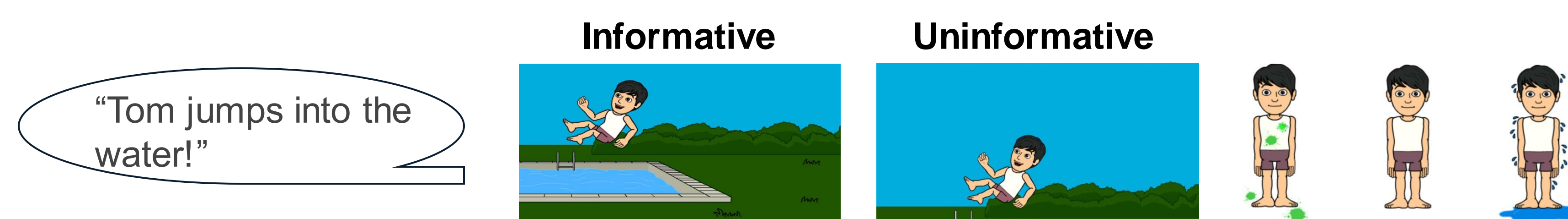


Young Children's Inferences of Story Outcomes Based on Verbal and Pictorial Information

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BACKGROUND

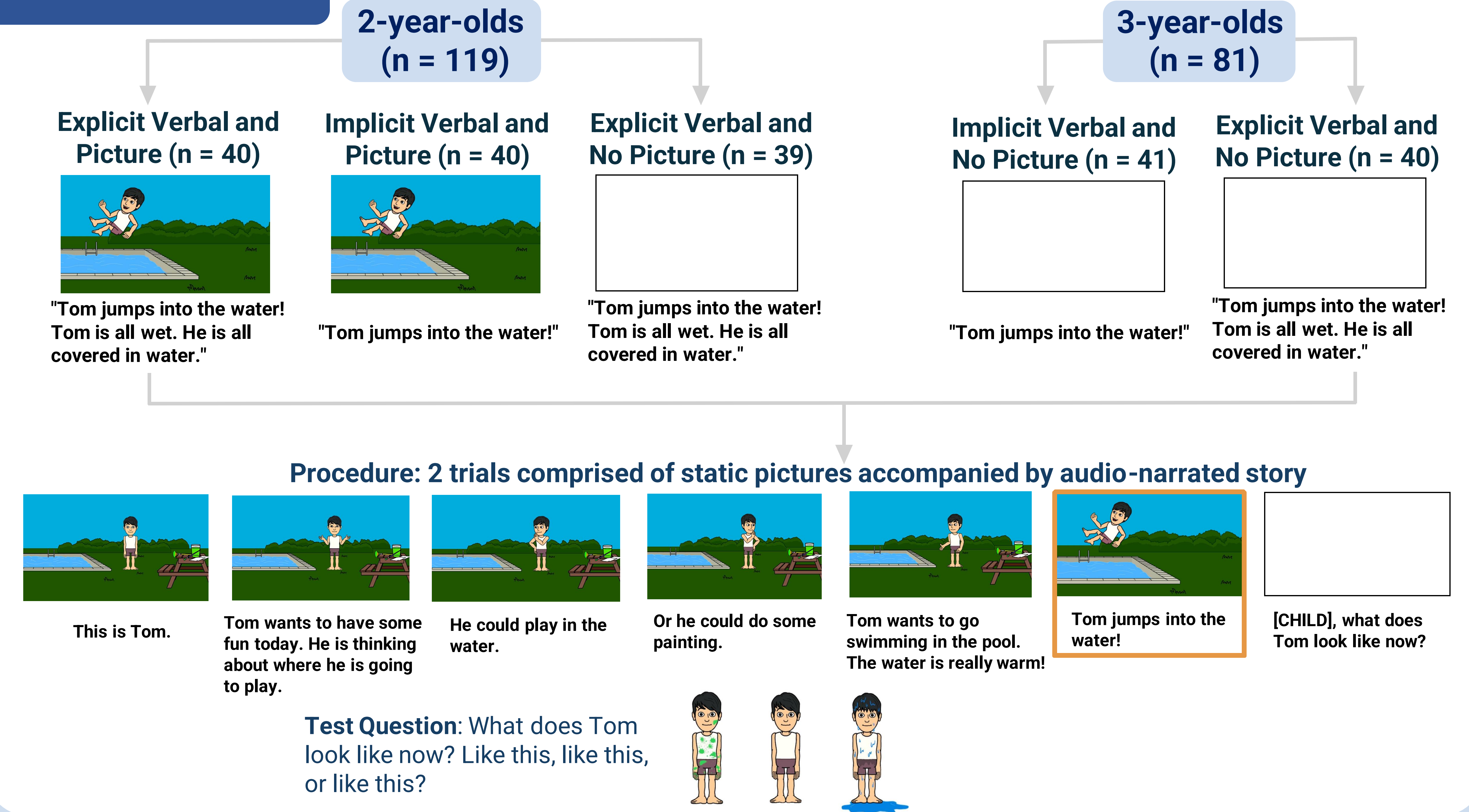
- There is evidence that 3-year-olds perform better than 2-year-olds when using implicit verbal information to infer story outcomes, regardless of whether an informative or uninformative picture is also available when the inference is to be drawn (Lee, Jarosz, & Ganea, in progress).
- However, it is unknown how 2- and 3-year-olds would perform if we manipulated both the explicitness of the verbal information AND the presence/absence of the informative picture.
- This would address the questions: Would explicit verbal information improve 2-year-olds' inferential ability when accompanied by an informative picture? Would 3-year-olds still be able to draw inferences when given implicit verbal information with no supportive picture?



Research Questions

- Does explicitness of verbal information influence 2- and 3-year-olds' updating ability during narrative comprehension?
- Does an informative picture influence 2-year-olds' ability to update during narrative comprehension?
- Does children's performance improve across their third and fourth years of life?

METHODS



RESULTS

2-year-olds

Main effect of **age**: older 2-year-olds had higher odds of succeeding, Wald $\chi^2(1) = 12.97, p < .001, b = .14, SE = .04, \text{Exp}(B) = 1.16$. No effect of condition.

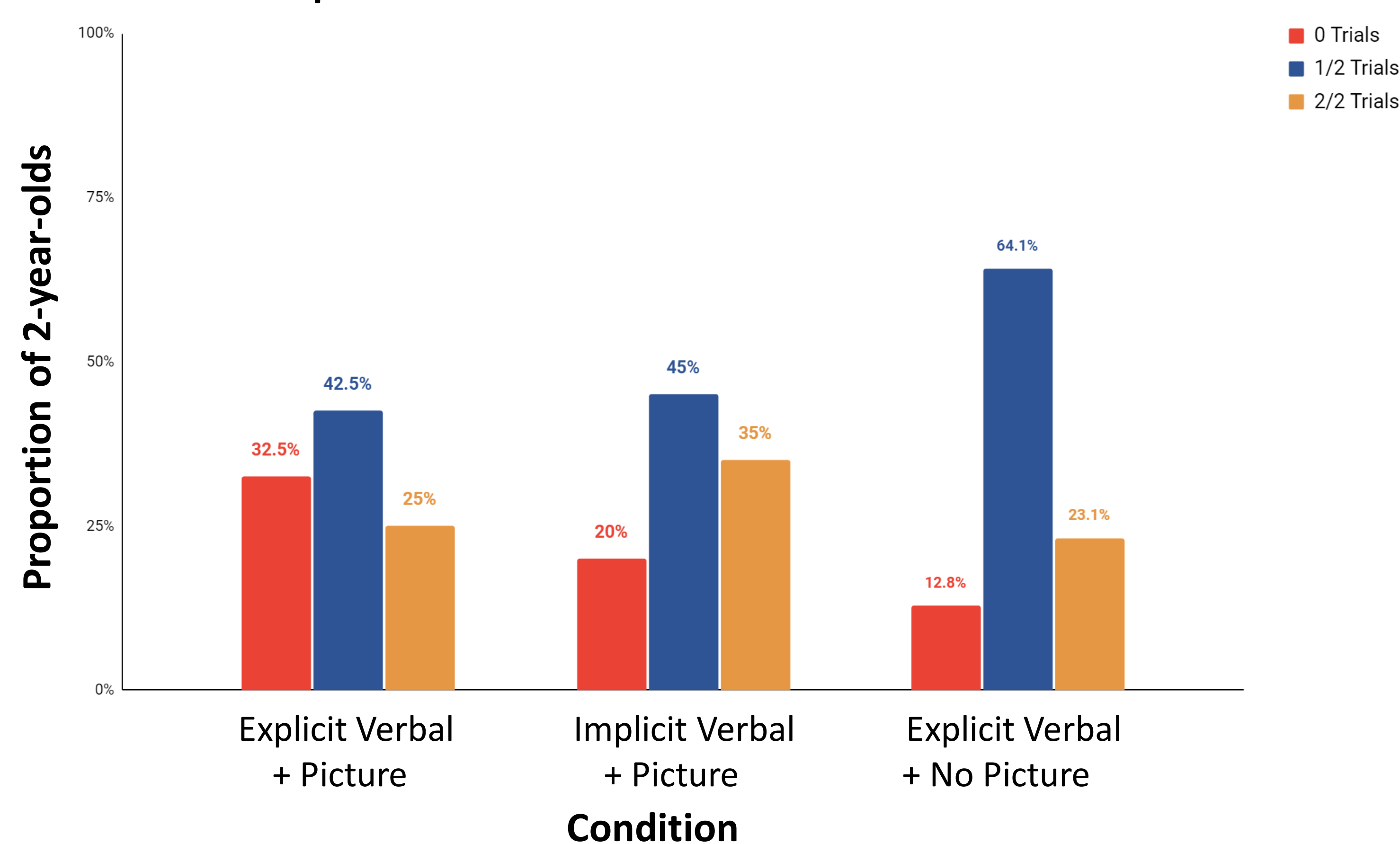
Chance comparison: pattern of responses above chance in each condition (all $ps < .013$).

3-year-olds

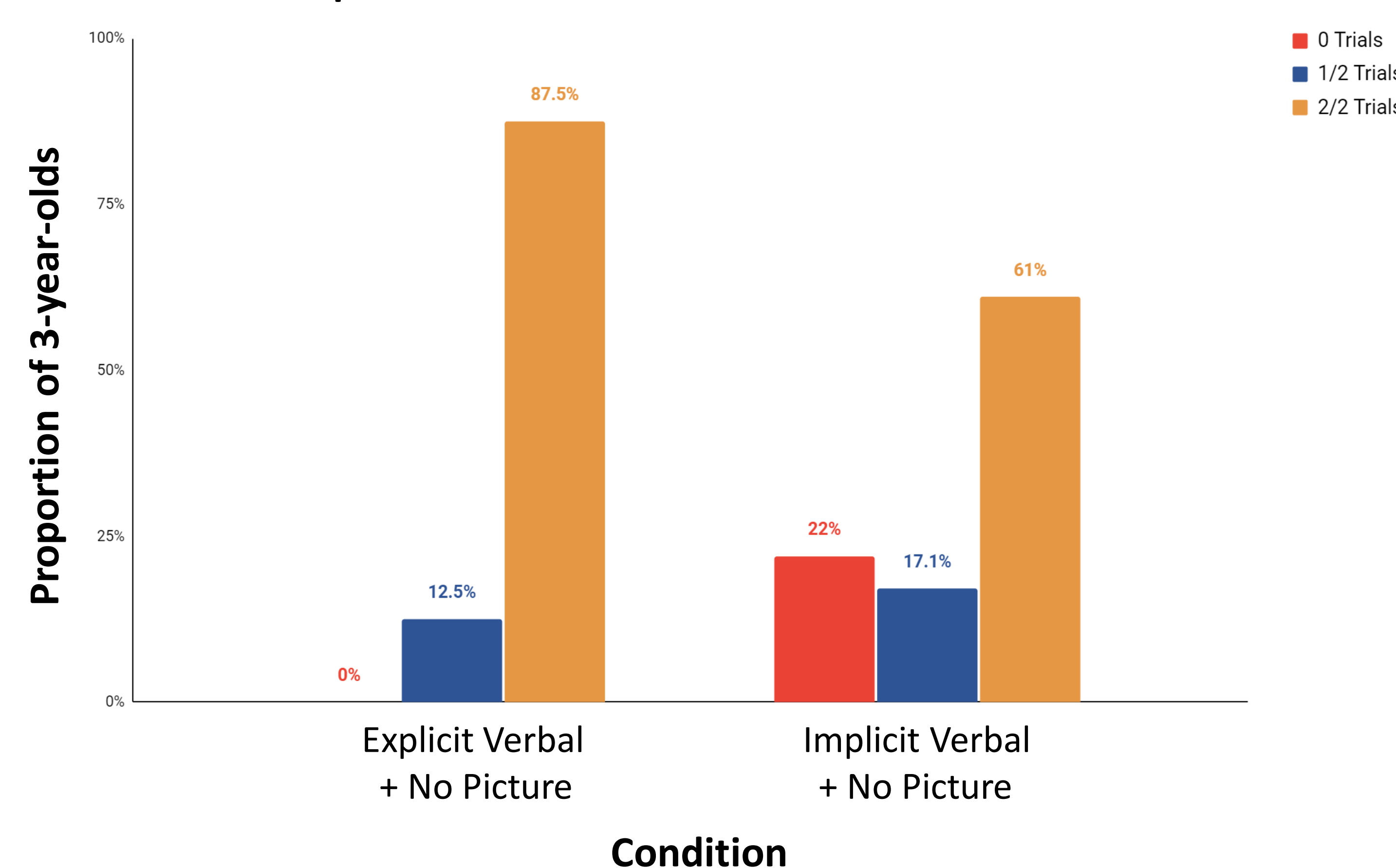
Main effect of **condition**: 3-year-olds who heard explicit verbal information had higher odds of success than those who heard implicit verbal information, Wald $\chi^2(1) = 9.07, p = .003, b = 1.76, SE = .58, \text{Exp}(B) = 5.8$. No effect of age.

Chance comparison: pattern of responses above chance in each condition (all $ps < .001$).

Correct Responses Across Two Trials as a Function of Condition



Correct Responses Across Two Trials as a Function of Condition



Number of trials on which each test image was chosen, by age and condition

Age	Condition	Target (n)	Untransformed (n)	Distractor (n)
2-year-olds	Explicit Verbal + Picture	37	19	24
	Implicit Verbal + Picture	46	16	18
	Explicit Verbal + No Picture	43	10	25
3-year-olds	Explicit Verbal + No Picture	75	0	5
	Implicit Verbal + No Picture	57	16	9

DISCUSSION

- RQ1: Explicitness of verbal information improved 3-year-olds' ability to draw inferences, when no picture was present. Two-year-olds performed similarly across conditions in this study.
- RQ2: The presence of an informative picture did not significantly affect 2-year-olds' ability to draw inferences about story outcomes.
- RQ3: 2-year-olds' inferential abilities became more accurate with age.
- Future studies will focus on understanding why 2-year-olds' ability to update representations is more challenged in a narrative context, compared to a non-narrative context (see Ganea & Harris, 2010; Ganea et al., 2007).

REFERENCES

- (1) Ganea, P. A., & Harris, P. L. (2010). Not doing what you are told: early perseverative errors in updating mental representations via language. *Child Development, 81*(2), 457–63. (2) Ganea, P. A., Shutts, K., Spelke, E. S., & DeLoache, J. S. (2007). Thinking of things unseen: infants' use of language to update mental representations. *Psychological Science, 18*(8), 734–9.