CHAPTER 11

Language Change: The Syllables of Time

No language as depending on arbitrary use and custom can ever be permanently the same, but will always be in a mutable and fluctuating state; and what is deem'd polite and elegant in one age, may be accounted uncouth and barbarous in another.

Benjamin Martin, Lexicographer

All living languages change with time. It is fortunate that they do so rather slowly compared to the human life span. It would be inconvenient to have to relearn our native language every twenty years. Stargazers find a similar situation. Because of the movement of individual stars, the constellations are continuously changing their shape. Fifty thousand years from now we would hardly recognize Orion or the Big Dipper, but from season to season the changes are imperceptible. Linguistic change is also slow, in human — if not astronomical — terms. As years pass we hardly notice any change. Yet if we were to turn on a radio and miraculously receive a broadcast in our "native language" from the year 3000, we would probably think we had tuned in a foreign language station. Many language changes are revealed in written records. We know a great deal of the history of English because it has been written for about 1,000 years. Old English, spoken in England around the end of the first millennium, is scarcely recognizable as English. (Of course, our linguistic ancestors did not call their language Old English!) A speaker of Modern English would find the language unintelligible. There are college courses in which Old English is studied as a foreign language.

A line from *Beowulf* illustrates why Old English must be translated.[1]

> Wolde guman findan þone þe him on sweofote sare geteode.
> He wanted to find the man who harmed him while he slept.

Approximately five hundred years after *Beowulf,* Chaucer wrote *The Canterbury Tales* in what is now called Middle English, spoken from around 1100 to 1500. It is more easily understood by present-day readers, as seen by looking at the opening of the *Tales.*

> Whan that Aprille with his shoures soote
> The droght of March hath perced to the roote . . .
> When April with its sweet showers
> The drought of March has pierced to the root . . .

Two hundred years after Chaucer, in a language that can be considered an earlier form of Modern English, Shakespeare's Hamlet says:

> A man may fish with the worm that hath eat of a king, and eat of the fish
> that hath fed of that worm.

The stages of English are Old English (449–1100 C.E.), Middle English (1100–1500), and Modern English (1500–present). This division is somewhat arbitrary, being marked by dates of events in English history, such as the Norman Conquest of 1066, the results of which profoundly influenced the English language. Thus the history of English and the changes in the language reflect nonlinguistic history to some extent, as suggested by the following dates:

449–1066 Old English	449	Saxons invade Britain
	6th century	Religious literature
	8th century	*Beowulf*
	1066	Norman Conquest
1066–1500 Middle English	1387	*Canterbury Tales*
	1476	Caxton's printing press
	1500	Great Vowel Shift
1500–Modern English	1564	Birth of Shakespeare

Changes in a language are changes in the grammars of those who speak the language, and are perpetuated when new generations of children learn the language by acquiring the altered grammar. This is true of sign languages as well as spoken languages. Like all living languages, American Sign Language continues to change. Not only have new signs entered the language over the past 200 years, but also the forms of the signs have changed in ways similar to the historical changes in spoken languages.

An examination of the past 1,500 years of English shows changes in the lexicon as well as to the phonological, morphological, syntactic, and semantic components of the

[1] The letter þ is called *thorn* and is pronounced [θ] in this example.

grammar. No part of the grammar remains the same over the course of history. Although most of the examples in this chapter are from English, the histories of all languages show similar changes.

The Regularity of Sound Change

> That's not a regular rule: you invented it just now.
>
> Lewis Carroll, *Alice's Adventures in Wonderland*

The southern United States represents a major dialect area of American English. For example, words pronounced with the diphthong [aj] in non-Southern English will usually be pronounced with the monophthong [a:] in the South. Local radio and TV announcers at the 1996 Olympics in Atlanta called athletes to the [ha:] "high" jump, and local natives invited visitors to try Georgia's famous pecan [pa:] "pie." The [aj]-[a:] correspondence of these two dialects is an example of a **regular sound correspondence.** When [aj] occurs in a word in non-Southern dialects, [a:] occurs in the Southern dialect, and *this is true for all such words.*

The different pronunciations of *I, my, high, pie,* and such did not always exist in English. This chapter will discuss how such dialect differences arose and why the sound differences are usually regular and not confined to just a few words.

Sound Correspondences

In Middle English a mouse [maws] was called a mūs [mu:s], and this *mūs* may have lived in someone's *hūs* [hu:s], the way *house* [haws] was pronounced at that time. In general, Middle English speakers pronounced [u:] where we now pronounce [aw]. This is a regular correspondence like the one between [aj] and [a:]. Thus *out* [awt] was pronounced [u:t], *south* [sawθ] was pronounced [su:θ], and so on. Many such regular correspondences show the relation of older and newer forms of English.

The regular sound correspondences we observe between older and modern forms of a language are due to phonological changes that affect certain sounds, or classes of sounds, rather than individual words. Centuries ago English underwent a phonological change called a **sound shift** in which [u:] became [aw].

Phonological changes can also account for dialect differences. At an earlier stage of American English a sound shift of [aj] to [a:] took place among certain speakers in the southern region of the United States. The change did not spread beyond the South because the region was somewhat isolated. Many dialect differences in pronunciation result from a sound shift whose spread is limited.

Regional dialect differences may also arise when innovative changes occur everywhere but in a particular region. The regional dialect may be conservative relative to other dialects. The pronunciation of *it* as *hit,* found in the Appalachian region of the United States, was standard in older forms of English. The dropping of the [h] was the innovation.

Ancestral Protolanguages

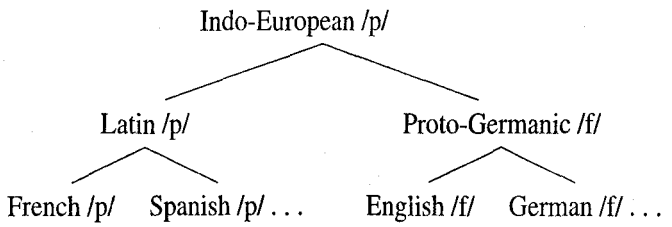
Many modern languages were first regional dialects that became widely spoken and highly differentiated, finally becoming separate languages. The Romance languages — French, Spanish, and so on — were once dialects of Latin spoken in the Roman Empire. There is nothing degenerate about regional pronunciations. They result from natural sound change that occurs wherever human language is spoken.

In a sense, the Romance languages are offspring of Latin, their metaphorical parent. Because of their common ancestry, the Romance languages are **genetically related.** Early forms of English and German, too, were once dialects of a common ancestor called **Proto-Germanic.** A **protolanguage** is the ancestral language from which related languages have developed. Both Latin and Proto-Germanic were themselves descendants of an older language called **Indo-European.**[2] Thus, Germanic languages such as English and German are genetically related to the Romance languages such as French and Spanish. All these important national languages were once regional dialects.

How do we know that the Germanic and Romance languages have a common ancestor? One clue is the large number of sound correspondences. If you have studied a Romance language such as French or Spanish, you may have noticed that where an English word begins with *f,* the corresponding word in a Romance language often begins with *p,* as shown in the following examples.

English /f/	French /p/	Spanish /p/
father	**p**ère	**p**adre
fish	**p**oisson	**p**escado

This /f/-/p/ correspondence is another example of a regular sound correspondence. There are many between the Germanic and Romance languages. The prevalence of such regular sound correspondences cannot be explained by chance. What then accounts for them? A reasonable guess is that a common ancestor language used a *p* in words for *fish, father,* and so on. We posit a /p/ rather than an /f/ since more languages show a /p/ in these words. At some point speakers of this language separated into two groups that lost contact. In one of the groups a sound change of $p \rightarrow f$ took place. The language spoken by this group eventually became the ancestor of the Germanic languages. This ancient sound change left its trace in the *f-p* sound correspondence that we observe today, as illustrated in the diagram.



[2] It may also be called Proto-Indo-European.

Phonological Change

> Etymologists . . . for whom vowels did not matter and who cared not a jot for consonants.
>
> Voltaire

Regular sound correspondences illustrate changes in the phonological system. In earlier chapters we discussed speakers' knowledge of their phonological system, including knowledge of the phonemes and phonological rules of the language. Any of these aspects of the phonology is subject to change.

The velar fricative /x/ is no longer part of the phonemic inventory of most Modern English dialects. *Night* used to be pronounced [nɪxt] and *drought* was pronounced [druxt]. This phonological change — the loss of /x/ — took place between the times of Chaucer and Shakespeare. All words once pronounced with an /x/ no longer include this sound. In some cases it disappeared altogether, as in *night* and *light*. In other cases the /x/ became a /k/, as in *elk* (Old English *eolh* [ɛolx]). In yet other cases it disappeared to be replaced by a vowel, as in *hollow* (Old English *holh* [hɔlx]). Dialects of Modern English spoken in Scotland have retained the /x/ sound in some words, such as *loch* [lɔx] meaning "lake."

These examples show that the inventory of sounds can change by the loss of phonemes. The inventory can also change through the addition of phonemes. Old English did not have the phoneme /ž/ of *leisure* [ližər]. Through a process of palatalization — a change in place of articulation to the palatal region — certain occurrences of /z/ were pronounced [ž]. Eventually the [ž] sound became a phoneme in its own right, reinforced by the fact that it occurs in French words familiar to many English speakers such as *azure* [æžər].

An allophone of a phoneme may, through sound change, become a phoneme in its own right. Old English lacked a /v/ phoneme. The phoneme /f/, however, had the allophone [v] when it occurred between vowels. Thus *ofer* /ofer/ meaning "over" was pronounced [ɔvər] in Old English.

Old English also had a geminate phoneme /f:/ that contrasted with /f/, and was pronounced as a long [f:] between vowels. The name *Offa* /of:a/ was pronounced [ɔf:a]. A sound change occurred in which the pronunciation of /f:/ was simplified to [f]. Now /f:/ was pronounced [f] between vowels so it contrasted with [v]. This made it possible for English to have minimal pairs involving [f] and [v]. Speakers therefore perceived the two sounds as separate phonemes, in effect, creating a new phoneme /v/.

Similar changes occur in the history of all languages. Neither /č/ nor /š/ were phonemes of Latin, but /č/ is a phoneme of modern Italian and /š/ a phoneme of modern French, both of which evolved from Latin. In American Sign Language many signs that were originally formed at the waist or chest level are now produced at a higher level near the neck or upper chest, a reflection of changes in the "phonology."

Phonemes thus may be lost (/x/), or added (/ž/), or result from a change in the status of allophones (the [v] allophone of /f/ becoming /v/).

Phonological Rules

An interaction of phonological rules may result in changes in the lexicon. The nouns *house* and *bath* were once differentiated from the verbs *house* and *bathe* by the fact that

the verbs ended with a short vowel sound. Furthermore, the same rule that realized /f/ as [v] between vowels, also realized /s/ and /θ/ as the allophones [z] and [ð] between vowels. This was a general rule that voiced intervocalic fricatives. Thus the /s/ in the verb *house,* was pronounced [z], and the /θ/ in the verb *bathe* was pronounced [ð].

Later a rule was added to the grammar of English deleting unstressed short vowels at the end of words. A contrast between the voiced and voiceless fricatives resulted, and the new phonemes /z/ and /ð/ were added to the phonemic inventory. The verbs *house* and *bathe* were now represented in the mental lexicon with final voiced consonants.

Eventually, both the unstressed vowel deletion rule and the intervocalic-voicing rule were lost from the grammar of English. The set of phonological rules can change both by addition and loss of rules.

Changes in phonological rules can, and often do, result in dialect differences. In the previous chapter we discussed the addition of an *r*-dropping rule in English (/r/ is not pronounced unless followed by a vowel) that did not spread throughout the language. Today, we see the effect of that rule in the *r*-less pronunciation of British English and of American English dialects spoken in the Boston area and the southern United States.

From the standpoint of the language as a whole, phonological changes occur gradually over the course of many generations of speakers, although a given speaker's grammar may or may not reflect the change. The changes are not planned any more than we are presently planning what changes will take place in English by the year 2300. Speakers are aware of the changes only through dialect differences.

The Great Vowel Shift

A major change in English that resulted in new phonemic representations of words and morphemes took place approximately between 1400 and 1600. It is known as the **Great Vowel Shift.** The seven long, or tense, vowels of Middle English underwent the following change:

Shift			**Example**			
Middle English		**Modern English**	**Middle English**		**Modern English**	
[i:]	→	[aj]	[mi:s]	→	[majs]	*mice*
[u:]	→	[aw]	[mu:s]	→	[maws]	*mouse*
[e:]	→	[i:]	[ge:s]	→	[gi:s]	*geese*
[o:]	→	[u:]	[go:s]	→	[gu:s]	*goose*
[ɛ:]	→	[e:]	[brɛ:ken]	→	[bre:k]	*break*
[ɔ:]	→	[o:]	[brɔ:ken]	→	[bro:k]	*broke*
[a:]	→	[e:]	[na:mə]	→	[ne:m]	*name*

By diagramming the Great Vowel Shift on a vowel chart (Figure 11.1), we can see that the high vowels [i:] and [u:] became the diphthongs [aj] and [aw], while the long vowels underwent an increase in tongue height, as if to fill in the space vacated by the high vowels. In addition, [a:] was fronted to become [e:].

These changes are among the most dramatic examples of regular sound shift. The phonemic representation of many thousands of words changed. Today, some reflection

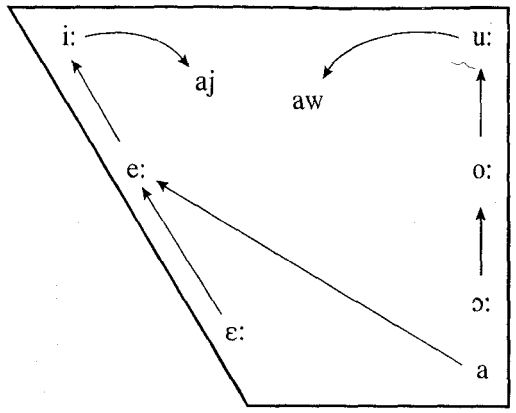
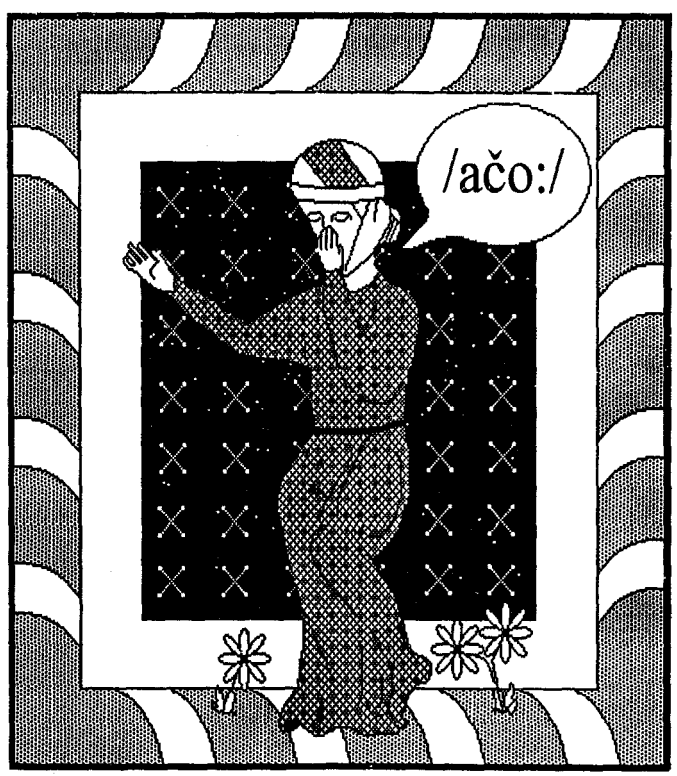


Figure 11.1 The Great Vowel Shift.

of this vowel shift is seen in the alternating forms of morphemes in English: *please — pleasant; serene — serenity; sane — sanity; crime — criminal; sign — signal;* and so on. Before the Great Vowel Shift, the vowels in each pair were the same. Then the vowels in the second word of each pair were shortened by the **Early Middle English Vowel Shortening** rule. As a result the Great Vowel Shift, which occurred later, affected only



The sniffles in 14th-century England

the first word in each pair. The second word, with its short vowel, was unaffected. This is why the vowels in the morphologically related words are pronounced differently today, as shown in Table 11.1.

Table 11.1 Effect of the Vowel Shift on Modern English

Middle English Vowel	Shifted Vowel	Short Counterpart	Word with Shifted Vowel	Word with Short Vowel
ī	aj	ɪ	divine	divinity
ū	aw	ʊ	profound	profundity
ē	i	ɛ	serene	serenity
ō	u	a	fool	folly
ā	e	æ	sane	sanity

The Great Vowel Shift is a primary source of many spelling inconsistencies of English because our spelling system still reflects the way words were pronounced before the Great Vowel Shift.

Morphological Change

Like phonological rules, rules of morphology may be lost, added, or changed. We can observe some of these changes by comparing older and newer forms of the language or by looking at different dialects.

Extensive changes in rules of morphology have occurred in the history of the Indo-European languages. Latin had **case endings,** suffixes on the noun based on its grammatical relationship to the verb. These are no longer found in the Romance languages. (See chapter 5 for a more extensive discussion of grammatical case.) The following is a **declension,** or list of cases, for the Latin noun *lupus,* "wolf":

Noun	Noun Stem		Case Ending	Case	Example
lupus	lup	+	us	nominative	The *wolf* runs.
lupī	lup	+	ī	genitive	A sheep in *wolf's* clothing.
lupō	lup	+	ō	dative	Give food to *the wolf.*
lupum	lup	+	um	accusative	I love *the wolf.*
lupe	lup	+	e	vocative	*Wolf,* come here!

In *Alice's Adventures in Wonderland,* Lewis Carroll has Alice give us a brief lesson in grammatical case. Alice has become very small and is swimming around in a pool of her own tears with a mouse that she wishes to befriend:

> "Would it be of any use, now," thought Alice, "to speak to this mouse? Everything is so out-of-the-way down here, that I should think very likely it can talk: at any rate, there's no harm in trying." So she began: "O Mouse, do you know

You are now entering another declension, a declension not of adjectives, not of articles, but of nouns...

> the way out of this pool? I am very tired of swimming about here, O Mouse!" (Alice thought this must be the right way of speaking to a mouse: she had never done such a thing before, but she remembered having seen in her brother's Latin Grammar, "A mouse-of a mouse-to a mouse- a mouse-O mouse!")

Alice gives the English corresponding to the nominative, genitive, dative, accusative, and vocative cases.

Ancient Greek and Sanskrit also had extensive case systems expressed morphologically through noun suffixing, as did Old English, as illustrated by the following noun forms:

Case	OE Singular		OE Plural	
nominative	stān	"stone"	stānas	"stones"
genitive	stānes	"stone's"	stāna	"stones'"
dative	stāne	"stone"	stānum	"stones"
accusative	stān	"stone"	stānas	"stones"

Lithuanian and Russian retain much of the early Indo-European case system, but changes have all but obliterated it in most modern Indo-European languages. In English, phonological changes over the centuries resulted in the loss of many case endings.

English retains the genitive case, which is written with an apostrophe *s,* as in *Robert's dog,* but that's all that remains as far as nouns are concerned. Pronouns retain a few more traces: *he/she* are nominative, *him/her* accusative and dative, and *his/hers* genitive.

English has replaced its depleted case system with an equally expressive system of prepositions. For example the dative case is often indicated by the preposition *to* and the genitive case by the preposition *of.* A noun occurring after a verb with no intervening preposition is often, but not always, in the accusative case.

English and most of the Indo-European languages, then, have undergone extensive morphological changes over the past 1,000 years, many of them induced by changes that took place in the phonological rules of the language.

Syntactic Change

> All things change except the love of change.
>
> Anonymous, *Madrigal* (1601)

The loss of case endings in English occurred together with changes in the rules of syntax governing word order. In Old English, word order was freer because the case endings on nouns indicated the meaning relations in a sentence.

Additionally, Modern English is an SVO (Subject-Verb-Object) language. Old English was both an SVO and an SOV language.[3] Sentences like *Se man þone kyning sloh,* literally *the man the king slew,* were grammatical. Thus the phrase structure rules that determine the word order of basic sentences changed in the history of English.

The syntactic rules relating to the English negative construction also underwent a number of changes from Old English to the present. In Modern English, negation is expressed by adding *not* or *do not.* We may also express negation by adding words like *never* or *no:*

I am going → I am not going
I went → I did not go
I go to school → I never go to school
I want food → I don't want any food; I want no food

In Old English the main negation element was *ne.* It usually occurred before a verbal element:[4]

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[3] A later section in this chapter entitled "Types of Languages" explains this in more detail.

[4] From E. C. Traugott. 1972. *The History of English Syntax.* New York: Holt, Rinehart, and Winston.

þæt he *na* siþþan geboren *ne* wurde
that he never after born not would-be
that he should never be born after that

ac hie *ne* dorston þær on cuman
but they not dared there on come
but they dared not land there

In the first example, the word order is different from that of Modern English, and there are two negatives: *na* (a contraction of *ne* + *a*, "not" + "ever" = "never") and *ne*. As shown, a double negative was grammatical in Old English. Although double negatives are ungrammatical in Modern Standard American English, they are grammatical in some English dialects.

In addition to the contraction of *ne* + *a* → *na*, other negative contractions occurred in Old English: *ne* could be attached to *habb-* "have," *wes-* "be," *wit-* "know," and *will-* "will" to form *nabb-*, *nes-*, *nyt-*, and *nyll-*, respectively.

Modern English also has contraction rules that change *do* + *not* into *don't*, *will* + *not* into *won't*, and so on. In these contractions the phonetic form of the negation element always comes at the *end* of the word because Modern English word order puts the *not* after the auxiliary verb. In Old English, the negative element occurred at the beginning of the contraction because it preceded the auxiliary verb. The rules determining the placement of the negative morpheme have changed. Such syntactic changes may take centuries to be completed, and there are often intermediate stages.

Another syntactic change in English affected the rules of comparative and superlative constructions. Today we form the comparative by adding *-er* to the adjective or by inserting *more* before it; the superlative is formed by adding *-est* or by inserting *most*. In Malory's *Tales of King Arthur*, written in 1470, double comparatives and double superlatives occur, which today are ungrammatical: *more gladder, more lower, moost royallest, moost shamefullest.*

When we study a language solely from written records, which is necessarily the case with nonmodern languages such as Elizabethan English (sixteenth century), we see only sentences that are grammatical unless ungrammatical sentences are used deliberately. Without native speakers of Elizabethan English to query, we can only infer what was ungrammatical. Such inference leads us to believe that expressions like *the Queen of England's crown* were ungrammatical in former versions of English. The title *The Wife's Tale of Bath* (rather than *The Wife of Bath's Tale*) in *The Canterbury Tales* supports this inference. Modern English, on the other hand, allows some rather complex constructions that involve the possessive marker. An English speaker can use possessive constructions such as

The girl whose sister I'm dating's roommate is pretty.
The man from Boston's hat fell off.

Older versions of English had to resort to an *of* construction to express the same thought (*The hat of the man from Boston fell off*). A syntactic change took place that accounts for the extended use of the possessive morpheme *'s*.

Lexical Change

Changes in the lexicon also occur. Among them are changes in the lexical category in which a word may function.

The word *menu* is ordinarily used only as a noun, but the waiter in the *New Yorker* cartoon uses it as a verb. If speakers adopt the usage, *menu* will take on the additional lexical category of verb in their mental lexicons. Such changes are common and are often put into effect in special usage situations. The noun *window* is used as a verb by carpenters as in, "Tomorrow we have to window the upper story," where *to window* means "put window frames in a house under construction." Recently, a radio announcer said that Congress was "to-ing and fro-ing" on a certain issue, to mean "wavering." This strange compound verb is derived from the adverb *to and fro.* In British English, *hoover* is a verb meaning "to vacuum up," derived from the proper noun *Hoover,* the name of a vacuum cleaner manufacturer. American police *Mirandize* arrested persons, meaning to read them their rights according to the Miranda rule. Since the judicial ruling was made in 1966, we have a complete history on how a proper name became a verb.

The word *telephone* was coined exclusively as a noun in 1844 and meant "acoustic apparatus." Alexander Graham Bell appropriated the word for his invention in 1876, and

"Have you folks been menued yet?"

in 1877 the word was first used as a verb, meaning "to speak by telephone." In languages where verbs have a specific morphological form such as the *-er* ending in French (*parler,* to speak), or the *-en* ending in German (*sprechen,* to speak), such changes are less common than in English. Thus the French noun *téléphone* cannot be a verb, but becomes the different word *téléphoner* as a verb.

Other categorical changes may occur historically. The word *remote* was once only an adjective, but with the invention of control-at-a-distance devices, the compound *remote control* came into usage, which ultimately was shortened to *remote,* which now functions as a noun; witness the half dozen remotes every modern household loses track of.

A recent announcement at North Carolina State University invited "all faculty to sandwich in the Watauga Seminar." We were not invited to squeeze together, rather to bring our lunches. Although the verb *to sandwich* exists, the new verbal usage is derived from the noun *sandwich* rather than the verb.

Addition of New Words

> And to bring in a new word by the head and shoulders, they leave out the old one.
>
> Montaigne

In chapter 3 we discussed ways in which new words can enter the language. These included deriving words from names (*sandwich*), blends (*smog*), back-formations (*edit*), acronyms (*NATO*), and abbreviations or clippings (*ad*). We also saw that new words may be formed by derivational processes, as in *uglification, finalize,* and *finalization.*

Compounding is a particularly productive means of creating words. Thousands of common English words have entered the language by this process, including *afternoon, bigmouth, cyberspace, egghead, force feed, global warming, icecap, jet set, laptop, moreover, nursemaid, offshore, pothole, railroad, skybox, takeover, undergo, water cooler, X-ray,* and *zookeeper.*

Other methods for enlarging the vocabulary that were discussed include word coinage. Societies often require new words to describe changes in technology, sports, entertainment, and so on. Languages are accommodating and inventive in meeting these needs. The words may be entirely new, as *steganography,* the concealment of information in an electronic document, or *micropolitan,* a city of less than 10,000 people. Even new bound morphemes may enter the language. The prefix *e-* as in *e-commerce, e-mail, e-trade,* meaning "electronic," is barely two decades old. The suffix *-gate,* meaning "scandal," derived from the Watergate scandal of the 1970s, may now be suffixed to a word to convey that meaning. Thus *Irangate* meant a scandal involving Iran, and *Dianagate,* a British usage, referred to a scandal involving wiretapped conversations of the late Princess of Wales, Diana. A change currently underway is the use of *-peat* to mean "win a championship so many years in succession," as in *threepeat* and *fourpeat,* which we have observed in the newspaper.

A word so new that its spelling is still in doubt is *dot com,* also seen in magazines as *.com,* and *dot.com.* It means "a company whose primary business centers on the Internet." The expression written 24/7, and pronounced *twenty-four seven,* meaning "all the time," also appears to be a new entry not yet found in dictionaries, but seen in newspapers and heard during news broadcasts.

Borrowings or Loan Words

Neither a borrow, nor a lender be.

William Shakespeare, *Hamlet*, I. iii

Languages ignore the "precept" of Polonius quoted above. Many of them are avid borrowers. **Borrowing** words from other languages is an important source of new words. Borrowing occurs when one language adds a word or morpheme from another language to its own lexicon. The pronunciation of the borrowed item is often altered to fit the phonological rules of the borrowing language. The borrowed word, of course, remains in the source language, so there is no need for its return. Languages are as much lenders and borrowers, and why shouldn't they be since they lose nothing in the transaction? Most languages are borrowers, so their lexicon can be divided into native and nonnative, or **loan words.** A native word is one whose history or **etymology** can be traced back to the earliest known stages of the language.

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A language may borrow a word directly or indirectly. A direct borrowing means that the borrowed item is a native word in the language from which it is borrowed. *Feast* was borrowed directly from French and can be traced back to Latin *festum.* On the other hand, the word *algebra* was borrowed from Spanish, which in turn had borrowed it from Arabic. Thus *algebra* was indirectly borrowed from Arabic, with Spanish as an intermediary.

Some languages are heavy borrowers. Albanian has borrowed so heavily that few native words are retained. On the other hand, most Native American languages borrowed little from their neighbors.

English has borrowed extensively. Of the 20,000 or so words in common use, about three-fifths are borrowed. Of the 500 most frequently used words, however, only two-sevenths are borrowed, and since these words are used repeatedly in sentences, the actual frequency of appearance of native words is about 80 percent. *And, be, have, it, of, the, to, will, you, on, that,* and *is* are all native to English.

History through Loan Words

A morsel of genuine history is a thing so rare as to be always valuable.

Thomas Jefferson

We may trace the history of the English-speaking peoples by studying the kinds of loan words in their language, their source, and when they were borrowed. Until the Norman Conquest in 1066, the Angles, the Saxons, and the Jutes inhabited England. They were of Germanic origin when they came to Britain in the fifth century to eventually become the English.[5] Originally, they spoke Germanic dialects, from which Old English developed directly. These dialects contained a number of Latin borrowings but few foreign elements beyond that. These Germanic tribes had displaced the earlier Celtic inhabitants, whose influence on Old English was confined to a few Celtic place-names. (The modern languages Welsh, Irish, and Scots Gaelic are descended from the Celtic dialects.)

The Normans spoke French and for three centuries after the Conquest, French was the language used for all affairs of state and for most commercial, social, and cultural matters. The West Saxon literary language was abandoned, but regional varieties of English continued to be used in homes, in the churches, and in the marketplace. During these three centuries, vast numbers of French words entered English, of which the following are representative:

government	crown	prince	estate	parliament
nation	jury	judge	crime	sue
attorney	saint	miracle	charity	court
lechery	virgin	value	pray	mercy
religion	value	royal	money	society

Until the Normans came, when an Englishman slaughtered an ox for food, he ate *ox.* If it was a pig, he ate *pig.* If it was a sheep, he ate *sheep.* However, "ox" served at the Norman tables was *beef* (*boeuf*), "pig" was *pork* (*porc*), and "sheep" was *mutton* (*mouton*). These words were borrowed from French into English, as were the food-preparation words *boil, fry, stew,* and *roast.* Indeed, over the years French foods have given English a flood of borrowed words for menu preparers:

aspic	bisque	bouillon	brie	brioche
canapé	caviar	consommé	coq au vin	coupe
crêpe	croissant	croquette	crouton	escargot
fondue	mousse	pâté	quiche	ragout

English borrowed many "learned" words from foreign sources during the Renaissance. In 1475 William Caxton introduced the printing press in England. By 1640, 55,000 books had been printed in English. The authors of these books used many Greek and Latin words, and as a result, many words of ancient Greek and Latin entered the language.

From Greek came *drama, comedy, tragedy, scene, botany, physics, zoology,* and *atomic.*

Latin loan words in English are numerous. They include:

bonus scientific exit alumnus quorum describe

[5] The word *England* is derived from *Anglaland,* "Land of the Angles."

During the ninth and tenth centuries, Scandinavian raiders, who eventually settled in the British Isles, left their traces in the English language. The pronouns *they, their,* and *them* are loan words from Old Norse, the predecessor of modern Danish, Norwegian, and Swedish. This period is the only time that English ever borrowed pronouns.

Bin, flannel, clan, slogan, and *whisky* are all words of Celtic origin, borrowed at various times from Welsh, Scots Gaelic, or Irish.

Dutch was a source of borrowed words, too, many of which are related to shipping: *buoy, freight, leak, pump, yacht.*

From German came *quartz, cobalt,* and — as we might guess — *sauerkraut.*

From Italian, many musical terms, including words describing opera houses, have been borrowed: *opera, piano, virtuoso, balcony,* and *mezzanine.* Italian also gave us *influenza,* which was derived from the Italian word for "influence" because the Italians were convinced that the disease was *influenced* by the stars.

Many scientific words were borrowed indirectly from Arabic, because early Arab scholarship in these fields was quite advanced. *Alcohol, algebra, cipher,* and *zero* are a small sample.

Spanish has loaned us (directly) *barbecue, cockroach,* and *ranch,* as well as *California,* literally "hot furnace."

In America, the English-speaking colonists borrowed from Native American languages. They provided us with *hickory, chipmunk, opossum,* and *squash,* to mention only a few. Nearly half the names of U.S. states are borrowed from one American Indian language or another.

English has borrowed from Yiddish. Many non-Jews as well as non-Yiddish-speaking Jews use Yiddish words. There was once even a bumper sticker proclaiming: "Marcel Proust is a yenta." *Yenta* is a Yiddish word meaning "gossipy woman" or "shrew." *Lox,* "smoked salmon," and *bagel,* "a hard roll resembling a doughnut," now belong to English, as well as Yiddish expressions like *chutzpah, schmaltz, schlemiel, schmuck, schmo,* and *kibitz.*

English is also a lender of copious numbers of words to other languages, especially in the areas of technology, sports, and entertainment. Words and expressions such as *jazz, whisky, blue jeans, rock music, supermarket, baseball, picnic,* and *computer* have been borrowed by languages as diverse as Twi, Hungarian, Russian, and Japanese.

Loan translations are compound words or expressions whose parts are translated literally into the borrowing language. *Marriage of convenience* is a loan translation borrowed from French *mariage de convenance.* Spanish speakers eat *perros calientes,* a loan translation of *hot dogs* with an adjustment reversing the order of the adjective and noun, as required by the rules of Spanish syntax.

Loss of Words

Pease porridge hot
Pease porridge cold
Pease porridge in the pot nine days old

Nursery Rhyme

Words also can be lost from a language, though an old word's departure is never as striking as a new word's arrival. When a new word comes into vogue, its unusual presence draws attention; but a word is lost through inattention — nobody thinks of it; nobody uses it; and it fades away.

A reading of Shakespeare's works shows that English has lost many words, such as these taken from *Romeo and Juliet: beseem,* "to be suitable," *mammet,* "a doll or puppet," *wot,* "to know," *gyve,* "a fetter," *fain,* "gladly," and *wherefore,* "why."

More recently, it appears that the expression *two bits,* meaning "twenty-five cents," is no longer used by the younger generation and is in the process of being lost (along with *four bits, six bits,* etc.). The word *stile,* meaning "steps crossing a fence or gate," is no longer widely understood. Other similar words for describing rural objects are fading out of the language due to urbanization. *Pease,* from which *pea* is a back formation, is gone, and *porridge,* meaning "boiled cereal grain," is falling out of usage, though it is sustained by a discussion of its ideal serving temperature in the childen's story *Goldilocks and the Three Bears.*

Technological change may also be the cause for the loss of words. *Acutiator* once meant "sharpener of weapons" and *tormentum* once meant "siege engine." Advances in warfare have put these terms out of business. Although one still finds the words *buckboard, buggy, dogcart, hansom, surrey,* and *tumbrel* in the dictionary — all of them referring to subtly different kinds of horse-drawn carriages — progress in transportation is likely to render these terms obsolete and eventually they will be lost.

Semantic Change

> The language of this country being always upon the flux, the Struldbruggs of one age do not understand those of another, neither are they able after two hundred years to hold any conversation (farther than by a few general words) with their neighbors the mortals, and thus they lie under the disadvantage of living like foreigners in their own country.
>
> Jonathan Swift, *Gulliver's Travels*

We have seen that a language may gain or lose lexical items. Additionally, the meaning or semantic representation of words may change, by becoming broader or narrower, or by shifting.

Broadening

When the meaning of a word becomes broader, that word means everything it used to mean, and more. The Middle English word *dogge* meant a specific breed of dog, but it was eventually **broadened** to encompass all members of the species *canis familiaris.* The word *holiday* originally meant a day of religious significance, from "holy day." Today the word signifies any day on which we do not have to work. *Picture* used to mean "painted representation," but today you can take a picture with a camera. *Quarantine* once had the restricted meaning of "forty days' isolation."

More recent broadenings, spurred by the computer age, are *computer* itself, *mouse, cookie, cache, virus,* and *bundle,* to name but a few.

Narrowing

In the King James Version of the Bible (1611 C. E.), God says of the herbs and trees, "to you they shall be for meat" (Genesis 1:29). To a speaker of seventeenth-century English, *meat* meant "food," and *flesh* meant "meat." Since that time, semantic change has narrowed the meaning of *meat* to what it is in Modern English. The word *deer* once meant "beast" or "animal," as its German cognate *Tier* still does. The meaning of *deer* has been narrowed to a particular kind of animal. Similarly, the word *hound* used to be the general term for "dog," like the German *Hund.* Today *hound* means a special kind of dog, one used for hunting. The word *davenport* once meant "sofa" or "small writing desk." Today, in American English, its meaning has narrowed to "sofa" alone.

Meaning Shifts

The third kind of semantic change that a lexical item may undergo is a shift in meaning. The word *knight* once meant "youth" but shifted to "mounted man-at-arms." *Lust* used to mean simply "pleasure," with no negative or sexual overtones. *Lewd* was merely "ignorant," and *immoral* meant "not customary." *Silly* used to mean "happy" in Old English. By the Middle English period it had come to mean "naive," and only in Modern English does it mean "foolish." The overworked Modern English word *nice* meant "ignorant" a thousand years ago. When Juliet tells Romeo, "I am too *fond,*" she is not claiming she likes Romeo too much. She means "I am too *foolish.*"

Reconstructing "Dead" Languages

The branch of linguistics that deals with how languages change, what kinds of changes occur, and why they occurred is called **historical and comparative linguistics.** It is

"historical" because it deals with the history of particular languages; it is "comparative" because it deals with relations among languages.

The Nineteenth-Century Comparativists

> When agreement is found in words in two languages, and so frequently that rules may be drawn up for the shift in letters from one to the other, then there is a fundamental relationship between the two languages.
>
> Rasmus Rask

The nineteenth-century historical and comparative linguists based their theories on observations of regular sound correspondences among certain languages, and that languages displaying systematic similarities and differences must have descended from a common source language — that is, were genetically related.

The chief goal of these linguists was to develop and elucidate the genetic relationships that exist among the world's languages. They aimed to establish the major language families of the world and to define principles for the classification of languages. Their work grew out of earlier research.

As a child, Sir William Jones had an astounding propensity for learning languages, including so-called dead ones such as Ancient Greek and Latin. As an adult he found it best to reside in India because of his sympathy for the rebellious American colonists. There he distinguished himself both as a jurist, holding a position on the Bengal Supreme Court, and as an "Orientalist," as certain linguists were then called.

In Calcutta he took up the study of Sanskrit, just for fun, mind you, and in 1786 delivered a paper in which he observed that Sanskrit bore to Greek and Latin "a stronger affinity . . . than could possibly have been produced by accident." Jones suggested that these three languages had "sprung from a common source" and that probably Germanic and Celtic had the same origin.

About thirty years after Jones delivered his important paper, the German linguist Franz Bopp pointed out the relationships among Sanskrit, Latin, Greek, Persian, and Germanic. At the same time, a young Danish scholar named Rasmus Rask corroborated these results, and brought Lithuanian and Armenian into the relationship as well. Rask was the first scholar to describe formally the regularity of certain phonological differences of related languages.

Rask's investigation of these regularities inspired the German linguist Jakob Grimm (of fairy-tale fame), who published a four-volume treatise (1819–1822) that specified the regular sound correspondences among Sanskrit, Greek, Latin, and the Germanic languages. It was not only the similarities that intrigued Grimm and the other linguists, but the systematic nature of the differences. Where Latin has a [p], English often has an [f]; where Latin has a [t], English often has a [θ]; where Latin has a [k], English often has an [h].

Grimm pointed out that certain phonological changes that did not take place in Sanskrit, Greek, or Latin must have occurred early in the history of the Germanic languages. Because the changes were so strikingly regular, they became known as **Grimm's law,** which is illustrated in Figure 11.2.

Grimm's Law can be expressed in terms of natural classes of speech sounds: Voiced aspirates become unaspirated; voiced stops become voiceless; voiceless stops become fricatives.

Earlier stage:[a]	bh	dh	gh	b	d	g	p	t	k
	↓	↓	↓	↓	↓	↓	↓	↓	↓
Later stage:	b	d	g	p	t	k	f	θ	x (or h)

[a] This "earlier stage" is Indo-European. The symbols bh, dh, and gh are breathy voiced stop consonants. These phonemes are often called "voiced aspirates."

Figure 11.2 Grimm's Law, an early Germanic sound shift.

Cognates

Cognates are words in related languages that developed from the same ancestral root, such as English *horn* and Latin *cornū*. Cognates often, but not always, have the same meaning in the different languages. From cognates we can observe sound correspondences and from them deduce sound changes. In Figure 11.3 the regular correspondence *p-p-f* of cognates from Sanskrit, Latin, and Germanic (represented by English) indicates that the languages are genetically related. Indo-European **p* is posited as the origin of the *p-p-f* correspondence.[6]

"Shouldn't a unicorn be called a uniHORN?"

[6] The asterisk before a letter indicates a reconstructed sound, not an unacceptable form. This use of asterisk occurs only in this chapter.

Indo-European	Sanskrit	Latin	English
*p	p	p	f
	pitar-	pater	father
	pad-	ped-	foot
	No cognate	piscis	fish
	paśu[a]	pecu	fee

[a] *ś* is a sibilant pronounced differently than *s* was pronounced.

Figure 11.3 Cognates of Indo-European *p.

Figure 11.4 is a more detailed chart of correspondences, where a single representative example of each regular correspondence is presented. In most cases cognate sets exhibit the same correspondence, which leads to the reconstruction of the Indo-European sound shown in the first column.

Indo-European	Sanskrit		Latin		English	
*p	p	pitar-	p	pater	f	father
*t	t	trayas	t	trēs	θ	three
*k	ś	śun	k	canis	h	hound
*b	b	No cognate	b	labium	p	lip
*d	d	dva-	d	duo	t	two
*g	j	ajras	g	ager	k	acre
*bh	bh	bhrātar-	f	frāter	b	brother
*dh	dh	dhā	f	fē-ci	d	do
*gh	h	vah-	h	veh-ō	g	wagon

Figure 11.4 Some Indo-European sound correspondences.

Sanskrit underwent the fewest consonant changes, while Latin underwent somewhat more, and Germanic (under Grimm's Law) underwent almost a complete restructuring. Still, the fact that the phonemes and phonological rules, not individual words, changed has resulted in the remarkably regular correspondences that allow us to reconstruct much of the Indo-European sound system.

Exceptions can be found to these regular correspondences, as Grimm was aware. He stated: "The sound shift is a general tendency; it is not followed in every case." Karl Verner explained some of the exceptions to Grimm's Law in 1875. He formulated **Verner's Law** to show why Indo-European *p, t,* and *k* failed to correspond to *f, θ,* and *x* in certain cases:

- *Verner's Law:* When the preceding vowel was unstressed, *f,* θ, and x underwent a further change to *b, d,* and *g.*

A group of young linguists known as the **Neo-Grammarians** went beyond the idea that such sound shifts represented only a tendency, and claimed that sound laws have no exception. They viewed linguistics as a natural science and therefore believed that laws of sound change were unexceptionable natural laws. The "laws" they put forth often had exceptions, however, which could not always be explained as dramatically as Verner's Law explained the exceptions to Grimm's Law. Still, the work of these linguists provides important data and insights into language change and why such changes occur.

The linguistic work of the early nineteenth century had some influence on Charles Darwin, and in turn, Darwin's theory of evolution had a profound influence on linguistics and on all science. Some linguists thought that languages had a "life cycle" and developed according to evolutionary laws. In addition, it was believed that every language could be traced to a common ancestor. This theory of biological naturalism has an element of truth to it, but it is an oversimplification of how languages change and evolve into other languages.

Comparative Reconstruction

> . . . Philologists who chase
> A panting syllable through time and space
> Start it at home, and hunt it in the dark,
> To Gaul, to Greece, and into Noah's Ark.
>
> Cowper, "Retirement"

When languages resemble one another in ways not attributable to chance or borrowing, we may conclude they are related. That is, they evolved via linguistic change from an ancestral protolanguage.

The similarity of the basic vocabulary of languages such as English, German, Danish, Dutch, Norwegian, and Swedish is too pervasive for chance or borrowing. We therefore conclude that these languages have a common parent, Proto-Germanic. There are no written records of Proto-Germanic, and certainly no native speakers alive today. Proto-Germanic is a hypothetical language whose properties have been deduced based on its descendants.

In addition to similar vocabulary, the Germanic languages share grammatical properties such as irregularity in the verb *to be,* and similar irregular past-tense forms of verbs, further supporting their relatedness.

Once we know or suspect that several languages are related, their protolanguage may be partially determined by **comparative reconstruction.** One proceeds by applying the **comparative method,** which we illustrate with the following brief example.

Restricting ourselves to English, German, and Swedish, we find the word for "man" is *man, Mann,* and *man,* respectively. This is one of many word sets in which we can observe the regular sound correspondence [m]-[m]-[m] and [n]-[n]-[n] in the three languages. Based on this evidence the comparative method has us reconstruct **mVn* as the word for "man" in Proto-Germanic. The *V* indicates a vowel whose quality we are unsure of since, despite the similar spelling, the vowel is phonetically different in the various Germanic languages, and it is unclear how to reconstruct it without further evidence.

Although we are confident that we can reconstruct much of Proto-Germanic with relative accuracy, we can never be sure, and many details remain obscure. To build

confidence in the comparative method, we can apply it to Romance languages such as French, Italian, Spanish, and Portuguese. Their protolanguage is the well-known Latin, so we can verify the method. Consider the following data, focusing on the initial consonant of each word. In these data, *ch* in French is [š] and *c* in the other languages is [k].[7]

French	Italian	Spanish	Portuguese	English
cher	**c**aro	**c**aro	**c**aro	"dear"
champ	**c**ampo	**c**ampo	**c**ampo	"field"
chandelle	**c**andela	**c**andela	**c**andeia	"candle"

The French [š] corresponds to [k] in the three other languages. This regular sound correspondence, [š]-[k]-[k]-[k], supports the view that French, Italian, Spanish, and Portuguese descended from a common language. The comparative method leads to the reconstruction of [k] in "dear," "field," and "candle" of the parent language, and shows that [k] underwent a change to [š] in French, but not in Italian, Spanish, or Portuguese, which retained the original [k] of the parent language, Latin.

To use the comparative method, analysts identify regular sound correspondences in the cognates of potentially related languages. For each correspondence, they deduce the most likely sound in the parent language. In this way, much of the sound system of the parent may be reconstructed. The various phonological changes in the development of each daughter language as it descended and changed from the parent are then identified. Sometimes the sound that analysts choose in their reconstruction of the parent language will be the sound that appears most frequently in the correspondence. This approach was just illustrated with the four Romance languages.

Other considerations may outweigh the "majority rules" principle. The likelihood of certain phonological changes may persuade the analyst to reconstruct a less frequently occurring sound, or even a sound that does not occur in the correspondence. Consider the data in these four hypothetical languages:

Language A	Language B	Language C	Language D
hono	hono	fono	vono
hari	hari	fari	veli
rahima	rahima	rafima	levima
hor	hor	for	vol

Wherever Languages A and B have an *h,* Language C has an *f* and Language D has a *v*. Therefore we have the sound correspondence *h-h-f-v*. Using the comparative method, we might first consider reconstructing the sound *h* in the parent language; but from other data on historical change, and from phonetic research, we know that *h* seldom becomes *v*. The reverse, /f/ and /v/ becoming [h], occurs both historically and as a phonological rule and has an acoustic explanation. Therefore linguists reconstruct an **f* in the parent, and posit the sound change "*f* becomes *h*" in Languages A and B, and "*f* becomes *v*" in Language D. One obviously needs experience and knowledge to conclude this.

[7] Data are taken from Lehmann, 1973.

The other correspondences are not problematic insofar as these data are concerned. They are:

o-o-o-o n-n-n-n a-a-a-e r-r-r-l m-m-m-m

They lead to the reconstructed forms **o, *n, *a, *r,* and **m* for the parent language, and the sound changes "*a* becomes *e*" and "*r* becomes *l*" in Language D. These are natural sound changes found in many of the world's languages.

It is now possible to reconstruct the words of the protolanguage. They are **fono, *fari, *rafima,* and **for.* Language D, in this example, is the most innovative of the three languages, because it has undergone three sound changes. Language C is the most conservative, being identical to the protolanguage insofar as these data are concerned.

The sound changes seen in the previous illustrations are examples of **unconditioned sound change.** The changes occurred irrespective of phonetic context. Below is an example of **conditioned sound change,** taken from three dialects of Italian:

Standard	**Northern**	**Lombard**	
fisso	fiso	fis	"fixed"
kassa	kasa	kasə	"cabinet"

The correspondence sets are:

f-f-f i-i-i o-o-<>[8] k-k-k a-a-a a-a-ə s:-s-s

It is straightforward to reconstruct *f, *i, and *k. Knowing that a geminate like *s:* commonly becomes *s* (recall Old English *f:* became *f*), we reconstruct **s:* for the s:-s-s correspondence. A shortening change took place in the Northern and Lombard dialects.

There is evidence in these (very limited) data for a weakening of word-final vowels, again a change we discussed earlier for English. We reconstruct *o for o-o-<> and *a for a-a-ə. In Lombard, conditioned sound changes took place. The sound *o* was deleted in *word-final position,* but remained *o* elsewhere. The sound *a* became ə in word-final position and remained *a* elsewhere. The conditioning factor is word-final position as far as we can tell from the data presented. Vowels in other position do not undergo change.

We reconstruct the protodialect as having had the words **fisso* meaning "fixed" and **kassa* meaning "cabinet."

It is by means of the comparative method that nineteenth-century linguists were able to initiate the reconstruction of the long-lost ancestral language so aptly conceived by Jones, Bopp, Rask, and Grimm, a language that flourished about 6,000 years ago, the language that we have been calling Indo-European.

Historical Evidence

You know my method. It is founded upon the observance of trifles.

Sir Arthur Conan Doyle, "The Boscombe Valley Mystery," *The Memoirs of Sherlock Holmes*

[8] The empty angled brackets indicate a loss of the sound.

How do we discover phonological changes? How do we know how Shakespeare or Chaucer or the author of *Beowulf* pronounced their versions of English? We have no recordings that give us direct knowledge.

For many languages, written records go back more than a thousand years. Linguists study these records to find out how languages were once pronounced. The spelling in early manuscripts tells us a great deal about the sound systems of older forms of modern languages. Two words spelled differently were probably pronounced differently. Once a number of orthographic contrasts are identified, good guesses can be made as to actual pronunciation. These guesses are supplemented by common words that show up in all stages of the language, allowing their pronunciation to be traced from the present stepwise into the past.

Another clue to earlier pronunciation is provided by non-English words that appear in English manuscripts. Suppose a French word known to contain the vowel [o:] is borrowed into English. The way the borrowed word is spelled reveals a particular letter-sound correspondence.

Other documents can be examined for evidence. Private letters are an excellent source of data. Linguists prefer letters written by naive spellers, who will misspell words according to the way they pronounce them. For instance, at one point in English history all words spelled with *er* in their stems were pronounced as if they were spelled with *ar,* just as in modern British English *clerk* and *derby* are pronounced "clark" and "darby." Some poor speller kept writing *parfet* for *perfect,* which helped linguists to discover the older pronunciation.

Clues are also provided by the writings of the prescriptive grammarians of the period. Between 1550 and 1750 a group of prescriptivists in England known as orthoepists attempted to preserve the "purity" of English. In prescribing how people should speak, they told us how people actually spoke. An orthoepist alive in the United States today might write in a manual: "It is incorrect to pronounce *Cuba* with a final *r.*" Future scholars would know that there were speakers of English who pronounced it that way.

Some of the best clues to earlier pronunciation are provided by puns and rhymes in literature. Two words rhyme if the vowels and final consonants are the same. When a poet rhymes the verb *found* with the noun *wound,* it strongly suggests that the vowels of these two words were identical:

BENVOLIO: . . . 'tis in vain to seek him here that means not to be found.
ROMEO: He jests at scars that never felt a wound.

Shakespeare's rhymes are helpful in reconstructing the sound system of Elizabethan English. The rhyming of *convert* with *depart* in Sonnet XI strengthens the conclusion that *er* was pronounced as *ar.*

Dialect differences may provide clues as to what earlier stages of a language were like. Many dialects of English are spoken throughout the world. By comparing the pronunciation of various words in several dialects, we can draw conclusions about earlier forms and see what changes took place in the inventory of sounds and in the phonological rules.

For example, since some speakers of English pronounce *Mary, merry,* and *marry* with three different vowels ([meri], [mɛri], and [mæri]), we may conclude that at one

time all speakers of English did so. (The different spellings are also a clue.) For some dialects, however, only one of these sounds can occur before /r/, namely the sound [ɛ]. Those dialects underwent a sound shift in which both /e/ and /æ/ shifted to /ɛ/ when followed immediately by /r/. This is another instance of a conditioned sound shift.

The historical-comparativists working on languages with written records have a difficult job, but not nearly as difficult as scholars who are attempting to discover genetic relationships among languages with no written history.

Linguists must first transcribe large amounts of language data from all the languages, analyze them phonologically, morphologically, and syntactically, and establish a basis for relatedness such as similarities in basic vocabulary, and regular sound correspondences not due to chance or borrowing. Only then can the comparative method be applied to reconstruct the extinct protolanguage.

Linguists proceeding in this manner have discovered many relationships among Native American languages and have successfully reconstructed Amerindian protolanguages. Similar achievements have been made with the numerous languages spoken in Africa. Linguists have been able to group the large number of languages of Africa into four overarching families: Afroasiatic, Nilo-Saharan, Niger-Congo, and Khoisan. For example, Somali is in the Afroasiatic family; Zulu is in the Niger-Congo family; Hottentot, spoken in South Africa, is in the Khoisan family. These familial divisions are subject to revision if new discoveries or analyses deem it necessary.

Extinct and Endangered Languages

> Any language is the supreme achievement of a uniquely human collective genius, as divine and unfathomable a mystery as a living organism.
>
> Michael Krauss

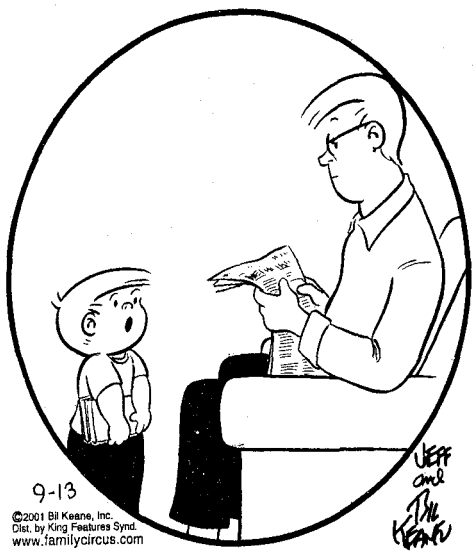
> I am always sorry when any language is lost, because languages are the pedigree of nations.
>
> Samuel Johnson

A language dies and becomes extinct when no children learn it. Linguists have identified four primary types of language death.

Sudden language death occurs when all of the speakers of the language die or are killed. Such was the case with Tasmanian and Nicoleño, a Native American Indian language once spoken in California.

Radical language death is similar to sudden language death in its abruptness. Rather than the speakers dying, however, they all stop speaking the language. Often, the reason for this is survival under the threat of political repression or even genocide. Indigenous languages embedded in other cultures suffer death this way. Speakers, to avoid being identified as "natives," simply stop speaking their native language. Children are unable to learn a language not spoken in their environment, and when the last speaker dies, the language dies.

Gradual language death is the most common way for a language to become extinct. It happens to minority languages that are in contact with a dominant language,



"Was Latin a dead language when you were little, Daddy, or was it still alive?"

much as American Indian languages are in contact with English. In each generation, fewer and fewer children learn the language until there are no new learners. The language is said to be dead when the last generation of speakers dies out. Cornish suffered this fate in Britain in the eighteenth century, as have many Native American languages in both the North and South continents.

Bottom-to-top language death is the term that describes a language that survives only in specific contexts, such as a liturgical language. Latin, and at one time, Hebrew, are such languages. It contrasts with gradual language death, which in its dying throes is spoken casually and informally in homes and villages. People stopped speaking Latin in daily situations centuries ago, and its usage is confined to scholarly and religious contexts.

Language death has befallen, and is befalling, many Native American languages. According to the linguist Michael Krauss, children are learning only 20 percent of the remaining native languages in the United States. Already, hundreds have been lost. Once widely spoken American Indian languages such as Comanche, Apache, and Cherokee have fewer native speakers every generation.

Doomed languages have existed throughout time. The Indo-European languages Hittite and Tocharian no longer exist. Hittite passed away 3,500 years ago, and both dialects of Tocharian gave up the ghost in the first century of the last millennium.

Linguists have placed many languages on an endangered list. They attempt to preserve these languages by studying and documenting their grammars — the phonetics, phonology, and so on — and by recording for posterity the speech of the last few speakers. Through its grammar, each language provides new evidence on the nature of human cognition. In its literature, poetry, ritual speech, and word structure, each language

stores the collective intellectual achievements of a culture, offering unique perspectives on the human condition. The disappearance of a language is tragic; not only are these insights lost, but the major medium through which a culture maintains and renews itself is gone as well.

Dialects, too, may become extinct. Many dialects spoken in the United States are considered endangered by linguists. For example, the sociolinguist Walt Wolfram is studying the dialect spoken on Ocracoke Island off the coast of North Carolina. One reason for the study is to preserve the dialect, which is in danger of extinction because so many young Ocracokers leave the island and raise their children elsewhere, a case of gradual *dialect* death. Vacationers and retirees are diluting the dialect-speaking population, attracted to the island by its unique character, including, ironically, the quaint speech of the islanders.

Linguists are not alone in their preservation efforts. Under the sponsorship of language clubs, and occasionally even governments, adults and children learn an endangered language as a symbol of the culture. Gael Linn is a private organization in Ireland that runs language classes in Irish (Gaelic) for adults. Hundreds of public schools in Ireland and Northern Ireland are conducted entirely in Gaelic. In the state of Hawaii a movement is underway to preserve and teach Hawaiian, the native language of the island.

The United Nations, too, is concerned. In 1991, UNESCO (United Nations Educational, Scientific, and Cultural Organization) passed a resolution that states:

> As the disappearance of any one language constitutes an irretrievable loss to mankind, it is for UNESCO a task of great urgency to respond to this situation by promoting . . . the description — in the form of grammars, dictionaries, and texts — of endangered and dying languages.

Occasionally a language is resurrected from written records. For centuries classical Hebrew was used only in religious ceremonies, but today, with some modernization, and through a great desire among Jews to speak the language of their forefathers, it has become the national language of Israel.

The preservation of dying languages and dialects is essential to the study of Universal Grammar, an attempt to define linguistic properties shared by all languages. This in turn will help linguists develop a comprehensive theory of language that will include a specific description of the innate human capacity for language.

The Genetic Classification of Languages

> The Sanskrit language, whatever be its antiquity, is of a wonderful structure, more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either, yet bearing to both of them a stronger affinity, both in the roots of verbs and in the forms of grammar, than could possibly have been produced by accident; so strong, indeed, that no philologer could examine all three, without believing that they have sprung from some common source, which, perhaps, no longer exists. . . .
>
> Sir William Jones (1786)

We have discussed how different languages evolve from one language and how historical and comparative linguists classify languages into families such as Germanic or Romance and reconstruct earlier forms of the ancestral language. When we examine the languages of the world, we perceive similarities and differences among them that provide evidence for degrees of relatedness or for non-relatedness.

Counting to five in English, German, and Vietnamese shows similarities between English and German not shared by Vietnamese.

English	German	Vietnamese[9]
one	eins	mot
two	zwei	hai
three	drei	ba
four	vier	bon
five	fünf	nam

The similarity between English and German is pervasive. Sometimes it is extremely obvious (*man/Mann*), at other times a little less obvious (*child/Kind*). No regular similarities or differences apart from those due to chance are found between them and Vietnamese.

Pursuing the metaphor of human genealogy, we say that English, German, Norwegian, Danish, Swedish, Icelandic, and so on are sisters in that they descended from one parent and are more closely related to one another than any of them are to non-Germanic languages such as French or Russian.

The Romance languages are also sister languages whose parent is Latin. If we carry the family metaphor to an extreme, we might describe the Germanic languages and the Romance languages as cousins, since their respective parents, Proto-Germanic and early forms of Latin were siblings.

As anyone from a large family knows, there are cousins, and then there are "distant" cousins, encompassing nearly anyone with a claim to family bloodlines. This is true of the Indo-European family of languages. If the Germanic and Romance languages are truly cousins, then languages such as Greek, Armenian, Albanian, and even the extinct Hittite and Tocharian are distant cousins. So are Irish, Scots Gaelic, Welsh, and Breton, whose protolanguage, Celtic, was once widespread throughout Europe and the British Isles. Breton is spoken in Brittany in the northwest coastal regions of France. It was brought there by Celts fleeing from Britain in the seventh century.

Russian is also a distant cousin, as are its sisters, Bulgarian, Serbo-Croatian, Polish, Czech, and Slovak. The Baltic language Lithuanian is related to English, as is its sister language, Latvian. A neighboring language, Estonian, however, is not a relative. Sanskrit, as pointed out by Sir William Jones, though far removed geographically, is nonetheless a relative. Its offspring, Hindi and Bengali, spoken primarily in South Asia, are distantly related to English. Persian (or Farsi), spoken in modern Iran, is a distant cousin of English, as is Kurdish, spoken in Iran, Iraq, and Turkey, and Pashto spoken in Afghanistan and Pakistan.

All the languages mentioned in the last paragraph, except for Estonian, are related, more or less distantly, to one another because they all descended from Indo-European.

[9] Tones are omitted for simplicity.

Figure 11.5 is an abbreviated family tree of the Indo-European languages that gives a genealogical and historical classification of the languages shown. This diagram is somewhat simplified. For example, it appears that all the Slavic languages are sisters. This suggests the comical scenario of speakers of Proto-Slavic dividing themselves into nine clans one fine morning, with each going its separate way. In fact the nine languages shown can be organized hierarchically, showing some more closely related than others. In other words, the various separations that resulted in the nine languages we see today occurred several times over a long stretch of time. Similar remarks apply to the other families, including Indo-European.

Another simplification is that the "dead ends" — languages that evolved and died leaving no offspring — are not included. We have already mentioned Hittite and Tocharian as two such Indo-European languages.

The family tree also fails to show a number of intermediate stages that must have existed in the evolution of modern languages. Languages do not evolve abruptly, which is why comparisons with the genealogical trees of biology have limited usefulness.

Finally, the diagram fails to show a number of Indo-European languages because of lack of space.

Languages of the World

> And the whole earth was of one language, and of one speech.
>
> Genesis 11:1

> Let us go down, and there confound their language, that they may not understand one another's speech.
>
> Genesis 11:7

Most of the world's languages do not belong to the Indo-European family. Linguists have also attempted to classify the non-Indo-European languages according to their genetic relationships. The task is to identify the languages that constitute a family and the relationships that exist among them.

The two most common questions asked of linguists are: "How many languages do you speak?" and "How many languages are there in the world?" Both are difficult to answer precisely. Most linguists have varying degrees of familiarity with several languages, and many are **polyglots,** persons who speak and understand several languages. Charles V, the Holy Roman Emperor from 1500 to 1558 was a polyglot, for he proclaimed: "I speak Spanish to God, Italian to women, French to men, and German to my horse."

As to the second question, it's hard to ascertain the number of languages in the world because of disagreement as to what comprises a language as opposed to a dialect.

A difficulty with both these questions is that the answers rely on a sliding scale. Familiarity with a language is not an all-or-nothing affair, so how much of a language do you have to know before you can be said to "speak and understand" that language? And how different must two dialects be before they become separate languages? One criterion is that of mutual intelligibility. As long as two dialects remain mutually intelligible, it is generally believed that they cannot be considered separate languages. But mutual

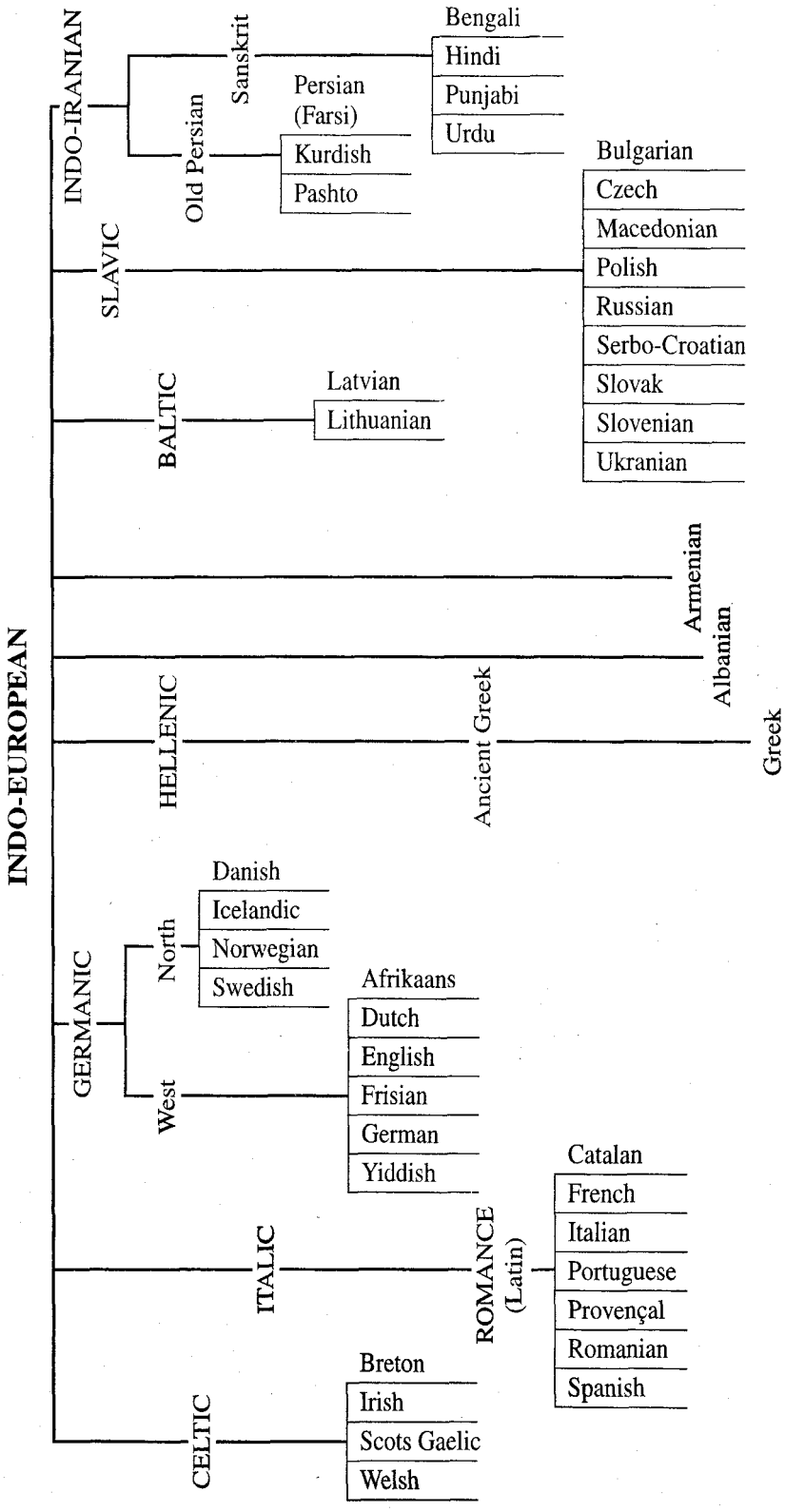


Figure 11.5 The Indo-European family of languages.

intelligibility itself lies on a sliding scale, as all of us know who have conversed with persons speaking dialects of our native language that we do not understand completely.

The Indo-Iranian languages Hindi and Urdu are listed as separate languages in Figure 11.5, yet they are mutually intelligible in their spoken form and are arguably dialects of one language. However, each uses a different writing system and each is spoken in communities of differing religious beliefs and nationalities. (Hindi, for the most part, is spoken in India by Hindus; Urdu is spoken in Pakistan by Muslims.) So what constitutes a separate language is not always determined by linguistic factors alone.

On the other hand, mutually unintelligible languages spoken in China are often thought of as dialects because they have a common writing system and culture, and are spoken within a single political boundary.

Estimates of the number of languages in the world vary widely. The minimum has been set at 4,000 and the maximum at 8,000. In the city of Los Angeles alone, more than 80 languages are spoken. Students at Hollywood High School go home to hear their parents speak Amharic, Armenian, Arabic, Marshallese, Urdu, Sinhalese, Ibo, Gujarati, Hmong, Afrikaans, Khmer, Ukrainian, Cambodian, Spanish, Tagalog, Russian, and more.

It is often surprising to discover what languages are genetically related and which ones aren't. Nepali, the language of remote Nepal is an Indo-European language, whereas Hungarian, surrounded on all sides by Indo-European languages, is not.

It is not possible in an introductory text to give an exhaustive table of families, sub-

families, and individual languages. Besides, a number of genetic relationships have not yet been firmly established. For example, linguists are divided as to whether Japanese and Turkish are related. We'll simply mention several language families with a few of their members. These language families appear not to be related to one another or to Indo-European. This, however, may be an artifact of being unable to delve into the past far enough to see common features that time has erased. We cannot eliminate the possibility that all the world's languages spring ultimately from a single source, an "ur-language" that some have termed **Nostratic,** buried, if not concealed, in the depths of the past. Readers interested in this fascinating topic may wish to read the writings of Professor Johanna Nichols of the University of California at Berkeley.

Uralic is the other major family of languages, besides Indo-European, spoken on the European continent. Hungarian, Finnish, and Estonian are the major representatives of this group.

Afro-Asiatic languages comprise a large family spoken in northern Africa and the Middle East. They include the modern *Semitic* languages of Hebrew and Arabic, as well as languages spoken in biblical times such as Aramaic, Babylonian, Canaanite, and Moabite.

The *Sino-Tibetan* family includes Mandarin, the most populous language in the world, spoken by around one billion Chinese. This family also includes all of the Chinese "dialects," as well as Burmese and Tibetan.

Most of the languages of Africa belong to the *Niger-Congo* family. These include over nine hundred languages grouped into a number of subfamilies such as Kordofanian and Atlantic-Congo. The latter includes individual languages such as Swahili and Zulu.

Equally numerous, the *Austronesian* family contains about nine hundred languages, spoken over a wide expanse of the globe, from Madagascar, off the coast of Africa, to Hawaii. Hawaiian itself, of course, is an Austronesian language, as are Maori, spoken in New Zealand; Tagalog, spoken in the Philippine Islands; and Malay, spoken in Malaysia and Singapore, to mention just a few.

Dozens of families and hundreds of languages are, or were, spoken in North and South America. Knowledge of the genetic relationships among these families of languages is often tenuous, and because so many of the languages are approaching extinction, there may be little hope for as thorough an understanding of the Amerindian language families as linguists have achieved for Indo-European.

Types of Languages

> All the Oriental nations jam tongue and words together in the throat, like the Hebrews and Syrians. All the Mediterranean peoples push their enunciation forward to the palate, like the Greeks and the Asians. All the Occidentals break their words on the teeth, like the Italians and Spaniards....
>
> Isidore of Seville, seventh century C.E.

There are many ways to classify languages. One way already discussed in this chapter is according to the language "family." This method would be like classifying people

"We get a lot of foreign visitors."

"Herman" ® is reprinted with permission from Laughing Stock Licensing Inc., Ottowa, Canada.

according to whether they were related by blood. Another way of classifying languages is by certain linguistic traits, regardless of family. With people, this method would be like classifying them according to height and weight, or hair and eye color.

Every language has sentences that include a subject (S),[10] an object (O), and a verb (V), although some sentences lack all three elements. Languages have been classified according to the basic or most common order in which these occur in sentences.

There are six possible orders — SOV (subject, object, verb), SVO, VSO, VOS, OVS, OSV — permitting six possible language types. Here are examples of some of the languages in these classes.[11]

SVO: English, French, Swahili, Hausa, Thai
VSO: Tagalog, Irish, (Classical) Arabic, (Biblical) Hebrew
SOV: Turkish, Japanese, Persian, Georgian
OVS: Apalai (Brazil), Barasano (Colombia), Panare (Venezuela)
OSV: Apurina and Xavante (Brazil)
VOS: Cakchiquel (Guatemala), Huave (Mexico)

The most frequent word orders in languages of the world are SVO, VSO, and SOV. The basic VSO and SOV sentences may be illustrated as follows:

[10] In this section *only,* S will abbreviate *subject* not *sentence.*

[11] The examples of VOS, OVS, and OSV languages are from Pullum, 1981.

VSO (Tagalog): Sumagot siya sa propesor
answered he the professor
"He answered the professor."

SOV (Turkish): Romalılar barbarları yendiler
Romans barbarians defeated
"The Romans defeated the Barbarians."

Languages with OVS, OSV, and VOS basic word order are much rarer.

The order of other sentence components in a language is most frequently correlated with the language type. If a language is of a type in which the verb precedes the object — a VO language, which includes SVO, VSO, or VOS — then the auxiliary verb tends to precede the verb; adverbs tend to follow the verb; and the language use *pre*positions, which precede the noun, among other such ordering relationships. English exhibits all these tendencies.

In OV languages, most of which are SOV, the opposite tendency occurs: Auxiliary verbs tend to follow the verb; adverbs tend to precede the verb; and there are *post*positions, which function similarly to prepositions but follow the noun. Japanese is an SOV language. It has postpositions, so to say "from Tokyo" in Japanese you say *Tokyo kara,* "Tokyo from." Also in Japanese, the auxiliary verb follows the verb, as illustrated by the following sentence:

Akiko	wa	sakana	o	tabete	iru
Akiko	*topic marker*	fish	*object marker*	eating	is

"Akiko is eating fish."

The correlations between language type and the word order of syntactic categories in sentences are *preferred* word orders, and for the most part are violable tendencies. Different languages follow them to a greater or lesser degree.

The knowledge that speakers of various languages have about word order is captured in the phrase structure rules of the language. In English, an SVO language, the V precedes its NP Object, so the grammar contains the rule VP → V NP. In the SOV languages Turkish and Japanese, the NP Object precedes the Verb and the corresponding phrase structure rule is VP → NP V. Similarly, the rule PP → P NP occurs in SVO languages, whereas the rule PP → NP P is the correlate occurring in SOV languages.

That a language is SVO does not mean that SVO is the only possible word order. When a famous comedian said, "Believe you me" on network TV, he was understood and imitated despite the VSO word order. Yoda, the Jedi Master from the motion picture *Return of the Jedi,* speaks a strange but perfectly understandable style of English that achieves its eccentricity by being OSV. (Objects may be complements other than Noun Phrases.) Some of Yoda's utterances are:

Sick I've become.
Strong with the Force you are.
Your father he is.
When nine hundred years you reach, look as good you will not.

For linguists, the many languages and language families provide essential data for the study of universal grammar. Although these languages are diverse in many ways, they are also remarkably similar in many ways. We find that the languages of the "wretched Greenlanders," the Maoris of New Zealand, the Zulus of Africa, and the native peoples of North and South America all have similar sounds, similar phonological and syntactic rules, and similar semantic systems.

Why Do Languages Change?

> Some method should be thought on for ascertaining and fixing our language forever. . . . I see no absolute necessity why any language should be perpetually changing.
>
> Jonathan Swift (1712)

> Stability in language is synonymous with rigor mortis.
>
> Ernest Weekley

No one knows exactly how or why languages change. As we have shown, linguistic changes do not happen suddenly. Speakers of English did not wake up one morning and decide to use the word *beef* for "ox meat," nor do all the children of one particular generation grow up to adopt a new word. Changes are more gradual, particularly changes in the phonological and syntactic system.

Of course, certain changes may occur instantaneously for any one speaker. When someone acquires a new word, it is not acquired gradually, although full appreciation for all of its possible uses may come slowly. When a new rule enters a speaker's grammar, it is either in or not in the grammar. It may at first be an optional rule, so that sometimes it is used and sometimes it is not, possibly determined by social context or other external factors, but the rule is either there and available for use or not. What is gradual about language change is the spread of certain changes through an entire speech community.

A basic cause of change is the way children acquire the language. No one teaches a child the rules of the grammar. Each child constructs a personal grammar alone, generalizing rules from the linguistic input received. As discussed in chapter 8, the child's language develops in stages until it approximates the adult grammar. The child's grammar is never exactly like that of the adult community, because children receive diverse linguistic input. Certain rules may be simplified or overgeneralized, and vocabularies may show small differences that accumulate over several generations.

The older generation may be using certain rules optionally. For example, at certain times they may say "It's I" and at other times "It's me." The less formal style is usually used with children, who as the next generation may use only the "me" form of the pronoun in this construction. In such cases the grammar will have changed.

The reasons for some changes are relatively easy to understand. Before television there was no such word as *television.* It soon became a common lexical item. Borrowed words, too, generally serve a useful purpose, and their entry into the language is not mysterious. Other changes are more difficult to explain, such as the Great Vowel Shift in English.

One plausible source of change is *assimilation,* a kind of ***ease of articulation*** process in which one sound influences the pronunciation of an adjacent or nearby sound. Due to assimilation, vowels are frequently nasalized before nasal consonants because it is easiest to lower the velum to produce nasality in advance of the actual consonant articulation. This results in the preceding vowel being nasalized. Once the vowel is nasalized, the contrast that the nasal consonant provided can be equally well provided by the nasalized vowel alone, and the redundant consonant may be deleted. The contrast between oral and nasal vowels that exists in many languages of the world today resulted from just such a historical sound change.

In reconstructing older versions of French it has been hypothesized that *bol,* "basin," *botte,* "high boot," *bog,* "a card game," *bock,* "Bock beer," and *bon,* "good," were pronounced [bɔl], [bɔt], [bɔg], [bɔk], and [bɔ̃n], respectively. The nasalized vowel in *bon* was due to the final nasal consonant. Owing to a conditioned sound change that deleted nasal consonants in word-final position, *bon* is pronounced [bɔ̃] in modern French. The nasal vowel alone maintains the contrast with the other words.

Another example from English illustrates how such assimilative processes can change a language. In Old English, word initial [kʲ] (like the initial sound of *cute*), when followed by /i/, was further palatalized to become our modern palatal affricate /č/, as illustrated by the following words:

Old English (c = [kʲ])	**Modern English (ch = [č])**
ciese	cheese
cinn	chin
cild	child

The process of palatalization is found in the history of many languages. In Twi, the word meaning "to hate" was once pronounced [ki]. The [k] became first [kʲ] and then finally [č], so that today "to hate" is [či].

Ease of articulation processes, which make sounds more alike, are countered by the need to maintain contrast. Thus sound change also occurs when two sounds are acoustically similar, with risk of confusion. We saw a sound change of /f/ to /h/ in an earlier example that can be explained by the acoustic similarity of [f] to other sounds.

Analogic change is an "economy of memory" change that results in a reduction of the number of exceptional or irregular morphemes that must be individually learned and remembered. It may be by analogy to *foe/foes* and *dog/dogs* that speakers started saying *cows* as the plural of *cow* instead of the earlier plural *kine.* By analogy to *reap/reaped, seem/seemed,* and *ignite/ignited,* children and adults are presently saying *I sweeped the floor* (instead of *swept*), *I waked last night* (instead of *woke*), and *She lighted the bonfire* (instead of *lit*).

The same kind of analogic change is exemplified by our regularization of exceptional plural forms. We have borrowed words like *datum/data, agendum/agenda, curriculum/curricula, memorandum/memoranda, medium/media, criterion/criteria,* and *virtuoso/virtuosi,* to name just a few. The irregular plurals of these nouns have been replaced by regular plurals among many speakers: *agendas, curriculums, memorandums, criterias,* and *virtuosos.* In some cases the borrowed original plural forms were considered to be the singular (as in *agenda* and *criteria*) and the new plural (e.g., *agendas*) is

therefore a "plural-plural." In addition, many speakers now regard *data* and *media* as nouns that do not have plural forms, like *information.* All these changes lessen the number of irregular forms that must be remembered.

Assimilation and analogic change account for some linguistic changes, but they cannot account for others. Simplification and regularization of grammars occur, but so does elaboration or complication. Old English rules of syntax became more complex, imposing a stricter word order on the language, at the same time that case endings were being simplified. A tendency toward simplification is counteracted by the need to limit potential ambiguity. Much of language change is a balance between the two.

Many factors contribute to linguistic change: simplification of grammars, elaboration to maintain intelligibility, borrowing, and so on. Changes are actualized by children learning the language, who incorporate them into their grammar. The exact reasons for linguistic change are still elusive, though it is clear that the imperfect learning of the adult dialects by children is a contributing factor. Perhaps language changes for the same reason all things change: it is the nature of things to change. As Heraclitus pointed out centuries ago, "All is flux, nothing stays still. Nothing endures but change."

Summary

Languages change. Linguistic change such as **sound shift** is found in the history of all languages, as evidenced by the **regular sound correspondences** that exist between different stages of the same language, different dialects of the same language, and different languages. Languages that evolve from a common source are **genetically related.** Genetically related languages were once dialects of the same language. For example, English, German, and Swedish were dialects of an earlier form of Germanic called **Proto-Germanic,** while earlier forms of Romance languages, such as Spanish, French, and Italian were dialects of Latin. Going back even further in time, earlier forms of Proto-Germanic, Latin, and other languages were dialects of **Indo-European.**

All components of the grammar may change. Phonological, morphological, syntactic, lexical, and semantic changes occur. Words, morphemes, phonemes, and rules of all types may be added, lost, or altered. The meaning of words and morphemes may **broaden, narrow,** or shift. The lexicon may expand by **borrowing,** which results in **loan words** in the vocabulary. It also grows through word **coinage, blends, acronyms,** and other processes of word formation. On the other hand, the lexicon may shrink as certain words are no longer used and become obsolete.

No one knows all the causes of linguistic change. Change comes about through the restructuring of the grammar by children learning the language. Grammars may appear to change in the direction of simplicity and regularity, as in the loss of the Indo-European case morphology, but such simplifications may be compensated for by other complexities, such as stricter word order. A balance is always present between simplicity — languages must be learnable — and complexity — languages must be expressive and relatively unambiguous.

Some sound changes result from **assimilation,** a fundamentally physiological

process of **ease of articulation.** Others, like the **Great Vowel Shift,** are more difficult to explain. Some grammatical changes are **analogic changes,** generalizations that lead to more regularity, such as *sweeped* instead of *swept.*

The study of linguistic change is called **historical and comparative linguistics.** Linguists use the **comparative method** to identify regular sound correspondences among the **cognates** of related languages and systematically reconstruct an earlier **protolanguage.** This **comparative reconstruction** allows linguists to peer backward in time and determine the linguistic history of a language family, which may then be represented in a tree diagram similar to Figure 11.5.

Linguists estimate that there are 4,000 to 8,000 languages spoken in the world today (2002). These languages are grouped into families, subfamilies, and so on, based on their genetic relationships. A vast number of these languages are dying out because in each generation fewer children learn them. However, attempts are being made to preserve dying languages and dialects for the knowledge they bring to the study of Universal Grammar and the culture in which they are spoken.

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Exercises

1. Many changes in the phonological system have occurred in English since 449 C.E. Below are some Old English words (given in their spelling and phonetic forms), and the same words as we pronounce them today. They are typical of regular sound changes that took place in English. What sound changes have occurred in each case?

Example: OE hlud [xlu:d] → Mod. Eng. loud

Changes: (1) The [x] was lost.

(2) The long vowel [u:] became [aw].

OE **Mod E**

a. crabba [kraba] → crab

Changes:

b. fisc [fɪsk] → fish

Changes:

c. fūl [fu:l] → foul

Changes:

d. gāt [ga:t] → goat

Changes:

e. lǣfan [læ:van] → leave

Changes:

f. tēþ [te:θ] → teeth

Changes:

2. A. The Great Vowel Shift left its traces in Modern English in such meaning-related pairs as:

(1) serene/serenity [i]/[ɛ]

(2) divine/divinity [aj]/[ɪ]

(3) sane/sanity [e]/[æ]

List five such meaning-related pairs that relate [i] and [ɛ] as in example 1, five that relate [aj] and [ɪ] as in example 2, and five that relate [e] and [æ] as in example 3.

	[i]/[ɛ]	[aj]/[ɪ]	[e]/[æ]
(1)			
(2)			
(3)			
(4)			
(5)			

B. In the section entitled "The Great Vowel Shift" is a cartoon of a woman sneezing. Explain the humor of the cartoon in terms of the Great Vowel Shift.

3. Below are given some sentences taken from Old English, Middle English, and early Modern English texts, illustrating some changes that have occurred in the syntactic

rules of English grammar. (*Note:* In the sentences, the earlier spelling forms and words have been changed to conform to Modern English. That is, the OE sentence *His suna twegen mon brohte to þæm cynige* would be written as *His sons two one brought to that king,* which in Modern English would be *His two sons were brought to the king.*) Underline the parts of each sentence that differ from Modern English. Rewrite the sentence in Modern English. State, if you can, what changes must have occurred.

Example: It *not* belongs to you. (Shakespeare, *Henry IV*)

Mod. Eng.: It does not belong to you.

Change: At one time, a negative sentence simply had a *not* before the verb. Today, the word *do,* in its proper morphological form, must appear before the *not.*

a. It nothing pleased his master.

Mod. Eng.:

Change:

b. He hath said that we would lift them whom that him please.

Mod. Eng.:

Change:

c. I have a brother is condemned to die.

Mod. Eng.:

Change:

d. I bade them take away you.

Mod. Eng.:

Change:

e. I wish you was still more a Tartar.

Mod. Eng.:

Change:

f. Christ slept and his apostles.

Mod. Eng.:

Change:

g. Me was told.

Mod. Eng.:

Change:

4. Yearbooks and almanacs often publish a new word list. In the 1980s and 1990s several new words, such as *Teflon* and *e-business,* entered the English language. From the computer field, we have new words such as *byte* and *modem.* Other words have been expanded in meaning, such as *memory* to refer to the storage part of a computer and *crack* meaning a form of cocaine. Sports-related new words include *threepeat, skybox,* as well as other compounds such as *air ball, contact hitter,* and *nose guard.*

A. Think of five other words or compound words that have entered the language in the last ten years. Describe briefly the source of the word.

B. Think of three words that might be on the way out. (*Hint:* Consider *flapper, groovy,* and *slay/slew.* Dictionary entries that say "archaic" are a good source.)

C. Think of three words whose dictionary entries do not say they are verbs, but which you've heard or seen used as verbs. *Example:* "He went to piano over at the club," meaning (of course) "He went to play the piano at the club."

D. Think of three words that have become, or are becoming, obsolete due to changes in technology. *Example: Mimeograph,* a method of reproduction, is on the way out due to advances in xerographic duplication technology.

5. Here is a table showing, in phonemic form, the Latin ancestors of ten words in modern French (given in phonetic form):

Latin	French	Gloss
kor	kœr[12]	heart
kantāre	šãte	to sing
klārus	klɛr	clear
kervus	sɛr	deer
karbō	šarbɔ̃	coal
kwandō	kã	when
kentum	sã	hundred
kawsa	šoz	thing
kinis	sãdrə	ashes
kawda/koda[13]	kø[12]	tail

Are the following statements true or false?

	True	False
a. The modern French word for "thing" shows that a /k/, which occurred before the vowel /o/ in Latin, became [š] in French.	_____	_____
b. The French word for "tail" probably derived from the Latin word /koda/ rather than from /kawda/.	_____	_____
c. One historical change illustrated by these data is that [s] became an allophone of the phoneme /k/ in French.	_____	_____
d. If there were a Latin word *kertus,* the modern French word would probably be [sɛr]. (Consider only the initial consonant.)	_____	_____

6. Here is how to count to five in a dozen languages, using standard Roman alphabet transcriptions. Six of these languages are Indo-European and six are not. Which are Indo-European?

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[12] œ and ø are front, rounded vowels.

[13] /kawda/ and /koda/ are the word for "tail" in two Latin dialects.

	L1	L2	L3	L4	L5	L6
1	en	jedyn	i	eka	ichi	echad
2	twene	dwaj	liang	dvau	ni	shnayim
3	thria	tři	san	trayas	san	shlosha
4	fiuwar	štyri	ssu	catur	shi	arba?a
5	fif	pjeć	wu	pañca	go	chamishsha

	L7	L8	L9	L10	L11	L12
1	mot	ün	hana	yaw	uno	nigen
2	hai	duos	tul	daw	dos	khoyar
3	ba	trais	set	dree	tres	ghorban
4	bon	quatter	net	tsaloor	cuatro	durben
5	nam	tschinch	tasŏt	pindze	cinco	tabon

7. Recommend three ways in which society can act to preserve linguistic diversity. Be realistic and concrete. For example, "encourage children of endangered languages to learn the language" is *not* a good answer, being neither sufficiently realistic (why should they want to?), nor sufficiently concrete (what is meant by "encourage"?).

8. The vocabulary of English consists of native words as well as thousands of loan words. Look up the following words in a dictionary that provides their etymologies. Speculate how each word came to be borrowed from the particular language.

   Example: Skunk was a Native American term for an animal unfamiliar to the European colonists, so they borrowed that word into their vocabulary so they could refer to the creature.

   a. size **b.** royal **c.** aquatic **d.** heavenly **e.** skill **f.** ranch **g.** blouse **h.** robot **i.** check **j.** banana **k.** keel **l.** fact **m.** potato **n.** muskrat **o.** skunk **p.** catfish **q.** hoodlum **r.** filibuster **s.** astronaut **t.** emerald **u.** sugar **v.** pagoda **w.** khaki **x.** shampoo **y.** kangaroo **z.** bulldoze

9. Analogic change refers to a tendency to generalize the rules of language, a major cause of language change. We mentioned two instances, the generalization of the plural rule (*cow/kine* becoming *cow/cows*) and the generalization of the past-tense formation rule (*light/lit* becoming *light/lighted*). Think of at least three other instances of nonstandard usage that are analogic; they are indicators of possible future changes in the language. (*Hint:* Consider fairly general rules and see if you know of dialects or styles that overgeneralize them, for example, comparative formation by adding *-er.*)

10. Study the following passage from Shakespeare's *Hamlet,* Act IV, Scene iii, and identify every difference in expression between Elizabethan and current Modern English that is evident (e.g., in line 3, *thou* is now *you.*).

    HAMLET: A man may fish with the worm that hath eat of a king, and eat of the fish that hath fed of that worm.

    KING: What dost thou mean by this?

HAMLET: Nothing but to show you how a king may go a progress through the guts of a beggar.

KING: Where is Polonius?

HAMLET: In heaven. Send thither to see. If your messenger find him not there, seek him i' the other place yourself. But indeed, if you find him not within this month, you shall nose him as you go up the stairs into the lobby.

11. Here are some data from four Polynesian languages.

Maori	**Hawaiian**	**Samoan**	**Fijian**	**Gloss**	**Proto-Polynesian (See Part C)**
pou	pou	pou	bou	"post"	
tapu	kapu	tapu	tabu	"forbidden"	
taŋi	kani	taŋi	taŋi	"cry"	
takere	kaʔele	taʔele	takele	"keel"	
hono	hono	fono	vono	"stay, sit"	
marama	malama	malama	malama	"light, moon"	
kaho	ʔaho	ʔaso	kaso	"thatch"	

A. Find the correspondence sets. (*Hint:* There are 14. For example: o–o–o–o, p–p–p–b.)

B. For each correspondence set, reconstruct a proto-sound. Mention any sound changes that you observe. For example:

o–o–o–o *o

p–p–p–b *p p → b in Fijian.

C. Complete the table by filling in the reconstructed words in Proto-Polynesian.

12. Consider these data from two American Indian languages:

Yerington Paviotso = YP	**Northfork Monachi = NM**	**Gloss**
mupi	mupi	"nose"
tama	tawa	"tooth"
piwɨ	piwɨ	"heart"
sawaʔpono	sawaʔpono	"a feminine name"
nimɨ	niwɨ	"liver"
tamano	tawano	"springtime"
pahwa	pahwa	"aunt"
kuma	kuwa	"husband"
wowaʔa	wowaʔa	"Indians living to the west"
mɨhɨ	mɨhɨ	"porcupine"
noto	noto	"throat"
tapa	tape	"sun"
ʔatapɨ	ʔatapɨ	"jaw"
papiʔi	papiʔi	"older brother"
patɨ	petɨ	"daughter"
nana	nana	"man"
ʔatɨ	ʔetɨ	"bow," "gun"

A. Identify each sound correspondence. (*Hint:* There are ten correspondence sets of consonants and six correspondence sets of vowels: for example, *p–p, m–w, a–a,* and *a–e.*)

B. (1) For each correspondence you identified in A not containing an *m* or *w,* reconstruct a proto-sound (e.g., for *h–h, *h; o–o, *o.*).

(2) If the proto-sound underwent a change, indicate what the change is and in which language it took place.

C. (1) Whenever a *w* appears in YP, what appears in the corresponding position in NM?

(2) Whenever an *m* occurs in YP, what two sounds may correspond to it in NM?

(3) On the basis of the position of *m* in YP words, can you predict which sound it will correspond to in NM words? How?

D. (1) For the three correspondences you discovered in A involving *m* and *w,* should you reconstruct two or three proto-sounds?

(2) If you chose three proto-sounds, what are they and what did they become in the two daughter languages, YP and NM?

(3) If you chose two proto-sounds, what are they and what did they become in the daughter languages? What further statement do you need to make about the sound changes? (*Hint:* One proto-sound will become two different pairs, depending on its phonetic environment. It is an example of a conditioned sound change.)

E. Based on the above, reconstruct all the words given in the common ancestor from which both YP and NM descended (e.g., "porcupine" is reconstructed as *mihi.).

13. The people of the Isle of Eggland once lived in harmony on a diet of soft-boiled eggs. They spoke proto-Egglish. Contention arose over which end of the egg should be opened first for eating, the big end or the little end. Each side retreated to its end of the island, and spoke no more to the other. Today, Big-End Egglish and Little-End Egglish are spoken in Eggland. Below are data from these languages.

A. Find the correspondence sets for each pair of cognates, and reconstruct the proto-Egglish word from which the cognates descended.

B. Identify the sound changes that have affected each language. Use classes of sounds to express the change when possible. (*Hint:* There are three conditioned sounds changes.)

Big-End Egglish	**Little-End Egglish**	**Gloss**	**Proto-Egglish** (To be completed)
šur	kul	omelet	*
ve	vet	yoke	*
rɔ	rɔk	egg	*
ver	vel	egg shell	*
žu	gup	soufflé	*
vel	vel	egg white	*
pe	pe	hard-boiled (obscene)	*