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INTERNATIONAL SYMPOSIUM ON BILINGUALISM
SAN SEBASTIAN · SPAIN · JUNE 9TH - 13TH · 2025

THE PROCESSING OF ADJECTIVES IN SPANISH AS AN L2

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INTRODUCTION

In Spanish, similarly to other Romance languages, the adjective position is associated with its semantic nature (Fábregas, 2017):

- Adverbial adjectives **= prenominal** position:

El *presunto* estafador fue capturado por la policía

The alleged scammer was captured by the police

- Relational adjectives **= postnominal** position:

Las elecciones *nacionales* afectaron al país

The national elections affected the country

- Qualitative adjectives **= alternate** between both positions**:**

Las *valientes* mujeres frenaron el ataque de ayer

Las mujeres ***valientes*** frenanron el ataque de ayer

The brave women stopped the attack yesterday

The postnominal position is the **preferred option as it is the **unmarked position** in Spanish (Demonte, 2008; Scontras, 2023)*

INTRODUCTION

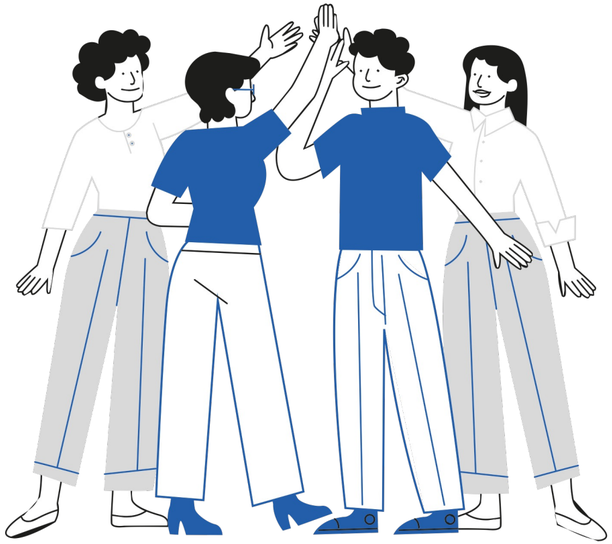
Qualitative adjectives **= alternate** between both positions – CHANGE IN MEANING (Demonte, 2008)

Las *valientes* mujeres frenaron el ataque de ayer

Non-restrictive interpretation (n-R)

Las mujeres *valientes* frenaron el ataque de ayer

Restrictive interpretation (R)



The brave women stopped the attack yesterday

📌 Learning these semantic nuances might be the reason why adjectives are acquired later during language development (Weicker & Schulz, 2018) & there is no conclusive evidence about the explicit knowledge by adult native speakers (Pettibone, 2022)

OFFLINE STUDIES

Native speakers:

1. Correctly distinguish grammatical vs. agrammatical adjective position
2. Prenominal position is less frequent for them → postnominal sentences are more accepted
3. Correct interpretation → prenominal position = non-restrictive

L2 learners of Spanish:

1. **Struggle with acquiring formal features** but...
2. L1 Italian – similar to Spanish: sensitive to prenominal vs. postnominal differences from **intermediate levels**
3. L1 English – fixed adjective order: sensitive from advanced levels

The extent to which these challenges are associated with **processing costs** due to the linguistic formalities or to individual differences has been less studied

(Guijarro-Fuentes et al., 2009; Judy et al., 2008; Rothman et al., 2009;2010)

INDIVIDUAL DIFFERENCES

Native speakers:

Always treated as a CONTROL GROUP (but see Pettibone et al., 2021)

Bilingual speakers:

Previous linguistic experience = Spanish proficiency and/or Spanish use

NO significant factors*

(Judy, 2018; Pettibone et al., 2021)

Role of individual differences during sentence processing and offline measures – explored in other experiment

(Rivera et al., in preparation)

Small sample sizes (n<50) to correctly measure individual differences

GOALS

G1: Explore L2 Spanish online processing and offline responses of L1 English/Italian speakers living in Spain (>3 months)

G2: Explore the role of individual differences in Spanish use and [Proactive control] in predicting responses

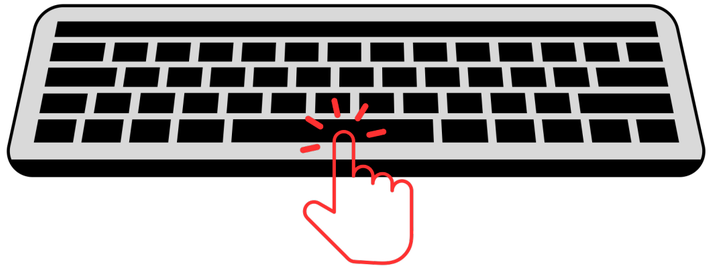
MATERIAL

Sentence condition	Prenominal	Postnominal
Adjective in **variable position** (n=60)	Las **valientes** mujeres frenaron el ataque de ayer. *The brave women stopped the attack yesterday.*	Las mujeres **valientes** frenaron el ataque de ayer. *The brave women stopped the attack yesterday.*
Adjective in **fixed-position grammatical** (n=60)	El **presunto** asesino fue capturado por la policía. *The alleged murderer was captured by the police.*	Las sanciones **económicas** afectaron al país. *The economic sanctions affected the country.*
Adjective in **fixed-position ungrammatical** (n=60)	*Las **económicas** sanciones afectaron al país. *The economic sanctions affected the country.*	*El asesino **presunto** fue capturado por la policía. *The alleged murderer was captured by the police.*

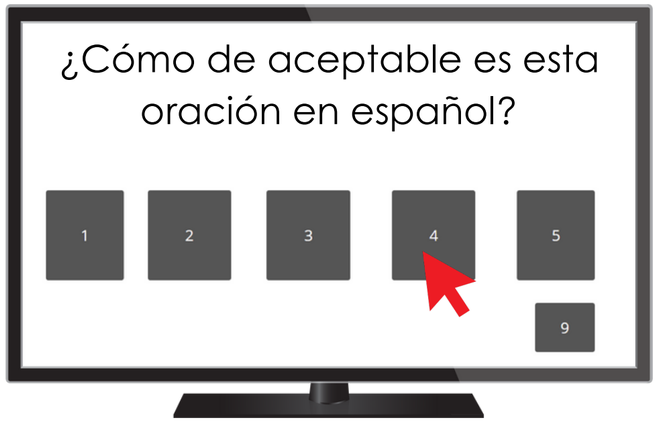
90 unique sentences per list + 60 fillers (30 ungrammatical)

EXPERIMENTAL TASK

1.Self-Paced Reading task (SPR)



2. Grammatical Judgement task (GJT)



Answers between 3 - 5

How acceptable is this sentence in Spanish?

3. Semantic Interpretation task (SIT)

How do you interpret this sentence?

INDIVIDUAL DIFFERENCES MEASURES

Linguistic experience measures:

Self-assessment questionnaire based on:

1. Linguistic Historic Questionnaire (LHQ, Li et al., 2020)
2. Bilingual Language Profile Questionnaire (BLP, Birdsong et al., 2012)

*Participants answer questions about their experience with <u>ALL languages</u> they know

DELE test (Montrul, 2004)

Participants needed to complete a 20-question cloze test followed by 30 multiple-choice questions

% of Spanish use (SPA.use)

Average % of their reported use of Spanish with friends – family – work

Example:

Friends: 50% English **30% Spanish** 20% French

Family: 80% English **20% Spanish**

Work: 60% English **40% Spanish**

SPA.use = 30%

GOALS

G1: Explore L2 Spanish online processing and offline responses of L1 English/Italian speakers living in Spain (>3 months)

SPR: Shorter reaction times (RTs) for sentences including adjectives in fixed positions versus variable positions **– Shorter RTs for L1 Italian than L1 English speakers**

G2: Explore the role of individual differences in Spanish use [and Proactive control] in predicting responses

SPR: Higher % use of Spanish in a daily basis will predict shorter RTs, specially for sentences with adjectives in variable position, as they are semantically loaded. **– Use of Spanish will especially be important for L1 English**

PARTICIPANTS

*Sample size 94 participants (47 per L1) – 80% of power (alpha = .4)

69 **L*n*** Spanish speakers(43 L1 English // 26 L1 Italian) –
L2 (n=51); L3 (n=12); L4 (n=6)

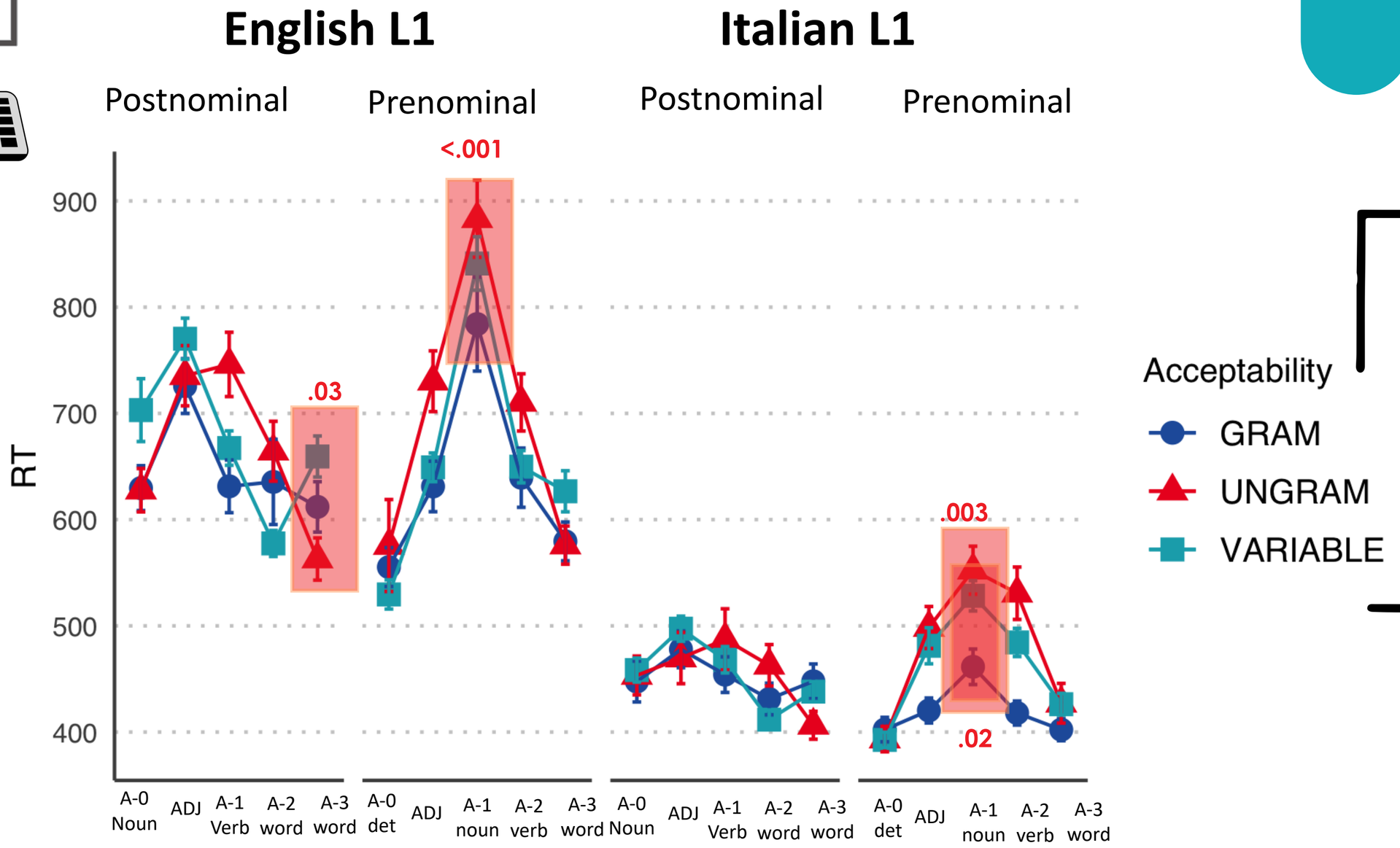
	SELF-ASSESSED PROFICIENCY (1-7) in Spanish				**0 - 50**	**0 - 100**
	SPEAK	**COMPREHENSION**	**READING**	**LISTENING**	**DELE**	**% USE OF SPANISH**
ENGLISH	5.42 (1.03)	5.85 (1.02)	5.92 (1.12)	5.25 (1.25)	42.35 (8.39)	33.5% (18.8%)
ITALIAN	6.12 (1.08)	6.41(.58)	6.45 (.59)	6.00 (1.06)	45.11 (5.97)	49.9% (22.8%)

📌Preliminary results show that use of Spanish explains better the variance than score in the DELE test

SPR

.054

*Preliminary results



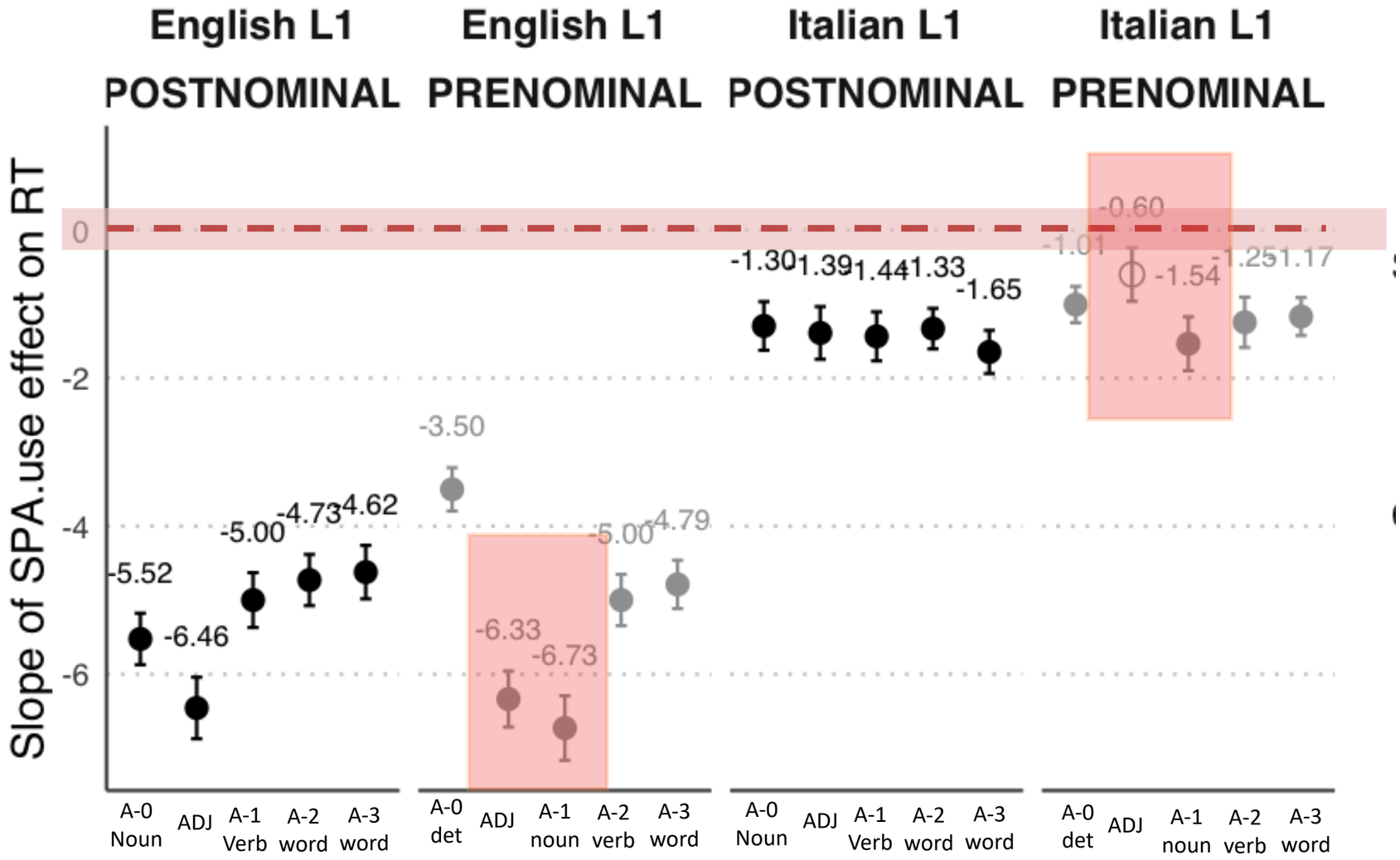
SPR

*Preliminary results

SPA.use effects when reading the critical words

Solid points = $p < 0.05$

.33



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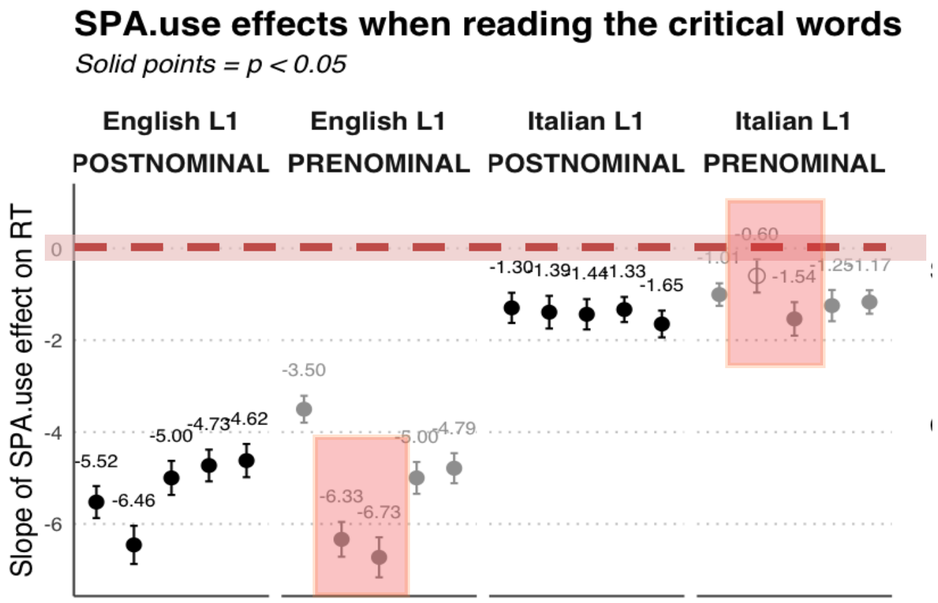
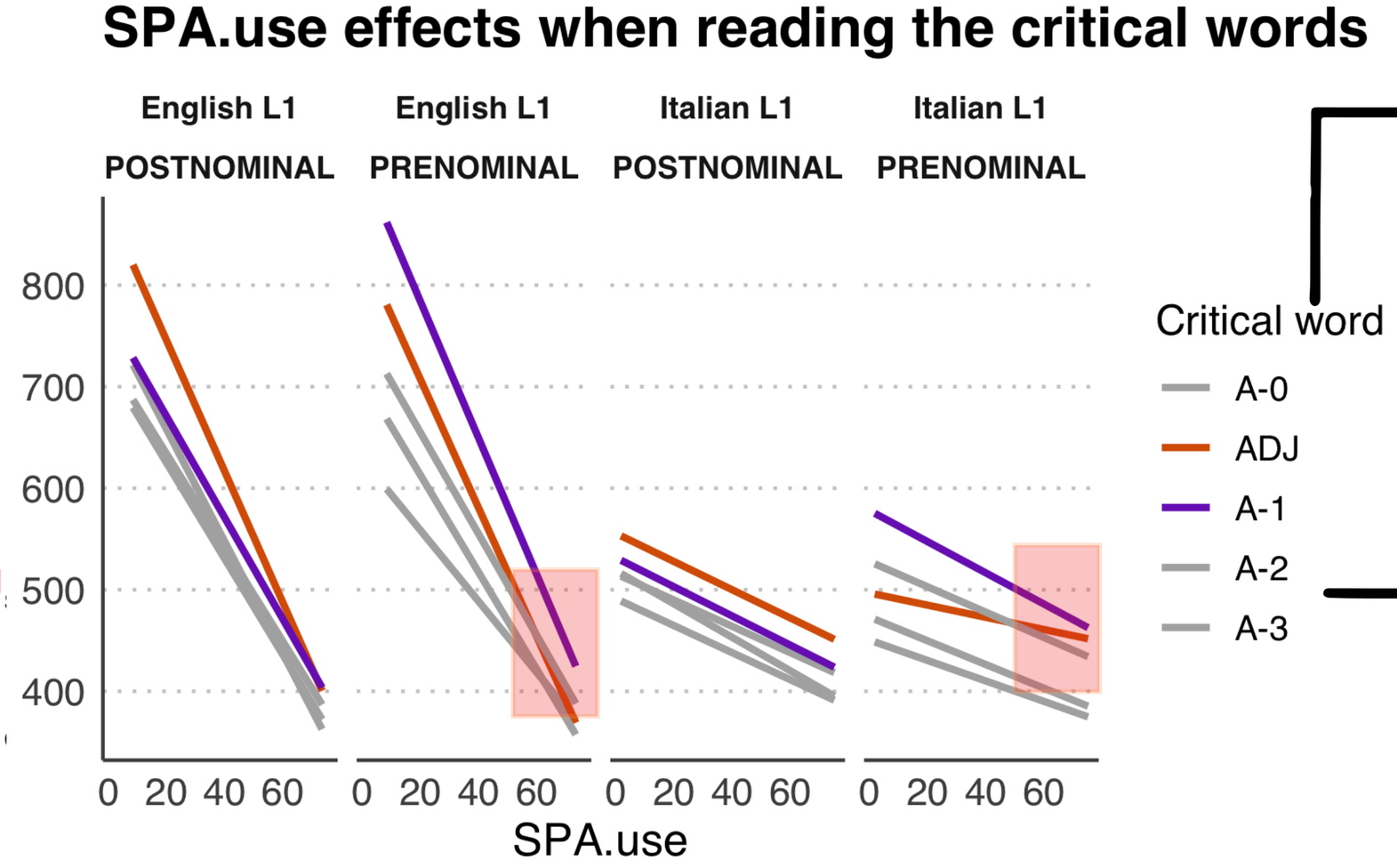
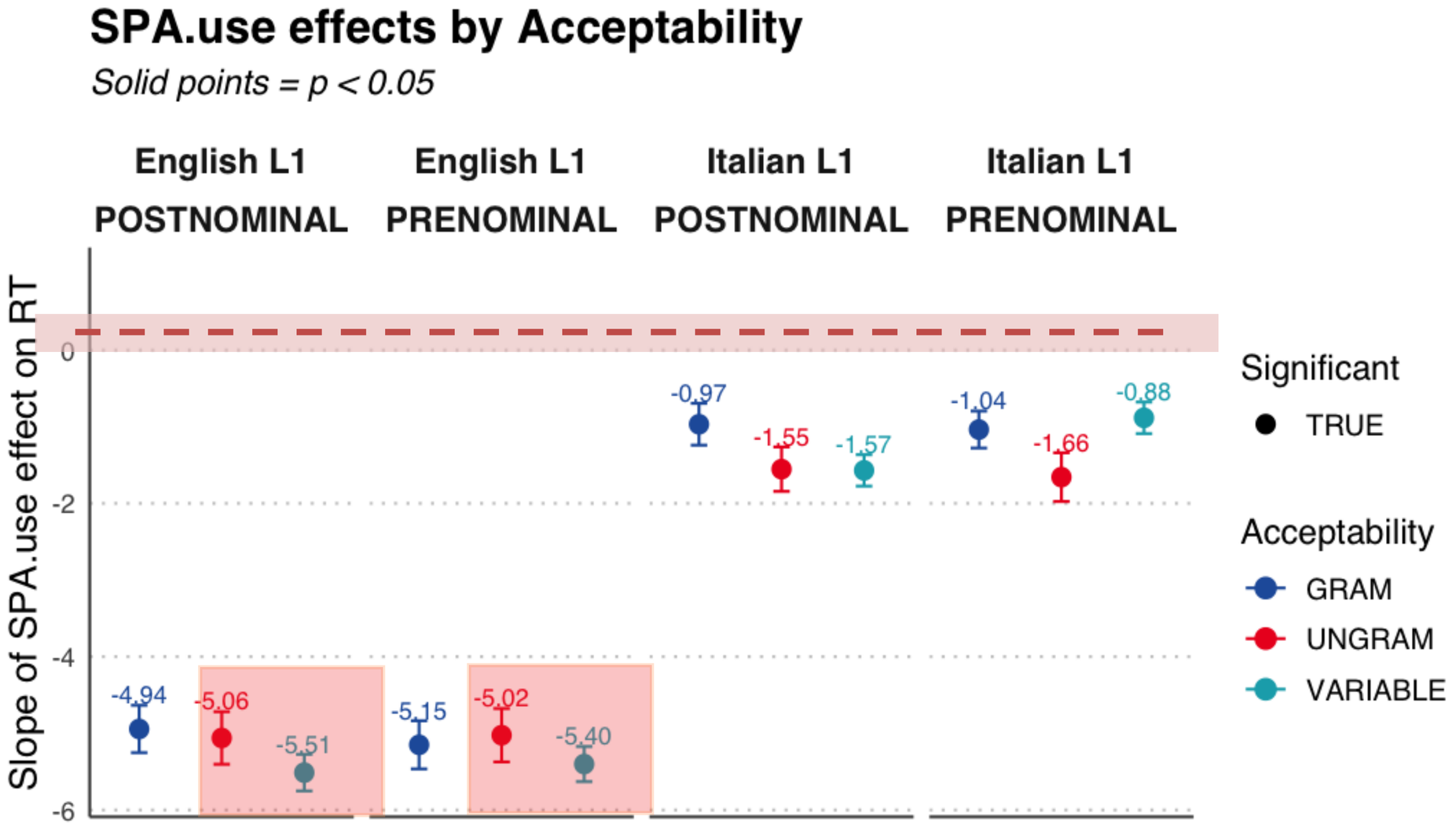
SPR





SPR

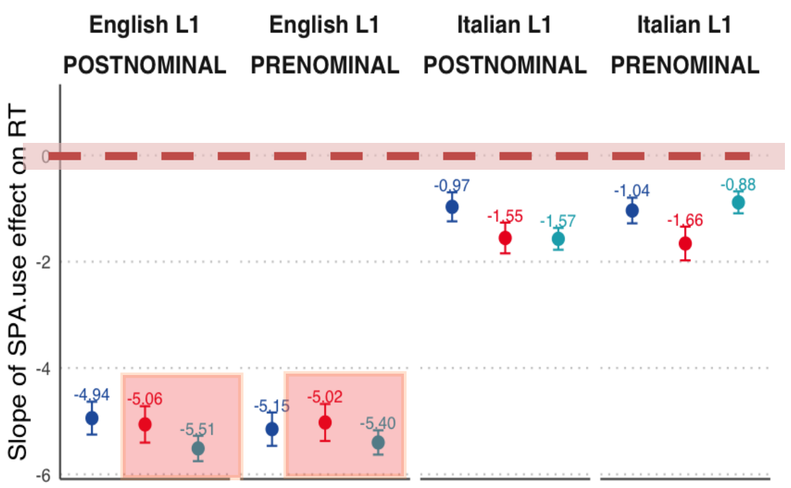
*Preliminary results

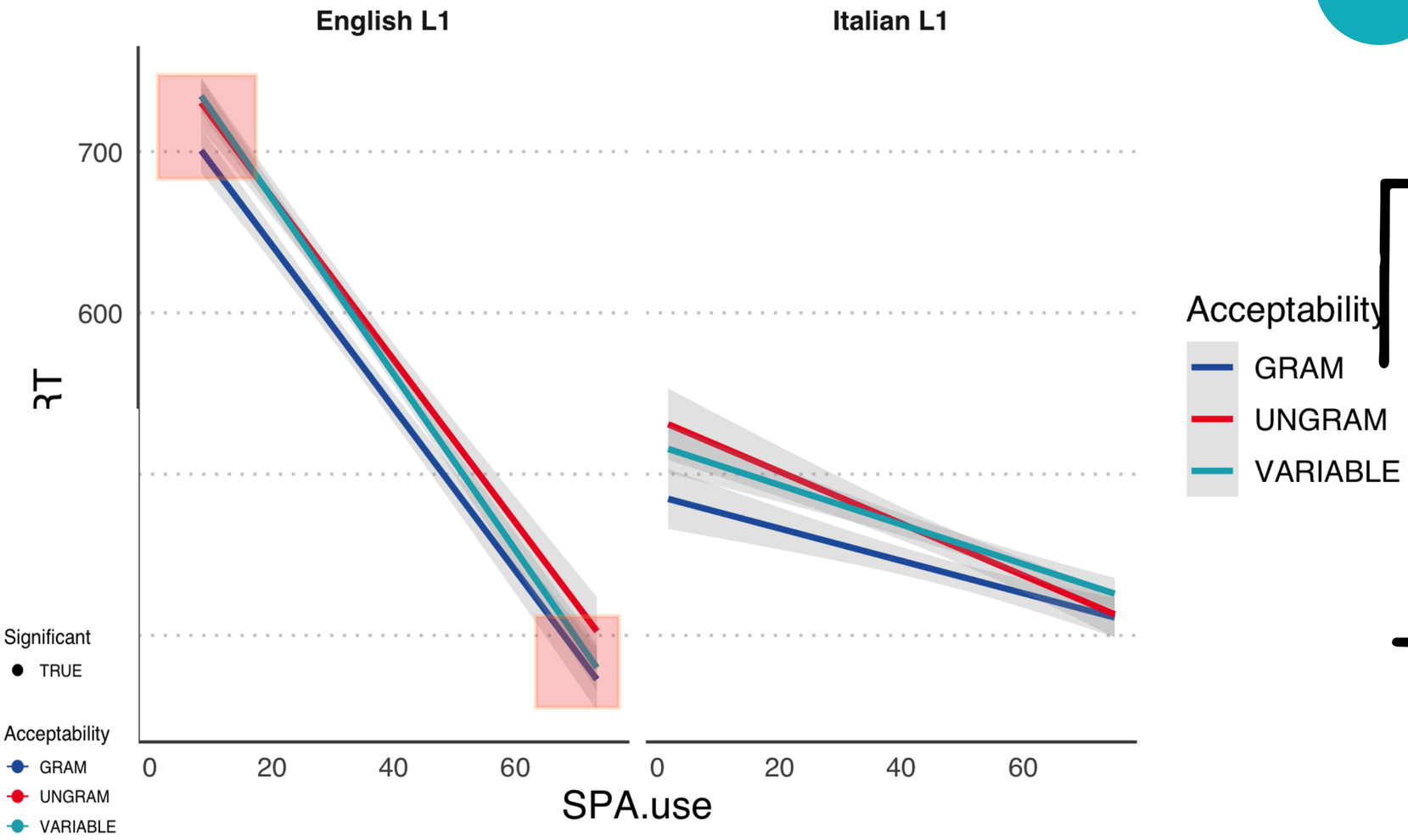


*Note that only the 3-way interaction L1*Acceptability*SPA.use is significant

*Preliminary results

SPR





DISCUSSION

Shorter RTs for L1 Italian than L1 English speakers (.05)

Implicit processing of the adjective position is different regarding participants' L1:

a. L1 English show processing costs associated with postnominal (but not prenominal) sentences with adjectives in variable position:
   i. Postnominal → RTs in **A-3** variable > ungrammatical
   ii. Prenominal → RTs in **A-1** (noun) ungrammatical > grammatical

b. L1 Italian show processing costs associated to prenominal sentences with adjectives in variable position:
   i. Prenominal → RTs in **A-1** (noun) variable/ungrammatical > grammatical

📌These processing costs might reflect what was predicted by theoretical and applied linguistics, specifically for the prenominal sentences

DISCUSSION

Use of Spanish has a key role explaining processing costs (RTs)

Stronger effects of Use of Spanish were found for L1 English than L1 Italian:

a. L1 English
   i. Specially when reading prenominal sentences:
      i. Reduced wrap up effects of the A-1 word (noun)
   ii. Higher use of Spanish → fewer processing cost of adjectives in variable position (shorter RTs)

b. L1 Italian
   i. Higher use of Spanish → fewer processing costs when reading prenominal sentences:
      i. Reduced wrap up effects of the A-1 word (noun)

CONCLUSIONS

We need to look closer, but…

So far, L1 English and L1 Italian speakers living in Spain seem to be affected differently by their L1 (whether similar or different) and their L2/Ln Spanish (in terms of % use) when processing semantically loaded structures.

FUTURE DIRECTIONS

1. Finish data collection

2. Explore the significant role of individual differences in **Proactive control** to explain this pattern of results*

   i. Compensatory tool during **language comprehension**, reducing costs L1/L2 processing (Pérez et al., 2019)

   ii. Key factor in the understanding of successful syntax learning, both initial (Rivera et al., 2022; 2023) and intermediate states (Luque & Morgan-Short, 2021)

3. Explore ERP activity - N400 (syntactic) and P600 (semantic) patterns

📌We have collected data using the AX-CPT task, we will be happy to answer questions about it

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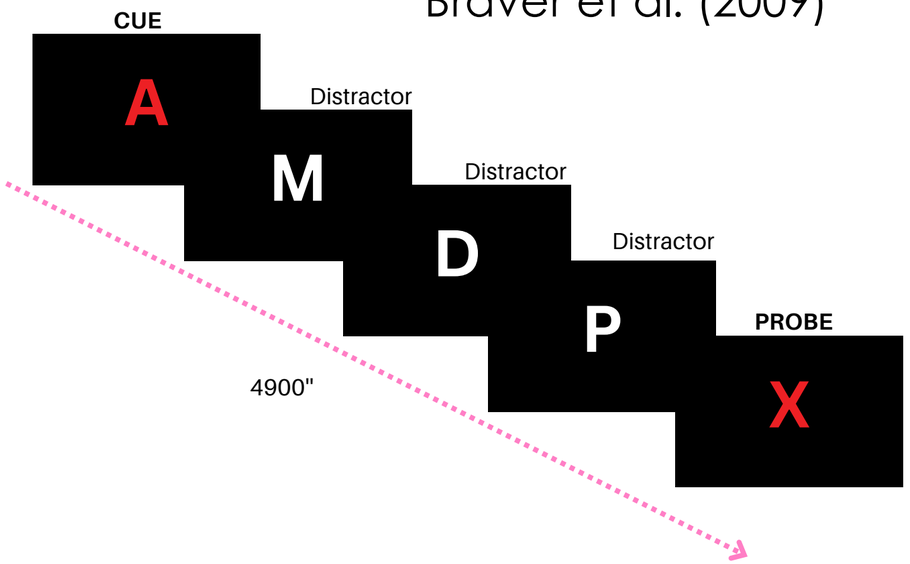
INDIVIDUAL DIFFERENCES MEASURES

Cognitive control: AX-CPT task

Braver et al. (2009)

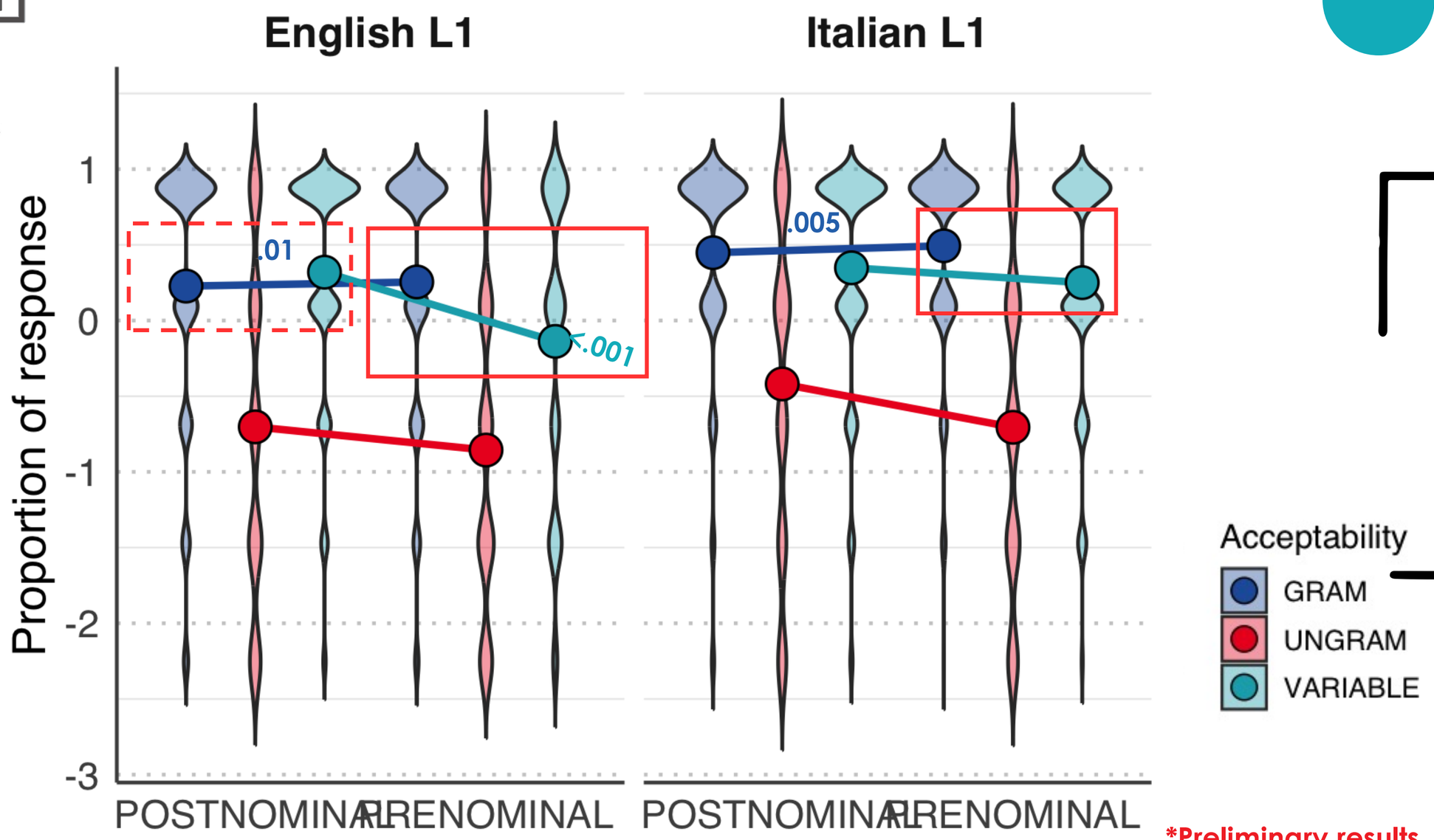


Trial	%	Answer	Condition
AX	70%	Yes	TARGET
AY	10%	No	The cue prepares for a "yes"
BX	10%	No	The cue prepares for a "no"
BY	10%	No	control

BSI index = Proactive control

GJT

3.09% of data lost due to “9” responses



*Preliminary results

GJT

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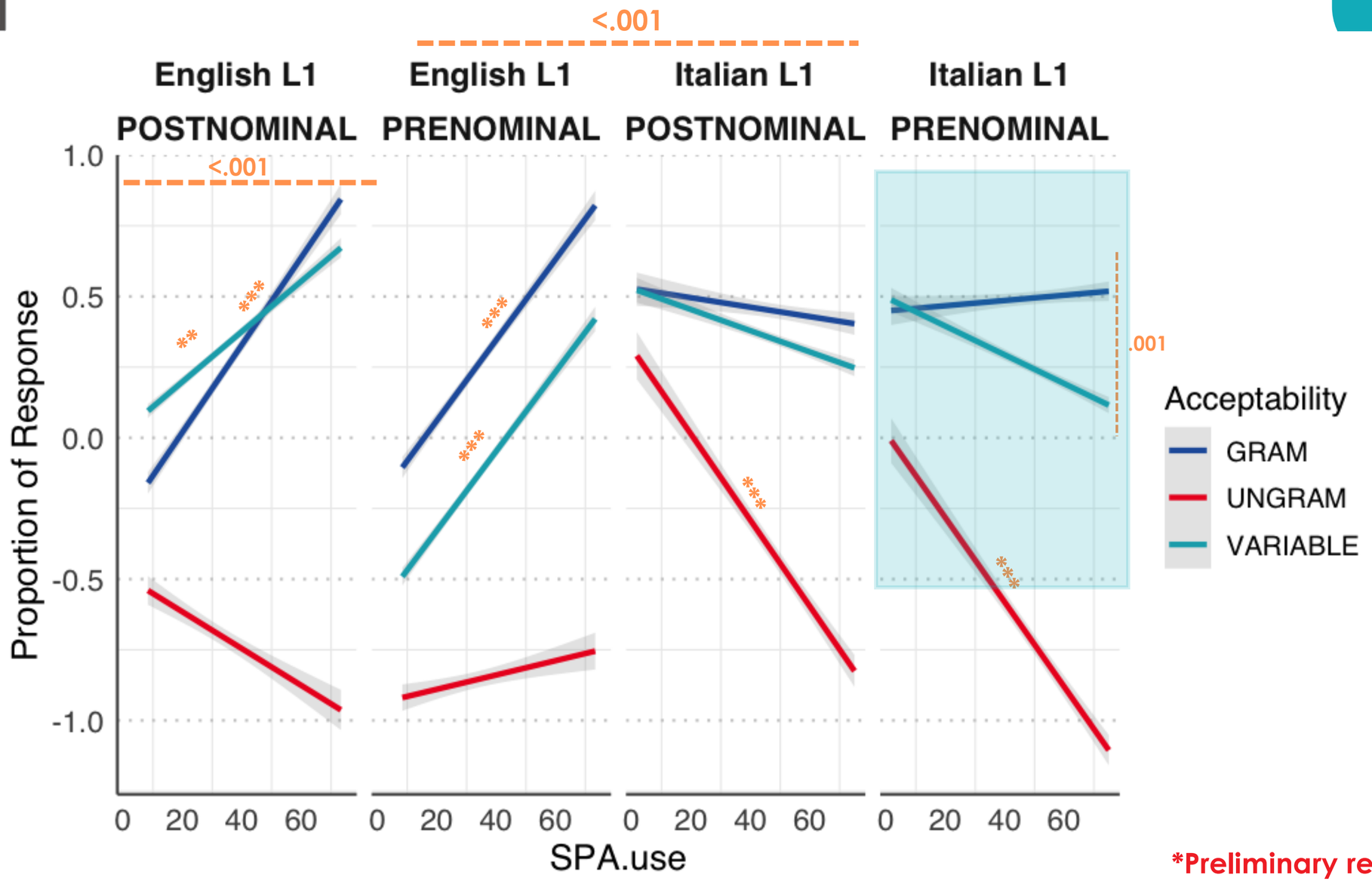
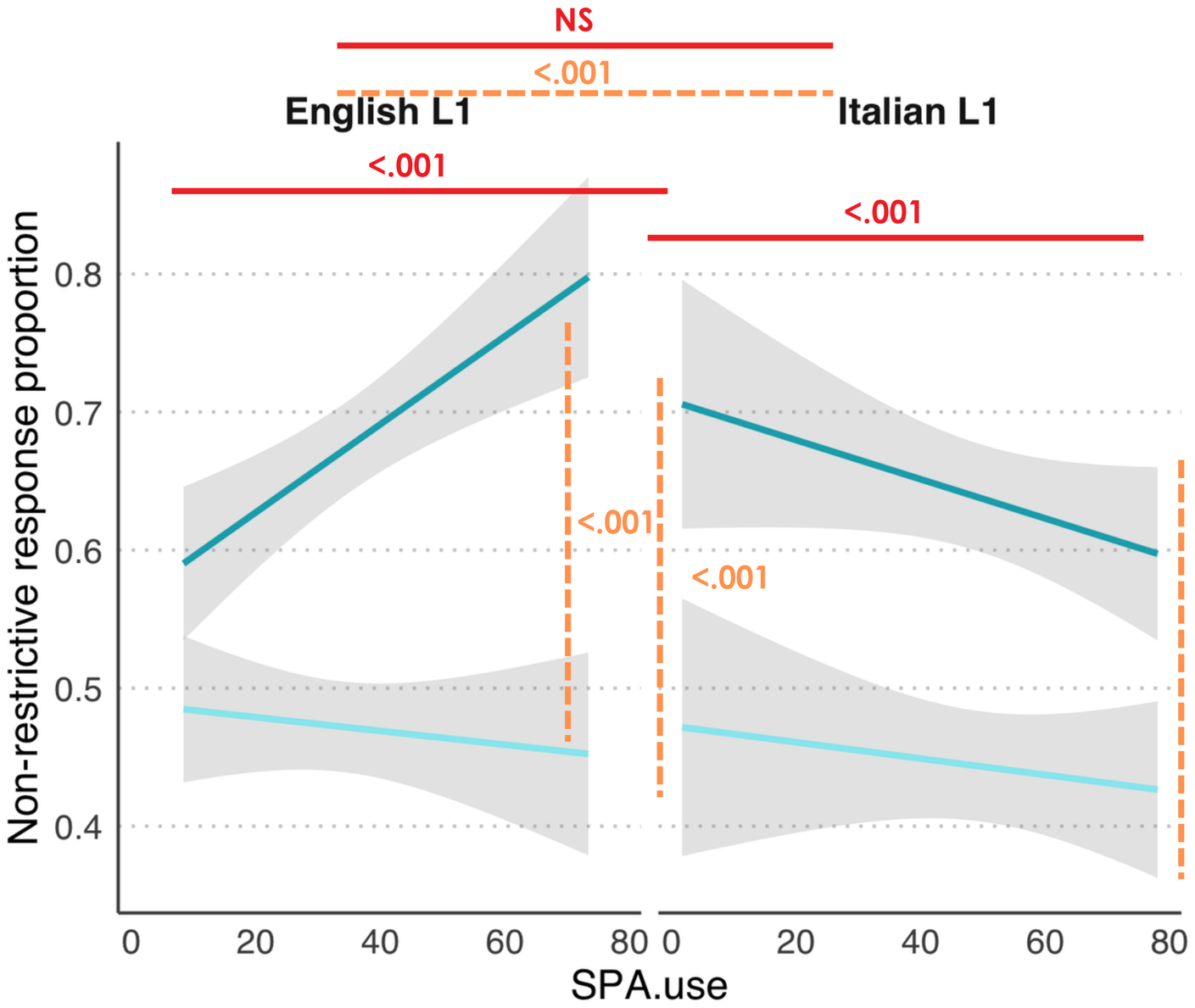


*Preliminary results

SIT



*Preliminary results