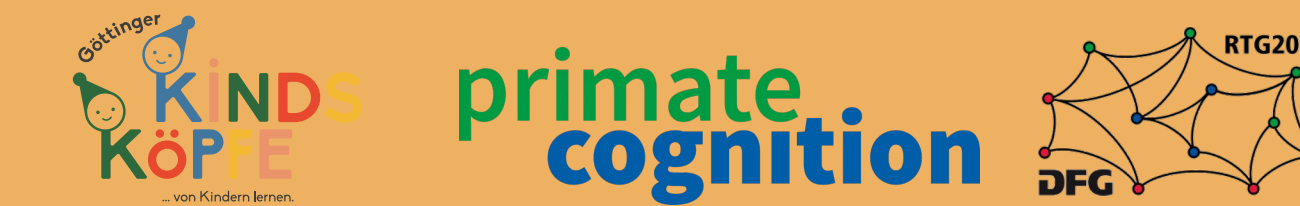


Inner conflicts: How children navigate ultra-intensional conflicts

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What are ultra-intensional conflicts?

- Dilemmas where the substitution of co-referential expressions are invalid, even though the different descriptions are known^{1,2}
- “quasi-cyclical preferences” and framing-effects^{1,2}



Pizza > Salad **deliciousness frame**

Pizza < Salad **healthiness frame**

“Nina prefers the pizza over the salad.”



“Nina prefers the unhealthy meal over the salad.”

Background

- Studies on children’s understanding of intrapersonal conflicting desires from a 3rd person perspective show different developmental onsets (5-11 years)^{3,4,5}
- 1st person understanding tested so far rather indirect → delay-of-gratification studies⁶

Research Questions

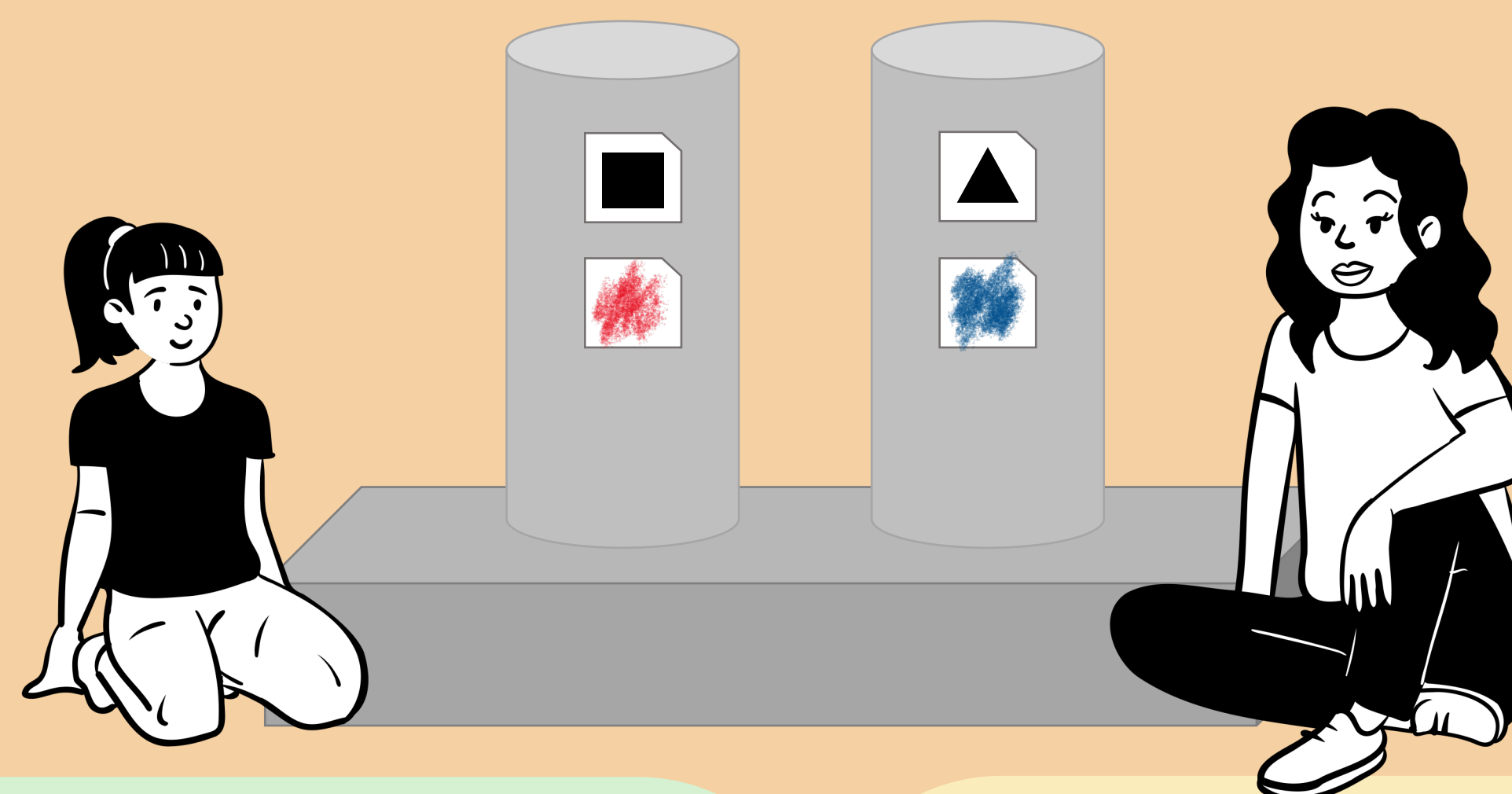
- 1) How and when do children grasp ultra-intensional contexts?
- 2) Does Theory of Mind underpin this cognitive ability?

Method



Study with 3- to 6-year-olds (N = 66)
2x2x2 design: condition (compatible vs. incompatible) x person (1st vs. 3rd) x type of trials (direct vs. indirect)

Color-shape sorting game



Compatible



Incompatible



Indirect trials (8x in total)

Child receives the token

- Reaction time
- Score of signs of conflict understanding: social referencing, game refusal, question asking, switching between tubes, etc.

Direct trials (8x in total)

- 1) “Where do you want to put that in?”
- 2) “Why?” (Justification)

Correct responses:

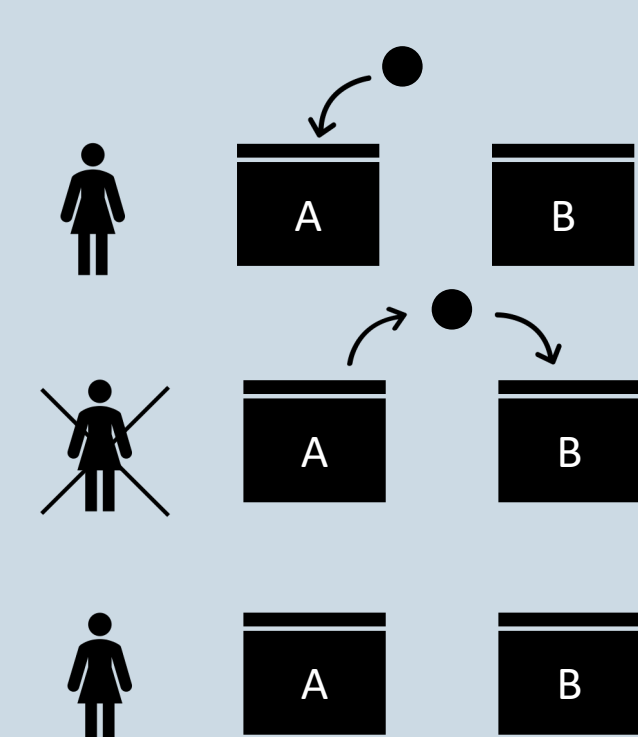
- 1) Sort by color and shape
- 2) Explanations containing both dimensions (color & shape)

Correct responses:

- 1) Game refusal / put it in both tubes
- 2) Explanations containing one dimension

False Belief Task

1) Action prediction⁷



2) Explanation question^{8,9}



“Where will she look for her X?”

“Actually, she went here to look for her X. Why did she go here?”

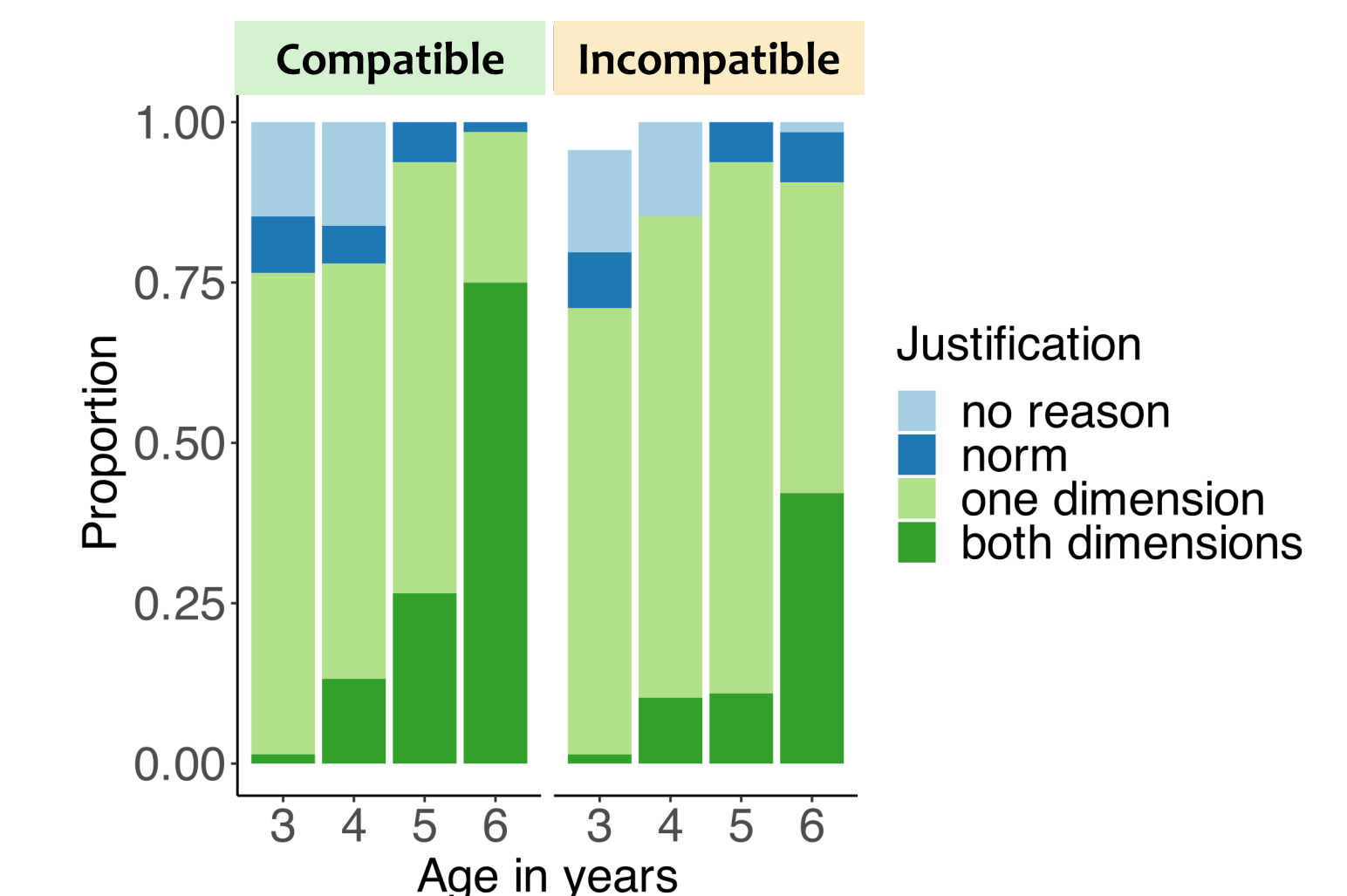
Results

Direct trials

1) Where do you want to put that in?

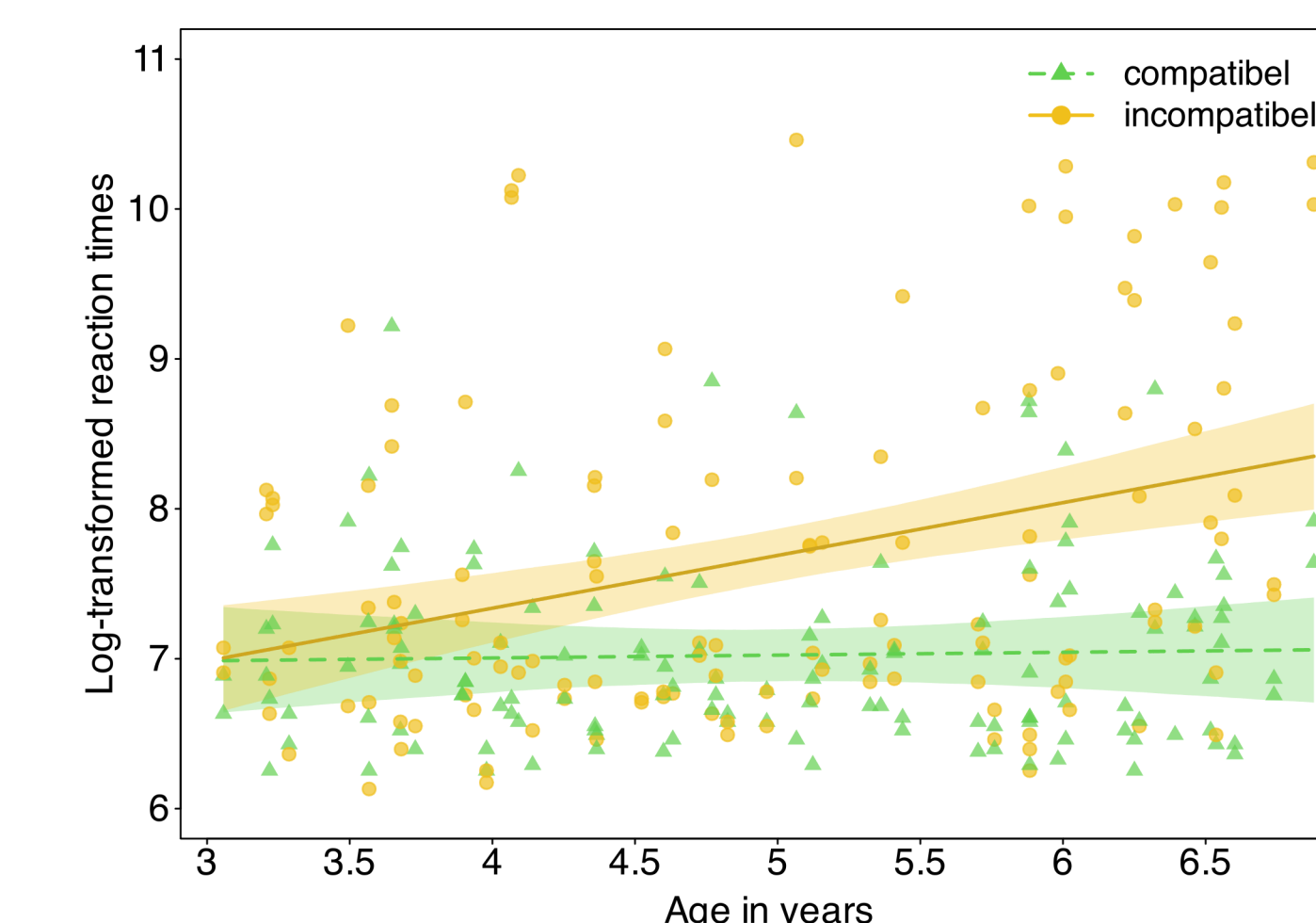
- Ceiling performance in **compatible** condition
- Floor performance in **incompatible** condition
- No condition*age interaction

2) Why? (Justification question)



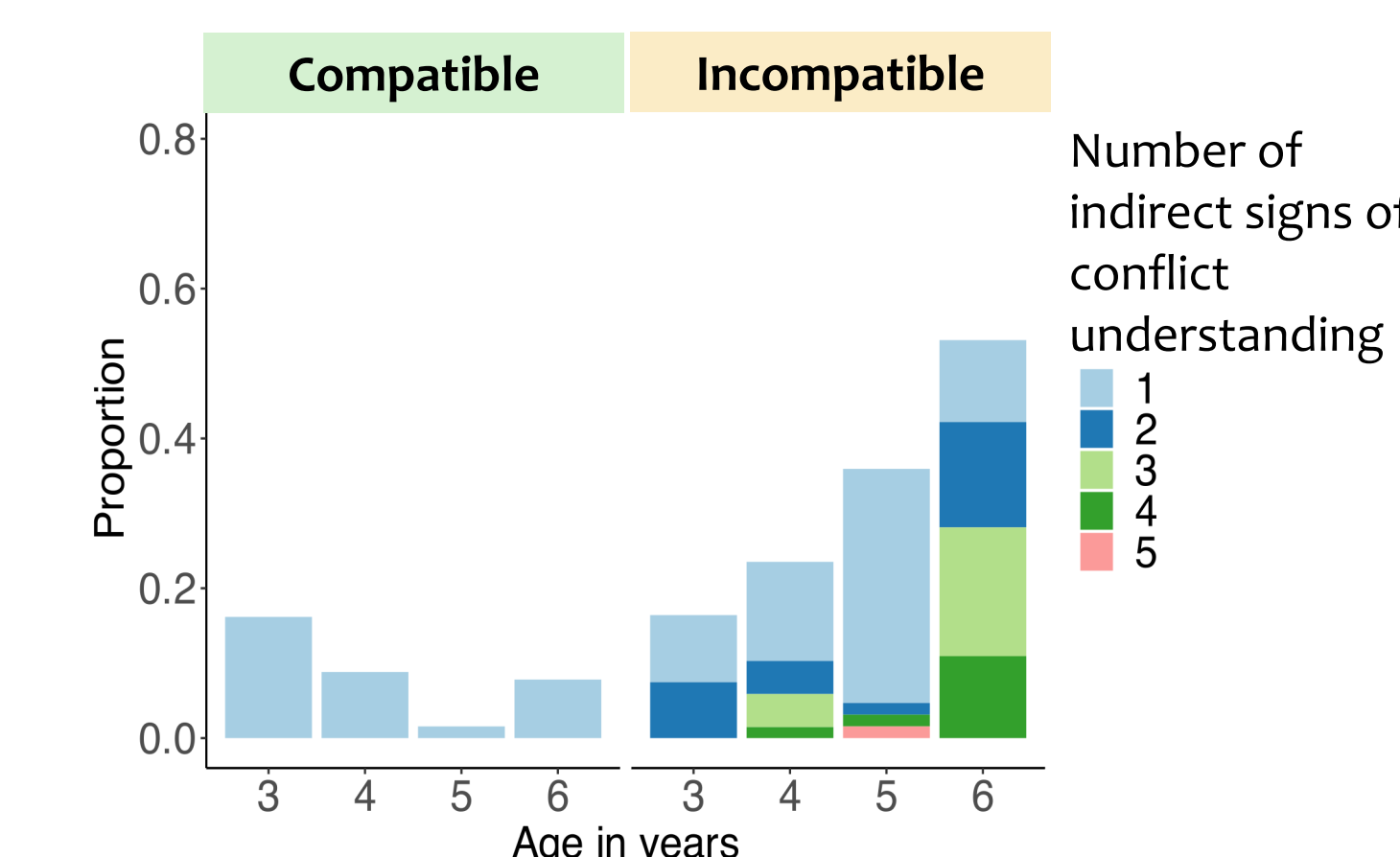
Indirect trials

reaction time (1st) ~ condition * age + trial + (1|id)



- **Condition*age interaction:**
 - Younger children show no distinction between conditions
 - Older children’s reaction times increase with age in **incompatible** trials but remain stable in **compatible** trials (b = 0.367, p < .001)

Score



Score contains:

- 34% social referencing
- 21% game refusal
- 4% question-asking
- 41% other forms

- **3rd person:** similar pattern; distinction in reaction times slightly later
- **No correlations with FB task or FB explanation score (controlling for age)**

Discussion

- Children begin to recognize ultra-intentional conflicts both in themselves and in other around their 4th birthday
- Evidence of conflict understanding across various indirect measures earlier than in direct measures
- Pragmatic demands of the direct question: “Where do you want to put it?” implies forced choice
- No correlations with Theory of Mind



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- References
1. Bermudez, 2020
 2. Bermudez, 2022
 3. Bennett & Galpert, 1993
 4. Choe et al., 2005
 5. Rostad & Pexman, 2015
 6. e.g., Mischel & Ebbsen, 1970
 7. Wimmer & Perner, 1983
 8. Perner et al., 2002
 9. Priewasser et al., 2013