

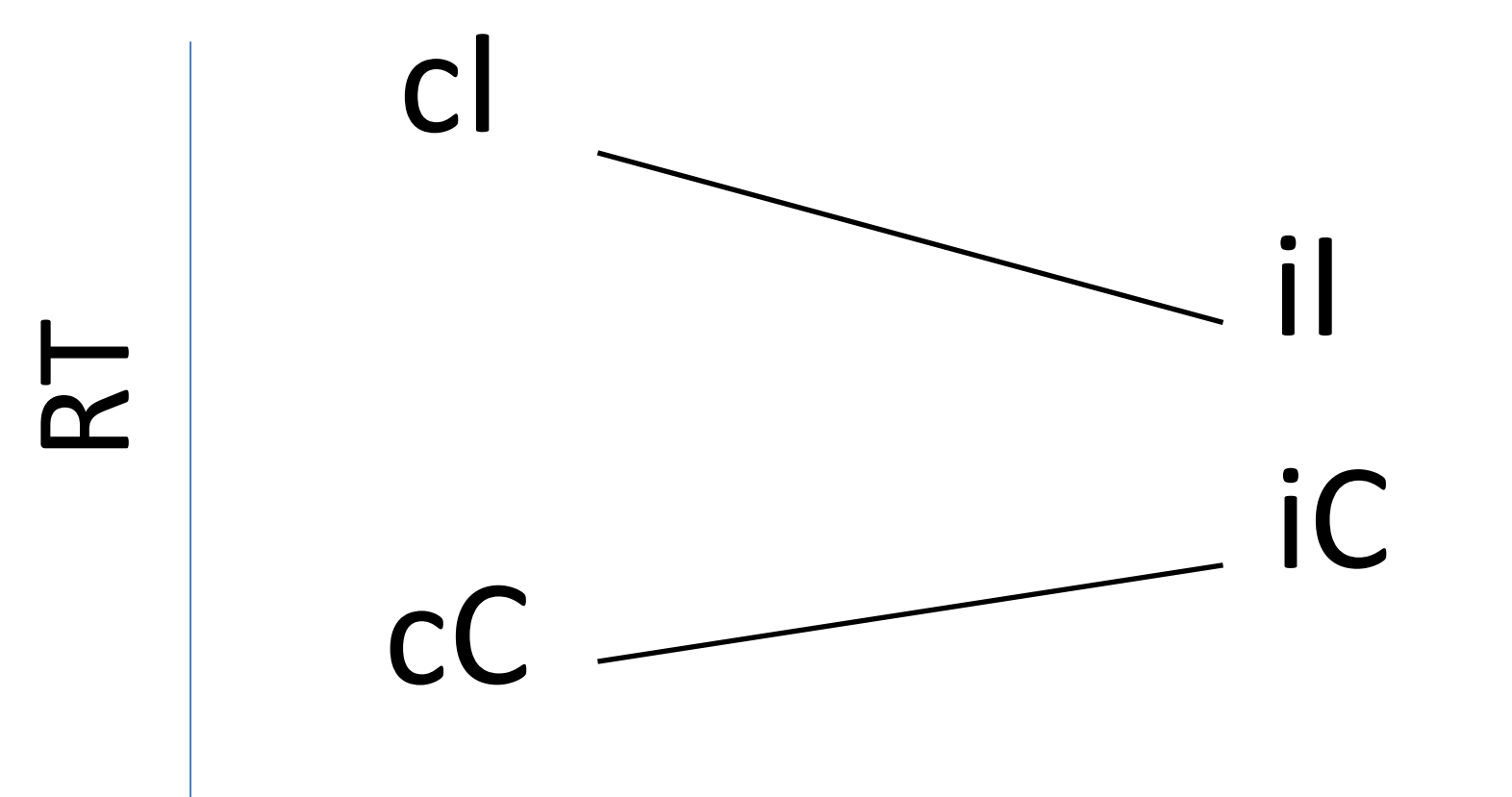
It's not that simple: Sequential congruency effects reveal a bilingual disengagement advantage

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Introduction

- Executive control advantages for bilinguals over monolinguals on interference tasks have been reported across the lifespan¹, but these advantages are less consistently found for young adults^{2, 3}
- We examined a more sensitive measure of executive control on a typical flanker task: *The sequential congruency effect (SCE)*⁴
- The SCE is a measure of disengagement of attention from the previous trial⁵
- Bilinguals are faster than monolinguals at disengaging attention from previous irrelevant information⁶
- We hypothesized that bilinguals would show smaller SCEs even when no differences in standard flanker performance exist

Sequential congruency effect (SCE)



c = *previous* trial congruent
i = *previous* trial incongruent

C = *current* trial congruent
I = *current* trial incongruent

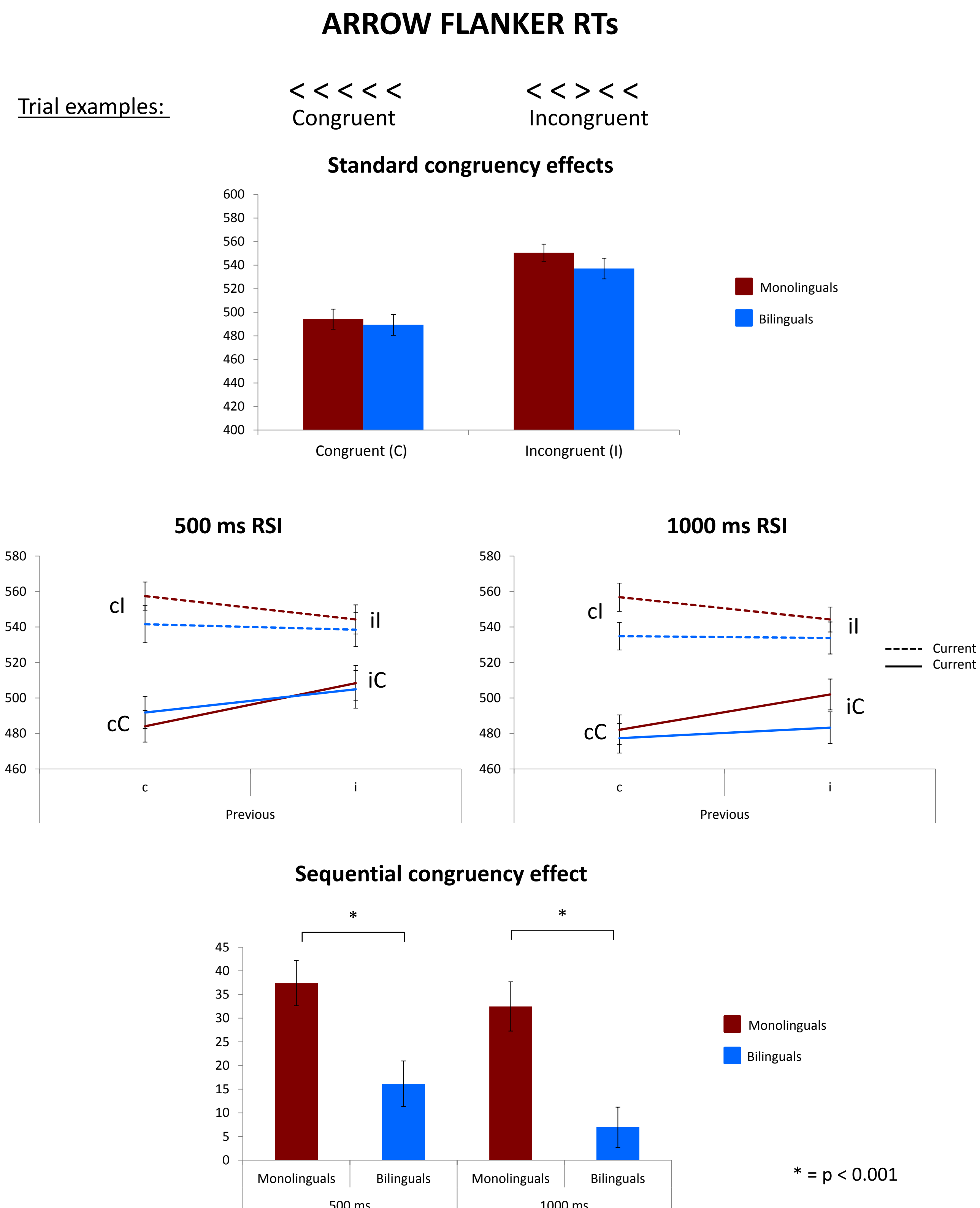
$$SCE = (cl - cC) - (il - iC)$$

* More horizontal lines denote smaller SCEs *

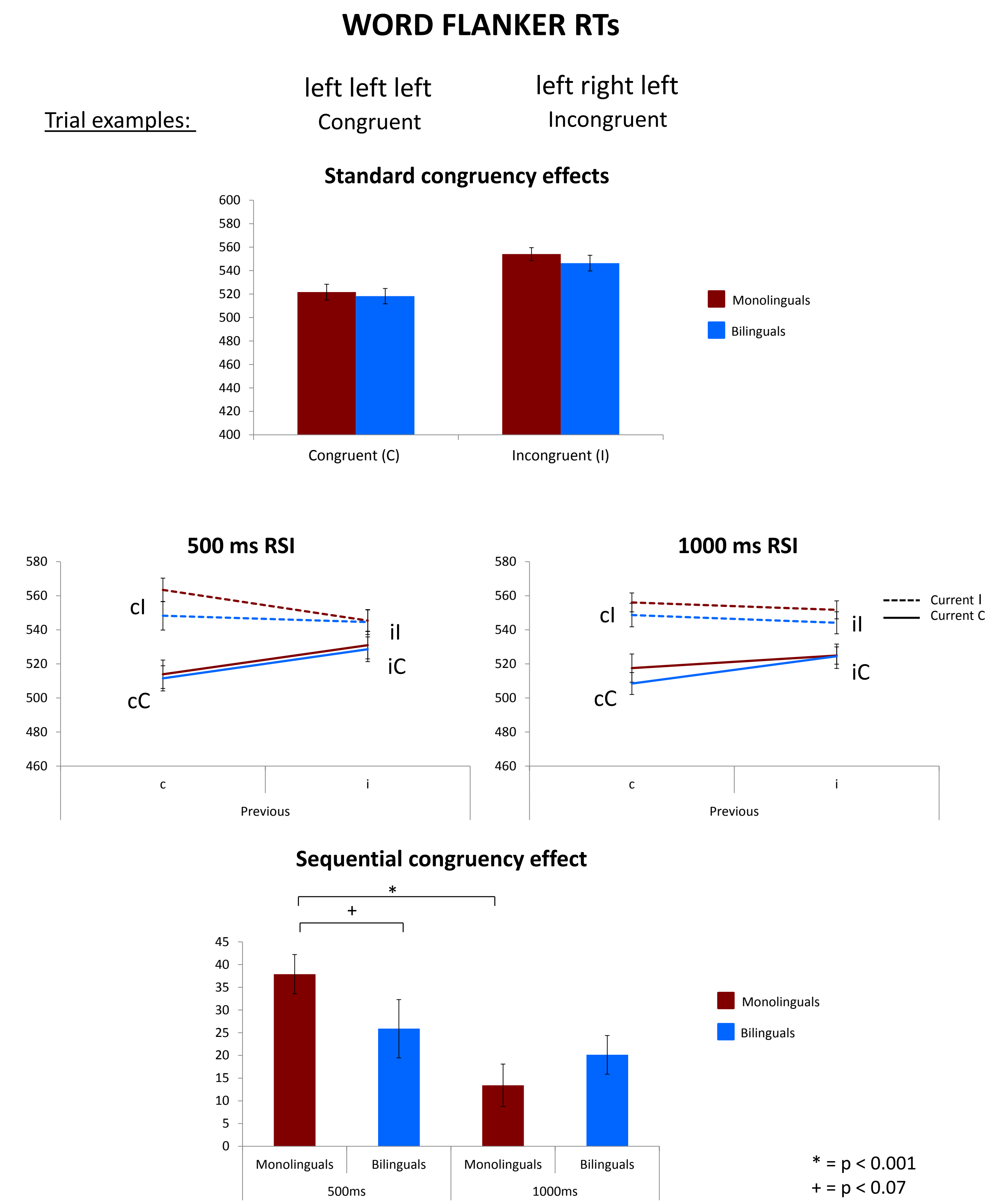
Predictions based on more rapid disengagement of attention by bilinguals than monolinguals:

1. Bilinguals will show smaller SCEs
2. Bilinguals will be less affected by short response-to-stimulus (RSI) intervals

Results



Results



Background measures

Questionnaires:

- Language and social background questionnaire
- Shipley-Hartford vocabulary test
- Shipley-Hartford non-verbal abstract reasoning

Participant info.:

means and std. err.	Monolinguals (n = 28)	Bilinguals (n = 31)
Age	19 (0.3)	19.3 (0.3)
GSA Bilingualism (out of 100)	2 (2)	82 (4)
Shipley-H. Vocabulary	102 (2)	101 (2)
Shipley-H. Non-verbal IQ	103 (2)	104 (2)

Discussion

- Standard flanker analyses revealed no group differences in performance
- When previous trial congruency was incorporated, bilinguals showed smaller SCEs than monolinguals on the arrow flanker task
- Bilinguals were also less influenced by shorter response-to-stimulus intervals than were monolinguals on the word flanker task
- We conclude that bilinguals are better than monolinguals at rapidly disengaging attention from previous trials

References:

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- 4 - Gratton, G., Coles, M. G., & Donchin, E. (1992). Optimizing the use of information: Strategic control of activation of responses. *Journal of Experimental Psychology: General*, 121(4), 480.
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