

# When data collide:

Traditional judgments vs. formal experiments  
in sentence acceptability

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Two areas of concern in syntax

# 1. Traditional judgments + formal experiments

- What does it mean when they conflict?

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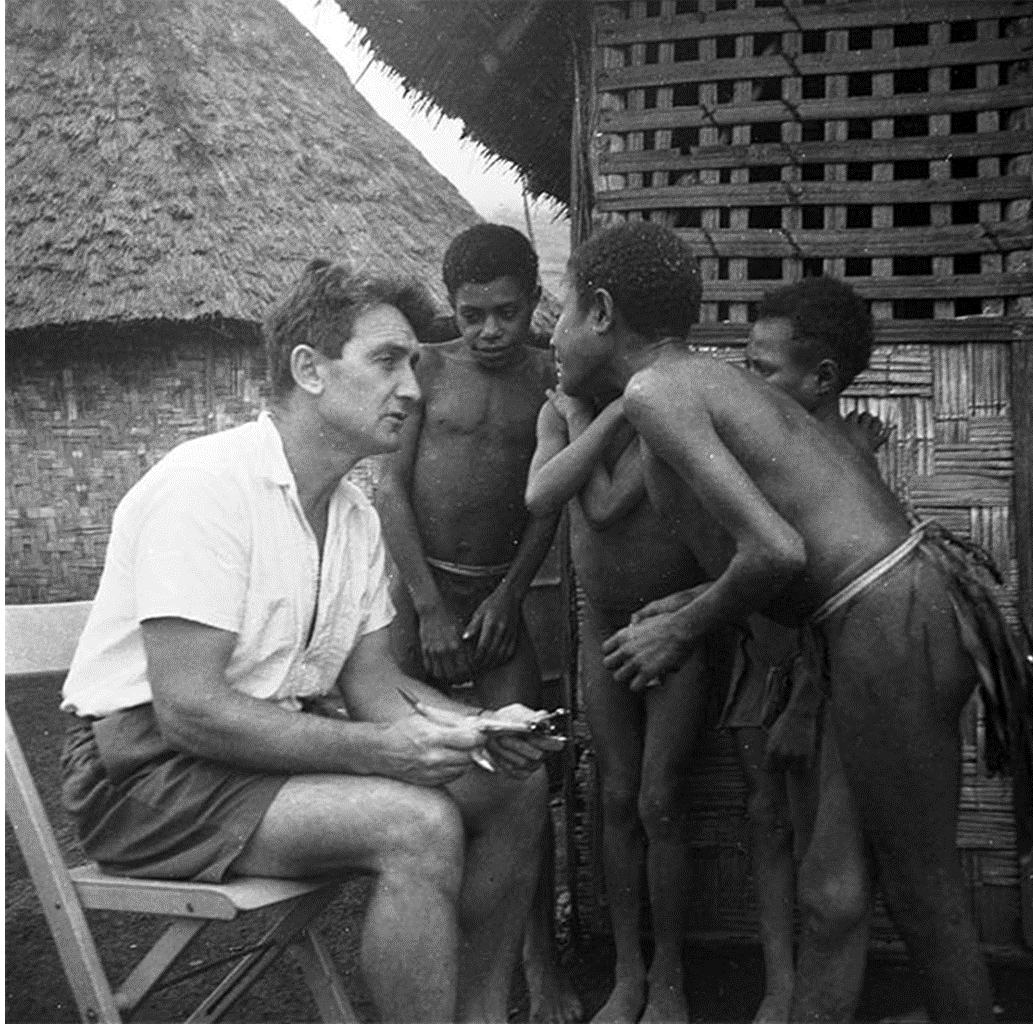
## 2. Constraints on *wh*-movement

- Are some still completely beyond our understanding?

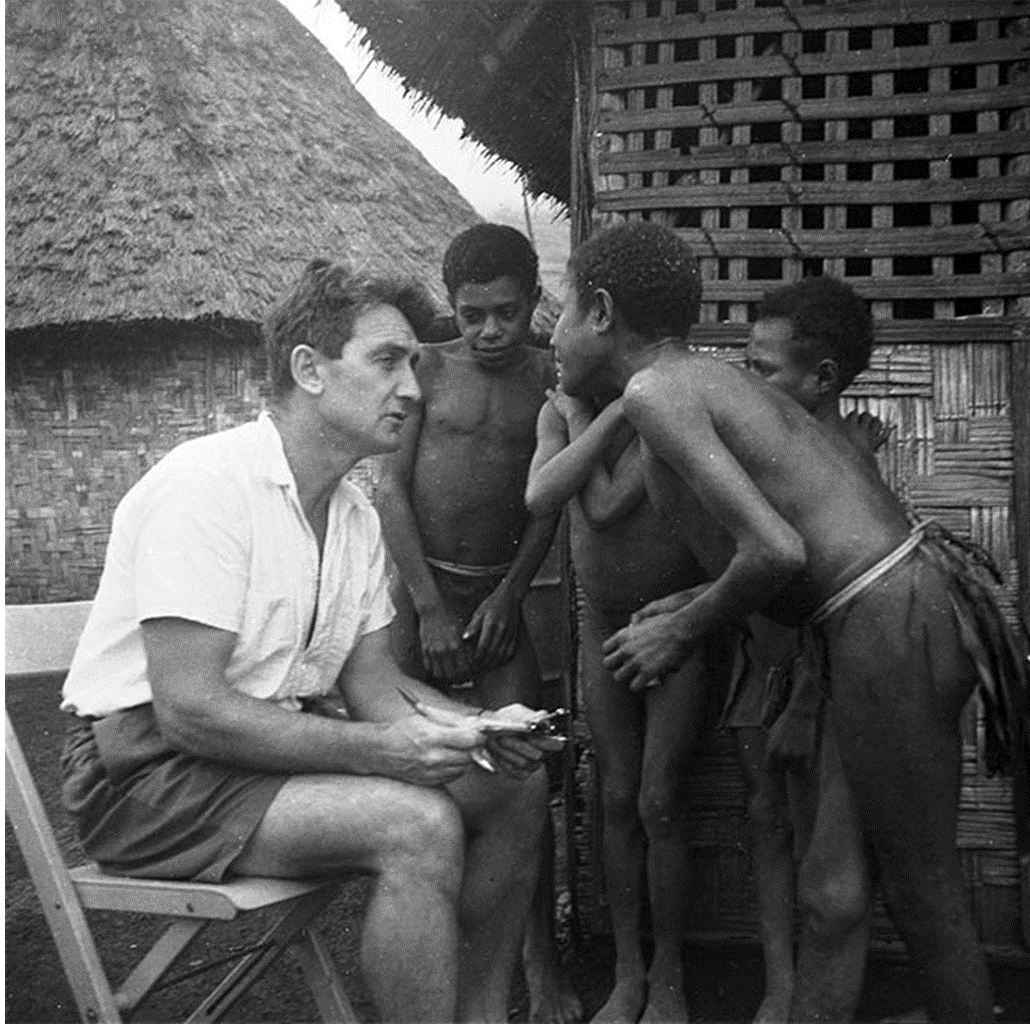
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# Traditional judgments



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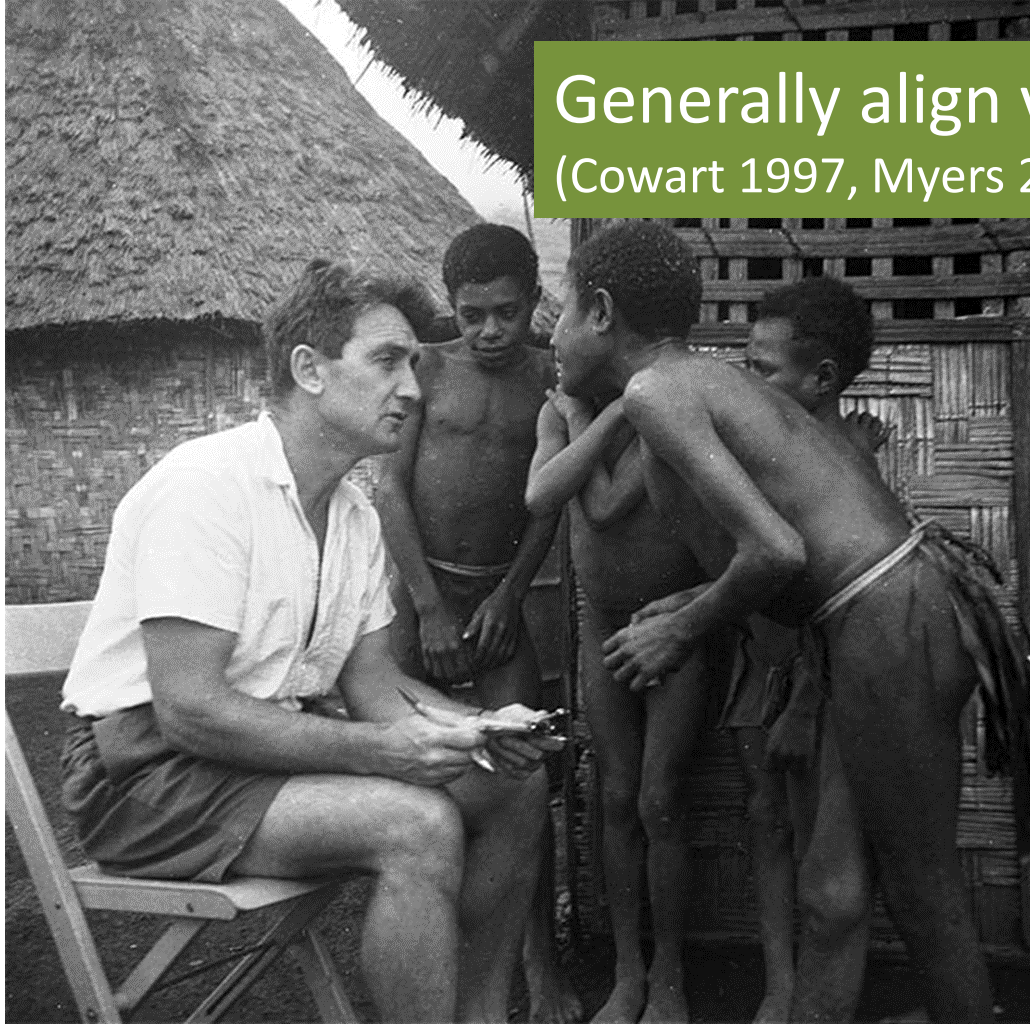


# Formal experiments





# Traditional judgments



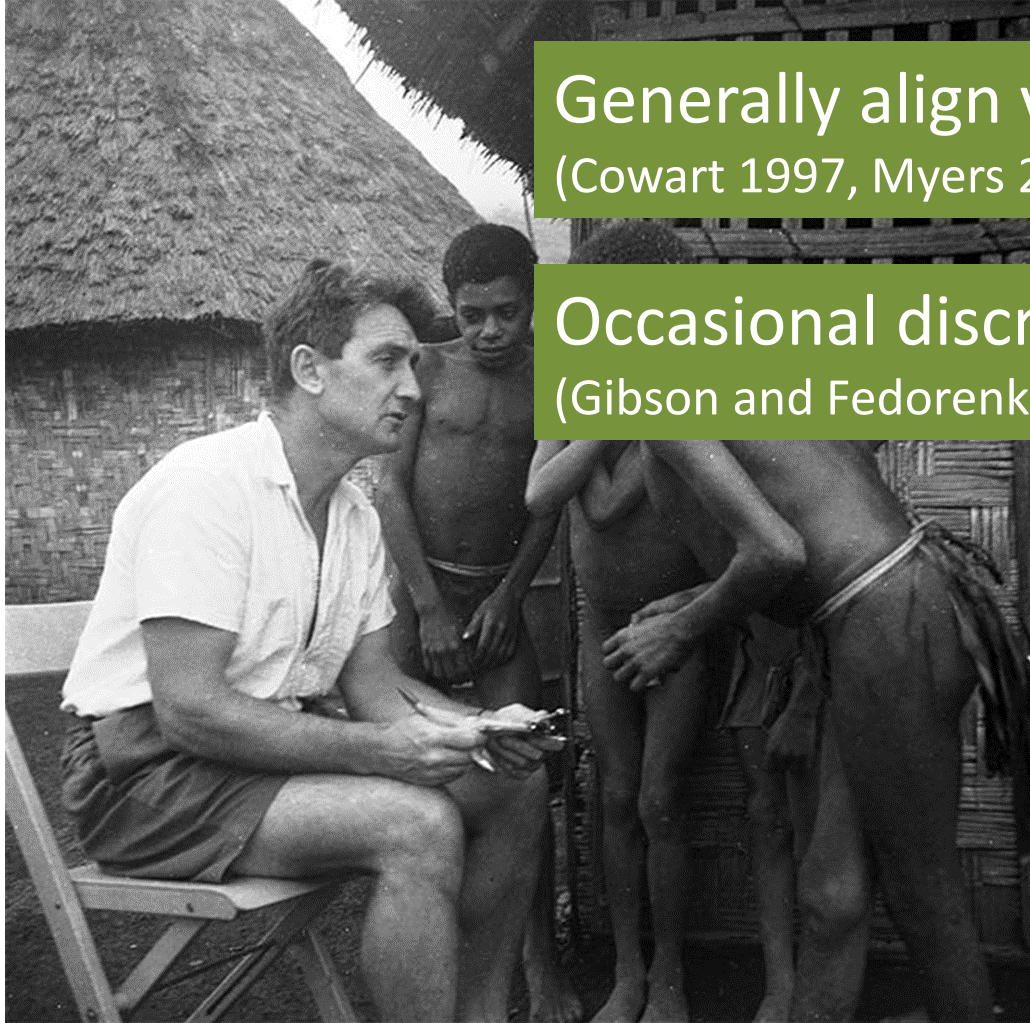
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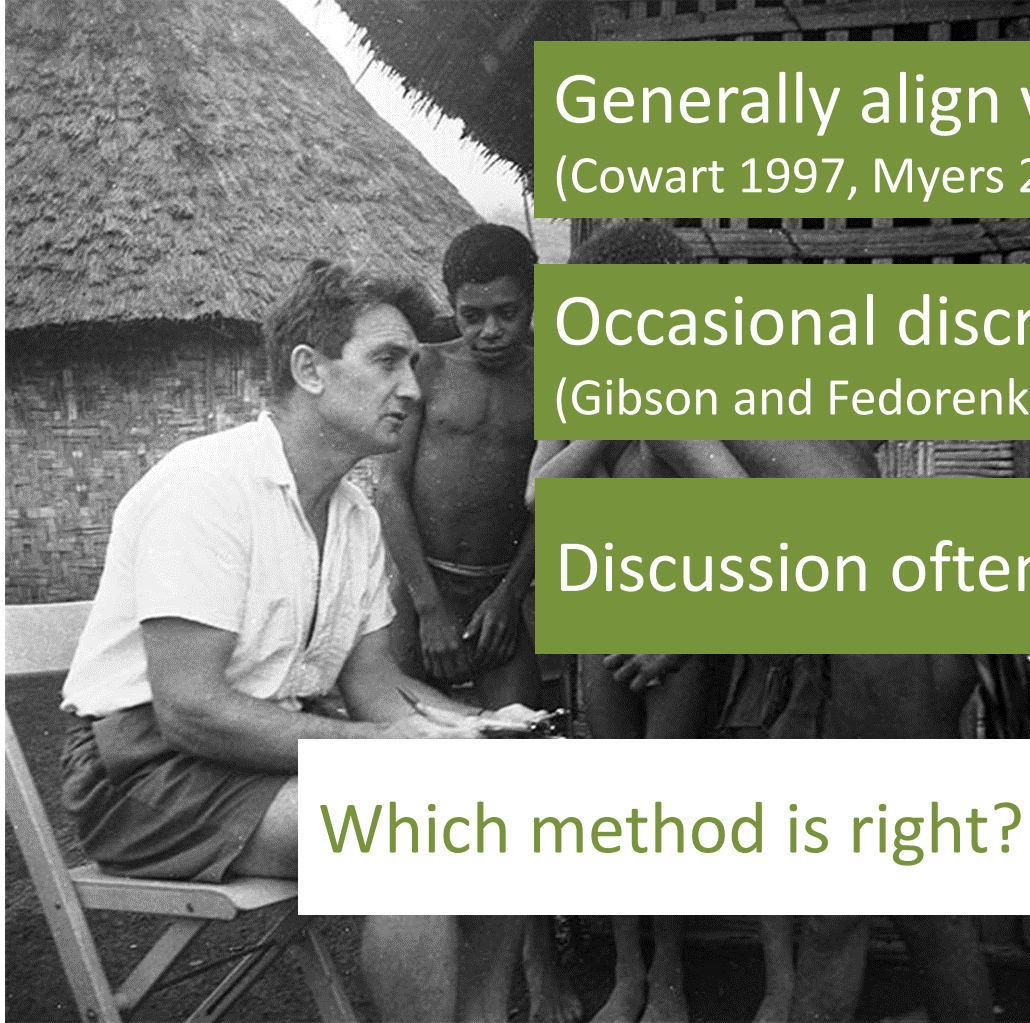
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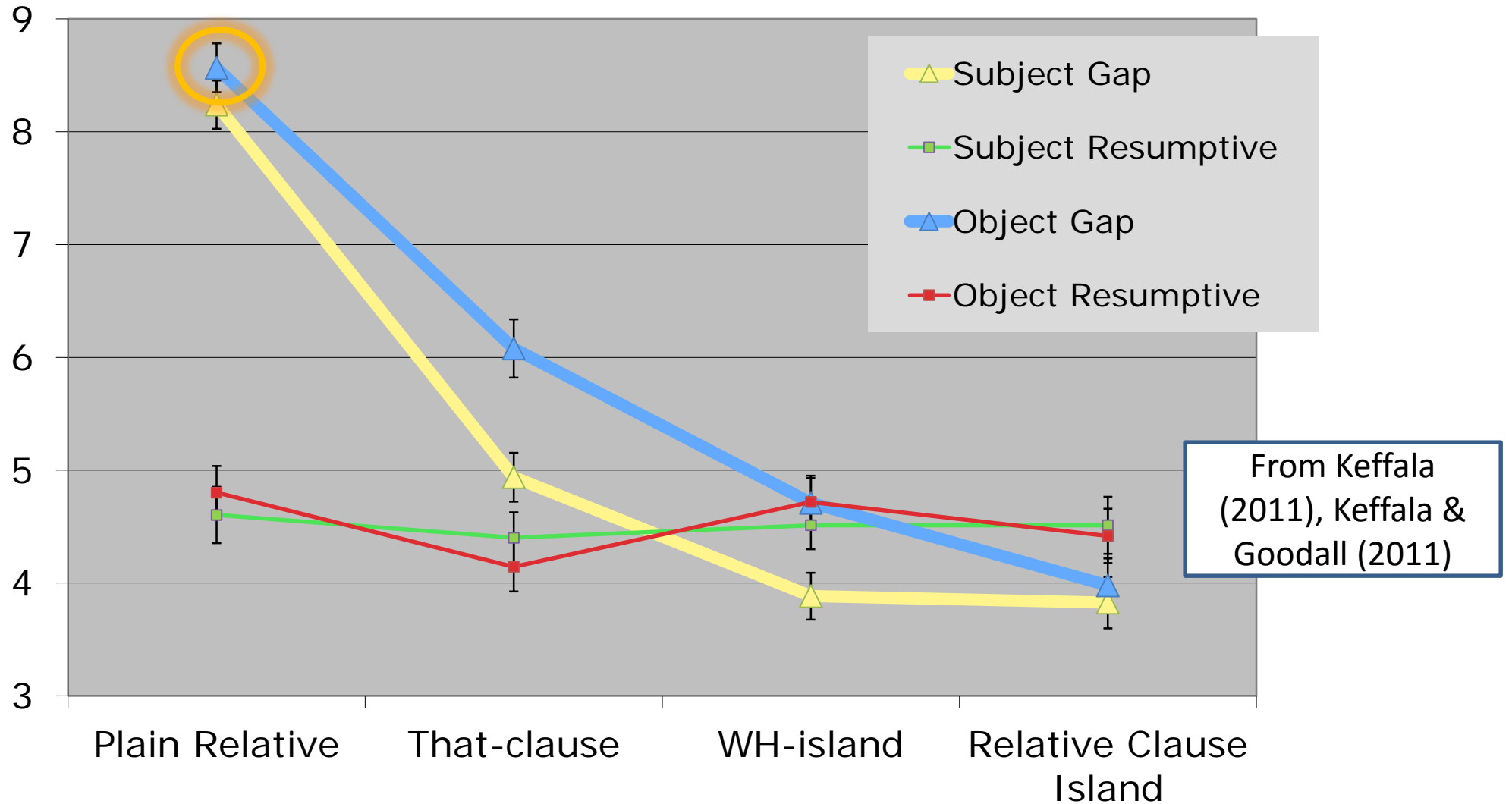
What is the right tool for the job?

# One difference we know about

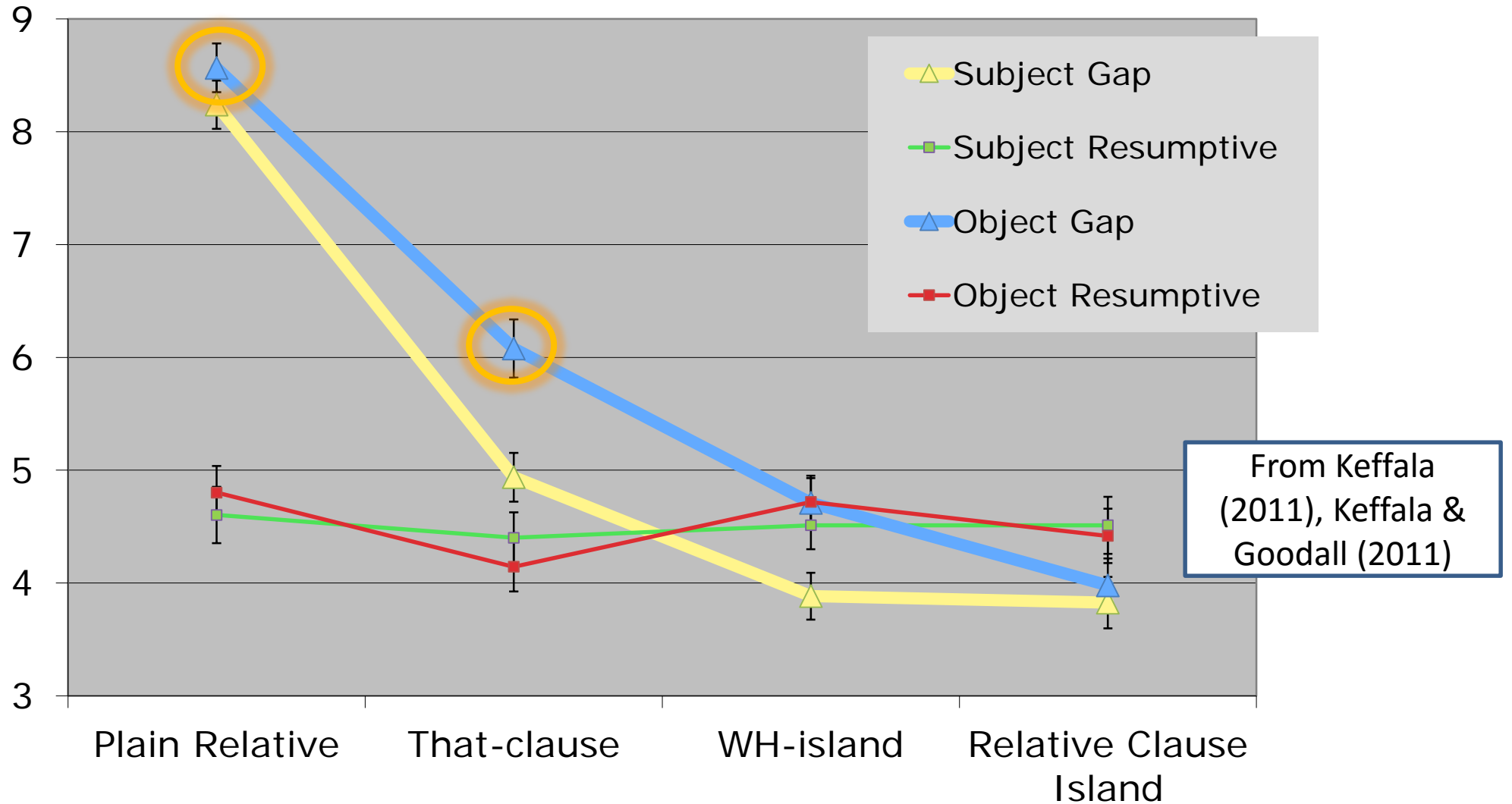
- Formal acceptability experiments are very sensitive to demands on working memory.
- Affects long-distance extraction, for example.
- Sometimes larger than well-known grammatical effects.



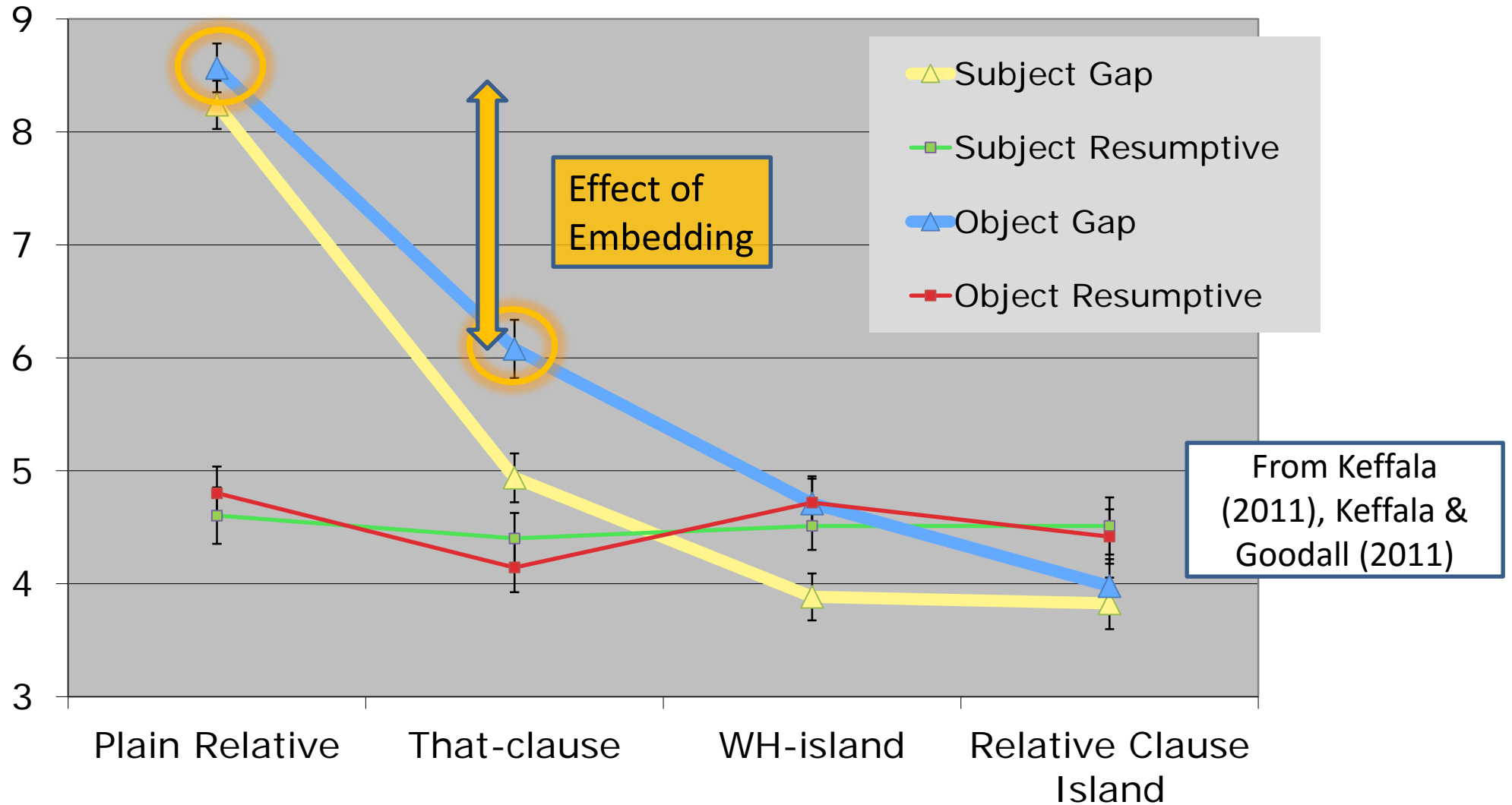
# Working memory vs. grammar



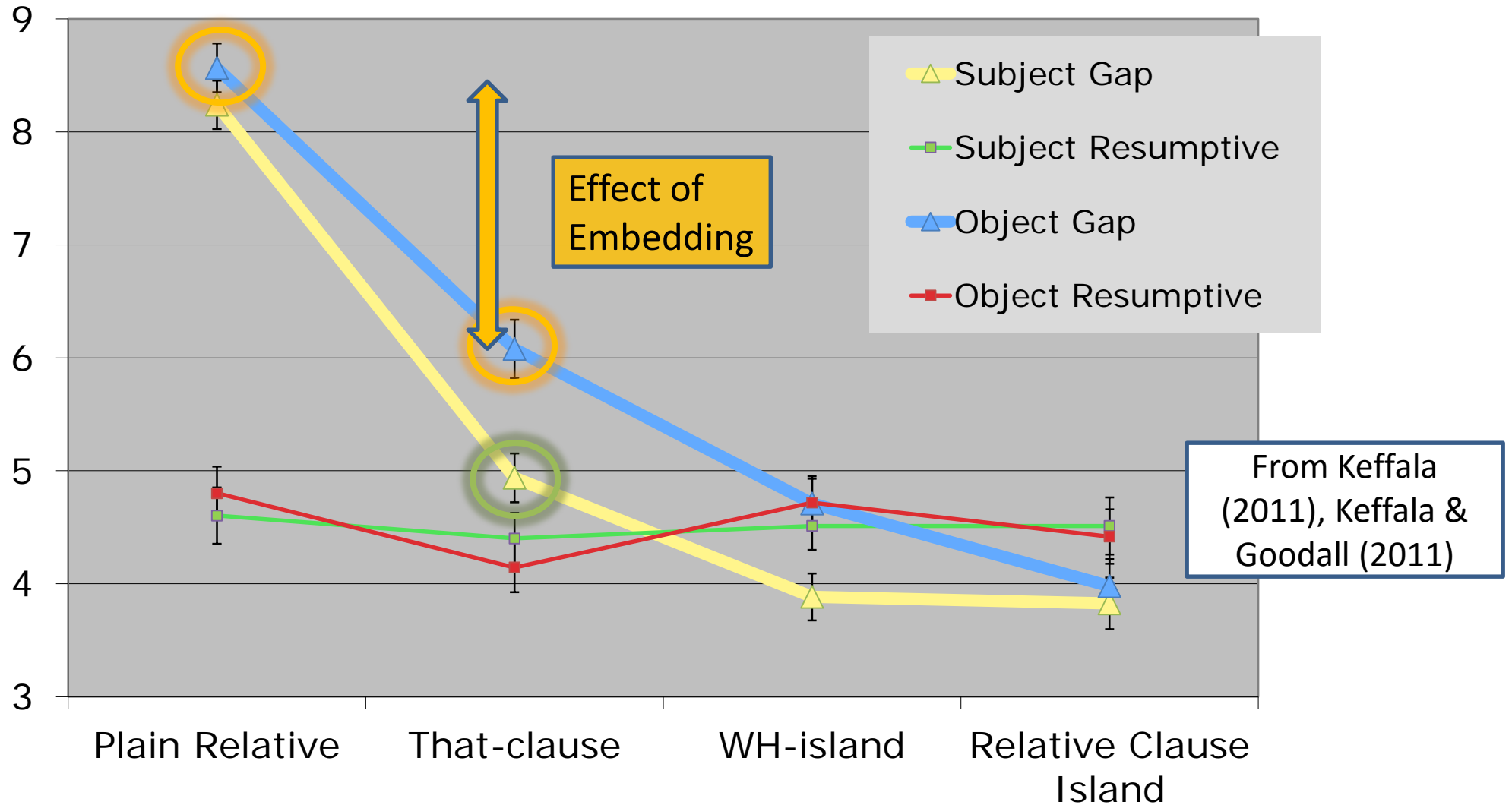
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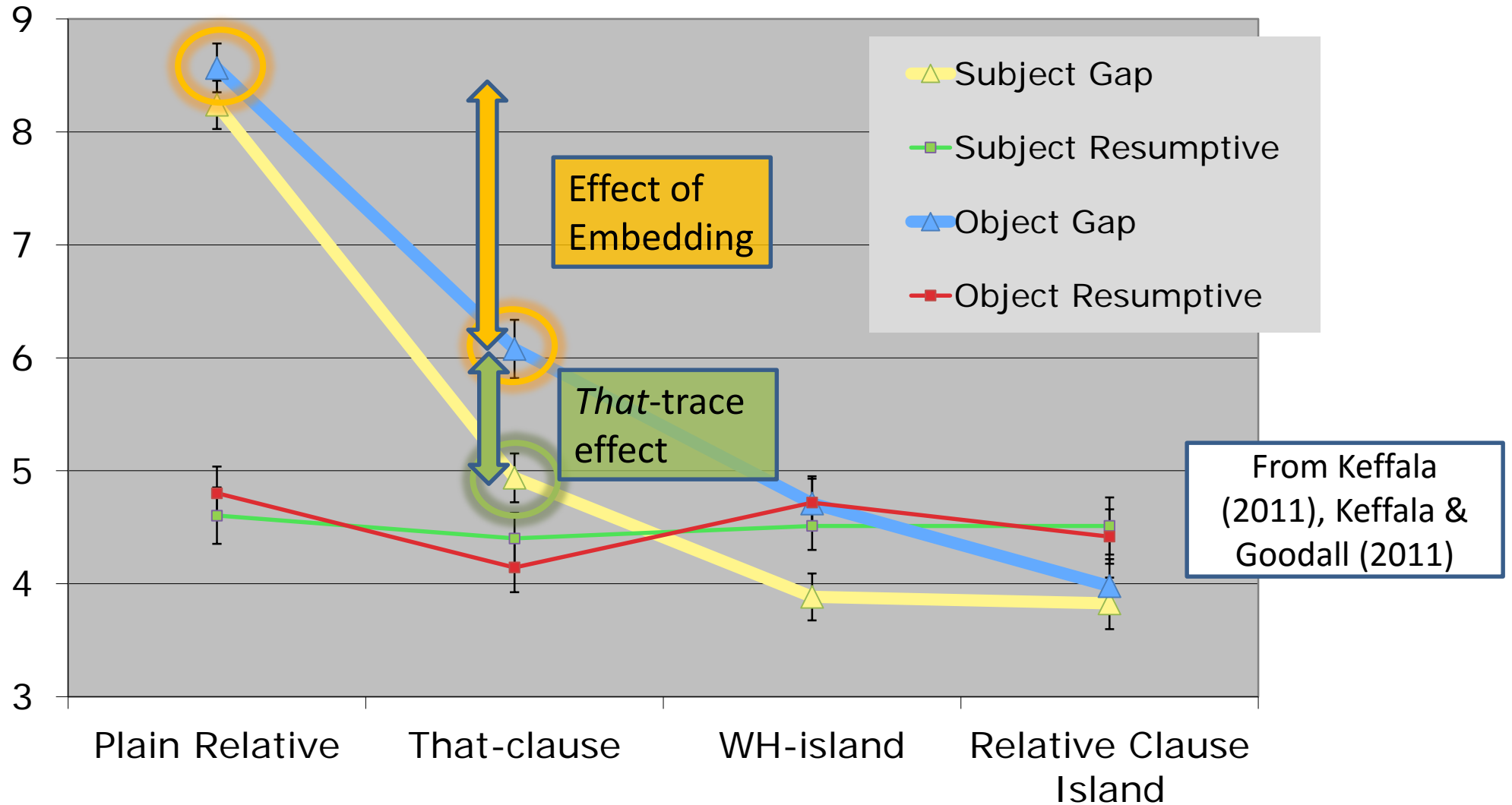
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- Are all differences in results attributable to known differences like this?
- What are we to make of differences that aren't so easily explained?

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## 2. Constraints on *wh*-movement

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# An embarrassment of riches

- Many *wh*-phenomena have several possible explanations.

CNPC: What do you believe the claim that Mary saw \_\_\_\_?

*Wh*-island: What do you wonder when Mary saw \_\_\_\_?

# An embarrassment of riches

- Many *wh*-phenomena have several possible explanations.

CNPC: What do you believe the claim that Mary saw \_\_\_\_?

*Wh*-island: What do you wonder when Mary saw \_\_\_\_?

- Both are structurally more complex than:

What do you believe that Mary saw \_\_\_\_?

# A number of possible, plausible explanations

- In terms of:
  - grammar
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- In terms of:
  - grammar
  - working memory
- Problem becomes figuring out relative role of each.

# Not all cases give us this luxury

- For other *wh*-phenomena, we are lucky to come up with any plausible explanation.

Who do you think (that) Mary saw \_\_\_\_ ?

Who do you think (\*that) \_\_\_\_ saw Mary?

# Not all cases give us this luxury

- For other *wh*-phenomena, we are lucky to come up with any plausible explanation.

Who do you think (that) Mary saw \_\_\_\_ ?

Who do you think (\*that) \_\_\_\_ saw Mary?

- Appears to make little sense in terms of processing.
- Also hard to find grammatical reason.



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1. Traditional judgments  
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## Subextraction from SPEC of CP

2. Constraints on *wh*-movement

- Are some still completely beyond our understanding?

# Background

- Like many languages, Spanish forbids subextraction from (preverbal) subjects:

\*Esta es la autora de la que

[varias traducciones \_\_ ] han ganado premios internacionales.

`This is the author by whom

[several translations \_\_ ] have won international awards.'

# Subextraction out of SPEC/CP

- But Esther Torrego noticed an amazing fact: subextraction improves when subject is moved to SPEC of CP:

¿De qué autora no sabes [qué traducciones \_\_ ] han ganado premios internacionales?

`By what author don't you know [which translations \_\_ ] have won internat'l awards?'

(Torrego (1985), Chomsky (1986))

# Also in Italian

? [Di quale autore] ti domandi [<sub>CP</sub> [quanti libri t]<sub>i</sub> [<sub>TP</sub> siano stati censurati t<sub>i</sub>] ] ]

‘Which author do you wonder how many books by have been censored?’

(from Rizzi 2006: 114)

# Also in English

? Which athletes<sub>i</sub> do you wonder [<sub>CP</sub> [which pictures of t<sub>i</sub>]<sub>j</sub> Mary bought t<sub>j</sub>]

? Which athletes<sub>i</sub> do you wonder [<sub>CP</sub> [which pictures of t<sub>i</sub>]<sub>j</sub> t<sub>j</sub> are on sale]

Lasnik & Saito (1992:111)

? [<sub>CP</sub> Who<sub>i</sub> can't you decide [<sub>CP</sub> [how many pictures of t<sub>i</sub>]<sub>z</sub> to buy t<sub>z</sub> for your kids]]?

Kayne (1984:192)

Why is this amazing?



# Why is this amazing?

## I. Syntax

- Freezing Principle
- Criterial Freezing
- Chain Uniformity

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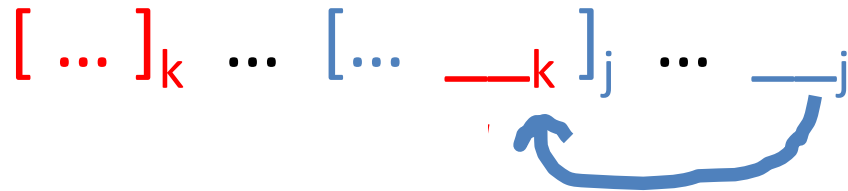
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$[ \dots ]_k \dots [ \dots \text{---}_k ]_j \dots \text{---}_j$

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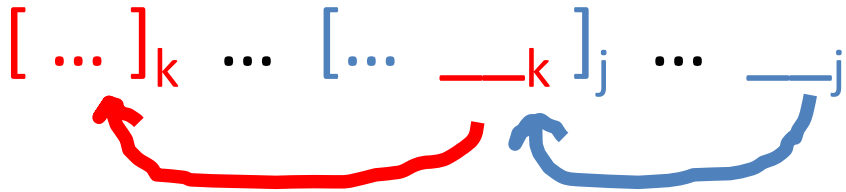
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## I. Syntax

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# Freezing Principle at work

You gave [a book about Tom] to your niece.

You gave \_\_\_ to your niece [a book about Tom].

# Freezing Principle at work

You gave [a book about Tom] to your niece.

You gave \_\_\_ to your niece [a book about Tom].

Who did you give [a book about \_\_\_] to your niece]?

?\*Who did you give \_\_\_ to your niece [a book about \_\_\_]?

# criterial Freezing

An element moved to a position dedicated to some scope-discourse interpretive property, a criterial position, is frozen in place.

Rizzi (2004)

\*[<sub>CP</sub> [Which book] does Bill wonder [<sub>CP</sub> *t* [she read *t*] ] ]?

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## II. Sentence processing

[Which author] don't you know

[which translations of \_\_ ] won prizes?



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## II. Sentence processing

[Which author] don't you know

[which translations of     ] won prizes?

Requires:

- Positing filler (hard)
- Positing filler before other dependency resolved (really hard)
- Positing gap (hard)
- Doing all of this at the same time (**really hard!**)

So... many reasons to be amazed by subextraction  
from SPEC/CP

[Which author] don't you know

[which translations of \_\_ ] won prizes?

We would expect it to be worse, not better,  
than subextraction from subject.

# But does it happen?

- Some have claimed that it does not (e.g., G. Müller 2010, Gallego 2010).
- Gallego (2010) suggests *de qué autora* is argument of *sabes*:  
¿De qué autora no sabes \_\_\_\_  
[qué traducciones] han ganado premios internacionales?  
`By what author don't you know \_\_\_\_  
[which translations] have won international awards?'  
– This shouldn't be possible in English.

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- Because of preposition stranding, we can be more certain where the gap is.
- This is not possible in Spanish.
- A formal experiment makes sense here.
  - Phenomenon is subtle at best.
  - Contrast has been called into question.

# Method

- 48 participants
- 7-point scale (1 = “very bad”, 7 = “very good”)

# Materials: design

- 2 x 3 x 2 design:
  - Grammatical function of affected constituent:
    - Subject vs. Object
  - Location of affected constituent:
    - SPEC/CP vs. Embedded clause vs. Matrix clause
  - Type of *wh*-movement:
    - Preposition-stranding vs. Pied-Piping



# Materials: lists

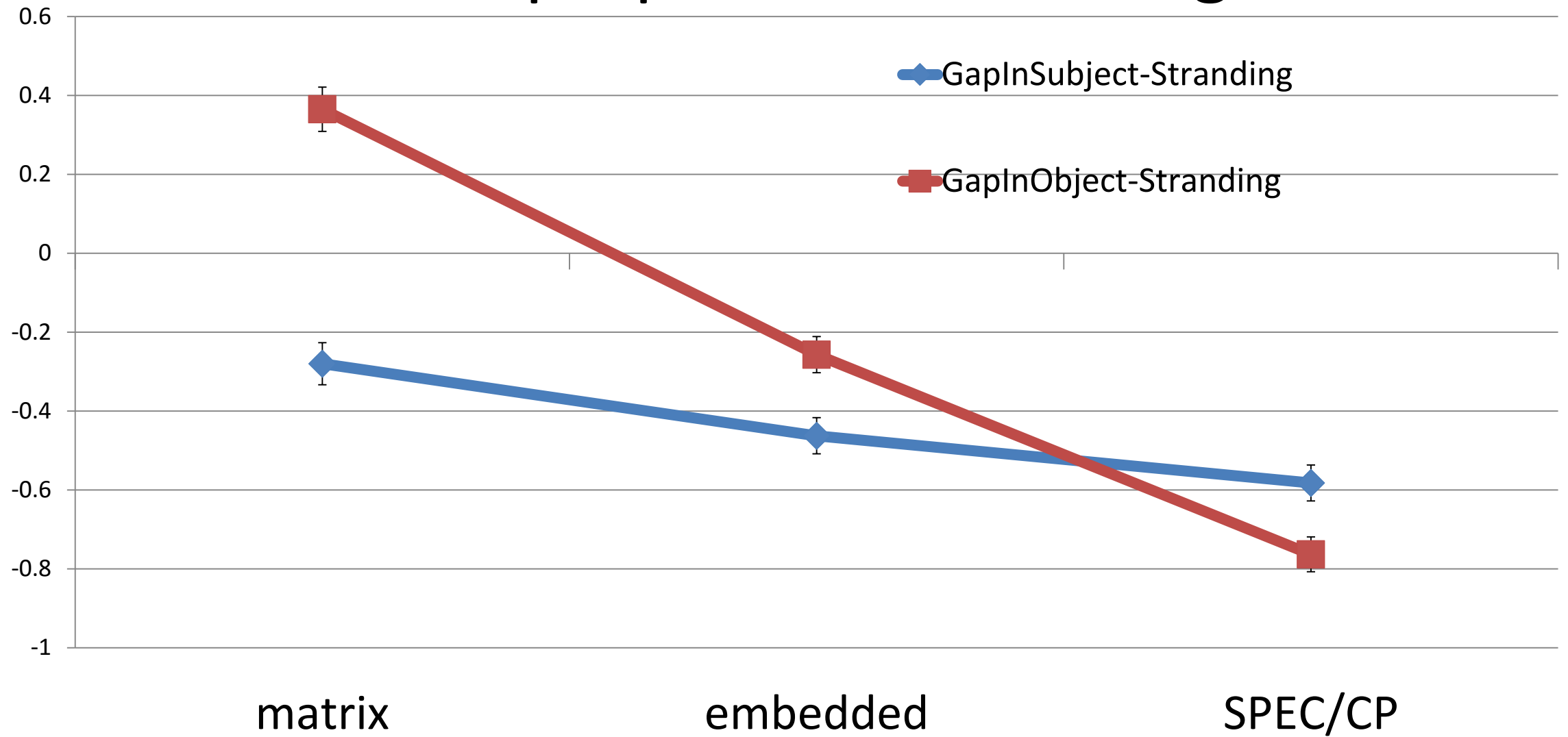
- 4 tokens of each condition: Subjects see 48 experimental items
- 57 fillers (1.2 : 1 filler/experimental ratio)
- 12 lists: counterbalanced (Latin square) and pseudo-randomized
- 12 additional lists with reverse order of items
- 2 subjects randomly assigned to each list
- Screening out of outlier subjects based on fillers

Phrase with gap		
Location	Function	Sample stimuli
matrix	Subject	[Which animal] will [several movies about __] be shown to the visitors?
	Object	[Which animal] will they show [several movies about __] to the visitors?

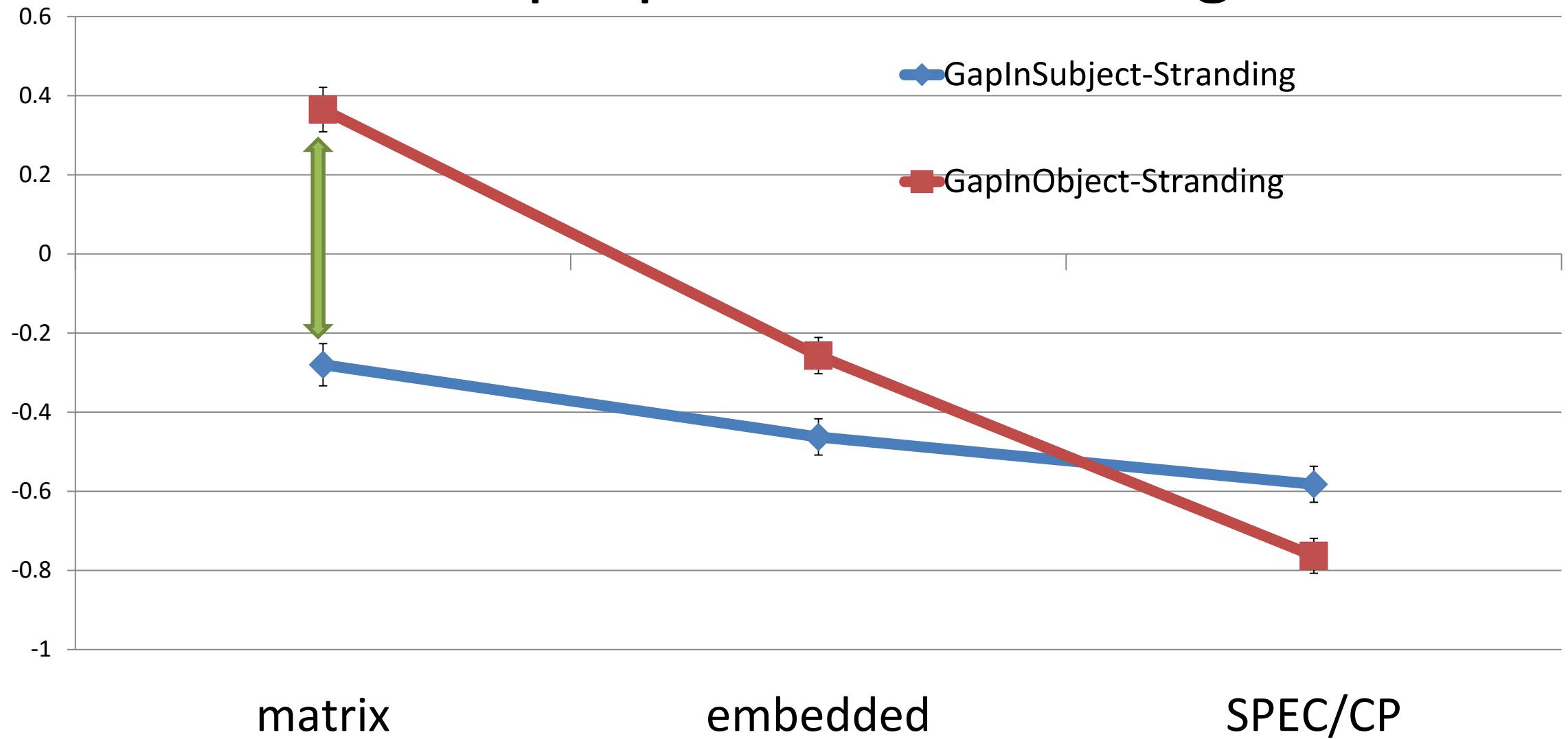
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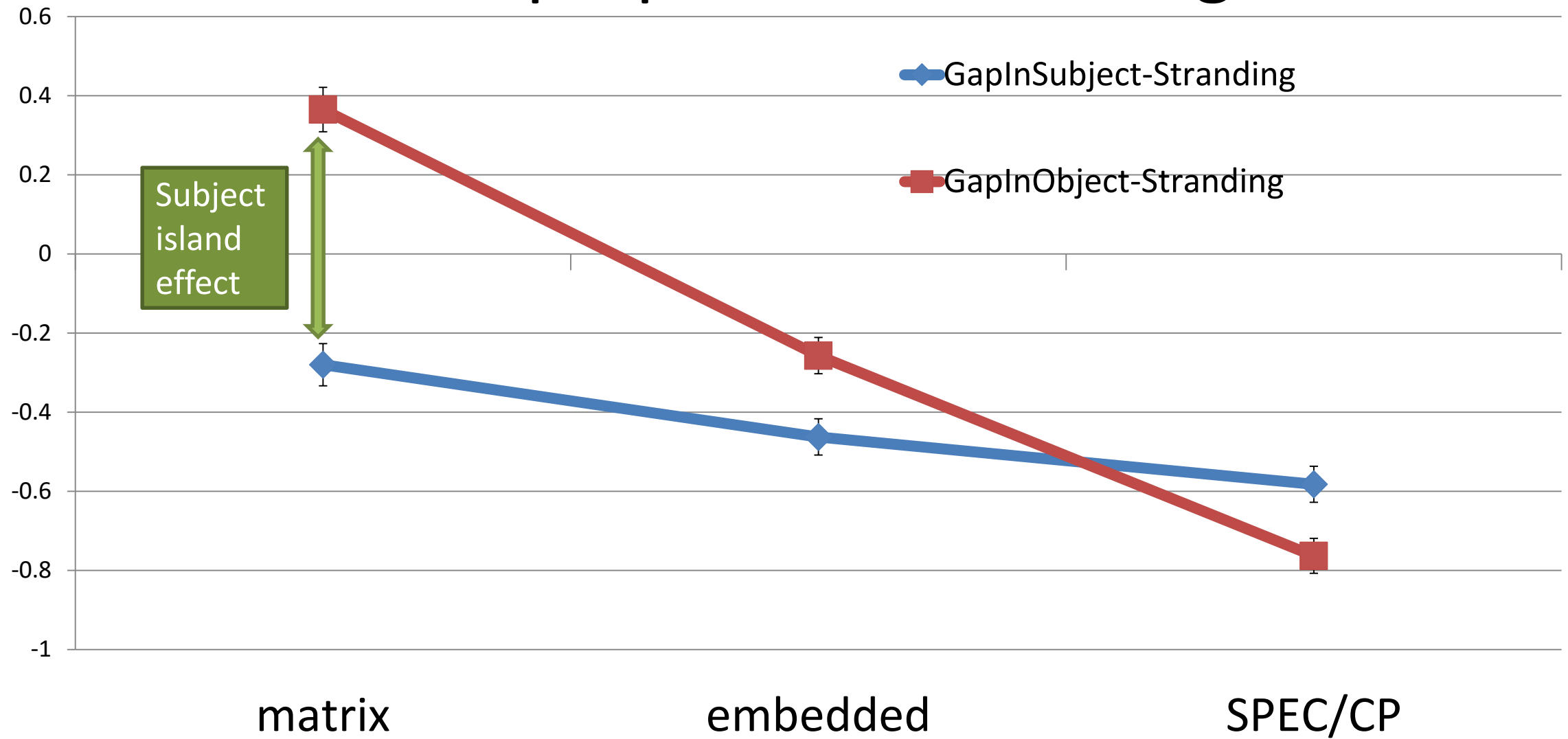
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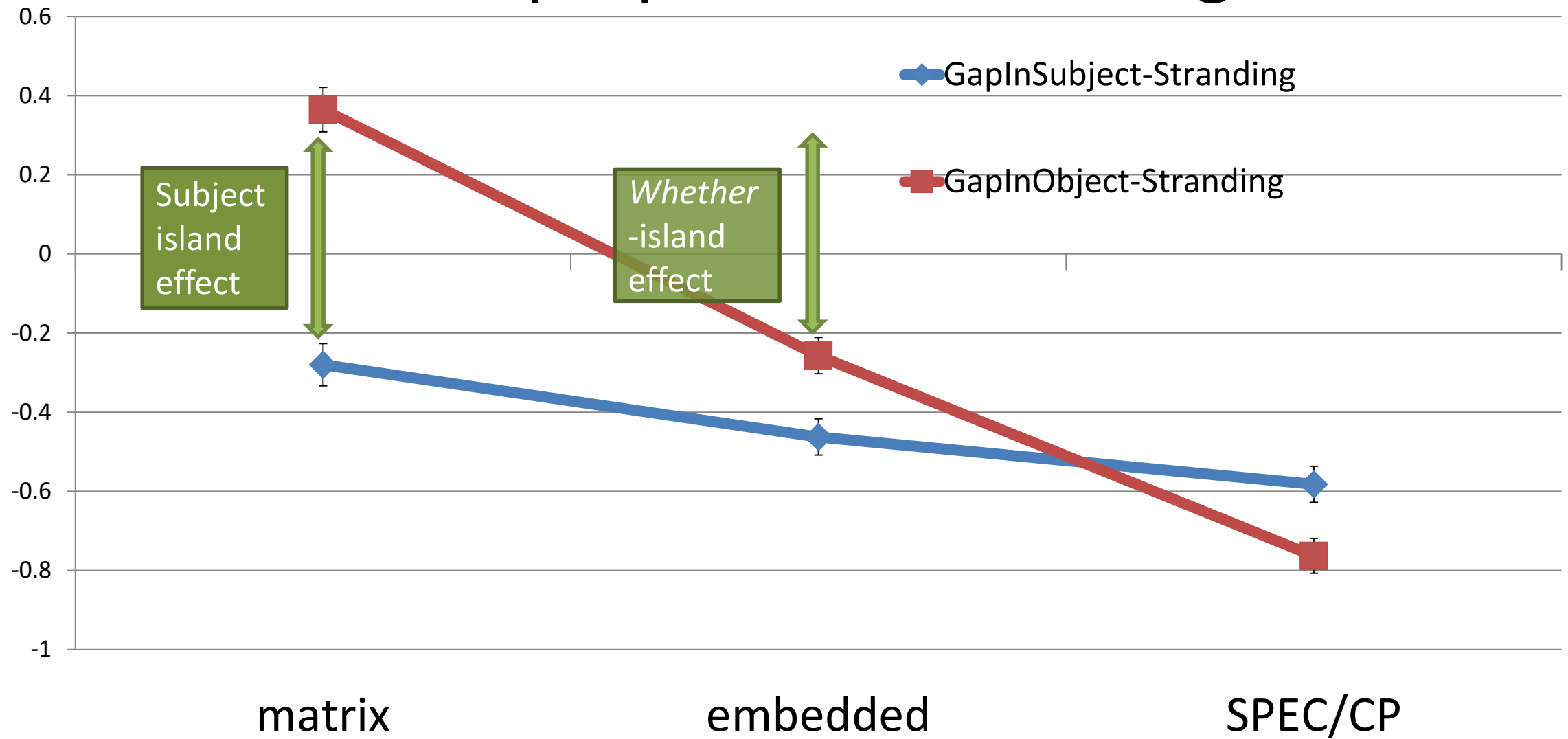
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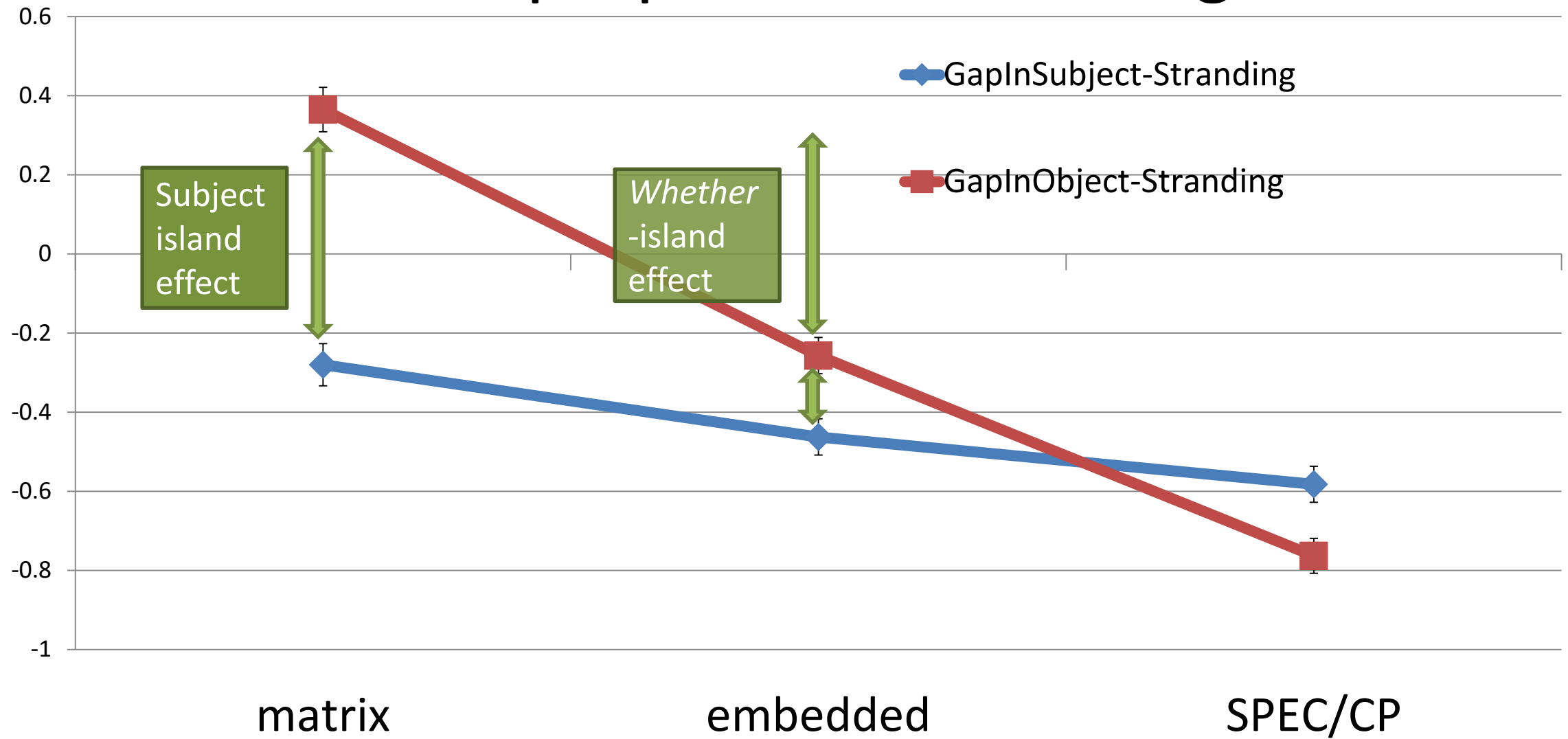


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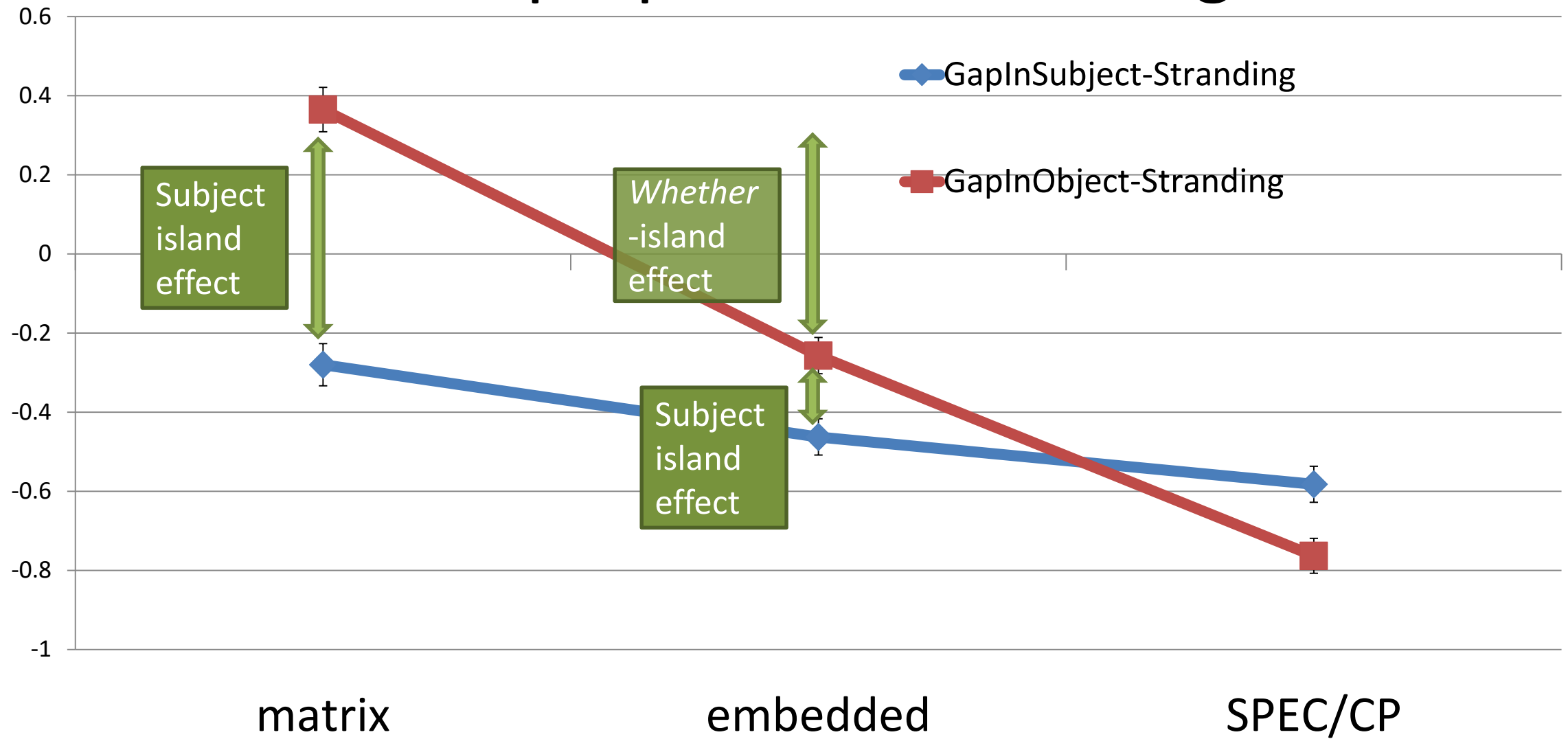




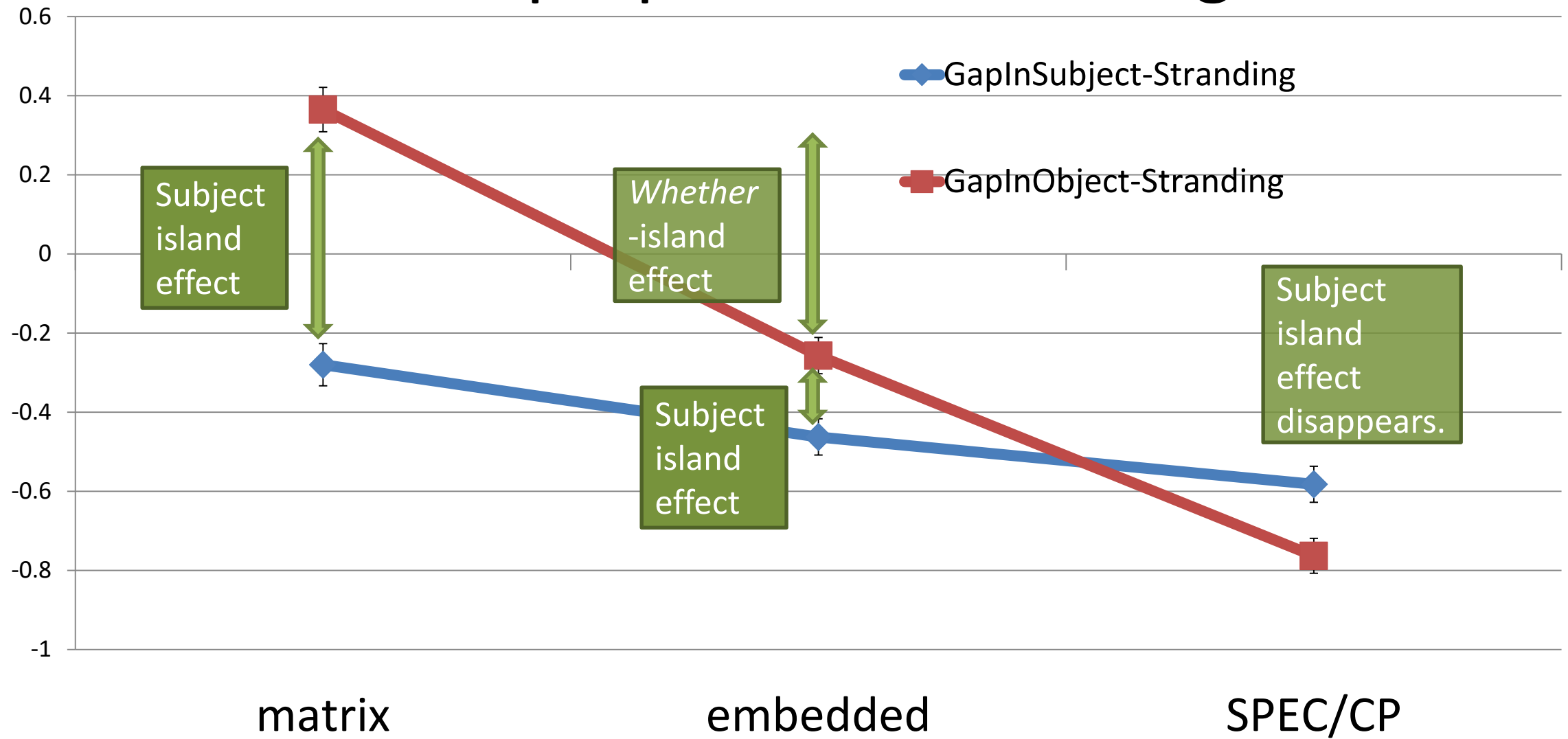
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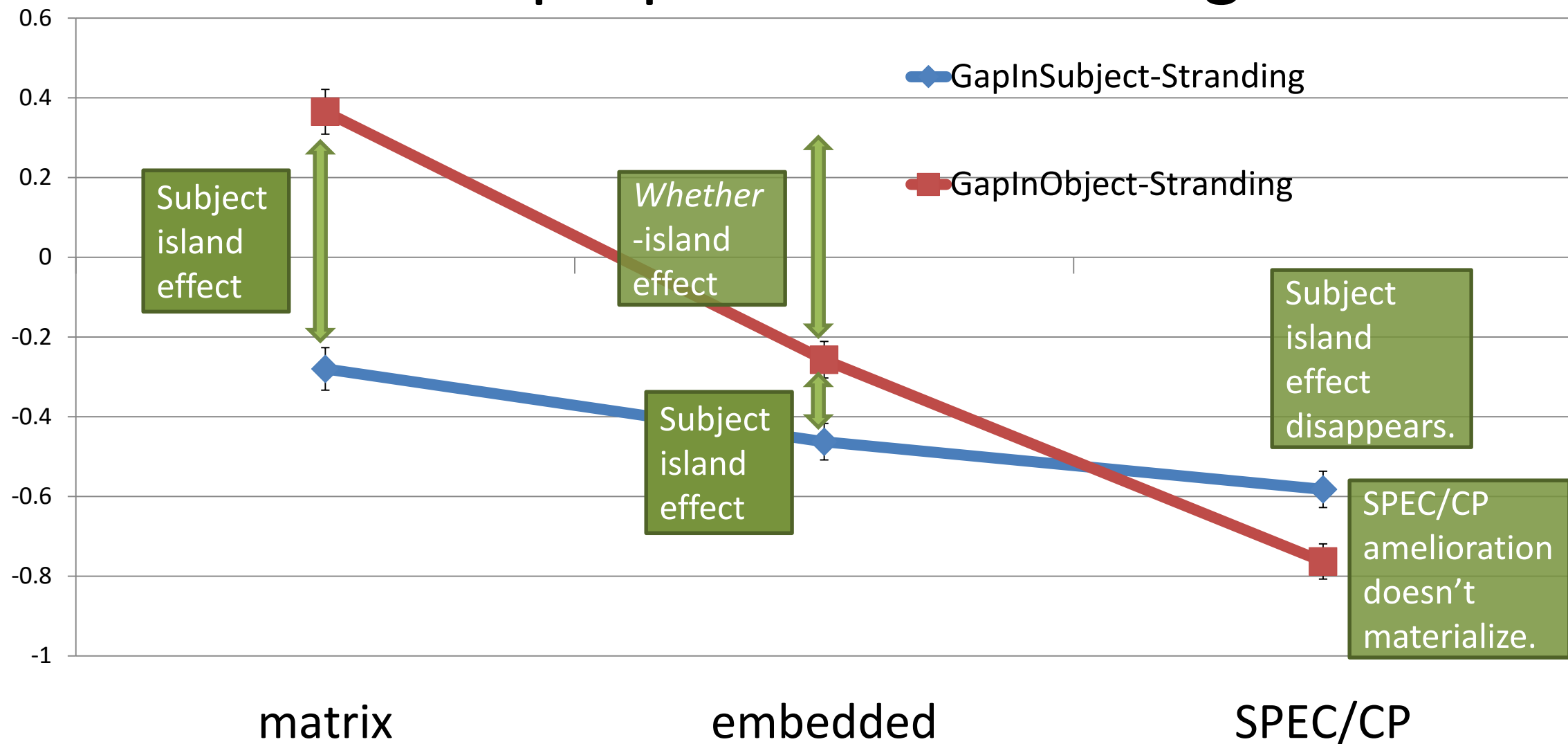
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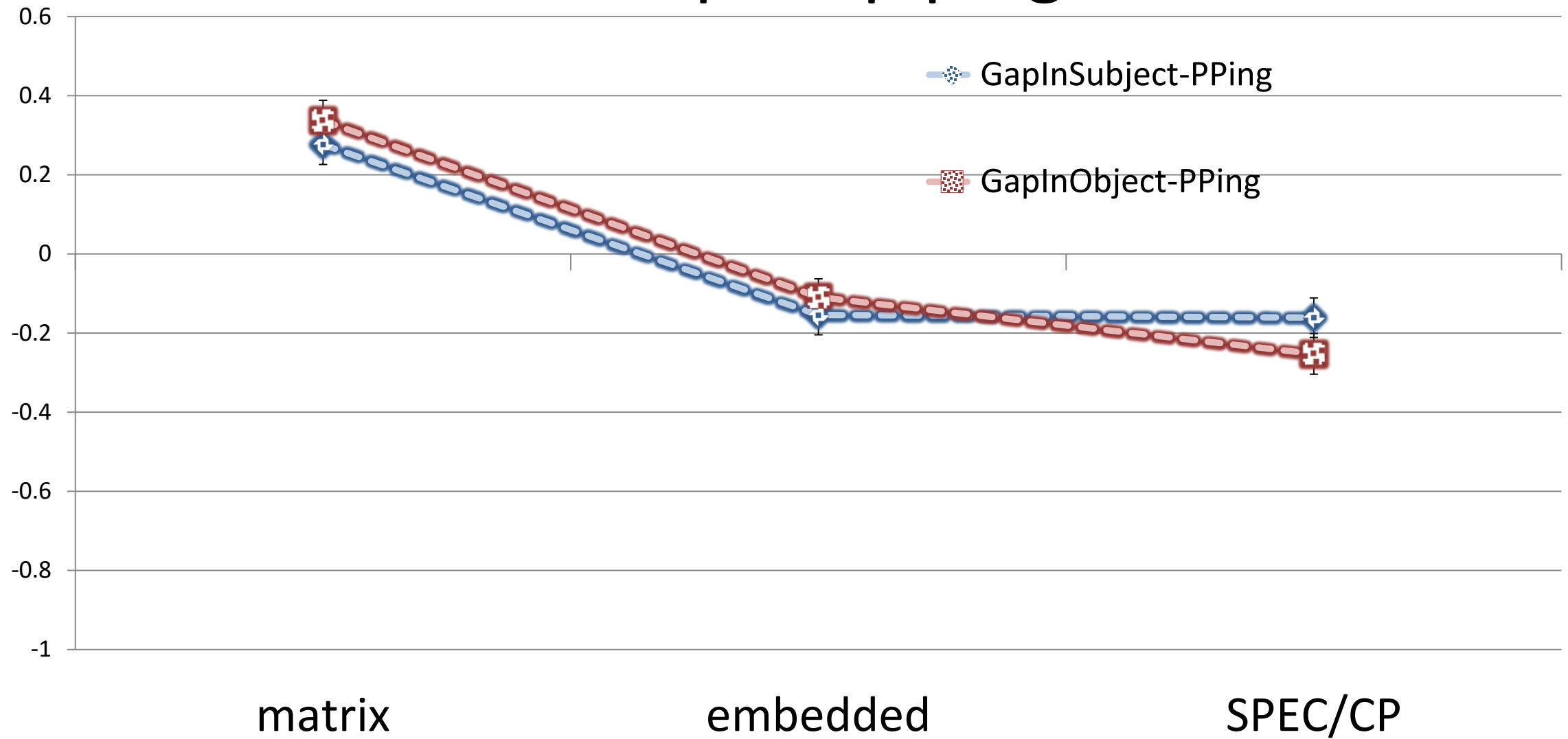
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- Even worse with subextraction from SPEC/CP.
- So far: Preposition-stranding, where gap position is clear.
- What about with pied-piping?

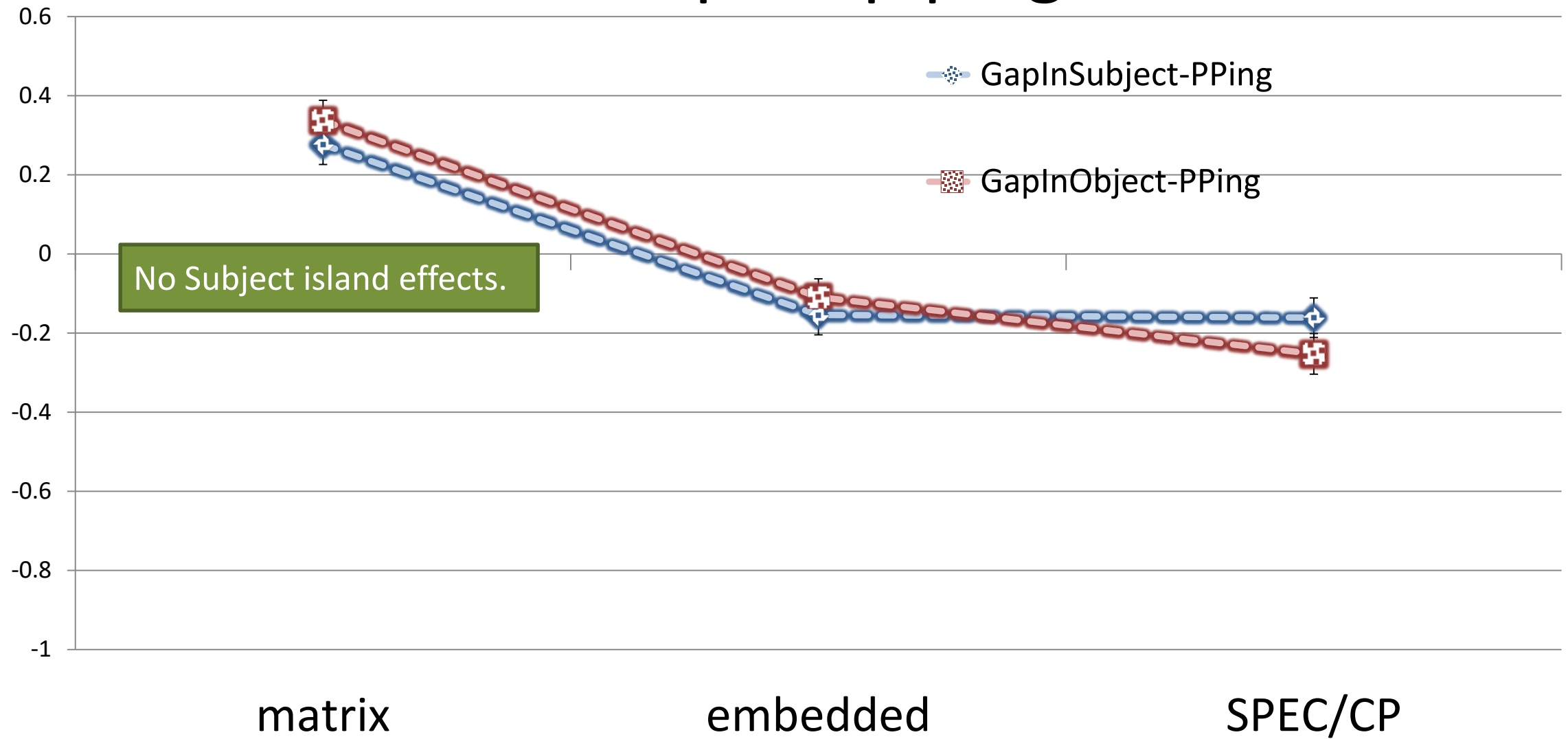
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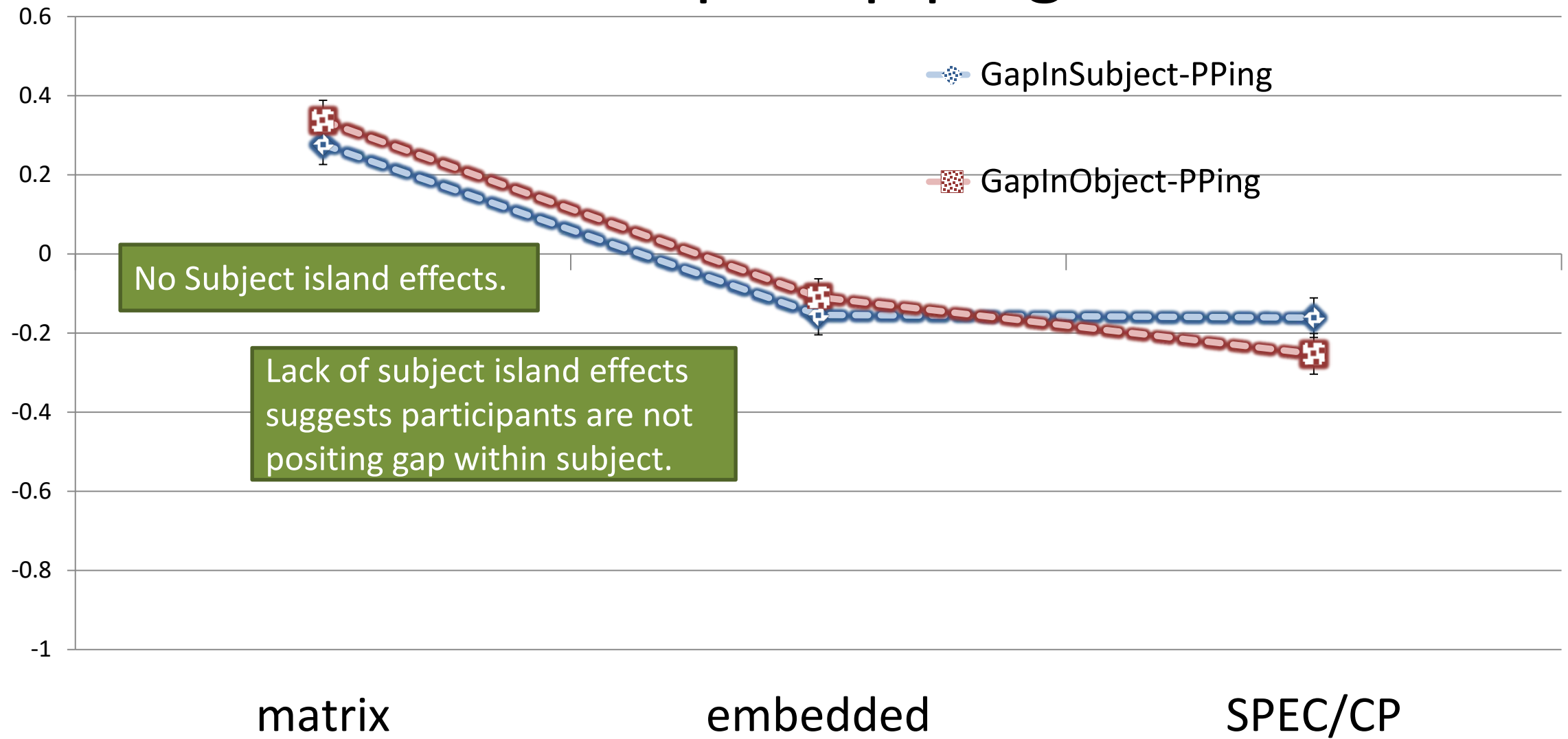




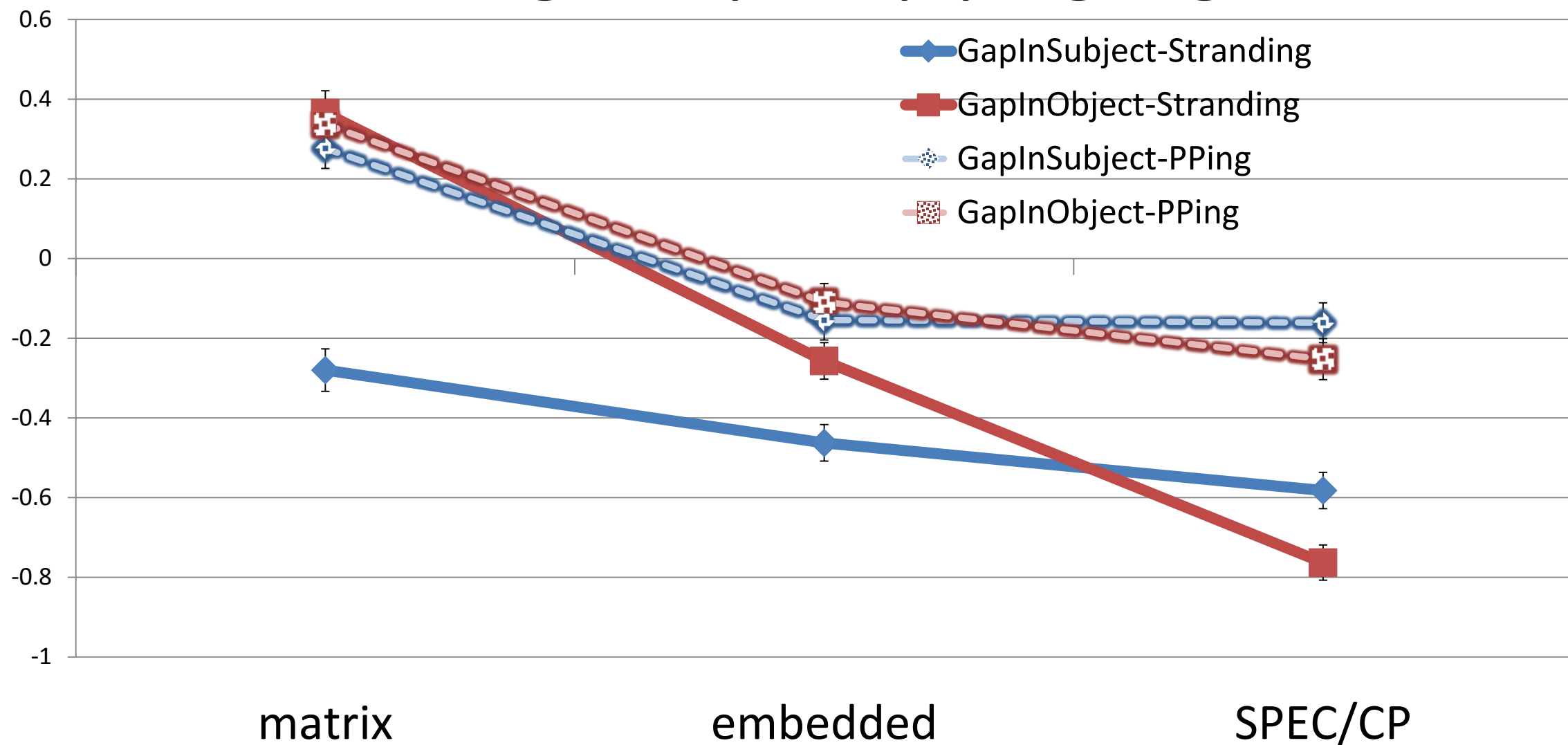
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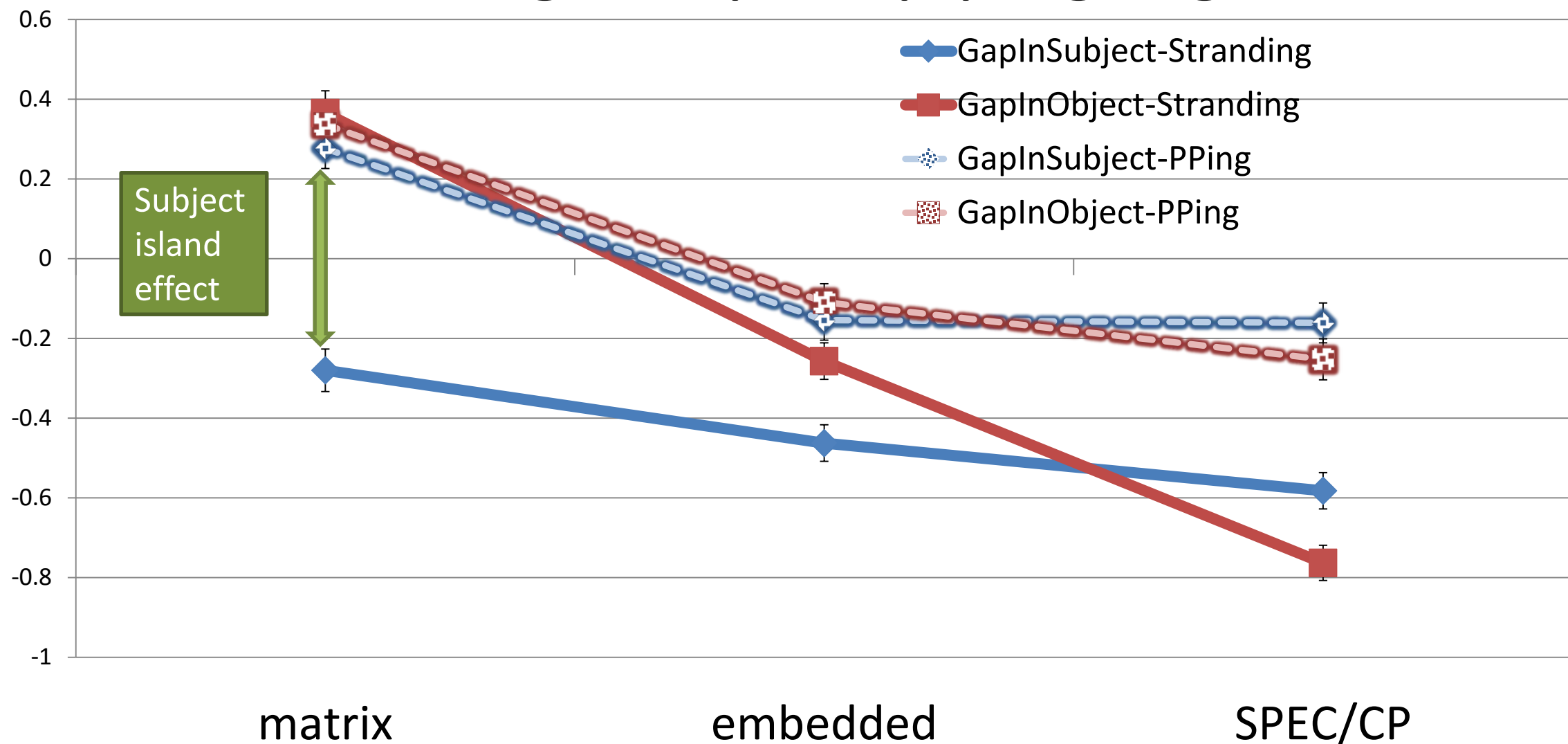
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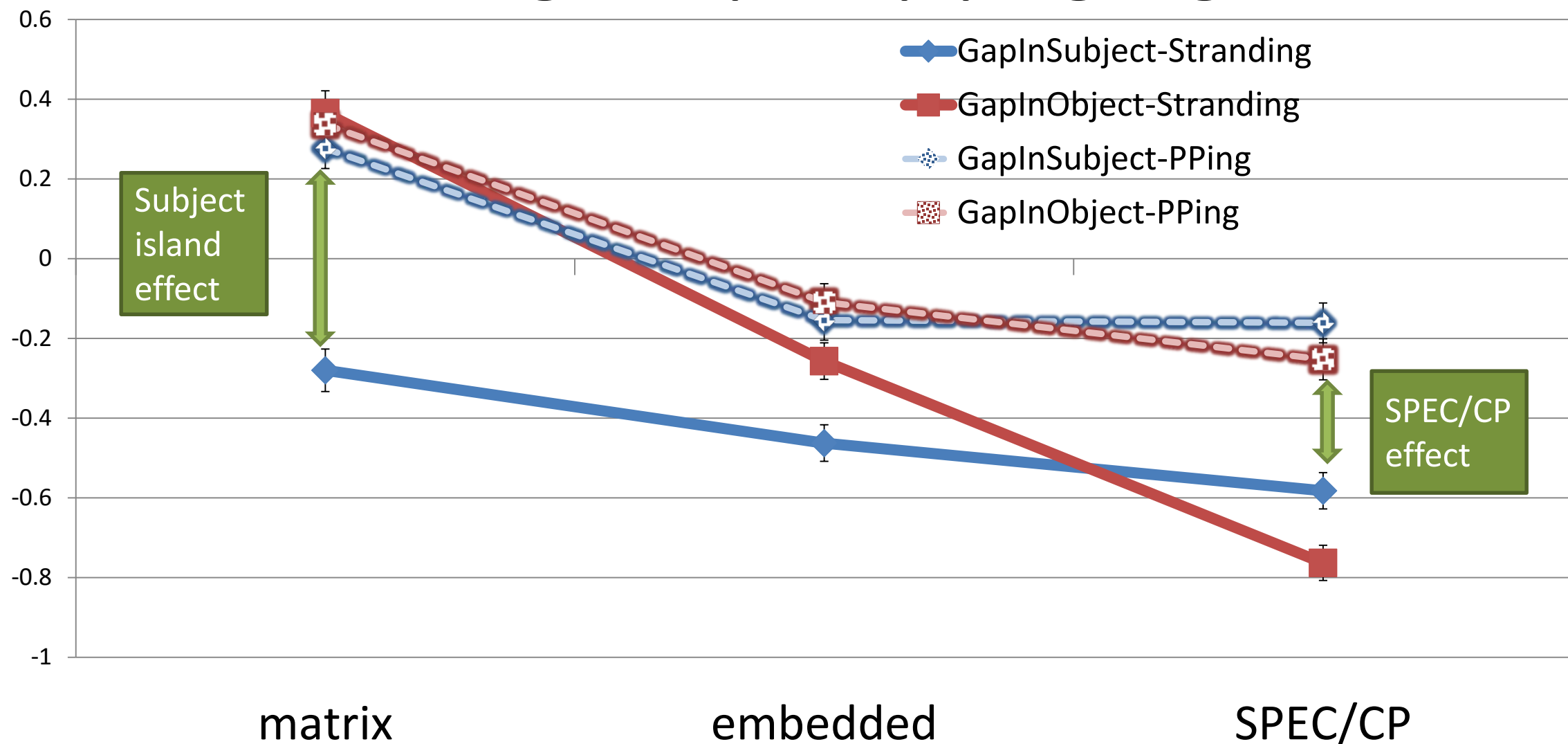
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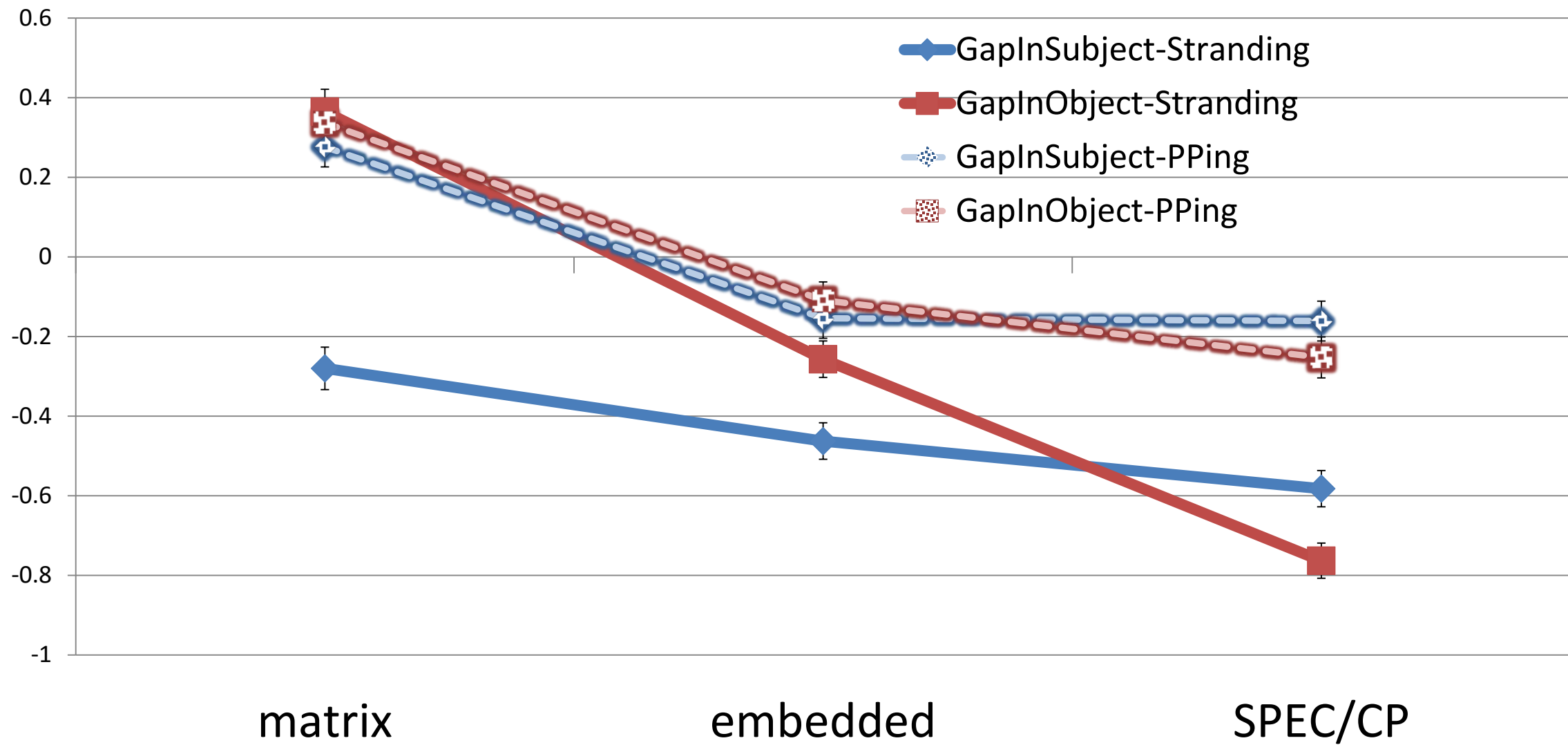
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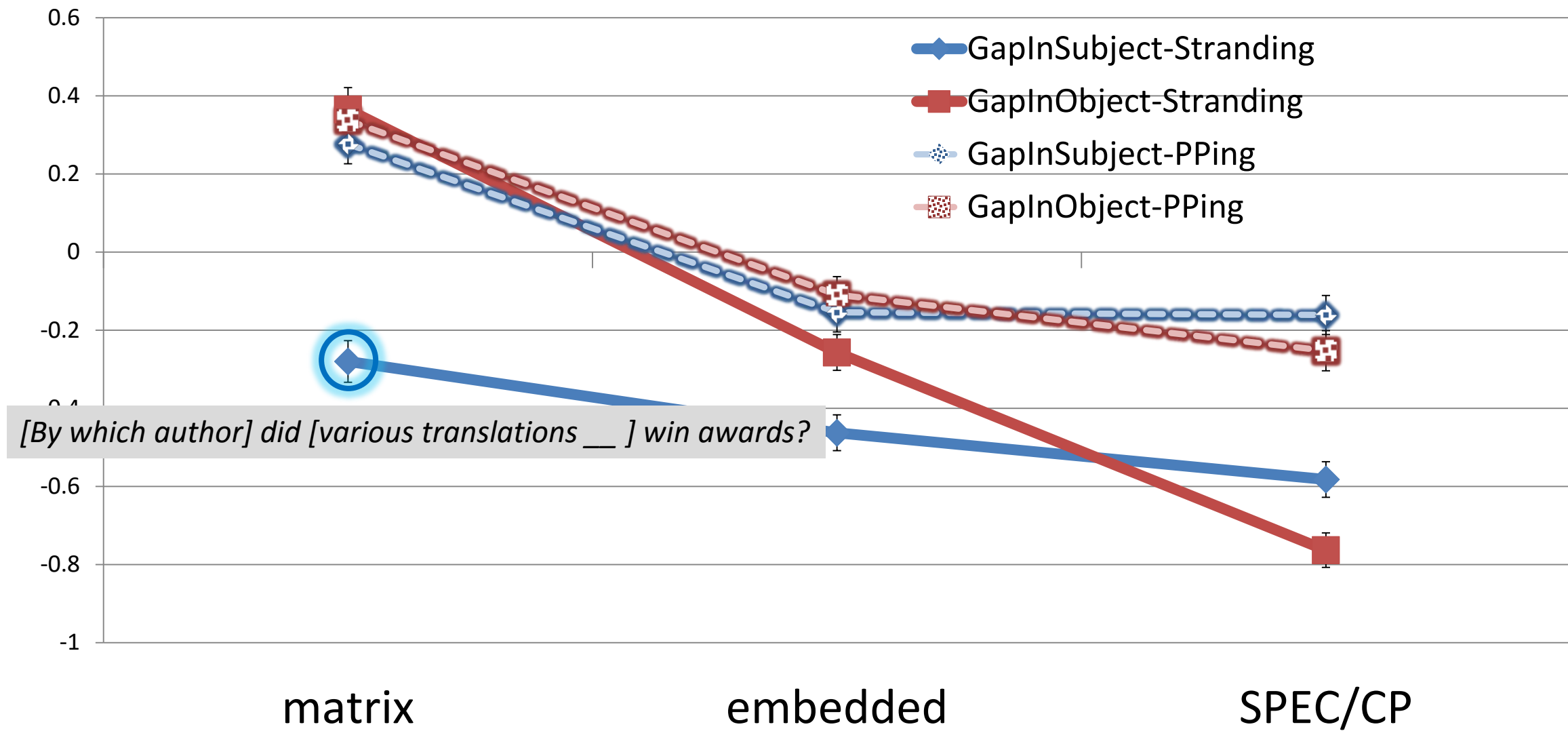
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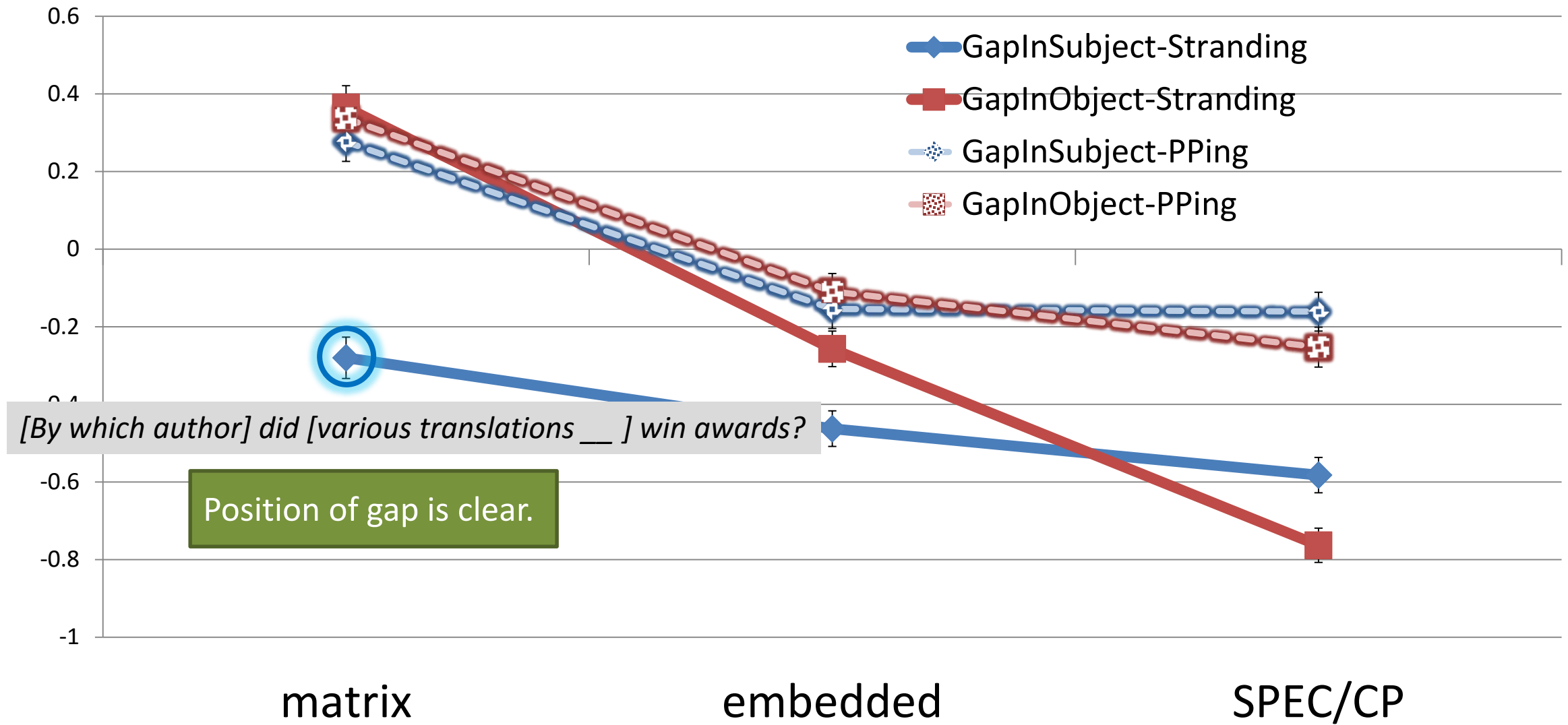
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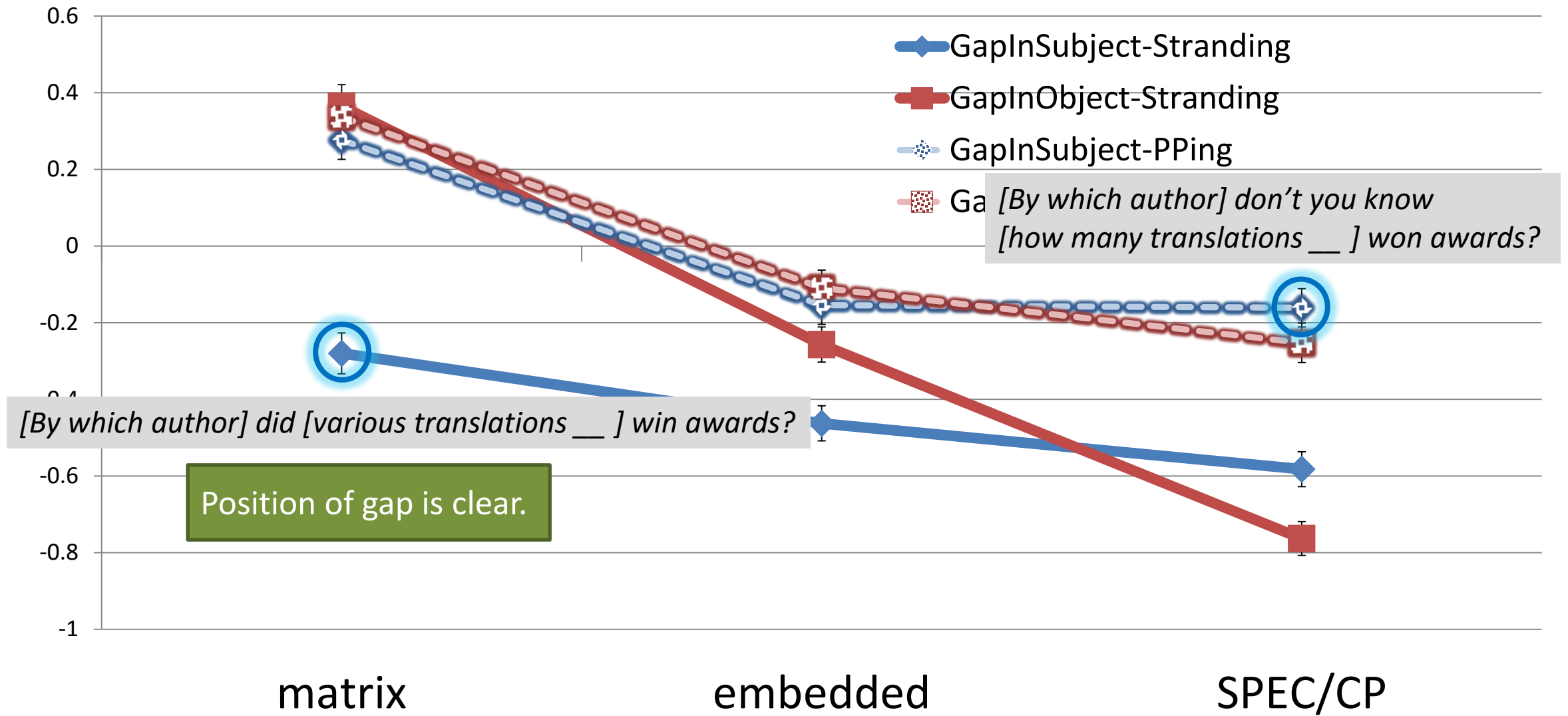


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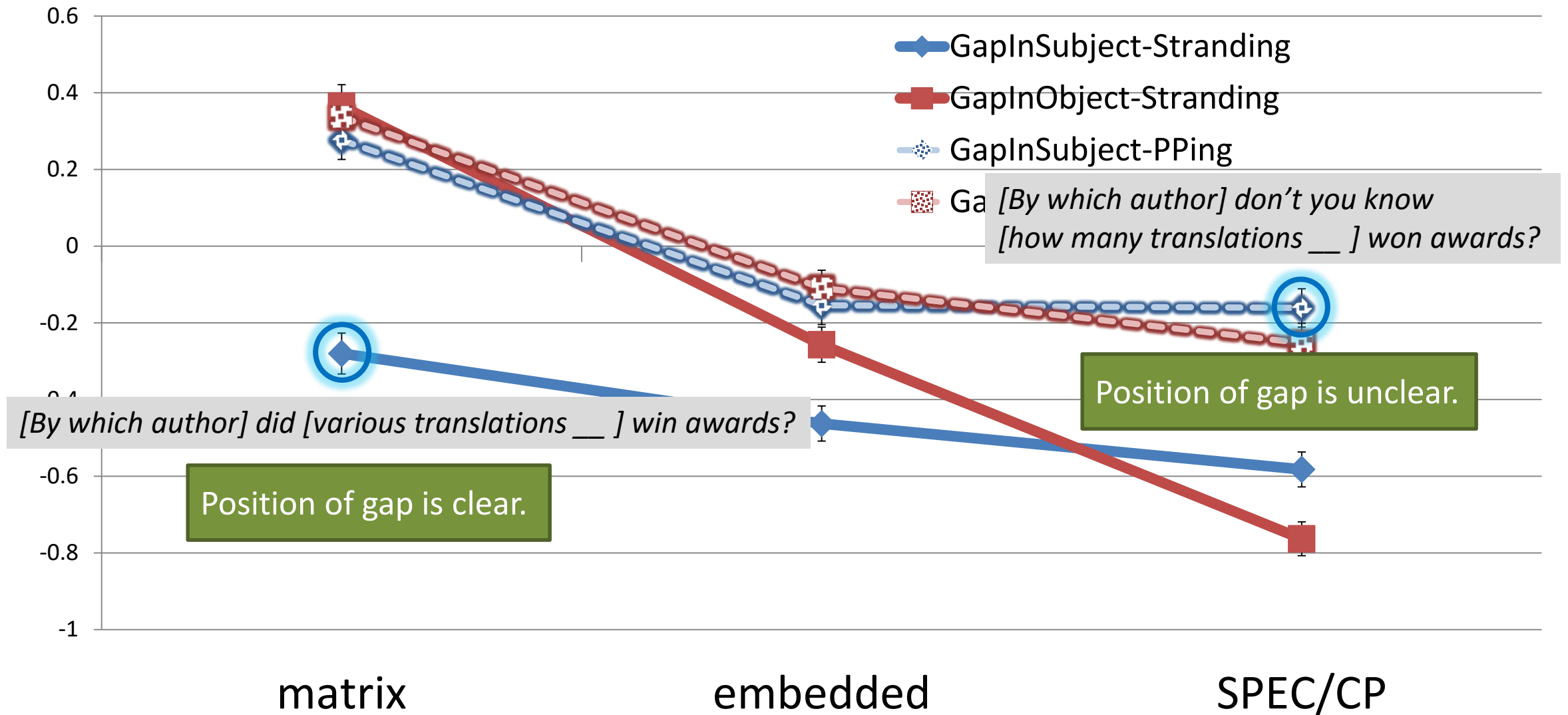




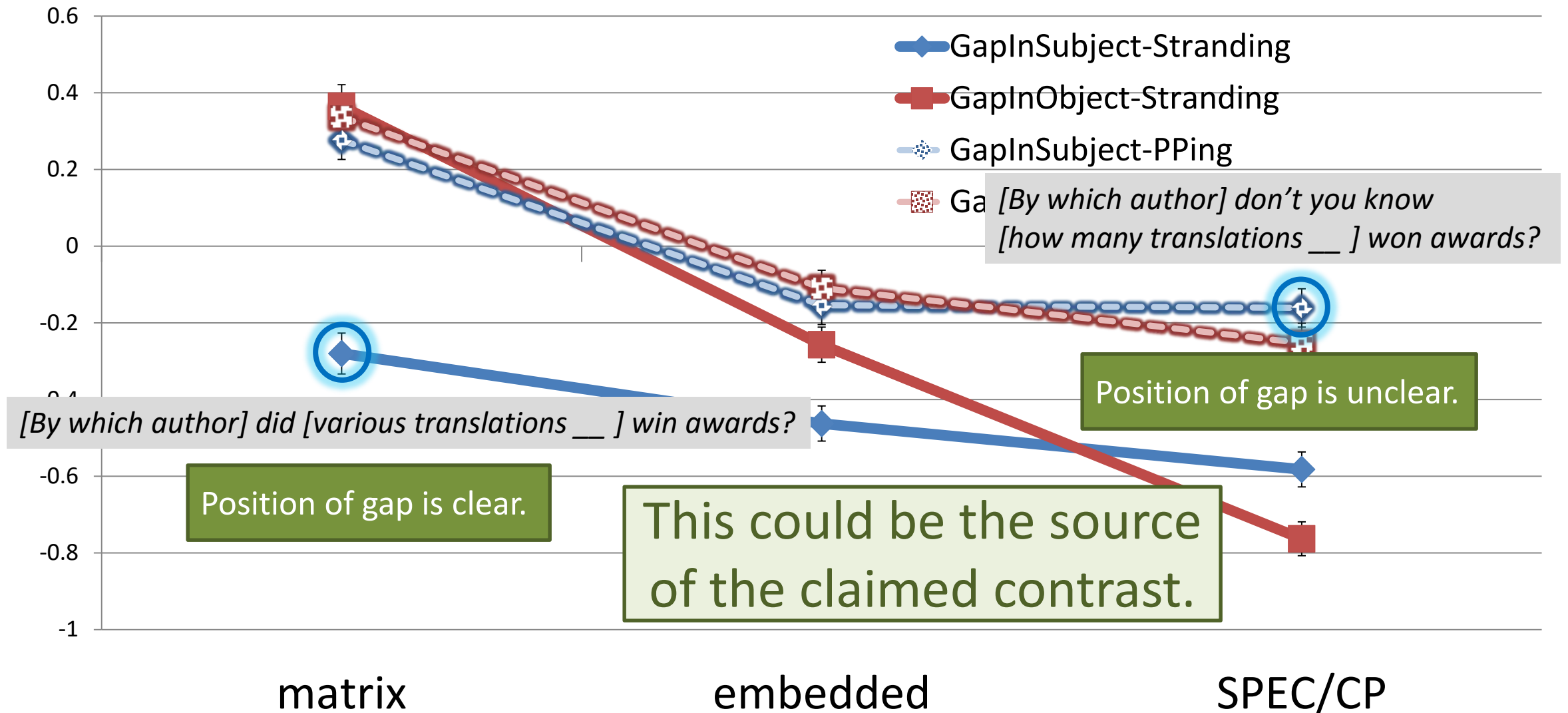
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- Original claim:

gap in subject < gap in SPEC/CP



Could also be “not  
clear where gap is”

- Once we distentagle confound, situation becomes clear:

gap in SPEC/CP < gap in subject < unclear gap position

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- Traditional judgments need to be done carefully too, with due concern for true minimal pairs, etc.
- Formal experiments can be useful in adjudicating disputes.
- Neither method is unassailable or always done flawlessly.  
Choose the best tool for the job, and use it correctly.

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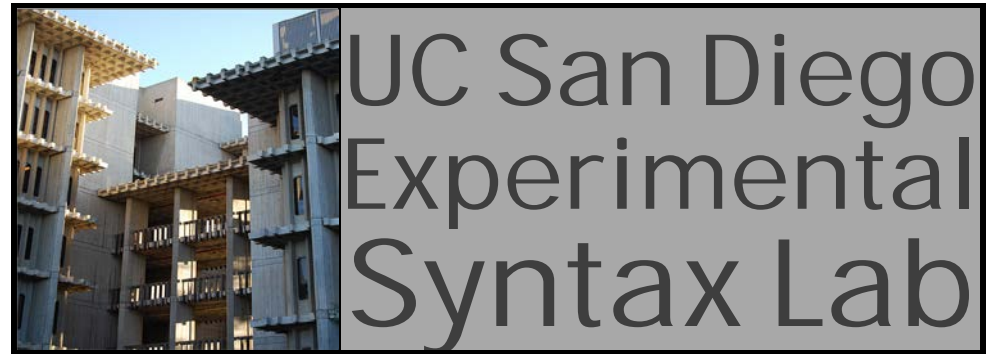
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We have eliminated one  
problematic case.

Thank you!



[grammar.ucsd.edu/syntaxlab](http://grammar.ucsd.edu/syntaxlab)