Press Release

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Infants' language skills more advanced than first words suggest

Babies can recognise combinations of words even before they have uttered their first word, a study suggests, challenging ideas of how children learn language.

Assessments in 11-12 month-olds show that infants at the cusp of talking are already processing multiword phrases such as 'clap your hands'.

Researchers say the study is the first to provide evidence that young children can pick up and understand multiword sequences before they can talk or begin producing such combinations themselves.

The findings suggest that babies learn individual words and more complex phrases at the same time, which challenges the perspective that they progress from single words to phrases and sentences, experts say.

It may also explain why adults who learn a new language in later life by focusing on individual words often do not achieve native-like proficiency.

Linguists at the University of Edinburgh assessed 36 infants' language learning behaviour in a series of attention tests using recorded adult speech.

They looked at how the babies responded to multiword combinations of three-word sequences used in parent-child conversations.

The researchers compared the infants' responses using a testing method called central fixation, which measures infants' looking behaviour in response to sounds.

They assessed if the babies could distinguish more frequently used three-word sequences such as 'clap your hands' from similar but less common phrases such as 'take your hands'.

On average, fixation times were longer for the frequently used phrases. This pattern was found in 23 of the 36 infants.

Researchers say this suggests babies who are still learning their first words are simultaneously learning word combinations.

This development happens months before parents hear their children's first attempts at sequences of words, experts say.

Dr Barbora Skarabela, of the School of Philosophy, Psychology and Languages Sciences, said: "Previous research has shown that young infants recognise many common words. But this is the first study that shows that infants extract and store more than just single words from everyday speech. This suggests that when children learn language, they build on linguistic units of varying sizes, including multiword sequences, and not just single words as we often assume. This may explain why adults learning a second language, who tend to rely on individual words, often fall short of reaching native-like proficiency in the way they string words together into phrases and sentences."

The study is published in Cognition – https://authors.elsevier.com/a/1cYnj2Hx2luLz (doi.org/10.1016/j.cognition.2021.104612).

Researchers at the Hebrew University of Jerusalem contributed to the study.

For further information, please contact: Joanne Morrison, Press and PR Office, tel +44 131 651 4266, joanne.morrison@ed.ac.uk