



BUCLD-49

Children’s derivation of scalar inference from *or*-sentences: Evidence from varying the degree of relevance

Maumita Bhaumik¹

¹ The English and Foreign Languages University



Motivation

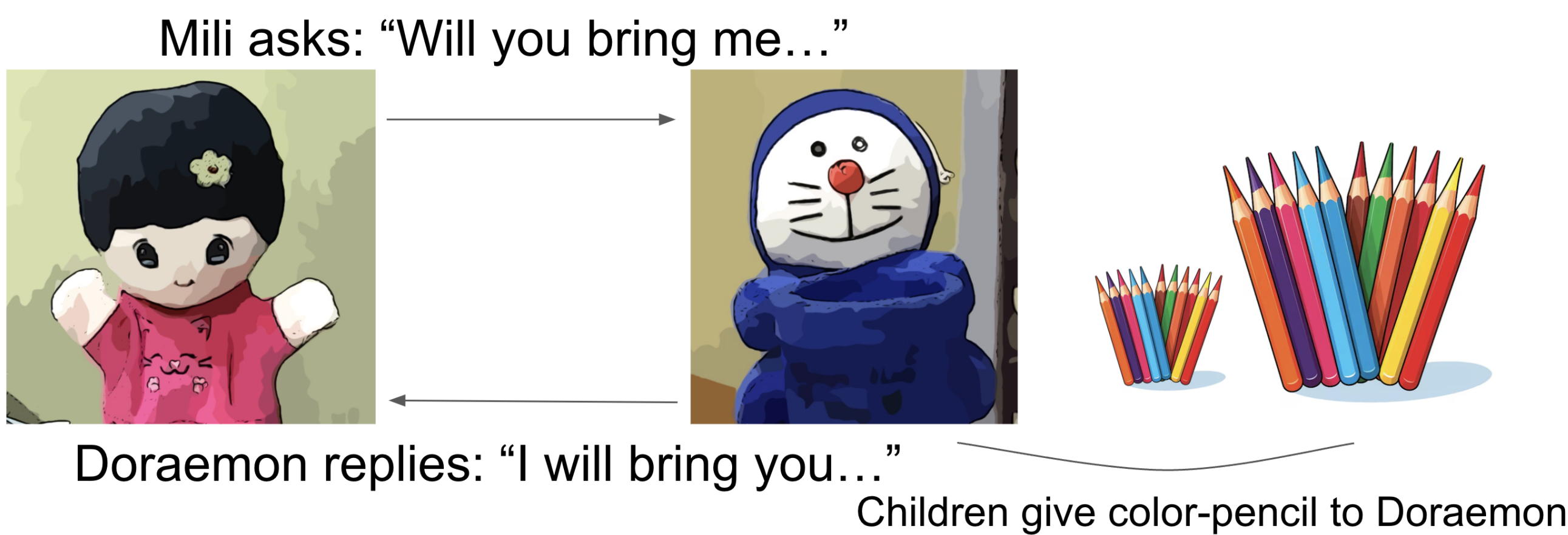
- It is widely argued that children’s difficulty deriving scalar implicature from *or*-sentences stems from their difficulty accessing the scalar alternative, and [2,3,6].
- However, it remains to be tested how children would perform if the alternative is available in the context.
- Further, impact of relevance on children’s disjunction (or) comprehension has yet to be explored.
- This study investigates the role of alternative and relevance in children’s derivation of implicature from *or*-sentences.

Method

- Participants:** Bengali-speaking 4- to 5-year-olds (N=74), 8- to 9-year-olds (N=48), adults (N=48)

Age group	C1	C2	C3	C4
Young children	19 4;2-5;10, M=5;2	18 3;8-5;6, M=4;10	19 4;2-5;10, M=5;2	18 4;1-5;7, M = 4;10
Older children	12 8;2-9;0, M=8;6	12 8;2-8;11, M=8;6	12 8;1-8;11, M=8;4	12 8;2-9;0, M=8;5
Adults	12	11	12	13

- Materials and procedure:**



Task:

If Doraemon promises to bring two objects, give him a big color-pencil.
If Doraemon promises to bring only one object, give him a small color-pencil.

Condition	Mili’s question	picture card
C1	Will you bring me a doll and a boat?	
C2	Will you bring me those two things?	
C3	Will you bring me a doll and a boat and the other two things?	
C4	Will you bring me those four things?	

Trial types in each of the four conditions: Total trials = 19 [Practice = 3, Main = 15]

Doraemon’s reply in Test [5] I will bring you a doll or a boat	Doraemon’s reply in Control1 [5] I will bring you only a doll	Doraemon’s reply in Control2 [5] I will bring you a doll and a boat
--	---	---

Conclusion

- There was no significant difference between the performance of children in +alternative and -alternative conditions. Alternative hypothesis cannot explain this result [1,2,3,6].
- Degree of relevance affects children’s implicature derivation [4,5]. However, in low-relevance condition, availability of the alternative seems to improve performance. A possible explanation for this can be that utterance of the alternative helps in hypothesizing that speaker is considering the alternative, and hence, relevance of the degree of informativeness is emphasized.

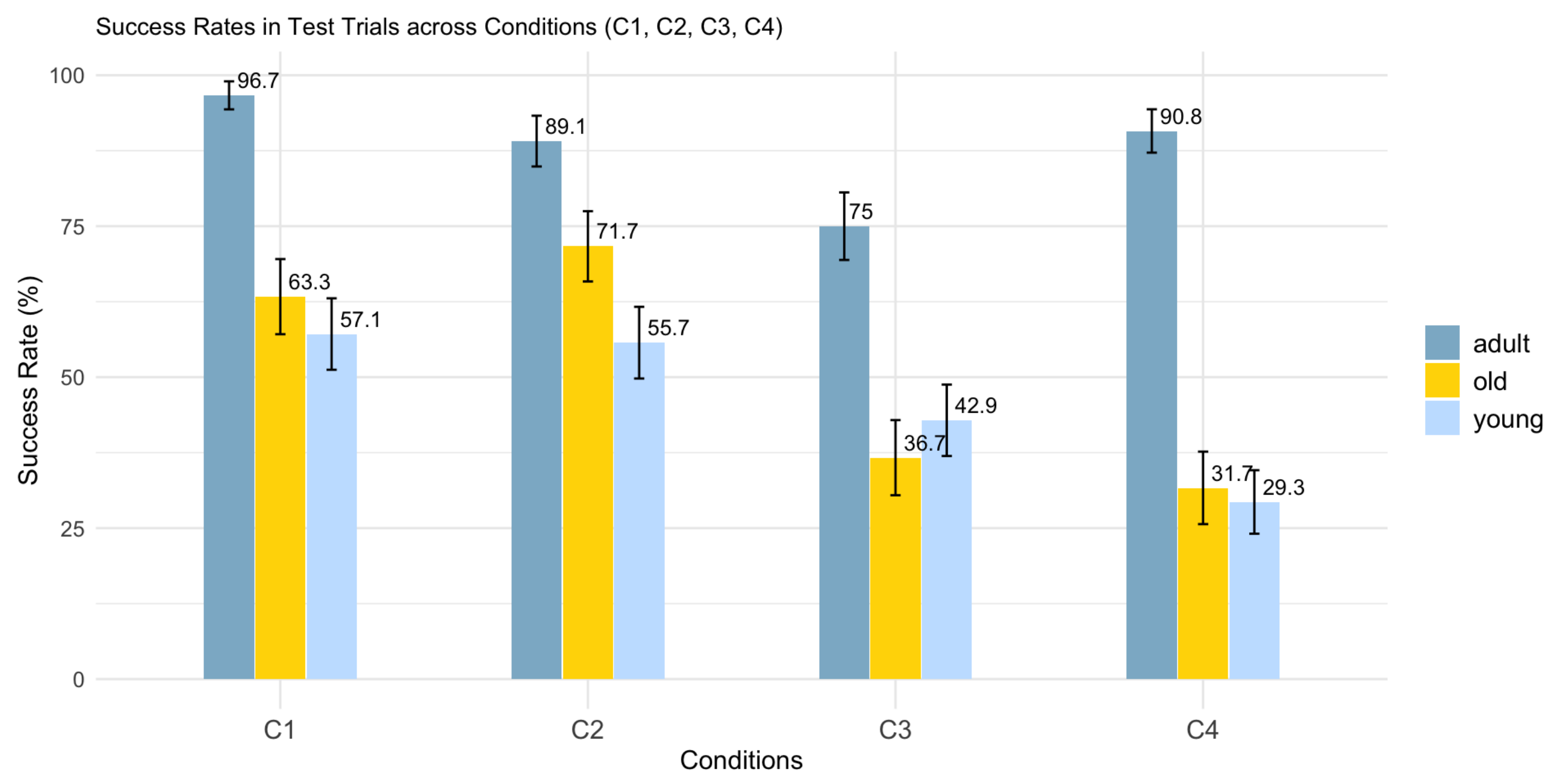
Design

Alternative × Relevance

- 4 between-subject conditions
 - Coniditon 1: [+alternative, high-relevance] aka. C1
 - Coniditon 2: [-alternative, high-relevance] aka. C2
 - Coniditon 3: [+alternative, low-relevance] aka. C3
 - Coniditon 4: [-alternative, low-relevance] aka. C4
- In **+alternative** conditions, alternative is primed before *or*-sentence. In **-alternative** conditions, alternative is not primed before *or*-sentence.
- In **high-relevance** conditions, scalar implicature is the relevant implicature. In **low-relevance** conditions, exhaustivity implicature is the more relevant implicature.

Results

<i>some failed control</i>	remaining C1	remaining C2	remaining C3	remaining C4
Young children	14 4;3-5;8, M=5;2	14 3;8-5;6, M=4;10	14 4;6-5;10, M=5;4	15 4;1-5;6, M=4;11



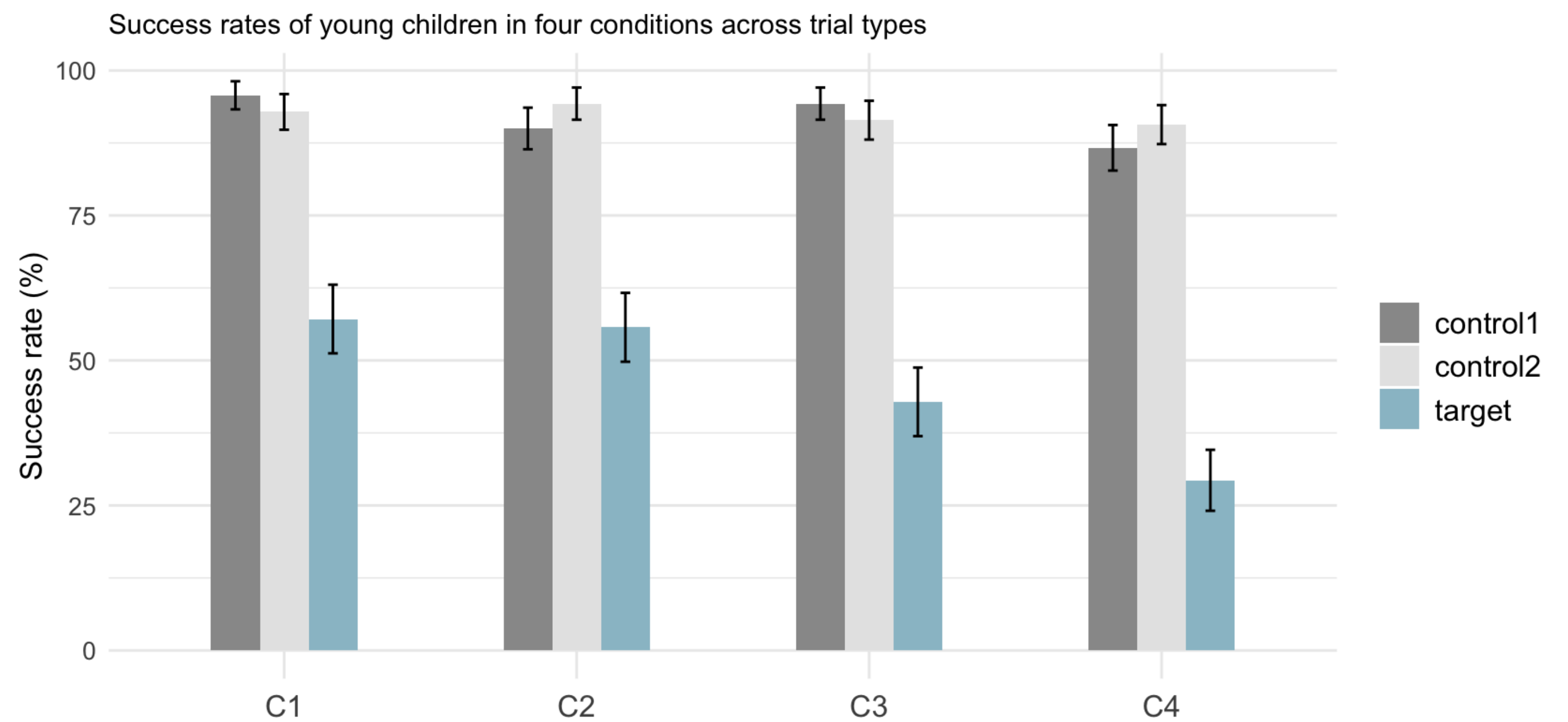
	C1	C2	direction	C3	C4	direction
Adults	<0.0001	<0.0001	greater	<0.001	<0.0001	greater
O.child	0.02	0.0005	greater	0.025	0.003	less
Y.child	0.14	0.2	greater	0.14	0.0002	less

Performance across conditions (Kruskal-Wallis test on mean success rates):

Adults	Older children	Young children
$\chi^2 = 4.5, p = 0.21$	$\chi^2 = 6.99, p = 0.072$	$\chi^2 = 4.94, p = 0.176$

Post-hoc comparison (Dunn’s test):

	Adults	Older children	Young children
C1 vs. C2	0.4	0.277	0.442
C1 vs. C3	0.02	0.07	0.14
C1 vs. C4	0.33	0.056	0.03
C2 vs. C3	0.04	0.019	0.178
C2 vs. C4	0.42	0.014	0.04
C3 vs. C4	0.05	0.45	0.22



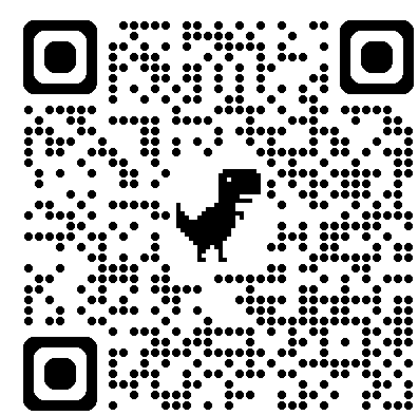
KEY REFERENCES

- Barner, Brooks, & Bale, 2011. *Cognition*
- Chierchia & colleagues, 2001. *25th BUCLD Proceedings*
- Gotzner & Colleagues, 2020. *Journal of Semantics*.
- Papfragou & Tantalou, 2004. *Language Acquisition*.
- Skordos & Papfragou, 2016. *Cognition*.
- Tieu & Colleagues, 2016. *Journal of Semantics*.

ACKNOWLEDGEMENT

- Lyn Tieu, University of Toronto
- Adina Camelia Bleotu, University of Bucharest
- Participating children and adults
- No conflict of interest to report

AUTHOR INFORMATION



Maumita Bhaumik
<https://maumitabhaumik.github.io>