



LANGUAGE LINKS

NEWSLETTER OF PURDUE UNIVERSITY CHILD LANGUAGE RESEARCH PROJECTS

SPRING 2009

Welcome	1
Get Ready For Summer Fun!	1
Talking About The Past.....	2
Purdue Stuttering Project Update	2
Parent Tips: Children's Speech Development.....	3

WELCOME

This is the seventh issue of *Language Links, the Newsletter of the Child Language Research Projects* in the Department of Speech, Language, and Hearing Sciences at Purdue University. Through this publication, we strive to keep in touch with families who have participated in our research, as well as people who have referred families to our programs.

In this issue, you will find news about research findings from the Stuttering Project and from Summer Fun, an article about what to expect in your child's developing ability to pronounce sounds in words, and information about upcoming programs. We are grateful for the contributions that you have made to our research, and we hope that you find this newsletter interesting and informative!

Department of Speech,
Language, and Hearing Sciences

www.cla.purdue.edu/slhs

GET READY FOR *SUMMER FUN!*

With spring around the corner, the Child Language Research Lab is beginning to look for participants for the 2009 Summer Fun research and therapy program. The program combines language research with speech-language therapy for eligible 4- and 5-year-olds, and will run this year from June 16 through July 9. The sessions will be held on Tuesday, Wednesday and Thursday mornings from 9:00 to 11:30am.

*The Summer Fun Program
combines language research
with speech-language therapy
for eligible 4- and 5-year-olds.*

During Summer Fun, children participate in general preschool activities and a variety of fun and language-enriching experiences. They paint t-shirts, have a pretend camping trip, march in a 4th of July "parade", and sell lemonade at a stand. Each Summer Fun

participant has individualized communication goals, which are addressed during daily half-hour therapy sessions, as well as in the classroom. Children may work on articulation, descriptive language, social communication, and school readiness skills. Parents are provided with progress summaries and reports of their children's test scores, and they have the opportunity to meet with clinical staff at the end of the program to discuss their child's progress.



Eligibility- to participate in the Summer Fun program, children must be between

Summer Fun! continued on page 2

SUMMER FUN PROGRAM
(765) 496-1821 or (800) 691-4700

CHILD LANGUAGE RESEARCH LAB
(765) 496-1821 or 496-2253

DEVELOPMENTAL SPEECH
PRODUCTION LAB
(765) 494-1669

PURDUE STUTTERING PROJECT
(765) 496-6403 or (866) 360-0051

TALKING ABOUT THE PAST

When children begin to produce short sentences, they usually talk about the “here and now” – that is, their sentences describe events that are unfolding around them, as they are speaking. Gradually, of course, children begin to talk about events in the past. Usually these are events in the very recent past, such as when children note that something has just fallen down.

When young children begin to talk about events in the past, it is not always clear that they are trying to convey that the event occurred in the past; instead they may be stating that the event had just been completed. There is an important difference. We can refer to completed events by saying, for example, “When we arrive this evening, Mom will have already baked the cookies.” In this sentence, “cookie-baking” is a completed event, but we are referring to something in the future! On the other hand, the sentence “Yesterday I was painting my house,” does not tell whether the painting was completed, only that it was occurring yesterday.

It seems that many children first focus on completed events and then gradually figure out that past events do not have to emphasize completion. Recently, we have conducted studies that show that many young children do seem to focus on completion when they hear past tense. In our study, a toy character (such as Elmo) performed an action (emptying a cup of beads) at two locations along a path.

Summer Fun! continued from page 1

4 and 5 years of age by June 1, 2009 and demonstrate a significant delay in language development without accompanying medical problems, hearing impairment or other developmental delays. Eligibility testing will take place this spring. Families receive \$8 per session for testing, and the program is provided at no cost to families. For more information about this program, contact Pat Deevy before April 1 at (765) 496-1821, (800) 691-4700, or deevy@purdue.edu.

At the first location, he performed the action in one of two ways: he either emptied the cup all the way or emptied it only partially. He then moved on to the second location and began emptying the other cup. As he did this, the child was prompted, “Show me where Elmo *was* emptying the cup”. We found that children were much more likely to point to the location of the first cup if the cup had been completely emptied than if it had not.

Importantly, we found that some children with language problems do not seem to understand requests like this, even when the event had been completed. On hearing the above prompt, these children are likely to point to Elmo in the process of emptying the second cup rather than to the first location, regardless



of whether the first cup had been completely emptied or not. This suggests that these children may be insensitive to completion cues. If completion cues help most children start to figure out past tense, it may be necessary to specifically point these cues out to some children, so that their understanding of past tense does not continue to lag behind. We are currently exploring this possibility.

Purdue Stuttering Project Update

Drs. Anne Smith and Christine Weber-Fox are conducting a long-term study of young children who stutter, funded by the National Institutes of Health. The children are first seen when they are 4 or 5-years-old, and are seen yearly for a period of 5 years. During each yearly visit, the children’s speech, language, and hearing abilities are assessed. The children also participate in physiological testing, including assessment of their speech motor control and studies of how the brain processes sounds and language. The goal of the project is to determine if the results of these tests will help predict which 4 and 5-year-olds who are stuttering are likely to persist, while others may recover from stuttering.

During one of the speech production tasks, the motion of the lips and jaw are recorded while the child produces “novel non-words.” These are words like “mab” which sound okay in English, but which are meaningless. The children produce five non-words of increasing difficulty, so that “mab” is the easiest one and “mabshaytiedoib” is the most difficult. Results so far have shown that all of the children could produce “mab” correctly. However, on the more difficult non-words such as “mabshibe,” only about 25% of the 4 and 5-year-olds who stutter could accurately produce them, while about 88% of 4 and 5-year-old children with typically-developing language could produce all of the non-words correctly. Furthermore, the children who stutter were significantly more variable in their oral coordination patterns over 10 fluent productions of “mab,” even though this non-word was quite short and simple. Clearly, the children who stutter do not do as well when asked to produce new and unfamiliar speech sequences, and their underlying patterns of speech movement were different.

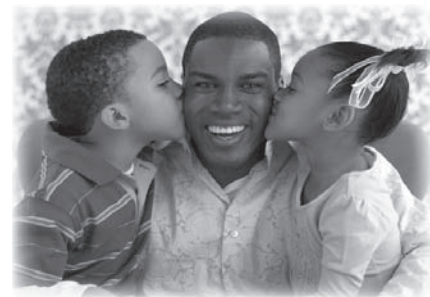
Are the children who perform most poorly on this non-word repetition task the ones most likely to persist in stuttering? We will be able to answer that question in the later years of this project. We hope that knowing which children are at the most risk for continued stuttering will allow us to provide them with more effective and efficient treatment.

PARENT TIPS: CHILDREN'S SPEECH DEVELOPMENT

Language development in young children typically proceeds slowly at first but rapidly becomes more and more adult-like. We treasure our children's mispronunciations during the relatively short time that they occur. However, some parents express concern about whether their child's errors are typical for their age, and wonder when they will outgrow them. In this article, we will talk about why children's speech does not become adult-like at least until the school years.

The accurate production of speech is in fact extremely complex and difficult. To produce a simple word, such as "dog," a child must coordinate their breathing with their voice and with their tongue

and lip movements. For the "d," the tongue is in the front of the mouth and for the "g" in the back of the mouth. Children not only have to develop complex motor skills, but also to learn what sounds and sequences of sounds are important for their specific language. For example, "b" and "p" are meaningful in English; just by changing this simple sound, the child changes the word from "big" to "pig". For some children, learning the sound rules is very difficult. In sum, to learn to talk, children have to develop very complex motor skills and to learn the rules about sounds that are specific to their language. It is no wonder that it takes quite a while for children to become accurate in their production of speech sounds!



If you are concerned about your child's speech, you may contact a speech-language pathologist through your pediatrician or Purdue's Speech and Hearing Clinic (494-3789). Free public services are available also. If your child is under 3, contact First Steps of Indiana (420-1404). If your child is 3 or older, contact Greater Lafayette Area Special Services at 476-2900.



Project Seeks Children Who Stutter

We are seeking children who stutter to participate in a study of speech motor development conducted by Professors Anne Smith and Christine Weber-Fox in the Department of Speech, Language, and Hearing Sciences at Purdue University.

- Children must be 4 or 5 years of age.
- Free assessment of child's speech, language, & hearing.
- Families of eligible children will receive \$100.00 per year to help cover time and transportation costs.

For more information or to schedule an appointment contact:
Barbara Brown
brownb@purdue.edu or
(765) 496-6403 or toll-free at
(866) 360-0051.

WHAT TO EXPECT IN YOUR CHILD'S SPEECH DEVELOPMENT

How well should others (i.e., outside the family) be able to understand our child?

- ☆ By age 3, speech should be 50-75% intelligible
- ☆ By age 4, speech should be 80-90% intelligible
- ☆ By age 5, speech should be 100% intelligible (although errors on **r**, **s**, **th** may remain)

When do children typically acquire specific sounds?

- ☆ 0 - 2 years: **p**, **b**, **m**, **n**
- ☆ 2 - 3 years: **d**, **t**, **h**, **w**
- ☆ 3 - 4 years: **k**, **g**, **f**, and **y** (as in *yellow*)
- ☆ 4 - 6 years: **l**, **s**, **z**, **v** (distorted production of **s** and **z** may occur until age 7)
- ☆ 4 - 6 years: **ch**, **sh**, **j** (as in *judge*)
- ☆ 5 - 7 years: **th** and **r**

The kinds of errors children make are somewhat predictable. Below are common ways that children change the pronunciation of words and ages at which they stop demonstrating these.

These processes typically disappear by age 3:

- ☆ Dropping the final sound (saying *bi* for *big*)
- ☆ Dropping a syllable (saying *nana* for *banana*)

These processes typically disappear after age 3, usually by age 5:

- ☆ Cluster reduction (*top* for *stop*)
- ☆ Fronting (*tee* for *key* or *dum* for *gum*)
- ☆ Stopping (*tun* for *sun* or *doo* for *zoo*)

PURDUE

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