Congruency effects of speaker's gaze on listeners' sentence comprehension

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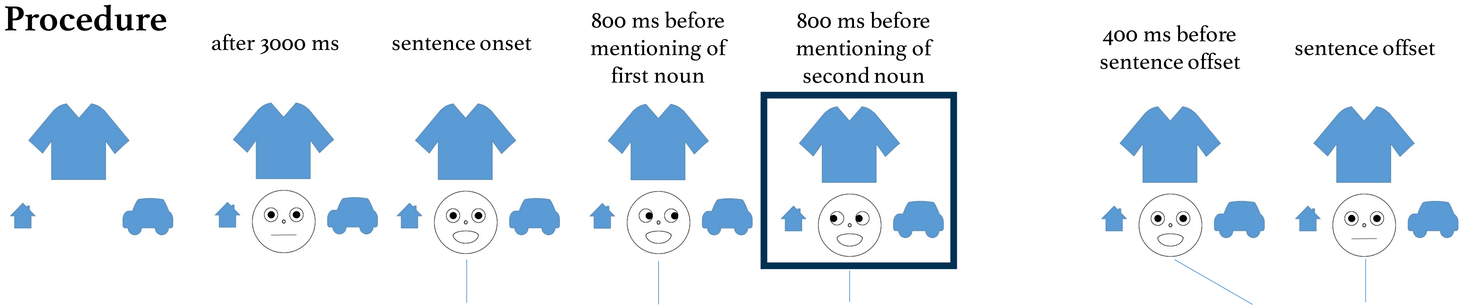
Gaze Cues in face-to-face interactions

- Speakers' direct their gaze toward an object approximately 800ms before mentioning.
  (Griffin & Bock, 2000; Kreysa, 2006)
- Eye-tracking studies provided evidence that speaker gaze cues are interpreted by listeners to contain referential intentions
  (Staudte & Crocker, 2011; Staudte et al., 2014)
- Do listeners utilize this external cue as soon as it is available to make phonological and formal predictions about the unfolding sentence?

Procedure



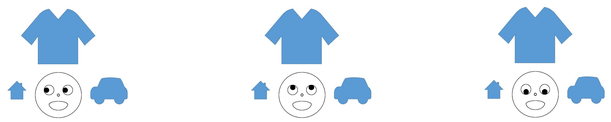
- The blue box indicates the manipulated gaze cue
- The highlighted word indicates the region of interest

Verglichen mit dem Auto, ist das Haus verhältnismäßig klein, denke ich.
Compared to the car, the house is relatively small, I think.

Methods

Design:

- 72 experimental trials / 72 filler
- 3 lists (Latin square)
- 30 participants (age: 18–32 / mean age: 24 / male: 8)
- Comparisons between objects uttered by a TTS
- Gaze cue preceding second noun in the sentence by 800ms manipulated
- 3 conditions:



Congruent **I**ncongruent **N**eutral

800 ms prior to "Auto" (car)

References

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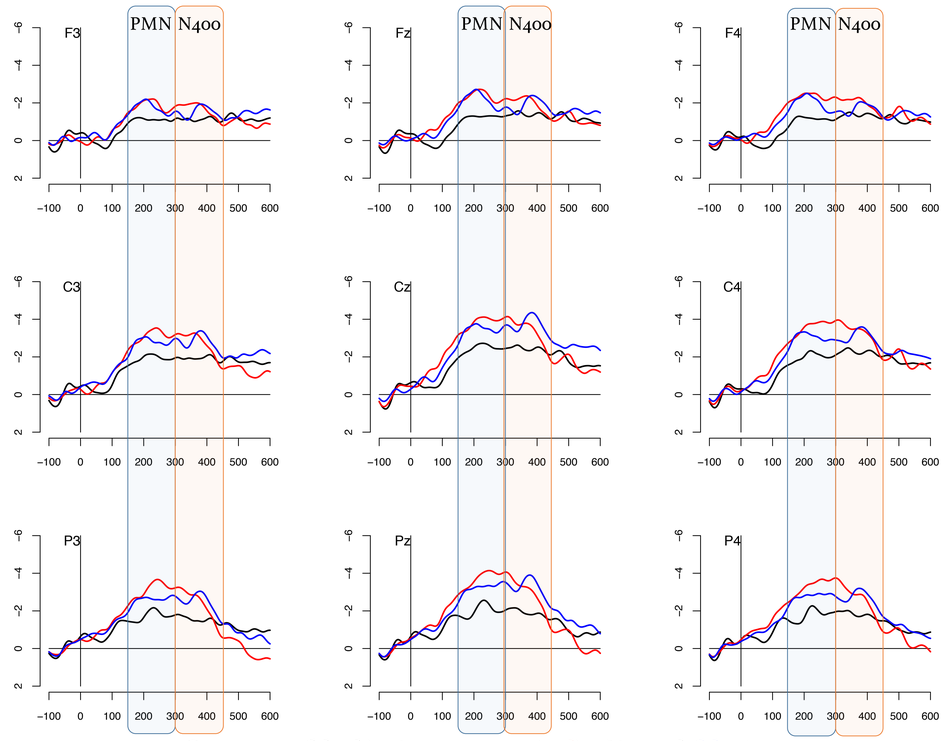
Results (second noun onset)



Congruent (black) – Incongruent (red) – Neutral (blue)

	PMN	n.s.	N400
	150 – 300 ms	250 – 350 ms	300 – 450 ms
C - I	*	*	*
C - N	*	n.s	*
I - N	n.s.	n.s.	n.s.

Discussion

Gaze cues can influence

- expectancy of the phonological form (Phonological Missmatch Negativity)
  (Connolly & Phillips, 1994; Hagoort and Brown, 2000)
- Predictability of the word form in sentential context (N400)
  (Dambacher et al., 2006)

Neutral	Incongruent
2 active candidates	wrong candidate
selection	**prediction violation**

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