

Encyclopedia of LANGUAGE DEVELOPMENT

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Library of Congress Cataloging-in-Publication Data

Encyclopedia of language development / Patricia J. Brooks, editor, College of Staten Island and the Graduate Center of City University of New York ; Vera Kempe, editor, Abertay University.

pages cm

Includes bibliographical references and index.

ISBN 978-1-4522-5876-8 (hardcover : alk. paper)

1. Language acquisition--Encyclopedias. I. Brooks, Patricia (Patricia J.) editor of compilation. II. Kempe, Vera. editor of compilation.

P118.E523 2014

401'.9303--dc23

2014003288



14 15 16 17 18 10 9 8 7 6 5 4 3 2 1

adversity in the obstetric and perinatal period, constitute a known risk group for language delay. For a minority, the underlying cause will be neurocognitive and the extent of delay more serious, but for most, the evidence suggests delay will be mild and transitory. The key direction for prevention and early intervention of delay, therefore, is in supporting parents to provide optimal language environments and also providing opportunities to have positive language experiences outside the home in high-quality early education and care programs.

There is consistent international evidence that children in such programs have more advanced cognitive and language development and that such programs are particularly effective in compensating for families living with adversities such as depression or higher child-care loads. In the case of families with twin children, there are unique stressors associated with care load that warrant the inputs of additional supports both within and outside the family.

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See Also: Child-Directed Speech (Effects of Variation in Quality); Dyadic Interaction and Early Communicative Development; Genetic Basis of Language Development and Impairment; Intervention for Child Language Impairments; Language Development in Preterm Infants and Children; Twin Studies of Individual Differences.

Further Readings

- Calvin, C., C. Fernandes, P. Smith, P. M. Visscher, and I. J. Deray. "Is There Still a Cognitive Cost of Being a Twin in the UK?" *Intelligence*, v.37 (2009).
- Ronalds, G. A., B. L. De Stavola, and D. A. Leon. "The Cognitive Cost of Being a Twin: Evidence From Comparison Within Families in the Aberdeen Children of the 1950s Cohort Study." *British Medical Journal*, v.331/7528 (2005).
- Rutter, M., K. Thorpe, R. Greenwood, K. Northstone, and J. Golding. "Twins as a Natural Experiment to Study Causes of Language Delay I: Examination of Obstetric and Perinatal Environment." *Journal of Child Psychology and Psychiatry*, v.44/3 (2003).
- Spinath, F. M., T. S. Price, P. S. Dale, and R. Plomin. "The Genetic and Environmental Origins of Language Disability and Ability." *Child Development*, v.75/2 (2004).
- Thorpe, K. "Twin Children's Language Development." *Early Human Development*, v.82 (2006).

Thorpe, K., R. Greenwood, A. Eivers, and M. Rutter.

"Prevalence and Developmental Course of 'Secret Language.'" *International Journal of Language and Communication Disorders*, v.36 (2001).

Thorpe, K., M. Rutter, R. Greenwood, and J. Golding.

"Twins as a Natural Experiment to Study the Causes of Language Delay: II Examination of Patterns of Family Interaction and Home Environment." *Journal of Child Psychology and Psychiatry*, v.44 /3 (2003).

Language for Reading

Strong early language skills support not only later language development, but also emergent literacy and later reading readiness in kindergarten. The data here are abundant and clear. Unfortunately, children from disadvantaged backgrounds often lag behind middle-class students when it comes to language growth, and thus start school at a major disadvantage relative to their higher-income peers. By third grade, many of these children have such poor literacy skills that their chances of receiving a high school diploma are negligible. By building up the language capabilities of these children when they are in preschool and early elementary school, educators can change the course of that trajectory. This entry describes how we can use current scientific data to best support strong language competencies for all children. First, the problem of the language gap is presented. Second, this entry proposes six evidence-based principles of language learning that can be used at home and in school to support skills that build strong speakers, listeners, and readers.

A Persistent Problem: The Language Gap

In 1995, a now classic study by B. Hart and T. Risley became headline news. They examined language input and output in three groups—children from welfare, working-class, and professional families—and found that children in the welfare group heard, on average, 616 words per hour, compared to 1,251 in the working-class group, and 2,153 in the professional group. Children's vocabularies at 3 years of age significantly predicted language skills at 9 and 10 years of age. These findings are consistent with results of many recent studies that show both direct and indirect relations between oral language development and reading abilities. For instance, children's vocabulary at 2 years of age predicts their reading abilities up until

fifth grade. Oral language is also indirectly related to reading abilities through code-related skills such as identifying the /b/ sound in the word *bat* or phonological awareness—knowing that *bat* rhymes with *cat*. Importantly, having a large vocabulary also helps children develop strong reading comprehension abilities at higher grade levels (Grade 4 and above), when reading becomes a major resource for acquiring new information and understanding new concepts.

Six Principles for Language Learning and Pre-Literacy: Moving to the Classroom

Based on what we know about language acquisition and early language development, this entry presents six principles for language learning and pre-literacy that provide evidence-based strategies for supporting reading development.

Principle 1: Children learn the words that they hear most: Hart and Risley showed that one consistent difference between parents who are more or less educated is their use of language at home. This difference seems to have long-range consequences for later language development and processing speed for reading and for brain development. Several studies conducted by the National Institute of Child Health and Human Development (NICHD) Early Childcare Research Network have shown that the relationship between adult input and child output at school mirrors the findings from the home setting. This is also true for language heard in school. A study conducted by J. Huttenlocher and colleagues found that the complexity and variety of teachers' language related to the children's language levels above and beyond the effects of parent language or socioeconomic status. One systematic way of providing repeated exposure to new words is through shared book reading. Hearing repeated readings of the same books that explain and use new vocabulary is especially valuable to children's word knowledge.

Principle 2: Children learn words for things and events that interest them: Younger children readily assume that words map onto objects that are interesting. Parents who capitalize on their children's focus of interest by talking about what children are attending to have larger vocabularies. Children whose parents work against this principle have smaller vocabularies. This type of joint attention, in which adults follow children's lead, appears to persist as one of the leading

sources for language development through the preschool years. The joint attention that happens during book reading may be especially potent. A recent study by B. Farrant and S. Zubrick with more than 2,000 Australian children showed that joint attention and the amount of mother-reported book reading at 9 months of age predicted young children's vocabulary when they were 34 months of age.

When children are interested and actively engaged in joint activities, they also learn language from their peers. In fact, the amount of time 3-year-olds spend talking with peers while pretending has been found to be positively associated with the size of their vocabularies at kindergarten entry. Furthermore, 4-year-olds' play, in the form of making shopping lists and reading storybooks to stuffed animals, predicts both language and reading readiness after the children entered kindergarten. These findings are supported by a study from the HighScope Educational Research Foundation that investigated the preschool features that promote language and cognitive development across 10 countries. Small-group free play at age 4 was positively associated with multiple measures of oral language ability at age 7. In other words, when children are following their interests, they are likely to learn more new vocabulary items.

Principle 3: Interactive and responsive rather than passive contexts favor language learning: Language learning is optimal when children actively engage in sensitive and responsive conversations with those around them. Research documents the positive effect of sensitive and responsive parenting not only on children's social-emotional development but also on their language competence. Interactions with caregivers in which adults and children take turns while sharing joint attention provide children with necessary support in developing language competence. For example, when a child points to apples in the grocery store and says, "Apples," his or her mother can elaborate by saying, "Yes, remember when we had apples for breakfast? You really like apples, don't you?" The mother responds to child's request for attention by joining in, elaborating on the child's utterance, and extending the conversation.

This link has also been observed in center care. The Home-School Study of Language and Literacy examined teacher-child conversations when children were 4 years of age; after controlling for children's language ability at age 3 (i.e., the mean length of their utterances), parental income, education, and home support

for literacy (e.g., reading to children), the study found that higher-quality conversations and richer vocabulary exposure during free play and group book reading were predictive of children's productive language, language comprehension, and print skills at the end of kindergarten and fourth grade.

Principle 4: Children learn words best in meaningful contexts: Sparking interest is often a first step in meaning making. Cognitive psychology has shown that people learn best when information is presented in integrated contexts rather than as a set of isolated facts. For example, words connected in a grocery list are better remembered than the same list of words presented without context. Children also learn better when the books they are listening to are linked up to their own lives. Noting that the dog in the book looks like the one at the firehouse down the street helps children remember that the word *speckled* describes the Dalmatian.

One of the meaningful contexts in which children learn words is play. Studies using thematic play as a backdrop for language and literacy development repeatedly find that meaningful connections between words develop in conversations and support children's learning of novel words. Thus, children who learn connected vocabulary for the category of building (words such as *hammer* and *tool belt*) better remember and use these words than do children who do not learn in this integrative manner.

M. Han and colleagues demonstrated that low-income children who are given an opportunity to use vocabulary in a playful context learn it better than those who learn only under explicit instruction. For instance, preschoolers who learned new words in 20-minute book-reading sessions that were followed by 10-minute play sessions made significant gains in receptive and expressive vocabulary compared to children who received 30 minutes of explicit instruction about novel words in the context of book reading.

Principle 5: Children need to hear diverse examples of words and language structures: The amount and diversity of verbal stimulation children encounter foster earlier and richer language outcomes in terms of both vocabulary and grammar. For instance, E. Hoff and C. Tian found that mothers' vocabulary richness and length of utterances significantly predicted their children's vocabulary knowledge above and beyond the effects of socioeconomic status on word learning. However, building vocabulary is not

a matter of learning words in isolation but of hearing words within sentences. Huttenlocher and colleagues found that exposure to complex language, such as multipart sentences like *I am looking for my shoe on the floor, but it is in the dog's mouth* throughout the school year can improve 4-year-olds' comprehension of syntax. The relationship between adult input and child output not only appears in home environments but also in studies of child care and early schooling. In fact, children learn not only language that is directed to them but even profit from overheard speech. W. E. Nagy, P. A. Herman, and R. C. Anderson demonstrated that, as children age, they continue to learn new words through incidental exposure to adult talk and by reading new materials on their own. Perhaps this is why Z. Weizman and C. Snow reported that children exposed to low-frequency words at age 5 had stronger vocabularies in the second grade.

Principle 6: Vocabulary learning and grammatical development are reciprocal processes: Children learn vocabulary through grammar and grammar through vocabulary in two ways: By noting the linguistic context in which words appear, children gain information about a word's part of speech; and once a word is known, by observing the diverse linguistic contexts in which words are used, children detect nuances in word meaning. Research with monolingual and bilingual children demonstrates that vocabulary and grammar are not divorced; they feed one another. Both vocabulary and grammar are foundational for early language growth and early literacy. J. Dixon and V. Marchman have provided evidence for vocabulary and grammar developing in synchrony with 1,461 children between 16 and 30 months of age. Lending more support to this argument, this relation has been observed with bilingual children as well. In a study of 2- to 4-year-olds, M. Normand and colleagues found that grammatical categories predicted children's complexity of multiword utterances better than their lexical knowledge. Thus, both the lexical and grammatical richness of language children hear in conversation with teachers and peers, and also during book readings, can help children to develop vocabulary and grammar simultaneously.

Conclusion

It has long been known that robust language skills are one of the unique and crucial precursors to strong school readiness. Reading readiness, in particular, is dependent on language abilities such as a sizeable

vocabulary, mastery of grammatical knowledge, and narrative abilities. Children from impoverished backgrounds are at risk for lower language skills. The reduction in the input that passes the ears of these children can have enormous consequences.

Parents and teachers have the opportunity to change the course of language learning for children. Because reading is parasitic on language, focusing on the principles of language learning presented in this entry can help improve reading outcomes for children from all socioeconomic backgrounds.

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See Also: Child-Directed Speech (Effects of Variation in Quality); Effects of Head Start Early Intervention on Language Development; Effects of Schooling on Language Development; Home Environment (Effects on Language and Literacy Development); Learning Words From Overheard Speech; Lexical Bootstrapping; Matthew Effects (Rich Get Richer); Parental Responsiveness and Scaffolding of Language Development.

Further Readings

- Dickinson, D. K., R. M. Golinkoff, and K. Hirsh-Pasek. "Speaking Out for Language: Why Language Is Central to Reading Development." *Educational Researcher*, v.39 (2010).
- Dickinson, D. and P. Tabors. *Beginning Literacy With Language: Young Children Learning at Home and School*. Baltimore, MD: Paul H. Brookes Publishing, 2001.
- Dixon, J. and V. Marchman. "Grammar and the Lexicon: Developmental Ordering in Language Acquisition." *Child Development*, v.78 (2007).
- Hart, B. and T. Risley. *Meaningful Differences in the Everyday Lives of American Children*. Baltimore, MD: Brookes Publishing, 1995.
- Hoff, E. and C. Tian. "Socioeconomic Status and Cultural Influences on Language." *Journal of Communication Disorders*, v.38 (2005).
- Huttenlocher, J., M. Vasilyeva, E. Cymerman, and S. Levine. "Language Input and Child Syntax." *Cognitive Psychology*, v.45 (2002).

Nagy, W. E., P. A. Herman, and R. C. Anderson. "Learning Words From Context." *Reading Research Quarterly*, v.20 (1985).

NICHD Early Child Care Research Network. "Early Child Care and Children's Development Prior to School Entry: Results From the NICHD Study of Early Child Care." *American Educational Research Journal*, v.39 (2002).

Language Learning in Avians

No nonhuman has learned a code identical to what is considered human language, but several have acquired forms of interspecies communication. Apes, the closest phylogenetic relatives of humans, incapable of any considerable vocal learning, were taught to use elements of American Sign Language to manipulate plastic chips or to read and press computer-based symbols to communicate with humans; dolphins, further removed from humans genetically but large-brained mammals that do engage in vocal learning, interpret human signs and whistles and use their rostrum to signal via computer-based symbols; dogs, nonvocal learners but domesticated by humans, comprehend numerous human speech sounds and whistles. However, only birds—predominantly Grey parrots—with brains the size of a shelled walnut and whose last common ancestor with humans was about 300 million years ago (i.e., a dinosaur)—can learn both to produce and comprehend human speech sounds to acquire elements of referential symbolic communication.

The Case of Alex

The most prolific of these Grey parrots, Alex, learned to vocally label more than 50 different objects, seven colors, five shapes, quantities to eight, three categories (color, shape, and material), and used *no*, *come here*, *wanna go X*, and *want Y* (X and Y being appropriate location or item labels) intentionally. He combined labels to identify, request, comment on, or refuse more than 150 items and to alter his environment. Requests, initially acquired via training, were spontaneously extended to newly acquired labels and were intentional: If trainers responded incorrectly (e.g., substituting alternative items), Alex generally said, "No", often coupling refusal with repetition of his initial request. He understood concepts of category,