

(DIS)CONFIRMATION OF LINGUISTIC PREDICTION BY NON-LINGUISTIC CUES

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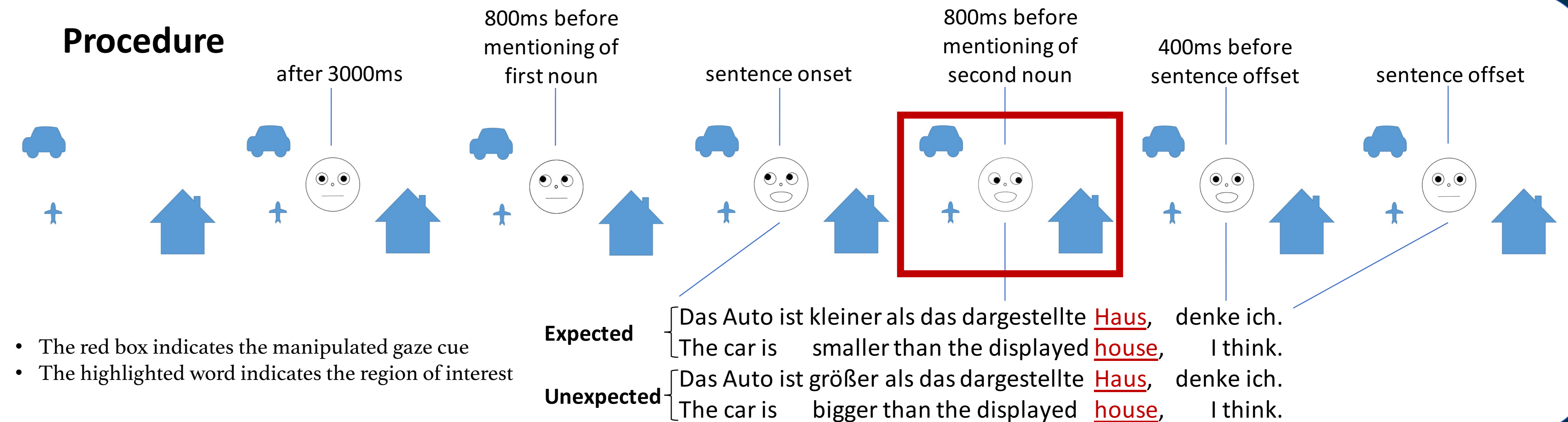
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Gaze Cues in face-to-face interactions

- Speakers' direct their gaze toward an object approximately 800ms before mentioning. (Griffin & Bock, 2000)
- Previous studies showed that listeners utilize speakers' gaze to form predictions about the unfolding sentence. (Jachmann et al., 2017)
- Do listeners utilize this external cue to validate expectations about the unfolding sentence? And, if so, how does this effect the comprehension of the noun?**

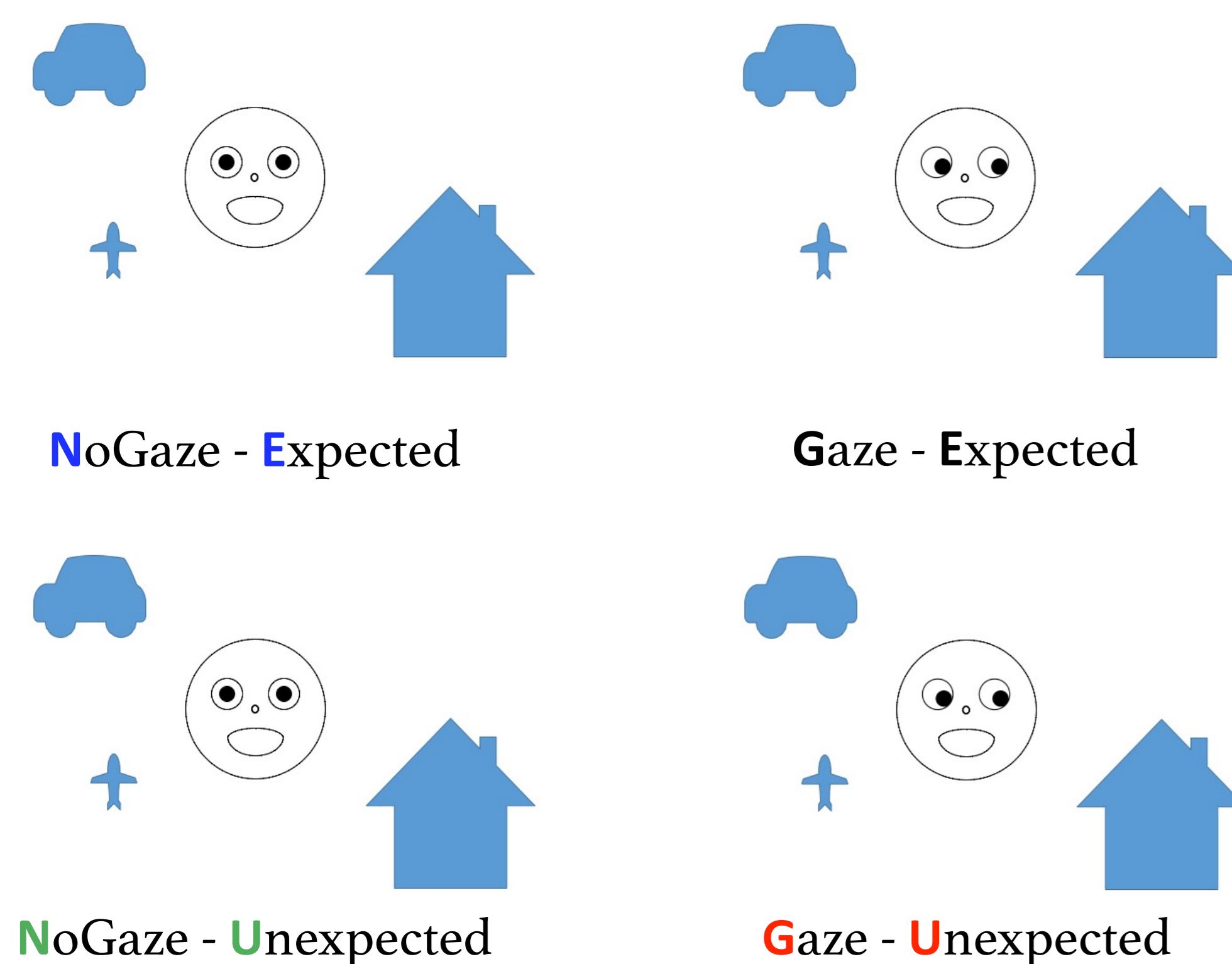
Procedure



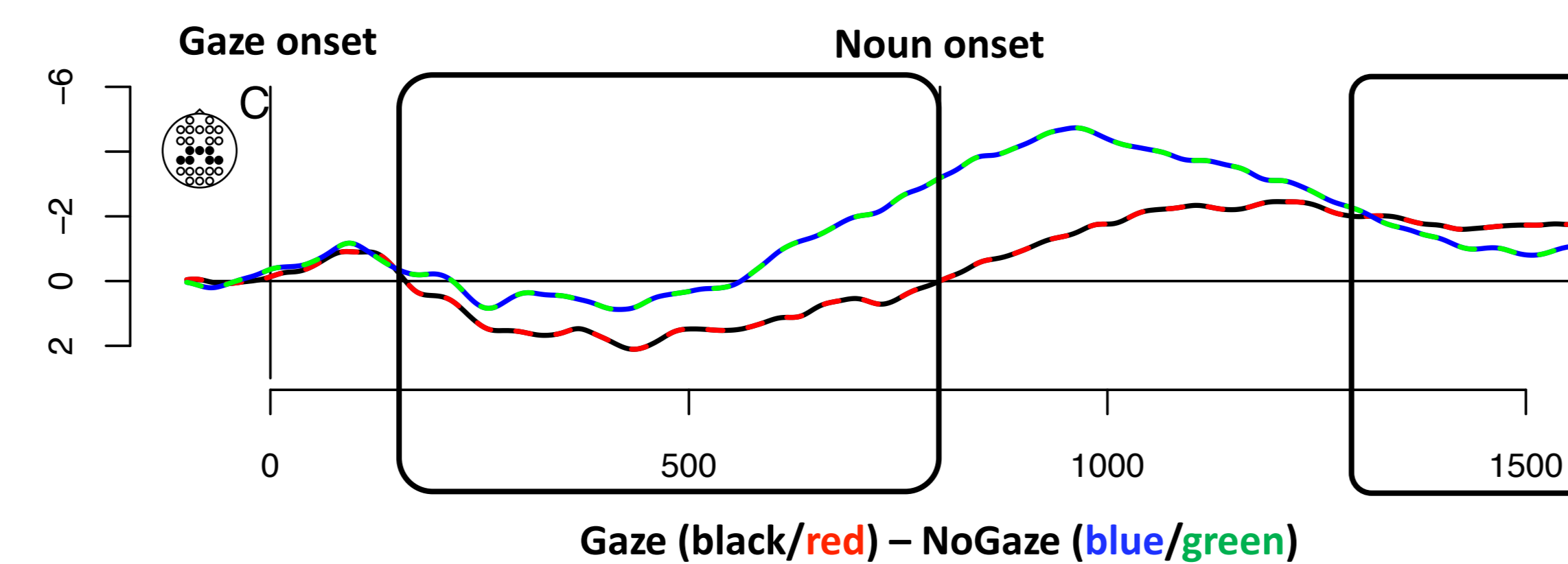
Methods

Design:

- 152 experimental trials / 100 filler
- 4 lists (Latin square)
- 24 participants
- Comparisons uttered by a text-to-speech system
- Gaze cue preceding second noun in the sentence by 800ms manipulated
- Truth value of the sentence manipulated
- 4 conditions:



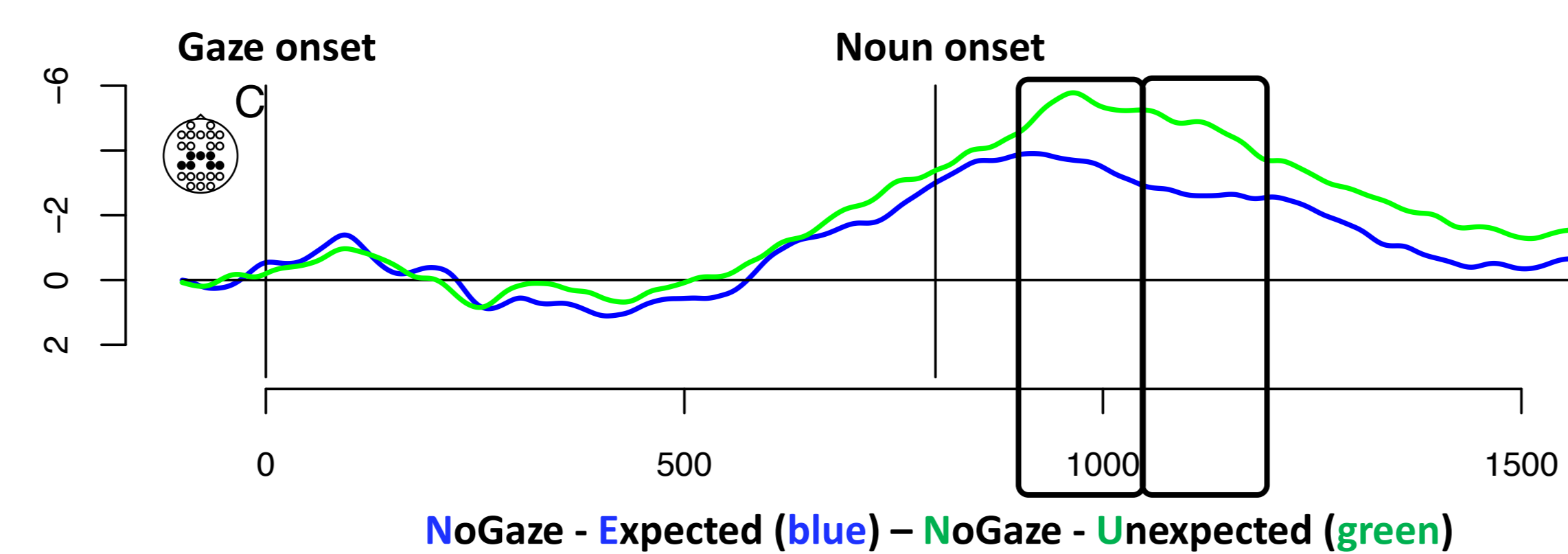
Results



Gaze	150-800	*
	200-450	*
Noun	950-1100 (150-300)	*
	1100-1250 (300-450)	*
	1300-1600 (500-800)	(CP) *

Positivity (150-800ms)
Integration of visual information (Polich, 2007)
Response readiness

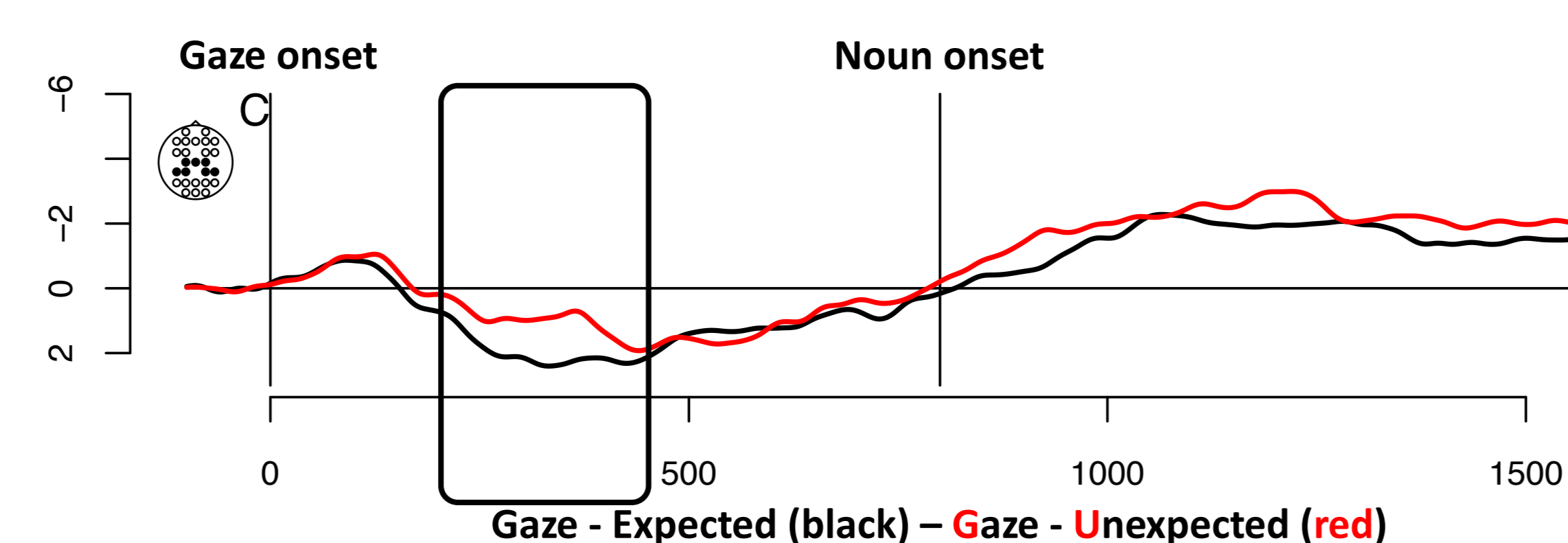
P6 (1400-1600ms) (Noun: 600-800ms)
Update of the situation model (Polich, 2007)
Response readiness



Gaze	150-800	n.s.
	200-450	n.s.
Noun	950-1100 (150-300)	*
	1100-1250 (300-450)	*
	1300-1600 (500-800)	n.s.

N2 (950-1100ms) (Noun: 150-300ms)
Phonological Matching Negativity (PMN) (Hagoort and Brown, 2000)

N4 (1100-1250) (Noun: 300-450ms)
Predictability driven N400 (Kutas, DeLong & Smith, 2011)



Gaze	150-800	n.s.
	200-450	*
Noun	950-1100 (150-300)	n.s.
	1100-1250 (300-450)	n.s.
	1300-1600 (500-800)	n.s.
		n.s.

Negativity (200-450ms)
Predictability driven N400-like effect (Kutas, DeLong & Smith, 2011)

Conclusion

Gaze absent:

- No difference in the Gaze region
- Expectation validation (N4) and integration (P6) on the Noun
- Additional PMN for auditory input

Gaze present:

- Expectation validation (N4-like effect) and integration (Positivity) on the Gaze cue
- No differences on the noun

Speakers' gaze shifts the point of expectation evaluation, and thus eases linguistic comprehension

References

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