



The Building Blocks of Language in Early Childhood

by Joy Simpson

Part 1: What We Know about Communication between Infants and Parents

Baby's first word is a day as jubilant as the first time she walks. It is a momentous occasion in the life of a family.

What parents may not realize is the "important day" sticker should also mark an event that goes like this: Baby finishes her bottle, says "aah" and hands it to mommy. "Ahh" doesn't sound like a word, but baby has added a helpful gesture. She's communicating! Another feat between the ages of 8 and 12 months is: Baby looks at daddy and points at the passing kitty cat. Another: Baby looks at her favorite doll on the shelf, looks at mommy's face and back to the doll. These acts communicate baby's desires and interests, and for this reason, they represent a critical stage in prelinguistic development.

Communication is a complex dance of thinking, moving, hearing, imitating, and eventually interacting. Infants use each of these functions. And they learn, in time, that it takes two to dance. The growing rapport between parent and child is critical in the early years, says Steven F. Warren, professor of human development and director of the Schiefelbusch Institute for Life Span Studies at the University of Kansas. According to his research with Paul Yoder at Vanderbilt University, Warren says, "Once the baby is able to interact, mommy and baby will engage in give and take, sound and gesture in a way that actually stimulates the child's development."

For families whose children have developmental disabilities, the steps of the dance aren't always clear, says Warren. Autistic children typically don't look their parents in the face – a key signal for communication – and so parents may not initiate conversation or know when their child wants something. Because a child with a developmental delay may not have full motor control, she may not make sounds that adults enjoy, recognize and reward.

Early childhood research tells us that a baby making frequent and increasingly complex sounds – even if they're nonsense – is developing a strong language base that supports later success. Researchers can tell us a great deal about the building blocks of language in the first years of life. Parents should know this information because a significant delay in communication skills may be a signpost of disability.

Warren co-directed a Merrill conference with Mabel Rice for the purpose of sorting out the causes of language disabilities in children with Down's syndrome, Williams syndrome, fragile X syndrome, Specific Language Impairment, and autism. The book from this conference – *Developmental Language Disorders: From Phenotypes to Etiologies* – was published by Lawrence Erlbaum in 2004.

Part 2: Signposts of Disability – What Parents Can Observe

Children typically produce words at some point between the ages of 12 and 24 months. There are many stages of communication, though. “Parents can be reassured that development is on track if their child hands them a toy, understands her name – and many other kinds of interaction,” says Steven F. Warren, director of the Schiefelbusch Institute for Life Span Studies.

Signposts of language delay or disability in infancy are:

- The baby does not babble much by the age of 10-12 months. The sounds she makes do not move beyond pure vowels to more complex “da-da” and “ba-ba” statements.
- At 12 months, the child does not intentionally communicate. He doesn’t indicate the things he wants with sounds or gestures. He doesn’t point out things he finds interesting, directing your attention. He doesn’t protest with squawks or a push when he dislikes something.
- The child doesn’t engage in social interactions like playing Peek-a-Boo, showing off, or waving “bye-bye.”
- And finally, if the child doesn’t appear to understand at least some words (bottle or ball, for example), it may be time to seek an assessment.

Several tests can be given in the early years, says Warren. The first thing to do is rule out hearing loss. An audiologist can administer a hearing test and describe choices for intervention. For children who are not yet talking but have normal hearing, an early childhood educator or clinician can do an initial screening by asking the parents questions from the MacArthur Communicative Development Inventory/Infants. If a language disability is suspected, Warren recommends in-depth testing by a speech language pathologist. One of the more complete tests is the Communication and Symbolic Behavior Scales.

After an evaluation, parents can secure resources to stimulate their child’s growth. They can work regularly with a speech language pathologist, and receive other services as required by the Individuals with Disabilities Education Act (IDEA). Part C of this federal program is about helping infants and toddlers with disabilities. If symptoms appear at birth, IDEA assures that each state will provide services in the first year of life. “Certainly by age 2,” says Warren, “parents can seek a diagnosis and treatment.” Research shows that early intervention relieves parents and gives children a good start.

Part 3: The Value of an Interactive Environment

Many parents create a wonderful training ground for language in the early years. They do this more or less naturally. When baby says “da-da,” parents echo the cute sounds, cooing “da-da” back. This encourages baby to keep babbling. When baby reaches or points, mommy responds by giving him what he wants. The child’s actions have a concrete effect. Daddy and baby play Peek-a-Boo over and over, establishing a routine for interaction that enriches them both. When baby says “ba-ba,” mommy says, “Here’s your bottle.” This modeling of adult words in context gives sound a meaning – and baby a reward. Many researchers believe rich layers of experience are instrumental in propelling a child’s growth.

Now, here’s the rub. A child with developmental delays may not do the things that parents typically respond to. They may not show they are ready to communicate, and so the dance between parent and child is delayed and awkward. “This is not the fault of the parent. It is just another aspect to disability that must be overcome,” says Steven F. Warren, director of the Schiefelbusch Institute for Life Span Studies and professor of human development at the University of Kansas.

Having a stimulating environment is not as critical for normally developing children, says Warren, because they have the ability and inclination to go after what they need. “Research shows that children with cognitive or behavioral disorders need even more experience and advantages, but the challenges created by disability can lead to greater and greater delays in communication over time.”

There are a number of methods for parents who want to understand the challenges faced by their child and take steps to improve their outcomes, says Warren. The Hanen Early Language Program, developed in Toronto, Canada, “has an excellent reputation for helping families create enriched home environments for children with language delays or autism, and you can easily find the Hanen Centre on the web.” Go to the Center’s web site at: www.hanen.org

Part 4: Prelinguistic Milieu Teaching – A Boost for Children age 2

Prelinguistic Milieu Teaching (PMT) is an early intervention method that has been studied for 10 years. It involves one-on-one services for the child and a program of parent education. Its purpose is not to make the child talk, but to build the first stage of communication. This will lead to developmental milestones, including language. PMT builds the child’s motivation and awareness of a communication partner. “To be able to tell someone – even in gestures – that you are hungry is empowering,” says Nancy Brady, associate research professor with the Life Span Institute at the University of Kansas. “In our clinical experience, we’ve found that young children are much less frustrated when they learn to communicate.” Brady is fine-tuning the effectiveness of PMT in a 5-year research project with Steven Warren, director of the Life Span Institute, and Marc Fey, professor in the Communication Disorders Program at the University of Kansas Medical Center.

The PMT philosophy holds that children show progress if given specific kinds of supports in an environment that brings out their interests and abilities. The goals are to help a child make frequent, clear requests and comments with gestures and/or sounds, and to look at the person they are communicating with.

PMT can fill the gap between infancy and age 3 when more intensive early intervention often begins. “Doctors and educators are reluctant to offer a child augmentative devices when they see delays at age 2. They often tell parents to wait and see if their child will develop spoken language on his own,” says Brady. Sign language and picture pointing are two kinds of augmentative communication. With PMT, a therapist can work with children as young as 18 months and establish the first stage of communication that is prelinguistic. “If a child hasn’t learned what communication is, he will have a hard time knowing how to carry on a conversation with sign language or other techniques,” says Brady. She has seen children with autism repeatedly point at a picture card, unaware they must show it to someone if they hope to make their request known.

Here are three basic principles of PMT. The first is – follow the child’s lead. Children focus best on things that interest them. The PMT therapist spends time observing the child when they are together and waits to begin a session until he sees what the child is looking at or playing with. Face to face, at eye level with the child, he talks about it. Another principle is – set the stage for communication. By putting a favorite toy in the room, but out of reach, the PMT therapist encourages the child to come ask for it. When a therapist puts things out of order in the room, this may elicit a comment from the child. The third principle is – use social games like Pat-a-Cake strategically. Children learn how the game ritual goes and when the adult interrupts or changes it, the child will communicate to be able to keep playing. Pat-a-Cake and Peek-a-Boo also reinforce face-to-face contact with give and take, like a conversation.

PMT has proven helpful in building the child’s capacity to initiate communication with clear, frequent acts. “The technique is most effective when parents notice the changes in their child and reinforce this growth and development at home,” says Warren. Several researchers are validating its effectiveness with specific clinical populations. Paul Yoder has a project like KU’s underway at Vanderbilt University. He is working specifically with autistic children, whereas Warren, Brady and Fey have focused their study on children with Down’s syndrome and other disabilities resulting in language delays.

Progress between the ages of 0 to 3 years may affect how well a person uses the tools of communication throughout his whole life. This can include vocabulary, reading comprehension, and fluent self-expression. For a child with developmental delays, early intervention is considered best practice. “The earlier the better,” says Steven Warren. Research shows that parents may be able to stave off behavioral problems and school failure, if they can build support for their child’s prelinguistic development in the early stages of life.

“Building Blocks of Language” is based on interviews with Steven Warren and Nancy Brady at the Schiefelbusch Institute for Life Span Studies, the University of Kansas. The interviewer, Joy Simpson, is a member of the National Association of Science Writers.

References

- Bates, E., Thal, D. and Janowsky, J.S. (1991). Early language development and its neural correlates. In I. Rapin and S. Segalowitz (Editors), *Handbook of neuropsychology: Volume 7. Child neuropsychology* (pp. 107-179). New York: Elsevier/North Holland.
- Brady, N.C., and Warren, S.F. (2003). Language interventions for children with mental retardation. In L. Masters-Glidden and L. Abbeduto (Vol. Eds.), *Language and communication in mental retardation: A volume in international review of research in mental retardation*, 27 (pp. 231-250). Boston: Academic Press.
- Calandrella, Amy M. and Wilcox, M. Jeanne (October 2000). Predicting language outcomes for young prelinguistic children with developmental delay. *Journal of Speech, Language, and Hearing Research*, 43, 1061-1071.
- Fenson, L., Dale, P.S., Reznick, J.S., Thal, D., Bates, E., Hartung, J.P., Pethick, S., and Reilly, J.S. (1993). *The MacArthur Communicative Developmental Inventories*. San Diego: Singular Publishing Group.
- Kumin, Libby (1999). Comprehensive speech and language treatment for infants, toddlers, and children with Down syndrome. In T.J. Hassold, and D. Patterson. *Down syndrome: A promising future, together*. New York: Wiley-Liss.
- Leew, Shirley V., Warren, Steven F., and Yoder, Paul J. (2002). Infants and Toddlers: putting Research into Practice. In H. Goldstein, L.A. Kaczmarek, and K.M. English (Editors). *Communication and language intervention series: Volume 10. Promoting social communication: Children with developmental disabilities from birth to adolescence*. Baltimore, Maryland: Paul Brookes Publishing Company.
- Manolson, Ayala (1992). *It takes two to talk*. Toronto: The Hanen Centre Publications.
- McCathren, Rebecca B., Warren, Steven F., and Yoder, Paul J. (1996). Prelinguistic predictors of later language development. In K.N. Cole, P.S. Dale, and D.J. Thal (Editors). *Communication and language intervention series: Volume 6. Assessment of communication and language* (pp. 57-75). Baltimore: Paul Brookes Publishing Company.
- McLean, Lee K. (September 1990). Communication development in the first two years of life: A transactional process. *Zero to Three*, 13-19.
- Mundy, Peter and Stella, Jennifer (2002). Joint attention, social orienting and communication in autism. In A.M. Wetherby and B.M. Prizant (Editors). *Communication and language intervention series: Volume 9. Autism spectrum disorders: A transactional developmental perspective*. Baltimore: Paul Brookes Publishing Company.
- National Early Childhood Technical Assistance Center. U.S. Office of Special Education Programs. *Overview to the Part C Program under IDEA*
-- available online www.nectac.org/partc/partc.asp#overview
- Stoel-Gammon, Carol (1989). Prespeech and early speech development of two late talkers. *First Language*, 9, 207-224.
- Stoel-Gammon, Carol (1992). Prelinguistic vocal development: Measurement and predictions. In C.A. Ferguson, L. Menn, and C. Stoel-Gammon (Editors), *Phonological development: Models, research, implications* (pp. 439-456). Parkton, Maryland: York Press.

Sussman, Fern. (1999). *More than words: Helping parent promote communication and social skills in children with Autism Spectrum Disorder*. Toronto: The Hanen Centre Publications.

Warren, Steven F., and Yoder, Paul J. (1998). Facilitating the transition from preintentional to intentional communication. In A.M. Wetherby, S.F. Warren, and J. Reichle (Editors). *Communication and language intervention series: Volume 7. Transitions in prelinguistic communication*. Baltimore: Paul Brookes Publishing Company.

Warren, Steven F., Yoder, Paul J., and Leew, Shirley V. (2002). Promoting social-communicative development in infants and toddlers. In H. Goldstein, L. A. Kaczmarek, and K. M. English (Editors). *Communication and language intervention series: Volume 10. Promoting social communication: Children with developmental disabilities from birth to adolescence*. (pp. 121-150). Baltimore: Brookes Publishing.

Warren, Steven F. (2004) Intervention as experiment. In M.L. Rice and S.F. Warren (Editors). *Developmental language disorders: From phenotypes to etiologies* (pp. 187-206). Mahwah, New Jersey: Lawrence Erlbaum Associates.

Wetherby, Amy M., and Prizant, Barry M. (1992). Profiling young children's communicative competence. In S.F. Warren and J. Reichle (Editors). *Communication and language intervention series: Volume 1. Causes and effects in communication and language intervention* (pp. 217-254). Baltimore: Paul Brookes Publishing Company.

Wetherby, Amy M., and Prizant, Barry M. (1998). *Communication and Symbolic Behavior Scales manual*. Baltimore: Paul Brookes Publishing Company.

Yoder, Paul J., McCathren, Rebecca B., Warren, Steven F., and Watson, Amy L. (Spring 2001). Important distinctions in measuring maternal responses to communication in prelinguistic children with disabilities. *Communication Disorders Quarterly*, 22, 135.

Yoder, P. J., Warren, S. F., McCathren, R., and Leew, S.V. (1998). Does adult responsivity to child behavior facilitate communication development? In A. M. Wetherby, S.F. Warren, and J. Reichle (Editors). *Communication and language intervention series: Vol. 7. Transitions in prelinguistic communication* (pp.39-58). Baltimore: Paul Brookes Publishing Company.

Yoder, Paul J. and Warren, Steven F. (1998). Maternal responsivity predicts the extent to which prelinguistic communication intervention facilitates generalized intentional communication. *Journal of Speech, Language, and Hearing Research*, 41, 1207-1219.

Yoder, P.J. and Warren, S.F. (2001). Relative treatment effects of two prelinguistic communication interventions on language development in toddlers with developmental delays vary by maternal characteristics. *Journal of Speech, Language, and Hearing Research*, 44, 224-237.

© 2003 The University of Kansas Merrill Advanced Studies Center

In The Know is an online publication of the Merrill Advanced Studies Center at the University of Kansas. *In The Know* articles are copyrighted, but may be reproduced and used for educational purposes. For more information on science and policy go to: www.merrill.ku.edu