**Research Project Title:** Subordinate Clause Comprehension in Young Children

**Project Dates** --
**Begins:** October 2014 (pending IRB approval)

**Ends:** June 2015

**Principal Investigator:** Laurence B. Leonard, Ph.D.

**Research Assistant(s):** Sofía M. Souto, Ph.D., CCC-SLP

**Goals & Significance:** English-speaking children typically pass through a stage of language development during which they demonstrate variability in their production of grammatical morphemes marking tense and subject-verb agreement. During this stage, children may appropriately use the third singular –s (3S) inflection (e.g., The boy runs.) in one sentence, and then inappropriately use a nonfinite (NF) form (e.g. The dog eating.) in the next sentence, sometimes observed in multiple uses of the same verb. Previous research has proposed that the ungrammatical NF subject-verb sequence is not an instance of omission of auxiliary *is*, but rather the production of a NF verb with no underlying projection. These productions resemble grammatical structures in adult input subordinate clauses (e.g., I saw the dog eating.) and auxiliary initial questions (e.g., Is the dog eating?). The current study assesses children’s comprehension of the structural ties within sentences that include a sentence-final nonfinite subject-verb clause (e.g., The cow sees the horse eating) via a receptive task.

As young children demonstrate variability in tense/agreement morpheme use in early normal language development, children with language learning problems such as specific language impairment (SLI) demonstrate persistent difficulties in tense/agreement morpheme use beyond early childhood. One important reason to examine tense/agreement use in normal language development is that such examination may provide evidence that then can be used to inform the study of tense/agreement use in the speech of children with SLI. It is likely that factors that play a role in normal language development also play a significant role in the development of language learning problems.

**What will participants do?** Children will participate in a preliminary language screener to determine eligibility. The experiment requires children to point to the picture (from a set of four) on a computer screen that matches the sentence presented.

**For more information about this study contact:** Sofía M. Souto, ssouto@purdue.edu 765-496-0202 or 305-733-6027
Child & Family Research
Ben & Maxine Miller Child Development Laboratory School
Purdue University

**Research Project Title:** Multimodal Dramatic Play and Literacy Development in Preschoolers

**Project Dates**
- Begins: October, 2014
- Ends: August, 2015

**Principal Investigator:** Susan Britsch, Professor of Curriculum & Instruction, Purdue University

**Research Assistant(s):** to be determined

**Goals & Significance:** The proposed project focuses on multimodal play and literacy development in children aged three – five years. The project will integrate multimodal dramatic play with phonological awareness, print concepts, phonics, word recognition, literature texts, text types and purposes, print conventions, and expressive language, all of which are focal in the ISTAR-KR standards. The project will explore the connections children make between their dramatic play, the means of expression (modes) they use to enact this play, and their emerging literacy abilities as they begin to create and respond to print.

**What will participants do?** All of the children for whom consent and assent are obtained will be able to participate in the project; however, from this pool, 4-8 focal children will be selected and followed closely in terms of data analysis by the researcher throughout the project. All of the participating children will engage in multiple, 1-day dramatic play opportunities in the classroom’s dramatic play center. The teacher will follow up this dramatic play with focused oral and print literacy activities in large group time, based on the children’s activity and their creation of literacy products during dramatic play. Some of these follow-up activities will focus on print concepts; others will focus on narrative development. To facilitate the children’s understanding of narrative development, the use of small digital cameras will be gradually introduced as part of the children’s dramatic play. Each participating child will be provided with a Canon Power Shot A4000 IS camera to photograph the “story” of several of the dramatic play episodes. Sets of these photographs will be printed and may be used in the follow-up literacy activities during large group time so that the children can organize them into appropriately structured narratives.

**For more information about this study contact:** Dr. Susan Britsch, sbritsch@purdue.edu
Examples of Past Research Projects in the
Ben & Maxine Miller Child Development Laboratory School

The Ben & Maxine Miller Child Development Laboratory School collaborates in child and family research as a key aspect of their mission. We encourage researchers to consider pilot studies or major research projects with the children, families, and staff of MCDLS. Some examples of past research projects in cooperation with the teachers, children, and parents include:

Research Project Title: Computer mouse use among pre-school aged children
Principal Investigator: Nathan Mentzer, PhD, Assistant Professor, Engineering/Technology Teacher Education, College of Technology
Goals & Significance: Develop a new computer mouse product for the young students at CDL to use.
What will participants do? Be observed during regularly scheduled center time while using a computer mouse. Early in the term, we would observe them using the existing mouse. Later in the term, we would like to observe them using a mouse we develop. We would like to photograph their hand and mouse. Pictures will be cropped to prevent student identification, only the hand and mouse will be saved and used.

Research Project Title: Outlet safety and children
Principal Investigator: Jimmy Page, junior, Industrial Design
Goals & Significance: Try to get a better understanding of current outlet covers and their pros and cons.

Research Project Title: Child language research project
Principal Investigator: Pat Deevy, (765)-496-1821, deevy@purdue.edu, Dept. of Speech, Language, & Hearing Sciences
Goals & Significance: We are seeking 2 ½ to 3 year old children to participate in research activities concerning speech and language (10 30-40 min. sessions). Children must be native speakers of English. You will receive $9 per session, plus a free speech, language, and hearing screening for your child.

Research Project Title: Mothers and infants at home: An observation study
Principal Investigator: Nancy Longoria, HDFS doctoral student
Goals & Significance: The current study attempts to further the understanding of the nature of the relationships between maternal behavior in the home and concurrent infant socioemotional functioning. Results of the study will be utilized in the future to develop an intervention that may serve to enhance mother-infant attachment relationships, thereby promoting infant social and emotional development.

Research Project Title: Changes to speech as a function of language training
Project Dates: Begins: July 2011  Ends: July 2014
Principal Investigator: Peter Richtsmeier, Ph.D.
Research Assistant(s): Erica Berlin
Goals & Significance: We are looking at how hearing speech from different people (sometimes called talker variability) affects language learning in children. This is basic research that could someday lead to therapeutic techniques for children who struggle to produce accurate speech.
What will participants do? The experiment involves learning "alien names" (nonsense words), some of which children say. We measure how accurate children are when saying those words. We measure accuracy in terms of whether the alien names sounded correct and in terms of how consistently children articulate the names. For measuring articulation, we use small infrared (invisible) lights on the children’s lips and chin, as well as on a pair of goggles they wear (attached using double-sided medical tape), to track their mouth movements during speech. A special camera picks up the motion from the lights as the children talk. Five sessions over the course of five weeks are needed to complete the entire experiment.
For more information about this study contact: Dr. Richtsmeier, (765) 494-6472, prichtsmeier@yahoo.com
Research Project Title: Mothers and infants at home: An observation study  
Principal Investigator: Germán Posada  
Research Assistant: Nancy Longoria, HDFS doctoral student  
Goals & Significance: The current study attempts to further the understanding of the nature of the relationships between maternal behavior in the home and concurrent infant socioemotional functioning. Results of the study will be utilized in the future to develop an intervention that may serve to enhance mother-infant attachment relationships, thereby promoting infant social and emotional development.  
What will participants do? Mothers with an infant age 11 to 14 months are being recruited to participate in a home observations study. Mothers will complete a demographic questionnaire, and 3 additional questionnaires (maternal depression, infant temperament, and infant socioemotional development). Each mother-infant dyad will be videotaped completing a 10 minute play activity, and 10-minute teaching task. Each mother will complete a brief, 1-questions interview at the beginning of the home visit, and at the end of the home visit.  
For more information about this study contact: Germán Posada, Associate Professor, HNLY 248, (765) 494-1029 or Nancy Longoria, Research Assistant, HNLY 243, (765) 496-3470

Research Project Title: Input Sources  
Principal Investigator: Dr. Laurence B. Leonard  
Research Assistant(s): Dr. Pat Deevy  
Goals & Significance: We are testing the role of language input on language learning, in typical and delayed language learners. Specifically, we are interested in how verb inflections are learned because these are especially difficult for preschoolers with language delay.  
What will participants do? Children are taught novel verbs with or without certain verb endings; we then elicit the verb in the form it was heard and in a different form. These verbs are taught using puppets and stuffed toys in the context of “shows”. Standardized testing of language and a hearing screening are also completed over the course of the study.  
For more information about this study contact: Pat Deevy; 496-1821; deevy@purdue.edu

Research Project Title: Assessing Indiana’s Early Education Classrooms  
Project Dates: Begins: Data collection began April 2012  Ends: Data collection will end Oct 2012  
Principal Investigator: Michael Conn-Powers, PhD  
Research Assistant(s): Alice Frazeur Cross, EdD and Susan D. Dixon, MA, CCC  
Goals & Significance: We are investigating how preschool programs in Indiana compare with one another and with states that have established, publicly supported prekindergarten programs. The information will provide a sound snapshot of the strengths of Indiana’s early care and education programs; and will provide professional development resources sound information concerning areas needing improvement.  
What will participants do? First, pre-k teachers will complete a brief questionnaire concerning their backgrounds and typical daily schedules. Second, we will schedule a time to observe for one morning. This observation will be videotaped as teachers and children follow their typical, everyday routines. Later, we will analyze the video using two assessment measures. Once both measures have been coded, we will destroy the videotape.  
For more information about this study contact: Michael Conn-Powers at 1-800-825-4733 or mipower@indiana.edu

Research Project Title: Food preference vs. liking of food in preschool-age children  
Project Dates: Begins: August 2012  Ends: estimated end date May 31, 2013  
Principal Investigator: Dr. Sibylle Kranz  
Research Assistant(s): Lyndsey Huss, Mary Brauchla, Elisa Bastian  
Goals & Significance: Dietary intake behavior and food preferences are established early in life and persist for most individuals throughout the life cycle. Thus, teaching children to consume healthy diets and adequate amounts of food during early childhood may help prevent obesity and other diet-related diseases. To date, very little is known about young children’s taste preference development and data elucidating the ability of young children to discern various tastes, especially the possible presence of
thresholds of taste recognition would greatly support efforts of developing healthy foods that children will accept into their diets.

This pilot project was developed based on methods from a European study indicating that children taste sweet and salty, but not bitter consistently. We will conduct a series of taste-tests and conduct test-retest analysis to determine if children can discern the four basic tastes sweet, salty, sour, and bitter.

**What will participants do?** A taste threshold test will be given two times and the third test will be a taste test.

*Taste Threshold:* The taste threshold tests will examine how easily the children can taste sweet, salty, sour and bitter. Children will be offered 30 ml of taste solutions in distilled water: sweet, salty, sour and bitter. Children will compare the solution to plain water and indicate whether the test solution tastes like the water.

*Taste Preference:* Plain tap water will be used as main carrier solution and flavor (sweet, salty, sour, and bitter) will be added to the water. Eight sets of two cups of water each (one baseline and one with one of the flavors added) will be offered to the children with the request of trying the beverage and then moving their favorite choice from its original location onto a smiley face.

**For more information about this study contact:** Lyndsey Huss (lhuss@purdue.edu, 765-494-2461)

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**Research Project Title:** Preschoolers' literacy development through book reading  
**Project Dates:** Begins: Sep, 24th    Ends: Dec, 14th  
**Principal Investigator:** Dr. Aman Yadav, associate professor in department of educational studies  
**Research Assistant(s):** Ninger Zhou, graduate student in department of educational studies  
**Goals & Significance:** The purpose of this study is to explore how preschool children can improve literacy skills from reading books with their parents.  
**What will participants do?** Once enrolled for the study, parents will read the provided books with their children. There will be five reading sessions. The sessions will be completed in approximately one week. The following is a description of the tasks and duration for each session.

1. **First session:** The researcher will familiarize parent with the reading procedure for this study (10m). The parent and child will then read two stories together (20-30m). This session will be video recorded.
2. **Three at home sessions:** Parent and child will read two stories together on three separate days within a five-days frame (60-90m in total).
3. **Last session:** Parent and child will read two stories together (20-30m). The child will receive a picture vocabulary assessment (10-15m). The session will be video recorded.

*Note: The first and last session are conducted with the researcher at a place of parents' choice, such as their home, a place near the preschool, or a lab on Purdue campus.*

Participants will receive a book for free after completing all the sessions.  
**For more information about this study contact:** Ninger Zhou, zhoun@purdue.edu

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An investigation of the relation between task performance and perceptual processes in preschoolers. Dr. Laura Claxton, Health & Kinesiology

**Input sources of grammatical deficits specific language impairment.** Dr. Laurence Leonard & Pat Deevy, Speech, Language, & Hearing Sciences

**Preschool teachers’ characteristics and children’s math development.** Dr. Jennifer Dobbs-Oates, Ji Young Choi, & Sandy Liang, Human Development & Family Studies

**STEM in early education: A developmentally appropriate curriculum.** Dr. Demetra Evangelou & Katerina Bagiati, Ida Ngambeki, Diana Bairaktarova, Mary Pilotte, Engineering Education, and Christina Citta, HDFS Undergraduate Honors Student
Tinkering with pre-school technology. Dr. Todd Kelley, Industrial Technology; Dr. Patrice Buzzanel, Communication; Dr. Daphene Koch, Building & Construction Management; and Dr. Mary Johnson, Aviation Technology

Taste testing of high-fiber foods. Dr. Sibylle Kranz, RD, Dr. Jennifer Zuercher, RD, Lauren Boyer, Mary Brauchla, MPH, Eva Grace, Katie Lansing, & Lyndsey Maxwell, Nutrition Science

Effects of timing or serving dessert on young children's intake of food. Dr. Sibylle Kranz, RD, Lyndsey Maxwell, Lauren Boyer, Megan Wenger, & Christina Cook, Nutrition Science