

LINGUISTICS AND APPLIED LINGUISTICS

Languages are complex systems through which people communicate the full range of human experience. Personal identity is expressed through language, and social interaction without language is almost unimaginable. The scientific study of the structure and use of language is known as **linguistics**, and a *linguist* is someone who engages in such study. (The term *linguist* may also refer to someone who is fluent in more than one language.) Depending on their subfield or specialty, linguists who are engaged in research may pursue the answers to questions pertaining to the nature of language itself, to the relationship of language to the human brain, or to the insights to be gained about society through the study of language use.

The major structural areas of linguistics include the study of speech sounds (the subfields of which are *phonetics* and *phonology*), words (*morphology*), phrases and sentences (*syntax*) and meaning (*semantics* and *pragmatics*). Each of these subfields is introduced in this chapter and explored in detail in the subsequent units of this book. The major subfield of linguistics that explores the systematic study of language use at both an individual and societal level is known *sociolinguistics*; in the final unit (Unit 9, “Sociolinguistics,”) this topic is explored in relation to culturally and linguistically diverse (CLD) learners. There are many additional subfields of linguistics, as diverse as how languages change over time (historical linguistics) and how children learn their first language (language acquisition). What linguists working in each of the different subfields of linguistics have in common is their interest in contributing to the collective understanding about language.

In addition to research, there are many ways in which knowledge about language is applied to real-world situations. **Applied linguistics** makes use of linguistic theories and methods in order to address practical questions that are language-related. Language education is one of the major career fields in which applied linguistics is important, and this includes the profession of teaching English to CLD learners. Examples of some of the many additional professionals who make use of applied linguistics include computational linguists, who work in computer science in such areas as speech recognition, machine translation, and grammar checking; speech-language pathologists, who treat people with speech and language disorders; and court interpreters, who interpret for defendants, litigants, and witnesses in courtroom and other legal settings.

WHAT IS LANGUAGE?

Language is a method of human communication consisting of the use of words or signs in a structured way in order to convey meaning. The word *language* is also used to mean the particular system of communication used by a community, such as English, Japanese, or American Sign Language. There are approximately 7,100 languages used in the world today, yet over half the world’s population speaks just 23 of those languages, and 86% of people speak an Asian or European language (Simons & Fennig, 2018). Languages change over time to meet the needs of their users, and they also change as groups of speakers come together or become isolated from each other. When a language no longer has any speakers, it is said to be extinct.

A fundamental question in linguistics has to do with how human beings produce and understand language. An early model that proposes how language functions continues to be influential today. This is the speech communication chain, first proposed by Claude Shannon and

Warren Weaver in 1949 (cited in Dawson & Phelen, 2016, p.8-9). According to this model, any communication system will include an information source, a transmitter, a signal, a receiver, and a destination. In using language, the speaker/signer/writer is both the information source and transmitter; the signal—speech, signs, or writing—is sent to one or more others, who are both receiver and destination. Essentially, an idea is conceived by a sender, put into words, expressed through a physical medium such as sound or paper, and finally received and decoded in a receiver's mind.

As advances have occurred in psycholinguistics (a subfield concerned with how the mind processes language), more refined models have emerged of speech perception (receiving and interpreting messages) and speech production (formulating and sending messages). In speech perception, for example, psycholinguists have studied how language users can understand utterances despite significant ambient noise or variation in speakers' speech sounds. In speech production, for example, William Levelt (1989; discussed in Dawson & Phelen, 2016, p.374) proposed a model in which three major planning stages of language production happen simultaneously instead of sequentially. These include conceptualization, formulation (which encompasses grammatical and phonological encoding), and articulation.

WHO HAS LANGUAGE?

The human vocal tract is adapted for the production of speech sounds, while specific areas of the human brain are essential for language comprehension and production. Currently it is widely thought that humans have been speaking for about 100,000 years, but there are several contrasting views about how the capacity for language evolved in humans. One view is that language is the result of an evolutionary leap, a single mutation that set human language apart from the communication systems of other species. This is sometimes referred to as the **discontinuity view**. The **continuity view**, in contrast, asserts that the differences between human language and the communication systems of other primates is a matter of degree of complexity, that human communication evolved in stages along with the evolution of the species, from earlier hominids to modern homo sapiens.

Scientific ideas of language evolution are based on evidence from archaeology, paleontology, anatomy, linguistics, and genetics. In recent years, scientists have isolated the gene known as FOXP2 as a possible key to human language ability. While many animal species have the FOXP2 gene, the human version of this gene shows some variation with that of our closest genetic relatives, the great apes. (Specifically, FOXP2 in humans differs in two amino acids from that in gorillas and chimpanzees.) And although many animals have complex systems of communication, none of these systems have the breadth or depth of capacity that human language has.

So what sets human language apart from animal communication systems? One way of addressing this question is by considering the **design features of language**, first proposed by Charles Hockett (1966, standard version discussed in Dawson & Phelen, 2016, pp.20-26). Hockett identified nine characteristics of communication systems, and he noted that all nine are needed in order for a communication system to be considered language. Put another way, only human language exhibits all nine design features, with the final two being the features that distinguish human language from animal communications systems. Very briefly, these are 1) a mode of transmission, such as the voice or hand; 2) the capacity to signal meaning, so that users

of the system understand each other; 3) purpose, such as requesting information or issuing a warning; 4) the capacity for each user of the system to both send and receive messages, which not all members of all species can do; 5) cultural transmission, which involves learning through interaction with others of the same species; 6) arbitrariness, which means that the connection between what something is or means and the word or signal for it is purely by convention; 7) the creation of messages out of smaller, discrete units, seen for example in the fact that, in spoken language, sentences are composed of individual words and each word is composed in turn of smaller units of individual sounds; 8) displacement, which involves the ability to communicate about something not present in the space or time of the communication; and 9) productivity, which allows users of the system to create an unlimited number of new messages out of the system's discrete units, as when we express a new idea for the first time using the finite units of sound and grammar contained in our native language.

Although there is still controversy regarding how human language differs from animal communication systems, if language is defined as a communication system that exhibits all nine of the design features, then it is possible to state that only humans have the capacity for language. Research into animal communication systems has revealed that only human language has the characteristic of productivity—the unlimited creation of new messages—and that the capacity to communicate about topics not in the here and now (displacement) is also characteristic only of human language, although proposals have been made that the dance of bees to communicate remote food sources demonstrates displacement. In any event, from the perspective of the current state of research, all animal communication systems are closed systems, that is, they are limited as to the messages that can be conveyed, while only human language allows its users to formulate and convey an unlimited number of novel utterances.

LINGUISTIC KNOWLEDGE

Language users have internalized, largely subconscious linguistic knowledge of the basic elements of language (sound, words, sentences) and the patterns or rules for combining these elements into units that can express well-formed, meaningful utterances (sounds into words, words into messages such as sentences). This knowledge of the elements and rules of language is a user's **mental grammar**. Along with the language user's mental dictionary, which stores words and their meanings, this mental grammar is known as **linguistic competence**, while the actual use of language in spoken, written, or signed form is known as **linguistic performance**. Linguistic performance is observable, while linguistic competence is not; therefore, analysis of linguistic data observed through performance is essential to building an understanding of the mental grammar.

In addition to knowledge of the structural aspects of language, language users demonstrate **communicative competence**, that is, the ability to engage in linguistic interactions with the appropriate social conventions established by their speech community (such as, for example, the rules of conversation: Is it okay to interrupt a conversation partner? How long should the pause be from the end of one person's utterance to the beginning of another's? Is it more appropriate to address a college teacher informally by first name or formally, as Professor So-and-so? etc.).

Another important fact about language users is their **linguistic creativity**. As noted in connection with the design feature of productivity, the discrete units and systematic rules of

language allow users to understand and produce original sentences that have never previously been uttered, and each speaker is hypothetically capable of producing infinitely long sentences. For example, the simple sentence *The dog ran after the stick* can be made into an infinitely long sentence just by continuing to add independent clauses to it with the coordinating conjunction *and* between them: *The dog ran after the stick and the squirrel scrambled up the tree and the birds flew away and the lightning flashed and the wind blew across the valley and....*

FUNDAMENTAL PROPERTIES OF HUMAN LANGUAGE

A persistent topic in linguistics has to do with how languages are similar to each other, and how they differ. The field of **linguistic typology** classifies, compares and analyzes languages according to their similarities and differences in structure and organization. All languages, for example, form sentences out of the elements of Subject (S), Verb (V) and Object (O), and the basic order in which these elements function in a particular language allows languages to be classified by one of six possible typologies. (English is classified as SVO, since a basic declarative sentence consists of a subject followed by a verb and then an object: Chris (S) ate (V) breakfast (O).) That is, while all languages contain these basic sentence elements, not all languages order these elements in the same way. Yet the number of possibilities for ordering is not unlimited. In fact, a large majority of the world's languages, over 75%, follow either the pattern of SVO (English, Chinese, etc.) or SOV (Turkish, Korean, etc.). About 10-15% of languages follow the VSO pattern (Welsh, Arabic, etc.). The patterns VOS, OVS, and OSV are rare (Crystal, 2010, p.98). One of the generalizations that can be made from these facts is that, while not universal, there is a strong preference for subjects to precede objects among the world's languages.

Although the basic structural elements of sentences are only three in number, the vocabulary of languages is large and open-ended. There is both great productivity and great variation across languages regarding individual words. Yet here too languages have something in common. A fundamental property of all human languages is that the relation between form and meaning is arbitrary. Words and signs have no necessary relationship to the meaning they express. This was noted in the discussion of the sixth design feature, arbitrariness. That is, words do not resemble the things they are pointing out in the world in any sensory way, the way a drawing of the sun might be thought to resemble the sun itself. For example, the word-form *chair* in English refers to a physical object, typically with four legs and a seat, built for a person to sit on. But word forms for this same object in other languages may bear no resemblance to the spoken or written English form *chair*. For example, *chair* is *silla* in Spanish, *uija* in Korean, *sandalye* in Turkish, and so on. While the word for an object may differ from language to language, however, it is necessarily the case that speakers of the *same* language will use the *same* word for an object, in order for communication to be successful. This tells us that, while words across languages may vary greatly in their structural forms of pronunciation and grammar, when it comes to usage, they function in the same way –through arbitrary convention.

The theory of **Universal Grammar** (UG) proposes that the capacity for human language is innate, and that children are born with a disposition to identify structural patterns in the language(s) to which they are exposed in childhood. UG theorists are interested in establishing **linguistic universals**, the set of features shared by all languages. Evidence for language universals may be found in certain linguistic categories and structural rules. All spoken

languages have vowels and consonants, for example, and while the vocabulary of individual languages must be learned, all languages have categories for nouns and verbs. From the perspective of UG, the grammars of individual languages differ because each language employs a somewhat different subset of the totality of structural possibilities.

LANGUAGE ACQUISITION

In addition to investigating the structural properties of languages, linguists who study language universals are interested in understanding how children are able to acquire so complex a communication system as language in just a few short years without explicit instruction. This fact is taken as further evidence that the capacity for human language is innate.

While there are a variety of differing theories of **first language acquisition**, that is, the process through which children acquire their first language, there is widespread agreement about the stages in which children acquire their first language—no matter what the language of their caretakers. (Children learning to sign rather than speak go through parallel stages of acquiring sign language.) These stages include cooing at approximately 2-3 months, followed by babbling at about 4-6 months. By the age of one year babies produce single words, with a two-word phase following several months later. By age two children are able to produce simple sentences, and by age three they can produce several sentences together and use hundreds of words. By age four children are well on the way to adult-like language usage.

While the rapidity with which children acquire their first language offers strong evidence that the capacity for human language is innate, there also may be limits on the window of time within which human beings can acquire a first language. The **critical period hypothesis** suggests that, in order to learn the language of their community completely and fully, children must be exposed to it by the start of adolescence. Note that a critical period has been observed in nonhuman species as well. Many songbirds, for example, must be exposed to their species-specific song when young in order to fully learn it. In fact, the presence of a critical period was identified by biologist Eric Lenneberg as one of the six features of biologically-controlled—that is, innately determined—animal behaviors (Lenneberg 1967, in Dawson & Phelen, 2016, pp.318-319). Two additional features identified by Lenneberg of relevance to first language acquisition are that (1) explicit instruction has little impact on the emergence of the behavior, which has been repeatedly found to be the case by researchers observing children in the process of acquiring their first language, and that (2) there are regular milestones associated with the development of the behavior, which the preceding overview of the stages of first language acquisition has illustrated.

According to the critical period hypothesis, children are innately predisposed to acquire language from birth to the beginning of adolescence, about age thirteen. A child who has not been exposed to language before adolescence will never acquire language completely, because the time period during which the brain structures needed for language can develop ends at adolescence. The critical period hypothesis also has implications for **second language acquisition**, the process through which a language other than one's first language is acquired. Children who start learning a second language before adolescence are much more likely to achieve native-like competence in the second language than children who begin to learn the second language later on.

Observation of second language learners over many years has confirmed that children seem to be able to achieve competence in a second language more easily than adults. For example, adults and even teens who begin learning a second language in adulthood are likely to speak with an accent as well as to produce sentences that show influence from the grammatical patterns of their first language. But there are exceptions to these general observations, and many people are capable of learning a new language well into adulthood. “Rather than a critical period, there seems to be a steady decline in how well one can learn a second language.” (Dawson & Phelan, 2016, pp.320-321). It would also seem that aspects of second language acquisition decline at different rates. The receptive skills of listening and reading comprehension, along with vocabulary acquisition, seem to be more easily mastered by adult language learners than the productive skills of speaking and writing, which are commonly challenged by transfer from the first language.

KNOWLEDGE OF THE SOUNDS OF LANGUAGE

To know the speech sounds of a language is to know, first of all, what sounds can count as speech sounds and what sounds cannot. A person listening to a radio program, for example, is able to distinguish the sounds made by a human voice from, say, static noise carried by radio frequency. Young children acquire the language or languages they are exposed to, and for children learning a spoken language this includes the subset of speech sounds they hear from the set of all possible speech sounds. Each spoken language makes use of between ten and one hundred speech sounds made up of both consonants and vowels; English uses approximately 50 of these sounds (Dawson & Phelan, 2016, p.25). So the speech sounds of whatever language or languages a child learns become the sounds that the child can recognize and produce as familiar units.

Upon hearing the speech of someone who learned English in adulthood, for example, native speakers of English may perceive an “accent” in that person’s speech, although the native speakers may not always be able to precisely identify the sounds that seem different from their own spoken English. Likewise, a speaker who is learning English in adulthood may struggle to acquire native-like English pronunciation, particularly of the sounds and sound combinations in English that are not used in the language(s) the learner has already acquired. Many native speakers of Spanish, for example, add a short “e” vowel sound at the beginning of English words that begin with an “s” plus another consonant sound, such as “eSpanish” for “Spanish,” because while plenty of words in Spanish begin with an “s” sound, Spanish words do not begin with a combination of “s” plus another consonant. This combination is common at the beginning of English words, however (*Spain, speak, spell*, etc.), so it is easy for native speakers of English to pronounce such words. By comparison, consider how challenging it might be for a native speaker of English to pronounce a word beginning with the combination of sounds “ng.” Even though English has many words that end in this combination (*walking, bring, sang*, etc.), English words cannot begin with this sound sequence. Yet it is a common way for words to begin in, for example, Tibetan.

The study and classification of speech sounds is known as **phonetics**. In the 1880s, a group of language teachers formed the International Phonetic Association and created the International Phonetic Alphabet (IPA), a set of written symbols used to represent the individual sounds of human speech (International Phonetic Association). Although the IPA has undergone

numerous revisions since it was first published, its essential function continues today: one symbol is assigned to each sound in every human language. For example, the word *knit* in English has four alphabetic letters, but only three sounds, since the “k” is not pronounced: [n] [ɹ] and [t], so we could transcribe this word into IPA as [nit]. (In general, IPA transcriptions are enclosed in square brackets.) By establishing a one-to-one correspondence between each of the speech sounds in human language and a designated symbol for that sound, the IPA offers a pathway to the pronunciation of any spoken language.

Individual speech sounds are meaningless, but when combined according to the systematic rules that govern them, the units of speech, in relation to each other, are capable of carrying linguistic meaning. **Phonology** is the branch of linguistics concerned with the rule-governed sound systems of language. Native speakers of any spoken language have internalized the knowledge of which combinations and distributions of sounds are possible in the words of their language, and which are not. *Snag* is a word in English, for example, since English phonology permits the initial consonants [s] + [n] followed by a vowel and ending with another consonant, [g]. But, continuing with the example above contrasting English with Tibetan, because the sound combination “ng” cannot begin a word in English, native speakers of English will recognize that these same four speech sounds cannot make a word when they are reordered as n + g + a + s = *ngas. (An asterisk before a word indicates that it is unacceptable in the context of a given language.)

The minimum unit of speech that can contrast with other units to express differences in meaning is called a *phoneme*. One way that linguists determine the phonemes of an individual language is through *minimal pairs*. Minimal pairs of words help determine if two speech sounds in a given language that differ in only one phonological aspect are—or are not—separate phonemes capable of expressing differences in meaning. For example, despite their four-letter spelling, the English words *reef* and *leaf* each have three sounds. Both words have the same vowel sound (transcribed as /i/) and the same final consonant sound (/f/). They differ only in their initial sounds, /r/ and /l/ respectively. (In contrast to phonetic transcription, phonological transcriptions are generally enclosed in slashes.) Because *reef* /rif/ and *leaf* /lif/ are two separate words in English with two different meanings, differing only in the first sound of each word, they are considered a minimal pair, and /r/ and /l/ are therefore considered separate phonemes. But for Japanese speakers, perception of the difference between the sounds /r/ and /l/ is not great enough for these two sounds to distinguish one word meaning from another, so in Japanese /r/ and /l/ cannot be used to make a minimal pair of words.

Another important aspect of the study of speech sounds concerns how speakers make use of pitch, stress, and intonation to indicate questions, convey emphasis, express emotion, and other meaning-bearing functions. In English, for example, speakers will generally pose a yes/no question by ending it with rising intonation (“Is the cat sitting on the mat?”), while a declarative statement is made by ending a sentence with falling intonation (“The cat is sitting on the mat.”). This area of linguistic study, known as *prosody*, plays an important part in both the linguistic and communicative competence of second language learners.

Readers will find detailed information about phonetics and phonology in Units 7 and 8, respectively.

KNOWLEDGE OF WORDS

Words are independent units of language. Because native speakers have internalized both the possible sound combinations and the rules for word formation in their language, they usually know whether a word exists or not in that language. English has the word *great* for example, but for most English language users there is no word *grat* (unless they are familiar with it as an acronym in the jargon of finance), even though *great* and *grat* are similar in structure. Children acquire the words of the language or languages they are exposed to, beginning with simple one-syllable word forms and increasing in complexity with their cognitive development. But unlike other aspects of language acquisition, language users are capable of learning new words throughout their lifetimes. The rules for structuring those words, however, are, like the rules governing speech sounds and sentence structure, largely unconscious.

How do language users determine when something is an acceptable word in their language and when it is not? In the process of acquiring their native language(s), users internalize the rules for structuring words out of component parts, and they also acquire words learned in the course of their experience that are stored in their own mental dictionary. For example, English language users will recognize the word *happy* as an adjective that can be used to modify a noun such as *baby*, as in the phrase *the happy baby*. Similarly, the adjective *unhappy* will be considered acceptable in the phrase *the unhappy baby*, since a word-formation rule allows the prefix *un-* to attach to the beginning of *happy* to create its opposite meaning. English speakers will also know that *un-* can express opposite meaning when it attaches to the beginning of certain verbs, as in *do* and *undo*. But when the *un-* is attached to a noun such as *cat*, the resulting form *uncat* will be considered nonsense. English speakers can make this judgment based on their knowledge of the words stored in their mental dictionary as well as their internalized knowledge of the types of words that *un-* may or may not attach to.

The study of how words are structured and formed is known as **morphology**. Words are made up of units called *morphemes*, which are the smallest segments of language that carry linguistic meaning. Morphemes are of two basic types. A morpheme that can stand alone as a word or act as the base to which other morphemes are attached is called a *free morpheme*. Examples of free morphemes are *bird*, *run*, *sad*, etc. A morpheme that cannot stand alone as a word and must attach to at least one other, free, morpheme in order to function meaningfully is called a *bound morpheme*. For example, the noun *joy* is a free morpheme and can stand alone as a word in a sentence: *The parents felt **joy** upon seeing their baby for the first time*. The suffix *-ful*, on the other hand, cannot function as an independent word. But when *-ful* is attached to the base *joy*, the adjective *joyful* results and can function as a word in a sentence, as in *The **joyful** children built sand castles on the shore*. Free morphemes can also combine with each other to form compound words, as in *bird + house* → *birdhouse*.

Language users have internalized knowledge about the meaning and function of free and bound morphemes as well as where in a word a bound morpheme may appear. They know, for example, that the prefix *un-* can attach to the beginning of an adjective and the suffix *-ness* can create a noun by following an adjective, as in *unhappiness*. They also know that *un-* cannot follow the free morpheme to which it is attached and that *-ness* cannot precede it, so that **nesshappyun* would be rejected by users as an English word.

Bound morphemes are actually of two types: *inflectional morphemes* are grammatical in function, and *derivational morphemes* can change the meaning or the word class of the base to which they are attached. The word *unhappiness* mentioned above shows both of the ways that

derivational morphemes work: the prefix *un-* changes the meaning of the adjective to its opposite, and the suffix *-ness* changes the adjective (*un*)*happy* into a noun. Inflectional morphemes, on the other hand, perform grammatical functions, such as the suffix *-ed*, used to mark the simple past of regular verbs, or the suffix *-s*, used to mark the plural of nouns. Both of these inflectional morphemes occur in the sentence *Alex disliked loud noises*. Many languages have a large number of inflectional morphemes, but in English there are only eight, all of which are suffixes.

How do languages add new words? Words are more easily added to open class categories such as nouns and verbs than to closed class categories whose words are mostly grammatical in function, such as articles, pronouns, and conjunctions. The following are some of the most common ways that English adds new words: *borrowing* from another language (e.g. *sushi* from Japanese), *coinage*, in which words are simply created from the language's possible sound combinations (e.g. the subatomic particle *quark*), *compounds*, in which two or more free morphemes combine (*laptop* from *lap* + *top*), *blends*, which combine the first part of one word with the last part of another (*bromance* from *brother* + *romance*), *acronyms*, in which a new word is formed by combining the first letter of a set of words (*SCOTUS*, from Supreme Court of the United States), and *clippings*, which are shorter, often informal, versions of longer words (e.g., *biopic*, which is actually a compound made from two clippings, *biographical* and *picture*). Although language users can acquire new words, store them in their mental dictionaries, and use them appropriately, it is uncommon for users to be aware of how the words came into their language unless they learn about these processes in school or elsewhere.

Much more information about morphology can be found in Unit 2, including the structure of words (Chapter 2) and word formation (Chapter 3).

KNOWLEDGE OF SENTENCES

One of the most familiar forms of human message transmission among language users is the sentence, a rule-governed linguistic unit composed of words that can stand alone in expressing meaning, such as a statement or question. One form of evidence that demonstrates that language users have internalized knowledge of the sentence structure of their native language is that they can produce an unlimited number of new sentences at will. But in order to recognize a sentence as such when it is spoken, a language user must first be able to determine where one word ends and another begins. For, unlike the written form of a sentence in English, for example, which contains spaces between the individual words, spoken utterances typically contain few if any pauses between words.

So how do you know when something is or is not a sentence when it is spoken? Native speakers rely on their mental dictionaries and their internalized knowledge of word and sentence formation rules. Then again, how do language users determine whether a group of words does or does not constitute a sentence? Upon hearing the sequence of words *the small tan dog wagged its tail*, for example, a native speaker of English would judge it to be a grammatically well-formed sentence. But if the same words are produced in an unfamiliar order, such as *tail dog tan its small the wagged*, the same speaker will judge the sequence ill-formed and reject its being labeled as a sentence. The speaker is aware, even if unconsciously, that for a sentence in English to be well-formed, the words it is composed of must follow certain rules of order and form.

A native user of a language is also able to recognize when a group of words is a complete sentence and when it is a component of a sentence, a *phrase*. In the example just cited, *the small tan dog* contains no verb and therefore is only part of a sentence—a noun phrase. The phrase contains a subject, but it lacks a predicate, something that is asserted about the subject. And just as in evaluating the grammaticality of sentences, a native speaker is able to determine whether or not a phrase is well-formed according to their internalized knowledge of the rules of word combining. For example, *the happy baby* will be considered a well-formed noun phrase, but *the happily baby* will be considered ill-formed because native English speakers have internalized a rule that says an adjective (*happy*) may modify a noun (*baby*), but an adverb (*happily*) may not.

One way that linguists analyze the internal structure of a sentence is according to its phrases, such as noun phrase and verb phrase. In the simple sentence *The children ate the cake*, the subject *The children* is a noun phrase containing the noun *children* preceded by the article *the*. The verb phrase in the sentence is *ate the cake*, composed of the verb *ate* and the direct-object noun phrase *the cake*, which in turn is made up of the noun *cake* and the article *the*. The system of rules for combining words into phrases and phrases into sentences is known as **syntax**. Just as with other aspects of language, children acquire the syntactic rules of the language or languages they are exposed to in predictable stages that are largely unconscious.

Phrases combine to form *clauses*, which consist of both a subject (noun phrase) and a predicate (verb phrase); therefore, a clause is equivalent to a sentence in its simplest form: *The dog slept*. A clause or sentence that can stand alone to express meaning is an *independent clause*. Sentences can be *simple* (one independent clause), *compound* (two or more independent clauses), or *complex* (one independent clause and one or more *dependent*, or *subordinate*, clauses). For example, *The children ate the cake* is a simple sentence containing one independent clause, while *The children ate the cake and the cats chased the mice* is a compound sentence containing the independent clause *The children ate the cake* and a second independent clause *the cats chased the mice* joined to the first clause by the conjunction *and*. In the sentence *The children ate the cake while the cats chased the mice*, the independent clause is *The children ate the cake*, and the clause *while the cats chased the mice* is considered subordinate since it cannot function meaningfully without being attached to the independent clause. The two clauses are joined together to form one complex sentence by means of the subordinating conjunction *while*. In the production of sentences in their first language, children progress from simple to complex sentences over a time period of about three years, from age two to five (Gotzke & Gosse, 2009).

The topic of syntax is covered fully in Unit 3, “Syntax,” which includes Chapters 4 and 5.

KNOWLEDGE OF MEANING

Language users know a lot about language meaning. For example, thanks to their mental dictionaries, native speakers of English will know that the word *roof* means “the external upper covering of a house or other building” and not “the upper interior surface of a room or other compartment.” Language users are also able to judge whether or not a sentence has meaning. The sentence *The child studies art*, for example, has the expected subject-verb-object structure of English declarative sentences, and speakers know that *child* refers to an animate, human subject capable of actions such as studying, and that *art* is a common object of study for human beings. But if confronted with another grammatically well-formed sentence such as *Art ran happily*, English language users would be confused: *Art* is an inanimate subject, so to suggest that it can

move by running or that it can experience an emotion such as happiness may well cause speakers to declare this sentence meaningless. The study of how language conveys meaning is known as **semantics**.

When language users learn words, they learn their *reference*, that is, what they are pointing out in the world. For example, the word *cat* refers to a particular class of domestic feline animal, and the referent of the phrase *my cat* refers to a specific individual member of that class. Language users also know a lot about how pairs of words relate to each other in meaning: *synonyms* have approximately the same meaning (for example, *sofa* and *couch* both refer to an upholstered object of furniture intended to seat several people), while *antonyms* are opposite in meaning (*in* vs. *out*, *up* vs. *down*, etc.). Most native speakers recognize the difference between the literal or *denotative* meaning of a word and a word's *connotative* or associative meaning that may carry an emotional charge. For example, the words *childlike*, *youthful*, *childish*, *young*, *immature*, and *juvenile* all denote more or less the same idea, that is, the relative youthful quality of something or someone. But some of these words carry positive connotations (*childlike*, *youthful*, *young*) while others, depending on the context of their use, evoke negative connotations (*childish*, *immature*, *juvenile*). Readers will find much more information about word meaning in Chapter 7, "Lexical Semantics: Relativity and Transfer."

Language users know when a word or sentence is *ambiguous* (*She visited the bank* could mean someone went either to a financial institution or to a slope bordering a river), and they know when a sentence is true or false. For example, the sentence *The sun is shining* may be true or false depending on the conditions under which it is uttered; the sentence *All children are adults* however, is false under any circumstance, because children by definition are not adults. They also know when the truth of one sentence presupposes the truth of another: *Cindy fed her turtle* presupposes the truth of *Cindy has a turtle*.

Non-literal, figurative uses of words, phrases, and sentences often cause confusion among language learners and need to be explained. *My son is a night owl* does not literally mean that someone's human child looks like a raptor, has wings, and flies around at night, but rather that he shares the property with such birds of prey of being more active at night than during the day. One common form of figurative language is the *idiom*, a group of words whose meaning is independent of the sum of its individual words. The meaning of idioms must be learned similarly to the way individual words are learned. The idiom *I'm all ears*, for example, does not mean that the speaker is constructed solely of multiple human ears, but instead means "I'm listening to what you are going to say." Since the use of idioms is frequent in English, it is important for language educators to be aware of idiomatic meaning as they endeavor to help their students acquire vocabulary and use it in appropriate contexts.

Beyond the meaning of individual sentences, language users understand and convey meaning through connected stretches of context-sensitive language. The study of **pragmatics** examines how various contexts affect the interpretation of linguistic utterances. For example, the meaning of the sentence *Can you help me?* would be quite clear to someone witnessing a person struggling to carry several heavy suitcases all at once, but without this situational context the precise meaning is unclear, including whether the utterance is intended as a request for assistance or simply as a general question. Achieving communicative competence in a speech community involves applying one's knowledge of how linguistic meaning connects to context; it also involves knowledge of the social conventions expected during linguistic interactions, such as appropriate forms of address, rules for turn-taking in conversations, and many other aspects of

communication established through cultural norms. The topic of pragmatics is addressed in depth in Chapters 8, 9, and 10, which form Unit 6, “Pragmatics.”

KNOWLEDGE OF NONVERBAL COMMUNICATION

In addition to language that is spoken, signed, or written, human beings also engage in **nonverbal communication** in the form of gestures, facial expressions, body posture, and proximity during interactions. Although there are similarities across cultures, nonverbal communication is also significantly impacted by the culture of its language users, a fact which can sometimes result in miscommunication between people of different linguistic and cultural backgrounds. For example, the physical distance between speakers during interaction is culturally determined, yet it is often not consciously recognized. The amount of space that is considered appropriate for interaction between people who don't know each other well may vary considerably across cultures. For a high-contact culture, for example, relative closeness shows friendly interest, while for a low-contact culture that same closeness may be perceived as uncomfortably invasive or aggressive. Conversely, in low-contact cultures where relative distance is expected during interactions, visitors from a high-contact culture may feel as though the people around them are cold and indifferent. The study of this aspect of nonverbal communication is known as *proxemics*. Another example of nonverbal communication concerns eye contact: In some cultures, eye contact is expected during teacher-student interactions, while in other cultures students are expected to show respect by avoiding direct eye contact with their teachers. Having some understanding of culturally-determined differences in nonverbal communication can be helpful to language educators in their efforts to help students achieve communicative competence.

IMPLICATIONS FOR TEACHING ENGLISH LANGUAGE LEARNERS

Benefits of Structural Linguistics for Language Teachers

In addition to the internalized mental grammar that has been in focus in the preceding sections, there are several other uses of the term *grammar* that it will benefit language educators to be aware of. The everyday understanding of grammar views language use as correct if it conforms to the rules of the standard variety of a language, and incorrect if it does not. For linguists, this approach to grammar is known as *prescriptive grammar*, but it is rarely the object of their study. Instead, many linguists focus on a more objective, nonjudgmental account of the rules and patterns of a language or dialect based on observing the linguistic performance of native speakers of the language, including how the sounds of the language combine to produce words, how the words combine to form sentences, and how linguistic meaning is conveyed. This approach to grammar is known as *descriptive grammar*. A third approach, known as *pedagogical grammar*, is concerned with the rules of language applied for the purpose of learning another language. While it is essential for teachers of language to be thoroughly familiar with pedagogical grammar, an understanding of language from the perspective of descriptive grammar is also important in language education. An overly close identification with prescriptive grammar, however, may result in students becoming unmotivated or even demoralized.

In order to facilitate second language acquisition among their students, teachers must have a firm grasp of their subject matter, namely language. It is therefore important for English language teachers to understand language structure and usage. Familiarity with structural linguistics enables teachers to creatively explore methods for effective language instruction and error correction that will benefit their students. Knowledge of phonetics allows teachers to better model, explain, and correct student pronunciation. Knowledge of the grammatical morphemes of English can help teachers become more conscious of how students might achieve grammatically accurate sentences, such as through noun plurals and past-tense verb formation. Knowledge of English word formation enables teachers to acquaint their students with the components of English words, empowering students to identify and analyze word meaning as well as to produce correctly formed words. Teachers who can share with their students a basic understanding of how words are coined in English and how to interpret idioms will also help students in vocabulary building.

A knowledge of the similarities and differences in structure between the source and target languages (differences in speech sounds, word formation, or sentence structure) can help teachers increase their awareness of the role of cross-linguistic influence in language learning and thus enable them to design more effective lessons. Perhaps the simplest level of comparative understanding concerns the basic order of the fundamental sentence elements of subject (S), verb (V), and object (O). If the order of these elements in a student's first language is the same as in that of the target language, the student may initially acquire the target language more quickly than if the order of the basic elements in the source and target languages is different. For example, both English and Mandarin are SVO languages, but the basic pattern of Korean, Tibetan, and Japanese is SOV.

Another easily identifiable aspect of language that may differ markedly from source to target language is the writing system: Students whose first language is written with the Latin alphabet, for example, have less initial learning to do in reading and writing than students whose first language employs a non-Latin alphabet or is written in a non-alphabetic system. It is important for teachers to be aware of the literacy challenges students face in learning a new writing system.

At more advanced levels, with a knowledge of semantics teachers can help students navigate the vast world of linguistic meaning, distinguishing denotative meaning from connotative meaning, or recognizing and producing literary tropes such as metaphor, metonymy, puns, and so on. When their study of linguistics also includes a foundation in pragmatics, teachers become invaluable guides for students in their quest to decipher language whose meaning is heavily dependent on context.

Benefits of Sociolinguistics for Language Teachers

Knowledge of the principles of sociolinguistics, including the role of language in the construction of personal and social identities as well as the role of language variation across users from different regions, socioeconomic classes, genders, and other demographic factors will help language educators plan effective, culturally-sensitive lessons and make informed policy decisions about multilingualism, student attitudes toward standard English, and other socially-based language issues that arise in education.

Learning a second language involves being exposed to the culture of the native users of the target language. So in addition to achieving linguistic competence, language users also need to understand and employ the social conventions woven into the culture of the target speech community, such as appropriate forms of address, how to engage in turn-taking in conversation, and many other aspects of communication. When language learners internalize these social norms along with the structural rules of the target language, they achieve communicative competence. Communicative competence is therefore an important objective in language education.

Approaches to the Teaching of Language

Numerous theories of second language acquisition have been put forward in recent decades, and language educators would do well to become familiar with the most well-known among them. From a practical point of view, however, teachers of English learners will want to adopt and develop an approach or methodology of instruction that takes into account such factors as the level and age of their students as well as the purpose of the course they are teaching. It is also important to note that language education requires an understanding of the principles of learning in addition to knowledge about language. Learning styles of students will differ among students both individually (for example, some students are visual learners while others are more auditory) and demographically (children learn differently from adults, for example).

Language learners commonly exhibit cross-linguistic transfer on their way to becoming fluent in a new language, so that what they produce in the target language contains features of their first language, whether in pronunciation, grammar, or vocabulary. For many students, aspects of this learner language become fossilized, and complete bilingualism may never be achieved. Currently the most prominent second language classroom teaching methodology is the communicative approach. This approach emphasizes the importance of achieving successful communication of messages while decreasing emphasis on grammatical accuracy. As a student-centered method, the communicative approach encourages student interaction through the practice of listening and speaking skills.

The range of pedagogical practices that second language educators participate in is vast, from helping students achieve basic spoken communication to facilitating students' improvement in written academic English. Along with fluency in the target language, a basic knowledge of linguistics is a valuable tool for any language teacher engaged in helping students achieve linguistic and communicative competence.

DISCUSSION QUESTIONS

- (1) Children who are born deaf and who are exposed to sign language from an early age acquire sign language in stages similar to those of spoken language acquisition among hearing children. What does this suggest about the innateness of language vs. the innateness of speech?

- (2) The critical period hypothesis holds that, for linguistic competence to be native-like, language must be acquired no later than adolescence. Do you think this holds true for all aspects of language acquisition? What factors might make it difficult to acquire a new language in adulthood, and what aspects of language acquisition might be less problematic for adults?
- (3) While their innate linguistic creativity allows language users to produce completely new utterances at will, they also make frequent use of familiar expressions. Consider the potential value to second language learners of instruction that includes stretches of language such as idioms and common phrases. How might this be approached?
- (4) Identify the advantages to language teachers in being trained in the International Phonetic Alphabet as well as in morphology and syntax. Do you perceive any disadvantages to such training in structural linguistics? Explain your response.
- (5) While second language instruction involves teaching pronunciation, vocabulary, and sentence structure, students are not typically taught structural linguistics (e.g., the IPA, morphology, syntax, and semantics). Discuss your view on whether training language learners in basic linguistics might help or hinder their efforts to increase their proficiency in the target language.
- (6) In traditional second language teaching of the past, vocabulary was taught through lists of individual words and their definitions, which students were expected to memorize. In more recent decades, the importance of teaching vocabulary in context has been emphasized, including groups of words that commonly go together, known as collocations. Discuss your view on the merits of each approach to teaching vocabulary to second language learners.
- (7) Discuss your view on the value of instruction in nonverbal communication as an aspect of helping language learners achieve communicative competence in the target language.
- (8) Traditional language teaching of the past stressed the study of grammar rules for correct sentence formation. In recent decades, the emphasis in second language teaching has shifted to communicative competence, with a greater acceptance of learner language (where the target language shows influences from the source language). Develop a viewpoint regarding these two approaches, including whether or not each may be effective in language education.
- (9) It is commonly thought that writing is the most difficult language skill to master in second language learning. Consider the factors that might contribute to making writing proficiency more difficult to achieve than other aspects of language, such as fossilization of learner language.

EXERCISES

- (1) The notion of linguistic creativity asserts that we can create infinitely long sentences. Test this for yourself by chaining independent clauses together with a conjunction such as *and*, *or*, or *but*. Alternately, write a simple sentence composed of one independent clause and then lengthen it with a series of adjective clauses introduced by the subordinating conjunction *that*. (For example, *We noticed the owl that spotted the fox that chased the mouse that ran across the field that bordered the hillside that...*)
- (2) According to linguistic typology, English is an SVO language, meaning that the basic order of elements in a sentence are subject, verb, object. Can you think of any common types of English utterances where SVO is not the basic word order? What about sentences that seem more complex than simply SVO? Examine a variety of English sentences to inform your response.
- (3) Select one aspect of English grammar and consider how you would explain it to an English learner, including what forms of practice you would ask the learner to do. Consider as possibilities the plural of nouns, the form and use of the indefinite article, or the structure of information questions.
- (4) Check your understanding of the phonemes of English by producing a dozen or so minimal pairs. (To keep it simple, identify short words that rhyme, such as *cat* and *sat*.) How many separate phonemes can you identify from among your minimal pairs? Note that identifying minimal pairs with students is one way to help them recognize English phonemes and practice pronunciation.
- (5) Listen to an audio recording or radio broadcast in a language you don't understand. What can you tell about the language from just listening? Can you tell if the language has a predominance of consonants or vowels, or a predictable stress pattern? Can you discern emotional tone? If so, how did you arrive at your conclusions?
- (6) Words that could exist within the phonological and morphological systems of a language—but don't—are known as *accidental gaps*. Choose an English word at random, then alter it slightly so that it seems unfamiliar. Now research whether the word exists or not. If it does not, you have produced an accidental gap. What meaning would you assign to it? This is an exercise that students may enjoy as they learn about English speech sounds and vocabulary.
- (7) Examine a short text written in a writing system you are unfamiliar with (alphabetic or non-alphabetic). Are you able to tell if the text is ordered left to right, right to left, or top to bottom? How many different symbols do you note? Do repeated symbols occur in similar positions, such as at the start or end of a group of symbols? Are you able to tell where one word ends and another begins? If so, what is your evidence? Then reflect on the impact that learning a new writing system may have on reading development among second language learners.

- (8) Consider the kinds of hand gestures you use to express such functions as greeting, beckoning, refusing, accepting, leave-taking, etc. Then choose a culture you consider significantly different from your own and research how the gestures to express these same functions may be similar or different in that culture from those you would make. As you review your findings, reflect on the potential role of gestures in communicative competence.
- (9) Consider the facial expressions you use to express emotions such as surprise, pleasure, relief, anger, sadness, puzzlement, and joy. Then choose a culture you consider significantly different from your own and research how the facial expressions that express these same emotions may be similar or different in that culture from those you would make. As you review your findings, reflect on the potential role of facial expressions in communicative competence.

REFERENCES

- Crystal, D. (2010). *The Cambridge encyclopedia of language* (3rd ed.). Cambridge, England: Cambridge University Press.
- Dawson, H., & Phelen, M. (Eds.). (2016). *Language files: Materials for an introduction to language and linguistics* (12th ed.). Columbus, OH: The Ohio State University Press.
- Gotzke, C. & Gosse, H.S. (2009). Introduction to language 3-5 years: Increasingly adult-like understanding and use. *Handbook of language and literacy development: A roadmap from 0-60 months*. London, ON: The Canadian Language & Literacy Research Network. Retrieved from <http://www.theroadmap.ualberta.ca/understandings/research/37-60#2>
- International Phonetic Association (2019). *History of the IPA*. Retrieved from <https://www.internationalphoneticassociation.org>
- Shannon, C. & Weaver, W. (1949). *The mathematical theory of communication*. Urbana-Champaign, IL: University of Illinois Press.
- Simons, G.F., & Fennig, C.D. (Eds.). (2018). *Ethnologue: Languages of the world* (21st ed.). Dallas, TX: SIL International. Retrieved from <https://www.ethnologue.com/guides/how-many-languages>

ADDITIONAL READING

- Brown, H.D. (2014). *Principles of language learning and teaching* (6th ed.). London, England: Pearson Education ESL.
- Comrie, B., Matthews, S., & Polinsky, M. (2003). *The atlas of languages: The origin and development of languages throughout the world* (2nd ed.). New York, NY: Facts on File.

- Denham, K., & Lobeck, A. (2013). *Linguistics for everyone: An introduction* (2nd ed.). Boston, MA: Cengage Learning.
- Fromkin, V., Rodman, R., & Hyams, N. (2017). *An introduction to language* (11th ed.). Boston, MA: Cengage Learning.
- Harmer, J. (2015). *The practice of English language teaching* (5th ed.). London, England: Pearson Longman.
- Jackendoff, R. (n.d.) FAQ: How did language begin? Retrieved September 21, 2018, from <https://www.linguisticsociety.org/resource/faq-how-did-language-begin>
- Lieberman, P. (2007). Tracking the evolution of language and speech. *Expedition Magazine*, 49 (2). Retrieved from <http://www.penn.museum/sites/expedition/?p=9236>
- Radford, A., Atkinson, M., Britain, D., Clahsen, H., & Spencer, A. (2009). *Linguistics: An introduction* (2nd ed.). Cambridge, England: Cambridge University Press.
- Richard-Amato, P. (2010). *Making it happen: From interactive to participatory language teaching—Evolving theory and practice* (4th ed.). London, England: Pearson Education ESL.
- Silva, M. (1995). *Grammar in many voices*. Chicago, IL: NTC Publishing Group.
- Silva, M. (1998). *Basic grammar in many voices*. Chicago, IL: NTC Publishing Group.
- Tannen, D. (n.d.). Discourse analysis—What speakers do in conversation. Retrieved September 27, 2018, from <https://www.linguisticsociety.org/resource/discourse-analysis-what-speakers-do-conversation>
- Yule, G. (2017). *The study of language* (6th ed.). Cambridge, England: Cambridge University Press.