



The first and the last



credits: Tobias Myrstrand Leander

Word “edges” are important for language acquisition

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Children start to learn the sound of words by remembering the first and last syllables. A SISSA study, published in *Child Development*, sheds light on the information the infant brain uses during language acquisition and the format in which it stores words in its memory.

If you're only seven months old, there's no difference between a “cinema” and a “cimena”. What infants accurately remember of a word is, in fact, only the first and last syllable. The middle syllables may even be jumbled, but to these little ears this will make virtually no difference. These are the main findings of a study carried out at SISSA and recently published in *Child Development* that uncovers the early mechanisms of word memory.

Infants start to learn words very early, during the first months of life, and to do so they have to memorise their sounds and associate them with meanings. The study by Silvia Benavides-Varela (now at the IRCCS Fondazione Ospedale San Camillo in Venice, but at SISSA at the time the study was performed) and Jacques Mehler, neuroscientist at SISSA, revealed the format in which infants remember their first words. In particular, the two scientists saw that infants aged about



seven months accurately encode the sound and position of the first and last syllable, whereas they have difficulty retaining the order of syllables in the middle.

“The edges of words are important for the words to be recognised”, explains Benavides-Varela. “In the sound of a word we can distinguish two sets of information: information about content, the actual sound of the single syllables, and information about the order in which the syllables are uttered. Our study demonstrates that the two formats, content and order, are dissociated from a very early age”.

The strategy used by infants should not be seen as a limitation for lexical learning, but rather as a feature of human memory that interacts with language learning mechanisms. The “supremacy” of edge syllables seems indeed to be pervasive at all ages (previous studies have shown that the same also occurs in adults) and could explain some linguistic regularities observed in human language. For example, when an element is added to a complete word, in most cases it is a prefix or a suffix, that is, a morpheme that is appended to the beginning or end of the word and not to the middle.

Other phenomena as well can be explained by the effect of word edges: for example, when mothers teach their infants new words they tend to put them at the end of sentences, a spontaneous – probably subconscious – strategy that could be effective in the transmission of important information to their babies.

IMAGES:

- Credits: Tobias Myrstrand Leander (<http://goo.gl/7CqZD2>)

USEFUL LINKS:

- Original paper on Child Development (<http://goo.gl/v39cLY>)

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