

The University of Texas at Dallas

DEVELOPMENTS

INFANT LEARNING PROJECT

SPRING 2020

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Infant Learning Project

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Infant Learning Project Team



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Stroller Versus Backpack: What Will Get Infants Talking?

ELIZABETH TRAVERS

Many parents employ a special mode of transportation for their infant during their first year of life. Strollers, in particular, are especially common among mothers. With so many developmental milestones occurring during this year, including several related to language, it can be of interest to parents whether their choice of infant transportation has any impact on these milestones. One of these milestones can include pragmatic language development. Pragmatics refers to the concept of using language appropriately and conversationally in different contexts. A study done by Mireault et al. in 2018 investigated whether choice of transportation modality makes a difference in pragmatic use of vocalizations in 7- to 11-month old infants. In this age group, infants start to vocalize recognizable syllables such as “ba” or “da.” They may even have some basic words down, such as “mama” or “no.” These new sounds and words are used more in a conversational format with parents during this stage of development.

This study specifically looks at a comparison between front-facing strollers and backpacks. The main differences between these two modes of transportation is the distance between the parent and the child and the angle at which the infant sits. In strollers, the infant is farther away from the parent and they are sitting in a reclined position. In a backpack, the child is very close to the parent, they share the same point of view, and they are sitting in a more upright position, which stimulates alertness.

This study hypothesized that there would be more vocalizations from both mother and child, and the child would more actively scan their environment while they are in the backpack, rather than the stroller (Mireault et al., 2018).

The study was done with 36 pairs of mothers and infants. Both mother and infant were wearing a Go Pro camera on their heads to record all interactions during the experiment. Each pair took an eight minute outdoor walk using a stroller and then repeated the process using a backpack. The results from this experiment were gathered from the GoPro video footage.

There were many interesting findings from this study. While in the backpack, infants showed more vocal initiative. They were more likely to actually start conversations, not just vocalize in response to their mother. This led to an increased amount of continuous conversations between mother and child. Because infants in the backpack are at around the same visual viewpoint as their mother and they are in a more upright position, there was also an increase in visual scanning of their environment. In the backpack condition, the total amount of time talking was longer for both parents and infants. In the stroller condition, parents spoke for an average of 52.37 seconds and infants spoke for 25.83 seconds. In the backpack condition, parents spoke for an average of 65.9 seconds and infants spoke for 29.56 seconds (Mireault et al., 2018). Parents reported that they were more likely to touch their baby while they were in the backpack rather than the stroller. This may be related to the shorter distance between mother and child while they are using the backpack.



These findings show that backpacks create more opportunities for conversations and language exposure with children than strollers. This is especially important as it is occurring during such a critical time in language and pragmatic development, the first year of life.

Talking to Kids about COVID-19

Many parents may be feeling uncertain on how to talk to their children about the novel coronavirus. This article by the CDC gives some great tips to help your children understand the current situation, and what they can do to stay healthy.

<https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/talking-with-children.html>



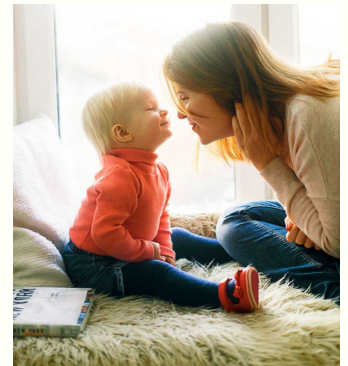
Santa Study!

UT Dallas' Think Lab is currently recruiting children to help with an online project on how children understand Santa Claus.

Children must be between the ages of 6 and 12 and have shared skepticism about Santa with a parent within this last year.

For more information or to sign up, visit <https://utdallas.edu/thinklab/santa-study/>

Families will receive a \$10 gift card for participating.



The Baby Brain Lab at UT Dallas is launching a new project that looks at how parents and their infants communicate, and how this communication supports infant brain and cognitive development.

Participation in this study involves completing 4 home language samples and 3 visits when infants are 6 months, 12 months, and 24 months old.

At each visit, infants will participate in developmental tests, have an MRI scan, and parents will complete questionnaires.

More information about the study and how to participate can be found here.

<https://labs.utdallas.edu/babybrainlab/information-for-families/>

Families can earn up to \$430 for participation in this study.

Pretend Play in Indicating later Infant Communicative Development

GINNI STREHLE



From having tea parties with their stuffed animals to playing war with their friends, children are infatuated with pretend play, but what are the benefits of this type of play on the child's development? A study done by Quinn et al. in 2018 worked to understand the differences in infant language development when infant-caregiver interaction occurred in either a symbolic play situation or a functional play situation. Pretend play, or symbolic play, is "the non-literal use of objects, actions or persons, typically in the spirit of enjoyment," (Quinn et al. 2018, p. 34). In other words, symbolic play is pretending that an everyday situation is something completely abstract. Symbolic play aids in the cultivation of symbolic development, which is when the child can begin to imagine new ideas and thoughts instead of being limited to what is in their surroundings as means for learning, which more fits the definition of functional play. Functional play is the practical form of playing, meaning the object itself defines its purpose or is defined by the caregiver during play. Along with the changes in thought about the world, symbolic play also is a strong influencer of early infant language development, but how much does symbolic play affect a child's development of language in comparison to "functional" play?

During this study, researchers observed the differences in two variables between the infant-caregiver dyad during play time: frequency and length of joint attention as well as gesture use. Joint Attention is the shared attention of an object between a caregiver and an infant in order for the infant to communicate "information and attitudes with attentive and helpful adults," that will strengthen the social interaction within the dyad (Moll & Tomasello, 2007, p. 705). Gesture use was also measured during the play times to measure non-verbal language development within the dyad. Two types of gestures were coded for: iconic and deictic. Iconic gestures are gestures that have some sort of representational meaning outside of the legitimate context of the interaction whereas deictic gestures are more declarative and indicative of where the infant or caregiver wants the attention to be focused during an interaction. Gesture use was important to acknowledge because it is an early precursor to future language development. In other words, "the infant does not have her first words; she does them," (Bates et al. 1983, p. 65).



Infants in this study were, on average, 18 months old and accompanied by their mothers. Each of the dyads were subjected to two 20-minute sessions of symbolic play and functional play, but caregivers were not directed to engage in symbolic play so that if symbolic play occurred, it would happen naturally. The difference between functional and symbolic play contexts was that in the functional playroom, toys had a specific purpose. For example, there would be a magnet drawing board in the functional playroom that was intended for drawing, but there would be a pan and spoon in the symbolic playroom so that the infant could pretend to cook a meal. By exposing the dyads to different contexts, it was observable how the play styles entailed varying levels of joint attention and gesture use rather than simply analyzing one play context or the other.

The study found that in symbolic play, dyads experienced more instances of joint attention and longer periods of joint attention than during functional play. This increase in joint attention symbolizes the idea that the symbolic play “context may foster infants’ burgeoning understanding of others as intentional social agents,” (Quinn et al., 2018, p. 44). It was also observed that in symbolic play, dyads were more likely to use iconic gestures, meaning a more abstract form of thought was being engaged in, and functional play dyads were more likely to engage in deictic gestures, a more robust and straightforward interaction with present stimulus. Gestures are said to be an “early form of naming similar to early spoken word use,” which indicates an early form of recognizing and producing the name of an object prior to verbally being able to name it (Quinn et al. 2018, p. 45). Quinn continues to discuss the importance of parental in-hand gestures during symbolic play by stating that parental gesture use is highly influential of infant gesture use, so the increased use of iconic gestures in symbolic play increase the child’s likelihood of thinking in an abstract way during pre-verbal and verbal communication (p. 45).

Symbolic play fosters the development of language in an 18-month-old infant. The increased frequency and length of joint attention is related to the increased use of representational gesture use, a pre-verbal milestone for early language development. In addition, the increased use of gestures in both play situations showed the development of production and comprehension of pre-verbal communication. Quinn pointed out how there may be cultural disparities in the emphasis and use of symbolic play in infants, so the next steps in this research is to isolate the testing variables, symbolic play and functional play, as much as possible and assess the differences in symbolic play and its effects across different cultures.





Congratulations

Meg Mickelsen

B.S. IN PSYCHOLOGY

Meg is graduating with BBS Honors for completing a research project and thesis titled *Paranoia Mediates the Relationship Between Attributional Bias and Suicidality in Schizophrenia Spectrum Illness.*

THANK YOU

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

Congratulations

Sarah Rehman

B.S. IN SPEECH-LANGUAGE
PATHOLOGY & AUDIOLOGY

Sarah will continue her education as a Master's student in UTD's program for Communication Disorders. She hopes to become a licensed speech-language pathologist and work with TBI and stroke patients.

