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**Code-switching *always, carefully,  
completamente y frecuentemente***

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# Adverb Position

- Restrictions on adverb position can vary based on language
- For example, in English post-verbal adverb position is restricted, but not pre-verbal adverb position

(1) \* Hannah **speaks always** English.

(2) Hannah **always speaks** English.

## Adverb Position

- Spanish is more flexible with respect to adverb position
  - Generally acceptable either pre-verbally or post-verbally

|                                |       |                |                |          |  |
|--------------------------------|-------|----------------|----------------|----------|--|
| (3)                            | Juana | <b>habla</b>   | <b>siempre</b> | español. |  |
|                                | Juana | speaks         | always         | Spanish  |  |
| 'Juana always speaks Spanish.' |       |                |                |          |  |
| (4)                            | Juana | <b>siempre</b> | <b>habla</b>   | español. |  |
|                                | Juana | always         | speaks         | Spanish  |  |
| 'Juana always speaks Spanish.' |       |                |                |          |  |



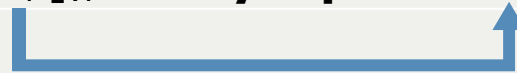
What about code-switching (CS)?

## V-to-T Movement

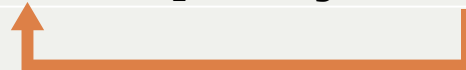
- Argued that verb (V) and tense (T) determine adverb position (Camacho & Sánchez, 2017; Pollock, 1989; Suñer, 1994; Zagana, 2002; among others)
  - V-to-T movement is one option for feature checking
  - Or if an agreement relationship occurs between V and T, there is no need for movement (i.e., affix lowering)
- Languages can be categorized as either verb-raising (e.g., French) or non-raising (e.g., English)
- Spanish is a so-called hybrid language (Ayoun, 2005)
  - There is always movement, but with a lower spell-out can occur (Camacho & Sánchez, 2017)

# (Non-)Raising in English and French

(5) [TP Hannah [T' **t<sub>i</sub>** [VP **always speaks**+T **t<sub>i</sub>** Spanish ]]] *non-raising*



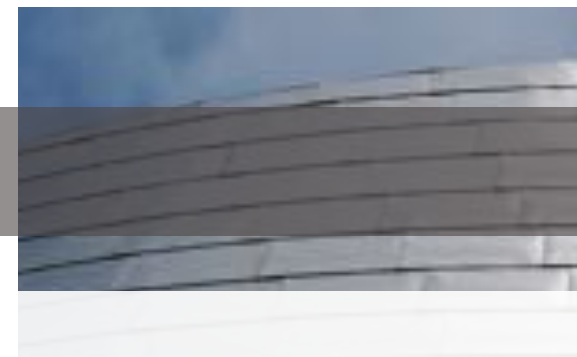
(6) [TP Jeanne [T' **parle<sub>i</sub>**+T [VP **toujours** **t<sub>i</sub>** français ]]] *verb-raising*



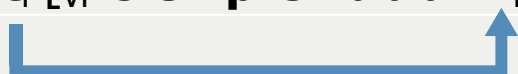
Jeanne speaks always French

'Jeanne always speaks French.'

# (Non-)Raising in Spanish



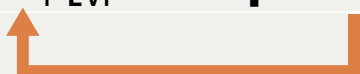
(7)  $[_{TP} \text{Juana } [_{T'} \text{t}_i [_{VP} \text{siempre habla} + T_i \text{español } ]]]$  *non-raising*



Juana                      always                      speaks                      Spanish

'Juana always speaks Spanish.'

(8)  $[_{TP} \text{Juana } [_{T'} \text{habla} + T_i [_{VP} \text{siempre t}_i \text{español } ]]]$  *verb-raising*



Juana                      speaks                      always                      Spanish

'Juana always speaks Spanish.'

Adopting a Minimalist approach to CS (MacSwan, 1999), predictions about adverb switches can be made

- Language of the finite verb (i.e., V+T) should dictate acceptability in both monolingual and CS contexts

**Research Question:**

Does adverb position in CS pattern with the verb?

- Spanish adverb + English verb = preverbal (i.e., English-like non-raising)
- English adverb + Spanish = flexible (i.e., Spanish-like non-raising *or* verb-raising)?



# Participants

- US Spanish-English early bilinguals ( $n = 24$ )
  - Learned both from a young age ( $M = 1.8$  years) (i.e., 2L1 bilinguals)
  - 19-49 years old ( $M = 23.2$ )
  - Born in the US ( $n = 20$ ) or arrived at a young age ( $M = 4.8$  years)
  - English dominant ( $M = 26.1$  out of  $\pm 218$ )
    - Bilingual Language Profile (Birdsong, Gertken & Amengual, 2012)
  - Advanced English proficiency
    - *Modified English cloze test* (O'Neill, Cornelius & Washburn, 1981)
  - Intermediate/advanced Spanish proficiency
    - *Diplomas del Español como Lengua Extranjera* (DELE) (Montrul & Slabakova, 2003)

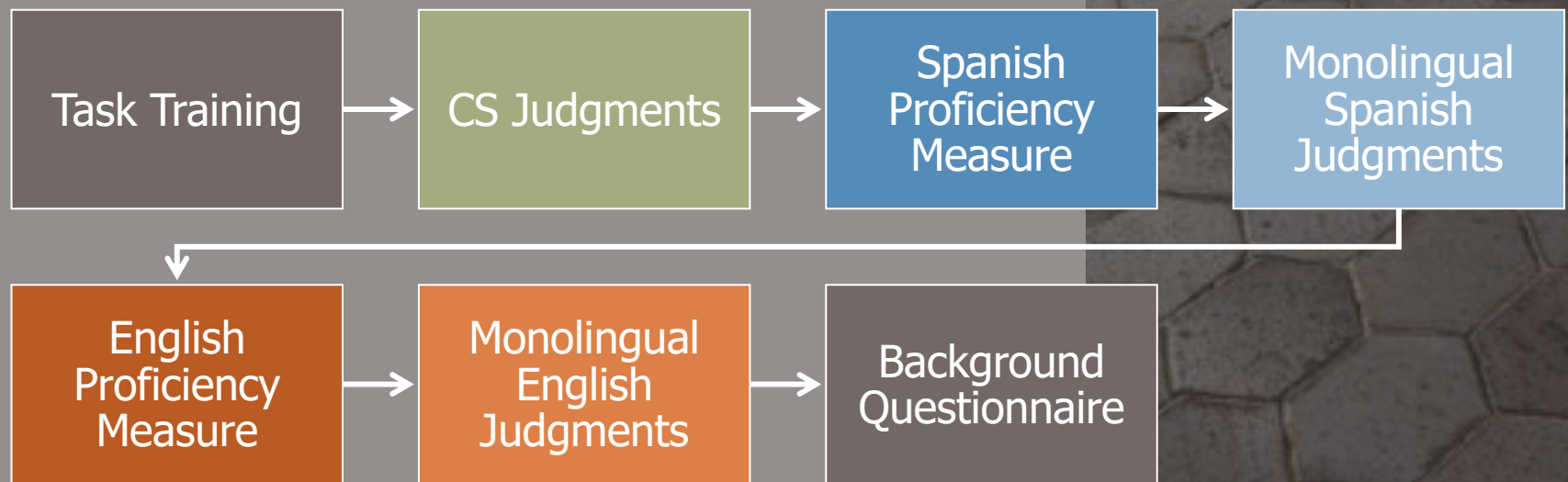
# Task

- Written acceptability judgment task (AJT)
  - 7-point Likert scale (1 = lowest)
  - Completed online via Qualtrics

That guy pidió un vaso de agua.

|                              | Completely unacceptable | Mostly unacceptable   | Somewhat unacceptable | Unsure                | Somewhat acceptable   | Mostly acceptable     | Completely acceptable |
|------------------------------|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| ¿Qué le parece esta oración? | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

# Experimental Procedure



# Target Stimuli

- Spanish-English sentences containing finite verbs switched with adverbs ( $n = 16$ )
  - Four conditions:
    - English V + Verb-Raising (i.e., *speaks siempre*)
    - English V + Non-Raising (i.e., *siempre speaks*)
    - Spanish V + Verb Raising (i.e., *habla always*)
    - Spanish V + Non-Raising (i.e., *always habla*)
  - Four different adverbs (Camacho & Sánchez, 2017):
    - *always/siempre; carefully/cuidadosamente; completely/completamente; frequently/frecuentemente*
  - Subject always a proper name; always an explicit direct object
    - Always matched the language of the adjacent element

# Target Stimuli

SUBJECT

ADVERB

VERB

DIRECT  
OBJECT

**Hannah** **always** **habla español.**

SUBJECT

VERB

ADVERB

DIRECT  
OBJECT

**Hannah** **speaks** **siempre español.**

SUBJECT

ADVERB

VERB

DIRECT  
OBJECT

**Juana** **siempre** **speaks English.**

SUBJECT

VERB

ADVERB

DIRECT  
OBJECT

**Juana** **habla** **always English.**

# Comparison Stimuli

- Comparison monolingual equivalents were tested in Spanish ( $n = 8$ ) and English ( $n = 8$ )
  - Four conditions:
    - English Verb-Raising (i.e., *speaks always*)
    - English Non-Raising (i.e., *always speaks*)
    - Spanish Verb-Raising (i.e., *habla siempre*)
    - Spanish Non-Raising (i.e., *siempre habla*)
  - Four different adverbs:
    - *always/siempre; carefully/cuidadosamente;*  
*completely/completamente; frequently/frecuentemente*

# Comparison Stimuli

SUBJECT

ADVERB

VERB

DIRECT  
OBJECT

**Hannah always speaks English.**

SUBJECT

VERB

ADVERB

DIRECT  
OBJECT

**Hannah speaks always English.**

SUBJECT

ADVERB

VERB

DIRECT  
OBJECT

**Juana siempre habla español.**

SUBJECT

VERB

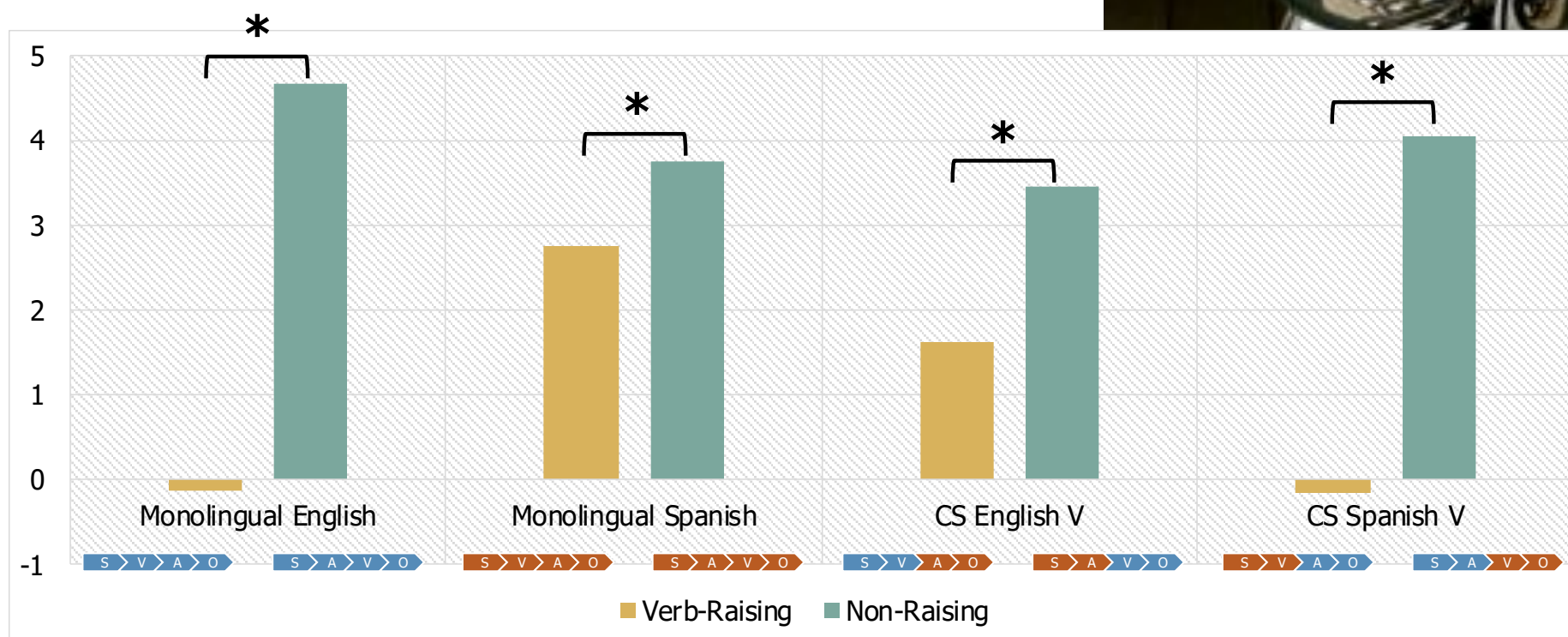
ADVERB

DIRECT  
OBJECT

**Juana habla siempre español.**



## All Results: Average z-score by stimulus type





## *Always/siempre*

**Hannah speaks always English.**

**Hannah always speaks English.**

**Juana habla siempre español.**

**Juana siempre habla español.**

**Hannah speaks siempre español.**

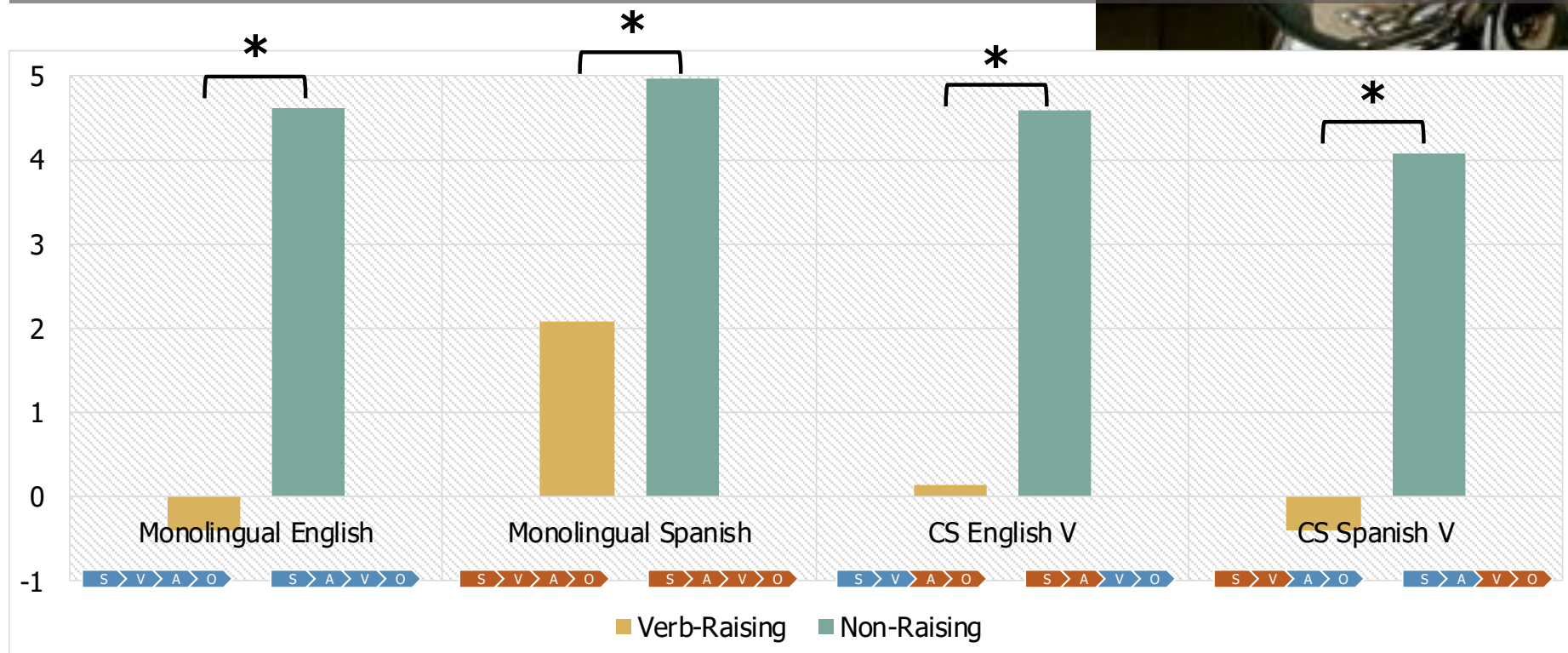
**Juana siempre speaks English.**

**Hannah always habla español.**

**Juana habla always English.**



## *Always/siempre: Average z-score by stimulus type*



## *Frequently / frecuentemente*

**Sarah buys frequently tomatoes.**

**Sarah frequently buys tomatoes.**

**Margarita compra frecuentemente tomates.**

**Margarita frecuentemente compra tomates.**

**Sarah buys frecuentemente tomates.**

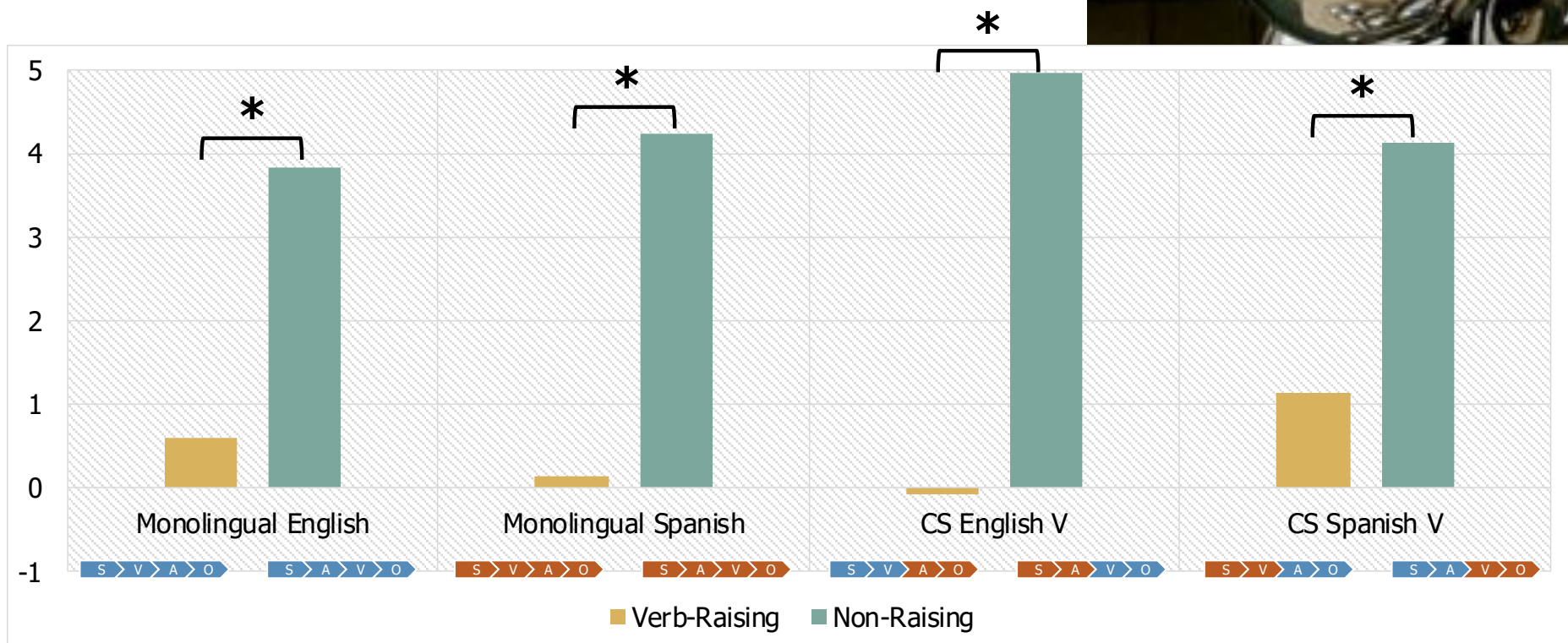
**Margarita frecuentemente buys tomatoes.**

**Sarah frequently compra tomates.**

**Margarita compra frequently tomatoes.**



*Frequently/frecuentemente*: Average z-score by stimulus type



## *Carefully/cuidadosamente*



**Henry reads carefully the instructions.**

**Henry carefully reads the instructions.**

**Antonio lee cuidadosamente las instrucciones.**

**Antonio cuidadosamente lee las instrucciones.**

**Henry reads cuidadosamente las instrucciones.**

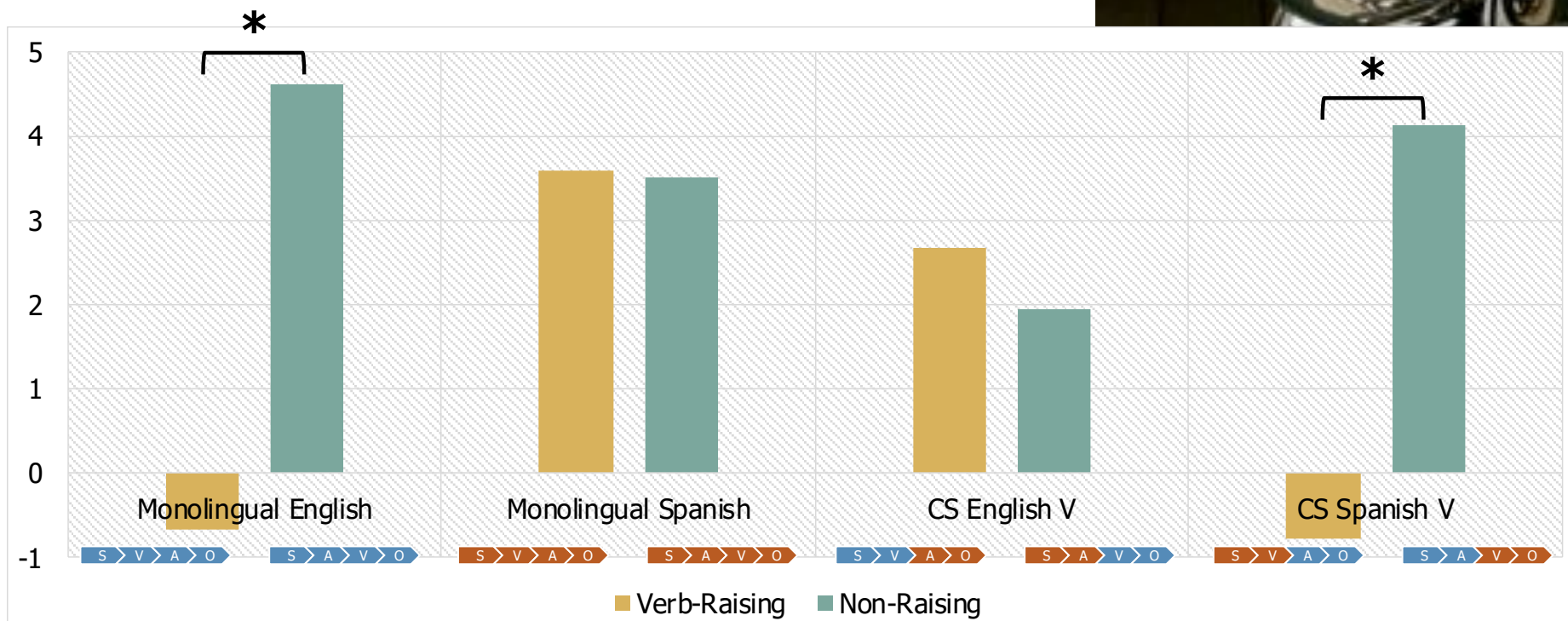
**Antonio cuidadosamente reads the instructions.**

**Henry carefully lee las instrucciones.**

**Antonio lee carefully the instructions.**



*Carefully/cuidadosamente: Average z-score by stimulus type*



*Completely/completamente*: Average z-score by stimulus type

**Nate understands completely the homework.**

**Nate completely understands the homework.**

**José entiende completamente la tarea.**

**José completamente entiende la tarea.**

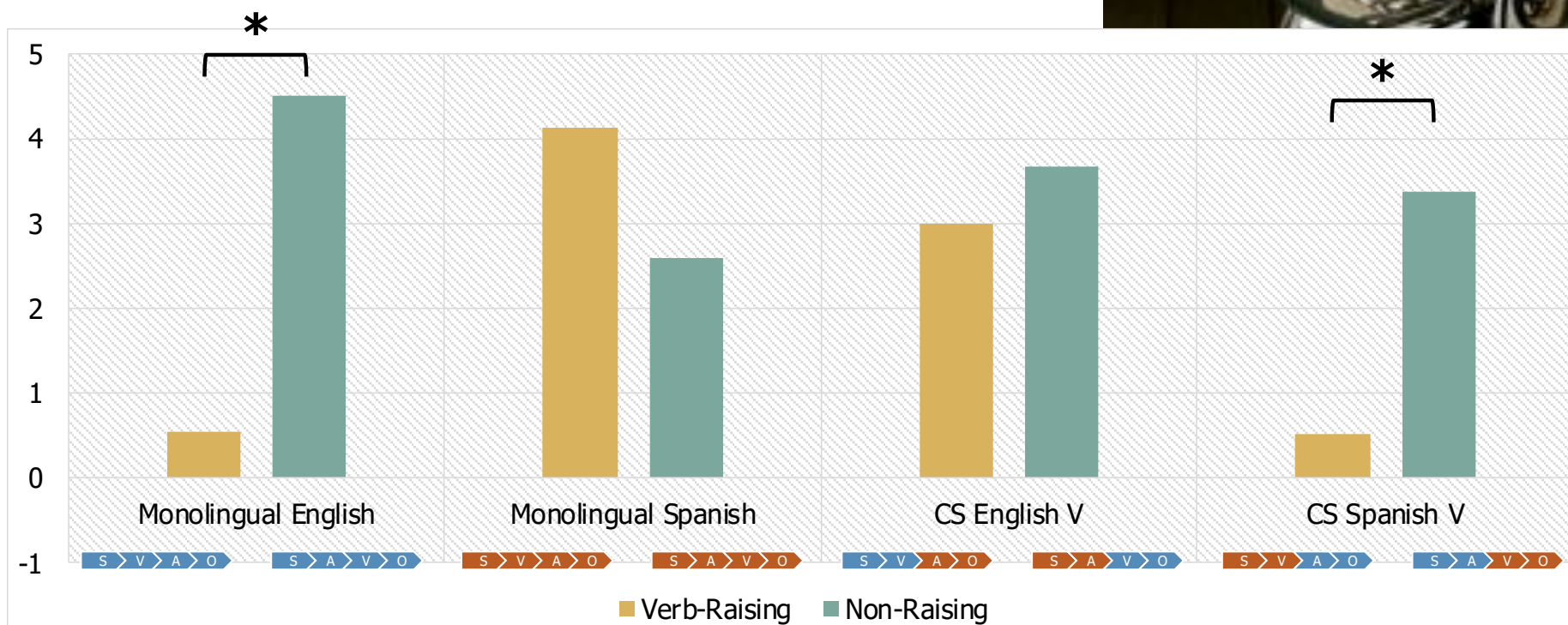
**Nate understands completamente la tarea.**

**José completamente understands the homework.**

**Nate completely completamente la tarea.**

**José completamente completely the homework.**

*Completely/completamente: Average z-score by stimulus type*





## Discussion

- General availability of switched non-raising follows from the syntactic literature
  - Available in Spanish or English monolingually
    - *Hannah always speaks English.*
    - *Juana siempre habla español.*
- Minimalist predictions for CS confirmed
  - Available with Spanish or English verbs
    - *Juana siempre speaks English.*
    - *Hannah always habla español.*
- Non-raising is always available

## Discussion

- Verb-raising also follows from the literature, in that it is allowed in Spanish and not English
  - However, availability varies lexically in Spanish
    - *completamente* / *cuidadosamente* > ? *siempre* > \* *frecuentemente*
- Minimalist predictions for CS not confirmed
  - Spanish verb-raising was the least favored
  - If anything, predicted by the language of the adverb, not the verb
    - Available only with *completamente* and *cuidadosamente*

# Discussion

- Why were the predictions not confirmed for verb-raising?
  - Task?
    - Inclusion of control stimuli (e.g., pronoun switches, complex-sentence switches, etc.) (Koronkiewicz, 2019) suggest participants completed the task appropriately
  - Theoretical framework?
    - Matrix Language Frame (Myers-Scotton, 1993, 2002) model would similarly depend on the language of the finite verb (i.e., the matrix language)
  - No V-to-T movement?
    - Could argue that these bilinguals have non-raising as the preferred default for both English and Spanish, contra Camacho & Sánchez (2017)
    - Would still need to explain why it is possible (but not preferred) in Spanish

# Discussion

- Some other syntactic reason?
  - Verb adjacency to the direct object likely playing a role
  - Stadthagen-González, López, Parafita Couto & Párraga (2018) have compatible findings with post-verbal adverbs in Spanish-English CS
    - *Olivia preparó rápidamente* the food
      - > Olivia prepared quickly *la comida*
      - > Olivia prepared *rápidamente* *la comida*
      - > *Olivia preparó* quickly the food
  - “All the constituents within the domain of the [verb-complement] dependency contribute to the perceived (un)acceptability of the construction” (p. 88)
    - That is to say, it’s not just V+T, but the language of the adverb *and* the direct object play a role

## Future Directions

- Continued look into adjacency constraints
- Further examination of the lexical differences
  - Frequency adverbs (*siempre/frecuentemente*) seem to constrain verb raising in Spanish
- Currently collecting data from French-English bilinguals
  - Can compare current data to a “true” verb-raising language paired with non-raising English

# ¡Gracias!

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