# Can Theory of Mind Improve Young Children's Strategic Behaviour?

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## What is strategic behaviour?

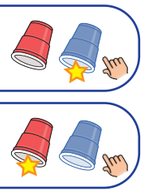
- An act that is intended to maximise self-gain when the interest of multiple parties are concerned. E.g., lying.
- It is an indicator of children's cognitive development and epistemic vigilance. It also facilitates social exchange.
- The emergence of such behaviour marks the maturity of children's social and cognitive ability, and predicts how well a person can function within a group. It is hence a normative and adaptive product of development.
- Children are capable of doing so starting from around 3 years old.
- For this study, we used the hide-and-seek task to test children's strategic lying behaviour:

Child hid a sticker under one of two inverted cups while the experimenter closed his/her eyes.

The experimenter asked the child where the sticker was.

If child told the truth, he/she lost the sticker.

If child told a lie, he/she won the sticker.



## What is theory of mind?

- An understanding that others can hold perceptions, emotions, and intentions that are different from one's own.
- There are 5 commonly tested theory-of-mind components, and this study focused on three of them:
  - Diverse Desires - others can have preferences different from one's own
  - Diverse Beliefs - others can have different beliefs about the same event from one's own, when one doesn't know which belief is the truth
  - Knowledge Access - others can have knowledge about an event that is different from one's own
  - Content False Belief - others can have the wrong beliefs about the contents of a container when one knows what is in it
  - Hidden Emotion - others' real emotions can be different from what they show on the outside
- Studies claimed that children begin to develop theory of mind around 3 years old.

## This study

- Based on the evidence of past research, our study explored the effect of diverse beliefs, knowledge access, and false belief on children's strategic behaviour.

**Pretest**
Hide-and-seek task
Theory-of-mind tasks

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**Training**

| Experimental Cond. | Control Cond. |
|---|---|
| Diverse Beliefs or Knowledge Access or False Belief | Conservation rules |

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**Posttest**
Hide-and-seek task
Theory-of-mind tasks

## What we found

- Theory of mind did not improve young children's strategic behaviour in general, only some children in the knowledge-access training group (those who passed the diverse-belief task in posttest) showed improvement in the posttest hide-and-seek task.
- Teaching children the concept of theory of mind according to their prior ability improved their theory-of-mind competence in that component in posttest.
- Children were more likely to pass the knowledge-access task after knowledge-access training, than to receive diverse-beliefs and false-belief trainings, and pass the respective theory-of-mind tasks afterwards.

## What should parents do?

**To improve theory of mind,**

- Take children's pre-existing theory-of-mind ability into consideration. Avoid teaching concepts that they have already understood, or concepts that are still too difficult for them to grasp.
- Provide evidence that matches children's current level of understanding.
- Provide timely confirmative or corrective feedback.
- For knowledge access, teaching over a single session should be sufficient; however more time and effort should be devoted for children to understand diverse beliefs and false belief. This may be due to the reliance of belief components on the abstract idea of thoughts. Parents may consider introducing the fundamental concept of thoughts at the start, before moving on to the more elaborate explanations of beliefs.

**To improve strategic behaviour,**

- Parents can assist children to master the concepts of diverse beliefs and knowledge access, as suggested by our results.
- Alternatively, according to a previous study, children's understanding of false belief also aids in their later strategy-use.

**THANK YOU FOR YOUR PARTICIPATION!**

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