

## Introduction

- ▶ **Scalar implicatures (SIs)** are commonly studied using **sentence verification tasks**.
- ▶ Linking assumption: Computing an SI  $\Rightarrow$  Rejecting an underinformative sentence (e.g., “Some trees are plants.”)
- ▶ Rates of pragmatic (rejecting) vs. literal (accepting) responses vary a lot across studies. [1, 2, 3, 4, 5, 6]
- ▶ **Hypothesis:** Literal response rates depend on task framing (truth vs. felicity) and context source (world knowledge vs. picture).

### The Present Study

- ▶ We ran three web-based experiments (252, 252, and 576 participants) on Prolific with PCIbex. [7]
- ▶ Each experiment employed a sentence(-picture) verification task. [8, 9]
- ▶ We manipulated whether truth (true/false) or felicity (good/bad) judgments were asked for. [10]
- ▶ We also manipulated whether sentences were judged against world knowledge (WK) or a picture.
- ▶ Results show higher literal response rates for truth (over felicity) and world knowledge (over pictures).

### Data & Code:



[osf.io/86r4u](https://osf.io/86r4u)

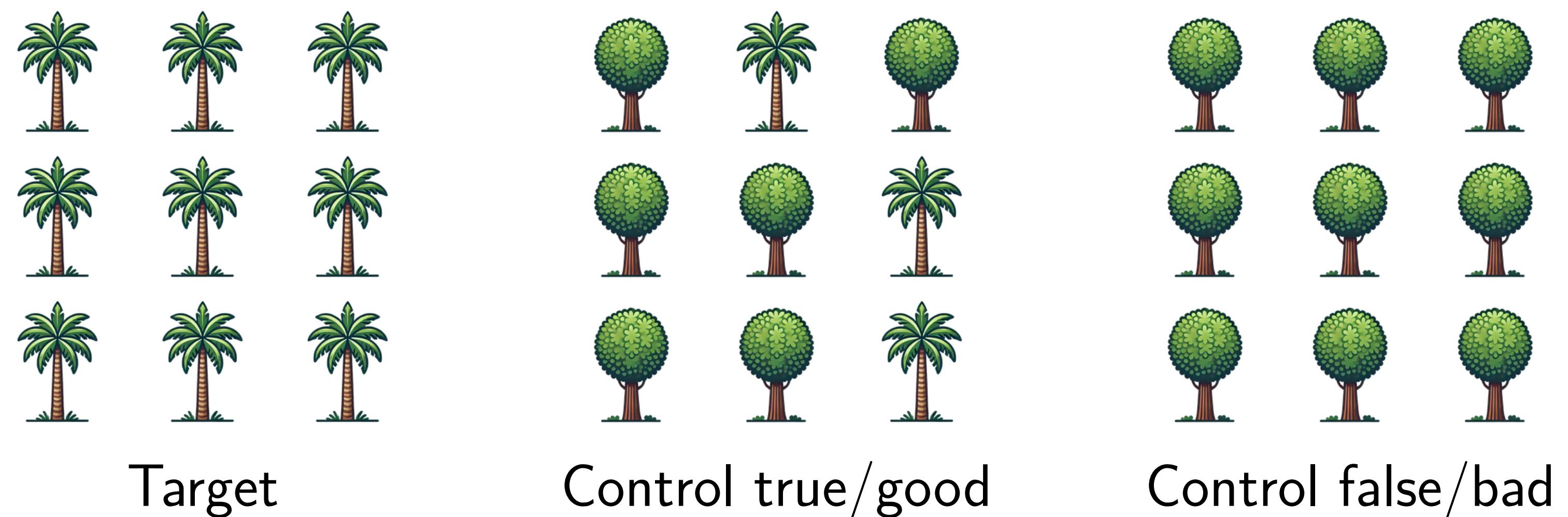
## Experimental Design

Group	Sentence	Question	Task Framing	Context Source
a	Some trees are plants.	Is this a true or a false statement?	Truth	World knowledge
b	Some of the trees are palms.	Is this a true or a false description of the picture?	Truth	Picture
c	Some trees are plants.	Is this a good or a bad statement?	Felicity	World knowledge
d	Some of the trees are palms.	Is this a good or a bad description of the picture?	Felicity	Picture

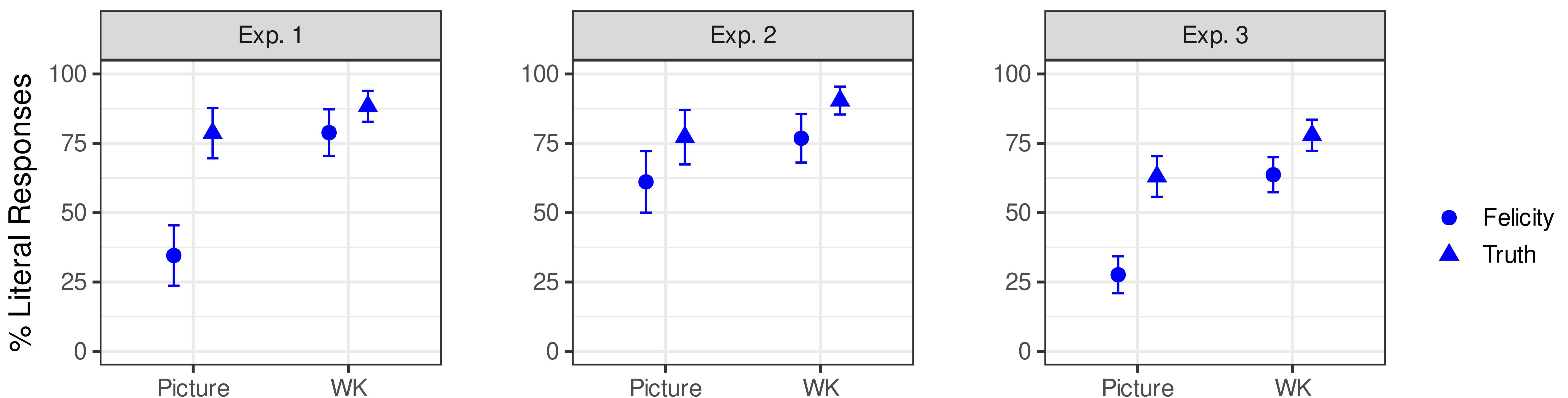
- ▶ Between-subjects design (groups a, b, c, d); 24 items

### Differences Between Experiments

- Exp. 1:** 3 trial types (target, control-true, control-false)  
**Exp. 2:** like Exp. 1, but question “Is this a true statement?”  
**Exp. 3:** 6 trial types (3 new controls with strong scalemate)



## Results



- ▶ The same basic pattern in all three experiments:

- ▶ More **literal** responses with **truth** than with felicity  
(95% Crls: Exp. 1 [+6.5%, +30.3%], Exp. 2 [+0.6%, +15.5%], Exp. 3 [+25.1%, +47.9%])
- ▶ More **literal** responses with **world knowledge** than with pictures  
(95% Crls: Exp. 1 [+4.6%, +29.3%], Exp. 2 [-0.9%, +13.5%], Exp. 3 [+18.1%, +44.5%])

### Conclusion

Task design systematically influences how underinformative sentences are interpreted.

## References

- [1] W. De Neys and W. Schaeken. “When people are more logical under cognitive load: Dual task impact on scalar implicature”. In: *Experimental Psychology* 54.2 (2007), p. 128. [2] B. van Tiel, E. Pankratz, and C. Sun. “Scales and scalarity: Processing scalar inferences”. In: *Journal of Memory and Language* 105 (2019), pp. 93–107. [3] L. Bott and I. A. Noveck. “Some utterances are underinformative: The onset and time course of scalar inferences”. In: *Journal of Memory and Language* 51.3 (2004), pp. 437–457. [4] B. Van Tiel and W. Schaeken. “Processing conversational implicatures: Alternatives and counterfactual reasoning”. In: *Cognitive Science* 41 (2017), pp. 1119–1154. [5] A. Cremers and E. Chemla. “Direct and indirect scalar implicatures share the same processing signature”. In: *Pragmatics, semantics and the case of SIs*. Springer, 2014, pp. 201–227. [6] A. Feeney et al. “The story of some: Everyday pragmatic inference by children and adults”. In: *Canadian Journal of Experimental Psychology* 58.2 (2004), pp. 121–132. [7] J. Zehr and F. Schwarz. *PennController for Internet Based Experiments (IBEX)*. 2018. [8] A. M. Collins and M. R. Quillian. “Retrieval time from semantic memory”. In: *Journal of Verbal Learning and Verbal Behavior* 8.2 (1969), pp. 240–247. [9] H. H. Clark and W. G. Chase. “On the process of comparing sentences against pictures”. In: *Cognitive Psychology* 3.3 (1972), pp. 472–517. [10] M. Kissine and P. De Brabanter. “Pragmatic responses to under-informative some-statements are not scalar implicatures”. In: *Cognition* 237 (2023), p. 105463.