

# The Theory of Mind Scale

Based on the 2004 article *Scaling of Theory-of-Mind Tasks*, by Wellman & Liu in *Child Development*, 75(2), 523-541.

Below is a progression of conceptual achievements that mark social cognitive understanding in typically developing preschool children. Performing these 5 items provides an accurate and reliable method of measuring this development.

## Diverse Desires

**Purpose:** test the child's understanding that different people may have different desires.

**Set-up:** Toy figure of adult. Paper with drawings of a cookie and a carrot.

**Instruction:** "Here's Mr. Jones. It's snack time, so Mr. Jones wants a snack to eat. Here are two different snacks: a carrot and a cookie. Which snack would you like best? Would you like a carrot or a cookie best?"

**If carrot is selected say:** "Well, that's a good choice, but Mr. Jones really likes cookies. He doesn't like carrots. What he likes best are cookies."

**If cookie is selected say:** "Well that's a good choice, but Mr. Jones really likes carrots. He doesn't like cookies. What he likes best are carrots."

**Target question:** "So, now it's time to eat. Mr. Jones can only choose one snack, just one. Which snack will Mr. Jones choose? A carrot or a cookie?" *[This is the own desire question.]*

**Scoring:** Correct score would be for the child to say the opposite response from his or her own desire. So if a child initially said cookie, and then it was explained that Mr. Jones likes carrots, the correct answer would be carrot.

## Diverse Beliefs

**Purpose:** test the child's understanding that different people can have different beliefs.

**Set-up:** Toy figure of a girl. Paper with drawings of bushes and a garage.

**Instruction:** "Here's Linda. Linda wants to find her cat. Her cat might be hiding in the bushes or it might be hiding in the garage. Where do you think the cat is? In the bushes or in the garage?"

**If bushes are selected say:** "Well, that's a good idea, but Linda thinks her cat is in the garage. She thinks her cat is in the garage."

**If garage is selected say:** "Well, that's a good idea, but Linda thinks her cat is in the bushes. She thinks her cat is in the bushes."

**Target question:** "So where will Linda look for her cat? In the bushes or in the garage?" *[This is the own belief question.]*

**Scoring:** Correct score would be for the child to say the opposite response from his or her own belief. So if a child initially said bushes, and then it was explained that Linda would look in the garage, the correct answer would be bushes.

## Knowledge Access

**Purpose:** test the child's understanding that perceptual access leads to knowledge.

**Set-up:** Plain, nondescript box. A small plastic toy dog is inside the closed box. Toy figure of a girl.

**Instruction:** "Here's a closed box. What do you think is inside the box?" *The child can give any answer or indicate that he or she does not know. Next, open the box and have the child look to see what is inside.*

"Let's see.... It's really a dog inside!" *Close the box.* "Okay, what is in the box?"

**Target question:** *Bring out the toy figure of a girl.* "Polly has never ever seen inside this box. Now here comes Polly. So, does Polly know what is in the box?"

**Memory question:** "Did Polly see inside the box?"

**Scoring:** Correct score would be for the child to answer both the target question and the memory question "no."

## Contents False Belief

**Purpose:** test the child's understanding that people may hold false beliefs.

**Set-up:** Clearly identifiable Band-Aid box. Plastic toy pig that fits inside the closed Band-Aid box. Toy figure of a boy.

**Instruction:** "Here's a Band-Aid box. What do you think is inside the Band-Aid box?" Next the Band-Aid box is opened. "Let's see.... It's really a pig inside!" Close the Band-Aid box.

**Target question:** Bring out the figure of the boy. "Peter has never ever seen inside this Band-Aid box. Now here comes Peter. So, what does Peter think is in the box? Band-Aids or a pig?"

**Memory question:** "Did Peter see inside the box?"

**Scoring:** Correct score would be for the child to answer both questions with "no."

## Real – Apparent Emotion

**Purpose:** test the child's understanding that facial expressions may not match how people feel inside.

**Set-up:** Sheet of paper with simple drawings of three faces: happy, neutral, and sad. Cardboard cutout figure of a boy drawn as though seen from the back so that the boy's facial expression cannot be seen.

**Instruction:** "This story is about a boy. I'm going to ask you about how the boy really feels inside and how he looks on his face. He might really feel one way inside but look a different way on his face. Or, he might really feel the same way inside as he looks on his face. I want you to tell me how he really feels inside and how he looks on his face."

"This story is about Matt. Matt's friends were playing together and telling jokes. One of the older children, Rosie, told a mean joke about Matt and everyone laughed. Everyone thought I was very funny but *not* Matt. But, Matt didn't want the other children to see how he felt about the joke, because they would call him a baby. So, Matt tried to hide how he felt."

**Memory question 1:** "What did the other children do when Rosie told a mean joke about Matt?"  
(Laughed. Thought it was funny.)

**Memory question 2:** "In the story, what would the other children do if they knew how Matt felt?"  
(Call Matt a baby.)

**Target feel question:** Pointing to the three emotion pictures: "So, how did Matt really feel, when everyone laughed? Did he feel happy, sad, or okay?"

**Target look question:** "How did Matt try to look on his face, when everyone laughed? Did he look happy, sad, or okay?"

**Scoring:** Correct answer would either be: a) *feel* = sad; *look* = happy or okay, (b) *feel* = okay; *look* = happy

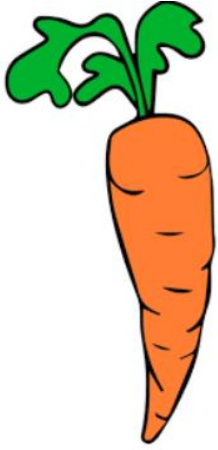
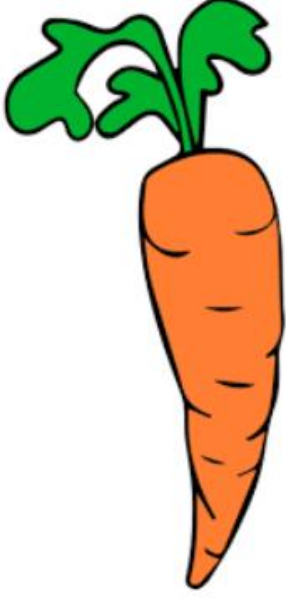
## Score Interpretation

If a child answers any target or memory question incorrectly, score them as incorrect (0) on that task. Wellman and Liu found that these five items formed a reliable scale, such that average performance by typical preschoolers decreased across the five tasks in the order they were presented as listed above. These results were replicated in typical preschoolers and deaf children and found that majorities of the deaf native signers and deaf late signers also matched the standard sequence. Results were based on 3 groups of 25 children ages 3, 4, 5 years.

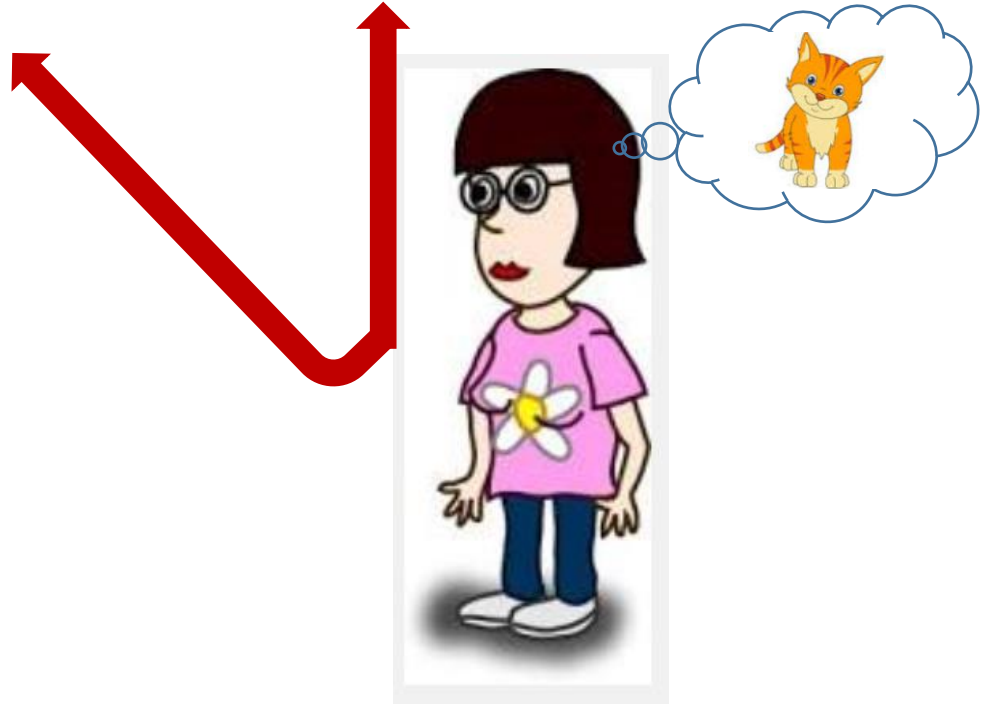
Average Age	Diverse Desires	Diverse Beliefs	Knowl. Access	False Belief	R/A Emotion
4 years 0 mon	+	+	0	0	0
4 years 6 mon	+	+	+	0	0
4 years 11 mon	+	+	+	+	0
5 years 4 mon	+	+	+	+	+

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Diverse Beliefs









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Real – Apparent Emotion

