

# Children's expectations of reciprocity in referential communication

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## Background

- Communication is a collaborative process governed by **rational expectations**.<sup>1</sup>
    - Listeners expect speakers to be appropriately informative, truthful, relevant and perspicuous.
  - However, in everyday talk exchanges, participants often **violate conversational expectations**.  
E.g., Speakers violate expectations of **informativeness** by offering less information than listeners need.
  - Although non adult-like, **children appear sensitive to such violations**, across a variety of phenomena.<sup>2-4</sup>  
E.g., Children give lower ratings to under-informative speakers (as opposed to fully informative ones)<sup>2</sup> and consider under-informative teachers as less helpful.<sup>3</sup>
- ### Current Study
- Is children's communicative behavior affected by whether a partner previously violated conversational expectations?
    - In the social domain, children do not share resources with uncooperative partners (defectors) who fail to reciprocate.<sup>5</sup>
    - In communication, would children adjust the amount of information they give to a conversational partner based on how informative (i.e., helpful) the partner was towards them in a prior interaction?

## Results

### Informativeness rating task

**Table 1.** Number of children who gave big or small rewards to the informative and under-informative puppets. Stars indicate statistically significant comparisons to chance (.5) in binomial tests.

reward	Informative puppet		Under-informative puppet		Total
	big	small	big	small	
4s	36***	2	8	29**	38
5s	34***	1	7	28***	35

\*\* p < .01, \*\*\* p < .001

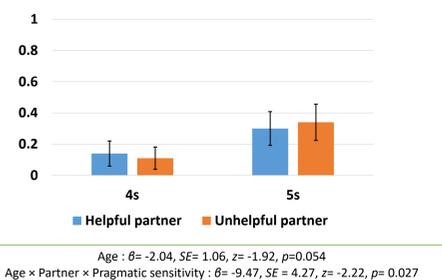
- Both 4- and 5-year-olds were more likely to give the appropriate reward to the informative rather than the under-informative puppet ( $\beta = -9.09$ ,  $SE = 1.82$ ,  $z = -4.97$ ,  $p < .001$ ).

• Based on informativeness ratings, we coded children's **pragmatic sensitivity**:

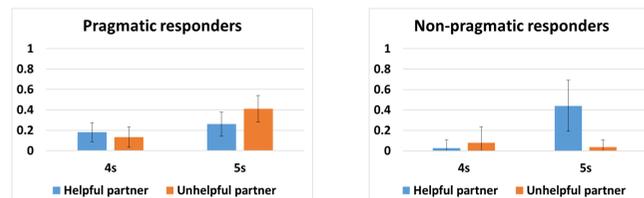
- **Pragmatic responders:** Children who gave the big reward to the informative puppet **and** the small reward to under-informative puppet.

### Referential communication task

**Figure 1.** Proportion mention of target modifiers by 4- and 5-year-old children in the helpful and unhelpful partner condition.



**Figure 2.** Results graphed for pragmatic and non-pragmatic responders separately.



## References

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## Methods

### Participants

38 4-year-olds (M = 4;6, range = 4;0 – 4;11) and 35 5-year-olds (M = 5;7 months, range = 5;1 – 6;0)

### Informativeness rating task

#### Introduction



E1: I will hide some stickers and Wendy and Sally will help you find them. Then, we will tell Wendy and Sally how helpful they were, so that they can do a better job next time. If they do a very good job, we will give them a big strawberry. If they don't do a good job we will give them a small strawberry.

#### Example trial



Children are presented with 3 containers.

E1 hides a sticker inside one container while the puppet watches.

Puppet (enacted by E2) offers a clue.

n = 4 (2 per puppet)

#### Puppet rating



E1: Was the puppet helpful? Should she get a big or a small strawberry?

Each puppet was rated after 2 trials

### 2 within-subjects conditions

#### 1. Informative/helpful puppet



#### 2. Under-informative/unhelpful puppet



### Referential communication task

**Task:** Children had to uniquely specify the target card (indicated by a red arrow) for the puppet. The puppet had a binder with the same cards as the children. The puppet's goal was to identify the right cards so that she could complete a board game and win a treasure.

#### Example trial



E.g., "It's the blue backpack".

Total of 16 trials (10 Test trials)

### 2 between-subjects conditions



Children described the pictures for the informative/helpful puppet.



Children described the pictures for the under-informative/unhelpful puppet.

## Conclusion

- Children were **sensitive** to speakers' violations of informativeness.<sup>2-4</sup>
  - Both 4- and 5-year-old children successfully awarded informative speakers with a big reward and penalized under-informative speakers with a small reward.
- Despite this sensitivity, preschoolers, overall, **did not tailor** their descriptions to **the informativeness of their partner** (with the exception of non-pragmatic responders).
  - Most 4- and 5-year-olds produced the same amount of modifiers, independently of the partner's helpfulness.
  - Contrary to our predictions, less (rather than more) pragmatically sensitive children produced more target modifiers for the sake of a helpful conversational partner.
- These findings leave open the possibility that **broad cooperation expectations** may **operate differently** in the communicative and non-communicative domains.
  - Perhaps children are more tolerant to violations of cooperation in conversation than other social interactions.