

## Chapter 2

### Development of Communication, Language, and Speech

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#### Chapter Overview

##### **Chapter Summary**

This chapter introduces basic concepts and terminology important for an understanding of human communication processes and provides a brief description of the normal development and interaction of communication, language, and speech. Communication is defined, and the importance of language, speech and nonlinguistic cues in the acquisition and use of communication is addressed.

##### **Personal Perspective**

##### **Communication**

This section describes the process of communication and its different aspects.

*Communication* – a dynamic process of exchanging information and ideas between and among individuals

- It is active; that is, it involves:
  - Encoding
  - Transmitting
  - Decoding intended messages

*Encoding, transmitting and decoding are also described in chapter 1*

- It may be influenced by
  - the context of the message,
  - the way in which the message is formed, and
  - preconceived notions, perceptions, and skills of each participant;
  - thus, the probability for miscommunication or message distortion is high.
- It includes speech and language as well as paralinguistic codes and nonlinguistic and metalinguistic cues.
  - *Paralinguistic mechanisms* refer to intonation, stress or emphasis, speed or rate of delivery, and pause or hesitation superimposed on speech to signal attitude or emotion.
  - *Nonlinguistic cues* refer to gestures, body posture, facial expression, eye contact, head and body movement, and physical distance or *proxemics* of speakers.
  - *Metalinguistic cues* involve monitoring and evaluating the success of the communication and how it was transmitted, rather than simply the message conveyed.
  - *Encoding* refers to the act of translating a concept in the mind of the speaker into linguistic form, which is then transmitted to the listener.

- *Decoding* is the act of receiving and processing a message.

*The process of human communication is introduced in chapter 1.*

### Development of Communication

- Communication is believed to begin at birth. Early communication does not depend on the use of language or speech.
- Within the first few months, infants:
  - Discriminate contrasting phonemes
  - Differentiate between intonation patterns
  - Recognize different voices
  - Distinguish verbal from nonverbal sounds
  - Coordinate eye gaze
- Caregiver-infant interactions are important and reflect:
  - Degree of caregiver responsiveness
  - Interaction routines
    - *Joint action* refers to actions or events that enable children to predict outcome of communication (e.g. “peek-a-boo”).
    - *Joint reference* refers to an agreed referent for a particular object or person and is important for development of early word meaning.
- Children typically progress from reflexive, undifferentiated, non-intentional communication to conventional, verbal, intentional communication by their second birthday.
  - Stage I: Undifferentiated behaviors are used, but intentions are unknown.
  - Stage II: Gestures and vocalizations are accompanied by eye contact to express intent.
  - Stage III: Words are used to convey intentions.

## **Language**

This section defines language and its distinct but interrelated components and describes the development of language.

- The primary purpose of *Language* is to code transmissions between and among individuals.
- Language is:
  - A social tool
  - A composition of arbitrary symbols
  - Rule-governed
  - A generative system (productive, creative)
- Dialects are sub-categories of parent languages that share some, but not all, rules
- Different languages use different symbols and rules.

### Components of Language

- There are three major components:
  - Form (syntax, morphology, phonology)
  - Content (semantics)
  - Use (pragmatics)
- These components are distinct but interrelated.
  - Form
    - *Syntax* – rules that govern the form or structure of a sentence
      - the order of words in sentences

- the sentence organization
  - the relationship between words, word classes, and other sentence elements
- *Morphology* – rules that govern internal organization of words
  - morphemes - the smallest unit of grammar.
  - two varieties: Free and Bound
    - *Free Morphemes* – units that can be used independently
    - *Bound Morphemes* – grammatical markers that must be attached to a word to convey meaning (e.g.: 's, -er, un-, and -ly)
- *Phonology* – rules that govern the distribution and sequencing of speech sounds and the shapes of syllables
  - Phonemes or speech sounds are the smallest linguistic units of sound.
- Content
  - *Semantics* – rules that govern meaning or content of words and word combinations.
    - *Semantic features* are aspects of meaning that characterize a word.
    - *Selection restriction* prohibits certain word combinations and identifies items as meaningless or redundant based on specific word characteristics.
    - *Synonyms* refer to words with identical features
    - *Antonyms* refer to words with opposite features
- Use
  - *Pragmatics* – rules that govern the cohesion and coherence of conversations including
    - turn-taking
    - opening, maintaining, and closing a conversation
    - establishing and maintaining topic
    - giving and receiving feedback
    - establishing and maintaining a role
    - making relevant contributions to the conversation

*These aspects of language and related language disorders are described further in chapters 6, 11, 12, and 13.*

- Summary

#### Language Development

- The role of the child's communication partner is crucial.
- Development is rarely linear across the five aspects of language.
- All aspects of language are intertwined in development.
- Language development is related to cognitive development.

A summary of some of the general patterns of behavior, which characterize the stages of language development, follows:

- Infant Pre-language:

- Begin to detect patterns or regularities of language and make generalizations that are important for symbol and rule learning.
  - Show sensitivity to intonational stress (rising and falling of intonational patterns, word boundaries)
  - Discriminate own language from that of others with the same prosodic pattern
  - Use prosodic and phonotactic clues to discern individual speech sounds
  - Exhibit comprehension that is highly context-dependent
- Toddler Language Development:
    - Progress from single-word utterances to simple multi-word combinations.
    - Produce words that contain one or two syllables, often of similar sounds and sound combinations
    - Exhibit lexical characteristics that influence linguistic processing, such as the word's frequency of use, the neighborhood density, and the phonotactic probability
    - Develop phonological and semantic skills interdependently  
(These features are all detailed in this chapter.)
    - Use under extensions and over extensions of meanings
    - Express meaning by word order in early two-word combinations (refer students to this chapter for description of simple word-order rules)
    - Use language to obtain information, to give information, and to engage in conversational give and take  
(Refer students to the chapter for a complete list of early elocutionary functions of word)
    - Extend vocabulary beyond 100 words
    - Produce some four-word utterances by age two (in typically developing children)

*For related information about developmental language impairment in infants and toddlers see chapter 11.*

- Preschool Language Development:
  - Experience a period of rapid and dramatic language changes
  - Learn 90% of the syntax, morphology, and phonology that will be used as an adult by the beginning of Kindergarten
  - Learn language through conversation
 (For important generalizations concerning preschool language development see this chapter (Table 2.3))

Phenomena observed during this period include:

- *Presupposition* – the process of estimating the knowledge of the listener and amount of information needed for comprehension
- Form Follows Function
  - The conversation function or use is established first, and then the child learns the language form to convey this function more effectively.
- *Bootstrapping* – using what you know about language to help you comprehend and produce language
- Active Involvement – Preschoolers are actively involved in analyzing incoming information, searching for patterns, hypothesizing language rules, substituting new patterns for old ones, making mistakes and synthesizing their own sentences based on these rules.
  - New words are added rapidly to the child's lexicon.

- *Fast mapping* is a process in which the child assumes a meaning from context and then produces the word in a similar context.
- Complexity and Utterance Length Relationship  
(See this chapter for complete description of age at which syntactic forms are acquired (Table 2.4) and for discussion of embedding and conjoining of words and phrases.)
  - There is a limited correlation between utterance length and complexity in English. Language is not merely additive. That is, there are times when complexity increases but utterance length does not.
- Avoid Exceptions – Language rules are easier to learn and more frequently used than language exceptions.
- Word Order is a Guide - The S-V-O word order in English serves as a guide for sentence comprehension and formation.
- Avoid Deviation from or Interruption of Standard Word Order.
- Caregivers Modify (or Reformulate) Conversations to Maximize Child Participation.
- All Aspects of Language are Intertwined in Development.
  - Narrative development typically begins at age 2. By age 3 children can sequence events in a narrative.

*For related information about developmental language impairment during the preschool period see chapter 11.*

- School Age and Adult Development
  - Growth in all aspects of oral and written language
  - Shift occurs in which associations previously based on syntactic features become tied to semantic attributes (Concept reorganization or *syntagmatic-paradigmatic*). This is felt to represent a change in general cognitive processing strategies.
    - Use language in more creative, imaginative, emotional ways such as figurative language (idioms, metaphors, similes, proverbs) and indirect requests
    - Spoken and written language have much in common but are not just language in different forms
    - Exhibit visual communication in the form of reading and writing
    - Importance of phonological awareness in early reading acquisition
    - Generation of text begins with oral narratives

*For related information about language disabilities in school-age children and youth see chapter 12.*

## Speech

Speech and the classification of English phonemes are described. The acquisition and classification of speech sounds are summarized.

*Speech* – a verbal means of communicating or conveying meaning.

- Consists of speech sound combinations:
  - Voice quality
  - Intonation
  - Rate
- Phonemes are classified as:
  - *Vowels* - produced with a relatively unrestricted air flow in the vocal tract

- *Consonants* - produced with a closed or narrowly constricted passage
- *Voiced* - produced by phonation or vibration of the vocal folds
- *Voiceless* - produced without phonation

*Note- In English, all vowels are voiced, but consonants may be either voiced or voiceless.*

- Traditional approaches to describing sounds in isolation or the traditional phonemic classification are based on:
  - The place of articulation (bilabial, labiodental, dental, alveolar, postalveolar, palatal, velar, glottal) and manner of articulation or type of production (plosive, fricative, approximants, nasal)
  - Table 2.5 presents the traditional classification of English consonants by place and manner of production

*For additional information on how and where speech sounds are formed see chapter 3.*

- *Cognates*: two phonemes which have the same manner and place of articulation but differ in voicing.
- *Coarticulation* is the co-occurrence of production characteristics of two or more phonemes. It demonstrates the dynamic nature of speech.

### Development of Speech

- Table 2.6 provides an overview of the developmental changes in speech from birth through age eight.  
(Generalizations about the acquisition of speech sounds across languages are listed in this chapter.)
  - Reflexive, suck-swallow pattern: the Newborn
  - Cooing: 2-3 months
  - Babbling: 4-6 months
  - Reduplication Babbling: 6-10 months
  - Phonetically Consistent Forms: 11-14 months
  - First Words and Phoneme Acquisition  
(Detailed in the chapter)
  - Order of acquisition of phonemes reflects the increasing speed and precision of the speech mechanism. The sequence of sound acquisition is not universal, but some generalized observations are included in the chapter.
  - Articulatory changes in adult speech are also explained.
- *Phonological processes*: natural developmental phenomena that reflect rules for simplifying speech. The most common rules are described in Table 2.7.

*For additional information about the classification of phonemes and the development of speech refer students to chapter 6.*

## Summary

## Study Questions

## Selected Readings

## Chapter 2 - Development of Communication, Language and Speech

Chapter Learning Goal	Student Learning Outcomes	Significant Learning Activities
<b>Certification standard III – B:</b> Demonstrates knowledge of the basic human communication and swallowing processes including their biological, neurological, acoustic, psychological, developmental, linguistic and cultural bases.	<b>Foundational knowledge</b> Identifies major developmental milestones associated with the components of communication, language and speech	Students will construct timelines to illustrate developmental milestones.
	<b>Skill in Application of Knowledge</b> Uses developmental data to distinguish examples of typical, disordered and different development	Students will use timelines to discuss variations that reflect cultural and language differences and variations that reflect disorders when presented with specific examples.
	<b>Skill in the Integration of Knowledge</b> Makes connection between and among published developmental data and examples from personal stories of family and friends	Students will query family and friends about their own communication development and compare highlights.
	<b>Skill in Acknowledging the Human Dimension</b> Describes the role children and their families play as active participants in the development of communication	Students will observe parents and children interact while at the play ground, supermarket, McDonalds, etc. and describe activities and behaviors they each demonstrate during play that may facilitate communication development.
	<b>Skill in Assessing the Relevance of Knowledge and Demonstrating a Caring Approach</b> Reflects on the ways knowledge about the roles children and their families play in the development of communication, language and speech may be used in prevention, assessment and treatment practices	Students will watch the movie <i>Parenthood</i> (1989) for a humorous look at the ways parents negotiate with their children and what they do to facilitate language.
	<b>Skill in Self-Directed Learning</b> Selects an appropriate printed or electronic resource to broaden understanding of the development of communication, language and speech	Students will conduct literature search for peer-reviewed resources written by the author of the chapter.

## Assessment focus of test bank

Foundational knowledge and skill in application of knowledge

### Multiple Choice (10)

- 2.1) The three components of language include
  - a) Competence, performance and understanding
  - b) Form, content and rhyme
  - c) Form, content and use
  - d) Paralanguage, body language and proxemics
- 2.2) Morphology is defined as
  - a) Rules that govern the internal organization of words
  - b) Rules that govern sentence organization
  - c) Rules that govern meaning
  - d) Rules that govern the cohesion and coherence of conversation
- 2.3) Syntax is an aspect of
  - a) Language form
  - b) Language content
  - c) Language use
  - d) Paralanguage
- 2.4) Message encoding includes
  - a) Monitoring messages
  - b) Receiving messages
  - c) Translating a concept into linguistic form
  - d) Processing or understanding a linguistic message
- 2.5) Caregiver-infant interactions important to language development include
  - a) Joint action
  - b) Joint reference
  - c) Baby talk
  - d) A and B
- 2.6) A language milestone appearing during the infant pre-language stage of development
  - a) Sensitivity to rising and falling intonation patterns
  - b) Occurrence of rapid and dramatic language changes
  - c) Use of over-extended word meanings
  - d) Ability to understand idioms
- 2.7) A language milestone characteristic of the toddler stage of language development
  - a) Relies on prosody to discern individual speech sounds
  - b) Acquires 100+ words
  - c) Uses fast mapping
  - d) Understands jokes
- 2.8) Phonemes are classified as
  - a) Letters and sounds
  - b) Morphemes and graphemes
  - c) Vowels and consonants
  - d) Processes and features



- 2.9) Phonological processes
- a) Are rules for combining individual speech sounds
  - b) Reflect rules for simplifying speech
  - c) Demonstrate acoustic, articulatory and perceptual characteristics of speech sounds
  - d) Reflect baby speech
- 2.10) The utterance “The girls are playing with blocks” contains
- a) 6 morphemes
  - b) 3 morphemes
  - c) 9 morphemes
  - d) 27 morphemes

### **True/False (10)**

- 2.1) The development of communication begins at birth.
- 2.2) During the preschool period of language development, function follows form.
- 2.3) The five components of language are distinct and unrelated.
- 2.4) Phonology is one component of language content.
- 2.5) The traditional approach to describing speech sounds is based on place and manner of articulation.
- 2.6) Place of articulation refers to the type of air released during speech production.
- 2.7) The word “make” has two vowel sounds.
- 2.8) The word “jump” has voiced and voiceless consonants.
- 2.9) The word “jumping” has free and bound morphemes.
- 2.10) Describing the arrangement of words in a verb phrase relates to language syntax.

### **Short answer (5)**

- 2.1) Define communication, language and speech.
- 2.2) Identify the four distinct stages of language development.
- 2.3) Compare and contrast phoneme and morpheme.
- 2.4) Describe the stages of speech sound acquisition from birth to 18 months.
- 2.5) Define and give an example of *bootstrapping*.

**Essay (1)****Skill in the integration of knowledge**

Explain the statement 'Development is rarely linear across the five aspects of language.'

**Assessment focus of portfolio****Skill in self-directed learning**

Portfolio containing two annotated resources on language development that were written by the author of the chapter

## **Answer key for test bank**

### **Multiple Choice:**

- 2.1) C
- 2.2) A
- 2.3) A
- 2.4) C
- 2.5) D
- 2.6) A
- 2.7) B
- 2.8) C
- 2.9) B
- 2.10) C

### **True/False:**

- 2.1) True
- 2.2) False
- 2.3) False
- 2.4) False
- 2.5) True
- 2.6) False
- 2.7) False
- 2.8) True
- 2.9) True
- 2.10) True

## **Supplemental Materials**

### **Additional Readings**

- Bedore, L., Pena, E., Gillam, R., & Ho, T. (2010). Language sample measures and language ability in Spanish-English bilingual kindergarteners, *Journal of Communication Disorders*, 43, 498-510.
- Berko Gleason, J. (2004). *The Development of Language* (6th ed.). Boston: Allyn & Bacon.
- Bowen, C. (1998). *Speech and language development in infants and young children*. Available from [www.speech-language-therapy-com/devel1.htm](http://www.speech-language-therapy-com/devel1.htm).
- Choi, S., & Gopnik, A. (1995). Early acquisition of verbs in Korean: a cross-linguistic study. *Journal of Child Language*, 22, 497-529.
- Fagen, M. (2009). Mean length of utterance before words and grammar: longitudinal trends and developmental implications of infant vocalizations. *Journal of Child Language*, 36, 495-527.
- Furey, J. (2010). Production and maternal-report of 16- and 18-month olds' vocabulary in low-and middle-income families. *American Journal of Speech-Language Pathology*, (PMID: 21060116). Retrieved from MEDLINE database.
- Glennen, S. (2008; Dec. 16). Speech and language myth busters for internationally adopted children. *The ASHA Leader*. Retrieved from [www.asha.org/Publications/leader](http://www.asha.org/Publications/leader).
- Goldstein, B (Ed.) (2004). *Bilingual Language Development & Disorders in Spanish English Speakers*. Baltimore: Brookes Publishing Company.
- Justice, L. (2010). *Communication Sciences and Disorders: A Contemporary Perspective* (2nd ed.). Boston: Allyn & Bacon.
- Klein, H., Moses, N., & Jean-Baptiste, R. (2010). Influence of context on the production of complex sentences by typically developing children, *Language, Speech, and Hearing Services in Schools*, 41, 289-302.
- Lovelace, S. & Stewart, S. (2009). The effects of robust vocabulary instruction and multicultural text on the development of word knowledge among African American children. *American Journal of Speech-Language Pathology*, 18, 168-179.
- Oetting, J., Newkirk, B., Hartfield, L., Wynn, C., Pruitt, S., & Garrity, A. (2010). Index of productive syntax for children who speak African American English. *Language, Speech, and Hearing Services in Schools*, 41, 328-39.
- Owens, R. (2008). *Language development: an introduction*. Boston: Allyn & Bacon.
- Pancsofar, N., Vernon-Feagans, L., & the Family Life Project (2010). Fathers' early contributions to children's language development in families from low-income rural communities. *Early Child Research Quarterly*, 25, 450-463.
- Pearson, B., Velleman, S., Bryant, T. and Charko, T (2009). Phonological milestones for African American English- speaking children learning mainstream American English as a second dialect. *Language Speech and Hearing Services in Schools*, 40, 229-244.

Redford, M. and Gildersleeve-Neumann, (2009). The development of distinct speaking styles in preschool children. *Journal of Speech-Language-Hearing Research*, 52, 1434-1448.

Scott, K., Roberts, J., & Krakow, R. (2008). Oral and written language development of children adopted from China. *American Journal of Speech-Language Pathology*, 17, 150-60.

## Film

Howard, R. & Grazer, B. (Producers), & Howard, R. (Director). (1989). *Parenthood*. [Motion Picture]. United States: Universal Pictures.

## Web Resources

American Speech-Language-Hearing Association <a href="http://www.asha.org/public/speech/development">www.asha.org/public/speech/development</a>
American Speech-Language-Hearing Association <a href="http://www.asha.org/public/speech/development">www.asha.org/public/speech/development</a>
Kids Health <a href="http://kidshealth.org/parent/growth/communication/not_talk.html">http://kidshealth.org/parent/growth/communication/not_talk.html</a>
Language and Speech Development in Children <a href="http://www.childdevelopmentinfo.com/development/language_development.shtml">http://www.childdevelopmentinfo.com/development/language_development.shtml</a>
National Institute on Deafness and Other Communication Disorders <a href="http://www.nidcd.nih.gov/healthy/voice/speechandlanguage.html">www.nidcd.nih.gov/healthy/voice/speechandlanguage.html</a>
Speech & Language Milestone Chart Learning Disabilities Association of America. <a href="http://www.ldonline.org/ld_indepth/speech-language/lda_milestones.html">www.ldonline.org/ld_indepth/speech-language/lda_milestones.html</a>
Vocal Development.Com (Purdue University) <a href="http://vocaldevelopment.com/home.htm">http://vocaldevelopment.com/home.htm</a>

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