

Mothers and infants connect through song

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As one of the first records of human music, infant-directed singing permeates cultural boundaries and parenting traditions. Unlike other forms of caregiving, the act of mothers singing to infants is a universal behavior that seemingly withstands the test of time.

On the surface, the exchange between mother and child may seem standard, but to Shannon de l'Etoile, professor of Music Therapy and associate dean of Graduate Studies at the University of Miami Frost School of Music, there is much more to the infant-directed song than meets the eye—and ear.

"We know from previous research that infants have the innate ability to process music in a sophisticated manner," explained de l'Etoile.

"Initially, I set out to identify infant behaviors in response to live infant-directed [singing](#) compared to other common maternal interactions such as reading books and playing with toys. One of the main goals of the research was to clarify the meaning of infant-directed singing as a human behavior and as a means to elicit unique behavioral responses from infants," she added.

Additionally, de l'Etoile explored the role of infant-directed singing in relation to intricate bond between mother and infant. In an initial study, she filmed 70 infants responding to six different interactions: mother sings an assigned song, "stranger" sings an assigned song, mother sings song of choice, mother reads book, mother plays with toy, and the mother and infant listen to recorded music. The results were promising, but also raised additional questions.

"High cognitive scores during infant-directed singing suggested that engagement through song is just as effective as book reading or toy play in maintaining infant attention, and far more effective than listening to recorded music," said de l'Etoile. "But what did the infant engagement tell us about the mother's role during the interaction?" she questioned.

de l'Etoile continued the study by focusing on the role of the caregiver during infant-directed singing by measuring the make-up of the song and the mother's voice.

"Findings revealed that when infants were engaged during song, their mother's instincts are also on high alert," said de l'Etoile. "Intuitively, when infant engagement declined, the mother adjusted her pitch, tempo or key to stimulate and regulate infant response."

While the intuitive adjustment of the song or singing voice seemed natural to most of the [mothers](#), de l'Etoile was inclined to dig further. In a study published in the *Journal of Music Therapy*, she explored the acoustic parameters in the singing voices of mothers with post-partum depression.

"The extraction and analysis of vocal data revealed that mothers with post-partum depression may lack sensitivity and emotional expression in their singing," stated de l'Etoile. "Although the infants were still engaged during the interaction, the tempo did not change and was somewhat robotic."

According to de l'Etoile, for mothers with postpartum depression, infant-directed singing creates a unique and mutually beneficial situation. Through song, the infants are provided with much-needed sensory stimulation that can focus their attention and modulate their arousal. Simultaneously, mothers experience a much-needed distraction from the negative emotions and thoughts associated with depression, while also feeling empowered as a parent.

"Mothers around the world sing to their infants in remarkably similar ways, and infants prefer these specialized songs," she said. "The tempo and key certainly don't need to be perfect or professional for mothers and infants to interact through [song](#). In fact, [infants](#) may be drawn to the personalized tempo and pitch of their mother, which encourage them to direct their gaze toward and ultimately communicate through this gaze," added de l'Etoile.

Provided by University of Miami

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