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THE STUDY OF LANGUAGE

People have long been interested in language, in such matters as its origin, its nature, and its uses, whether in persuasion, poetry, or prayer. Language has always been something of a mystery, not unlike the mysteries of creation, the origin of the sun, and the coming of fire. As such, it has provided people with such a rich source of myth that even today much of the mystery of language prevails.

One important difference which distinguishes linguists from nonlinguists lies in those aspects of language that the two groups consider to be either mysterious or interesting, and another, in how they choose to investigate and discuss the mysteries and problems that are perceived. The central purpose of this book is to show what linguists do when they work with language. They do different things at different times, but everything they do is motivated by principles derived from modern science. Consequently, this book is an introduction to linguistic science. It seeks to provide an overview of how linguists look at language by showing what questions they ask, what evidence they seek bearing on those questions, and what answers they propose.

SOME VIEWPOINTS ABOUT LANGUAGE

One of the greatest mysteries that have confronted people has been the origin of language, a topic on which there has been much speculation. Many of us are familiar with the stories in Genesis concerning the giving of names by a deity and the diffusion of different tongues following the destruction of the Tower of Babel. Another story, this one not biblical, about a Swede, Andreas Kemke, has him conjecturing that in the Garden of Eden Adam spoke in Danish, the serpent in French, and the deity in Swedish (Eve was not mentioned). This conjecture tells us much more about Kemke than it does about the origin of language. A multitude of theories abound on this topic: "bowwow," "singsong," "dingdong," "pooh-pooh," and "gestural" to name some of the more exotic. In each case the concern of the person or persons proposing the theory has been with explaining how human language could have originated in the world, either by referring to other forms of communication, both human and animal, or by invoking a *deus ex machina* solution. Linguists themselves have tended not to become involved in such "theorizing." Indeed, in 1886 the Linguistic Society of Paris banned papers on the possible origins of language from its meetings and publications.

At times, theorists with an inclination toward experimentation have even gone so far as to try to recreate the conditions which they consider necessary for the origin of language. Herodotus, the Greek historian, tells how the ancient Egyptian king Psammetichus raised two children in complete isolation from human speech to see what language they would "naturally" speak. The children's first word is reported to have been *bekos,* the Phrygian word for bread; consequently, Psammetichus decided that children would naturally speak Phrygian and that Phrygian was an "older" language than Egyptian. James I of Scotland performed much the same "experiment" in the early sixteenth century, but his children reportedly spoke "good Hebrew." Needless to say such conjectures and such experimentation do not qualify as scientific inquiry as such inquiry is understood today.

In the modern world, people still continue to have only the vaguest notions about what language is. These notions are oftentimes just as vague as those of the Spanish Emperor Charles V, for whom English was the proper language for commerce, German for warfare, French for women, Italian for friends, and Spanish for the worship of God. Even today many people regard Italian as "musical," the English spoken by the Welsh as "singsong," German as "guttural," French as "flowing," and American Indian languages as "monotonous and grunt-filled."

Many people think of languages as dictionaries of some kind and consider that learning a new language is equivalent to learning a new set of words which may be related, often on a one-to-one basis, to the set they know in the first language. Another common confusion is that of language with writing. Speech is often perceived to be a less precise, more transitory, and somewhat debased form of the language, which finds its purest or essential expression in its written forms.

We have poorly developed vocabularies for talking about linguistic matters and we do not know which matters are significant. Then again, in our actual use of words we reveal our attitudes about language and the functions of language. We regard some expressions as taboo, so we carefully avoid them by using **euphemisms**; nevertheless, we consider other expressions to be permissible profanities in

certain circumstances. We adopt pseudonames, stage names, and nicknames, either as members of a religious order, stage troupe, or social group. We continue to worship in special languages such as classical Arabic, Latin, or Sanskrit, and we allow ourselves to be controlled by such formulas as *I now pronounce you man and wife* or *I divorce thee* thrice repeated. We joke, pun, delight in riddles, and occasionally fall under verbal spells of one kind or another, which, though no longer as potent as those of the witches in *Macbeth* or of Rumpelstiltskin, still exercise some control over our behavior.

We are assailed on every side by language; yet very few of us know what language is. We are told to think positively, constructively, or imaginatively, but there is little agreement on how language is to be used in such thinking. There is considerable anxiety about how language is used in society. We encounter very few other phenomena as important to us as language. Toward many of these phenomena, we have adopted a scientific attitude, as for example in the matters of health and well-being. For most of us too astrology has given way to astronomy. However, we must observe that in general the study of language more closely resembles primitive astrology than it does sophisticated astronomy.

A DEFINITION OF LANGUAGE

Linguists are in broad agreement about some of the important characteristics of human language, and one definition of language widely associated with linguistics may be used to illustrate areas of agreement. This particular definition states that *language is a system of arbitrary vocal symbols used for human communication.* The definition is rather imprecise in that it contains considerable redundancy, particularly in employing both the terms *system* and *arbitrary;* some redundancy is perhaps excusable, however, for it allows certain points to be more heavily emphasized than they would otherwise have been.

Language as System

The key term in the above definition is **system.** It is also the most difficult term to discuss. We may observe that a language must be systematic, for otherwise it could not be learned or used consistently. However, we must also ask in what ways a language is systematic. A very basic observation is that each language contains two systems rather than one, a system of sounds and a system of meanings. Only certain sounds are used by speakers of any language, and only certain combinations of these sounds are possible. A speaker of English can say *I saw the bank* but he cannot say the following two sentences, which are starred (*) to show their unacceptability to a native speaker: **I saw the banque,* which makes him sound partly like a Frenchman, or **I saw the nbka,* which makes him feel that he is saying some kind of tongue twister rather than a completely well-formed English sentence. Likewise, he can say *I saw the bank* but not **I bank saw the,* which is nonsense, and, if he says *I bank the saw,* that sentence means something quite different and is rather absurd. The sound system of a language allows a small number of sounds to be used over and over again in various combinations to form units of meaning. The meaning system allows these units of meaning to be

arranged in an infinite number of ways to express both simple and complicated ideas.

All languages have dual systems of sounds and meanings, **duality** being a design feature of language, as Chapter 2 will show. Linguists concern themselves not only with characteristics of the two systems but also with how the systems relate to each other within one overall linguistic system for a particular language. The nature of this relationship in all languages is very important and constitutes a most interesting problem. Reference will be made to it throughout this book, particularly in Chapters 4, 7, and 8.

A related problem concerns the coverage of the system; that is, the kind of phenomena that must be accounted for, the principles to be used in deciding which phenomena are relevant, and how relationships are to be expressed. One kind of coverage would require us to do no more than make a catalog of observations of certain kinds of linguistic phenomena according to a preconceived plan. A dictionary is such a catalog of observations about words and their meanings, with different dictionary makers following different plans concerning what is to be included and how included material is to be described. However, we could not possibly make a dictionary of the sentences in a language in the same way that we can make a dictionary of the words in a language: the supply of words is finite but their possible combinations are infinite. A language offers its speakers the opportunity to speak about anything within their knowledge—and many things outside that knowledge, too. It is essentially a creative system in that much of what we say and hear we say and hear for the first time. We must search for satisfactory ways of describing sentences and parts of sentences, and also sounds and combinations of sounds. And we must do so in the knowledge that any system we propose must recognize the unlimited possibilities any language offers its speakers. As we shall see in later chapters, we can devise various sophisticated ways of saying something of interest about the systematic, creative nature of language.

Linguists are also concerned with the units and processes within the system. An utterance is not a continuous phenomenon: it is broken into discrete units of various sizes, and these units are arranged according to various processes. We must seek to understand what these units and processes are. Very likely they are not those that the educated public holds dear, or at least not as they are defined by that public, for example such units as letters and words and such processes as sentences constructed according to some "sense-making" formula. As we shall see in later chapters, we can postulate such units as phonemes and morphemes, and such arrangements and processes as constituent structures and transformations. Our search must be for those discrete units and processes which systematically account for interesting data within a theory that says something of significance to fellow scientists.

Language as Arbitrary

The term **arbitrary** in the definition does not mean that everything about language is unpredictable, for languages do not vary in every possible way. It means that we cannot predict exactly which specific features we will find in a particular language

if we are unfamiliar with that language or with a related language. There will be no way of predicting what a word means just from hearing it, of knowing in advance whether or how nouns will be inflected, or of saying whether pronouns will fall into any particular pattern. Likewise, there will be no way of predicting exactly which sounds will occur, of knowing what the ratio of consonants to vowels will be, or of saying whether the nasal passages will be involved in the production of certain vowels. If languages were completely unpredictable in their systems, we could not even talk about nouns, verbs, pronouns, consonants, and vowels at all. However, linguistic systems are not completely unpredictable: all the phenomena mentioned in the previous sentence will be found in any language we choose to examine, taking different realizations, of course, in different languages.

For example, the process of deletion—that is, the permissible omission of a part of a sentence when that part can be predicted from what remains—may be illustrated by the following deletions in a series of English sentences: *I could have gone and Peter could have gone too; I could have gone and Peter could have too;* and *I could have gone and Peter too.* This deletion process will be found in all languages, but the particular variation will depend on the language. All languages will have devices for negation, as in the English example of *The boy ran* negated to *The boy didn't run.* In this example the positive sentence is negated by the insertion of *n't,* the introduction of the verb *do,* and assignment of the "past tense" from the verb *run* to the verb *do.* This particular negation process is rather complicated. However, we would never expect to find a sentence such as *The boy ran* negated by a sentence such as **The boy ran the boy ran* or **The boy ran ran boy the,* or **The boy ran boy the,* that is, through some system of total sentence repetition or total or partial inversion. Language is unpredictable only in the sense that the variations of the processes that are employed are unpredictable. Apparently certain very simple logical processes are never employed, as in the above ungrammatical examples of negation, but certain seemingly illogical and obviously complicated processes are preferred, as in English negation. Of interest to us is what determines the processes that do occur and what exactly is predictable in languages.

The things which are predictable about all languages are called **linguistic universals.** For example, all languages seem to be characterizable as systems of rules of certain kinds. All have nouns and verbs. All have devices which allow speakers to make statements, ask questions, and give commands or make requests. All have consonants and vowels. All have means for referring to "real world" objects and relationships. And all allow their speakers the freedom to create original sentences. The specifics for each language are, however, largely unpredictable and, therefore, arbitrary: what German nouns are like; how questions are formed in Eskimo; what the vowels of Tagalog are; and what speakers of Basque call the various body parts.

Language as Vocal

The term **vocal** in the definition refers to the fact that the primary medium of language is sound, and it is sound for all languages, no matter how well developed

are their writing systems. We are *Homo loquens* as much as we are *Homo sapiens*. All the evidence we have, from the continued existence of preliterate societies, through the knowledge we have of language acquisition by children, to the existence of historical records, confirms the fact that writing is based on speaking. Writing systems are attempts to capture sounds and meanings on paper. Even though certain characteristics of writing systems came into being to inform people how to recite correctly, particularly to recite certain religious texts (as, for example, the Vedas, the religious texts of the Sanskrit language), the primary purpose of writing is to lend some kind of permanence to the spoken language and not to prescribe that spoken language in any way. In our attempts to describe a language, we must keep this fact in mind; therefore, we are not free to ignore the sounds a speaker makes in favor of studying the writing system.

We must acknowledge the centrality of speech to any study of language and therefore we must take an interest in phonetics and phonology (Chapters 3 and 4). Very few linguists have ventured to claim that language can manifest itself in either speech or writing and that the two manifestations are somehow "equal." These comments should not be taken as a denial of the importance of writing and writing systems and of the possible effects of mass literacy on language systems and linguistic usage. Writing undeniably influences speaking. An insistence on the vocal basis of language is an insistence on the importance of the historical and developmental primacy of speech over writing and therefore a denial of the common misunderstanding that speech is a spoken, and generally somewhat debased, form of writing.

Language as Symbol

The term **symbol** in the definition refers to the fact that there is no connection, or at least in a few cases only a minimal connection, between the sounds that people use and the objects to which these sounds refer. Language is a symbolic system, a system in which words are associated with objects, ideas, and actions by convention so that "a rose by any other name would smell as sweet." In only a few cases is there some direct representational connection between a word and some phenomenon in the "real" world. Onomatopoeic words like *bang, crash,* and *roar* are examples from English, although the meanings of these words would not be at all obvious to speakers of either Chinese or Eskimo. More marginal are words like *soft* and *harsh* or *slither* and *slimy,* in which any connection between sound and sense may well be disputed by native speakers. More than one writer has claimed that English words beginning with *sl,* and *sn,* as in *slime, slut, snarl,* and *snob,* are used to denote a variety of unpleasant things. In much the same way the vowel sound in *twig* and *bit* is said to be associated with small things and the vowel sounds in *huge* and *moose* with large things. However, once again we are in an area of subjectivity, as counterexamples are not difficult to find; for example, *sleep, snug, hill,* and *spoon.* No more than a slight statistical trend can be established, one on which it would be unwise to base conclusions. In the circumstances, then, little evidence exists to refute the claim that languages are systems of arbitrary symbols. In learning a new language, you cannot escape learning the new vocabulary almost item-by-item, adequate testimony to this arbitrary symbolic characteristic of all languages.

Language as Human

The term **human** in the definition refers to the fact that the kind of system that interests us is possessed only by human beings and is very different from the communication systems that other forms of life possess. Just how different, of course, is a question of some interest, for it can shed light on language to know in what ways human languages are different from systems of nonhuman communication. The differences may be ascribed to the process of evolution that the human species has gone through and result from the genetic characteristics that distinguish it from other species. No system of animal communication makes use of the design feature of duality, that is, of concurrent systems of sound and meaning, and few systems of animal communication employ discrete arbitrary signals. Moreover, none allows its users to do all that language allows human beings to do: reminisce over the past, speculate about the future, tell lies at will, and devise theories and even a **metalanguage** about the system itself. Bees do not discuss last year's supply of food, dolphins are not next-year oriented, jackdaws do not deceive each other with their calls, and dogs do not bark about barking. Further discussion of some of the fundamental differences between human language and animal communication is contained in Chapter 2.

Language is uniquely human in another respect. People can perform acts with language just as they can with objects of different kinds. As we shall see in Chapter 9, sentences like *I pronounce you husband and wife, I'm sorry,* and *I bet you a dollar* can all be acts (**performatives**) because saying something in the right circumstances is also doing something beyond making noises.

Language as Communication

The final term in the definition is **communication:** language is used for communication. Language allows people to say things to each other and express their communicative needs. These needs are strong, whether they are the needs of a Robinson Crusoe for something or someone to address his remarks to, or of Trappist monks who devise sophisticated signal systems to avoid breaking their vows of perpetual silence. Language is the cement of society, allowing people to live, work, and play together, to tell *the* truth but also to tell *a* lie, or *lies.* Sometimes it is used merely to keep communication channels open so that if any need arises to say something of importance a suitable channel is available. This last function is met through the conventions of greeting and leave-taking, by small talk at parties, and in the chatter of secretaries in a large office. It is most conspicuous in its absence, as witnessed by the image of the tall "silent" stranger in the movies or by such a statement as *She didn't even speak to me when we passed in the street.* Other manifestations of this keeping open of channels are the ubiquitous portable transistor radios of teen-agers and the *Good morning-Nice day* greetings of casual acquaintances. Language also functions to communicate general attitudes toward life and others, creating what the anthropologist Bronislaw Malinowski called "a phatic communion [among speakers] . . . a type of speech in which ties of union are created by a mere exchange of words." We need only notice how absurd it would be to take each of the following expressions literally: *How do you do! Where have you been all my life?,* and *How's everybody?*

The communication of most interest to us is, of course, the communication of meaning. A language allows its speakers to talk about anything within their realm of knowledge. According to one hypothesis associated with the linguist Edward Sapir and his student Benjamin Lee Whorf, languages may make some things easier for their speakers to say than other things. That is, different languages impose different perceptions of the world on their speakers or predispose them to look at the world in certain ways. If such a hypothesis were true, it would imply either that meanings would not be freely translatable across languages or that they would be translatable only with certain difficulties. However, this hypothesis has never had any strong appeal to linguists, who have felt that the linguistic evidence cited in its support has been slight and that not enough is known about how languages convey meaning to justify such a strong claim.

Linguists must be prepared to take an interest in how meaningfulness is achieved in language, even though at times precise questions about meaning cannot easily be formulated or answered even when formulated. The sentences *John opened the door* and *The key opened the door* communicate meaning; however, no general agreement exists as to how that meaning is achieved in each case. A sentence such as *John and the key opened the door,* made by conjoining the subjects of the two sentences, is bizarre; and both **John opened* and **The key opened* are unacceptable. The sentences fail to communicate meaning. We are faced with the problem of explaining such failure; Chapter 9 offers certain tentative explanations.

THE SCOPE OF LINGUISTIC THEORIZING

The above definition of language as a system of arbitrary vocal symbols used for human communication still allows for a wide range of scientific inquiries into language and its functions. It allows for a wide variety of questions to be posed and for very different bodies of evidence to be examined for answers to those questions. At this point, therefore, we should return to a discussion of what it is that we claim to be describing. Should we merely describe what we happen to observe, or should we attempt to make observations of certain kinds and also to filter out some important principles from these observations? We can, for example, report that so many people of such and such a background use sentences like *He be wise* and *He asked did John go,* and make no attempt to relate these sentences to other sentences from the same speakers, such as *He wise,* and to the almost certain nonappearance of a sentence such as *He asked if John went.* A decision as to what constitutes the data which must be described and accounted for will therefore control what we have to say. The decision effectively controls the actual selection of those data. If we feel we must describe certain kinds of relationships, we will look for examples of such relationships and for additional evidence; however, if we are not aware of these same relationships, we will not even notice certain phenomena. Such a situation is not uncommon in the natural or "hard" sciences. No scientist ever approaches a problem without some idea of how the problem should be stated and without some notion of what evidence might or might not be relevant in finding a solution.

Some kind of system is necessary for collecting and organizing data, because

science is concerned with the development of systems for handling data and with theory building. One very simple system would involve no more than making a rudimentary catalog of observations according to an elementary scheme of classification, as in the construction of a simple dictionary. Such a system would have what has been called "observational adequacy." It would simply cover the data but would not attempt to get at any very profound relationships that might exist beneath the "surface" of those data.

Some attempt can be made to get beneath the surface to explain relationships. The resulting system would attempt "descriptive adequacy." For example, various kinds of relationships can be shown to hold among apparently unrelated phenomena. Sentences like *John kissed Mary* and *The boy chased the dog* can be related to each other as exhibiting the same "pattern"; words like *Mary* and *dog* can be considered to be "nouns"; *Mary was kissed by John* and *The dog was chased by the boy* can be regarded as "transformations" of the first two sentences; and both **John Mary kissed* and **The boy dog chased* can be regarded as "ungrammatical," and therefore starred, because either they do not apparently occur in real life or they violate certain "rules" which speakers of the language apparently follow. Not all the preceding statements are equally "adequate." The best kind of descriptive adequacy in a grammar would result from that grammar showing not only how the data in the language are arranged but doing so in a way which accords with the linguistic intuitions of the speakers of that language.

But since all languages are somehow alike, a further level of "explanatory adequacy" may be attempted. All language descriptions would draw on the same system of organization, and the same terms and processes would be used in describing them because of the general likeness. For this reason attempts have sometimes been made to describe all language within a particular terminology. For example, attempts have sometimes been made to describe English as though every word must belong to one of eight parts of speech or in terms of phonemes or morphemes which can be discovered by following a prescribed set of procedures, or through possibilities and impossibilities of occurrence, for example the possibility of *Be quiet!* but the apparent impossibility of **Be tall!* Achieving explanatory adequacy is one of the most important goals of modern linguistics.

Each set of terms arises from a theory of some kind, and the theory and terminology together predispose an investigator to look at a language in a certain way. Investigators do not merely fit data into a theoretical framework using the available terminology to do so; rather, that framework helps them to delineate just what are the data and questions with which they must be concerned. Consequently, at various times certain questions about language have been held to be answerable but at other times not. A good theory should lead to the formulation of interesting questions so that gaps in a conceptual framework may be explored and new linguistic evidence used to confirm or deny basic hypotheses.

The "best" theory for a language, that is, the best grammar, will have all the characteristics of any good scientific theory. It will be an abstraction in that it will make reference to idealized units and processes. It will also, of course, acknowledge that these idealizations are realized in various ways in the world in which we live, just as the physicist's gravitational system and the economist's monetary system are abstractions realized respectively in falling bodies and price fluctuations. The grammar will attempt to relate apparently diverse phenomena within a

single framework, will provide a terminology for making observations about such phenomena, and will stimulate interesting investigations. A grammar must do all these things if it is to be of scientific value, and its usefulness must be judged by how well it does all three.

The points made in the previous paragraphs are extremely important. Linguistics is a science only insofar as linguists adopt scientific attitudes toward language. Scientific attitudes require objectivity: investigators must not deliberately distort or ignore data but must try to see things clearly and see them whole, all the while admitting that their theoretical inclinations influence their view of the data. However, these theoretical inclinations should be quite uninfluenced by emotions so as to avoid subjectivity. A scientific statement should also be testable, and the techniques and experiments on which it is based should be replicable, since explicitness is an essential requirement of the scientific method. A statement which is not testable is not vulnerable and an invulnerable statement is not a scientific one, for all scientific statements must be subject to disproof. Scientists must also be thorough in their treatment of problems and reject arbitrary solutions. However, different competing theories exist at any one time, each claiming adequacy in covering what purport to be the same data. The result may be vigorous conflict among supporters of the various theories, and developments in a discipline may appear to be revolutionary rather than evolutionary. Such has been the case in linguistics in recent years.

Since there is more than one way to "do" science—that is, since several different methods may properly be labeled "scientific"—we need not be surprised to find that linguists have continually discussed "how to do linguistics." The methodology of linguistics is a serious continuing concern. In later chapters we will see that concern for methodology surfaces on many occasions, particularly as this book to some extent recapitulates in its treatment of topics some of the history of modern linguistics.

SOME BASIC DISTINCTIONS

Before investigating language phenomena in any detail, we should be familiar with a set of distinctions widely recognized in linguistics. These distinctions are between pairs of related terms: *description* and *prescription; synchrony* and *diachrony; form* and *substance;* and *competence* and *performance.*

Description and Prescription

The distinction between description and prescription relates to the fact that we must try not to make prejudicial judgments about data. Linguists are concerned with how languages work, not with how they can be improved (if indeed they can be). A sentence such as *He ain't got none* is to be explained, not criticized or corrected. Such sentences occur, and must be accounted for. They may produce undesirable consequences when uttered in certain circumstances, but this observation is a social rather than a linguistic observation. *He ain't got none* may result in the speaker's being left out of certain social events and being deprived of certain opportunities. To say that *He ain't got none* is a "bad" sentence is to make some kind of prescriptive statement about behavior, not some kind of descriptive

statement about a linguistic phenomenon. We would not want to call it an ungrammatical sentence. For example, we should compare it with a collection of words such as **Got he ain't none*, a collection which is definitely ungrammatical for any speaker of English. *He ain't got none* is quite normal, and therefore perfectly grammatical, for people who use this kind of construction, but no speaker of English uses **Got he ain't none*. It is our task to describe the occurrence of the former and, if we can, to account for it in some way within a general theory. In addition, we may consider that we should also account for the nonoccurrence of the other group of words. On no account, though, can we dismiss *He ain't got none* as either "incorrect" or of no interest, merely because such an expression is in low repute in certain social circles.

Much language study in the last century or more has been prescriptive in nature. This prescriptive influence is particularly apparent in some of the language instruction which is given in the schools. The rules taught are often prescriptive, of the form *Do this* or *Don't do that*. On the other hand, the rules of a generative grammar, as we shall see, are entirely descriptive, of the form *X becomes Y (in situation Z)*.

Synchrony and Diachrony

The distinction between synchrony and diachrony refers to the fact that languages exist in time and that we can study a language as it exists at any one time or over a period of time. A **synchronic** statement is a statement about a language at one period in time, whereas a **diachronic** statement is a statement about a change or changes that took place over a period of time. Synchronic statements should make no reference to previous stages in the language. For example, *meet* and *meat* are pronounced the same, that is, they are **homophones** in current English. It is irrelevant in a synchronic statement about Modern English that they were once differently pronounced, a fact to which their spelling attests. The historical facts indeed show different sources for the ee and the ea in the words. However, such a similarity between the synchronic statement for current English and the diachronic evidence, that is, the historical facts, must be regarded as fortuitous and should never influence decisions as to what are the synchronic facts. A synchronic statement may reflect certain historical developments: for example, in one treatment of the sounds of current English the vowels of *reel* and *real* are described as being basically different rather than alike because the second word has a derived form *reality* which contains a two-vowel pronunciation of *ea*. But such a decision is made for synchronic reasons alone.

Valid diachronic, or historical, work must be based on good synchronic, or descriptive, work, because no valid statements about linguistic change can be made unless good descriptions exist of a language for at least two discrete stages of development. In addition, a theory of linguistic change is required in order to relate the two descriptions. Any account of changes in the pronunciation of words such as *mouse, night,* and *name* over the last thousand years in English must be based on a thorough knowledge of English pronunciation today, English pronunciation a millennium ago, and a theory of sound change, a theory which, to be maximally useful, should also find itself in harmony with the theory from which the synchronic statements are derived. These and related problems will be discussed in some of the later chapters. In those chapters we will also see that the distinc-

tion between diachrony and synchrony is not an absolute one: a language is a product of history and many of the effects of its history are noticeable in its structure.

Form and Substance

The distinction between form and substance is the distinction between the system we devise and the actual data. The system is a theoretical construct; the data are events in the real world. Of course, we must assume that there is some correspondence between the two, that empirical justification exists for our claims, and therefore that the system "accounts for" or is "behind" certain data. The system is not unlike a bus-company timetable or the rules of a game like chess. On any particular day specific buses are likely to deviate from the schedule because of local conditions, but the schedule is still recognizable as a whole; similarly, each game of chess is different from every other game in some respect or other, yet each is still recognizably the same game, chess. If the system requires us to refer to certain phenomena as nouns, others as phonemes, and still others as imperatives, then we are really claiming that languages have nouns, phonemes, and imperatives, and that these are realized in such substance as *boy* and *John, p, t,* and *k,* and *Get up!,* respectively. In another sense too, substance means that there can be innumerable instances of *boy, John, p, t,* and *k* and *Get up!,* and that each instance may differ slightly from each other instance since no two pronunciations are exactly alike. However, each one is a particular instance of an abstract "boy," "John," "p," "t," "k," and "Get up!" Such abstractions must somehow exist in people's heads when they use language, so one task we have is that of making hypotheses about the complete set of abstractions that exists, in the simplest yet most comprehensive way. Another implication is that language is, in a very important sense, a mental phenomenon.

Competence and Performance

The distinction between competence and performance is closely related to that between form and substance. The formal system we describe accounts for a native speaker's knowledge of his language. This knowledge allows him the potential to understand and produce utterances which he actually may never find the opportunity either to understand or to produce. For example, the reader will have understood the previous sentence, will understand this one, and will understand the next one, but each of these sentences is unique in his or her experience. This ability the reader has to understand novel sentences derives from **competence** in English. This same competence causes us to reject **the ate goldfish John* as a possible English sentence, tells us that *Time flies* is ambiguous, and indicates that the speaker got sidetracked in the middle of such a sentence as *I was going along the street and met well no it was raining at the time and as I said to Peter before leaving.* . . . Linguistic **performance** is full of utterances like this last one, as well as slips, as close listening to almost any conversation will reveal. Many linguists consider that the correct approach is not to describe such utterances, but to describe the underlying system, or competence, which leads a speaker-listener to produce and understand them.

That same system should allow us to account for the ambiguity of *Time flies* and the ***ungrammaticality*** of the collection of words about John and the goldfish. In that way speakers' intuitions about language will be acknowledged. Actual utterances will not, however, be treated all alike because some will be more useful than others in coming to decisions about the underlying facts. Almost universal agreement exists that any grammar which treats a long, well-formed sentence like *I was walking along Old Bridge Street when I met Jim, who was just leaving the hotel after having attended his weekly United Fund committee meeting* on the same basis as the disconnected utterance above is missing more than one important generalization about English in particular and language in general.

LINGUISTICS AND RELATED DISCIPLINES

Linguists are not the only people interested in the study of language. Anthropologists, philosophers, psychologists, and language teachers have long been interested in language, and linguistics has close ties with each of the other disciplines. These ties have been stronger at some times than others as interests change and as the influence of one discipline on another grows or diminishes.

Linguistics and Anthropology

The tie with anthropology is a historical one in that much linguistic endeavor grew out of a necessity for understanding the languages of "primitive" peoples. Exotic languages proved to be very different in many ways from the Indo-European languages beloved of the philologists and grammarians of the nineteenth century. Linguists who wanted to describe the exotic languages of the Americas, Southeast Asia, and the Pacific found that they had to devise completely new techniques of linguistic analysis. The branch of linguistics called structural linguistics derived its characteristic descriptive approach largely from a concern for exotic languages while its approach to historical matters came largely from the discoveries of nineteenth-century philologists. Today the relationship between anthropology and linguistics is less close than in the past; languages no longer appear to vary in all sorts of unpredictable ways as we find out more about different languages. Some of the ideas which intrigued early anthropological linguists, such as the relationship between language and culture (as, for example, in the aforementioned Sapir-Whorf hypothesis), no longer generate the same kind of excitement.

As some of the interest and excitement has diminished, however, a concern for the relationship between language and society has developed. One of the most rapidly growing areas of linguistic study is **sociolinguistics,** the study of language in its social context. We will be concerned with some aspects of sociolinguistics in Chapters 9 and 12, particularly those aspects which seem to require certain revisions of current linguistic theory.

Linguistics and Philosophy

If the relationship of linguistics to anthropology has weakened in recent years, the one between linguistics and philosophy has strengthened during the same time.

Linguists are interested once more in questions of meaning after passing through a period in which they almost totally disregarded the study of meaning. For a long time no suitable procedures seemed to exist for investigating questions of meaning; consequently, meaning in language was largely ignored because it was felt that nothing worthwhile could be said in the absence of suitable procedures. Today, on the other hand, linguists wonder why a sentence such as *John is as sad as the book he read* is bizarre in its meaning, how a sentence like *John doesn't beat his wife because he loves her* achieves its ambiguity, what *When did you stop beating your wife?* presupposes, and how we can "hear music" even when we cannot be exhorted to **Hear music!* Although we can acknowledge that a language is a system for relating sounds to meanings, we encounter great difficulty in understanding how this relationship is effected. We still know very little about what is involved when we say that something "means" something. As we will show in Chapter 9, there is a new interest in some of the same questions of meaning that have long interested certain philosophers.

Linguistics and Psychology

Linguists share an interest with psychologists in the "human" properties of language, in language learning, and in "creativity." Language is uniquely human. Languages also appear to share some universal constraints. We can assume that these constraints exist because of human limitations or predispositions. Children apparently learn languages in the same way no matter how different the cultures in which they are raised. Such universal learning is of interest to both psychologists and linguists. Language is also probably the most creative system possessed by man. Psychologists and linguists, therefore, have an interest in linguistic phenomena, the former to explain behavior in general, the latter to explain behavior in particular. It may even be the case, as Noam Chomsky has suggested, that linguistics is best thought of as being a branch of cognitive psychology.

One important area of interdisciplinary study has emerged in recent years, that of **psycholinguistics.** Psycholinguists are interested in such matters as the acquisition of language by children, speech perception, language processing, and linguistic functioning in various conditions, for example, in deafness and in various language pathologies. As linguists concern themselves more and more with some of the subtleties of language structure, they find evidence from various psycholinguistic studies useful in making decisions about what must be explained and how it must be explained.

Linguistics and Teaching

Finally, although languages are learned, they must also occasionally be taught, or there must be some teaching about linguistic matters. Linguists can be expected to contribute some understanding of language to this teaching; for example, of the native language, of reading, of foreign languages, and so on. We may also sometimes offer advice about the substance of what must be taught, pointing out what appear to us to be the facts that must be mastered. Occasionally, we venture statements about how what apparently must be taught should be taught. When such statements are made with a full understanding of the complex processes of

teaching and learning, they should be listened to with attention. However, too often they are not made with such an understanding, for linguists are just as prone as any other professionals to offer gratuitous advice in areas outside their realm of competence. Nor are we always completely objective in our own use of language. But such is to be expected. Language is heady stuff and not even the most self-disciplined linguist can entirely resist being influenced now and again by some of its more mysterious properties nor avoid being trapped occasionally during actual linguistic performance.

BIBLIOGRAPHIC NOTES

It may seem strange to begin these notes by mentioning a book that is not concerned with linguistics at all; however, Kuhn's *Structure of Scientific Revolutions* brilliantly describes what science is and how it changes. Linguistics fits Kuhn's description rather well.

Allen's bibliography *Linguistics and English Linguistics* is very useful in its combination of references on theoretical linguistics and English. Many good introductions to linguistics exist. The "classics" are Sapir's *Language*, Bloomfield's *Language*, de Saussure's *Course in General Linguistics*, Sturtevant's *Introduction to Linguistic Science*, and Jespersen's *Language: Its Nature, Development and Origin.* Two good "older" texts are Hockett's *Course in Modern Linguistics* and Gleason's *Introduction to Descriptive Linguistics* (with an accompanying workbook). Bolinger's *Aspects of Language* (with an accompanying workbook by Alyeshmerni and Taubr), Falk's *Linguistics and Language*, Fowler's *Understanding Language*, Fromkin and Rodman's *Introduction to Language*, Liles' *Introduction to Linguistics*, Lyons' *Introduction to Theoretical Linguistics*, and Langacker's *Language and Its Structure* all reflect some of the most recent developments in linguistic theory. Three interesting general treatments of issues are Farb's *Word Play*, Haugen and Bloomfield's *Language as a Human Problem*, and Minnis' *Linguistics at Large*. The most influential journals are *Foundations of Language, Language, Linguistic Inquiry, International Journal of American Linguistics*, and the *Journal of Linguistics*.

We can gain some knowledge of the historical development of linguistics as a discipline from Robins' *Short History of Linguistics* and Waterman's *Perspectives in Linguistics*. Pedersen's *The Discovery of Language* is an older account emphasizing nineteenth-century work, and Joos' *Readings in Linguistics* contains original papers that show many of the characteristics of the linguistic thought of a considerable part of the first half of the twentieth century. Dinneen's *Introduction to General Linguistics* is more an introduction to the history of linguistics than an introduction to general linguistics, so should be included here.

Brown's *Words and Things* is still probably the best introduction to many of the topics mentioned briefly in the final section of the chapter. However, certain other works may be cited in connection with specific disciplines. The connection of linguistics to anthropology is explored in Greenberg's *Anthropological Linguistics*, Landar's *Language and Culture*, and Burling's *Man's Many Voices*. The connection between language and thought is examined in Carroll's *Language and Thought* and *Language, Thought, and Reality: Selected Writings of Benjamin Lee Whorf*. Other noteworthy books on language and psychology are Deese's *Psy-*

cholinguistics, Greene's *Psycholinguistics,* Osgood and Sebeok's *Psycholinguistics: A Survey of Theory and Research Problems,* and Slobin's *Psycholinguistics.* Malinowski's words are quoted from his essay "The Problem of Meaning in Primitive Languages." A fairly recent exploration of the relationship of linguistics and meaning is made by Katz in *The Philosophy of Language.*

Wardhaugh's *Contexts of Language* discusses language in relation to most of the above-mentioned issues.

EXERCISES

1-1 Check to make sure that you understand each of the terms printed in **boldface** in Chapter 1.

1-2 Chapter 1 makes distinctions between certain terms. Express the distinction between the following terms as clearly as you can: *linguistic description* and *linguistic prescription; synchrony* and *diachrony; form* and *substance; competence* and *performance.*

1-3 Words such as the following have sometimes been cited to show the nonarbitrary nature of language or to argue for phonetic symbolism. How powerful is this evidence? Can you cite any counterevidence?

bang	dingdong	sludge	snoop	swipe
blare	gurgle	snail	snooty	swirl
blast	hiss	snake	snore	swish
bowwow	honk	snarl	snort	swoop
buzz	moo	snatch	snot	swoosh
chatter	murmur	sneak	snub	whack
choochoo	ping	sneer	splash	wham
clang	pitter-patter	snicker	strum	wheeze
clatter	scratch	snide	swat	whisper
crackle	sizzle	sniffle	swig	whistle
crash	slime	snigger	swill	whiz
creak	slop	snob	swing	whoosh

1-4 Why is **ngleikz* both unpronounceable in English and an obvious spelling aberration?

1-5 Which of the following sentences are "good" English sentences? Why are the others "bad"?

1 Colorless green ideas sleep furiously.
2 The moon is made of green cheese.
3 Moon cheese green made the of is.
4 The moon is completely uninhabited.

1-6 In what sense does a parrot talk? Why does a dog lie down when told to?

1-7 Record and describe two instances of language used for phatic communion.

1-8 Speech and writing are different. Record a short explanation or description exactly as it was spoken. Rewrite that explanation or description to make it into a coherent paragraph. What are some important differences between the two? What can you say about linguistic performance as a result?