

## Toddlers know when you are lying to them - even when they are just TWO years old

- Researchers used a simplified version of the 'false belief task' on toddlers
- It tests if children understand when someone thinks differently from them
- The researchers found that kids as young as two-and-a-half were aware
- This same ability allows them to recognize when people lie, cheat, pretend

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PUBLISHED: 19:24 GMT, 29 November 2016 | UPDATED: 19:27 GMT, 29 November 2016

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You might want to think twice before telling lies to your toddler – chances are, they know what you're up to.

In a new study, researchers tested the abilities of young children to understand when other people have different thoughts from them.

The team found that kids as young as 2-and-a-half years old are aware of others' 'false beliefs' and can correctly respond based on this information, suggesting they can also recognize when people are lying, cheating, or pretending.



In a new study, researchers tested the abilities of young children to understand when other people have different thoughts from them. Pictured, a child reacts to a question posed by NTU Assistant Professor Setoh Pei Pei (left)

An international team of researchers analyzed the behaviour of more than 140 children in the United States aged 2-and-a-half using a methodology known as the 'false belief task.'

This is used to determine if children fail to understand when others think differently than they do.

False beliefs are misconceptions that result from incorrect reasoning, and the researchers suspected it may be too advanced for children to understand, or there may be too much information for them to deal with at once.

Their findings are published in the Proceedings of the National Academy of Sciences.

The researchers simplified the traditional task, in which a character named Sally hides a marble in one of two containers and then leaves, not knowing that the marble is later shifted to the other container.

In this scenario, researchers typically ask where Sally will look for her marble.

While younger children point to the marble's new location, suggesting they do not understand Sally's false belief about its placement, children ages 4 and up often point to the original location.

In the modified version, the researchers used a story of 'Emma' and an apple, which followed the same format.

But, this time, the apple was taken to an undisclosed location.

Before asking where Emma will look for her apple, the team asked two additional questions, in which they were shown two object pictures and asked about the location of the object in question.

The researchers say this method helped to reduce the information-processing demand, making it easier for them to answer the ultimate question.

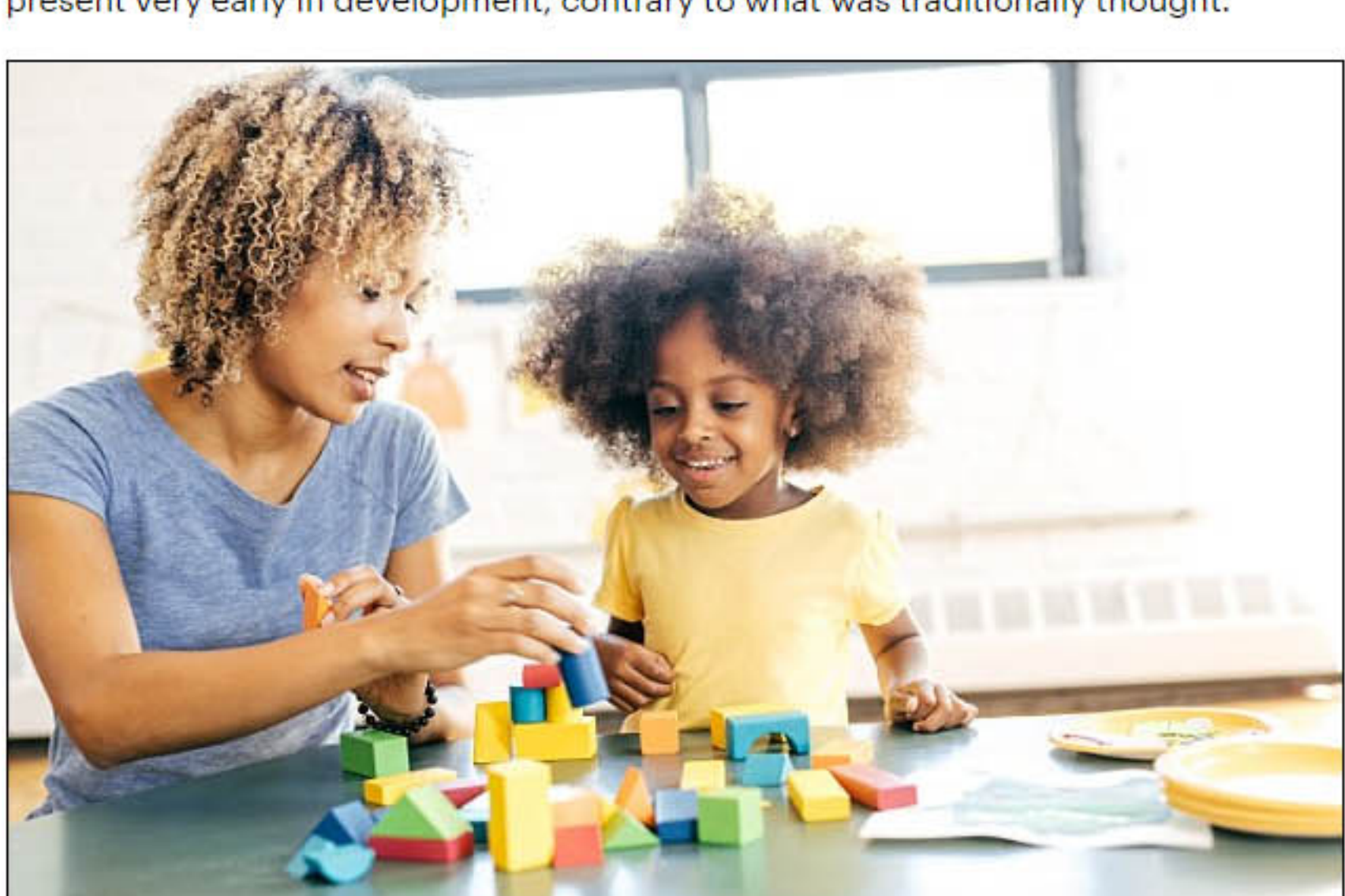
Story trial-1		"This is a story about a girl named Emma. Look! There's Emma!"
Story trial-2		"Emma finds an apple in a bowl."
First practice trial		"Where is Emma's apple?"
Story trial-3		"Emma puts her apple in a box for later."
Story trial-4		"Then she goes outside to play with a ball."
Second practice trial		"Where is Emma's ball?"
Story trial-5		"When Emma is gone, her brother Ethan finds the apple and takes it away."
Story trial-6		"Emma is hungry. She comes in to look for her apple."
Test trial		"Where will Emma look for her apple?"

The researchers simplified the traditional 'false belief task.' In the modified version, the researchers used a story of 'Emma' and an apple

As the children were able to answer correctly, the findings indicate that they are aware that others may hold different beliefs from them – far younger than previous studies have suggested.

'When children around the world are asked what someone with a false belief will do next, it is usually not until age four or five that they answer correctly,' said Renee Baillargeon, a psychology professor at the University of Illinois.

'Our study shows that when the task is made simpler, even two-and-a-half year olds succeed. So the ability to answer questions about persons with false beliefs is present very early in development, contrary to what was traditionally thought.'



The team found that kids as young as 2-and-a-half years old are aware of others' 'false beliefs' and can correctly respond based on this information, suggesting they can also recognize when people are lying, cheating, or pretending. Stock image

The researchers say young children are able to recognize false beliefs, but may not have been able to demonstrate this understanding due to information-processing overload.

In the next steps, some members of the team will be taking on three new studies related to this phenomenon in Singapore and Asia.

'Having the ability to represent false beliefs means recognising that others can have different thoughts from us,' said Assistant Professor Setoh Pei Pei, of Nanyang Technological University, Singapore.

'This ability enables children to recognise when others are lying, cheating, or pretending.'

'If parents believe that children do not understand complicated matters, they may tell simpler versions of the truth and 'dumb down' what they view as complicated content for kids.

'Our findings suggest that children may be able to spot when parents are doing this from as early as two-and-a-half years old.'

'Parents of young children and early childhood educators should be aware that children's early cognitive abilities may be more advanced than previously thought.'