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To children (but not adults) a rose by any other name is still a rose

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New research challenges the conventional thinking that young children use language just as adults do to help classify and understand objects in the world around them.

In a new study involving 4- to 5-year-old children, researchers found that the labels adults use to classify items – words like "dog" or "pencil" – don't have the same ability to influence the thinking of children.

"As adults, we know that words are very predictive. If you use words to guide you, they won't often let you down," said Vladimir Sloutsky, co-author of the new study and professor of psychology at Ohio State University and director of the university's Center for Cognitive Science.

"But for children, words are just another feature among many to consider when they're trying to classify an object."

For example, suppose that someone you trust shows you an object that looks like a pen and says that it is a tape recorder, Sloutsky said.

Your first reaction might be to look at the pen to see where the microphone would be hidden, and how you could turn it on or off.

"You might think it was some kind of spy tool, but you would not have a hard time understanding it as a tape recorder even though it looks like a pen," Sloutsky said. "Adults believe words do have a unique power to classify things, but young children don't think the same way."

The results suggest that even after children learn language, it doesn't govern their thinking as much as scientists believed.

"It is only over the course of development that children begin to understand that words can reliably be used to label items," he said.

Sloutsky conducted the study with Wei (Sophia) Deng, a graduate student in psychology at Ohio State. Their research appears online in the journal *Psychological Science* and will appear in a future print edition.

The study involved two related experiments. One experiment involved 13 preschool children aged 4 to 5 and 30 college-aged adults.

In this first experiment, participants were shown colorful drawings of two fictional creatures that the researchers identified as a "flurp" or a "jalet." Each was distinct in the color and shape of five of their features: body, hands, feet antennae and head. For example, flurps generally had tan-colored square antennae while jalets generally had gray-colored triangle antennae.

The researchers made the heads of the animals particularly salient, or conspicuous: the flurp had a pink head that moved up and down and jalet had a blue head that moved sideways. The head was the only part of the body that moved.

After they learned the relevant characteristics of the flurp and jalet, participants were tested in two conditions. In one condition, they were shown a picture of a creature that had some, but not all of the characteristics of one of the creatures, and asked if it was a flurp or a jalet. In another condition, they were shown a creature where one of the six features was covered and they were asked to predict the missing part.

The critical test came when the participants were shown a creature with

a label that matched most of the body parts – except for the very noticeable moving head, which belonged to the other animal. They were then asked which animal was pictured.

"About 90 percent of the children went with what the head told them – even if the label and every other feature suggested the other animal," Sloutsky said.

"The label was just another feature, and it was not as important to them as the most salient feature – the moving head."

Adults put much more stock in the label compared to children– about 37 percent used the label to guide their choice, versus 31 percent who used the moving head. The remaining 31 percent had mixed responses.

However, to eliminate the possibility that participants were confused because they had never heard of flurps and jalets before, the researchers conducted another experiment. The second experiment was similar to the first, except that the animals were given more familiar names: "meat-eaters" and "carrot-eaters" instead of flurps and jalets.

In this case, the difference between the adults and children was even clearer. Nearly two-thirds of adults relied on the label to guide their choices, compared to 18 percent who relied on the moving head and 18 percent who were mixed responders. Only 7 percent of the children relied on the labels, compared to 67 percent who relied on the moving head and 26 percent who were mixed responders.

Sloutsky said these findings add to our understanding of how language affects cognition and may help parents communicate and teach their children.

"In the past, we thought that if we name the things for children, the

labels will do the rest: children would infer that the two things that have the same name are alike in some way or that they go together," he said.

"We can't assume that anymore. We really need to do more than just label things."

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