THE UNIVERSITY OF TEXAS AT DALLAS

INFANT LEARNING PROJECT

Developments

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Current News...

Did you bring your 6-month-old to the lab to watch videos on the eye-tracker of women speaking in an approving or comforting manner?

► ***We have the results of that study!***

For her Master's thesis, Claire Noonan analyzed the visual scanning patterns of 6-month-olds as they viewed videos of women speaking approving and comforting infant-directed speech. Results showed that, for both silent videos and videos with sound, infants looked more at comforting eyes than approving eyes. This is actually consistent with adults, who look more at sad eyes than at happy eyes to gather important emotional information. Analyses also indicated that, in both silent videos and videos with sound, 6-month-olds looked longer at the viewer's left side of the face. This finding supports the hypothesis that emotions are processed in the right hemisphere, and this occurs more for positive emotions. Finally, results showed that when viewing silent videos, infants looked more at the mouth than the eyes. However, for videos with sound, infants looked equally at the mouth and the eyes. This increased attention to the eyes during naturalistic interactions with sound may signal to the mother that her infant is focusing on her, which encourages her to continue the interaction. The results of this study will be presented at the *International Conference on Infant Studies* this July in Berlin, Germany!

Current Projects

1 Visit: 6-month-olds

Infant participants will view synchronous and desynchronous videos of women speaking on an eye-tracking monitor, and their attention to the stimuli will be recorded and analyzed.

Graduation Announcements

The Infant Learning Project would like to congratulate Claire Noonan, B.A., who will be graduating with her M.S. in Psychological Sciences in May! She will begin her Ph.D. in School/Child Clinical Psychology at Tulane University this fall on a full scholarship. Claire was an enormous asset to the lab for the past year and we wish her the best of luck in her future endeavors. We would also like to congratulate a former research assistant, Dolores Gonzalez, on graduating with her B.S. in Psychology and Child Learning and Development. Lastly, we would like to congratulate Mariah Fowler, B.S., on her acceptance to the Psychological Sciences M.S. program here at UTD! We thank Mariah for her valuable contributions this past year, and we wish her success as she continues her work in the lab over the next two years!

Infant Learning Project

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Thank You!

We thank our families for your participation. Without your support, our research would not be possible!

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Music Therapy & Premature Infants

Priscilla Jacob

At birth, a baby under 37 weeks gestation is classified as premature. Pre-term infants need specialized care and are often moved into a neonatal intensive care unit (NICU) in order for the health care staff to treat the high-risk birth. Although NICUs are crucial for the survival of premature infants, the NICU sound environment is full of harsh acoustic stimuli that may interfere with rest and growth in infants. It becomes difficult to control volume levels and other unpredictable patterns of the NICU sound environment. In an effort to counterbalance these conditions, previous research has supported the use of therapist-selected recorded music to improve critical areas such as weight gain and sleep. A recent study by Loewy, Stewart, Dassler, Telsey, and Homel (2013) looked at how certain organic elements of live music, as opposed to recorded music, are crucial for infants' recovery.

Data were collected across 11 hospitals in which 272 pre-term infants with respiratory distress syndrome, clinical sepsis, or small for gestational age received three live-music interventions. The first intervention used was a parent-preferred lullaby, sung live by the mother, associated with the family's history or tied to the family's culture or community. The other two interventions used special musical instruments: the Remo ocean disc and the gato box. The Remo ocean disc is an instrument used to simulate the fluid sounds of the womb; the disc is set to match inhalation and exhalation cycles of the infants. The gato box simulates the heartbeat an infant would hear in the womb. Infants' vital signs, activity levels, feeding and sleeping patterns in response to the three interventions were recorded and analyzed.

The use of lullabies and entrained instruments were found to help infants self-regulate. Lullabies sung live by mothers were shown to improve infants' activity levels; this suggests that live-vocal contact can sustain a quiet-alert state. The gato box was found to improve sucking and feeding behaviors. And the Remo ocean disc induced a quiet-alert state as well as improved oxygen saturation levels over time. All interventions improved long-term sleeping patterns and overall well-being of infants. Certain elements of live music, such as rhythm, timbre, and vocal tone, have therapeutic qualities that are beneficial to a growing premature infant.

The music therapy sessions included educating parents on the impact of their own breathing, heartbeat, and voice on their infants' behaviors. The building of parental assessment skills is crucial for infant well-being.

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Music Therapy & Premature Infants

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Parents are encouraged to hold infants skin-to-skin over the heart on the left of their chests while spending time with infants. Entraining parents' inhalation and exhalation patterns with their infants has also been found to benefit the babies. Another technique that parents were taught was making an "ah" sound which may provide a soothing vibratory experience for infants. The most beneficial aspect for both parents and infants was identifying their favorite lullaby or song of kin. Even for parents who would identify themselves as "bad" singers, it was important to realize that their voices are unique and recognizable to their infants, and ideal for providing intervention to ultimately improve their infants' state of well-being.

Source: Loewy, J., Stewart, K., Dassler, A., Telsey, A., & Homel, P. (2013). The effects of music therapy on vital signs, feeding, and sleep in premature infants. *Pediatrics, 131*, 902-18.

ISIS

Dr. Spence & Claire Noonan will be attending the biennial **International Conference on Infant Studies** in Berlin, Germany. Claire will present a poster based on her Master's thesis titled, "Six-month-old Infants' Scanning of Meaningfully Distinct Audiovisual Infant Directed Faces." Dr. Spence will present a poster on Dr. Shepard's dissertation: "The Effects of Familiarity and Infant-Directedness on Six-Month-Olds' Visual Scanning of Talking Faces." Claire received a $1000 ISIS travel award and a $200 M.S. award to attend!

Enhanced Handling, Positioning & Motor Development

Sarah Rouhani

Shortly after birth in many Non-Western cultures, caregivers use formal handling techniques in order to give their newborns familiarity with body movements. This results in infants' sitting, standing, walking and body control abilities emerging months earlier than the average Western infant. Lobo and Galloway (2012), from The University of Delaware, tested the efficacy of this enhanced handling and positioning during the course of infants' first year. Their study sought to test if three weeks of intensive handling and positioning would have any long-term effects on infant development.

In this study, the researchers tested twenty-eight 2-month-olds. Half were placed in the control group while the others were in the experimental group. In the control group, the caregivers interacted face-to-face with the infants while they were placed in supine position (flat on the back) for 15 minutes a day during the three-week period. The caregivers in the experimental group also interacted with the infants for 15 minutes a day, however they performed various advanced handling and positioning tasks. These tasks consisted of (a) the prone position (face down, backside facing up) in which the infant would practice holding up their head, (b) pulling the infant's body into a sitting position and lowering it down again to a supine position in order to familiarize their body with sitting, (c) swaying the infant's body while they were placed in a sitting or standing position in order to get them to practice keeping their body and head oriented upright, and (d) moving their hands from a lateral to a midline position. The overall benefit of these positions "allows for the infants to experience a variety of possibilities for action, views of the world, levels of arousal and social interaction, and postural and strength requirements"—all of which quickens their developmental process (Fogel, Messinger, Dickson, & Hsu, 1999).

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Enhanced Handling, Positioning & Motor Development

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Short-term changes appeared in the infants between 3 and 5 months of age. More than half of the infants in the experimental group began resting their hands midline rather than lateral when in the supine position at just 3 months of age. None of the infants in the control group displayed this skill until 4 months of age. When analyzing their reaching abilities, infants in the experimental group correspondingly showed an earlier development at 3.1 months while the infants in the control group did not exhibit this skill until 4.2 months. Long-term effects of the handling and positioning manipulation on infant motor behavior were also observed. Most infants begin to crawl between 8 and 10 months. This skill emerged in the infants of the experimental group at an average of 7.5 months of age, while the infants of the control group started to crawl at 8.7 months. The average age for an infant to walk independently is around 12 months. The infants of the experimental group began walking independently at 11 months of age while the control group didn't begin walking until 12.4 months of age.

It is evident that the infants in the experimental group were at an advantage in developing these specific skills due to their early exposure to the different positions and their experiences with different body movements. The infants in the experimental group learned how to coordinate their muscles and were given the opportunity to observe the world around them and process more sensory information. The researchers have concluded from this study that caregiver handling and positioning tasks can result in short- and long-term developmental changes in motor skill development and that experience with the infant's body, caregiver, and environment can advance specific behaviors, such as walking, crawling and reaching.

Source: Lobo, M., & Galloway, J. (2012). Enhanced handling and positioning in early infancy advances development throughout the first year. *Child Development*, *83*, 1290-1302.

We'd like to congratulate Kate Shepard, Ph.D., on her graduation from the UT Dallas Psychological Sciences program this past summer. Dr. Shepard conducted research with the Infant Learning Project and now owns a private practice in which she provides speech-language services to children in the North Dallas Area.

Shadow Me SPEECH THERAPY

For more information, please visit:

Shadow Me Speech Therapy
shadowmespeechtherapy.com

"Like" Infant Learning Project on *Facebook* to receive weekly information about infant research, child development and parenting!

NEW STUDENTS

We would like to welcome four new students to the Infant Learning Project!
We appreciate all of their hard work and enthusiasm in the lab.

Claire Noonan, B.S.
Mariah Fowler, B.S.
Aeshah Saib, B.S.
Priscilla Jacob
Sarah Rouhani
Ashley Neduvelil