From grounded spaces to linguistic prediction: Multimodal word meaning in context

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Motivation & RQ

- Most research on language & multimodality in isolated word meaning representations
- We process in context → are there multimodal activations when pre-activating words in context?

Context (x 37)

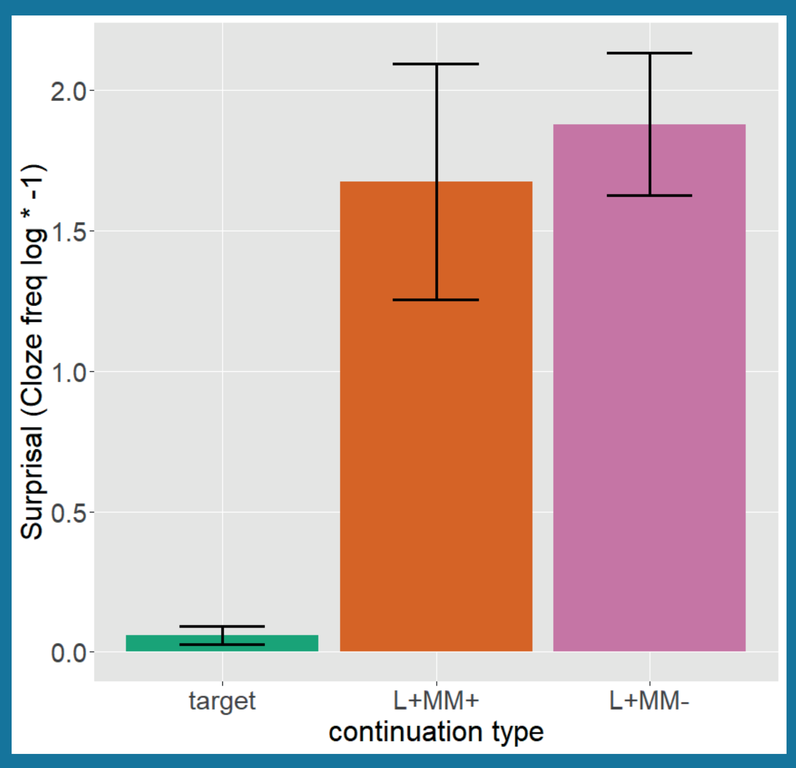
The impatient man kept looking at his . . .

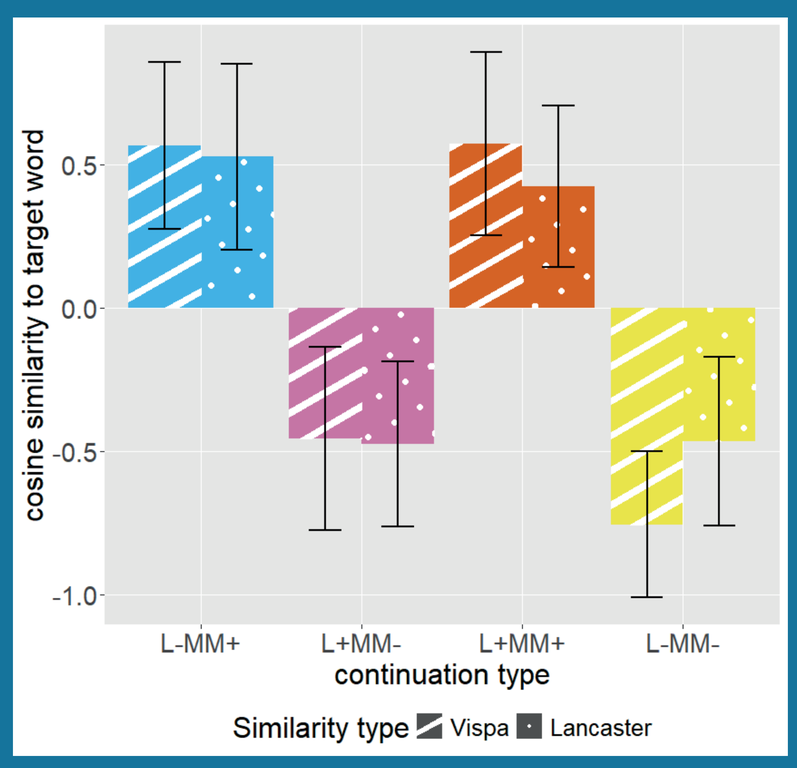
Continuation (conc & known)

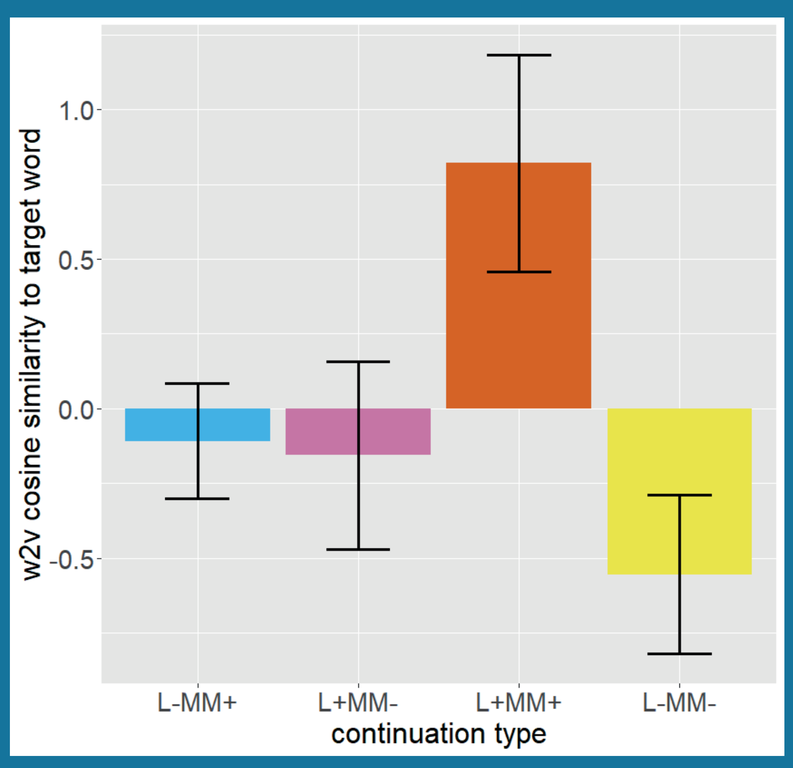
WATCH
COMPASS
WIFE
PHONE
DOG

Target
L- MM+
L+MM-
L+MM+
L- MM-

Data-driven design







L = Cloze low entropy, ≥ 2 comp

MM = ViSpa & Lancaster

Extra = Google w2v

Norming studies

(1) Plausibility

The impatient man kept looking at his watch

1 2 3 4 5 6 7

(2) Visual similarity

Is a **watch** more visually similar to a **compass** or a **dog**?

compass — dog

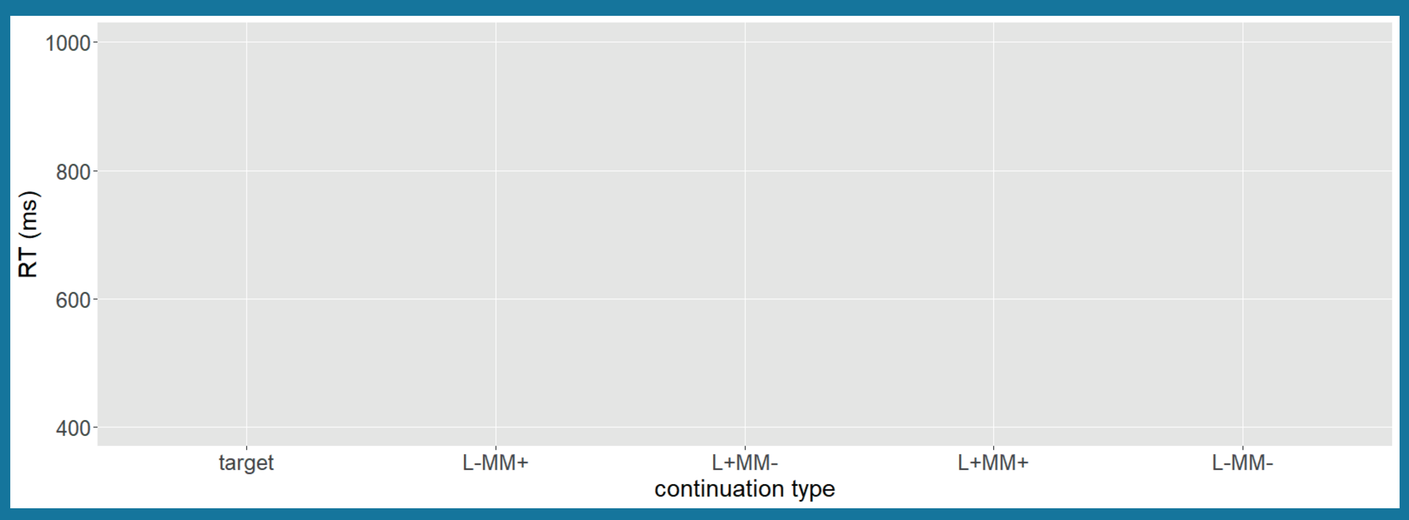
(3) Semantic relatedness

Which word is more likely to appear in the same context as **watch**?

dog — phone

To be continued…

- Self-paced reading experiment
- Do multimodal representations have an effect on reading times?
- Use unimodal and multimodal language models in the analysis



References

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