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How Linguists Study Language

As the number of English learners increases, most practicing teachers and students preparing to become teachers are required to take coursework in second language acquisition, English language teaching methods, cross-cultural communication, and linguistics. While the first three courses are usually regarded as useful and interesting, many teachers and teacher candidates are apprehensive and some are even resentful as they enter a linguistics class. They are nervous about having to take the class, and, at the same time, suspect it will be of no use. Few classes, with the possible exception of statistics, trigger such strong emotions.

Of course, some students look forward to taking a course in linguistics. They regard the study of language as interesting. Unfortunately, such students are in the minority. Many students connect “linguistics” with “grammar,” which, in turn, triggers thoughts of identifying parts of speech—nouns, verbs, and conjunctions. If these students were not particularly successful at determining whether a word was an adjective or an adverb in the past, they figure that now it will get even harder. They begin the class believing that, since they never were very good at grammar, this class will further expose that weakness.

Other students associate linguistics with activities like diagramming sentences. They are convinced that sentences must be hard to diagram. They aren’t sure what a tree diagram is. Or perhaps they have heard from other students that they will need to learn a new writing system called phonemic transcription. This system uses unfamiliar symbols to represent sounds. All this can be intimidating. In addition, for students who are studying to be teachers and for those already working in schools, identifying parts of speech, drawing tree diagrams, and writing phonemic

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transcriptions appear to have little connection to their classrooms. They ask themselves and their instructors questions like “How will this knowledge help me be a better teacher?” and “How will this class give me any practical ideas I can use with my own English learners?”

Pedagogical Language Knowledge

We have written this book to help dispel these fears about linguistics. In the chapters that follow, we present the basic concepts of linguistics in everyday language. We focus on aspects of linguistics that have clear classroom connections. We provide examples and suggest activities to help educators apply concepts from linguistics to their own teaching. Our primary goal is to turn key insights from linguistics into what Krashen (2003) calls *comprehensible input*. We hope to provide teachers with the knowledge they need to make informed decisions as they help their students, both native English speakers and students learning English as an additional language, develop academic literacy.

We agree with Bunch (2013), who argues that teachers need *pedagogical language knowledge*. As Bunch explains:

I argue that efforts to prepare teachers for working with English learners (ELs) to engage with increasing language and literacy expectations across the curriculum requires development of *pedagogical language knowledge* (Galguera 2011)—not to “teach English” in the way that most mainstream teachers may initially conceive of (and resist) the notion, but rather to purposefully enact opportunities for the development of language and literacy in and through teaching the core curricular content, understandings, and activities that teachers are responsible for (and, hopefully, excited about) teaching in the first place. (298)

Bunch notes that pedagogical language knowledge is different from *pedagogical content knowledge* that all teachers need. English teachers, for example, need to know about how to teach effective writing and how to analyze literature. This is pedagogical content knowledge, and it is different from the pedagogical content knowledge a social studies teacher would need. All teachers need to know their content and how to teach it.

In addition, they need to know the language of their content area and how to teach that language. This is pedagogical language knowledge. For example, a teacher teaching a mathematics lesson on division would need to know how to teach division (pedagogical content knowledge) and how to teach the language required to read, write, and discuss division (pedagogical language knowledge). For instance, the teacher

would need to be aware of the possible confusion for an English learner of the expressions “divide into” and “divide by” and plan a lesson to help clarify the difference.

What teachers need to know

Fillmore and Snow (2000) have written a detailed paper outlining what teachers need to know about language to teach effectively, especially when teaching English learners. They organize their report by considering the different roles a teacher plays and the language needed for each role. Figure 1.1 summarizes the language demands for the different roles.

In addition to discussing teachers’ roles and responsibilities, Fillmore and Snow list a number of things teachers should know about language. These include knowledge of the basic units of language (phonemes, morphemes, words, phrases, clauses, discourse); how the lexicon is acquired and structured; an understanding of dialects or language varieties; academic English; English spelling; what makes a written text easy or difficult to understand. This is a daunting list, but it does reflect the kind of knowledge that is the basis for pedagogical language knowledge.

Teachers of English learners do not need the same detailed knowledge of linguistics that a teacher of linguistics would need. However, they do need to understand basic concepts of linguistics to develop pedagogical language knowledge so

Teacher as Communicator	Teachers need to understand their students. This requires an understanding of alternate discourse patterns. Teachers also need to know how to provide comprehensible oral input.
Teacher as Educator	Teachers need to understand language development. This allows teachers to distinguish between cognitive problems and second language problems. In addition, teachers need to teach students to read and write in the different content areas.
Teacher as Evaluator	Teachers often group students for instruction. English learners may have different ways of using language and of interacting than middle class native English speakers do. In evaluating students, then, it is important to understand the differences between ways students from different backgrounds use language.
Teacher as Educated Human Being	A knowledge of linguistics should be part of the general knowledge that any educated person develops. Teachers need to understand how language works, the history of their language, and differences between their language and that of their students.
Teacher as Agent of Socialization	For many English learners, schools represent a different culture than their home culture. Teachers are the agents who help socialize children into a new culture. Teachers need to understand children’s home cultures and languages in order to help them accommodate to the school culture. Children can make this accommodation without losing their home culture and language.

Figure 1.1 *Roles of the teacher* (Adapted from Fillmore and Snow, 2002, with permission from the Center for Applied Linguistics)

that they can meet the language needs of their students. Further, in the case of teaching adults a second language, it is helpful for teachers to know enough grammar to be able to explain why some ways of saying or writing something in the language are considered to be standard or conventional forms and some ways are not. The teacher does not need to directly teach the grammar, but having some knowledge of grammar gives a teacher credibility. Often, if older students have studied the grammar of English and are familiar with its rules, they lose confidence if their teacher does not know the grammar.

In addition, some researchers, such as Long (2001), have argued that while teaching discrete grammar items in isolation is not useful, teaching grammar in the context of meaningful activity can improve students' facility with the language. Teachers could either point out errors and provide corrective feedback during an activity, or they could plan a lesson that focuses on a common error they have observed.

For example, if students are having trouble with irregular past-tense forms, such as *brought*, and use a form such as *bringed*, the teacher could simply point out the error and provide the correct form, or the teacher could plan a lesson that would require students to use irregular past forms. For instance, the teacher could say, "I want each of you to tell me about one thing you brought to class today." Some knowledge of linguistics would be helpful in planning such lessons.

The research on providing corrective feedback and on planning lessons that elicit forms students have trouble with has not been conclusive. Often, exercises like asking students to tell what they brought to class are not meaningful, and it appears that engagement in meaningful use of a language is the key to language acquisition.

Whether or not a teacher decides to teach grammar directly, the more he knows about how language works, the more effectively he can use language to help his students learn. As Halliday (1984) wrote, "A child doesn't need to know any linguistics to use language to learn; but a teacher needs to know some linguistics if he wants to understand how the process takes place—or what is going wrong when it doesn't" (9).

Three Aspects of Language Development

The reason that Halliday emphasizes the importance of teachers knowing about linguistics is that subject matter content is always developed through language. It is nearly impossible to separate the knowledge of a subject and the knowledge needed to read, write, and talk about that subject. For example, it would be hard to learn mathematics without knowing what the words *triangle* or *multiplied by* mean. As Halliday (1984) points out, we learn language, we learn through language, and we learn about language.

Teachers armed with linguistics knowledge can help all their students *learn language*. Whether her students are six years old or twenty-six, whether they speak English as the native language or are learning English as an additional language, a teacher is responsible to help all students develop their language abilities. A first-grade teacher expands her students' language knowledge by representing their experiences in writing during a language experience activity. A middle school language arts teacher helps his students discover the organizational structure of the short stories they read. A high school biology teacher shows her students how to use contextual clues to understand new science vocabulary. Teaching any subject involves teaching the language—the vocabulary and the organizational structures—common to that content area.

The second aspect of language development is *learning through language*. Go into most classrooms and what do you hear? The teacher is talking, the students are talking, the room is full of talk. Why is this? It's because one way that humans learn is through oral language. In the case of deaf children, the mode of communication is sign rather than oral language, but language is just as much present. If you look around the classroom, you will also see written language. There are books, lists on the board, student papers on the wall, and words on computer monitors. Everywhere you look, there is written language. Students continually learn through language, both oral and written, inside and outside classrooms. And teachers continually teach their students through language.

Students also *learn about language*. Sometimes they learn that the language they came to school speaking is not valued in that setting. Sometimes they learn how to make subjects and verbs agree. Or they may learn that when two vowels go walking the first one does the talking. Every day, students learn about language. In classrooms this language study should be scientific. For example, students might work together to discover why many English words end in a silent *e* and then develop a rule for keeping or dropping the *e* before adding a suffix. This approach to language study is most common in classes where the teacher has studied linguistics. Such a teacher has her students engage in linguistic investigations following the same approach that linguists use.

The greater a teacher's understanding of basic language structures and processes, the easier it is for that teacher to make good decisions when teaching tough topics like phonics, spelling, and grammar. A teacher with an active interest in language will arouse a similar interest in students who may be surprised to find that *hippopotamus* means "river horse," that the reason commas and periods go inside quotation marks is that typesetters didn't want to lose those little pieces of punctuation as they laid out type for printing, and that the rule about not ending a sentence

with a preposition was created in a period of history when teachers decided to try to base English grammar rules on Latin rules. The more that teachers understand language, the more effectively they can help their students develop their knowledge of language.

Why Study Linguistics?

In this book we focus on connections between linguistics and teaching, specifically teaching English learners and teaching literacy. We will show how knowledge of linguistics can help teachers work more effectively with English learners as well as with native English speakers. However, there are several other reasons for studying linguistics.

One very good reason for studying linguistics is that language is what makes us distinctly human. Lederer (1991) puts it in the strongest terms, "The birth of language is the dawn of humanity . . . before we had words, we were not human beings" (3). Pinker (1994) argues that humans have a language instinct. Chomsky (1975) claims that language is innate, that it grows in the human mind the same way hair grows on our heads.

Most linguists agree that language is uniquely human; it is what distinguishes us from other living creatures. Other creatures can use signs to communicate, but only humans have syntax, the ability to combine symbols to create new symbolic meanings. Syntax expands language capacity and enables humans to communicate in unique ways. For example, there is a difference in meaning between these two sentences:

- (i) The dog bit the man.
- (ii) The man bit the dog.

Notice that the same elements (dog, man, bit) occur in each sentence. However, English speakers use word order to convey meaning, and here the change in the word order results in a change in meaning. This illustrates how syntax enables English speakers to combine symbols in different ways to convey different meanings.

Human communication is qualitatively different from animal communication. A dog might be able to communicate to its owner (or to another dog) that she is hungry, but she can't tell her master what she did yesterday or what she hopes to do tomorrow. However, the claim that only humans have language is debatable. It's a topic students might want to investigate. Do dolphins or chimpanzees have language? How is their communication different from communication among humans? Is language what distinguishes humans from other creatures? Linguistics is the scientific study of language, and the study of linguistics gives teachers and students the tools to investigate questions such as these.

A second reason to study linguistics is that language study is interesting. Students are fascinated to discover that sandwiches got their name from the Earl of Sandwich, who spent his days (and nights) playing cards. He also loved to eat meat, but he didn't want to get grease on the cards, so he wrapped the meat in bread, and the sandwich was born! Newspaper columns, radio shows, books, and Internet websites feature information about language. Richard Lederer's (2012) books on language are best sellers. Many of his lines (*Why do we park in the driveway and drive on the parkway?*) make their rounds on the Internet as friends forward emails with lists of interesting language tidbits. However, even though language is a fascinating subject, the only exposure many students get to language study during their elementary and secondary years is through worksheets and exercises that bore them to tears and serve little practical purpose in improving their reading or writing. What students need is a new approach, and teachers who study linguistics can awaken students' interest in language and engage them in linguistic investigations.

A third reason for studying linguistics is that a well-educated person should know something about language. Unfortunately, it is usually only when students study foreign languages that they begin to learn how their own language works. Language study should be introduced early in school, and the approach to language study should be scientific. This book is designed to help teachers build the knowledge they need to provide a scientific approach to language study for their students.

A final reason to study linguistics is that "the study of language is ultimately the study of the human mind" (Akmajian, Demers, and Harnish 1979, 5). Although linguists are interested in the structure and functioning of language, their goal in trying to understand how language works is to gain insights into how the human mind works. Even though scientists cannot examine the workings of the mind directly, they can study language, the unique product of human minds. Language reflects the inner workings of the mind. As Chomsky (1975) puts it, "language is a mirror of mind in a deep and significant sense. It is a product of human intelligence, created anew in each individual by operations that lie far beyond the reach of will or consciousness" (4).

Approaches to the Study of Language

Linguistics, broadly defined, is the scientific study of language. People have always been fascinated with language. Over time, different approaches have been taken to the study of language. Derewianka (2007) identifies three models of grammar that have been developed. She refers to these models as "grammar as structure, grammar as mental faculty, and grammar as functional resource" (843).

As Derewianka points out, all grammars of English can be traced back to Greek roots. Plato argued that sentences represent propositions made up of a *subject* (what we are talking about) and a *predicate* (what we are saying about the subject). So in a sentence such as "Third-grade students must pass high-stakes tests" the subject is "third-grade students" and the predicate is "must pass high-stakes tests." The sentence, as a basic unit, represents a proposition that the speaker or writer makes. According to Derewianka (2007), "Plato was interested in the truth value of propositions, not in grammatical analysis as an end in itself" (843–44).

Aristotle took a slightly different approach to the study of language. He categorized language into its structural parts. Like Plato, he was not so much interested in defining these parts as in determining how they function in rhetoric (effective or persuasive speaking or writing), poetics, and reasoning. It was Dionysius Thrax who produced the first systematic grammar. He identified most of the parts of speech that linguists use today.

These early scholars raised important questions about language that continue to be studied. Derewianka lists the following questions:

1. What are the basic constituents of a sentence and how are they organized into structures?
2. Is there a universal grammar that reflects human cognition?
3. How does language function to help us achieve our rhetorical purposes? (844)

All three questions are important for an understanding of language and how it functions. At the same time, as linguists have studied these questions, their findings have had important implications for how we teach a second language and how we teach literacy.

Language as structure

One question that linguists have studied is "What are the basic parts of a sentence and how are they organized into structures?" This line of study has led to a greater understanding of the parts of a sentence and how these parts are combined or structured in different languages. Most linguists would agree that the basic parts of a language may include words and phrases that correspond to the traditional English parts of speech (nouns, verbs, adjectives, adverbs, articles, prepositions, conjunctions, and pronouns). Not all languages have all of these parts. Some languages do not have articles. In some languages, the words we refer to as *prepositions* come after the noun, so they are called *postpositions*. In such languages the English phrase

"under the table" would become "the table under." Despite these and other differences, the world's languages generally have words that serve the same functions as the types of words in traditional English grammar.

The words in a language are combined to form phrases, clauses, and sentences. The study of language structure involves identifying the way words are organized into these larger units. For example, in some languages sentences begin with a subject followed by a verb and an object. In other languages, the verb comes at the end. In some languages, the order of the words is quite fixed while in other languages, endings on the words indicate whether they are subjects, objects, and so on, making the order of the words more flexible. The task for linguists who view language as structure is to determine the parts and how they are organized into larger units. This is the study of syntax.

A number of reference grammars for English have been produced. These grammars describe the parts and the structure of English in detail. These reference grammars represent important scholarly work, but since they can only be accessed through major libraries, they are not often used by teachers. Some recent reference grammars have been developed by analyzing large corpuses of text, usually several million words. Computer analysis of written and spoken language allows linguists to describe how a language is currently being used.

Implications for teaching a second language and teaching literacy

Work by linguists to develop accurate descriptions of languages, the parts and how they are structured, has strongly influenced language teaching. The traditional approach to teaching a second language has been to teach the grammar and vocabulary of the new language. Teaching a language this way seems like a logical approach. It involves breaking down the language into its parts and then teaching each part. So, for instance, a teacher might teach students that some words are nouns, some are adjectives, and so forth. Once students can identify the parts of speech, they study how to put the parts together to produce conventional oral and written language.

While the traditional approach to teaching language is logical, it generally does not enable people to communicate in that language. Often, students who know the grammar of the language still do not know how to use the language to make themselves understood or to understand others. The failure of the traditional grammar-based approach should not be surprising. Many people who are native speakers of a language do not "know" its grammar—that is, they cannot identify parts of speech, the tenses of verbs, or other things, such as subject-verb agreement. Generally, it is only when they try to teach the grammar that they learn it. The fact

is that we acquire our native language without first learning the grammar. Why, then, do we need to teach a second language by teaching the grammar? If people acquire a second language in much the same way that they acquire their first language, then explicit teaching of grammar is not needed.

This logical approach also applies to teaching people to read and write. In traditional reading methods, written language (which is a kind of second language for everyone) is broken down into its parts (letters, words, paragraphs, and so on) and the parts are taught one by one. Usually, students are taught the sound or sounds each letter makes, how to blend sounds, and how to use that information to sound out words. Once the written language is transformed into oral language, the assumption is made that students should be able to recognize the words and know their meanings. Then they can put the meanings of the words together to figure out the meaning of a text. The problem with this “logical” approach is that students taught using this method often struggle to make sense of what they read. Again, this suggests that written language can be acquired and does not need to be taught as a step-by-step process. In Chapter 2 we examine more carefully how people acquire a first language, and in Chapter 3 we look in more detail at how second languages and written language are taught and learned.

Language as mental faculty

A second line of research in linguistics that has had implications for second language teaching comes from the work of Chomsky and his followers. Chomsky is interested in the relationships between language and cognition. He has argued that people acquire their first language naturally because the human brain is wired for language. He sees language as a mental faculty unique to humans.

Chomsky and other linguists argue that humans are born with a *language acquisition device*, a set of mental structures that enable them to use language input to form subconscious rules for how language works. Over time, humans develop an internal grammar, a set of rules they can use to understand and produce one or more languages. The internal grammar includes a syntactic component along with a knowledge of phonology, morphology, semantics, and pragmatics.

In later work, Chomsky referred to the language acquisition device as *Universal Grammar*. He has argued that all humans are born with the ability to acquire a language. However, since languages differ, what babies need to figure out is how the language or languages they hear work. For example, babies seem to be born knowing that the language they hear will be made up of units that include subjects

and predicates (although they certainly could not explain it that way). This was the insight Plato discussed.

In English most sentences have a subject, a verb, and an object. A typical sentence in English would be "Juan studied mathematics." First comes the subject, then the verb, and finally an object. Babies seem to know that sentences have subjects, verbs, and objects. If they hear English or Spanish they learn that the order of these three components is subject, verb, object. If they hear other languages, they may hear a different sequence. In some languages, such as Japanese, the order is normally subject, object, verb. The universal knowledge all humans have is that all sentences have subjects, verbs, and objects. The specific knowledge they develop involves the syntax, the order of the components.

Chomsky's claim is that humans are born with an ability to develop language naturally. This claim is generally accepted when applied to young children acquiring a first language or even to acquiring more than one language at an early age. The question is whether older children and adults have the capacity to acquire additional languages in the same way that young children acquire their first language or languages.

Implications for teaching a second language and teaching literacy

If people are born with an innate ability to acquire language, as Chomsky argues, then teaching a second language involves tapping into that ability. As we discuss in detail later, the approach to teaching that is consistent with a view of language as a mental faculty is one that de-emphasizes direct teaching of grammar and instead focuses on providing comprehensible language input. The teacher's job is to make language understandable, not to teach the grammar of the language. This is best done when the focus of lessons is on the academic content being studied instead of on the language itself. However, in order to make language understandable, a teacher needs to know about language and how language works. Then the teacher can make modifications in speech or writing to help aid students' comprehension.

Krashen (1982) developed a theory of second language acquisition based on Chomsky's work. According to Krashen, the traditional approach to teaching a second language by teaching the grammar and vocabulary does not result in people being able to comprehend and produce a second language. Instead, Krashen argues, students need comprehensible input, messages they can understand, in either oral or written form. Comprehensible input allows the language acquisition device to develop the internal rules needed to understand and produce the new language.

Krashen's theory of second language acquisition has strongly influenced teachers. Most current methods of second language teaching focus on ways to make lessons understandable, and grammar is de-emphasized if it is taught at all. Since English learners in K–12 settings need both English and academic subject-area knowledge, teachers can teach both language and content simultaneously. Current methods focus on helping students develop academic English, a register of English used in schools to read, write, and discuss different academic content-area subjects.

Chomsky's linguistic theories have also had implications for teaching both native English speakers and English learners to read and write. Rather than teaching the discrete parts of written language, teachers use methods to make written texts understandable. For example, a teacher might read a picture book with a repetitive pattern to students as they follow along. Over time, students acquire the ability to read and write texts on their own. At first, the teacher provides a great deal of help. Over time, she gradually releases the responsibility for reading and writing to students. This approach to literacy is similar to the approach used to teach a second language.

Language as functional resource

A third line of research in linguistics that has had a strong influence on teaching a second language comes from the work of Halliday (1994) and others, such as Martin (2001) and Derewianka (2007), using an approach called *systemic functional linguistics*. These linguists investigate the question "How does language function to help us achieve our rhetorical purposes?" That is, how do we use language to comprehend and express ideas? Halliday sees language as a resource for making meaning. He is interested in understanding how the process takes place. Halliday's influence was first seen primarily in Australia, but in recent years, it has had a strong influence in the U.S. and other countries.

While Chomsky takes a biological approach to language acquisition, Halliday takes a social approach. As a result of engaging in social interactions, humans develop the language they need. People constantly make choices as they use language, and these choices are influenced by the context.

Halliday identifies three aspects of the context that shape language interactions: the *field*, the *tenor*, and the *mode*. The field refers to the ideas being expressed, the topic of a conversation or a paper. The tenor refers to the relationship between the speaker and listener or the reader and writer. People choose different kinds of language depending on their relationship with the person they are talking with. Finally, the mode refers to the ways speakers or writers shape their texts (oral or

written) to make them cohesive and coherent. These three aspects, the field, tenor, and mode, make up the language register that is used in a particular context.

To take a simple example, if two friends are discussing a movie they attended, the field would be the subject of the movie. The tenor would be shaped by the equal relationship of friends. The mode would be oral language that is coherent because the different comments relate to the movie and cohesive because there would be links among the different comments. The two friends would constantly make language choices based on these contextual factors. The context shapes the language, and, at the same time, the language is an important part of the context.

Halliday's approach to language development is consistent with Vygotsky's (1962) claim that learning takes place through social interactions. As Derewianka puts it, "Language learners are not simply processors of input or producers of output but speaker/hearers engaged in a collaborative process through which they build grammatical, expressive, interactional, and cultural competence" (2007, 851).

Implications for teaching a second language and teaching literacy

Halliday's work has had an increasing influence on how second languages are taught. Teachers have focused on helping students develop the genres (types of oral and written texts) needed for school through careful scaffolding. For example, a teacher of history might involve his students in an analysis of the kinds of history texts they are expected to be able to discuss, read, and write. A mathematics teacher might work with students to help them understand how word problems are structured.

Teachers using a functional approach follow a model referred to as the *curriculum cycle* (Derewianka 2007). The cycle has four phases. In the first phase, the teacher works with the students to build knowledge of the field of study. So if students will be reading about the Missouri Compromise, the teacher would engage them in activities to understand the historical context of the Compromise and the language needed to discuss, read, and write about this historical event.

In the next phase the teacher provides students with a sample of a text about the Missouri Compromise. Together, the teacher and students read the text and discuss it to construct a clear understanding. Then the teacher works with the students to deconstruct the text, looking carefully at how the author used language.

In the third phase, the class works together to construct a response to the text, such as an explanation of what occurred. During this phase, the teacher helps the students focus on the kinds of language needed to write a historical explanation.

For example, students would need different kinds of words and phrases to express cause and effect.

In the final phase, students work independently to produce a text of their own on this topic or a closely related topic. Throughout the curriculum cycle, the teacher scaffolds instruction and helps students focus on both the history content and the language used to express this content.

Gibbons (2002, 2009) provides many examples showing how teachers with English learners can implement this approach. For example, in one fourth-grade class, students first work in small groups to conduct experiments with magnets. The language they use is not precise. They do not use technical terms, such as *magnet*, *attract*, or *repel* during this activity. Following the small group experiments with magnets, the teacher explicitly teaches the key words (*magnet*, *attract*, *repel*) that students need to discuss their experiments. She does this using a magnet and demonstrating the terms *attract* and *repel* as she places different materials near the magnet.

After this explicit teaching, one student reports back from each small group what they have learned about magnets. During the oral reports, the teacher scaffolds the students' language, helping them to incorporate technical terms into their speech. Finally, the teacher has the students write about what they learned in their science notebook.

Throughout the lesson, the teacher pays attention to both the content students are learning and the language they need to talk and write about the science content. The teacher is not just providing the students with comprehensible input. She is working with them to build their language resources so that they can make choices of language that fits the context. For example, in a written report on magnets students should use technical language that is formal and establishes them as an authority on the topic.

This view of language as a functional resource is consistent with García's (2009) claim that people do not *have* one or more languages. Rather, they build up a linguistic resource that they can draw on as they *do* language. In fact, García uses *language* as a verb and refers to people using language as people who are *linguaging*. Language enables us to function, to do things in the world. It is an active process, and the task for students is to use language (to language) appropriately in the different contexts of schooling. For example, the language demands of math are different from those of language arts, and a good history report is different from a report in science.

Halliday's approach to language as a functional resource is the linguistic theory that supports a model of reading developed by Goodman (1996), Smith (1985), and others. Methods of teaching reading and writing based on this model include scaffolding to make written language comprehensible. Reading instruction follows

a gradual release of responsibility model (Pearson and Gallagher 1983) and includes read-alouds, shared and guided reading, and independent reading. Students read and write for real purposes in a workshop setting. This approach to teaching reading fits well with a view of language as a resource that develops in social interactions.

These three approaches to the study of language—language as structure, language as mental faculty, and language as functional resource—continue to be studied by linguists. Insights from linguistics influence the way second languages and literacy are taught. Knowledge of linguistics equips teachers with the pedagogical language knowledge they need to work effectively with English learners and students developing reading proficiency.

How Do Linguists Study Language?

Linguistics is the scientific study of language, and linguists study language in the same way that other scientists study their fields. Science always starts with a question. For example, a linguist studying a new language might ask, “What are the meaningful sounds in this language?” To investigate a question, a scientist forms a hypothesis and collects data to test the hypothesis. The linguists’ goal is to describe the new language.

Akmajian, Demers, and Harnish (1979), who are Chomskyan linguists, explain how a linguist studies language scientifically. Several steps are involved in building a theory to describe a language. When a linguist attempts to describe a new language, the first step is to break the speech stream up into units. It’s not hard for people to listen to another person who speaks their own language and write down the words that person utters. The speech of that language is perceived as being divided into discrete units. But when we try to determine the units in a language we don’t speak or understand, the job of picking out meaningful units is a challenge. When we lived in Lithuania, we wanted to learn a few words of the language. However, as we listened to people speak, we had a very hard time deciding where one word ended and the next one began. We invite you to try this yourself with a language you don’t speak. See if you can divide the language up into words. It’s not easy because the physical speech stream is continuous. Speakers don’t pause between words.

Let’s imagine that the linguist has collected some data, and when she looks at her field notes, this is what she finds:

Doesyournewhusbandcookwell

First, the linguist must decide how to divide up the stream into discrete units that occur in a sequential order. She might do this by trying to find repeated

sequences. After considerable work, the linguist might hypothesize that in this language, the units are these:

Does your new husband cook well

The second task in describing a language is to figure out the differences among the units of speech. They don't all seem to be alike. This leads to forming a hypothesis about categories of words in the language. For example, in English words may be classified as nouns, verbs, conjunctions, and so on. Each of these labels represents a category. Working with this sentence, the linguist might categorize the units this way:

Does your new husband cook well
AUX DET ADJ N V ADV

She uses AUX for an auxiliary, or helping, verb and DET for a determiner, such as an article or a possessive pronoun.

The third step in describing a language is to decide how the speech units can be grouped together. For example, in this sentence "your new husband" might be one group and "does cook well" might be another. The groups of words each play a specific role, so the fourth step would be to determine the function of each group. Here "your new husband" serves as the subject of the sentence, and "does cook well" is the predicate.

The final step in describing this language would be to find what linguists call *dependencies*. In this sentence *does* depends on "your new husband." The subject and verb have to agree in number. If the subject were "your new husbands" then the auxiliary verb would be *do*, the form used with plural subjects.

Readers shouldn't be worried if they are rusty on their auxiliary verbs, subjects, and predicates. This book doesn't include a test on parts of speech or the parts of a sentence. This example simply illustrates how linguists go about the scientific study of a language. They collect data and form hypotheses about the linguistic units, categories, groupings, functions, and dependencies. They use scientific methods to describe various aspects of a language. Of course, languages are very complex, and no linguist would claim to have described any language completely. Science is always a work in progress.

How Do Schools Teach Students About Language?

In most elementary and secondary schools, language study is not approached from a scientific perspective. Linguists work to describe language so that they can study it. However, historically, grammar teachers have prescribed, not described. They

have laid down the rules for students to learn and follow. Teachers have told their classes that subjects and verbs must agree, and they have given students worksheets to practice this skill. Many students have learned that they can't end a sentence with a preposition. Teachers of grammar, from the earliest days, have used this prescriptive approach.

We want to encourage teachers to take a descriptive approach to language study because prescriptive approaches to natural phenomena like language simply don't work. The laws of physics ensure that if I drop my pencil, it will fall to the ground, not fly up into the sky. This will occur no matter what rules about gravity great physicists proclaim. In the same way, prescriptive teachers can tell students not to split infinitives, but that won't inhibit a writer who wants "to boldly go" where no person has gone before. In fact, great writers seldom follow the rules in grammar books. In response to a critic who suggested that he rewrite a sentence to avoid ending it with a preposition, Winston Churchill is reputed to have commented, "This is the sort of nonsense up with which I will not put!"

As an alternative to the teaching of grammar rules, a teacher with some linguistic knowledge might choose to involve students in linguistic investigations. For example, students might examine books written by well-known writers to see if they ever end sentences with prepositions. Students could collect examples of such sentences and discuss how the sentence would sound if it were rewritten with the preposition coming earlier. In the course of this investigation, students would need to learn to distinguish between a preposition (He ran *up* a big hill) and a particle (He ran *up* a big bill). A *particle* is a word that is used to form a two- or three-word verb. They might even discover that what Churchill's critic objected to was a final particle, not a preposition after all. *Put up with* is actually a three-word verb.

When teachers understand basic linguistic concepts, they can make informed decisions about how to teach language to their students. Knowledgeable teachers can teach their students about language using a descriptive approach. They also have the knowledge base to determine how to approach topics like phonics, vocabulary, or spelling. We encourage teachers to explore topics in linguistics with their students. We have organized this book to provide the essential linguistics teachers need to boldly go where many teachers have not gone before.