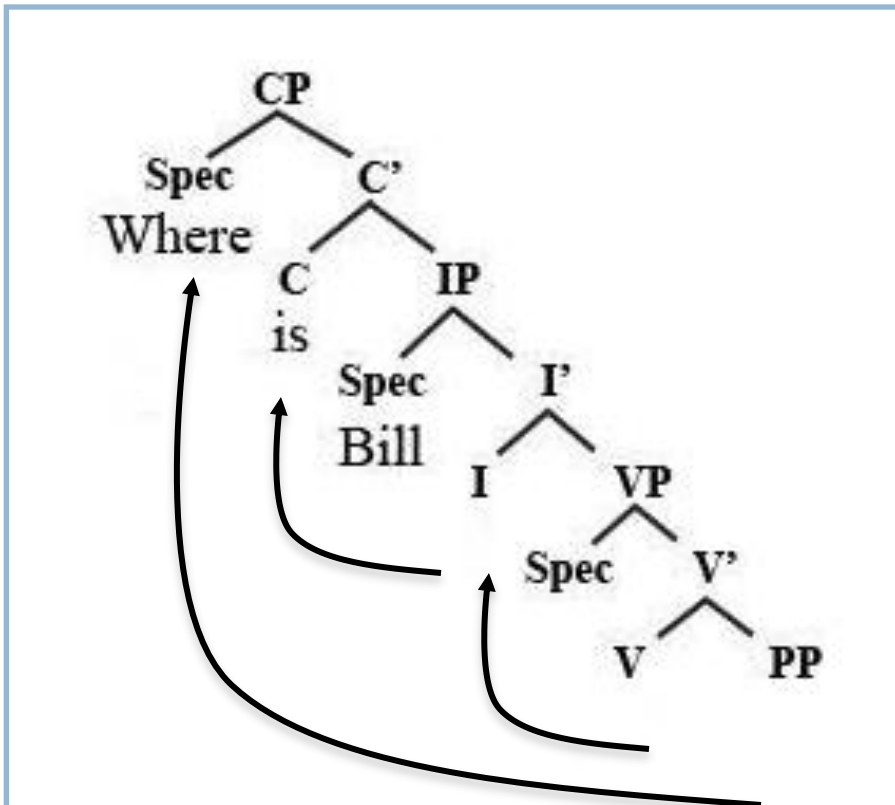# Subject-Auxiliary Inversion and Subject-Verb Inversion

□ What syntactic mechanisms underlie subject-auxiliary inversion (SAI)/subject-verb inversion in wh- questions?

(1)   a. What will John say?

b. *What John will say?

(2)   a. ¿Qué dijo Juan?

b. *¿Qué Juan dijo?

□ Do they differ between Spanish and English?

"Residual V2" and V-to-I-to-C

The Wh- Criterion (Rizzi 1991)

A. A *wh*-operator must be in a Spec-head configuration with X^0
$$[+wh]$$

B. An X^0 must be in a Spec-head
$[+wh]$

configuration with a *wh*-operator.

- V-to-I-to-C movement (Emmonds1970, Chomsky, 1981, Den Besten 1983 and Pollock, 1989)

V-to-I-to-C in Spanish?

- V-to-I-to-C analysis has been adopted for Spanish and Italian
  - Rizzi 1991, Pesetsky & Torrego 2001 and many others
  - Torrego's (1984) classic study is in this spirit.

- Conceptually attractive
  - Same analysis for English and Romance
  - *Wh*-criterion as universal principle

Is this analysis adequate for Spanish?

- Spanish and English do not behave in exactly the same way.
  - In embedded questions, inversion is required in Spanish, but is disallowed in English:
    - Mary asked what <u>Peter would </u>say.
    - *María preguntó qué <u>Pedro dijo</u>.
  - This is a classical trait of Germanic V2 languages

- Let's now look at other Spanish/English differences.

Adverbs, Clitics & Compound Tenses

□ Adverbs - Suñer (1994)

(3) ¿Con quién [nunca] [jamás de los jamases] piensas (tú) hablar?
'With whom wouldn't you ever in your life think of speaking?'

(4) *With whom never do you plan to speak?
With whom do you never plan to speak?

□ Clitics – Ordóñez (1997)

(5) a. ¿Qué **le** escribió?
b. *¿Qué escribió **le**?
'What wrote to her/him' (Ordóñez, 1997 p. 133)

(6) Gestern hat **sich** der Hans ein Buch gekauft.
Yesterday has cl the Hans a book bought
'Yesterday Hans has bought a book for himself' (Kayne, 1995)

□ Auxiliary Verbs - Barbosa (2001)

(7) *¿Cuándo ha Juan comprado una bicicleta?
When has John bought a bike
`When did John buy a bike?' (Baauw 1998, p 11)

Satiation

- Goodall (in press): Tests *wh*-questions without inversion for "satiation" in English and Spanish.
  - "Satiation" = Unacceptable sentence becomes acceptable with repetition.

- Participants were presented with unacceptable sentences like:

  (8)a. *What John will buy at the store?
  b. *¿Qué Juan compró en la tienda?
  'What did Juan buy in the store?'

- Results:
  - English speakers did <u>not</u> show satiation effect.
  - Spanish-speakers <u>did</u> show satiation effect (non-inverted questions became more acceptable).

- This difference is unlikely if both languages share same underlying mechanism for inversion.

Interim conclusions

- Verbs do <u>not</u> seem to be in a specifier-head configuration with the wh- pronoun in Spanish, as required by the *Wh*-Criterion.

- Thus Spanish must use different mechanisms for inversion than English.
  - English: Close connection between I (finiteness) and inversion (driven by *Wh*-Criterion).
  - Spanish: No necessary connection between I and inversion.

Existing child language results

- Finiteness-Inversion connection in English
  - Santelmann et al (2002)
  - Grinstead, Warren, Ricci and Sanderson (2009)
    - finiteness and SAI correlate ($r^2 = .275$, p. $< .001$).

- Finiteness-Inversion connection in Spanish
  - Unknown, though Guasti (1996) finds that Italian-speaking children form adult-like negative interrogatives, as opposed to English-speaking children (Bellugi 1965, 1971, Brown 1968, Erreich 1984).
  - methodological problem – small number of overt subjects (less than 20%) in spontaneous speech in null subject languages.

A Question

- Correlation between finiteness and subject-verb inversion in child Spanish, as suggested for child English?

- If there is, then it supports the idea that inversion is similar in Spanish and English.

- If there is not, it supports the idea that inversion is fundamentally different in the two languages.

Experiment 1: Finiteness

- Methodology: Grammaticality Choice Task (Pratt & Grinstead 2008)

  - A receptive task to get around the small number of overt subjects in spontaneous speech.

- Participants

  - 55 monolingual speakers of Spanish, from daycare centers in Mexico City.

    - 11 children excluded for not passing fillers, leaving 44.
    - Mean age of the 44 children: 4;9.
    - Range: 3;2 (39 mo) – 6;6 (80 mo).

Experiment 1: Procedures

- Children were introduced to two puppets, and were told that the puppets were babies and were learning to talk, and sometimes they made mistakes.

- Then, the child was presented with a picture of the puppets performing different actions.

- Each of the puppets said a sentence about the picture, using both adult-like and non-adult like combinations of finite and non- finite forms.

- The child then had to decide which puppet said the sentence better.
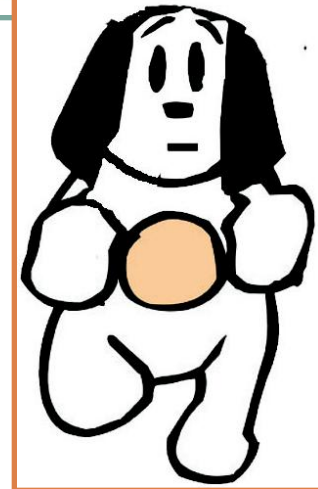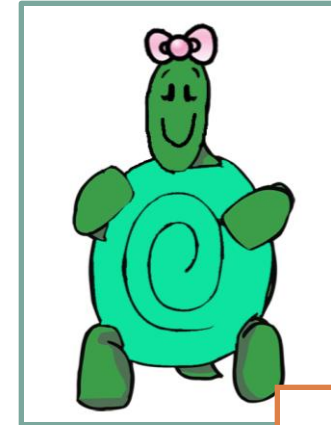
5. Experiment 1: Procedures -cont.

- The experiment consisted of four pairs of warm up questions, eight pairs of fillers and sixteen pairs of experimental items.
  - Fillers were judgments of plural marking on nouns, which children are known to comprehend very early (Rice, Wexler and Redmond 1999; Grinstead, Cantú & Flores 2008).
  - Children who did not pass at least 6 fillers were removed from the sample (n = 11).

- The verbs used in the sentences were in the present and past tense to describe what the puppets were doing in the pictures.

- We excluded second person singular, present tense verb forms (comes), because the uninflected version (come) is ambiguous with the 2nd person singular imperative, and has caused confusion in previous experiments.
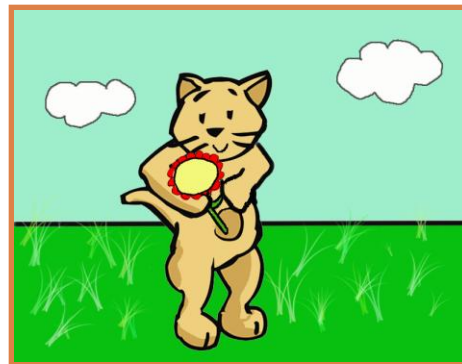
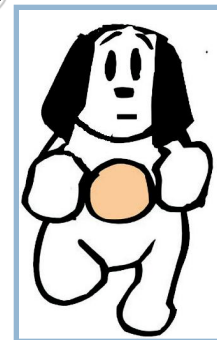# Experiment 1: Procedures -cont.

- Order of presentation was counterbalanced.
  - No effect of order ($F_{(2, 41)} = .061$, $p = .941$).
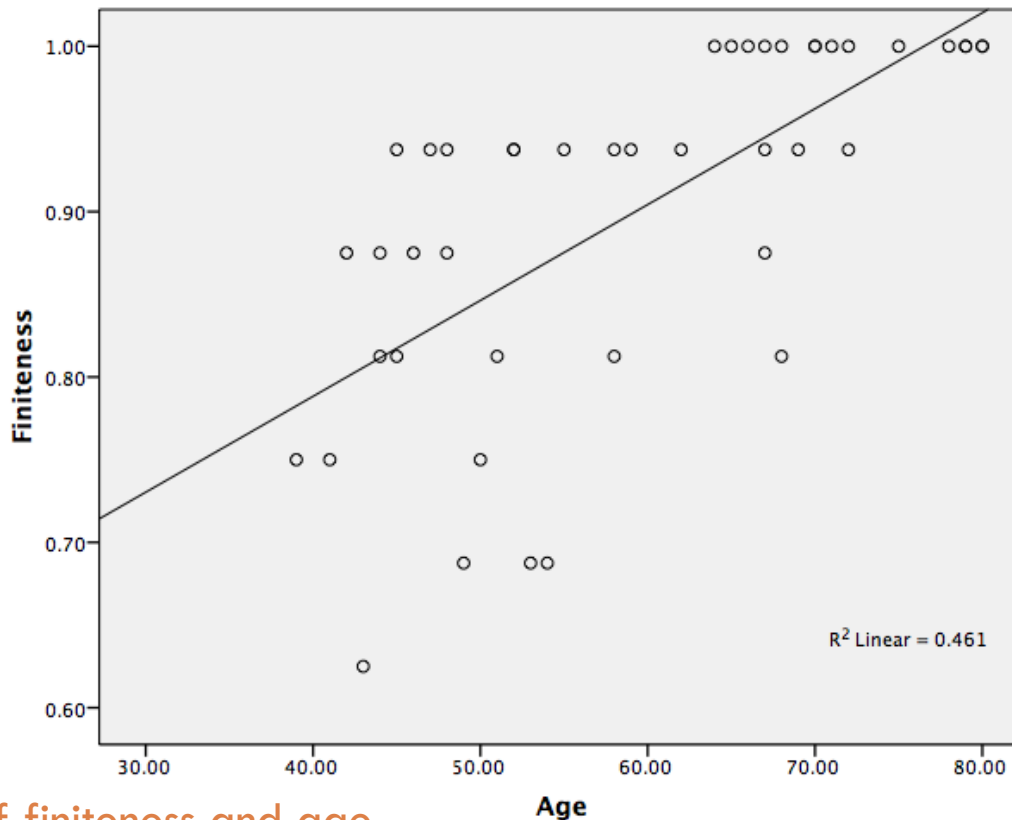
- Finiteness sample question:

Experiment 1: Results

- Overall average of correct answers: 90%, SD=.106 (N=44)
- Finiteness judgments and age were correlated: r= .679, p < .000.

Linear regression of finiteness and age.

Experiment 1: Conclusions

☐ Spanish-speaking children by 3;0 distinguish between finite and non-finite verb forms above chance ($t(43) = 56.140$), $p<.001$).

☐ Age and finiteness judgments are significantly correlated.

  ☐ Consistent with Grinstead, et al (2008) for finiteness in English and with Grinstead et al (2009) for finiteness in Spanish.

Experiment 2: Subject-Verb Inversion

- Methodology
  - Grammaticality Choice Task (Pratt & Grinstead 2008)

- Participants
  - same 44 children that took the Finiteness test.
  - Mean age: 4;9
    - Range: 3;2 (39 mo) – 6;6 (80 mo).

Experiment 2: Procedures

- Procedures identical to those of experiment 1.

- Experiment consisted of
  - 4 pairs of warm-up questions
  - 8 pairs of fillers
  - 18 pairs of experimental items.

- The three wh- words that were used on this test were adjuncts: *dónde* and *cuándo*, and the argument *qué*, distributed equally among the 18 experimental items.

Experiment 2: Procedures

- In main clause *wh*-questions, subject verb inversion is supposedly obligatory in central Mexican Spanish (cf. Lipski 1977).

- We decided not to use *por qué* since this *wh*-word shows much more variability with regards to inversion (Ordóñez 2006).
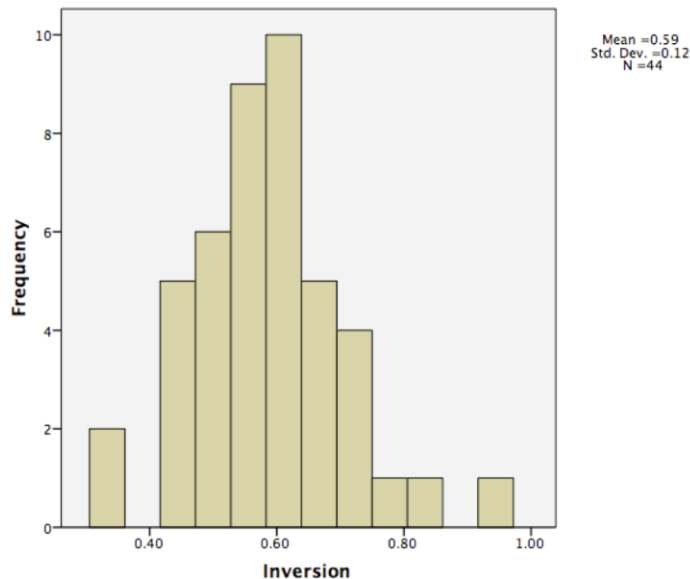
Experiment 2: Procedures

□ Order of presentation was counterbalanced.

  ▫ There was no effect of order (p > .05)

  ▫ Subject-verb inversion sample question:
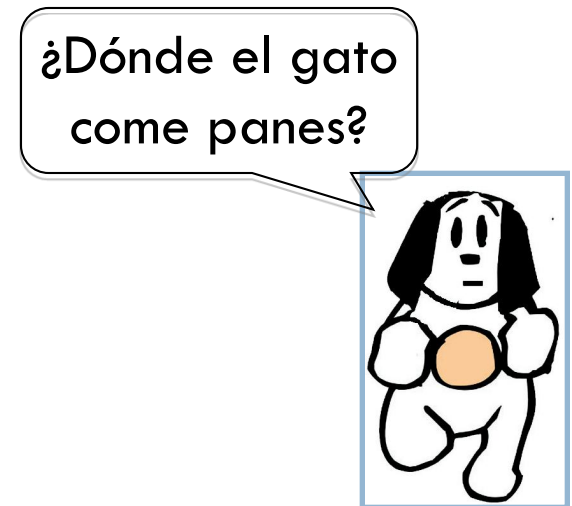
6. Experiment 2: Results

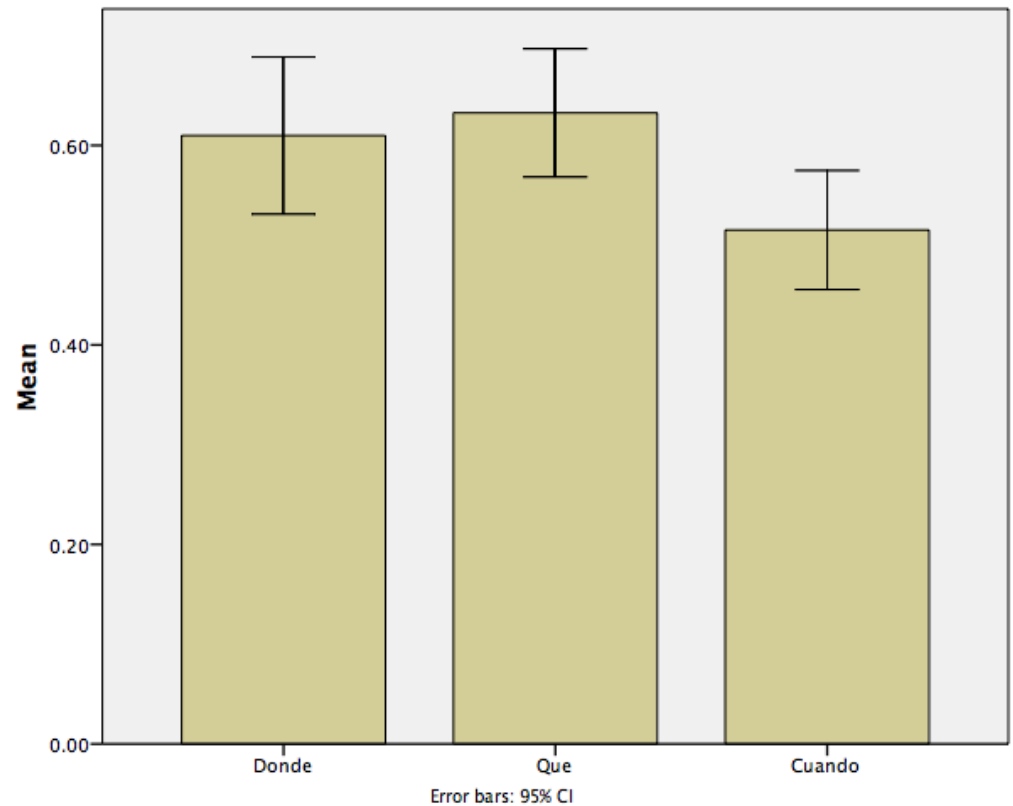□ The overall average of correct answers in the Inversion Task for N=44 was 58%, SD=.12

Distribution of correct judgments of inversion.

Experiment 2: Results

- The mean percentage of inverted structures chosen on the Inversion Task for N=44 was 58%, SD=.12

- Inversion was chosen significantly less with *cuándo* than with *qué* (p=.05).

Error bars: 95% CI

Judgment Reliability

□ Judgments of inversion in our sample were significantly above chance (t (43) = 4.743, p < .001).

  ◘ Children were not guessing.

Finiteness and Inversion Compared

- Are finiteness and inversion correlated in our the judgments of the Spanish-speaking children in our sample?

- Our results showed <u>no correlation between finiteness and inversion</u> (N=44, r=-.239, p=.118).

Experiment 2: Conclusions

- If our tasks measure finiteness and inversion, then our results suggest that the two are not related in Spanish.

Spanish and English compared

☐ How different are the relationships between finiteness and inversion in child Spanish and English?

☐ Spanish: Large difference between children's judgments of finiteness and inversion.

☐ English: Small difference between children's judgments of finiteness and inversion (Ricci 2009).

Spanish and English compared

Adult Control Results from pilot work

	Spanish (n=18)	English (n=11)
Finiteness	100% (288/288)	99% (263/264)
Inversion	86% (317/378)	99% (218/220)

Children's Results

	Spanish (n=44)	English (n=63)
Finiteness	90% (634/704)	80% (1282/1504)
Inversion	59% (464/792)	74% (929/1253)

Mean Correct Finiteness and Inversion Judgments from Ricci (2009) for English.

Spanish and English compared

- Spanish-speaking and English-speaking samples took very similar tests and are very similar in age.
  - Spanish: n = 44, age range = 39-80 months, mean age = **59 months.**
  - English: n = 63, age range = 36-72 months, mean age = **59 months.**

- However, compare the difference between finiteness and inversion scores:
  - Spanish-speaking children: 31% difference
  - English-speaking children: 6% difference
- Consistent with idea that finiteness and inversion are unrelated in development.

Spanish and English compared

☐ Finiteness scores in both English ($F_{(1,125)}$ = 5.364, p = .022) and Spanish ($F_{(1, 867)}$ = 169.283, p < .001) are significantly greater than inversion scores

However, the effect size of this difference is dramatically greater in Spanish than it is in English, again suggesting that the two constructions are not related in Spanish, while they are in English.
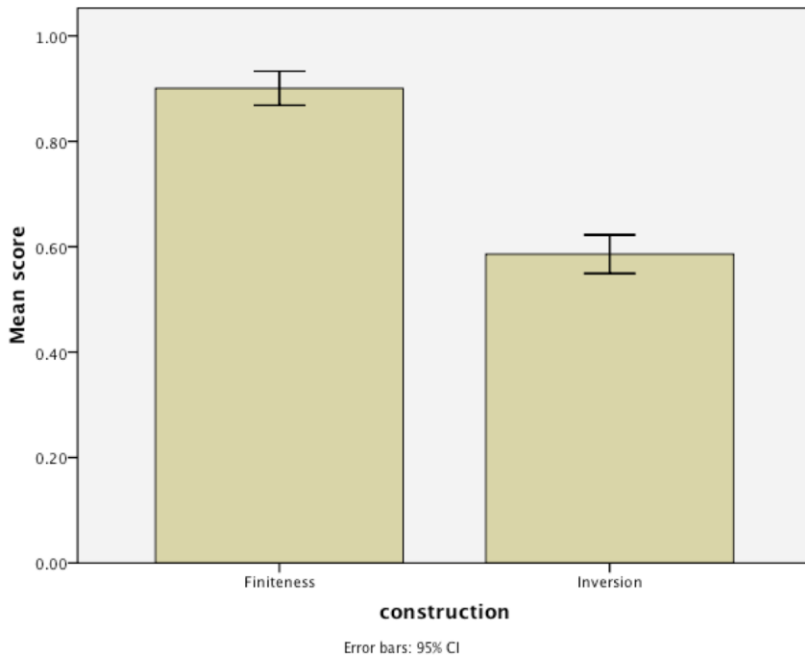
	Spanish	**English**
Finiteness vs. Inversion Partial Eta-Squared Values	.663	.041

Partial Eta-Squared Values From Univariate ANOVAs Comparing Finiteness to Inversion in Spanish and Finiteness to Inversion in English.
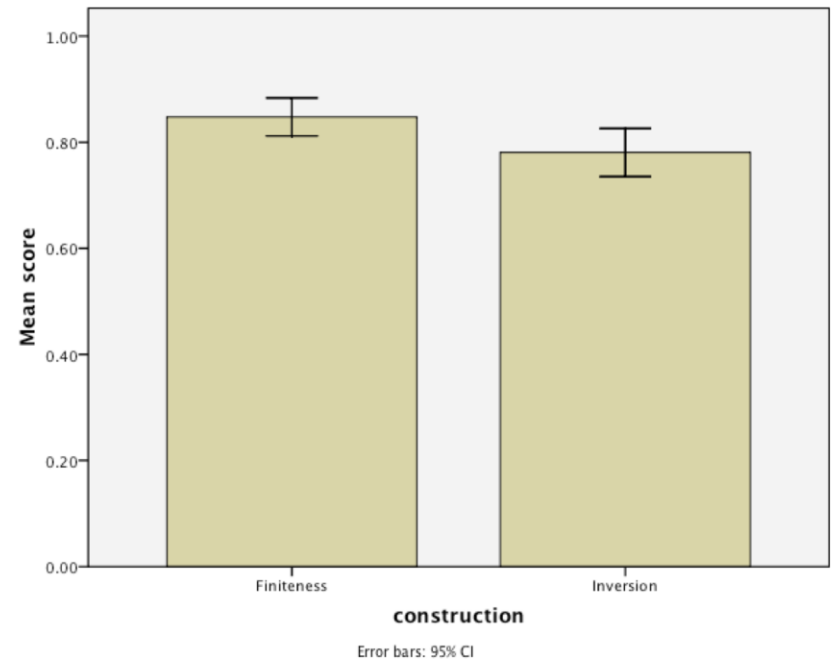
Spanish and English compared

□ This difference is illustrated in the comparison of the following figures:

Spanish Mean Percentage Correct for Finiteness and Inversion.

English Mean Percentage Correct for Finiteness and Inversion (from Ricci, 2009).

Narrowing attention to *qué*

- Adults required inversion most robustly with *qué*, so does finiteness correlate with inversion with *qué*?

- Adults chose inversion on 92% of our *qué* questions.
  - Do children's *qué* scores and finiteness scores correlate?
    - No, r = -.176, p = .254

"qué" Question Results

"Qué" sentences	Adult's % of inversion on "Qué" sentences	Children's % of inversion on "Qué" sentences
¿Qué tú comes en la mesita?	95%	66%
¿Qué tú rompes en la escuela?	90%	64%
¿Qué ellos rompen en la casa?	86%	64%
¿Qué ellos comen en la casa?	95%	64%
¿Qué el gato come ahora?	95%	68%
¿Qué el gato rompe en casa?	90%	55%

Conclusions

- Finiteness and inversion are <u>not</u> correlated in child Spanish, unlike what has been found for English.

- Consistent with idea of different mechanisms:
    - English: *Wh*-criterion forces link between finiteness and movement to C.
    - Spanish: No movement to C. *Wh*-criterion not at work here.

- Difference between finiteness and inversion judgments:
    - English: Very small.
    - Spanish: Much larger.

Conclusions

☐ Many more variables remain to be explored on the relationship between subject-verb inversion and finiteness in Spanish.

Acknowledgments

- □ We acknowledge the the generous help and comments of Javier Gutiérrez-Rexach, Rebeka Campos, Pilar Prieto, Laura Wagner, Peter Culicover, Mineharu Nakayama, Monique Mills, Amy Pratt and Cara Ricci.

◻Thank you!