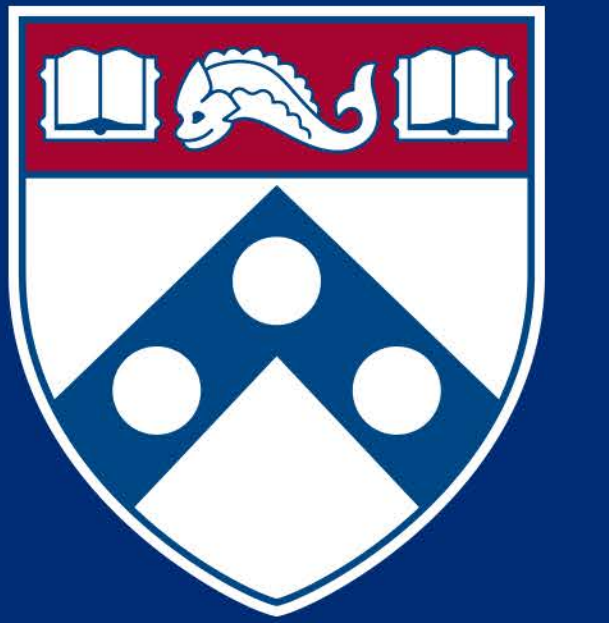


Cross-situational learning of homophones and general categories: The role of the referential domain

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Introduction

- Meaning generalization in word learning poses many challenges.
- How to learn homophones vs. general categories?



'bat': Two different meanings or one superordinate meaning like 'thing'?

- Previous studies: semantic distribution of exemplars, syntactic disambiguation (Dautriche & Chemla, 2016; Dautriche, Chemla & Christophe, 2016).
- Here we explore the role of the local referential domain (e.g., Brennan & Clark, 1996) – **Does learning depend upon the mere co-presence of semantically-contrasting objects?**

Design: Learning

- Adult participants learn 8 pseudo-words by watching videos of an actor selecting among two pictures given a word.
- Each word has 4 learning trials; selected pictures were consistent with two distinct meanings (e.g., dog and butterfly).
- Participants always witness the actor selecting 4 particular objects for a word, but, depending on the condition, different unselected items are co-present.
- Learning trials for *fami*:

	Lower-level contrast condition	Higher-level contrast condition
Trial 1		
Trial 2		
Trial 3		
Trial 4		

Prediction: learn two meanings (e.g., 'dog' and 'butterfly')

Prediction: learn one superordinate meaning (e.g., 'animal')

- Contrast level (Lower-level vs. Higher-level) was a between-subjects factor.
- Experiment 1 (N = 48): Learning trials for each word were *massed*. Experiment 2 (N = 45): Learning trials for words were *interleaved*.

Design: Testing

- Two tests for each word. Four test items in each test.

- Reminder and test trials for *fami*:

Reminder: This was called a **fami**.



Is this also a **fami**?

Is this also a **fami**?

Is this also a **fami**?

Is this also a **fami**?



Same category.

Encompassed only the reminded referent.

Encompassed both referents.

Outside category.

Reminder: This was called a **fami**.



Is this also a **fami**?

Is this also a **fami**?

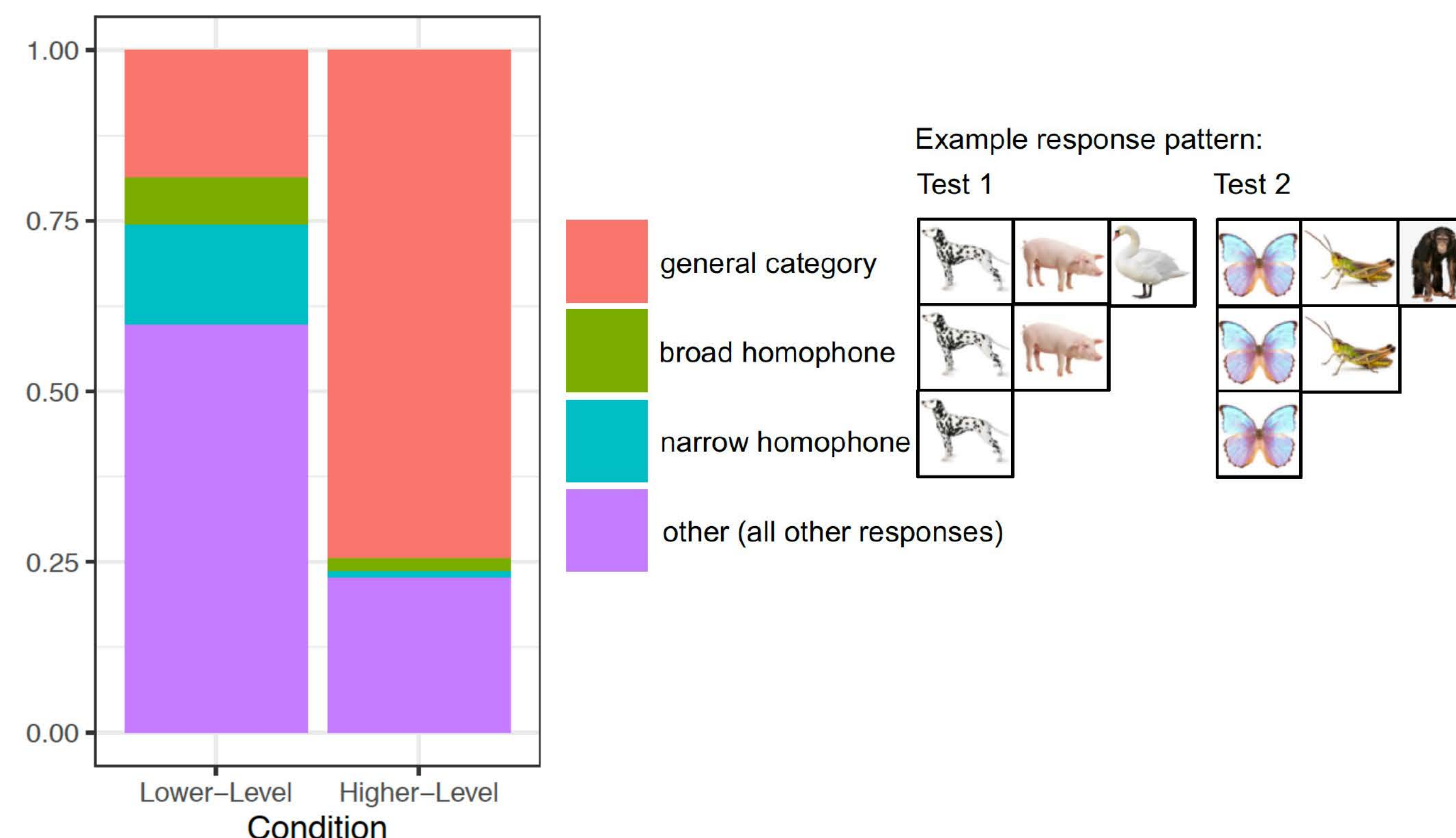
Is this also a **fami**?

Is this also a **fami**?



Results

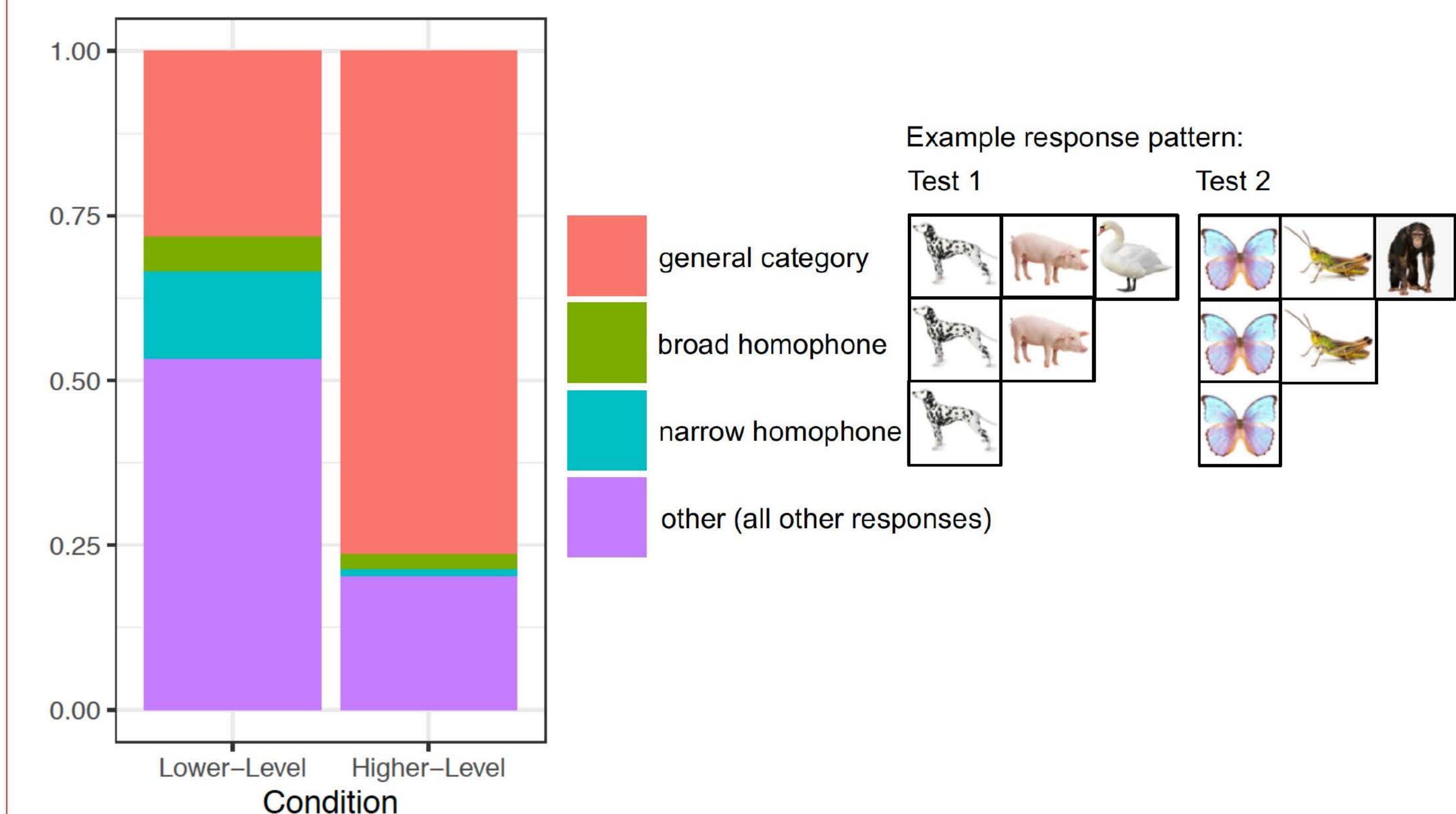
Experiment 1: Massed learning (learning trials grouped by word)



- More homophone responses in Lower-level contrast condition ($p=.002$).
- More general category responses in Higher-level contrast condition ($p<.001$).

Results

Experiment 2: Interleaved learning (learning trials for words were intermixed)



- More homophone responses in Lower-level contrast condition ($p=.008$).
- More general category responses in Higher-level contrast condition ($p<.001$).
- No between-experiment difference.

Discussion & Future Directions

- Learners use semantic contrast present in referential domains to form hypotheses for novel word meanings.
- Although it is difficult to learn homophones with relatively close meanings (dog/butterfly), learners show signs of doing so when the referential contrast supports it.
- Superordinate categories, which violate basic-level preferences, are arrived at easily via semantic contrast.
- Ongoing work: Can children also use semantic contrast in the same way to learn homophones vs. general categories?

References

- [1] Dautriche, I., & Chemla, E. (2016). What homophones say about words. *PLoS ONE*. [2] Dautriche, I., et al. (2016). Word learning: Homophony and the distribution of learning exemplars. *Language Learning and Development*. [3] Brennan, S. E. & Clark, H. H. (1996). Conceptual pacts and lexical choice in conversation. *Journal of Experimental Psychology: Learning, Memory, and Cognition*.

Acknowledgements

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