Preposition stranding in L1-English L2-Spanish code-switching

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L2 CODE-SWITCHING

Code-switching (CS) is a common bilingual phenomenon that occurs when multiple languages are used in the same conversation

- Overt realization of bilingual language activation

Despite decades of research on the topic, the CS of late second-language (L2) bilinguals remains under-studied compared to other bilingual groups

- Question at the intersection of CS and Second Language Acquisition: Do L2 bilinguals acquire CS restrictions as they acquire their L2 grammar? And if so, how?

P-STRANDING

Specific example of Spanish-English bilingual competence that needs to be acquired is *preposition stranding* (or *p-stranding*) vs. *pied-piping*

P-stranding occurs when extracting a determiner phrase (DP) from a prepositional phrase (PP), the possibility of which varies depending on the language (Law, 2006; Salles, 1995)

- Crosslinguistic conflict for Spanish-English bilinguals: ✓ ENGLISH, ✗ SPANISH

(1) a. Chad doesn't know [$_{DP}$ **what friend**]$_i$ Kevin is traveling [$_{PP}$ **with** **t**$_i$].

b. Fernando no sabe [$_{PP}$ **con** [$_{DP}$ **qué amiga**]]$_i$ Sergio está viajando **t**$_i$.
Fernando not knows with what friend Sergio is traveling
'Fernando doesn't know with what friend Sergio is traveling.'

c. */? Fernando no sabe [$_{DP}$ **qué amiga**]$_i$ Sergio está viajando [$_{PP}$ **con** **t**$_i$].
Fernando not knows what friend Sergio is traveling with
'Fernando doesn't know what friend Sergio is traveling with.'

P-STRANDING

US heritage speakers of Spanish have shown variation with regard to p-stranding (Depiante & Thomson, 2012; Pascual y Cabo & Gómez Soler, 2015)

- Simultaneous bilinguals: ✓ ENGLISH, ✓ SPANISH
- Early sequential bilinguals: ✓ ENGLISH, ✗ SPANISH

Leads to a distinction for p-stranding in CS as well (Koronkiewicz, 2022)

- Simultaneous bilinguals: ✓ SPANISH-to-ENGLISH, ✓ ENGLISH-to-SPANISH
- Early sequential bilinguals: ✓ SPANISH-to-ENGLISH, ✗ ENGLISH-to-SPANISH

	SIMULTANEOUS		EARLY SEQUENTIAL	
(2)	✓	a.	✓	*Fernando no sabe* [$_{DP}$ ***qué amiga***]$_i$ Kevin is traveling [$_{PP}$ **with t**$_i$]. Fernando not knows what friend 'Fernando doesn't know what friend Kevin is traveling with.'
	✓	b.	*	Chad doesn't know [$_{DP}$ **what friend**]$_i$ *Sergio está viajando* [$_{PP}$ ***con*** **t**$_i$]. Sergio is traveling with 'Chad doesn't know what friend Sergio is traveling with.'

PUZZLE

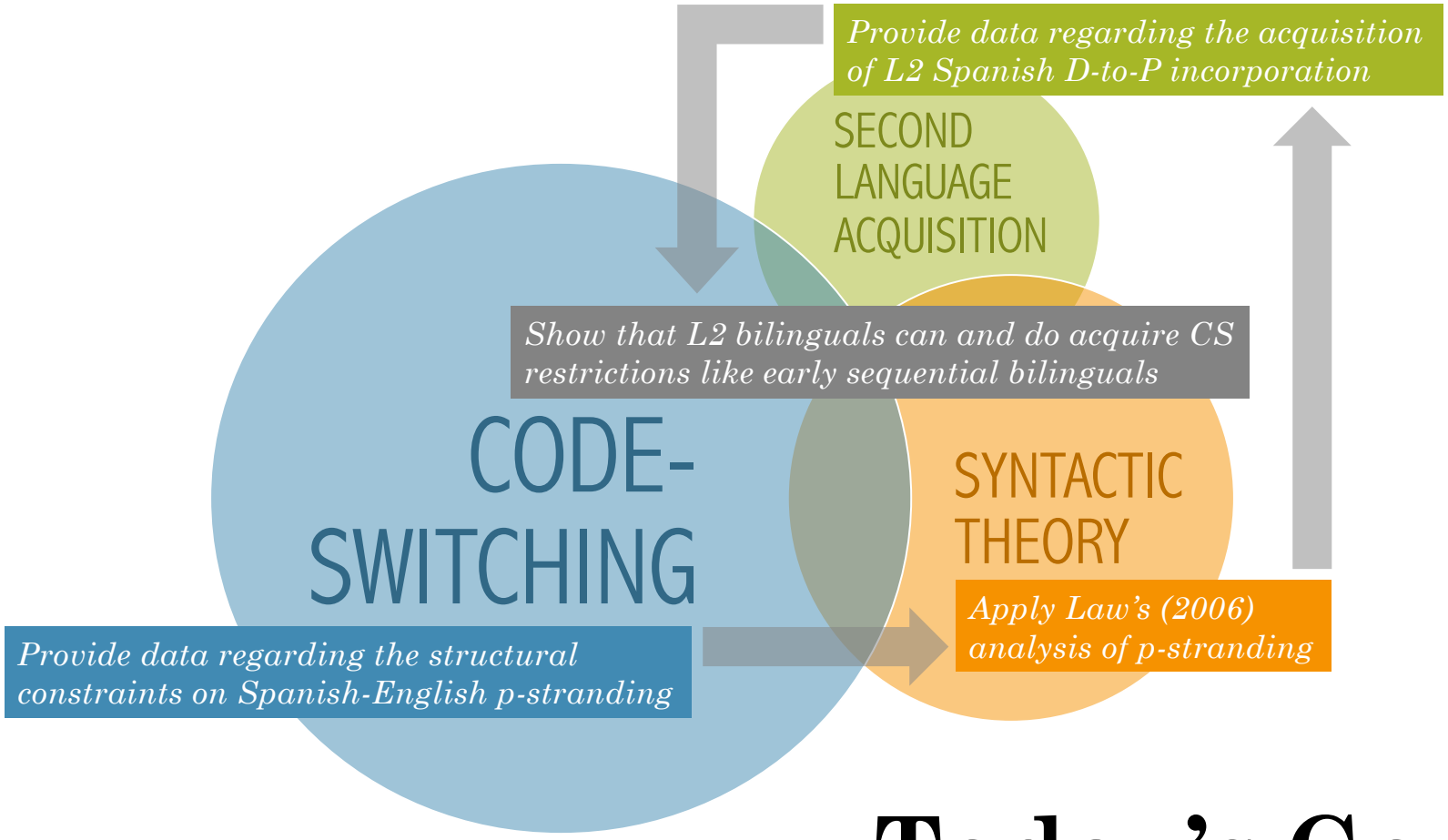
Todays' talk: What about late L2 bilinguals?

With monolingual p-stranding, L1-English L2-Spanish bilinguals do acquire the expected distinction

- Previous research has shown that L2-Spanish bilinguals "transfer [p-stranding] only at the beginning levels of proficiency, a characteristic that disappears completely in intermediate learners" (Liceras, 1986, as cited in Perpiñán, 2015, p. 580)

What happens when the languages are mixed?

- Is p-stranding still available only sometimes?
- In other words, do they acquire the same restriction on p-stranding from English-to-Spanish as early sequential bilinguals?



Today's Goals

Wh-elements in English occupy a higher syntactic position

- Generally considered the specifier of the Complementizer Phrase (Chomsky, 1986)

If a wh-element is the complement of a PP, it can be extracted, "stranding" the preposition in its lower position

- P-stranding can occur in matrix wh-questions, embedded wh-questions, and relative clauses (Law, 2006; Salles, 1995)
- At the same time, English allows pied-piping to be used prescriptively and/or in formal discourse (Biber et al., 1999)

(3)

a. $[_{DP}$ **What book** $]_i$ did you buy t_i?

b. $[_{DP}$ **What money**$]_i$ did you buy it $[_{PP}$ **with** $t_i]$?

c. I don't know $[_{DP}$ **what friend**$]_i$ you went shopping $[_{PP}$ **with** $t_i]$.

d. Amy is the friend $[_{DP}$ **who**$]_i$ I went shopping $[_{PP}$ **with** $t_i]$.

e. $[_{PP}$ **With** $[_{DP}$ **what money**$]]_i$ did you buy it t_i?

P-STRANDING IN SPANISH

Like English, wh-elements in Spanish occupy a higher syntactic position as well (i.e., SpecCP)

- However, wh-elements cannot be extracted from a PP, instead requiring the preposition to be pied-piped with the DP (Law, 2006)
- Consistent for matrix wh-questions, embedded wh-questions, and relative clauses

(4) a. ¿[$_{DP}$ **Qué libro**]$_i$ compraste **t$_i$**?
what book buy.2S
'What book did you buy?'

b. * ¿[$_{DP}$ **Qué dinero**]$_i$ lo compraste [$_{PP}$ **con t$_i$**]?
what money it buy.2s with
'What money did you buy it with?'

c. ¿[$_{PP}$ **Con** [$_{DP}$ **qué dinero**]]$_i$ lo compraste **t$_i$**?
with what money it buy.2S
'With what money did you buy it?

How do we account for p-stranding availability in some languages but not others?

Law (2006) argues that some languages are subject to a syntax-morphology-interface condition

- Wherein "elements that undergo suppletive rules must form a syntactic unit X°" (Law, 2006, p. 647)
- Condition is based on Spanish suppletive forms like *del* 'del' (i.e., *de* + *el*) and *al* 'to the' (i.e., *a* + *el*)
- Importantly, the condition does not require suppletion of the specific items in use to apply (i.e., it is all or nothing for each language)

P-STRANDING VARIATION

Under this analysis:

- English determiners, lacking any suppletive forms, never incorporate and remain as separate syntactic units
- Spanish determiners incorporate into prepositions (with or without suppletion) and form one syntactic unit (i.e., P+D)

This distinction has different consequences when wh-movement is triggered

- In Spanish, the only option is to move the entire PP, which includes the combined P+D
- In English, the wh-element (D) can be extracted on its own

(5) a. [PP [P **of**] [DP [D **the**] [NP north]]]

b. [PP [P **with**] [DP [D **what**] [NP money]]]

c. [PP [P+D **del**$_i$] [DP [D **t**$_i$] [NP norte]]]
of-the north
'of the north'

d. [PP [P+D **con qué**$_i$] [DP [D **t**$_i$] [NP dinero]]]
with what money
'with what money'

FRAMEWORK

Minimalist approach to CS (MacSwan, 1999)

- Constraints are due to the interaction of the two grammars in question, specifically when there is a mismatching of features
- Mirrors exactly what happens in monolingual derivations (i.e., no "third grammar")

Using this framework, specific predications can be made about restrictions on p-stranding in CS

- In this particular case, the features of the preposition drive the derivation
- When a Spanish preposition requires D-to-P incorporation, it consequently disallows p-stranding regardless of whether its DP object is in Spanish or English

L2 CODE-SWITCHING

Such a generative approach to CS typically targets native bilinguals

- Early bilinguals (i.e., 2L1 bilinguals and/or heritage speakers) who are exposed to both languages from a young age

Nonetheless, such an approach can be extended to (proficient) L2 bilinguals

- CS can serve as a linguistic crutch (especially at the lower levels of proficiency)
- "However, the same way L2 speakers can learn to style shift given different sociolinguistic contexts (Tarone, 1982, as cited in Ellis, 1994), we can imagine them also learning to shift between languages, even in the same sentence, if given an appropriate bilingual context" (Koronkiewicz, 2018, p. 4)
- Research has shown that L2 bilinguals are indeed able to acquire restrictions on CS that mirror those of early bilinguals (Fernández Fuertes et al., 2016; Giancaspro, 2015; Koronkiewicz, 2018; Toribio, 2001)

L2 CODE-SWITCHING

Various factors have been shown to play a role in the CS of L2 bilinguals

- Proficiency (Giancaspro, 2015; Koronkiewicz, 2018; Toribio, 2001)
- Dominance (Fernández Fuertes et al., 2016; Liceras et al. 2016)
- Exposure to language mixing (Koronkiewicz, 2018)

Only a handful of structures have been investigated so far

- Switches targeting auxiliary verbs, pronouns, complementizers, negation, and gender

RESEARCH QUESTION:

Do L1-English L2-Spanish bilinguals accept p-stranding in CS?

And if so…

Does PROFICIENCY play a role?

PREDICTIONS

If L2 bilinguals have no D-to-P incorporation in Spanish…

- P-stranding should be completely acceptable in their monolingual Spanish and English
- P-stranding should also be accepted in either switch direction
- Results should differ from early sequential bilinguals

If L2 bilinguals have D-to-P incorporation in Spanish…

- P-stranding should not be syntactically parallel in their monolingual Spanish/English
- Thus, p-stranding should only be accepted with Spanish-to-English switches (i.e., a Spanish DP extracted from an English PP)
- Results should be parallel to early sequential bilinguals

What role could proficiency play?

- Increased L2 proficiency should increase likelihood of acquiring such incorporation

PARTICIPANTS

Target group of US L2 bilinguals (n = 48) who learned Spanish in an academic context after acquiring English

- Age of onset of English = 0 years (i.e., since birth)
- Age of onset of Spanish ≥ 6 years (M = 12.0)

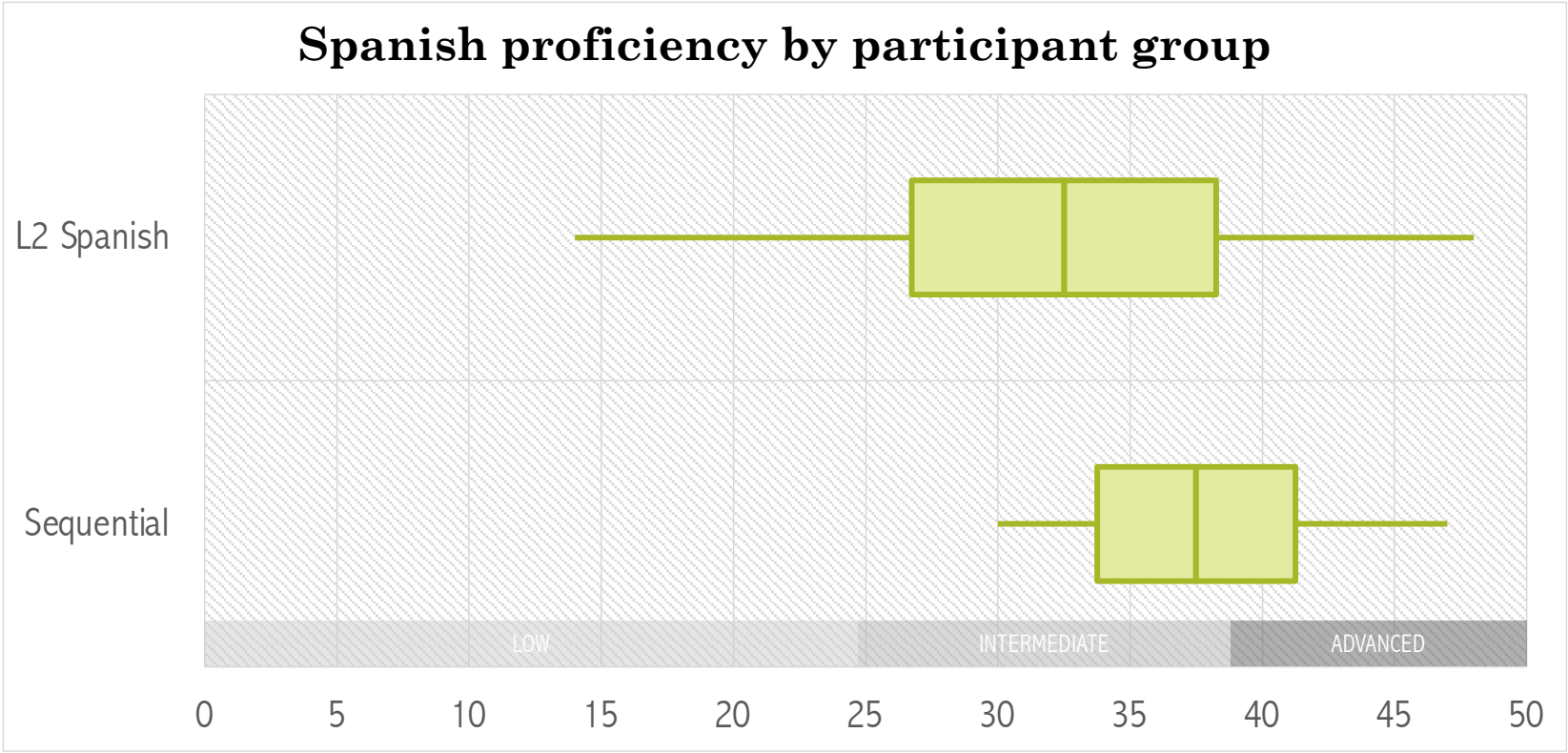
Comparison group of early sequential US heritage speakers of Spanish (n = 16) who learned both languages at an early age

- Age of onset of Spanish = 0 years (i.e., since birth)
- Age of onset of English = between 3 and 6 years (M = 4.8)

INDEPENDENT VARIABLE

Independent variable assessed in between blocks

- Modified Spanish cloze test (Montrul & Slabakova, 2003)



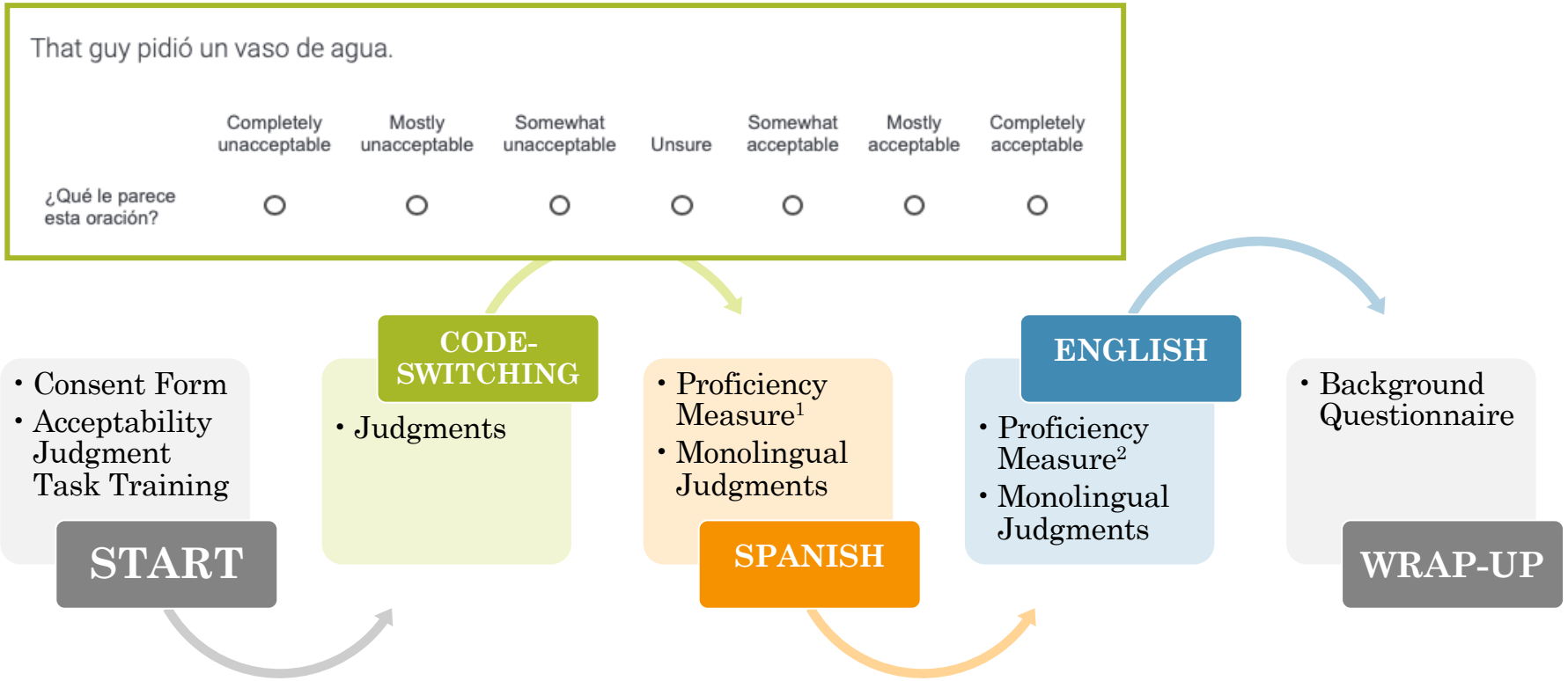
STIMULI

Target stimuli with p-stranding with *with/con* ($N = 32$)

- Half embedded wh- p-stranding and half relative clause p-stranding
  - Code-switched target sentences ($n = 16$)
  - Monolingual target equivalents for Spanish ($n = 8$)
  - Monolingual target equivalents for English ($n = 8$)

Filler stimuli with various other types of constructions (and switches) ($N = 169$)

- Targeted adverb order, auxiliary verbs, pronouns, and so on
  - Code-switched filler sentences ($n = 89$)
  - Monolingual Spanish filler sentences ($n = 42$)
  - Monolingual English filler sentences ($n = 38$)



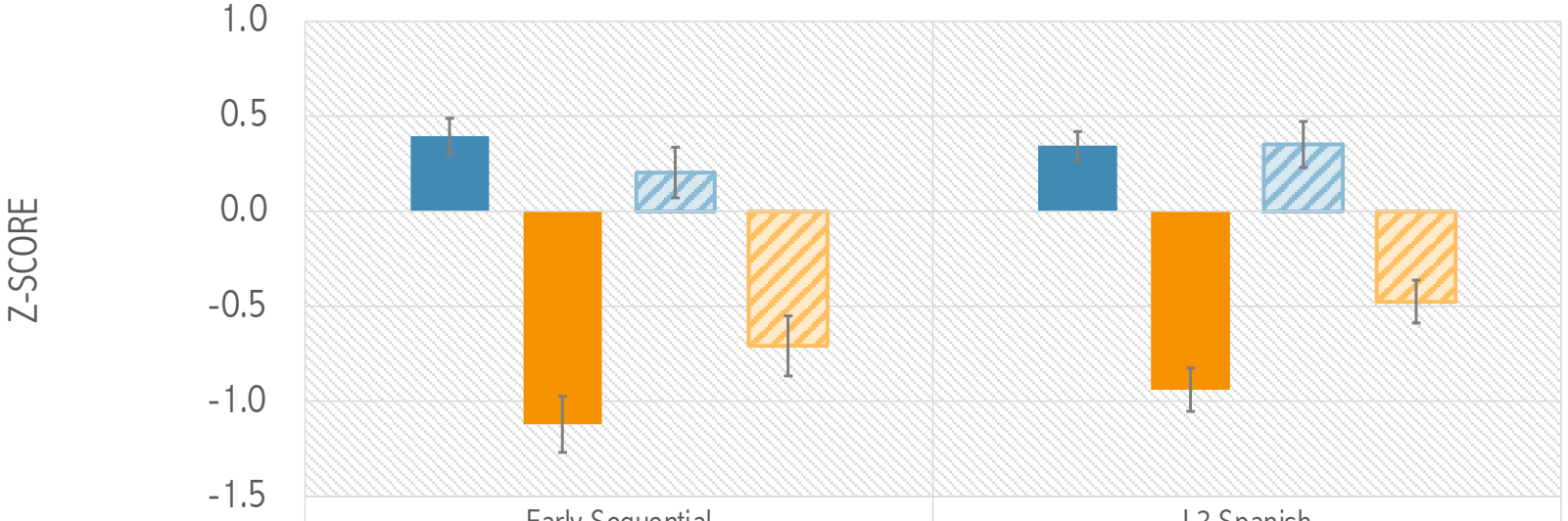
[1] Modified Spanish cloze test (Montrul & Slabakova, 2003)

[2] Modified English cloze test (O'Neill, Cornelius, & Washburn, 1981)

OVERALL RESULTS

Overall Results:

Average z-score by language(s) and group



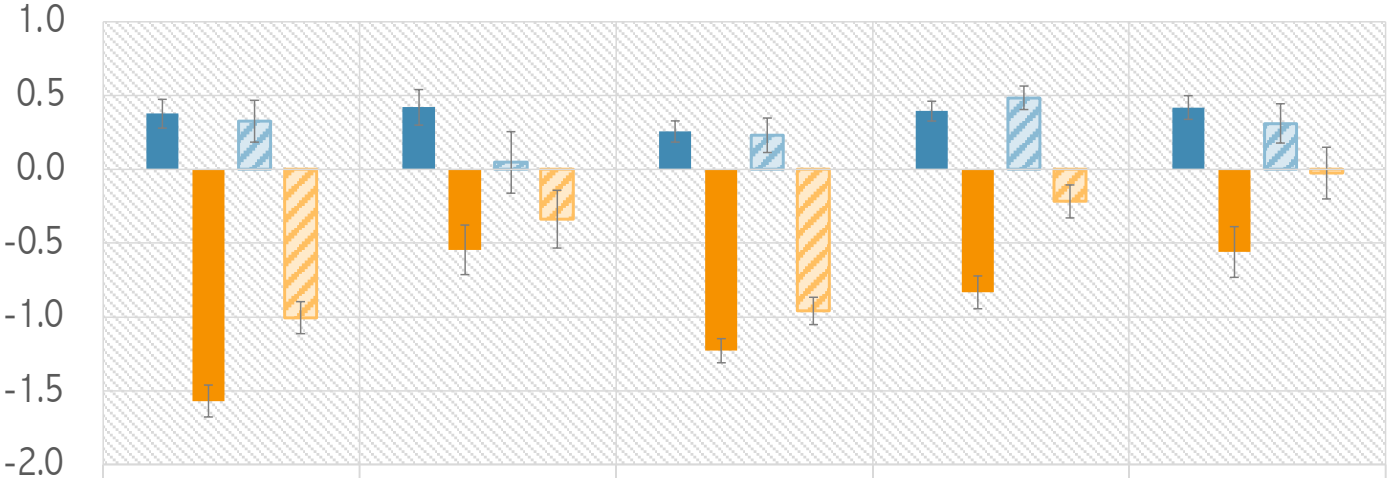
	Early Sequential	L2 Spanish
English	0.40	0.34
Spanish	-1.12	-0.94
CS Spanish-to-English	0.20	0.35
CS English-to-Spanish	-0.71	-0.48

BILINGUAL GROUP

PROFICIENCY RESULTS

Proficiency Results:

Average z-score by language(s) and bilingual proficiency group



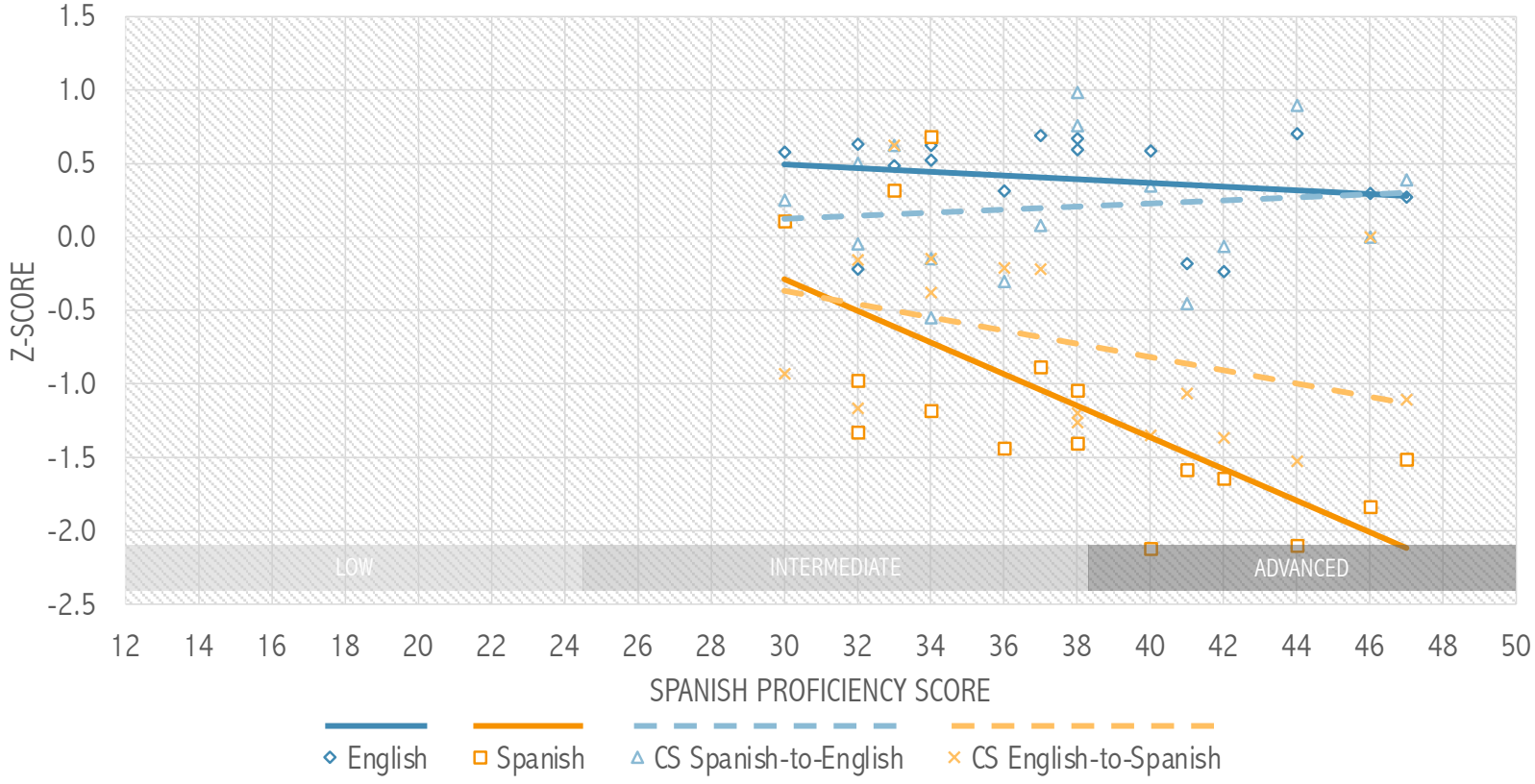
	Early Sequential		L2 Spanish		
	Advanced	Intermediate	Advanced	Intermediate	Low
English	0.38	0.42	0.26	0.39	0.42
Spanish	-1.57	-0.55	-1.23	-0.83	-0.56
CS Spanish-to-English	0.33	0.05	0.23	0.48	0.31
CS English-to-Spanish	-1.01	-0.34	-0.96	-0.22	-0.03

BILINGUAL GROUP

PROFICIENCY RESULTS

Early Sequential Bilinguals:

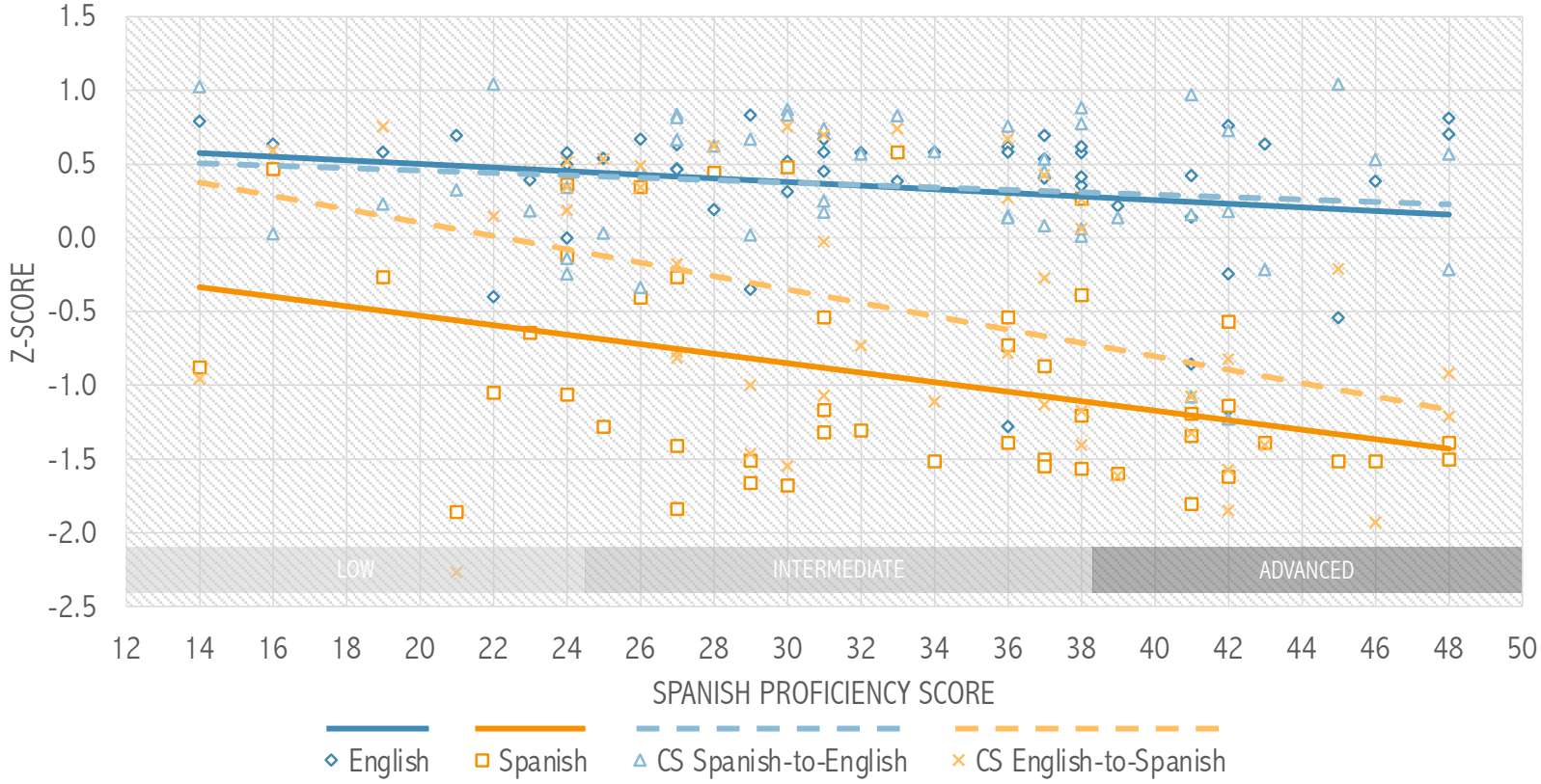
Average z-score by language(s) and Spanish proficiency



PROFICIENCY RESULTS

L2 Bilinguals:

Average z-score by language(s) and Spanish proficiency



RESULTS SUMMARY

If L2 bilinguals have no D-to-P incorporation in Spanish…

- ✗ P-stranding should be completely acceptable in their monolingual Spanish and English
- ✗ P-stranding should also be accepted in either switch direction
- ✗ Results should differ from early sequential bilinguals

If L2 bilinguals have D-to-P incorporation in Spanish…

- ✓ P-stranding should not be syntactically parallel in their monolingual Spanish/English
- ✓ Thus, p-stranding should only be accepted with Spanish-to-English switches (i.e., a Spanish DP extracted from an English PP)
- ✓ Results should parallel early sequential bilinguals

What role could proficiency play?

- ✓ Increased L2 proficiency should increase likelihood of acquiring such incorporation

DISCUSSION

Broadly speaking, L1-English L2-Spanish bilinguals do behave like early sequential bilinguals with regard to p-stranding

- Their Spanish prepositions require D-to-P incorporation, hence blocking p-stranding regardless of the language of the object
- Likely due to both groups having avoided crosslinguistic influence during their early years (unlike sequential bilinguals, as argued by Pascual y Cabo & Gómez Soler, 2015)

Crucially, though, the finding is affected by proficiency

- Unlike the other groups, L2 bilinguals with low proficiency lose this asymmetry in CS; Spanish prepositions less rejected in switched p-stranding

DISCUSSION

Unexpected and unexplained finding with early sequential bilinguals

- Like the L2 bilinguals with low proficiency, early sequential bilinguals with intermediate proficiency lose the CS asymmetry for p-stranding
- But the shift is distinct: Instead of Spanish prepositions becoming more acceptable in switched p-stranding, English prepositions were less accepted
- Likely culprit is group size, as this sub-group had the lowest number of participants in it after categorizing by proficiency

DISCUSSION

What does this tell us about L2 Spanish acquisition?

- Monolingual data suggest that even at a low proficiency, bilinguals can acquire D-to-P incorporation in their L2 Spanish

What does this tell us about L2 CS?

- Data suggests that L2 bilinguals with low proficiency have solidified D-to-P incorporation in monolingual Spanish, but not in language mixing
- Unique lens into how acquiring a specific grammatical construction does not necessarily immediately transfer to how one language mixes

How should we understand this (unpredicted) finding?

- Although it may be true that a Minimalist approach to CS can accurately predict language mixing of advanced/intermediate L2 bilinguals, for low proficiency speakers abandoning the no "third grammar" approach may be essential

LIMITATIONS

Limited lexical items (i.e., only with *with/con*)

- There is known idiosyncratic variation with p-stranding depending on the particular preposition (Biber et al. 1999)

Did not test pied-piping (or reduplication)

- Assume that rejection of p-stranding for a context implies acceptance of pied-piping, but without that data it cannot be confirmed

Data is receptive

- Unclear if the patterns would be the same for production

CONCLUSION

By extending Law's (2006) analysis of p-stranding to a bilingual context, we are better able to understand the acquisition of a specific aspect of L2 grammar as well as its related CS behavior

More broadly, this work helps continue to dispel the "paradox" of L2 CS

- CS "is stigmatized in most learning contexts, and teachers and learners themselves generally relate it to a lack of language proficiency… [even though a] bilingual's language-mixing/code-switching ability serves as a measure of [their] syntactic competence in the component languages" (Toribio, 2001, p. 217)
- Data here shows that L2 bilinguals do not make arbitrary decisions regarding CS, but rather they can and do switch using their grammatical competence, like other bilingual speakers, but it takes a bit of proficiency to get there

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