THE UNIVERSITY OF TEXAS AT DALLAS

DEVELOPMENTS

Infant Learning Project

Fall 2018

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Infant Learning Project

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A Cross-Cultural Comparison of Infant Smiling

Madeline Hale

In industrialized societies such as the United States, infants are expected to begin smiling regularly at around 2 months of age due to the phenomenon referred to as the “2-month shift” and interactions with their caregivers. Many past researchers have contributed to the list of skills infants develop by their second month that include: a general increase in alertness, improved control of their head and gaze direction, maintaining visual attention on one stimulus, and studying the mother’s face.

It is considered that this shift in the infant’s cognitive abilities is not enough to explain the emergence of the social smile; regular interaction with the caregiver is also needed. This interaction comes in the form of motor mimicry for the infant where they precisely imitate the facial expression of their caregiver unintentionally (Meltzoff & Moore, 1988). Caregivers then will imitate the infant’s smile with their own smile, called affect mirroring (Gergely & Watson, 1999). This cycle of the infant and caregiver imitating each other ultimately leads to the infant learning how to intentionally produce a smile.

However, this explanation of social smiling is only applicable to Western societies that have an independent socio-cultural context. In such cultures caregivers emphasize the development of face-to-face interactions and the expression of positive emotions (Keller, 2007). The opposite of these societies are ones with an interdependent socio-cultural context. These cultures are found in more rural societies and emphasize body contact and calmness (Keller, 2007). Interdependent cultures inherently contain fewer face-to-face interactions than in independent cultures. Although, the infants in such societies would still experience the “2-month shift”, they have fewer caregiver-infant interactions to learn from.

Wörmann et al. examined how receiving less feedback on the importance of smiling in interdependent cultures would affect the development rate of the infant smile. The researchers compared the development of social smiling between an independent socio-cultural context (Münster, Germany) and an interdependent socio-cultural context (Nso, Cameroon).

Wörmann et al. entered the study with three hypotheses that predicted the dyads from the Münster sample would show a larger increase in the duration of smiling between the 6th and the 12th weeks, that the mothers and infants would imitate each other’s smile more at 12 weeks. To test these hypotheses, the investigators examined videos of spontaneous interactions between 24 mother-infant dyads from Nso and 20 from Münster. Investigators coded for mutual gazing, smiling, and smiling intensity for three minutes of each ten-minute video. Two mechanisms were then analyzed from the codes: maternal and infant imitation.

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Congradulations!

Dr. Emily Touchstone

was recognized with the 2018 Aage Møller Teaching Award by the School of Behavioral and Brain Sciences (BBS), an honor that reflects her impact on students. Dr. Touchstone is a UTD alumni herself, receiving both her masters and PhD from the University. She currently teaches both undergraduate classes, such as child development and language disorders in children, and graduate level courses in the Communication Disorders program. Dr. Touchstone is not only an amazing professor, she is also an avid researcher and alumni of the Infant Learning Project. Her current research interests include developmental perspectives on social cognition, language and literacy.

"I am thrilled to have received the Aage Møller Teaching Award, established by a man who continues to set standards of excellence in academia, It brings me great joy to teach the students at UT Dallas, to share in their process of learning, and to watch as they create and accomplish goals for their own success." -Dr. Emily Touchstone

A Cross-Cultural Comparison of Infant Smiling continued...

The analysis showed that both mechanisms occurred more frequently in pairs from Münster, Germany. At 12 weeks, the mother-infant pairs from Münster smiled at and imitated each other more often and for longer periods of time than the pairs from Nso. However, at 6 weeks old both the Münster and Nso groups smiled at each other for similarly short amounts of time. The fact that the amount of imitation and smiling increased from 6 to 12 weeks in the Münster group, but not in the Nso group leads to the conclusion that both materna and infant imitations are amplifying mechanisms for the development of social smiling. The skills enhanced by the 2-month shift alone are not enough to for the development of smiling in young infants. Imitation is needed to produce the frequent smiling of infants seen in independent cultures such as Germany.

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THANK YOU

We Greatly appreciate all of the infants and parents who have participated in our studies. Without you, our research would not be possible!

Other Research Opportunities at UTD

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An investigation of typical daily hassles and dinnertime interactions

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Patterns of Repetitive Behaviors in Toddlers with Autism

by: Hollis Ratiff

Autism spectrum disorder (ASD) is a complex developmental condition that is characterized by persistent challenges in social interaction, speech and nonverbal communication, and restricted/repetitive behaviors (American Psychiatric Association, 2013). In children with ASD, these characteristics are identifiable at very early ages, thus a diagnosis for ASD can be made when an infant is two years old.

In infants, restricted and repetitive behaviors (RRB's) are a potential early sign in identifying ASD. However, it is difficult to tease apart typically developing repetitive behaviors from repetitive behaviors associated with ASD. This is because typically developing infants also engage in stereotyped behaviors in the first year of life. The Infant Brain Imaging Study (IBIS) set out to explore repetitive behaviors in high-risk ASD infants to better understand how RRB's can be used for early diagnosis.

Researchers from IBIS recruited infants that were high-risk for ASD and low-risk for ASD. Infants who were high-risk were identified if they had an older sibling with a diagnosis of ASD whereas low-risk infants were identified if they had a typically developing older sibling. The study followed infants from 12 months to 24 months. During visits to the lab, parents completed the Repetitive Behavioral Scales (RBS-R) to categorize the repetitive behaviors seen in their infants. The RBS-R covers a broad range of repetitive behaviors such as stereotypical, self-injurious, compulsive, ritualistic, sameness, and restricted behaviors. Parents were told to rate their infant based on observations of the last month. At 24 months, the infants were assessed using the DSM-IV checklist and the Autism Diagnostic Observation Schedule (ADOS) to identify if the infant had autism. Low-risk infants who had autism were excluded from this study.

The infants were broken down into 3 groups: high-risk infants who were diagnosed with ASD (HR-ASD), high-risk infants who were not diagnosed with ASD (HR-Neg) and low-risk infants who were not diagnosed with ASD (LR-Neg). It was found that the HR-ASD group differed significantly from the high and low risk group without ASD on all measures of repetitive behavior. As early as 12 months, the broad range of repetitive behaviors are highly elevated for children who go on to have a diagnosis of ASD. Overall, the high-risk infants with ASD had significantly higher rates of repetitive behavior across all subtypes.

This evidence suggests that these early repetitive behaviors may be a readily observable early marker for ASD. Even though repetitive behaviors are an essential part of typical development, it seems that the extent of these repetitive behaviors in children with autism are atypical.

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