networks may offer users insight into other cultures and create awareness about cultural differences as well as help users become aware of culturally appropriate communication and interaction strategies.

What Is the Foundation for Communicative Competence?

The previous sections described the many areas of competence that, together, form the basis of effective communication. This section describes the developmental pathways for these achievements from infancy to adulthood.

We are not born with communicative competence. Rather, acquiring competence takes time, and it is built on a number of early foundations. Several important early foundations characterize the infant's first year, including joint reference and attention, rituals of infancy, and caregiver responsiveness.

Joint Reference and Attention

There are three developmental phases that characterize infancy (Adamson & Chance, 1998): (1) attendance to social partners, (2) emergence and coordination of joint attention, and (3) transition to language.

PHASE ONE: BIRTH TO 6 MONTHS In the first phase, spanning from birth to about 6 months, infants develop patterns of attending to their social partners. In these early months of life, infants come to value and participate in interpersonal interactions as they learn how to maintain attention for sustained periods of engagement. Infants at this age enjoy looking at other people's faces, particularly at others' eyes. In fact, infants as young as 36 hours old prefer to look at a face with open eyes as opposed to a face with closed eyes (Csibra, 2010). Infants also attempt to imitate others' facial expressions (such as sticking out their tongue and smiling). Caregivers, too, tend to imitate the facial expressions of their infants during communicative exchanges. Some research has found that when mothers imitate their infants' facial expressions, specific parts of the brain are activated, which suggests that maternal empathy and communication skills have a neural basis (Lenzi et al., 2009). Caregiver responsiveness is an important feature of this first phase; caregivers who are warm, sensitive, and responsive to their infants promote their children's ability and desire to sustain long periods of joint attention (an ability that emerges in the next phase).

PHASE TWO: 6 MONTHS TO 1 YEAR In the second phase, spanning from 5 or 6 months of age through about 1 year, children learn to balance their attention between an object of interest and another person (Adamson & Chance, 1998, p. 18). This type of event signals the emergence of joint attention. **Joint attention** is the simultaneous engagement of two or more individuals in mental focus on a single external object or event. For example, when a mother shakes a rattle in front of her infant to get him to look at it, mother and baby are engaging in joint attention. As another example, a baby and mother engage in joint attention as they look at pictures in storybooks together. Joint attention is but one feature that makes human social cognition unique and unlike the social cognition of nonhumans (Carpenter, 2010). Many researchers would suggest that engaging in joint attention is a critical avenue for early communication development. Other researchers (see, e.g., Akhtar & Gernsbacher, 2007) do not believe that joint attention is a necessary and

sufficient precursor to vocabulary. They cite evidence that children can learn new words in the absence of joint attention (e.g., by overhearing) and that children with autism and Williams syndrome can learn new words without engaging in joint attention.

When infants engage in joint attention with others, they have opportunities to hear labels for things in their environment, which helps build their vocabularies. For example, a 10-month-old who shows interest in curtains blowing in the wind might look back and forth between the curtains and his father, establishing joint attention. When the father notices his son's interest, he will likely say something like "Oh, you like the curtains? See the curtains moving?" Research suggests that children who initiate and respond to bids for joint attention have relatively larger vocabularies at 24 months than children whose joint attention abilities are not as strong (Mundy, Fox, & Card, 2003). Often, caregivers take on much of the burden in sustaining periods of joint attention through a variety of techniques, such as using an animated voice and introducing new and interesting objects; this is called *supported joint engagement.* In supported joint engagement, the adult attempts to sustain the child's participation in a period of joint focus.

Why is joint attention so important? Without it, infants may miss out on word-learning opportunities. Imagine a mother pushing her infant down the sidewalk in a stroller as she points upward and exclaims, "Look at the birdie!" Suppose the infant misses his mother's pointing gesture and hears the word *birdie* while he is focused intently on his new shoes. In this situation, mother and son are not jointly attending to the same thing, making it unlikely that the baby will learn what the word *birdie* refers to. In the worst-case scenario, the baby might associate the word *birdie* with his new shoes.

Before infants can use cues to infer another's intentions, however, they must possess *intersubjective awareness*, or the ability to recognize when one shares a mental focus on some external object or action with another person. Only after infants realize that they can share a mental focus with other humans do they begin to interpret others' referential actions (e.g., pointing) as intentional and use their own referential actions to call attention to objects and events that interest them. An infant's attempt at deliberate communication with others is called **intentional communication,** which typically emerges around 9 or 10 months of age. Identifying when an infant's communicative behaviors are intentional or pre-intentional can be difficult unless you are familiar with some established guidelines. Indicators of intentionality include the following: (1) the infant is able to follow another person's line of regard (gaze) and pointing gestures at a distance (i.e., the infant is able to respond to another person's bid for joint attention); (2) the infant is able to use gestures or voice to direct another person's attention to an object of interest; (3) the infant is able to use gestures or voice to request or protest an object of interest; (4) the infant is able to use gestures or voice to get another person to look at, notice, or comfort him or her; and (5) the infant is able to use some gestures to communicate his or her intentions (Watt, Wetherby, & Shumway, 2006).

To illustrate how intentional communication works, picture a mother bathing her infant son, Ian, in the bathtub with several toys floating about. Ian looks in the direction of his mother's pointing and gaze when she says "Look how that duck swam way over there. See the duck?" Ian then points to his toy octopus, which is sitting out of reach on the edge of the tub, to indicate he wants to play with it. When Ian's mother doesn't initially reach for the octopus, he utters "Ah" in an attempt to get her to pass the toy to him. Later, when Ian is splashing in the water, he says "Eeeeeh" so that his mom will notice and will comment on how much fun

Episodes of joint attention help support young children's learning of new words.

he's having. Finally, when Ian is ready to get out of the tub, he raises his arms up over his head, gesturing that he wants his mother to lift him out of the tub.

PHASE THREE: 1 YEAR AND BEYOND In phase three, children move to using language within communicative interactions with others. Once children are adept at soliciting bids for joint attention with others, they shift to being able to engage socially with others by using language to represent events and objects within these interactions. It is still important for parents and other adults to remain actively involved in supporting children's attention and communication during this phase. Research suggests that mothers' verbal encouragement of infants' attention at age 1 year is positively related to infants' language development at that age (Karrass, Braungart-Rieker, Mullins, & Lefever, 2002).

DISCUSSION POINT

Throughout this chapter, you have read that comprehension precedes production in several areas of communicative competence. What are some ways to test whether a child comprehends a word that he or she is not yet producing?

Rituals of Infancy

Infants' lives center around the routines of feeding, bathing, dressing, and sleeping. These routines provide a sense of comfort and predictability, and they also provide early opportunities for language learning. Consider dressing, for example. During this routine, parents often provide a commentary for their infants not unlike a sports commentator's play-by-play during a baseball or football game. Babies hear such things as "Okay, let's put your right arm in. Now your left arm. Good job. Let's get these snaps. Snap! Snap! All done!" Although infants are much too young to learn about the concepts of right and left, they benefit from hearing the same words and phrases repeated to them each day. Infants are adept at computing and making sense of the statistical patterns they hear in speech. By hearing words and phrases over and over again, they become attuned to where pauses occur, which helps them to segment phrases, clauses, and eventually words from the speech stream. They also learn about **phonotactics,** or the combinations of sounds that are acceptable in their language. For example, English-learning infants quickly come to recognize that when they hear /ft/, as in the word *left,* the sounds preceding it (/lɛ/) belong to the same unit, because they never hear /ft/ preceded by a pause.

DISCUSSION POINT

What are some rituals from infancy that you think would be particularly important to support early language and communication development?

In addition to encountering many linguistic patterns in routines, infants also have many opportunities to engage in episodes of joint attention with their caregivers. At bath time, for example, infants may look back and forth between their bathtub toys and the person who is bathing them, creating periods of joint attention in which baby and adult are focused on the same thing.

BOX: *Tech Tools*

Language Sampling

Naturalistic language samples can provide rich data to complement information gathered by clinicians in an effort to determine the presence of a language or developmental disorder. However, collecting, transcribing, and analyzing such language samples can be an arduous and time-consuming process. Recent technological advances made by the LENA foundation (www.lenafoundation.org) can assist clinicians in collecting and analyzing language samples for children between 2 and 4 years of age. The LENA foundation describes the Language ENvironment Analysis System, or LENA, as the world's first automatic language collection and analysis tool designed for use by clinicians and researchers alike.

According to the product website, the LENA Pro is a recording device weighing 2 ounces that is small enough to fit into the chest pocket of specially designed clothing. It records up to 16 hours of a child's continuous speech, along with the speech and other sounds within about a 6- to 10- foot radius of the child. LENA software then processes the audio from the recorder to provide reports and other data that clinicians can analyze.

Speech-language pathologists can use the LENA system in a variety of ways. One unique purpose of the system is to assist speech-language professionals to automatically and objectively screen for autism and language delays in children who are between 24 and 48 months old. Research using the LENA system (e.g., Oller et al., 2010) indicates that the system provides an objective measure of twelve specific acoustic properties, such as the extent to which the child uses well-formed syllables, controlled pitch, and speech like rhythmic organization. Although further research is under way, the LENA system appears to be a promising technology for assisting speech-language professionals in identifying aspects of children's speech that could be predictive of a language delay or autism.

Courtesy of LENA Research Foundation

Caregiver Responsiveness

Caregiver responsiveness refers to caregivers' attention and sensitivity to infants' vocalizations and communicative attempts. Caregiver responsiveness helps teach infants that others value their behaviors and communicative attempts. Both the quality and the quantity of responsiveness by caregivers play a large role in early language development. Parents who are responsive and follow their children's lead foster greater occasions of joint attention and increase children's motivation to communicate, which results in more frequent initiations and bids for attention by children. More responsive language input by mothers when their children are 9 months old and 13 months old is linked to children's language milestones, including their first imitations, first words, multi-word sentences, and language to talk about the past (Tamis-LeMonda, Bornstein, & Baumwell, 2001). Researchers Girolametto, Weitzman, and Greenberg (2000) described the following key indicators of caregiver responsiveness:

1. *Waiting and listening:* Parents wait expectantly for initiations, use a slow pace to allow for initiations, and listen to allow the child to complete messages.
2. *Following the child's lead:* When a child initiates either verbally or nonverbally, parents follow the child's lead by responding verbally to the initiation, using animation, and avoiding vague acknowledgments.
3. *Joining in and playing:* Parents build on their child's focus of interest and play without dominating.
4. *Being face-to-face:* Parents adjust their physical level by sitting on the floor, leaning forward to facilitate face-to-face interaction, and bending toward the child when above the child's level.

What Are Major Communicative Milestones in Infancy and Toddlerhood?

Chapter 1 described the impressive rate of children's communicative achievements as a remarkable feature of language. Children around the world achieve certain language and communication milestones at roughly the same age and in roughly the same order. The sections that follow chronicle these achievements in a developmental fashion, beginning with infancy.

As you watch these two videos of infants at different stages of vocal development, identify and compare where each child is in relation to his or her vocal development: **video 1** depicts a 3-month-old boy and **video 2** depicts a 12-month-old girl. Are these stages appropriate and typical given the ages of the children? Why or why not?

Infancy

Infancy spans the period from birth to about 2 years of age, during which some of the most dramatic developments in communicative competence occur. We enter infancy essentially as helpless beings, unable to express anything beyond the most rudimentary calls for assistance. We leave infancy as intentional beings, well on our way to being competent communicators and able to express "No! Me do it!" with force and clarity. Infancy is a period of exploration and discovery.

Stages of Vocal Development

Infants follow a fairly predictable pattern in their early use of vocalizations, or the sounds they make. Vocalizations are different from verbalizations, which refer to the words children use. A common way to think about early vocalizations is to use a stage model to describe the observable and sequential pattern of infants' vocalizations. Figure 2.2 presents a stage model called the Stark Assessment of Early Vocal

Figure 2.2
Stages of vocal development

Reflexive stage (0–2 months)	Infants produce sounds of distress (e.g., crying, fussing) and vegetative sounds (e.g., coughs, burps)
Control of phonation (1–4 months)	Infants make cooing and gooing sounds, as well as "raspberries," trills, and clicks
Expansion (3–8 months)	Infants produce isolated vowel sounds and vowel glides and may use marginal babbling
Basic canonical syllables (5–10 months)	Infants use true consonant sounds and true vowel sounds in various combinations
Advanced forms (9–18 months)	Infants use diphthongs and jargon but do not yet produce true words

Source: Based on Nathani, S., Ertmer, D. J., & Stark, R. E. (2006). Assessing vocal development in infants and toddlers. *Clinical Linguistics and Phonetics, 20,* 351–369.

Development–Revised (SAEVD-R; Nathani, Ertmer, & Stark, 2006), which parents, researchers, and clinicians can use to classify vocalizations and assess an infant's oral communication abilities. The SAEVD-R includes 23 types of vocalizations that are grouped into five distinct developmental levels (with approximate ages):

1. *Reflexive stage* (0–2 months). The first kinds of sounds infants produce are called reflexive sounds. *Reflexive sounds* include sounds of discomfort and distress (crying and fussing) and vegetative sounds such as burping, coughing, and sneezing. Although infants have no control over the reflexive sounds they produce, adults tend to respond as if reflexive sounds were true communication attempts. Adults ask questions such as "Aww, why are you so fussy this morning?" to engage infants' attention. Parents may even interpret infants' reflexive sounds out loud for them: "Oh, you're not happy because your diaper needs to be changed?" Some research suggests that adults use information in an infant's face and voice to determine how distressed the infant might be. More specifically, as infants age, adults tend to rate their crying sounds as more distressed and their crying face as less distressed. Also, nonparents tend to rate infants' cries as more distressed than parents do (Irwin, 2003).
2. *Control of phonation* (1–4 months). In the control of phonation stage, infants make cooing and gooing sounds. Cooing and gooing sounds consist mainly of vowel-like sounds (sounds that are close to vowels, but not quite the same sounds adults would make for vowels). Infants in the control of phonation stage might also combine vowel-like segments with a consonant-like segment (e.g., "gaaa"). Other sounds in the control of phonation stage include isolated consonant sounds such as nasalized sounds (in which airflow is directed through the nose), as well as "raspberries," trills, and clicks. When infants produce consonant-like sounds, they typically do so far back in the mouth (e.g., "goooo"). These early consonant sounds are easier for infants to produce than sounds such as /t/ and /f/, which require more precise control over their tongue, lips, and teeth.
3. *Expansion* (3–8 months). In the expansion stage, infants gain more control over the articulators and begin to produce isolated vowel sounds (those that we would consider to sound like adult vowels), as well as vowel glides (e.g., "eeeey"). Infants of this age also experiment with the loudness and pitch

of their voices, and they may squeal or produce a series of squeals. During this stage, infants may also use marginal babbling, an early type of babbling containing short strings of consonant-like and vowel-like sounds.

4. *Basic canonical syllables* (5–10 months). In this stage, infants begin to produce single consonant-vowel (C-V) syllables (e.g., "ba," "ma"). Canonical babbling also emerges in this stage, and it differs from infants' earlier vocalizations because it contains more than two C-V syllables in sequence. Babbling may be reduplicated or nonreduplicated. Reduplicated babbling consists of repeating consonant-vowel pairs, as in "ma ma ma," whereas nonreduplicated babbling (which is also called *variegated babbling*) consists of nonrepeating consonant-vowel combinations, such as "da ma gi bo." Infants in this stage also produce whispered vocalizations, consonant-vowel combinations followed by an isolated consonant ("ba---d"), and disyllables, which consist of two C-V syllables separated by an audible gap ("ba---ga"). Parents might view their children as beginning to talk when they begin to babble because such syllable combinations resemble adult speech.

   You may be surprised to learn that infants who are Deaf also babble. Deaf infants as well as hearing infants who have parents who are Deaf (and thus use a sign language) babble using their hands. This manual form of babbling has a slower rhythm than ordinary gestures, and infants produce manual babbling within a tightly restricted space in front of their bodies (Petitto, Holowka, Sergio, & Ostry, 2001).

5. *Advanced forms* (9–18 months). In the more advanced stage of early vocalizations, infants begin to produce diphthongs, which are combinations of two vowel sounds within the same syllable, as in the combination of vowel sounds in the word *toy* and the word *mine*. Infants also begin to produce more complex syllable forms, including single syllable types such as V-C ("ak"), C-C-V ("spee"), complex disyllables such as V-C-V ("uma"), and multisyllabic strings with and without varied stress intonation patterns ("idagee"). Probably the most noticeable achievement in the advanced forms stage is jargon. **Jargon** is a special type of babbling that contains at least two syllables and at least two different consonants and vowels, as well as varied stress or intonation patterns. Because infants using jargon incorporate stress and intonation patterns, you may think you are hearing questions, exclamations, and commands, even in the absence of recognizable words. Although the vocalizations infants produce while they are babbling or using jargon may sound like short words or syllables, such vocalizations are not considered true words because they are not referential, nor do they convey meaning. Rather, at this stage, infants are still experimenting with the sounds of their native language.

EMERGENCE OF INTENTIONALITY Between 7 and 12 months, infants begin to communicate their intentions more clearly than before. Prior to this period, we consider children to be preintentional. Although infants may do things that are considered intentional (e.g., cry out in a certain way, babble), adults bear the burden of inferring their intentions in these acts, as in the following:

INFANT: (*squeal, smile*)

FATHER: Oh, you liked that!

INFANT: (*burp*) Maa.

FATHER: You want more? You do, don't you? Yes, you do.

In this interaction, the infant produces preintentional behaviors that are ambiguous at best, but the father views these as intentional. The infant's intentionality comes not from within, but rather from the adult with whom the infant is interacting.

In the latter half of the first year of life, infants become increasingly interested in the people and objects around them, and they also become interested in intentionally communicating to people about objects and events. During this stage of development, infants become attuned to the referential signals of others (e.g., pointing, eye gaze, line of regard), and they begin to use their own intentional gestures to direct others' attention. This transition to intentionality is a particularly important event in the communication achievements of young children. With intentionality, children are well on their way to being able to deliberately describe their needs, interests, and thoughts to the world around them, as in the following interaction:

INFANT: Mama (looks at mother and raises arms).

MOTHER: Oh, you want me to pick you up?

Infants demonstrate evidence of intentionality through their communicative efforts toward others, by pointing to objects, showing objects, gesturing, and using eye contact.

TRANSITION TO SYMBOLIC REPRESENTATIONS A word is a symbol, because it stands for and represents something else in the world. As infants approach their first birthday, they become aware of how sequences of sounds symbolize concepts in the world. Words are arbitrary symbols; with the exception of some onomatopoeic words (words, like *buzz* and *coo* that sound like the concepts they represent), words do not directly signal the concepts they represent. As infants develop, their **lexicons,** or mental dictionaries, develop as well. For each word they learn, infants create an entry in their lexicon, similar to the boldfaced words in dictionaries. The lexical entries are essentially a series of symbols. Each entry comprises the word, the word's sound, the word's meaning, and the word's part of speech (Pinker, 1994). Figure 2.3 shows the lexical representation for the word *money.*

At roughly 1 year of age, children move from using intentional communicative behaviors, including eye contact, gestures, and vocalizations, to using symbols, including words and gestures, to communicate. This 1-year mark signals an important and exciting transition for developing children. Although children at 1 year likely understand only a few words, parents often are quite gleeful when their children begin to use these words expressively.

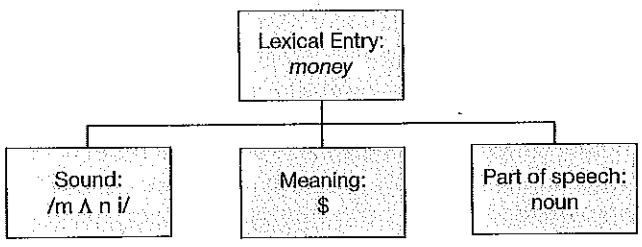


Figure 2.3
Lexical entry for the word *money*

Words are not the only types of symbols children use as they make the transition from nonsymbolic to symbolic communication. Children begin to use referential gestures at roughly the same time that they begin to use words. A referential gesture is one that carries a fixed meaning, such as flapping the arms to refer to a bird (Iverson & Thal, 1998). Referential gestures are different from *deictic* gestures, such as pointing or waving, which are used to indicate or call attention to something. Referential gestures are symbolic and function much like words for young children; for instance, a young child waving her hand a particular way can clearly communicate to her parents her disdain for a particular food. As children develop their initial lexicons, it is important to recognize the contributions of referential gestures. Young children's use of referential gestures provides them a much larger communicative repertoire in their transition to symbolic communication than is possible with spoken words alone (Iverson & Thal, 1998). Interestingly, research suggests that infants who use more different types of gestures to convey meaning at age 14 months have larger vocabularies at age 54 months than those who use fewer gesture types at age 14 months (Rowe & Goldin-Meadow, 2009).

As you know from Chapter 1, adults communicate for three main reasons: to request, to reject, and to comment. Once intentionality emerges in infants, they, too, communicate for these reasons, although the methods they employ are somewhat different. Prelinguistic infants may request a favorite toy by pointing to it. They may reject a not-so-favorite toy by pushing it away or hurling it across the room, and they may comment on a toy by holding it up for another person to see or even offering it to someone. When children begin to produce words, they use their first words for these same three communicative functions.

Of all the communicative milestones infants reach, parents, grandparents, and other family members tend to be the most excited about an infant's first word. On average, infants utter their first true word around 12 months. First words usually refer to salient people and objects in infants' everyday lives, such as *mama, dada, doggie,* and the like. Researchers consider a vocalization a true word if it meets three important criteria.

First, an infant needs to utter the word with a clear intention and purpose. When a baby says "doggie" while petting a dog, the baby undoubtedly has a clear intention and purpose of referring to the pet. If, however, a parent tells his or her child to "say doggie, say doggie" and the baby does so, the utterance is an imitation or repetition rather than a true word.

Second, a true word has a recognizable pronunciation. Obviously, 12-month-olds are not capable of producing all sounds accurately, but their first word should be a close approximation of the adult form, and others should be able to recognize the word. Thus, the child's "doddie" for *doggie* is a close enough approximation to consider this a true word. However, if a child produces *doggie* as "oo-na"—even consistently and while clearly using "oo-na" to refer to the family dog—it is not considered a true word, because it does not closely approximate the form adults use. The term *phonetically consistent form,* or *PCF,* is used to describe these idiosyncratic, wordlike productions that children use consistently and meaningfully but that do not approximate forms used by adults. Although not true words, these forms are important aspects of children's language development.

Third, a true word is one that a child uses consistently and in contexts beyond the original context. We would expect the baby who said "doggie" while petting the dog to use this word not only with that particular dog, but also for other people's dogs, pictures of dogs, and possibly even when hearing dogs barking in the distance. The extension of words across various contexts is related to the symbolic

aspect of words and how one word can have many diverse referents across time and place. Children demonstrate the symbolic element of word use when they take a word and apply it to diverse contexts, even incorrectly, as when a child calls every man "daddy" or all furry animals "cats."

Toddlerhood

In these two videos you will see toddlers at different stages of development and expressive phonology: **video 1** depicts an 18-month-old boy and **video 2** depicts a 24-month-old girl. Identify which phonological processes each child is using. Are these processes exhibited developmentally appropriate given their ages? Why or why not?

The word *toddler* describes a child learning to walk, who takes short, unsteady steps. Just as toddlers' movements may appear clumsy to observers, so too do toddlers' achievements in communicative competence sound a bit clumsy to the naive listener. Have you ever heard a toddler say "Me do it!" or "I have two mouses"? During this stage, toddlers experiment with form, content, and use as they continue to acquire communicative competence.

ACHIEVEMENTS IN FORM From roughly 1 year to 18 months of age, children acquire an expressive lexicon of about 50 words. For approximately 6 months after toddlers reach the 50-word mark (roughly from 18 months to 24 months), significant changes in children's communicative competence are evident. Children begin to show evidence of a rudimentary use of syntax, or language form, and begin to inflect words with grammatical morphemes. A grammatical morpheme is an inflection added to words to indicate aspects of grammar, such as the plural *s*, the possessive *'s*, the past tense *-ed*, and the present progressive *-ing*. These morphemes are an important aspect of grammatical development.

Children typically begin to move from single-word to multiword utterances between the ages of 18 and 24 months. During this time, parents begin to hear phrases such as "go bye-bye?" and "Mommy ball." It is during the two-word stage that children begin to acquire a sense of language structure. They see the value of combining words rather than using single words and can begin to use language for a greater variety of communicative functions. Some simple functions that children express during the two-word stage include commenting ("Daddy go"), negating ("No juice"), requesting ("More juice"), and questioning ("What that?").

When children move beyond one-word utterances to produce two- and three-word utterances, they begin to have a distinct grammar that governs the order of words. Recall from Chapter 1 that grammar, or syntax, refers to the rule system that governs the internal organization of sentences. When children produce only one-word utterances, there is no internal organization to consider. However, once children begin to link words to express ideas and desires ("Want go!" "Me do it!"), syntax emerges to govern how these words are organized.

Grammatical morphemes appear in children's speech when children are between 19 and 28 months of age, which is when expressive morphology can first be documented. When grammatical morphemes first emerge, language exhibits a *telegraphic* quality that results from the omission of key grammatical markers. The term *telegraphic* comes from telegrams that people would send to one another in the days before long-distance phone services were available. When sending a telegram, a customer paid by the word, so someone sending a telegram would omit function words (e.g., *a, the*) to save money. A toddler's "Mommy no go" and "Daddy walking" are telegraphic reductions of "Mommy, don't go" and "Daddy is walking." The emerging use of grammatical morphemes signals the child's development of morphology and his or her gradual increase in grammatical precision.

Table 2.1
Acquisition of Brown's 14 grammatical morphemes

Grammatical Morpheme	Age (in months)	Example
Present progressive *-ing*	19–28	*doggie running*
Plural *-s*	27–30	*shoes*
Preposition *in*	27–30	*milk in cup*
Preposition *on*	31–34	*cat on couch*
Possessive *'s*	31–34	*kitty's bowl*
Regular past tense *-ed*	43–46	*froggy jumped*
Irregular past tense	43–46	*Dad broke it*
Regular third-person singular *-s*	43–46	*birdy eats*
Articles *a, the, an*	43–46	*the car*
Contractible copula *be*	43–46	*she's tall*
Contractible auxiliary	47–50	*she's cooking*
Uncontractible copula *be*	47–50	*we were [we were busy]*
Uncontractible auxiliary	47–50	*she was [she was working]*
Irregular third person	47–50	*she made it*

Source: Based on Brown, R. (1973). *A first language: The early stages.* Cambridge, MA: Harvard University Press.

Roger Brown, a pioneer in early morphological development, documented the order and ages at which children tend to master 14 common morphemes. (See Table 2.1 for a list of grammatical morphemes, the approximate ages when they appear, and examples of these morphemes.) These grammatical morphemes tend to develop in the same order and emerge at roughly the same time in all English-speaking children. The first grammatical morpheme that children use expressively is the present progressive form *-ing,* as in *doggie running.* Children begin to use this morpheme around 18 or 19 months of age and master using the morpheme by 28 months. Additional morphemes that appear during toddlerhood include the prepositions *in* and *on,* which children start to use at about 2 years of age (*in cup, on table*), the regular plural *s* (*babies eating*), the possessive *'s* (*kitty's bowl*), and the irregular past-tense verb (*Dad broke it*). Irregular past-tense verbs, of which there are between 150 and 180, are verbs that children must memorize rather than form by adding *-ed* (e.g., *eat/ate,* not *eat/eated*). Once children have acquired the regular past-tense rule, they often overgeneralize its use to irregular verbs until they have had sufficient exposure to and practice with irregular verbs (e.g., *break, swim, run*) and regular verbs (e.g., *bark, help, melt*).

Sentence forms appear awkward for the most part during the toddler years. Toddlers tend to use uninflected verb forms ("Kitty eat") and to misuse or omit pronouns ("Me go," "Her do it"). Despite these awkward constructions, toddlers begin to use more adult-like forms for a variety of sentence types, including the yes/no question ("Are we going, Mommy?"), *wh-* questions ("What's that?"), commands ("You do it"), and negatives ("I don't like that").

Table 2.2
Brown's stages of language development

Stage	Age (upper limit)	MLU	MLU Range	Major Achievements
I	18 months	1.31	.99–1.64	• Single-word sentences • Uninflected nouns and verbs (*mommy, eat*)
II	24 months	1.92	1.47–2.37	• Two-element sentences • True clauses not evident (*Mommy up; Eat cookie*)
III	30 months	2.54	1.97–3.11	• Three-element sentences • Independent clauses emerge (*Baby want cookie*)
IV	36 months	3.16	2.47–3.85	• Four-element sentences • Independent clauses continue to emerge (*The teacher gave it to me*)
V	42 months	3.78	2.96–4.60	• Recursive elements predominate
Post V	54 months	5.02	3.96–6.08	• Complex syntactic patterns • Connecting devices emerge (*and, because*) • Subordination and coordination continue to emerge • Complement clauses used (*She's not feeling well*)

Sources: Adapted from R. D. Kent. (1994). *Reference manual for communicative sciences and disorders: Speech and language.* Austin, TX: Pro-Ed; and L. M. Justice & H. K. Ezell. (2002). *The syntax handbook.* Eau Claire, WI: Thinking Publications.

In addition to documenting grammatical morpheme usage, Roger Brown also created Brown's stages of language development, which characterize children's language achievements based on their ability to produce utterances of varying syntactic complexity (see Table 2.2). One of the defining characteristics of preschoolers' increasing language complexity is their **mean length of utterance (MLU).** MLU refers to the average length of children's sentence units, or utterances. Each utterance a child produces contains one or more morphemes, which are the smallest possible units of meaning. We can calculate MLU by counting the total number of morphemes in a sample of 50 to 100 spontaneous utterances that a child produces and then dividing the total number of morphemes by the total number of utterances: *MLU = total number of morphemes/total number of utterances.*

During the toddler and preschool years, children's MLU increases systematically. Calculating MLU is a common way to evaluate children's language skills against the expectations for their age. In order to achieve consistency in morpheme counts, researchers and practitioners generally use Brown's rules for counting morphemes (see Brown, 1973), although other protocols exist for this procedure. Although normally we would use a language sample of at least 50 utterances to increase the chances that the sample is valid and represents how a child usually uses language, for the sake of explanation we will use a short sample to demonstrate how to calculate the MLU for a 2-year-old.

	Utterance	Morphemes
1	Me do it.	3
2	No, me do it.	4
3	Eli want it.	3
4	Me go outside.	3
5	Outside.	1
6	What that?	2
7	Mommy do.	2
8	What that?	2

In this very brief sample, the child produced 8 utterances and a total of 20 morphemes, resulting in an MLU of 2.5. The norms presented in Table 2.3 show that the predicted MLU for a 2-year-old is 1.92. Sixty-eight percent of children have scores within one standard deviation of 1.92, or between 1.47 and 2.37. Thus, our example child's MLU is slightly higher than expected for his or her age.

ACHIEVEMENTS IN CONTENT Do you know parents who keep a diary or list of words that their children produce? Parents who keep track of their children's new words generally begin to have trouble keeping up with the word-learning pace

Table 2.3
Normative references for interpreting MLU

Age (in months)	Predicted MLU	Predicted MLU +/– One Standard Deviation (68% of Population)
18	1.31	0.99–1.64
21	1.62	1.23–2.01
24	1.92	1.47–2.37
27	2.23	1.72–2.74
30	2.54	1.97–3.11
33	2.85	2.22–3.48
36	3.16	2.47–3.85
39	3.47	2.71–4.23
42	3.78	2.96–4.60
45	4.09	3.21–4.97
48	4.40	3.46–5.34
51	4.71	3.71–5.71
54	5.02	3.96–6.08
57	5.32	4.20–6.45
60	5.63	4.44–6.82

Source: Adapted from J. F. Miller & R. Chapman. (1981). The relation between age and mean length of utterance in morphemes. *Journal of Speech and Hearing Research*, 24, 154–161. Reprinted with permission.

when their children are between 18 and 24 months of age. During the second half of the second year, or around the time when children have acquired 50 words, they often experience a **vocabulary spurt,** or word spurt (also referred to as a *naming explosion*), a remarkable increase in the rate of vocabulary acquisition. During the vocabulary spurt, children learn an average of 7 to 9 new words per day. Many parents of toddlers report that their children use new words out of the blue, such as *plenty, vent, dangerous,* or *steep*. The amount of vocabulary children know when they enter school is an important indicator of their success in school. Researchers Rowe, Raudenbush, and Goldin-Meadow (2012) have found that children with faster rates of vocabulary growth between 14 and 46 months had larger expressive vocabularies at 54 months than their peers with a similar initial number of words but slower rates of growth. This finding makes a great deal of sense because we would expect a 2-year-old who knows 50 words and has a faster rate of vocabulary growth to learn a greater number of words before entering school than a 2-year-old who knows 50 words but has a slower rate of vocabulary growth.

During toddlerhood, substantial growth occurs in both the receptive and the expressive lexicons. The receptive lexicon encompasses the words a person can comprehend, whereas the expressive lexicon refers to the words a person can produce. As we described earlier in this chapter, comprehension generally precedes production in language learning; this pattern holds as well for the receptive and expressive lexicons. For example, girls who are 18 months of age have an average of 65 words in their receptive vocabularies but only 27 words in their expressive vocabularies; in comparison, boys of the same age understand an average of 56 words and produce an average of 18 (Fenson et al., 2000). The disparity between the sizes of receptive and expressive lexicons continues throughout toddlerhood and the school years and into adulthood.

Although children learn about 7 to 9 new words per day between the ages of 18 and 24 months, they do not always use these words the way adults do. Children tend to use a new word cautiously at first. They apply newly learned words to specific objects or actions rather than to a category of objects or actions. This practice is called **underextension.** For instance, children who have just learned the word *doggie* might use it only to refer to the family pet; or children might use their new word *cup* to refer only to their green sippy cup. A child might learn the word *yellow* for a specific shade of yellow and stoically refuse to apply this word to other variants of yellow.

Children also engage in **overextension,** which is the opposite of underextension and involves the use of words in a wider set of contexts than adults would consider appropriate. Toddlers tend to overgeneralize new words on the basis of categorical, analogical, and relational similarities. A categorical overextension occurs when a child extends a known word to other referents because they are in the same category. For instance, a child may learn the word *horse* and then use it for all four-legged animals. Likewise, a child may use the word *juice* for all liquids or the word *snap* for all actions that involve clothing (buttoning, zippering, folding, etc.). An analogical overextension occurs when a child extends a known word to other referents because they have perceptual similarities. For instance, a child may use the word *ball* to describe anything round (e.g., the moon) or may use the word *ladder* to describe anything tall (e.g., a flagpole). A relational overextension occurs when a child extends a known word to other semantically related referents. For instance, the child may use the word *bird* to refer to a bird, a bird bath, and birdseed.

ACHIEVEMENTS IN USE In addition to acquiring new grammar and words as they move from the single-word to the multiword stage, children acquire important new language functions and conversational skills. By the time children enter the multiword stage, they are capable of using a variety of language functions, including instrumental, regulatory, personal interactional, heuristic, imaginative, and informative functions (Halliday, 1978). Children can use requests to satisfy their own needs (instrumental; "Can I play with that next?"), use directives to control the behaviors of others (regulatory; "Stop pushing me!"), tell information about themselves and share feelings (personal interactional; "This is my favorite song"), request information and ask questions to learn and investigate the world (heuristic; "Where did this come from?"), tell stories to pretend (imaginative; "I know how to fly airplanes because I'm a pilot"), and give information to communicate with others (informative; "I'm three"). Children's success at using communication for a variety of purposes is one of the most important aspects of communicative development during toddlerhood. Children use their growing lexicon and sophisticated grammar for many purposes. When children's internal demand for speech—their desire to communicate various functions or intentions—exceeds their capacity, they can become frustrated.

One area in which toddlers are not highly skilled is conversation. Conversational skill requires being able to initiate a conversational topic, sustain a topic for several turns, and then appropriately conclude the conversation. Those of us who have attempted to have a conversation with a young child know it is not usually very sophisticated:

PARENT: What did you do at school today?

TODDLER: Um, naptime.

Toddlers may demonstrate some skill in starting a conversation but cannot usually keep it going for more than one or two turns. Typically, the adult bears the burden of maintaining a particular topic. Toddlers also have difficulty keeping their audience's needs in mind: They may use pronouns without appropriately defining to whom they refer ("He is not nice"), and they may discuss topics without ensuring that the listener has a sufficient frame of reference to understand the context ("I want my favorite cereal, not this cereal"). You may also notice that in conversations, when you ask a toddler a specific question or give him or her an explicit opportunity to take a turn, the child will not always take the opportunity. The toddler may simply not respond or may respond noncontingently (off the topic). Toddlers are not yet proficient at realizing when they are not following along in a conversation and are thus not likely to seek clarification.

ACHIEVEMENTS IN SPEECH In the infancy period, children's vocal development undergoes considerable change as they move from reflexive sounds, like burping and coughing, to variegated babbling that sounds more like the language of their community. During the toddler years, children's development of phonology—their knowledge of the rules concerning the sound system—grows rapidly.

Expressive phonology refers to the observable sounds and sound patterns children use when producing syllables and words. When they speak, toddlers tend to use the sounds with which they are most skilled. Underlying every sound or sound pattern that a child produces is a *phonological representation,* a mental representation of a particular phoneme or sound pattern. These internal representations differentiate each phoneme in the child's repertoire from all the other phonemes and provide children with the rules for combining sounds into different patterns.

Together, these underlying representations form a child's phonological repertoire, or phonological system.

Attainment of Specific Phonemes. Results of research on the ages by which children can produce English consonant sounds (consonantal phonemes) vary widely. You may have heard of *norms* or *norm references,* which describe when children master certain abilities, as well as the order in which they master them. Perhaps the most popular norm references indicating when children tend to produce a sound correctly more often than they mispronounce it or omit it are Sander's (1972) customary ages of production and ages of mastery of speech sounds (see Figure 2.4). The phrase *customary age of production* describes the age by which 50% of children can produce a given sound in multiple positions in words in an adult-like way (e.g., the /s/ sound in sap, which occurs at the beginning of a syllable, and the /s/ sound in pass, which occurs at the end of a syllable). The customary age of production is indicated by the left edge of the bars in Figure 2.4. For example, around age 3, about 50% of children can produce the sound /s/ in multiple positions in a word in the correct way. By contrast, the phrase *age of mastery* describes the age by which 90% of children produce a sound in an adult-like manner. The age of mastery is indicated by the right edge of the bars in Figure 2.4. For example, the figure indicates that by age 8, most children have mastered producing the /s/ sound.

When assessing a toddler's sound production abilities, practitioners must consider that speakers do not typically produce phonemes in isolation. Neighboring sounds and combinations of sounds may affect children's production of particular sounds. Thus, to obtain an accurate picture of children's abilities, practitioners usually ask children to produce speech sounds in various positions (e.g., in the initial position in words and in the final position in words) and with a variety of neighboring sounds (e.g., followed by a vowel, after certain consonants). For instance, to understand whether a child can accurately use the speech sound /d/, we might ask a child to use this sound not only in the initial position of a word (*dare, dial, dance*) but also in the medial position (*daddy, body*) and final position (*mad, bid, sod*). Also, some consonants occur often in clusters with other consonants (e.g., S + P in *speech* and *spot*). Producing sounds within a cluster can be more challenging than producing a sound in isolation.

Although the exact age by which children can produce a particular phoneme varies across the norms, the order in which children tend to acquire the phonemes is generally the same across the normative samples. As shown in Figure 2.4, /p/, /m/, /h/, /n/, and /w/ are phonemes that are acquired early, and /v/, /z/, and θ (as in *th*ink) are phonemes that are acquired later.

Phonological Processes. As children develop their phonological repertoires, they make a number of adjustments to the production of specific sounds and sound classes. These natural adjustments are called *phonological processes;* they are processes of sound change that children apply to words and syllables to simplify the phonological production. These processes reflect normal patterns of deviation from the adult phonology, which will change as the child matures. These patterns are fairly universal across children. For instance, many preschool children say "sell" for *shell* and "tee" for *tree.* They say "jamas" for *pajamas* and "tum" for *thumb.* Adults who work often with young children expect to hear these systematic phonological patterns, or processes, in their speech.

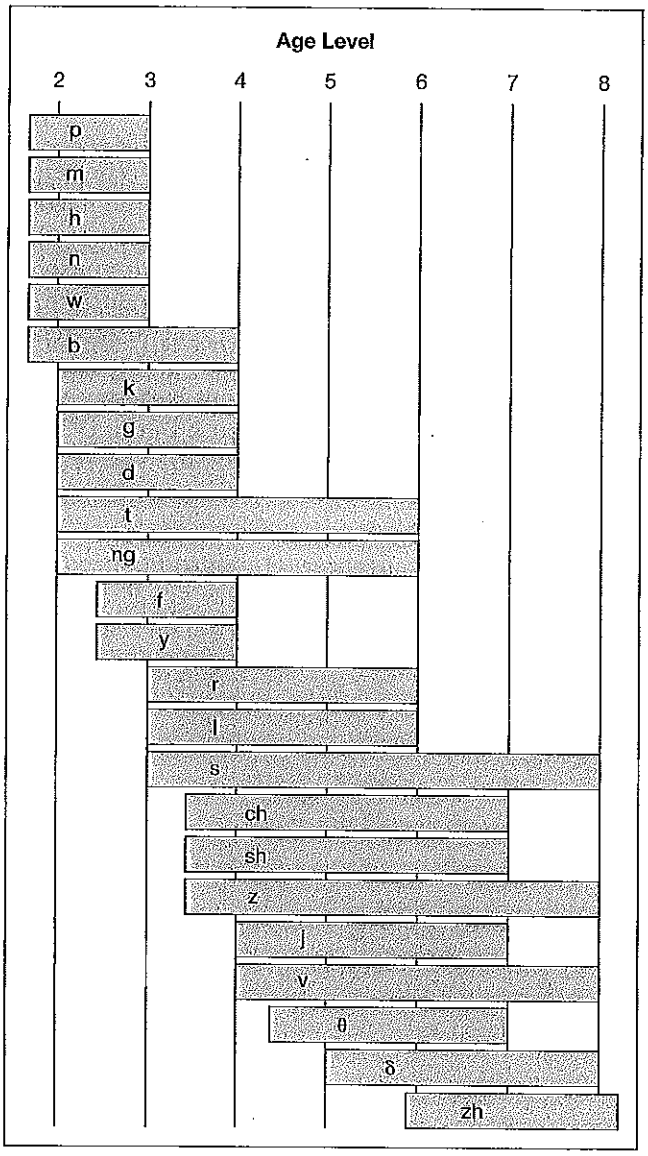


Figure 2.4
Sander's norms for age ranges of consonant development

Source: From E. K. Sander. (1972). When are speech sounds learned? *Journal of Speech and Hearing Disorders, 37,* 62. Reprinted with permission.

Toddlers' expressive phonology exhibits a large variety of phonological processes. Common ones include the following:

1. *Final consonant deletion:* The final consonant of a word is omitted ("ca" for *cat*).
2. *Reduplication:* The first syllable in a word is repeated ("wa-wa" for *water*).
3. *Consonant harmony:* One consonant in a word takes on features of another consonant ("doddie" for *doggie*).
4. *Weak syllable deletion:* The unstressed syllable in a word is omitted ("jamas" for *pajamas*).
5. *Diminutization:* The second syllable in a word is changed to "ee" or "ee" is added to a one-syllable word ("blankie" for *blanket* or "duckie" for *duck*).

6. *Cluster reduction:* A consonant cluster (two or more consonants that occur together, as in *st*ick or *cr*ayon) is reduced to a single consonant ("tick" or "cayon").
7. *Liquid gliding:* The consonants /l/ and /r/ are changed to *w* and *y* ("wabbit" for *rabbit* and "yove" for *love*; Vihman, 2004).

These and many other types of phonological processes represent the systematic substitutions, omissions, and additions that young children make as they acquire the phonology of their language (Vihman, 2004). Gradually, as children's phonology matures, these processes are suppressed, and children exchange immature production (e.g., liquid gliding) for mature, adult-like production.

DISCUSSION POINT

What are some factors that contribute to a sound being acquired earlier than other sounds? For instance, children master /b/ long before they master /r/ in English. What are some possible explanations for this?

The suppression of processes tends to follow a general age-related pattern. For instance, of the processes listed previously, children tend to suppress the first five (final consonant deletion, reduplication, consonant harmony, weak syllable deletion, and diminutization) by age 3 (Stoel-Gammon & Dunn, 1985). Thus, although these processes may occur frequently in toddlers, they become less frequent as children age from 2 to 3 years. The last two processes, cluster reduction and liquid gliding, are suppressed later.

BOX: *Mainstream Mentions*

With updated prevalence rates for Autism Spectrum Disorder (ASD) released in 2012, the mainstream media have focused an increasing amount of attention on this issue, including reports of studies linking various environmental factors to the disorder. The Centers for Disease Control and Prevention (CDC; 2012) estimates that about 1 in every 88 children has ASD. This rate is 23% higher than the rate of 1 in every 110 children, which the CDC released in 2009, and 78% higher than the rate of 1 in every 152 children, which the CDC released in 2007. One particular study receiving attention in the press is a report providing evidence that maternal diabetes and obesity are risk factors for autism, developmental delays, and delayed language (Krakowiak et al., 2012). The study found that mothers with diabetes were 2.3 times more likely to have a child with a developmental delay than mothers without diabetes, and obese mothers were 1.7 times more likely to have a child with ASD and 2.1 times more likely to have a child with a developmental delay than mothers who were not obese prior to their pregnancy. This study found, furthermore, that maternal diabetes was associated with greater deficits in expressive language in children with ASD.

On the April 2, 2012, edition of the show *Fox and Friends,* real estate mogul and reality TV star Donald Trump suggested that he believes that vaccines (specifically, multiple vaccines that are combined into a single shot) cause autism. Although Trump admitted that the theory he subscribes to is controversial and that it is not supported by many doctors, he said he knew of a couple of cases of a healthy young child receiving a vaccination and subsequently developing autism. Later, according to The State Column (http://www.thestatecolumn.com/articles/donald-trump-there-is-great-dishonesty-about-autism/), Trump slammed the study by Krakowiak and her colleagues, calling it "ridiculous." Trump further commented that the Food and Drug Administration (FDA) should immediately stop heavy-dose vaccinations, suggesting that we would see a huge decrease in children with autism.

The 2012 study by Krakowiak and colleagues and the subsequent news coverage illustrate both how important and how controversial research exploring environmental factors linked to autism, developmental delay, and language impairment can be. Trump's response to the study also illustrates the role that activists may play in supporting or opposing scientific research in the media. It is important for viewers of mainstream media to keep in mind that celebrity activists do not always present the most objective views about their interests and that they may not always promote ideas that are accepted by those in the scientific community.

What Are Major Communicative Milestones in Preschool- and School-Age Children?

Preschool Accomplishments

In these two videos you will see two preschool-aged children at different stages of development: **video 1** depicts a three-year-old boy and **video 2** depicts a four-year-old girl. As you watch the videos, try to identify their respective achievements in form, content, and use.

During the preschool years, when children are between 3 and 5 years old, they truly begin to master form, content, and use in their development of communicative competence. By many accounts, language acquisition is nearly complete by the time children leave preschool and begin formal schooling. Those of you who have recently had a conversation with a 5-year-old realize that the 5-year-old has an amazingly large vocabulary, demonstrates skill (relatively speaking) in holding a conversation, and uses the syntax of an adult. From kindergarten on, achievements in language are subtle and protracted relative to the remarkable and rapid advances of infancy, toddlerhood, and the preschool years.

ACHIEVEMENTS IN FORM During the preschool years, children refine their syntax and morphology in significant ways. Noteworthy advances occur in children's use of grammatical and derivational morphology. Grammatical morphemes, discussed earlier, are the modifications to words that provide additional grammatical precision, such as pluralizing words (*cat/cats*) and inflecting verbs (*go/is going*). Grammatical morphemes do not really carry meaning; rather, they provide grammatical detail. Derivational morphology is similar to grammatical morphology in that it modifies the structure of words. However, derivational morphology refers to the addition of prefixes and suffixes that carry meaning and thus change a word's meaning and sometimes its part of speech. For instance, we can add the suffix *-er* to *work* to change its part of speech from a verb to a noun (*worker*); we can add the prefix *un-* to *happy* to change its meaning. Additional common derivational morphemes include *pre- (preterm), super- (superstar), -est (heaviest), -ness (foolishness),* and *-ly (boldly).* Morphological development brings the ability to manipulate word structure by adding these and other prefixes and suffixes, allowing children to become increasingly precise and specific in their communication. Morphology allows children to expand their basic word repertoire exponentially; for instance, from the word root *run,* the child with well-developed morphology has access to numerous variations (*rerun, ran, running, runner,* etc.).

During the preschool years, children acquire additional grammatical morphemes, described by Brown (1973). For instance, children begin to use the articles *a, an,* and *the* to elaborate nouns (*a horse, an ant, the house*). The greatest development at this time is in the area of verb morphology. Speakers of English inflect verbs to provide information about time (e.g., past, present, future). Often, the verb *be* serves as an important marker of time. When *be* or one of its forms (*am, is, are, was, were*) is the main verb in a sentence, as in *I am Paul,* it is called a *copula.* When *be* or one of its forms serves as a helping verb in a sentence, as in *I am hugging Paul,* it is called an *auxiliary.* The *be* copula and auxiliary forms can be contracted (*He's happy; I'm going*) or uncontracted (*He is happy; I am going*). During the preschool years, children acquire many of the nuances of verb morphology, including mastery of the variations of *be* as both copula and auxiliary. Delayed development of verb morphology is one of the major signs of a language disorder (Brackenbury & Fey, 2003). Major achievements in verb morphology that occur in children between the ages of 3 and 5 include mastering the following:

Uncontractible copula (27 to 39 months): *be* copula that cannot be contracted, as in *Here she is* and *We were happy.* These copula are uncontractible because

it is incorrect to say "Here she's" (to mean *Here she is*) or "We're happy" (to mean *We were happy*).

Contractible copula (29 to 49 months): *be* copula that can be contracted, as in *Debbie's here.*

Uncontractible auxiliary (29 to 49 months): *be* auxiliary that cannot be contracted, as in *They were going.* The auxiliary form cannot be contracted in this case because *they're means they are,* not *they were.*

Contractible auxiliary (30 to 50 months): *be* auxiliary that can be contracted, as in *Mommy's working.* (Owens, 2007)

In addition to major achievements in morphology, the preschool years shepherd in significant advances in sentence complexity. Preschoolers move from simple declarative subject-verb-object constructions (*Daddy drives a truck*) and subject-verb-complement constructions (*Truck is big*) to more elaborate sentence patterns, such as

- Subject-verb-object-adverb (*Daddy's hitting the hammer outside*)
- Subject-verb-complement-adverb (*Baby is sleepy now*)
- Subject-auxiliary-verb-adverb (*Baby is eating now*)

Children at this time begin to embed phrases and clauses in their sentences to create complex and compound sentences. Children also use coordinating conjunctions (e.g., *and, or, but*) and subordinating conjunctions (e.g., *then, when, because*) to connect clauses. By the end of the preschool period, children produce compound sentences, as in *I told Daddy, and Daddy told Mommy,* as well as complex sentences with embedded clauses, as in *I told Daddy, who told Mommy* (see Justice & Ezell, 2002).

ACHIEVEMENTS IN CONTENT The preschool period represents an active and rich period of lexical development in which children build their language content. Here, we discuss two important areas of preschool language content development. First, preschoolers show rapid expansion of their receptive and expressive lexicons. Second, preschoolers increase their ability to use decontextualized language.

The Lexicon. By some accounts, children learn about 860 root word meanings between age 1 and the end of second grade, which amounts to about 2.4 root words per day (Biemiller & Slonim, 2001). Children learn new words during the preschool period through *incidental exposures,* or situations in which children informally experience new words within contexts of use. Preschool children show remarkable talent in their ability to effectively and efficiently acquire new words within a variety of daily activities (Brackenbury & Fey, 2003).

A single exposure is often adequate for giving children a general sense of a novel word's meaning. However, children's vocabulary acquisition is a gradual process. Their initial word representations progress from immature and incomplete to mature and accurate. The initial exposure to a word accompanied by the rapid acquisition of a general sense of its meaning is called *fast mapping* (Carey & Bartlett, 1978; McGregor, Friedman, Reilly, & Newman, 2002). These initial representations are then refined over time with repeated exposure to the concept over multiple contexts.

Curtis (2005, p. 43) describes vocabulary development (as it applies both to children and to adults) as a four-stage process. In stage 1, a child has no knowledge of a word ("I've never heard it"); in stage 2, a child has emergent knowledge of a word ("I've heard of it, but I don't know what it means"); in stage 3, a child has contextual knowledge of the word ("I recognize it in context. It has something to do with . . ."); and in stage 4, a child has full knowledge of the word ("I know it"). During the preschool period, children's vocabularies include words at each of these stages: Some words are quite familiar, consistent with full knowledge, whereas others are understood in a fairly rudimentary way, consistent with emergent and contextual knowledge.

Decontextualized Language Skills. Preschool-age children begin to make an important shift from being highly contextualized in their language skills to being decontextualized. Contextualized language is rooted in the immediate context: the here and now. Contextualized language relies on shared knowledge, gestures, intonation, and immediately present situational cues. A child using contextualized language might say, "Gimme that" while pointing to something in the listener's hands or might exclaim "Wow!" in the context of a fireworks display.

By contrast, decontextualized language is appropriate and necessary for discussing events and concepts beyond the here and now. Such events may have occurred long ago or might occur in the future; they may be occurring in the next room or only in an abstract realm. During the preschool years, children become able to use language in a decontextualized manner. Decontextualized discourse relies heavily on the language itself in the construction of meaning. Decontextualized language may not contain context cues and does not assume shared background knowledge or context in the same way contextualized language does. A child using decontextualized language might ask a parent for something in another room of the house ("Can you get the blocks down from my bookshelf?") or might describe a cake to someone after his birthday party has taken place ("My mom made a Superman cake for my birthday party"). In the first example, the child cannot rely on the immediate physical context to help in the communication with the mother; as with all types of decontextualized discourse, the child must use highly precise syntax and vocabulary to represent events that are beyond the here and now.

The ability to engage in decontextualized discourse is fundamental to academic success, as nearly all the learning that occurs in schools focuses on events and concepts beyond the classroom walls. This ability develops during the preschool years as children learn to use grammar and vocabulary in a highly precise manner.

DISCUSSION POINT

Children of lower socioeconomic status generally have a more difficult time producing decontextualized language. Why do you think this is?

ACHIEVEMENTS IN USE *Use* describes how we apply language functionally to meet our personal and social needs. During the preschool years, children begin to master several new discourse functions, improve their conversational skills, and use narratives.

Recall that as toddlers enter the two-word stage, they are already capable of using language to satisfy six different communicative functions (instrumental, regulatory, personal interactional, heuristic, imaginative, and informational). Preschoolers begin to use language for an even greater variety of discourse functions, including interpretive, logical, participatory, and organizing functions (Halliday, 1975, 1977, 1978). Interpretive functions interpret the whole of one's experience. Logical functions express logical relations between ideas. Participatory functions express wishes, feelings, attitudes, and judgments. Organizing functions

organize discourse. As the number of discourse functions grows, so, too, do preschoolers' conversational skills.

One mark of an effective conversationalist is the ability to take turns in a conversation. Preschool-age children quickly become adept at turn taking. They can maintain a conversation for two or more turns, particularly when the topic is their favorite: themselves! Although they still have some difficulties understanding when communication breakdowns occur and giving listeners the appropriate amount of information to facilitate understanding, preschoolers are increasingly sophisticated conversationalists. They understand that they should respond to questions, and they discover that speaking at the same time as another person makes for ineffective communication.

Children also begin to hone their narrative skills in the preschool years. "Hey, Mom, guess what I did today?" is one way in which a preschooler might begin a narrative. Narratives are essentially decontextualized monologues, in that rather than describing the here and now, they often focus on people or characters not immediately present or on events removed from the current context. Narratives are monologues in that they are largely uninterrupted streams of language, unlike conversations, in which two or more people share the linguistic load.

In a narrative, the speaker presents a topic and organizes the information pertaining to that topic in such a way that the listener can assume a relatively passive role, providing only minimal support to the speaker. Two important types of narratives are (1) personal, in which an individual shares a factual event of his or her life, and (2) fictional, in which an individual shares a made-up event. Usually, both types of narratives are threaded by an explicit sequence of events that are either causally or temporally related. A causal sequence unfolds following a cause-and-effect chain of events (e.g., Jesse didn't want to go to school . . . so Jesse told his mom he was sick). A temporal sequence unfolds over time (e.g., First we went to the store. Then we told the clerk what we wanted). In producing narrative—whether personal or fictional—the speaker must put into play a complex set of linguistic skills, including use of syntax for ordering words and ideas, verb morphology for signaling the time of events, vocabulary for precisely representing events and people, and pragmatics for knowing how much information to share with the listener.

Although narrative skills begin to develop as early as age 2, most children are not able to construct true narratives until around age 4. Children's early narratives may include only a minimal description of the participants, time, and location of an event. In some cases, they may omit this information altogether. So, for example, when listening to a 3-year-old narrate a story, it may be necessary to ask such questions as "You said Dominick scratched you—is he your brother or your cat?" and "Did that happen on TV or in real life?" to get a better picture of what the child is trying to express. Importantly, narratives become clearer for the listener as children's ability to consider the listener's perspective emerges. Children's repertoire of linguistic devices, including adverbial time phrases (e.g., *yesterday, this morning*) and verb morphology (signaling the time of activities), also grows, increasing the comprehensibility of their narratives.

Because narratives are a complex, multidimensional language activity, narrative skills are a good predictor of current and later school outcomes for preschoolers exhibiting difficulties in developing language skills (Justice, Bowles, Pence, & Gosse, 2010). The decontextualized language inherent in narratives may be the critical link to the acquisition of early literacy skills and subsequent school achievement (Peterson, Jesso, & McCabe, 1999). Table 2.4 summarizes these

Table 2.4
Major achievements in narrative

Approximate Age of Emergence	Narrative Stage	Characteristics
2 years	Heaps	• Few links from one sentence to another • Organization based on immediate perception
2–3 years	Sequences	• Superficial but arbitrary time sequences • No causal links between events
3–4 years	Primitive Narratives	• Have a concrete core surrounded by a set of clarifying or amplifying attributes
4–4 1/2 years	Unfocused Chains	• Story as a whole loses its point and drifts off
5 years	Focused Chains	• A main character experiences a series of events, but no true concept is present
5–7 years	True Narratives	• Has a theme or moral • Concrete, perceptual, or abstract bonds hold the story together

Source: Based on Applebee, A. N. (1978). *The child's concept of story: Ages two to seventeen.* Chicago: University of Chicago Press.

major achievements in narrative and shows how children move from "heaps" and descriptive sequences to well-rounded, complex stories ("true narratives") in the elementary years.

ACHIEVEMENTS IN SPEECH During the preschool years, children continue to expand and stabilize their sound repertoires. By the end of the preschool period, children are likely to have mastered nearly all of the phonemes in their native language. Four- and 5-year-olds typically exhibit only lingering difficulties with a few of the later-developing phonemes, including *r (row), l (low), s (sun), ch (cheese), sh (shy), z (zoo),* and *th (think, though).* Difficulties with some of the sounds acquired earlier may persist in complex multisyllabic words (*daffodil*) or in words with consonant clusters (*split*). However, by the end of the preschool period, children are highly intelligible, and their expressive phonemic repertoire is nearly as extensive as an adult's.

As mentioned previously, phonological processes refer to the systematic deviations children make in their expressive phonology. In the preschool years, nearly all processes are suppressed as children's phonological systems stabilize. Weak syllable deletion and cluster reduction may occur with 4-year-olds but are usually suppressed by 5 years of age. Two patterns that may persist past the fifth birthday are liquid gliding (substituting *y* and *w* for *l* and *r*) and *th* substitution (substituting *d* and *t* sounds for the *th* sound).

Receptive phonology also continues to develop during the preschool years. The achievement of strong internal phonological representations is very important. Reading development—discussed later in this chapter—requires that a child have robust phonological representations in order to make sense of the alphabetic principle, or the relationship between letters and letter combinations (graphemes) and sounds (phonemes). The quality and quantity of phonological stimulation children receive relates to their development of robust phonological representations.

ACHIEVEMENTS IN EMERGENT LITERACY The preschool period marks several critical achievements in young children's development of literacy. Between ages 3 and 5, children begin to make sense of reading and writing in a rudimentary way (Justice & Ezell, 2001). They learn how print works, they begin to play with the sound units that make up words, and they develop an interest in reading and writing. Researchers refer to this earliest period of learning about reading and writing as *emergent literacy.* Emergent literacy encompasses children's developing knowledge about reading and writing conventions. Although children at this time are not yet reading and writing in a conventional sense, their emerging knowledge about print and sounds forms an important foundation for the reading instruction that commences in kindergarten (Justice & Pullen, 2003).

Emergent literacy achievements depend largely on metalinguistic ability, or the child's ability to think about and reflect on language as an object of attention. Emergent literacy involves the child's engagement in activities in four main areas: oral language, phonological awareness, print awareness, and alphabet knowledge.

Oral language describes children's receptive and expressive language abilities, including phonological competence, grammatical competence, lexical competence, and discourse competence. Thus far in this chapter, we have been referring to these abilities simply as "language" abilities. In the context of emergent literacy, we use the term *oral language* to distinguish it from *written language*.

Phonological awareness describes the young child's understanding of and sensitivity to the sound units of oral language—namely, the series of larger and smaller units that make up speech (phonemes, syllables, words). This awareness is one of the strongest predictors of children's later reading outcomes (e.g., Schatschneider, Fletcher, Francis, Carlson, & Foorman, 2004). Phonological awareness emerges incrementally, beginning around 2 years of age and moving from a shallow level of awareness to a deep level of awareness (Stanovich, 2000; although Stanovich uses the term *phonological sensitivity* rather than *phonological awareness*). Children possessing shallow levels of phonological awareness show an implicit and rudimentary sensitivity to large units of sound structure. They are able to hear and produce rhymes, segment sentences into words and words into syllables, and detect beginning sound similarities across words (e.g., *sing, sack, sun*). Children develop these shallow sensitivities during the preschool years, from roughly 3 to 5 years of age. Children with a deep level of phonological awareness demonstrate an explicit and analytical knowledge of the smallest phonological segments of speech, the phonemes. They are able to count the number of phonemes in words (e.g., *wig* has three sounds, *spray* has four sounds), segment words into their constituent phonemes (e.g., *big* can be broken into /b/+ /I/+ /g/), and manipulate the phonological segments contained within words (e.g., deleting the first sound in *spray* and moving it to the end of the word, for *prays*; Justice & Schuele, 2004). Although phonological awareness encompasses a variety of skills, research suggests that the skills share a single underlying ability (e.g., Anthony & Lonigan, 2004).

DISCUSSION POINT

How good are your phoneme segmentation skills? Say the following words aloud and identify how many sounds (not letters!) are in each: *nothing, wheat, elephant, ostrich, fantastic.* (Answers: 5, 3, 7, 6, 9)

Print awareness describes the young child's understanding of the form and functions of written language. Print awareness arises from a number of specific achievements that children generally attain along a developmental continuum (Justice & Ezell, 2004): (1) print interest, (2) print functions, (3) print conventions, (4) print forms, and (5) print part-to-whole relationships (see Figure 2.5). First, young children develop an interest in and appreciation for print. Children recognize that print is a specific type of stimulus in the environment and in books. Second, they begin to understand that print conveys meaning, that it has a specific type of function. Third, children develop an understanding of specific print

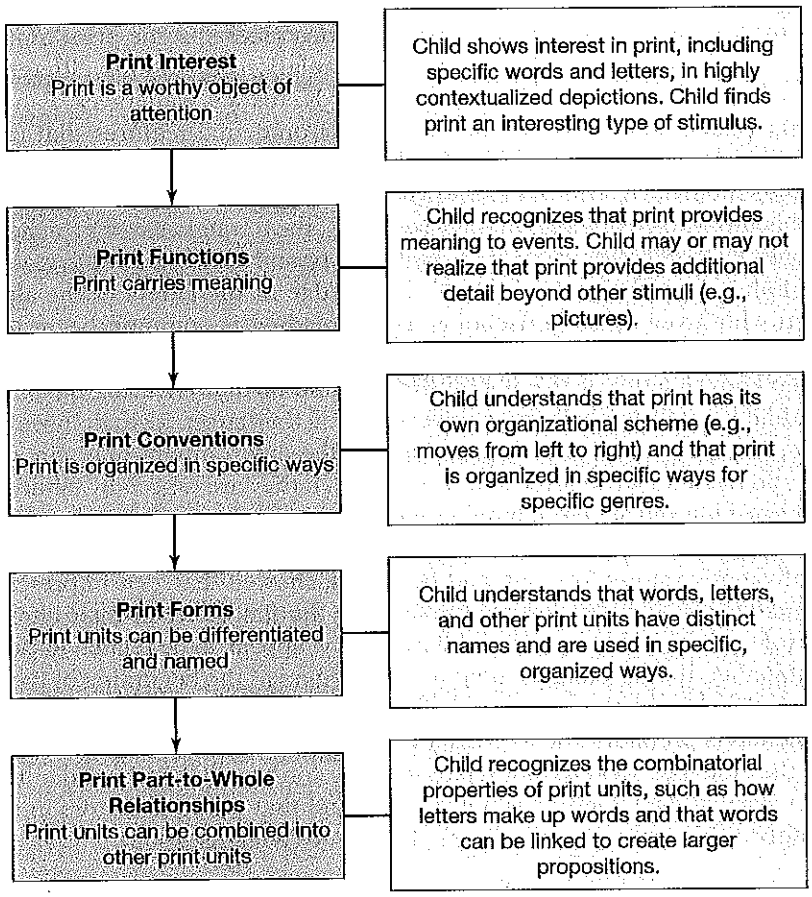


Figure 2.5
Major achievements in print awareness during the preschool years

Source: L. M. Justice & H. K. Ezell. (2004). Print referencing: An emergent literacy enhancement technique and its clinical applications. *Language, Speech, and Hearing Services in Schools,* 35, 185–193. Reprinted with permission.

Pointing to print while reading to preschoolers can help to foster print awareness.

conventions, such as how print is read from left to right and from top to bottom. Fourth, children learn the language that describes specific print units, such as words and letters. Fifth, children learn the relationship among different print units, such as how letters combine to form words. Justice, Kaderavek, Fan, Sofka, and Hunt (2009) summarize a number of environmental features that relate to children's development of print knowledge, including parents' involvement in their children's schoolwork, children's enjoyment of reading activities, parents' beliefs about the importance of home literacy activities, the frequency with which parents read books to their children, and the quality of parent-child storybook readings.

DISCUSSION POINT

Using what you know about Delilah in Case Study 2.1, do you predict that she would also exhibit difficulties with reading comprehension? Why or why not?

Alphabet knowledge is children's knowledge of the letters of the alphabet. Children who grow up in households where reading is common begin to show emerging knowledge of the alphabet during the first 3 years of life. Some children may even know a letter or two before their second birthday. During the preschool years, children will typically recognize some of the letters in their own names, show interest in specific letters occurring in the environment (e.g., on signs or labels), and begin to write some letters with which they are especially familiar. By 5 years of age, children are often familiar with the letters that make up their names, a phenomenon referred to as the *own-name advantage* (Treiman & Broderick, 1998). In an informative study, Treiman and Broderick showed that 79% of preschoolers from middle-class homes were able to identify the first letter in their name. Also interesting is that the letter names children know appear to be related to the order of the alphabet; that is, children tend to learn letters at the beginning of the alphabet before they learn letters at the end of the alphabet (McBride-Chang, 1999). This phenomenon is probably due to greater exposure to letters occurring at the beginning of the alphabet. Results of a separate study confirmed that the order in which children learn alphabet letters is not random and that multiple factors interact to contribute to this order (Justice, Pence, Bowles, & Wiggins, 2006).

School-Age Accomplishments

In these two videos you will see two school-aged children: **video 1** depicts a five-year-old girl and **video 2** depicts a seven-year-old boy. As you watch the videos, identify specific features of literate language that the children use in discourse.

You may wonder what language and communication achievements remain for school-age children to master. So much of the research concerning language development focuses on the achievements of infants and young children that it is tempting to equate language development with the very young child, overlooking the accomplishments of older children. Yet substantial development and refinement in the areas of syntax, pragmatics, and semantics occur throughout the school-age years and adolescence. The following sections discuss the most important aspects of communicative development among school-age children, which include functional flexibility, reading and writing, literate language, and form and content refinements.

FUNCTIONAL FLEXIBILITY Functional flexibility refers to the ability to use language for a variety of communicative purposes, or functions. This flexibility is increasingly important for school-age children, who must compare and contrast, persuade, hypothesize, explain, classify, and predict in the context of classroom activities and projects. Figure 2.6 provides a more complete list of language functions that are extremely relevant to school-age children, attesting to the importance of flexibility in language for children of this age.

Each of the language functions requires a distinct set of linguistic, social, and cognitive competencies, all of which develop over the school-age years and which the child must integrate for communicative competence. For example, according

1. *To explain:* To define terms by providing specific examples
2. *To describe:* To tell about, giving information necessary to identify
3. *To instruct:* To provide specific sequential directions
4. *To inquire:* To seek understanding by asking questions
5. *To hypothesize:* To make an assumption in order to test the logical or empirical consequences of a statement
6. *To analyze:* To break down a statement into its components, telling what each means and how they are related
7. *To compare:* To show how things are similar and different
8. *To deduce:* To arrive at a conclusion by reasoning; to infer
9. *To test:* To investigate the logic of a statement

Source: Based on Bereiter, C., & Englemann, S. (1966). *Teaching disadvantaged children in the preschool.* Englewood Cliffs, NJ: Prentice Hall.

Figure 2.6
Nine higher-level functions of language that are necessary for academic success

to Nippold (1998), students must integrate seven skills in order to use language to persuade:

1. Adjust to listener characteristics (e.g., age, authority, familiarity)
2. State advantages as a reason to comply
3. Anticipate and reply to counterarguments
4. Use positive techniques such as politeness and bargaining as strategies to increase compliance
5. Avoid negative strategies such as whining and begging
6. Generate a large number and variety of different arguments
7. Control the discourse assertively

Students who cannot use language flexibly are more likely than other students to have difficulty with the academic and social demands of elementary, middle, and high school.

Related to children's development of functional flexibility is their development of conversational abilities. During the school-age years, and particularly throughout adolescence, children's conversational abilities improve dramatically. Key developments include in the following: staying on topic for longer periods of time, participating in extended dialogues with others that last for several conversational turns, including an increasing number of relevant and factual statements and comments in conversations, making smooth transitions from one conversational topic to another, and adjusting the content and style of one's speech according to the listener's feelings and ideas (Nippold, 1998).

READING AND WRITING Reading and writing are two major skills that children develop during the school-age years. Success in learning to read requires an understanding of the alphabetic principle, meaning that children must learn how letters and letter combinations (graphemes) correspond to sounds (phonemes). Children's success with grapheme-phoneme correspondence rests on their achievement of print awareness and phonological awareness in the preschool period. Children who enter school with skills in these areas are more likely than others to succeed at beginning reading instruction (Chaney, 1998).

Children learning to read generally progress through a predictable series of stages that span the period between preschool and adulthood (Chall, 1996). The preschool years correspond to an emergent literacy or prereading stage, during which the most critical developments consist of oral language, print awareness, phonological awareness, and alphabet knowledge. Children then progress through five stages that build on this early foundation, as presented by Chall (1996).

1. *Initial reading, or decoding, stage:* Stage 1 covers the period of kindergarten through first grade, when children are about 5–7 years old. During this stage, children begin to decode words by associating letters with corresponding sounds in spoken words. During stage 1, children usually move sequentially through three phases. In the first phase, when children read, they make word substitution errors in which the substituted word is semantically and syntactically probable. For example, they might read the sentence *The dog is growling* as *The dog is barking,* substituting the semantically and syntactically plausible word *barking* for a word they do not know (*growling*). In the second phase, when children read, they make word substitution errors in which the substituted word has a graphic resemblance to the original printed word. They might read the sentence *The dog is growling* as *The dog is green,* substituting for the word *growling* a word that looks similar but does not make sense semantically. In the third phase, when reading, children make word substitution errors in which the substituted word has a graphic resemblance to the original printed word but is also semantically acceptable. For example, they might read the sentence *The dog is growling* as *The dog is growing* or *The dog is going,* either of which involves substituting a semantically plausible and perceptually similar word. Children who are more proficient at reading move through these phases more quickly than do children who are less proficient.
2. *Confirmation, fluency, and ungluing from print:* Stage 2 covers the period of second to third grade, when children are about 7–8 years old. During this stage, children hone the decoding skills they learned in stage 1 and experience confirmation as they become more confident in the reading skills they have gained. As children read familiar texts, they become particularly proficient with high-frequency words and use the redundancies of language to gain fluency and speed in reading. Fluency is reflected by reading that is efficient, well paced, and free of errors. It improves as children practice reading texts that closely match their reading abilities. Ungluing from print refers to the idea that as children become more confident and fluent in their reading abilities, their reading becomes more automatic. They can thus focus less on the print itself and more on gaining meaning from the text—they become unglued from the print. As children become more confident and fluent readers and become unglued from print in stage 2, they gradually begin the transition from *learning to read* to *reading to learn.*
3. *Reading to learn the new—a first step:* Stage 3 lasts from grade 4 to grade 8 or 9, when children are ages 9–14 years. During stage 3, children read to gain new information. By the end of this stage they are solidly reading to learn. Chall suggested thinking about stage 3 in two distinct phases. In the first phase, phase 3A (grades 4–6, or ages 9–11 years), children develop the ability to read beyond egocentric purposes so that they can read about and learn information about the world. By the end of phase 3A, children can read works of typical adult length, but not at the adult level of reading difficulty. In phase 3B (grades 7–8

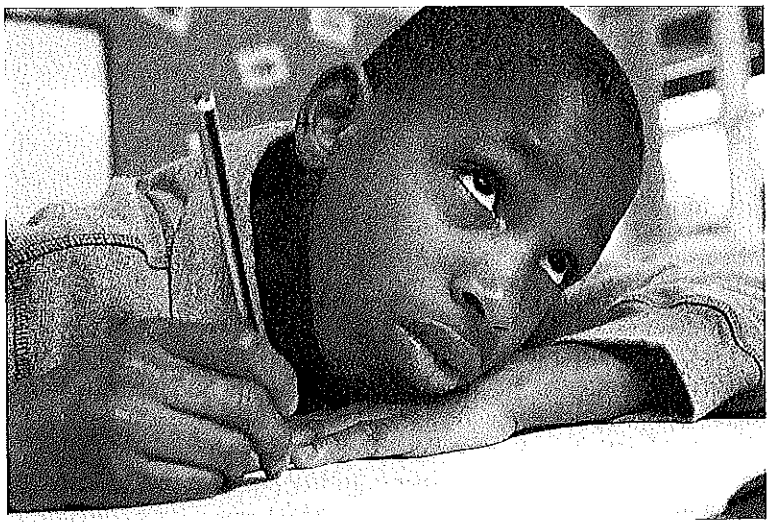
or 7–9, ages 12–14 years), children can read on a general adult level. Reading during stage 3 helps expand children's vocabularies, build background and world knowledge, and develop strategic reading habits.

4. *Multiple viewpoints—high school:* Stage 4 covers the high school period, between ages 14 and 18 years. During stage 4, students learn to handle increasingly difficult concepts and the texts that describe them. The most important difference between reading in stage 3 and reading in stage 4 is that in stage 4 children can consider multiple viewpoints. Stage 4 necessarily builds on the knowledge in stage 3, when children read to learn, because without the background knowledge from stage 3, children would not be able to read more difficult texts with multiple sets of facts, theories, and viewpoints.
5. *Construction and reconstruction—a world view: college:* Stage 5 occurs from age 18 years onward. During stage 5, readers read selectively to suit their purposes. Reading selectively involves knowing which portions of the text to read—the beginning, middle, end or some combination thereof. Readers also make judgments about what to read, how much to read, and at what level of detail to achieve comprehension. Readers at stage 5 use advanced cognitive processes, such as analysis, synthesis, and prediction, to construct meaning from text. The difference between stage 5 reading and reading in stages 3 and 4 is illustrated by the following responses to the question "Is what you just read true?"

   Stage 3: Yes, I read it in a book. The author said it was true.

   Stage 4: I don't know. One of the authors I read said it was true; the other said it was not. I think there may be no true answers on the subject.

   Stage 5: There are different views on the matter. But one of the views seems to have the best evidence supporting it, and I would tend to go along with that view. (Chall, 1996, p. 58)



Mastering the art and skill of persuasive writing is one linguistic challenge that school-age children face.

LITERATE LANGUAGE An earlier section of this chapter described the difference between contextualized and decontextualized language. When children enter school, language becomes increasingly decontextualized—removed from the here and now. *Literate language* refers to language that is highly decontextualized. The **literate language** style characterizes language that is used to "monitor and reflect on experience, and reason about, plan, and predict experiences" (Westby, 1985, p. 181). Literate language requires the child to use language without the aid of context cues to support meaning; the child must rely on language itself to make meaning. Developing a literate language style, or progressing from contextualized to decontextualized language, is crucial for children's participation in the type of discourse that occurs in school settings. Consider the following conversation taking place between 4-year-old Amber and her 8-year-old sister, Kristy:

AMBER: I want that crayon!

KRISTY: No way! You wrote on the wall with my crayons the other day while I was at school, and I got in trouble.

Discourse development lies along a continuum, with oral language on one end and literate language on the other (Westby, 1991). In our example, Amber's and Kristy's utterances represent opposite ends of this continuum. At the lower level of the discourse continuum is *oral language,* or the linguistic aspects of communicative competence necessary for communicating very basic desires and needs (phonology, syntax, morphology, and semantics). Westby describes children at this end of the continuum as "learning to talk." Children learning to talk are able to satisfy some basic language functions, including requesting and greeting. They can also produce simple sentence structures. The most salient characteristic of oral language is its highly contextualized style. Highly contextualized language depends heavily on the immediate context and environment. Markers of highly contextualized language include referential pronouns, or pronouns that refer to something physically available to the speaker ("I want *that*"), as well as gestures and facial expressions. Only when children have mastered oral language can they begin to "talk to learn," or to use language to reflect on past experiences and to reason about, predict, and plan for future experiences using decontextualized language (Westby, 1991).

Children who talk to learn represent the literate language end of the continuum. At this end, children use language chiefly as a way to communicate higher-order cognitive functions (e.g., reflecting, reasoning, and planning). Highly specific vocabulary and complex syntax that express ideas, events, and objects beyond those of the present typify literate language. Some specific features of literate language that children learn to use include the following (Curenton & Justice, 2004):

1. *Elaborated noun phrases:* groups of words consisting of a noun and one or more modifiers that provide additional information about the noun, including articles (*a, an, the*), possessives (e.g., *my, his, their*), demonstratives (e.g., *this, that, those*), quantifiers (e.g., *every, each, some*), *wh-* words (e.g., *what, which, whichever*), and adjectives (e.g., *tall, long, ugly*).
2. *Adverbs:* syntactic forms used to modify verbs, which enhance the explicitness of action and event descriptions. Adverbs provide additional information about time (e.g., *suddenly, again, now*), manner (e.g., *somehow, well, slowly*), degree (e.g., *almost, barely, much*), place (*here, outside, above*), reason (*therefore, consequently, so*), and affirmation or negation (e.g., *definitely, really, never*). Adverbial conjuncts used to link two sentences

together (e.g., *conversely, similarly*) are particularly important to engaging in analogical reasoning, whereby the speaker draws on similarities or parallels between situations (Nippold, 2007).

3. *Conjunctions:* words or phrases that organize information and clarify relationships among elements. Coordinating conjunctions include *and, for, or, yet, but, nor,* and *so.* Subordinating conjunctions are more numerous and include *after, although, as, because,* and *for,* among others.
4. *Metacognitive and metalinguistic verbs:* verbs referring to various acts of thinking and speaking. Metacognitive verbs include *think, know, believe, imagine, feel, consider, suppose, decide, forget,* and *remember.* Metalinguistic verbs include *say, tell, speak, shout, answer, call, reply,* and *yell.*

Consider the following example of decontextualized language:

> Last night, after I got home, I was wondering how to occupy myself when I decided that I would rearrange my kitchen cabinets. You see, I was quite bored, given all that had transpired. I started to pull cans off the top shelf, at which point I came upon something quite odd. Now, before I tell you what I found. . . .

This author paints a picture for the listener by using a variety of techniques that go beyond vocabulary and syntax. The author provides specificity by using elaborated noun phrases (*my kitchen cabinets, the top shelf*), adverbs (*last night, now*), and metacognitive/metalinguistic verbs (*wondering, decided, tell*). The author also uses conjunctions and conjunctive adverbs liberally in the story to weave together events in a causal and temporal manner (e.g., *at which point, now*). These devices provide context that is not otherwise available to the listener or, in this case, the reader. As children move through the elementary grades into adolescence and high school, we expect them to be able to use literate language structures to create context for readers and listeners.

DISCUSSION POINT

Describe in writing what you did last night. Document the use of literate language features in this written sample. Which features occur most frequently? Least frequently?

FORM AND CONTENT REFINEMENTS ***Form Refinements.*** As students move through the elementary grades into high school, they slowly and subtly achieve refinements in form. Because many of the syntactic skills that children exhibit, such as the passive voice, are only rarely used in conversation, these form accomplishments can be hard to witness. The most important achievement in form for school-age children is in the mastering of complex syntax, or developmentally advanced grammatical structures that mark a literate language style (Paul, 1995). These structures occur relatively infrequently in spoken language, but when used in written language indicate more advanced levels of grammar. Examples of complex syntax include noun phrases modified with following past participles (*a tree called the willow*), complex verb phrases using the perfective aspect (*They have driven a long way*), and adverbial conjuncts (e.g., *consequently, similarly, however*).

The development of syntax over the school-age years is most easily visible in students' writing. Persuasive writing in particular is a vehicle for the expression of more complex syntax. The goal of persuasive writing, as the name suggests, is to adopt a particular point of view and convince the reader to adopt the same stance or to take action consistent with that point of view. Some examples of persuasive writing include letters to support the reelection of a political official and email messages to persuade colleagues to help with an important project. According to Nippold (2000), persuasive writing is a challenging communicative ability that students develop during the school-age period. It requires that children have an

awareness of what other people believe and value and that they have the ability to present personal ideas in a logical sequence. Between childhood and adulthood, students incorporate an increasing amount and variety of complex language forms in their persuasive writing.

School-age children also continue to experience development in morphology. One important area of morphological development is children's use of derivational prefixes and suffixes. Derivational prefixes are morphemes that we add to the beginnings of words to change their meanings, such as *dis- (disallow)*, *non- (non-compliant)*, and *ir- (irreversible)*. Derivational suffixes are morphemes that we add to the ends of words to change their form class, or part of speech (e.g., to change one noun to another, change a verb to a noun, or change an adjective to an adverb), such as *-hood (sisterhood)*, *-ment (encouragement)*, *-er (faster)*, and *-ly (happily)*. Some of the later-learned derivational suffixes include *-y*, which is used to form an adjective, and *-ly*, which is used to form an adverb.

Context Refinements. The typical school-age child makes considerable gains in developing his or her lexicon. These gains occur primarily from reading books, an activity that provides students with access to words and concepts that are not typically used in or the topic of everyday conversations. The receptive and expressive vocabularies of school-age children continue to expand; by the time they graduate from high school, they will have command of over 60,000 words (Pinker, 1994).

Three areas of notable content development for school-age students are (1) understanding multiple meanings, (2) understanding lexical ambiguity, and (3) understanding figurative language. As children's lexicons grow and they continue to encounter new words, they realize that many words have more than one meaning. Students become able to provide multiple definitions for words that have several common meanings. Doing this requires lexical knowledge and metalinguistic knowledge, both of which are necessary to achieve full competence at the literate end of the oral–literate language continuum.

The understanding of lexical ambiguity is a second and related area of notable content achievement for school-age children. Lexical ambiguity occurs when words have multiple meanings, as *bear* does in "That was a real bear." Lexical ambiguity fuels the humor in jokes, riddles, comic strips, newspaper headlines, and advertisements (Nippold, 1998), as in the joke "Is your refrigerator running? You'd better go catch it!" When students encounter words that are ambiguous, they must first notice the ambiguity and then scrutinize the words to arrive at the appropriate meaning. Students with weak oral-language skills are often not very adept at noticing lexical ambiguities and are less likely than other students to seek clarification for an ambiguity when they do notice one. The result can be a communication breakdown (Paul, 1995).

A third semantic refinement that occurs over the school-age years is the ability to use and understand figurative language—words, phrases, symbols, and ideas that are used in a nonliteral and often abstract way to evoke mental images and sense impressions. Of the different types of figurative language, including simile, metaphor, oxymoron, hyperbole, and proverb, Nippold (2000) reports that proverbs are one of the most difficult to master. Proverbs serve a variety of communicative functions, such as

- commenting (Blood is thicker than water);
- interpreting (His bark is worse than his bite);
- advising (Don't count your chickens before they hatch);

- warning (Better safe than sorry); and
- encouraging (Every cloud has a silver lining). (Nippold, 2000)

Nippold reports that proverb understanding improves gradually during the adolescent years and that the presence of a supportive linguistic environment can facilitate the process. Proverb understanding has been correlated with measures of academic success in literature and mathematics in adolescents (Nippold, 2000), likely because proverb understanding reveals a student's ability to contend with abstract and metalinguistic aspects of language.

Chapter Summary

Communicative competence refers to the understandings and abilities that speakers of a language must possess and use in order to communicate effectively in that language. Children acquire communicative competence at two main levels—linguistic and pragmatic. Linguistic aspects include phonological competence, grammatical competence, lexical competence, and discourse competence and are related directly to the nature and structure of language. Pragmatic aspects of communicative competence include functional competence, sociolinguistic competence, interactional competence, and cultural competence and relate to the social contexts in which we use language. Communicative competence develops along a fairly predictable trajectory across the life span, with children reaching major milestones in roughly the same order and at roughly the same ages across cultures. Communicative competence is constructed on some innately given abilities and early foundations and continues to develop throughout toddlerhood, the preschool years, and the school-age years and into adulthood.

BOX: Case Study Revisited

Delilah is now 22 months old and has gone through 6 months of her intervention program. She also has a new baby sister, Isabella, who is just about 1 month old. Delilah has continued to enjoy her sessions with the SLP and her grandmother. Although she has experienced two ear infections since her tubes were inserted, she seems to be in much less pain than before the tubes were inserted and she seems to hear others much better than before. She has started using words, such as "Bella" to refer to her baby sister, and her parents and grandmother report that she is able to imitate short phrases, which she was unable to do before the intervention began. Delilah is beginning to say the names of objects in books and in her environment when she sees them, whereas previously she would simply point to the pictures. Overall, Delilah's parents and grandmother are quite pleased with her progress, and they are grateful that their pediatrician took the time to conduct a developmental screening as part of Delilah's routine check-up.