

Irony as a Form of Emotion Regulation – Evidence from Behavior and ERPs

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Background

Verbal irony: literal meaning contrasts with intended meaning

Irony is primarily used to express negative emotions [1]

-> **mildens negativity compared to literal (*tinge hypothesis*)** [2]

Evidence: irony dilutes negativity [e.g. 3,4,5]

What's the Mechanism?

cognitive reappraisal; a form of emotion regulation [6]

If the hypothesis holds, the behavioral and ERP effects for cognitive reappraisal would be comparable to those for irony.

Participant = involved as listener

Method

132 negative images

- instructed to imagine that the negative situation in each image was happening to them

2 blocks (irony, reappraisal)

statements matched for length, frequency, orthographic and phonological neighborhood

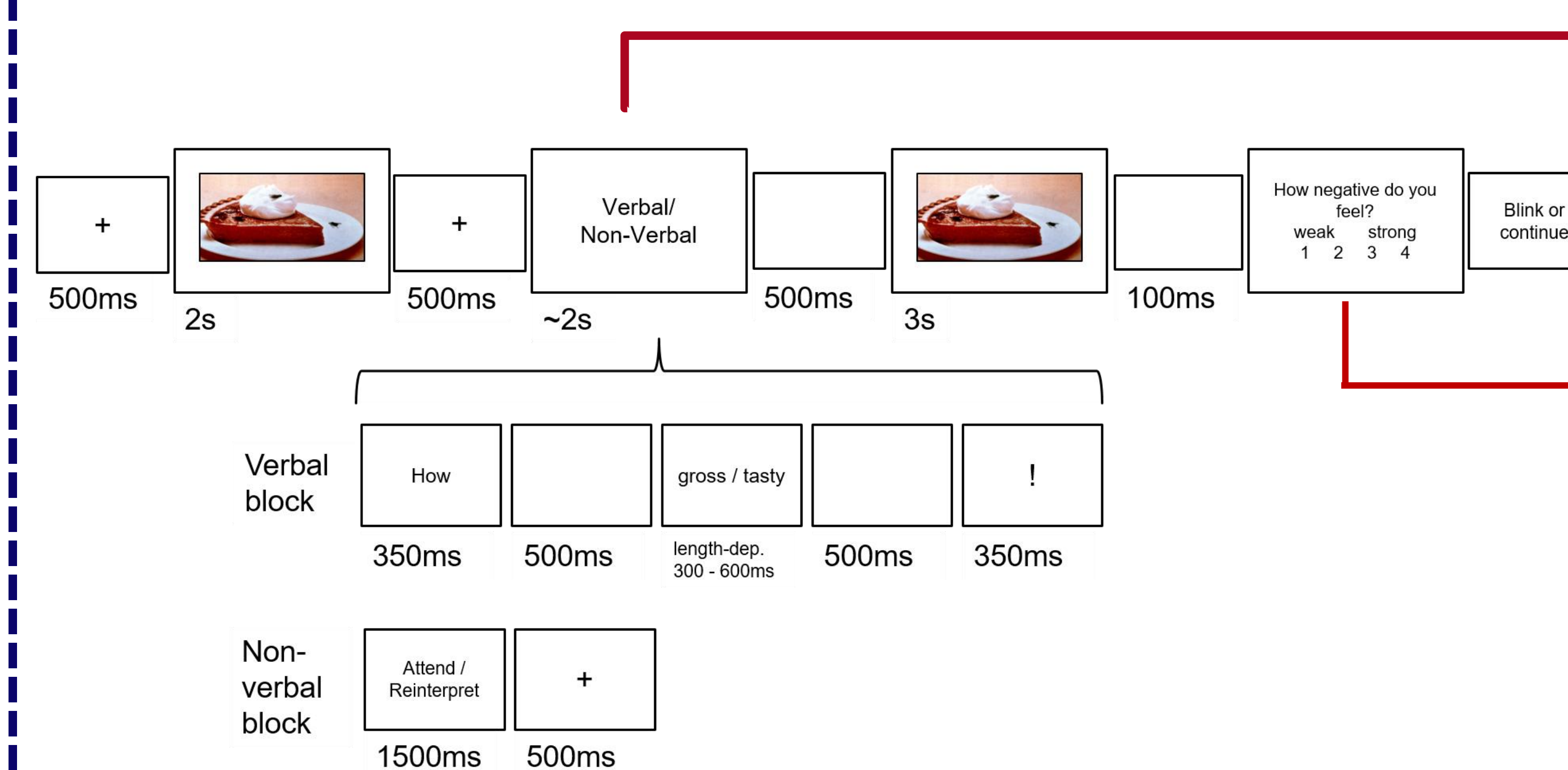
- A cracked phone screen: "Such skillful handling"
- Dropped food: "How yummy!"
- A flat tire: "Pretty filled!"

Task: "How negative do you feel?" (1 = weak – 4 = strong)

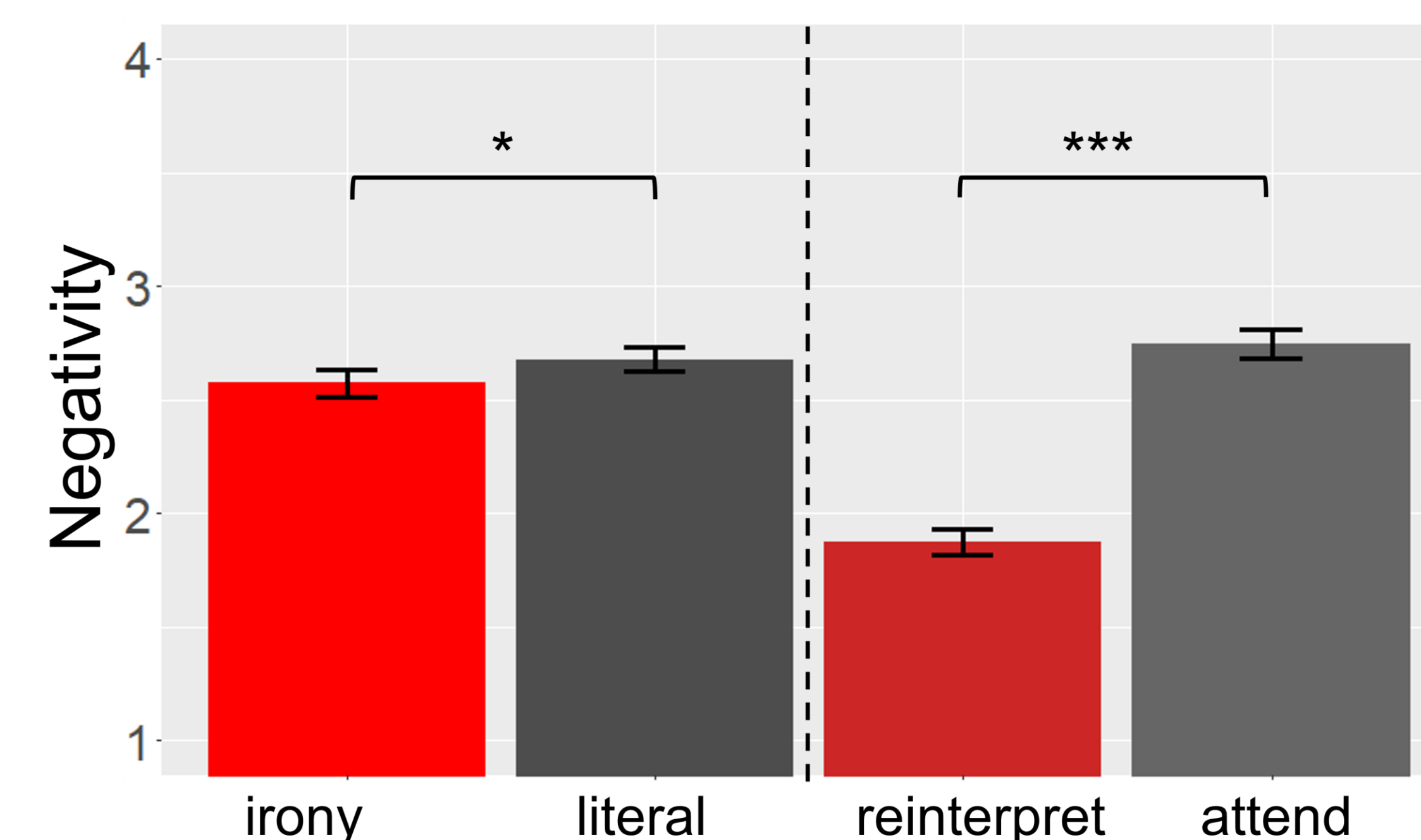
References

(1) Roberts & Kreuz, 1994, *Psych Sci*; (2) Dews & Winner, 1995, *Metaphor Symbol*; (3) Pfeifer & Lai, 2021, *Can J Exp Psy*, (4) Filik et al., 2017, *J Mem Lang*, (5) Dews, Winner, & Kaplan, 1995, *Discourse Processes*; (6) Gross, 1998, *Rev Gen Psychol*.

Design



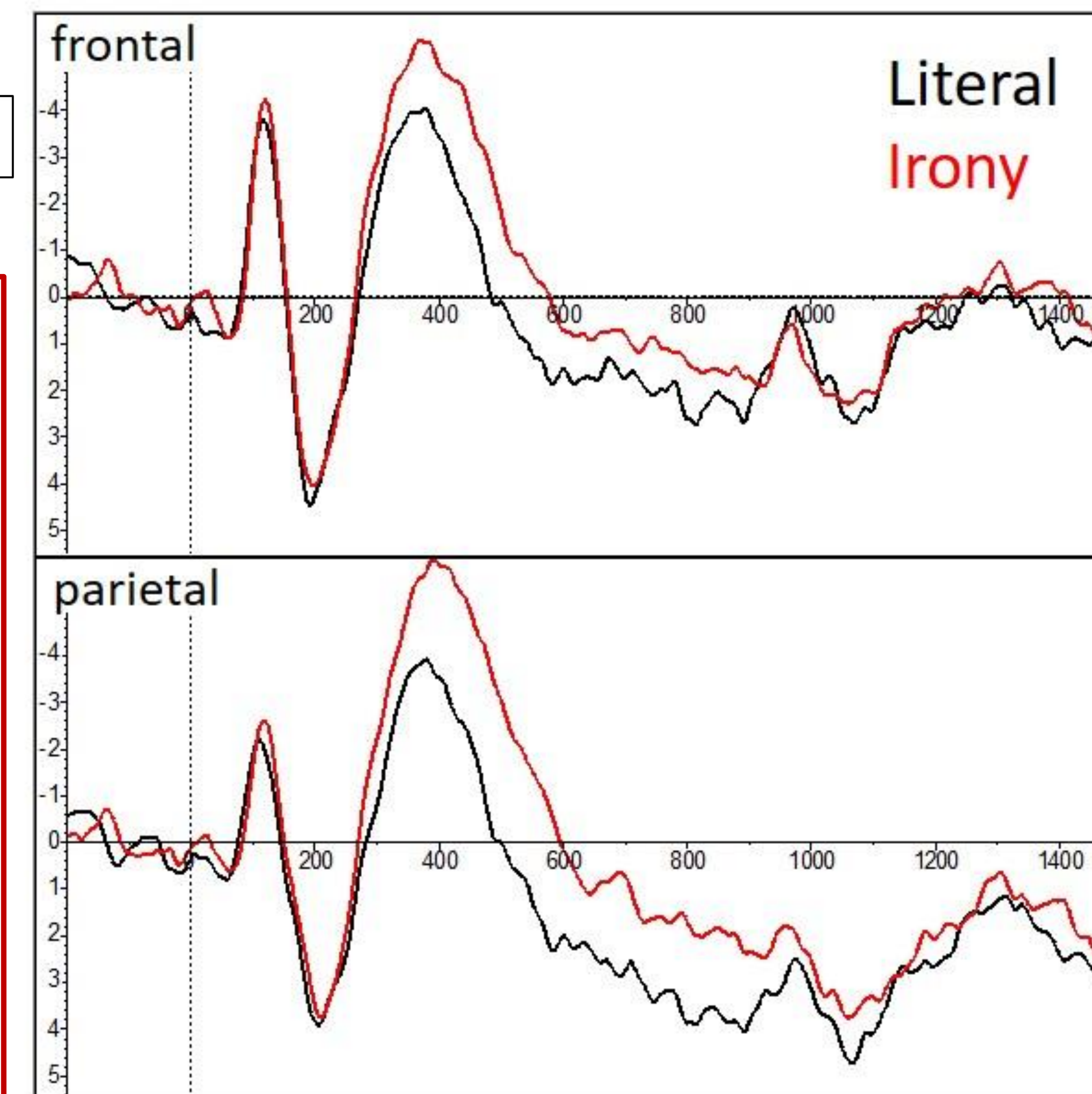
Results (Behavior, N = 54)



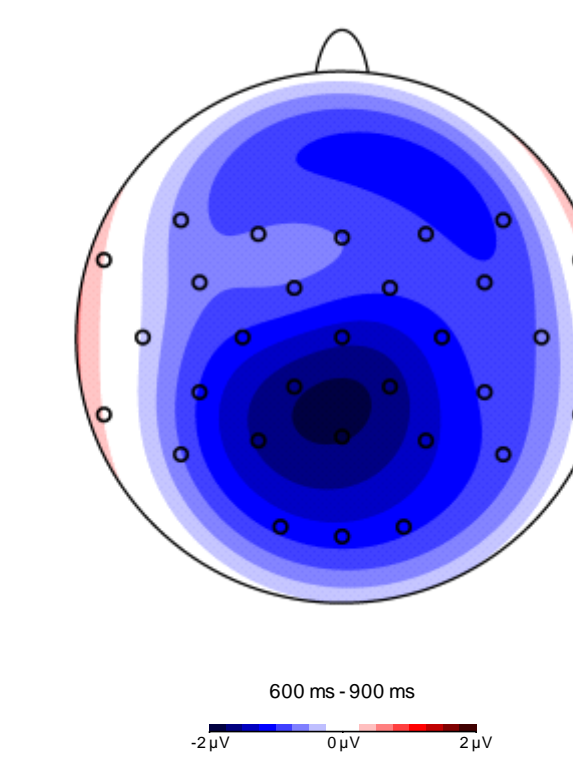
irony < literal ($p=.03$)
literal = attend
reinterpret < attend ($p<.001$)
reinterpret < irony ($p <.001$)

Results (ERP, N = 43)

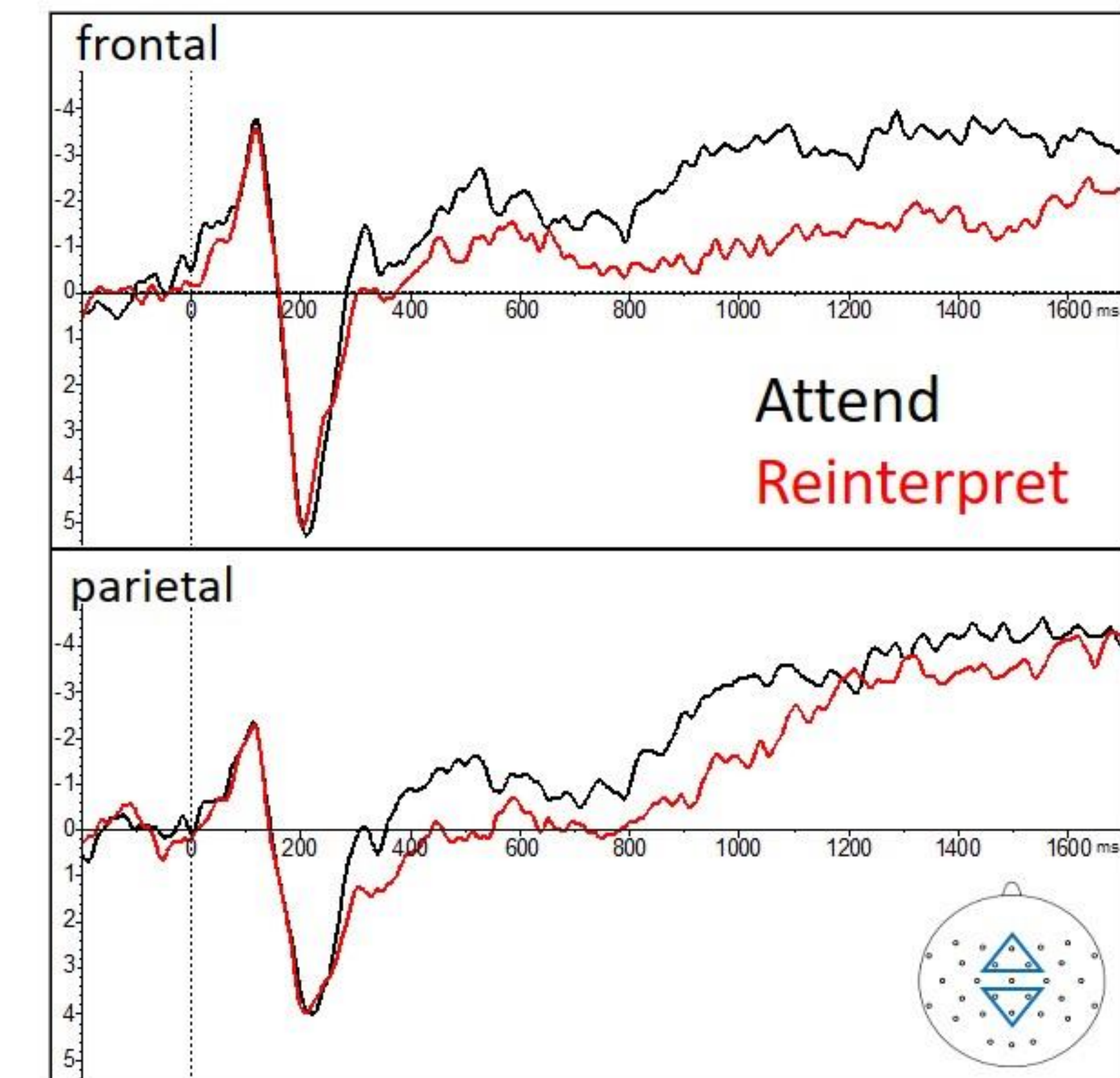
Verbal Block



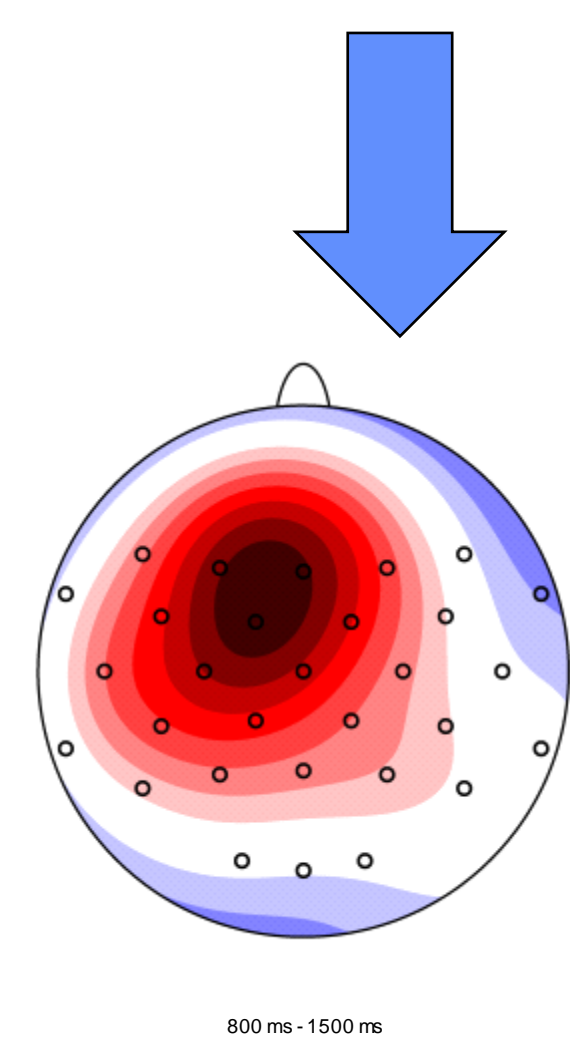
- Irony > literal: N400 (300-500 ms)
 - Irony < literal: LPC (600-900 ms)
- Sustained negativity for irony**



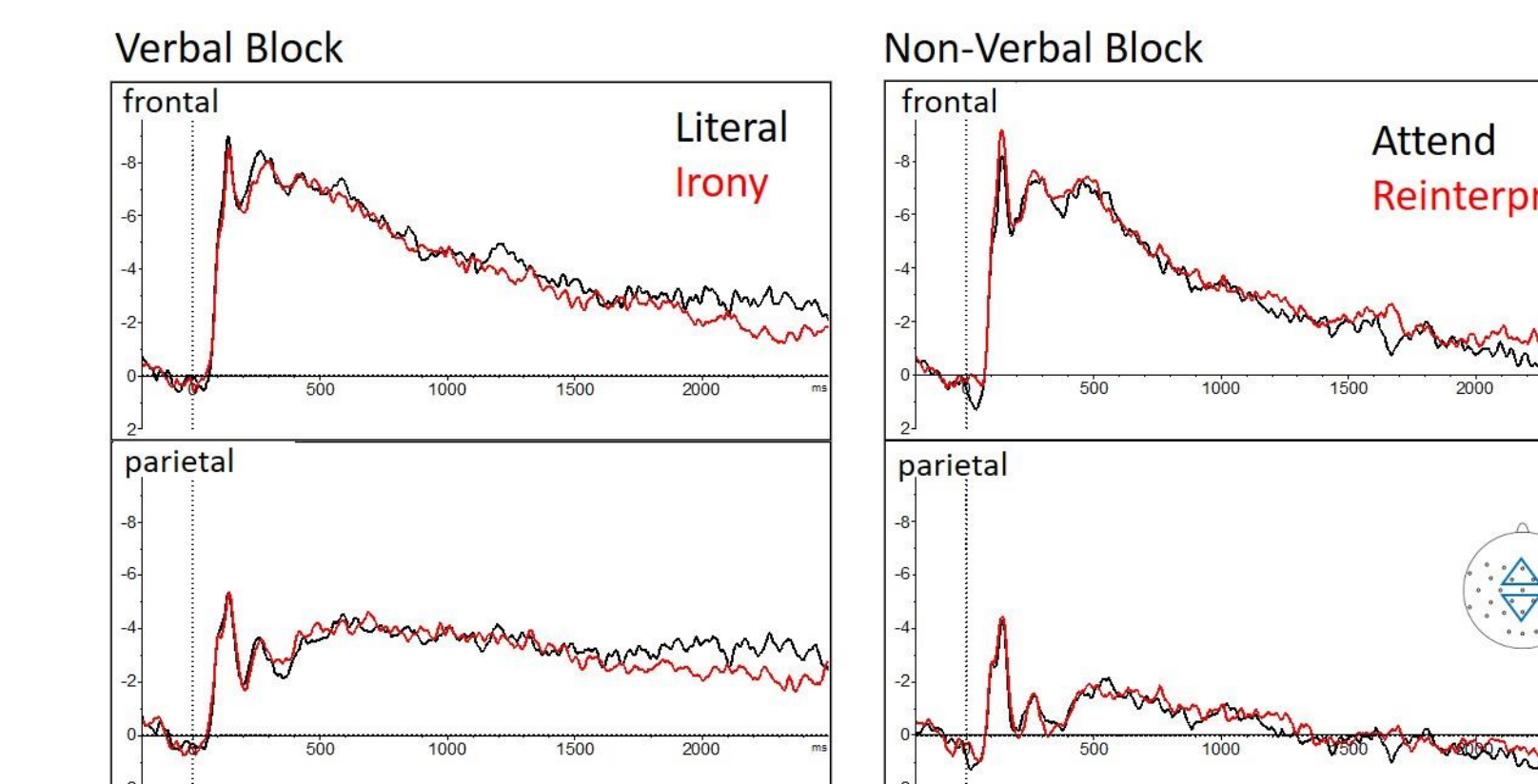
Non-Verbal Block



- reinterpret < attend: N400 (300-550 ms)
 - reinterpret < attend: *frontal* LPP (800-1500 ms)
- Reduced negativity for reinterpret**



No effects at 2nd image presentation



Discussion

• Behavior: IRONY < LITERAL

- in line with the *tinge hypothesis*
- expands previous research from bystanders to listeners
- BUT: irony is not as effective as reappraisal
- Maybe: reappraisal is active, conscious effort to mitigate negativity, while irony is more indirect/passive in our study

• ERP: irony and reappraisal act in **related, yet different ways**.

- Ironic words *contrast* the scene depicted by the image, and this contrast continued to be processed (elaborate or integrated), reflected by the sustained negativity
- Cognitive reappraisal recruits later and more frontal resources, potentially linked to *executive control* or *imagination*
- Conclusion**: irony is an **indirect yet effective tool in reducing negative emotions in others**
- BUT: *mechanism* in does not appear to be cognitive reappraisal alone