

THE PEARSON COMMUNICATION SCIENCES AND DISORDERS SERIES

# AN INTRODUCTION TO CHILDREN WITH LANGUAGE DISORDERS

VICKI A. REED



The background of the top half of the page features a light gray, semi-transparent graphic. It consists of several overlapping speech bubbles of various sizes and orientations, and a prominent starburst or sunburst shape in the upper left quadrant. The overall aesthetic is clean and modern.

# **An Introduction to Children with Language Disorders**

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# An Introduction to Children with Language Disorders

Fifth Edition

Vicki A. Reed  
*James Madison University*



330 Hudson Street, NY NY 10013

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I have been blessed to have so many wonderful friends and mentors.  
This book is dedicated to you for letting me stand on your shoulders.  
Thank you from the bottom of my heart.

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# Preface

## OVERVIEW OF THE BOOK

The focus of this book continues to be about children who do not acquire language normally. It is intended both for students who are learning about children's language disorders in order to help the children and for professionals wanting to update their knowledge in order to serve the children better. Language is the most powerful and important human ability. It affects educational achievement, relationships, and entire lives. Children with language disorders do not have easy access to this ability and are at a severe disadvantage. They struggle with learning and with human interactions; a language disorder alters a child's relationships with caregivers, undermines academic success, disturbs interpersonal relationships, limits vocational potential, and isolates the child from mainstream society.

This edition continues the organizational structure of the previous edition. There are three parts. The first provides an overview/review of normal language in two chapters—the bases of language and communication and normal language development in children and adolescents. Nine chapters that focus on the language difficulties of different populations comprise the second part of the book. Several of these chapters address language problems associated with children with intellectual disabilities, specific learning disabilities, autism spectrum disorder, auditory impairments, cultural and linguistic differences, and acquired language impairment, plus a chapter that looks at language issues associated with other special populations of children, such as gifted children and those with cleft palate. Two other chapters discuss the language of preschoolers with specific language impairment and adolescents with language impairment. These two chapters bookend the chapter on children with specific learning disabilities. The ordering of the three chapters is purposeful, attempting to convey the progression of specific language impairment in preschool children through the early school years and into and through adolescence. A main message is that the language impairment does not disappear and it is not “cured.” Across the nine chapters in this section of the book, a number of the topics covered in the chapters are those often overlooked in other texts on language disorders in children. Each chapter includes considerations for intervention associated specifically with the population of children discussed in the chapter. The third part of the book consists of three chapters that focus on intervention for children with language disorders—a chapter on assessment, one on intervention, and a third, unique chapter on augmentative and alternative communication as an intervention approach with children with language difficulties.

## NEW TO THIS EDITION

Although the overall organization of the previous edition has been retained, this new edition contains considerable changes. An aim in revision was to include new content related to topics. Another aim was to reflect changes in the field of child language disorders. As a result, some topics have been expanded while others have been reduced. Some reordering of topics has also occurred to reflect current thinking and practices. Examples of “what's new” are the following:

- The authors for some of the contributed chapters have changed. This edition welcomes Geraldine P. Wallach, Marsha Longerbeam, Jeff Sigafoos, Stacey Pavelko, Sarah E. Hegyi, and Kate L. Anderson as either new sole authors or coauthors.
- Across chapters, new tables have been included and a number of tables and figures from the previous edition have been significantly revised where new data are available; other tables and figures from the previous edition have been omitted.
- New content reflecting current information is evident throughout the book.



- Although all chapters have been updated, three chapters have undergone major revisions and expansions—Chapter 4, “Language and Children with Learning Disabilities,” Chapter 6, “Language and Children with Intellectual Disabilities,” and, in particular, Chapter 7, “Language and Children with Autism Spectrum Disorder”—in order to reflect new diagnostic criteria.
- Where specific published language tests are referred to in several of the chapters, newer versions of the tests are cited when appropriate.
- Since the previous editions, increasing recognition of discourse issues beyond narratives has emerged in our thinking about children with language impairment. Therefore, discussions of expository discourse have been expanded and are more frequent in several chapters.

We hope readers will find that these and other new features offer current information and perspectives and reflect the shifts in thinking and knowledge over the last several years. Children with language disorders depend on professionals providing services based on current knowledge.

## **ACKNOWLEDGMENTS AND THANK-YOUS**

A book, whether a new or revised edition, involves the efforts of many people. I am deeply grateful to the authors who offered their expertise and knowledge in their contributed chapters. I am also very thankful for the hard work of many responsible, conscientious, and bright undergraduate and graduate students who assisted with the revisions. I anticipate that their exceptional personal commitment to the project foreshadows their success as professionals and their ability to help and advocate for children with language disorders. And, the reviewers—Amy Ann Cocanour, University of Nevada, Reno; Ruth Crutchfield, SLP.D., CCC-SLP, University of Texas Pan American; Shana Goldwyn, Fitchburg State University; Johanna Price, Western Carolina University—offered suggestions and comments that helped improve this edition. Importantly, however, are the people in our personal lives. These individuals assist us to keep our balance, as well as our focus. They were truly significant factors in helping this edition see the light of day. We hope you know that you have our thanks, but more importantly, you have our hearts.

*Vicki A. Reed*

PART 1

Aspects of Normal  
Language and  
Communication

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# 1

## Language and Human Communication

### AN OVERVIEW

#### LEARNING OBJECTIVES

After reading this chapter, you should be able to

- Explain what comprises communication
- Describe the components of language
- Describe comprehension and production and the relationship between these various communication modes
- Explain the various communication modes
- Explain the biological, cognitive, and social bases of human communication

When two people talk with each other, one person usually speaks while the other person listens. The speaker encodes thoughts into mental representations of words and sentences and changes these into a continuous stream of speech sounds or acoustic energy. The speech sounds travel through the air in the form of sound waves (acoustic energy) and reach the listener's ear. The listener then decodes the sound waves into a stream of speech sounds, the speech sounds into the intended string of words, and the string of words miraculously into what the speaker originally thought. A breakdown in any step along the way may result in miscommunication or even a failure to communicate. Importantly, both the speaker and the listener must share the same code or symbolic system of what sounds and words represent what thoughts. Put simply, they must share the same language.

This book is concerned with the symbolic process of communication called language and the ways in which children do or do not use it. Before we can examine children's language disorders, however, we, like the speaker and the listener, must share the same language. Therefore, the purpose of this chapter is to overview for the reader the foundations of human communication and other topics that provide a platform for discussing children's language disorders. We discuss the terms *communication*, *language*, *speech*, and *extralinguistic elements of communication*, and we look at the different components of language and the relationship between understanding and using language. We also consider different communication modes. Finally, we review some of the biological, cognitive, and social bases of human communication. The content of the chapter is built primarily on two pillars—information that

is now recognized as relatively “common” knowledge for respective topics and knowledge provided by foundation researchers in their areas. Inclusion of many of the citations in the chapter thus attempts to recognize their early, still relevant, and important contributions to the study of child language disorders.

## COMMUNICATION

Communication refers to the sending and receiving of messages, information, ideas, or feelings. It is a broad term that encompasses not only the physical production of speech and the symbolic nature of language but also any behavior or action that conveys a message. For example, a throat clear may convey a message that a person has a sore throat. A baby’s cry conveys needs or discomforts that require attention. In these instances, the spoken word is not essential.

Communication is not limited to humans. Other animals communicate. Unlike other animals, however, humans have the ability to communicate highly complex thoughts, feelings, and ideas through the use of language. Humans also have the capacity for speech. Extralinguistic behaviors, which are discussed below, additionally contribute to the communicative process.

### Language

Language is a code in which we make specific symbols stand for something else. Bloom (1988) defines language as “a code whereby ideas about the world are represented through a conventional system of arbitrary signals for communication” (p. 2). According to this definition, coded symbols refer to real things, concepts, or ideas, and the things that the symbols represent are the *referents*. In the English code, there is no reason why an animal with four legs that is noted for tail wagging and barking is labeled a *dog*. Such an animal could as easily be coded as a *sloot*—and perhaps it is, in a code system other than English. Although the symbols are arbitrary, the symbols and their appropriate referents must be mutually agreed on by members of a community using the code if the code is to be meaningful. In this sense, language is a *convention* (Bloom, 1988).

Language is also a system in which *rules* or regularities guide which coded symbols may be combined with other symbols and in what order and what symbols can be used in what situations. These rules or regularities are predictable and can be used to identify what are and are not acceptable uses of language. For example, in the English language, the word order in the sentence “The ball is not red” is acceptable and considered correct, whereas the word order in the sentence “The ball not is red” violates accepted rules even though the words in the two sentences are identical.

The number of rules that delimit a language is finite. Once these finite rules are learned, however, a person can generate an infinite variety of meaningful messages by combining and recombining the symbols according to the agreed-on rules. The system of rules that results in the ability to produce an infinite number of expressions gives language its creative feature. By applying systematic rules, a language user can generate expressions never used or heard before, and another user of the same language can understand those expressions by employing the same rules. Every day, humans create sentences never spoken or written before, and they hear or read sentences and paragraphs they have never before encountered.

Because a language consists of regularities or sets of rules, members of a language community (including children) must learn the rules and induce the regularities in order to use the language. Among the rules that must be learned are those that determine who can say what to whom when and how. Language is, therefore, a *learned* or acquired behavior.

The ability to learn language is considered an innate human ability. Most infants are born with the capacity to acquire language, but this does not mean that infants inevitably use language. Even with the capacity to acquire language, infants still need to *learn* the language or code of the linguistic community in which they are reared.

## Speech

Speech is the oral expression of language. It involves the sensorimotor processes by which language users reproduce the coded symbols that are stored in their central nervous systems so that others can hear the symbols. Consequently, speech production requires the neurological control of physical movements to create sound patterns. These sound patterns are produced as a result of respiration, phonation, resonance, and articulation. *Respiration* refers to the coordinated, rapid muscular activities of the chest (which controls the lung action). Respiration provides the air in which a speech sound wave travels. Without air, there would be no way of phonating. *Phonation* refers to the production of sound through vibration of the vocal cords (vocal folds) in the larynx. Once a sound has been created, it resonates in the vocal tract (pharynx, oral cavity, and nasal cavity). Finally, the *articulators* (including the tongue, jaw, lips, and palate) are used to modify the sound into a vowel or a consonant. A consonant is produced by constricting the airstream, whereas a vowel is produced without significant constriction of the airstream through the mouth. An important point is that language is the code, whereas speech is the sensorimotor production of that code.

## Extralinguistic Aspects of Communication

As we saw previously, communication can be any behavior or action that conveys a message. If a speaker said, “The baby’s sleeping,” in a quiet whisper accompanied by a frown and an upright open-hand gesture in front of the listener, the speaker’s original thought and, therefore, communicative intention may have been not to comment on the fact that the baby is asleep but to stop the listener from waking the baby by speaking loudly. A term often used to refer to behaviors such as loudness, frowning, or using gesture is *extralinguistic communication*. These may enhance or even change the linguistic code. Extralinguistic elements include paralinguistics, nonlinguistics (nonverbal communication), and metalinguistics.

**Paralinguistics.** Paralinguistics refers to the melodic components of speech that modify the meaning of the spoken message. Melodic components include stress, pitch, and intonation. *Stress* is the relative loudness with which certain syllables in words are produced. For example, in the word *blackbird*, if the first syllable is said more loudly than the second syllable, the meaning is a specific type of bird. If there is no difference in stress between the syllables, the meaning is any bird that is black. If we take the word *pervert*, it is difficult to know whether the written word refers to a *pervert* (noun) or the act to *pervert* (verb). In spoken English, stress can communicate meaning. Stress can also be used for contrastive emphasis within utterances. One speaker might say, “I like the *red* jacket,” whereas a second speaker might say, “I like the *blue* jacket.” In doing so, the second speaker contrasts the color *red* with the color *blue* through the use of stress.

Pitch and intonation can also modify the meaning of a spoken message. Ladefoged (2006) describes *pitch* as the “auditory property of a sound that enables a listener to place it on a scale going from low to high” (p. 295). *Intonation*, on the other hand, refers to the patterns of rises and falls in pitch within and across utterances. Pitch and intonation both enhance a spoken message. For example, pitch can convey personal characteristics of speakers, such as their gender, age (to some extent), and emotional state. Changes in pitch can also alter the meaning of a word, as is seen in tone languages such as Mandarin Chinese, Thai, and Vietnamese. Intonation can be used to convey syntactic information. For example, the sentence “He went skydiving” could be said as a statement of fact, with falling intonation at the end of the utterance, but the same sentence could be expressed as a question or surprise, with rising intonation at the end of the utterance. In both examples, the sequence of speech sounds remains the same, but a difference in meaning is signaled by the intonation pattern.

The combination of these melodic components of speech creates prosody. Because prosody is superimposed on the segments of an utterance (e.g., the speech sounds, words, or phrases), the melodic components are often referred to as *suprasegmental* devices. These act

above the level of a segment to enhance the overall meaning of an utterance to convey an emotion or an attitude. Without paralinguistics our speech would sound robotic or dull, that is, like computer speech.

**Nonlinguistics (Nonverbal Communication).** The nonlinguistic aspect of communication is sometimes referred to as nonverbal communication. *Proxemics*, one aspect of nonverbal communication, refers to the ways that use of space and physical distance between speakers communicate. Another way speakers communicate nonverbally is with body language, or *kinesics*. Kinesics refers to the way in which body movements are used for communication, such as with gestures to point to objects or head shakes to signal “no.”

In many respects, nonverbal communication can be considered a system itself. In his now classic, insightful, and sometimes humorous book on nonverbal communication, Hall (1990) described ways in which unspoken communication is so very important and can vary by cultures. To emphasize the importance of nonverbal communication in human interaction, he entitled his book *The Silent Language*. Consciously or unconsciously, we engage in nonverbal communication, sometimes to emphasize concurrent oral messages, sometimes to contradict simultaneous oral messages, and sometimes to substitute for oral messages. For example, the utterance “That chocolate caramel fudge looks nice” could mean that the speaker thinks chocolate caramel fudge is appealing. But when spoken by a customer in a candy store, accompanied by pointing and leaning toward a piece of chocolate caramel fudge displayed in the store window, it could mean that the customer would like to purchase some fudge. Our understanding and use of nonverbal cues can largely determine the quality and effectiveness of our interpersonal relationships. In fact, some suggest that nonverbal communication carries more than half of the social meaning in interpersonal communication situations. When we are in a foreign country and unable to communicate through the use of speech and language, we often resort to using nonlinguistic cues to communicate and hope that those cues are appropriate symbols for that country. It is important to know that nonlinguistic behaviors, like specific words, are not always universal in what they communicate and that cultures differ in uses of and meanings associated with specific elements of nonverbal communication. A nod of the head in the United States or Australia indicates agreement (“yes”), while the same gesture in Bengal indicates “no” (Axtell, 1991).

Because inaccurate or ineffective interpretation and use of nonverbal communication can lead to problems in establishing and maintaining social relationships with others, an awareness of nonverbal communication, the nonlinguistic elements that make up particular nonverbal systems, and the ways in which these influence relationships are important. Some children who struggle with language experience deficits in the ability to understand and express nonverbal cues correctly. Such difficulties can result in the development of poor self-images and self-concepts, potentially leading to even more impaired interpersonal relationships.

**Metalinguistics.** The third extralinguistic element of communication is metalinguistics. The prefix *meta-* as it is used in *metalinguistics* means something like “beyond” or “higher” or “transcending,” not unlike how it is used in the word *metaphysics*. As such, *metalinguistics* refers to the ability to use language to communicate or talk about and to analyze language. It involves thinking about language, seeing it as an entity separate from its function as a way of communicating, and using language to judge the correctness of language and to correct it; it is an awareness of the components of language, and it is seeing language as a tool and controlling how we use language. For example, identifying and generating rhyming words involves metalinguistic ability.

Frequently, monitoring whether our messages are understood and consciously deciding how to clarify them involve metalinguistic skills. If we return to our example of the customer requesting a piece of chocolate caramel fudge using the utterance “That chocolate caramel fudge looks nice,” the response of the sales assistant would provide the customer with information about the success of his or her utterance. If the sales assistant nods agreeably but fails to begin to pick up the piece of fudge, then the customer would recognize a need to rephrase

the request, perhaps in a way that makes it an explicit request. Alternatively, the sales assistant might say, “Pardon, what did you say?” from which the customer would become aware of a need to correct or clarify the utterance in order to be understood.

### A Bit More about the Relationships among Speech, Language, and Communication

Communication involves the sending and receiving of messages. Although it can be as simple as a sneeze, it can also be a complex symbolic code expressed through the action of respiration, phonation, resonance, and articulation accompanied by paralinguistic and nonlinguistic cues. Figure 1.1 shows how the various terms we have discussed (speech, language, paralinguistics, nonlinguistics, metalinguistics, and communication) relate to one another. Sometimes, we may communicate just using nonlinguistic behaviors, such as raising our eyebrows or frowning. We may also communicate using language without speech, as is the case with writing.

It is also important that we differentiate further between the two key terms *speech* and *language*. As our definitions so far have indicated, language and speech are closely related but are not the same. The two sentences “The dog is black and white,” and “Is the dog black and white?” consist of the same sounds. However, the order of the sounds and therefore the order of the words in the two sentences are different, as is the resultant meaning of the two sentences. As another example, to produce the sentences “I want it to fit,” and “I want it to sit,” a child must only alter speech movements slightly to produce the difference between “f” and “s.” Yet the meaning of the two sentences is quite different based on the one speech sound variation.

It is possible for a child’s code system (language) to be intact but for the same child to have difficulty with the articulation of speech sounds. For example, a child who has an interdental lisp and says “th” for “s” might say the words *thing* and *sing* the same way, but from the context we can tell that the child knows the words mean different things:

I can “thing” Old McDonald has a Farm.

I don’t like that thing.

It is also possible for a child’s speech production to be intact but for the child’s language system to be deficient. As examples, a child who says, “I want it no to go,” “The gooses are flying,” or “I don’t

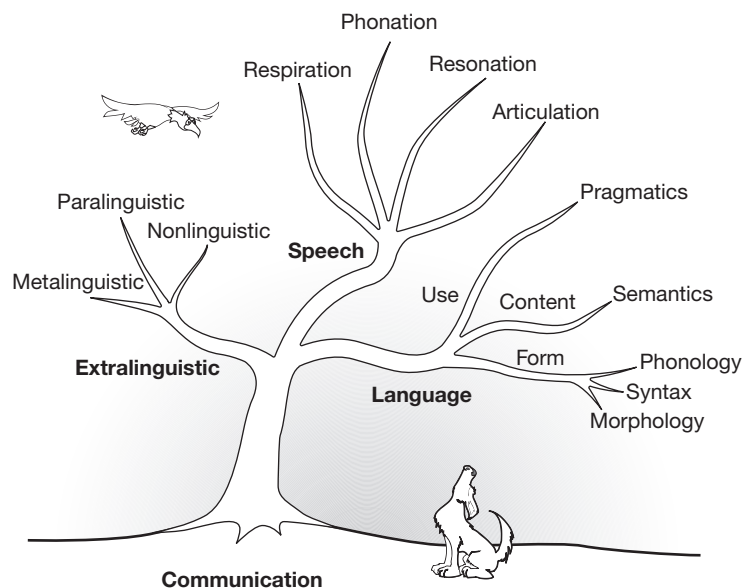


FIGURE 1.1 | Components of Communication



want for you to sick,” with well-pronounced sounds in a highly fluent manner, is demonstrating problems with language, not speech.

## COMPONENTS OF LANGUAGE

Spoken languages are made up of components. Some authors call these *elements*, some call them *parameters*, and others call them *aspects*. Whatever they are labeled, the intent is to break language into parts in order to discuss and describe it. Often, we consider there to be five basic components of language: (1) phonology, (2) semantics, (3) syntax, (4) morphology, and (5) pragmatics. Each is part of a system and is therefore governed by regularities and sets of rules that all speakers of a specific language must learn if they are to communicate effectively. Although we can discuss each of these components separately, they are all inter-related in language functioning, as we will see in later chapters.

### Phonology

When we utter a word such as *fish*, we produce a string of speech sounds that represent the word *fish*, beginning by lightly biting the bottom lip with the top front teeth, then producing the vowel sound, then using the tongue to produce the sound “sh.” If people who understand English were to hear the production of this string of speech sounds, they would know that the word was *fish*. A listener who understands and speaks a language other than English would not know what was being said. This idea of using a specific set of speech sounds in a particular sequence within a language to communicate meaning is the essence of phonology. *Phonology* is, therefore, language based and relates to the phoneme patterns that are governed by the rules of a specific language which lead to meaning within the language. To appreciate this definition, we need to examine the concept of speech sounds, or *phonemes*, more closely.

Phonemes are sounds that distinguish one meaningful word from another. When we look at a string of speech sounds in words, we see that by changing just one speech sound within a word, we can differentiate one word from another. For example, in the word pair *cat/rat*, sound differences occur in the initial positions of the words. The sounds that create these meaning differences (in this case, “c” and “r”) are phonemes. By replacing the “c” in “cat” with other sounds to create *rat*, *mat*, *hat*, *fat*, *pat*, *that*, we discover that “r,” “m,” “h,” “f,” “p,” “th” are also phonemes of English because they result in words with different meanings. Phonemes can be classified as either vowels (*mat*, *met*) or consonants (*hat*, *pat*).

One problem that becomes painfully clear as we watch children attempting to learn to read is the lack of consistency between the way an English sound is said and the way it is written. For example, the letter “c” is pronounced as a “k” sound in *cat* and as an “s” sound in *center*, and the long vowel “a” is spelled *ay* in *bay*, *a* in *fade*, and *ea* in *break*. Trying to use usual alphabetic symbols to write English as it is said is very difficult. This is where the International Phonetic Alphabet (IPA) comes to the rescue. It is a system that has a correspondence between a written symbol and a sound. That is, a spoken sound is represented by one consistent printed symbol. Many of the symbols of the IPA are shown in Table 1.1. As can be seen, the symbol /s/ represents the “s” sound in *sun* and *cement*; the symbol /dʒ/ represents the “j” sound in *jump*, *badge*, and *fudge*; and the symbol /θ/ represents the “th” sound in *thumb* and *tooth*. In this text, symbols that occur between / / indicate that they are IPA symbols and designate the relevant pronunciation as shown in Table 1.1. In using the IPA, a word in the language is transcribed on paper to match the way a speaker produces it. The exact number of phonemes in American English is difficult to determine because there are acceptable variations within the language. Some of these variations result from dialectal differences. Most estimates of the number of phonemes suggest that there are 40 to 46.

Each language has a limited set of phonemes that makes up the sound system; each language also has its own set of phonotactic rules or rules governing which phonemes can be combined with other phonemes and in what order. In English, *ksont* is not a word and never could be, even though all the individual sounds that make up the word are acceptable

TABLE 1.1 | The International Phonetic Alphabet

Consonants				Vowels and Diphthongs			
Voiceless		Voiced					
Symbols	Key Words	Symbols	Key Words	Symbols	Key Words	Symbols	Key Words
p	p <u>i</u> g	b	b <u>i</u> g	i	f <u>e</u> et	u	f <u>oo</u> d
t	t <u>o</u>	d	d <u>o</u>	ɪ	h <u>i</u> t	ʊ	f <u>oo</u> t
k	c <u>o</u> at, k <u>e</u> y	g	g <u>o</u> at	e	c <u>a</u> ke	ɒ	t <u>o</u> ll
f	f <u>i</u> ne	v	v <u>i</u> ne	ɛ	h <u>e</u> ad	ɔ	f <u>o</u> g
θ	t <u>h</u> umb	ð	t <u>h</u> e	æ	p <u>a</u> ck	ɑ	f <u>a</u> ther
s	c <u>i</u> der, s <u>u</u> n	z	z <u>i</u> pper	ʌ	d <u>u</u> g	ɒ*	l <u>a</u> w
ʃ	s <u>h</u> e	ʒ	v <u>i</u> sion, az <u>u</u> re	ə	s <u>o</u> fa	aɪ	t <u>i</u> me
tʃ	c <u>h</u> air	dʒ	g <u>e</u> m, h <u>u</u> ge	ɜː	f <u>u</u> r	aʊ	h <u>o</u> use
h	h <u>e</u> llo	m	m <u>e</u>	əː	m <u>o</u> ther	ɔɪ	t <u>o</u> il
ɹ	w <u>h</u> en	n	n <u>e</u> w	ɜː*	b <u>i</u> rd	ju	f <u>u</u> se
		ŋ	r <u>i</u> ng	a*	m <u>a</u> d		
		l	l <u>e</u> tt <u>e</u> r				
		r	r <u>u</u> n				
		w	w <u>e</u>				
		j	y <u>e</u> s				

\*These vowels occur in some eastern and/or southern American speech patterns.

English phonemes. On the other hand, *skont*, which is also not an English word, potentially could be a word in the language because the sequence of phonemes is possible. We see the application of English phonotactic rules in Lewis Carroll's opening passage to his literary classic "Jabberwocky": "Twas brillig, and the slithy toves did gyre and gimble in the wabe: All mimsy were the borogoves, and the mome raths outgrabe." English speakers are able to read the passage aloud and sound like they are producing acceptable English because the nonsense words abide by the phonotactic rules. If Lewis Carroll's opening passage began with something like "Ksee ngot, and the lsiyth ptosv did yger and rgilbe in the wabeh," we would struggle to pronounce many of the words because they fail to conform to the phonotactic rules of English. Children learning the phonological system of their language must learn to use not only the acceptable set of phonemes but also the phonotactic rules for combining these phonemes sequentially into words.

## Semantics

Semantics deals with the referents for words and the meanings of utterances. At a basic level, semantics involves the vocabulary of a language, or the lexicon. Sequences of phonemes combine to form words. The words are then used to represent items, attributes, concepts, or experiences. As we know, many words can have multiple meanings depending on the situations in which they are used. *Peel* can refer to the rind of a piece of fruit or the act of stripping or tearing off. In identifying the meanings of words, we typically think of the dictionary meanings. These dictionary meanings are the *referential meanings* or denotative meanings of words. However, words may have *connotative* or *emotionally associated meanings*. These meanings can, in fact, be so strong as to actually produce physical responses to the word. To many, the word *snake* can create chills even though the denotative meaning of the word refers to one of several kinds of limbless reptiles.

A word and its referents can trigger associations with another word and its referents. In some instances, the associated words belong to the same category as the original word. For example, the word *cow* may trigger one to think of *pig*, *horse*, and *sheep*. In other instances, the associated word or words may be the category for the original word—*animal* or *farm animal*.

Words can be categorized and recategorized through the process of abstraction. In the process of categorizing words, we identify or abstract the similarities among the referents for the words and use the similar characteristics to form another category that is also labeled. In