Non-technical summary of: Cheung, R.W., Hartley, C., Monaghan, P. (in press) Receptive and expressive language ability differentially support symbolic understanding over time: picture comprehension in late talking and typically developing children. *Journal of Experimental Child Psychology*. An earlier pre-print is available here: https://psyarxiv.com/tjw72/

Summary of content:
This paper examines how children's understanding of pictures interacts with their language ability and social skills.

Children come to understand how pictures and real objects relate to one another gradually in the first five years of life. At 9-months-old, you might see babies interact with pictures the way they would with real objects – for example, trying to pull a picture of a ball off of the page, or trying to eat a picture of a biscuit that's on the box. However, by 18-months-old, children progress to talking about pictures and pointing at them. This suggests they might have some awareness from this age onwards about how a picture of a biscuit isn't quite the same as the real thing (and doesn't taste as good!).

Previous research suggests that as children begin to learn language, they use words to help them understand how a picture of an object will relate to the same thing. For example, having the label 'apple' may help children understand the difference between a picture of an apple, and a real life, edible, three-dimensional apple sitting in front of them. However, children make use of pictures in a social context – they are given lots of input from caregivers about what pictures represent. This means their understanding of pictures might be affected by not only their language skills, but also their social abilities.

We worked with a group of children who had typically developing language and compared them to a group of children who are late to talk. We saw these children at the age of 2 years, and then again at the age of 3.5 years. At both times, we tested them on how well they matched a picture of an object to two real-life objects. We thought carefully about how to match these objects in such a way that mean they couldn't use language in one condition, but could use it in another.

We looked at four things: 1) how well did the different groups of children do in each condition over time? 2) did this change depending on how many words they understood? 3) did this change depending how many words they said? 4) how did all of this interact with how sociable children were?

We found that children do better when they can use known words to choose a match. We also found that late talking children could still use words to help them understand pictures even though they have some language delay, although they struggled to match pictures as accurately as children who didn't have language delays. We also found that at the age of 2, it mattered more how many words children understood and how sociable they were, whereas at age 3.5, it mattered more how many words children said: children who understood more and were more sociable at 2-years-old did better on the task, whereas at 3.5-years-old, children who said more did better on the task. This suggests that very young children rely much more on understanding words and caregivers giving them lots of help to understand pictures, but as children age and begin to talk more and more, they move to actively participating in talking about pictures and learning about them through conversation instead.

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