



FOR IMMEDIATE RELEASE

April 11, 2013

CONTACT:

Scott Hernandez-Jason, University Communications

Office: 209-228-4408 | Cell: 209-756-2368 | Email: shernandez-jason@ucmerced.edu

Emotional Flexibility of Infant Sounds Proves Critical to Language Development

The appearance of functional flexibility early in the first year of human life may have been a critical step in the evolution of human language

MERCED, Calif. — The squeals, vowel-like sounds and growls made by infants are critical to the development of human language, according a recent paper coauthored by a cognitive scientist at the University of California, Merced.

The [paper](#), published online by the prestigious Proceedings of the National Academy of Sciences, shows infants at 3 to 4 months old are able to use sounds to express how they feel about something, whether it's positive, neutral or negative. Called functional flexibility, this ability allows sounds to be distinct from their meanings and is a defining characteristic of language.

For example, an infant's growl could show that they're happy or angry. In contrast, crying and laughter tend to always represent the same emotional states.

Quick Facts

- A paper published recently shows infants at 3 to 4 months old are able to use sounds to express how they feel about something, whether it's positive, neutral or negative.
- The appearance of functional flexibility early in the first year of human life is not only a critical step in developing vocal language, but it may have been a critical step in the evolution of human language.
- Researchers studied nearly 7,000 sounds and faces the infants made to judge whether the expressions were positive, neutral or negative.

Cognitive science Professor [Anne S. Warlaumont](#) said the appearance of functional flexibility early in the first year of human life is not only a critical step in developing vocal language, but it may have been a critical step in the evolution of human language.

This behavior hasn't been reported in any nonhuman primates.

"Our findings demonstrate that some of the earliest sounds made by human infants have the characteristic of being very flexible with regard to the emotional states in which they're used," Warlaumont said. "For example, the same infant might one morning produce a squeal while happy and then later the same day produce a similar squeal while upset.

"We argue that this flexibility is a critical early prerequisite for language. If we want to look for the precursors to speech in nonhuman primates, we should look for sounds with this characteristic, rather than focusing primarily on sounds that are produced in very specific contexts, such as alarm calls."

In a room with toys and furniture, the researchers videotaped infants playing and interacting with their parents. Researchers studied nearly 7,000 sounds and faces the infants made to judge whether the expressions were positive, neutral or negative.

Warlaumont conducted the research as a doctoral student at the University of Memphis with first author Professor D. Kimbrough Oller. The paper, "Functional Flexibility of Infant Vocalization and the Emergence of Language," was co-authored by researchers at Idaho State University, the Milwaukee School of Engineering and Georgia State University.

###

UC Merced opened Sept. 5, 2005, as the 10th campus in the University of California system and the first American doctoral research university of the 21st century. Situated near Yosemite National Park, the campus significantly expands access to the UC system for students throughout the state, with a special mission to increase college-going rates among students in the San Joaquin Valley. It also serves as a major base of advanced research, a model of sustainable design and construction, and a stimulus to economic growth and diversification throughout the region.