

Interrogative inversion in Spanish-English bilingual children: cross-linguistic influence and L1 attrition in Spanish

Alejandro Cuza and Nelleke Strik
Purdue University, Dalhousie University

Objectives

Do Spanish-English bilingual children produce obligatory **subject-verb inversion** in Spanish interrogatives, a structure acquired early in monolingual development?

If difficulties are found:

- cross-linguistic influence?
- syntactic complexity?
- child L1 attrition?
- incomplete acquisition?

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Interrogatives in Spanish and English

	<i>Matrix</i>	<i>Embedded</i>
Spanish	¿Qué compró Dora?	No sé qué compró Dora.
	*¿Qué Dora compró?	*No sé qué Dora compró.
English	What <i>did</i> Dora buy?	*I don't know what bought Dora.
	*What Dora bought?	I don't know what Dora bought.

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Interrogative Inversion in English

→ Obligatory subject - (aux) verb inversion in matrix *wh*-questions, but not in embedded *wh*-questions.

T-to-C movement analysis:

V-to-T-to-C movement of the AUX verb in matrix questions (*do* support), but no auxiliary or lexical verb raising in embedded questions. The lexical verb always remains in its base position.

(Chomsky, 1981; Adger, 2001; Pollock, 1989; Radford, 1997).

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Interrogative Inversion in Spanish

→ Obligatory subject-verb inversion in both matrix and embedded *wh*-questions.

VP internal subject hypothesis:

- The verb moves to I (no movement to C). The subject originates in post-verbal VP-internal position (Spec, VP), giving rise to a VOS word order.

(Contreras 1987; Goodall 1993, 2004; Grinstead et al. 2010).

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Previous Research: Bilingual Children

- Simultaneous bilingual children develop autonomous grammatical systems with little interdependence between the two languages.

(De Houwer 1990, Meisel 1994, Paradis & Genesee 1996)

- Cross-linguistic influence among young bilingual children in both syntactic and syntax-semantics aspects of language.

(Austin et. al. submitted, Müller & Hulk, 2001, Pérez-Leroux, Cuza & Thomas 2011 a.o.)

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Previous Research: Bilingual Children

Hulk & Müller (2000): Two conditions for cross-linguistic influence:

- There is overlap in surface structures between the two languages and structural ambiguity in one of the two languages.
- It affects syntax-pragmatics interface structures (C-domain).

(Patzack 2001, Sorace 2005, Serratrice, Sorace & Paoli 2004)

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Previous Research: Bilingual Children

CLITIC CLIMBING: Pérez-Leroux, Cuza & Thomas (2011)

- Preference for post-verbal object clitics in infinitival expressions among SPAN-ENGL bilingual children versus the pre-verbal option preferred by monolingual speakers

TENSE/ASPECT: Cuza et al. (submitted)

- Overproduction of **preterite forms** and decreased production of the **imperfect forms** (10% range) by young Spanish-English bilingual children. Adult bilinguals, however, rely more on the preterite and the present and resemble younger children in their verbal proportion.

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Previous Research: Bilingual Children

SUB-VERB INVERSION: Austin et. al. (submitted).

- Discrete patterns of attrition of subject-verb inversion, and overt morphological reanalysis of Negative Polarity items in heritage Spanish, but no difficulties with sentential NEG:

- (1) a. ¿Qué tus papas **comen**?
 "What do your parents eat?"
 b. *No le gusta-a **ni** un pastel.
 "He doesn't like any cake."

- More permeability in the weak feature values of functional categories. Strong feature values (negation) remain unaffected.

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Previous Research: Heritage Speakers

SUB-VERB INVERSION: Cuza (2012)

- Low sensitivity to obligatory subject-verb inversion in matrix and embedded questions among Spanish heritage speakers in the US.

- (2) a. ¿Qué **compró** Juan? (matrix)
 "What did John buy?"
 b. Me pregunto qué **compró** Juan (embedded)
 "I wonder what John bought"

- Higher rates of non-inversion with **embedded questions**. Cross-linguistic influence effects in the absence of pragmatic phenomena.

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Previous Research: Heritage Speakers

Incomplete Acquisition Account

(Montrul, 2002; 2008; 2009; Montrul & Potowski, 2009)

- The deficits observed in adult heritage speakers stem mainly from incomplete acquisition during childhood due to reduced input and use of the heritage language.

L1 Attrition Account

(Austin et al. submitted, Cuza 2008; Sorace 2000, Polinsky 2011 a.o.)

- The deficits observed may stem from gradual L1 attrition during the life span rather than incomplete acquisition during early childhood in some linguistic domains.

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Research Questions

1. Do Spanish-English bilingual children show sensitivity to obligatory inversion in Spanish *wh*-questions?
2. If not, can difficulties be accounted for in terms of bilingual effects and L1 attrition rather than incomplete acquisition during early childhood?
3. Will the difficulties occur across the board or will some structures be more affected than others, depending on their syntactic complexity (matrix vs. embedded)?

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Study

Participants: 20 Spanish-English bilingual children

	Age Range	Mean Age	SD
Group 1 (n=6)	4;08 - 5;10	5;01	0;05
Group 2 (n=6)	6;10 - 7;05	7;01	0;02
Group 3 (n=8)	8;01 - 9;11	8;09	0;09

Participants:

- Mexican families, living in Central Indiana.
- Low socio-economic background.
- Positive parental attitude to Spanish and bilingualism.
- Exposure to Spanish at home with parents.
- Exposure to English via siblings, school, TV and friends from early age.

Experimental task:

Elicited production task (cf. Crain & Thornton a.o.)

- **Question after Story Task** (matrix questions)
- **Sentence Completion Task** (embedded questions)

16 test items (half matrix half embedded)

8 arguments: 4 DOinan (*what*), 2 DOan (*who*),
2 IO (*to who*)

8 adjuncts: 4 (*where*), 2 (*when*), 2 (*how*)

Two testers; one session; family home or office.

Examples:

Elicited production task

Story and Question Task (testing inversion in matrix sentences)



Dora y Diego tienen muchos juguetes. Dora tiene un oso muy grande pero Diego solamente tiene juguetes viejos y rotos. Tú quieres tener los juguetes de Dora, no los juguetes de Diego, pero Dora los escondió y tú no sabes dónde.



Dora and Diego have a lot of toys. Dora has a nice big teddy bear, but Diego only has old and broken toys. You want to have Dora's toys, and not Diego's, but Dora hid them and you don't know where.

Pregúntale a Ernie. (escondió)
¿_____?

Ask Bert. (hid)
¿_____?

Examples:

Sentence Completion Task (testing inversion in embedded sentences)



Dora va a Disney World y Diego va a Nueva York. Ernie quiere saber cuándo se van y te pregunta. Tú sabes que Dora se va la próxima semana. Diego se va también pero tú no sabes cuándo.

Respóndele a Ernie. (va)
No sé _____

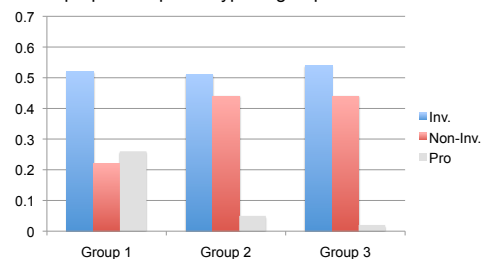


Dora is going on holiday to Disney World and Diego is going to New York. Bert wants to know when they are leaving and asks you. You know that Dora is leaving next week. Diego is going on holiday earlier, but you don't know when.

Answer Bert. (go)
I don't know _____

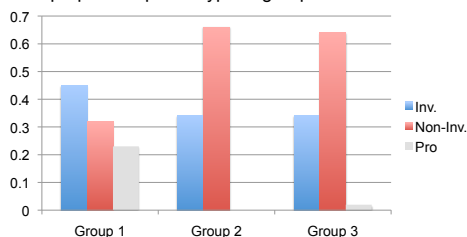
Results:

Figure 1:
Mean prop. of response types / group with matrix wh



Results:

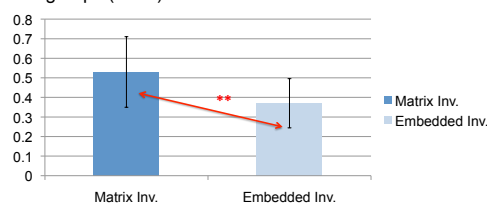
Figure 2:
Mean prop. of response types / group with embedded *wh*



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Results:

Figure 3:
Mean prop. of inversion with matrix and embedded *wh*
- all groups (n=20)



Significant difference between inversion in matrix and embedded *wh*:
Wilcoxon test: $V=129$, $p=.002$

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In sum:

- High rates of **non-inversion**;
- In particular in embedded *wh*-questions;
- More non-inversion in older children
- but *pro* in youngest group.
- Inversion more frequent in matrix than in embedded questions.

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Discussion

1. Do bilingual children show sensitivity to obligatory verb-subject word order in interrogative phrases?

Not completely.

Non-inversion is found,
especially in older children and in embedded
wh-questions.

Data from aged-matched controls would be
useful.

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Discussion

2. Can we talk about incomplete acquisition?

Not completely.

Rate of inversion appears to decrease with more exposure to English: the older the children are, the more problems they seem to have. Rather L1 attrition.

Non-inversion in embedded *wh*-questions also shows influence from English.

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Discussion

3. Are some structures more vulnerable than others?

Yes.

Embedded *wh*-questions appear to be more sensitive to non-inversion than matrix *wh*-questions, confirming research on syntactic complexity constraints in acquisition (see Strik & Pérez-Leroux 2011 for derivational complexity as a condition for transfer).

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Conclusions

- Results seem to go **beyond incomplete acquisition**. We found a discrete effect between rate of non-inversion and developmental stage, as well as a significant effect between inversion and type of structure (matrix vs. embedded). This suggests **experience** and **structural dimensions** as potential predictors for the patterns observed.

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Conclusions

- Difficulties among young bilingual children in an area of the grammar that is **not constrained by pragmatic factors**. This contradicts recent proposals on transfer selectivity and the status of the bilingual syntax (Hulk & Müller, 2000).
- It is also possible that these bilingual children have **undergone attrition of the emphatic/contrastive discourse properties of preverbal subjects** in Spanish (see Sorace 2000 for similar proposal for Italian), and are **overextending** this pattern to *wh*-question formation.

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