

The suffix meaning ‘negation,’ roughly analogous to *un-* or *non-* or *dis-*, is accomplished as a rapid turning over of the hand(s) following the end of the root sign that is being negated. For example, ‘want’ is signed with open palms facing upward; ‘don’t want’ follows that gesture with a turning of the palms to face downward. This ‘reversal of orientation’ suffix may be applied, with necessary adjustments, to many root signs.

In sign language many morphological processes are not linear. Rather, the sign stem occurs nested within various movements and locations in signing space so that the gestures are simultaneous, an impossibility with spoken languages.

Inflection of sign roots also occurs in ASL and all other sign languages, which characteristically modify the movement of the hands and the spatial contours of the area near the body in which the signs are articulated. For example, movement away from the signer’s body toward the “listener” might inflect a verb as in “I see you,” whereas movement away from the listener and toward the body would inflect the verb as in “you see me.”

Morphological Analysis: Identifying Morphemes

Case study 1

As we have seen in this chapter, speakers of a language know the internal structure of words because they know the morphemes of their language and the rules for their combination. This is unconscious knowledge of course and it takes a trained linguist to make this knowledge explicit as part of a descriptive grammar of the language. The task is challenging enough when the language you are analyzing is your own, but linguists who speak one language may nevertheless analyze languages for which they are not native speakers.

Suppose you were a linguist from the planet Zorx who wanted to analyze English. How would you discover the morphemes of the language? How would you determine whether a word had one, two, or more morphemes, and what they were?

The first thing to do would be to ask native speakers how they say various words. (It would help to have a Zorxese-English interpreter along; otherwise, copious gesturing is in order.) Assume you are talented in miming and manage to collect the following forms:

Adjective	Meaning
ugly	‘very unattractive’
uglier	‘more ugly’
ugliest	‘most ugly’
pretty	‘nice looking’
prettier	‘more nice looking’
prettiest	‘most nice looking’
tall	‘large in height’
taller	‘more tall’
tallest	‘most tall’

To determine what the morphemes are in such a list, the first thing a field linguist would do is to see whether some forms mean the same thing in different words, that is, to look for *recurring* forms. We find them: *ugly* occurs in *ugly*, *uglier*, and *ugliest*, all of which include the meaning ‘very unattractive.’ We also find that *-er* occurs in *prettier* and *taller*, adding the meaning ‘more’ to the adjectives to which it is attached. Similarly, *-est* adds the meaning ‘most.’ Furthermore by having our Zorxese-English interpreter pose additional questions to our native English-speaking consultant we find that *-er* and *-est* do not occur in isolation with the meanings of ‘more’ and ‘most.’ We can therefore conclude that the following morphemes occur in English:

ugly	root morpheme
pretty	root morpheme
tall	root morpheme
-er	bound morpheme ‘comparative’
-est	bound morpheme ‘superlative’

As we proceed we find other words that end with *-er* (e.g., *singer*, *lover*, *bomber*, *writer*, *teacher*) in which the *-er* ending does not mean ‘comparative’ but, when attached to a verb, changes it to ‘a noun who “verbs,”’ (e.g., *sings*, *loves*, *bombs*, *writes*, *teaches*). So we conclude that this is a different morpheme, even though it is pronounced the same as the comparative. We go on and find words like *number*, *somber*, *butter*, *member*, and many others in which the *-er* has no separate meaning at all—a *somber* is not ‘one who sombs’ and a *member* does not *memb*—and therefore these words must be monomorphemic.

Case study 2

Once you have practiced on the morphology of English, you might want to go on to describe another language. Paku was invented by the linguist Victoria Fromkin for a 1970s TV series called *Land of the Lost*, made into a major motion picture of the same name starring Will Farrell in 2009. This was the language used by the monkey people called Pakuni. Suppose you found yourself in this strange land and attempted to find out what the morphemes of Paku were. Again, you would collect your data from a native Paku speaker and proceed as the Zorxian did with English. Consider the following data from Paku:

me	‘I’	meni	‘we’
ye	‘you (singular)’	yeni	‘you (plural)’
we	‘he’	weni	‘they (masculine)’
wa	‘she’	wani	‘they (feminine)’
abuma	‘girl’	abumani	‘girls’
adusa	‘boy’	adusani	‘boys’
abu	‘child’	abuni	‘children’
Paku	‘one Paku’	Pakuni	‘more than one Paku’

By examining these words you find that the plural forms end in *-ni* and the singular forms do not. You therefore conclude that *-ni* is a separate morpheme meaning ‘plural’ that is attached as a suffix to a noun.

Case study 3

Here is a more challenging example, but the principles are the same. Look for repetitions and near repetitions of the same word parts, taking your cues from the meanings given. These are words from Michoacan Aztec, an indigenous language of Mexico:

nokali	'my house'	mopelo	'your dog'
nokalimes	'my houses'	mopelomes	'your dogs'
mokali	'your house'	ikwahmili	'his cornfield'
ikali	'his house'	nokwahmili	'my cornfield'
nopelo	'my dog'	mokwahmili	'your cornfield'

We see there are three base meanings: *house*, *dog*, and *cornfield*. Starting with *house* we look for commonalities in all the forms that refer to 'house.' They all contain *kali* so that makes a good first guess. (We might, and you might, have reasonably guessed *kal*, but eventually we wouldn't know what to do with the *i* at the end of *nokali* and *mokali*.) With *kali* as 'house' we may infer that *no* is a prefix meaning 'my,' and that is supported by *nopelo* meaning 'my dog.' This being the case, we guess that *pelo* is 'dog,' and see where that leads us. If *pelo* is 'dog' and *mopelo* is 'your dog,' then *mo* is probably the prefix for 'your.' Now that we think that the possessive pronouns are prefixes, we can look at *ikali* and deduce that *i* means 'his.' If we're right about the prefixes then we can separate out the word for 'cornfield' as *kwahmili*, and at this point we're a-rockin' and a-rollin'. The only morpheme unaccounted for is 'plural.' We have two instances of plurality, *nokalimes* and *mopelomes*, but since we know *no*, *kali*, *mo*, and *pelo*, it is straightforward to identify the plural morpheme as the suffix *mes*.

The end results of our analysis are:

kali	'house'
pelo	'dog'
kwahmili	'cornfield'
no-	'my'
mo-	'your'
i-	'his'
-mes	'plural'

Case study 4

Here is a final example of morphological analysis complicated by some changes in spelling (pronunciation), a bit like the way we spell the indefinite article "a" as either *a* before a consonant or *an* before a vowel in English.

Often the data you are given (or record in the field) are a hodge-podge, like these examples from a Slavic language:

gledati	'to watch'	nazivaju	'they call'
diram	'I touch'	sviranje	'playing (noun)'
nazivanje	'calling (noun)'	gladujem	'I starve'
dirati	'to touch'	kupuju	'they buy'
kupovanje	'buying (noun)'	stanovati	'to live'
sviraju	'they play'	kupujem	'I buy'

gledam	'I watch'	diranje	'touching (noun)'
stanovanje	'living (noun)'	stanujem	'I live'
diraju	'they touch'	gladovanje	'starving (noun)'
nazivati	'to call'	stanuju	'they live'
kupovati	'to buy'	gledaju	'they watch'
gladuju	'they starve'	svirati	'to play'
gladovati	'to starve'	sviram	'I play'
gledanje	'watching (noun)'	nazivam	'I call'

The first step is often merely to rearrange the data, grouping commonalities. Here we see that after (possibly considerable) perusal, the data involve seven stems, which we group by meaning. We also note that there are exactly four forms for each stem (infinitive, I (1st person singular), they (3rd person plural) and the noun form or gerund) and we fold that into the reorganization. We even alphabetize to emphasize the orderliness. Thus rearranged the data appear less daunting:

	touch	starve	watch	buy	call	live	play
Infinitive	dirati	gladovati	gledati	kupovati	nazivati	stanovati	svirati
1 st , Sing.	diram	gladujem	gledam	kupujem	nazivam	stanujem	sviram
3 rd , Plur.	diraju	gladuju	gledaju	kupuju	nazivaju	stanuju	sviraju
Noun	diranje	gladovanje	gledanje	kupovanje	nazivanje	stanovanje	sviranje

Now the patterns become more evident. We hypothesize that in the first column *dir-* is a stem meaning 'touch' and that the suffix *-ati* forms the infinitive; the suffix *-am* is the first-person singular; the suffix *-aju* is the third-person plural; and finally that the suffix *-anje* forms a noun, similar to the suffix *-ing* in English. We need to test our guess and the second column belies our hypothesis, but undaunted we push on and we see that the columns for 'watch,' 'call,' and 'play' work exactly like the column for 'touch,' with stems *gled-*, *naziv-*, and *svir-*.

But columns 'starve,' 'buy,' and 'live' are not cooperating. They follow the pattern for the infinitive (first row) and noun formation (fourth row), and give us stems *gladov-*, *kupov-*, and *stanov-* but something is awry in the second and third row for these three verbs. Instead of *-am* meaning 'I' it appears to be *-em*. (Yes, it could be *-ujem* or even *-jem*, but we stay with the form that's nearest to *-am*.) So the suffix meaning 'I' has two forms, *am/em*, again analogous to the English *a/an* alternation.

But horrors, something is going haywire with the stems in just these three cases and now our effort to rearrange the data pays off. We see fairly quickly that the misbehaving cases are all verbs ending in *ov*. And if we stick with our decision that *-am/-em* means 'I,' then we can hypothesize that the stem alternates pronunciation in certain cases when it ends in *ov*, kind of like English *democrat/democracy*. If we accept this we are forced into the decision that the third-person plural morpheme also has an alternate form, namely *u*, so its two forms are *-aju/-u*.

We may sum up our analysis as follows:

Stems *dir-*, *gled-*, *naziv-*, *svir-* take suffixes *-ati*, *-am*, *-aju*, *-anje*. The verbs ending in *ov* have stems *gladov-*, *kupov-*, *stanov-* when expressed as infinitives with *-ati*, and noun-forms with *-anje*; and stems *gladuj-*, *kupuj-*, *stanuj-* when expressed as 'I' with *-em* or as 'they' with *-u*.

Finally, if we discover in our field work, for example, that *razarati* means ‘to destroy’ then we immediately know that ‘I destroy’ is *razaram*, ‘they destroy’ is *razaraju*, and ‘destruction’ is *razaranje*. Or if we’re told that *darujem* means ‘I gift’ then we deduce that the noun ‘gift’ is *darovanje*, the infinitive ‘to gift’ is *darovati*, and ‘they gift’ is *daruju*.

In chapter 6 we’ll see *why* the “same” morpheme may be spelled or pronounced differently in different contexts, and that the variation, like most grammatical processes, is rule-governed. By following the analytical principles discussed in the preceding four case studies you should be able to solve the morphological puzzles that appear in the exercises.

Summary

Knowing a language means knowing the **morphemes** of that language, which are the elemental units that constitute words. *Moralizers* is an English word composed of four morphemes: *moral* + *ize* + *er* + *s*. When you know a word or morpheme, you know both its **form** (sound or gesture) and its **meaning**; these are inseparable parts of the **linguistic sign**. The relationship between form and meaning is **arbitrary**. There is no inherent connection between them (i.e., the words and morphemes of any language must be learned).

Morphemes may be free or bound. **Free morphemes** stand alone like *girl* or *the*, and they come in two types: **open class**, containing the content words of the language, and **closed class**, containing function words such as *the* or *of*. **Bound morphemes** may be **affixes** or bound roots such as *-ceive*. Affixes may be **prefixes**, **suffixes**, **circumfixes**, or **infixes**. Affixes may be derivational or inflectional. **Derivational affixes** derive new words; **inflectional affixes**, such as the plural affix *-s*, make grammatical changes to words. Complex words contain a **root** around which **stems** are built by affixation. Rules of morphology determine what kind of affixation produces actual words such as *un* + *system* + *atic*, and what kind produces nonwords such as **un* + *system*.

Words have hierarchical structure evidenced by ambiguous words such as *unlockable*, which may be *un* + *lockable* ‘unable to be locked’ or *unlock* + *able* ‘able to be unlocked.’

Some morphological rules are **productive**, meaning they apply freely to the appropriate stem; for example, *re-* applies freely to verbal stems to give words like *redo*, *rewash*, and *repaint*. Other rules are more constrained, forming words like *young* + *ster* but not **smart* + *ster*. Inflectional morphology is extremely productive: the plural *-s* applies freely even to nonsense words. **Suppletive forms** escape inflectional morphology, so instead of **mans* we have *men*; instead of **bringed* we have *brought*.

There are many ways for new words to be created other than affixation. **Compounds** are formed by uniting two or more root words in a single word, such as *homework*. The **head** of the compound (the rightmost word) bears the basic meaning, so *homework* means a kind of work done at home, but often the meaning of compounds is not easily predictable and must be learned as individual lexical items, such as *laughing gas*. **Back-formations** are words created by misinterpreting an affix look-alike such as *-er* as an actual affix, so, for example, the verb *peddle* was formed under the mistaken assumption that peddler was *peddle* + *-er*.

The grammars of sign languages also include a morphological component consisting of a root, derivational and inflectional sign morphemes, and the rules for their combination.

Morphological analysis is the process of identifying form-meaning units in a language, taking into account small differences in pronunciation, so that prefixes *in-* and *im-* are seen to be variants of the “same” prefix in English (cf. *intolerable*, *impeccable*) just as *democrat* and *democrac* are stem variants of the same morpheme, which shows up in *democratic* with its “t” and in *democracy* with its “c.”

References for Further Reading

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Exercises

1. Here is how to estimate the number of words in your mental lexicon. Consult any standard dictionary. (Note that Internet dictionaries may not work for this exercise.)
 - a. Count the number of entries on a typical page. They are usually boldfaced.
 - b. Multiply the number of words per page by the number of pages in the dictionary.
 - c. Pick four pages in the dictionary at random, say, pages 50, 75, 125, and 303. Count the number of words on these pages.
 - d. How many of these words do you know?
 - e. What percentage of the words on the four pages do you know?
 - f. Multiply the words in the dictionary by the percentage you arrived at in (e). You know approximately that many English words.
2. Divide the following words by placing a + between their morphemes. (Some of the words may be monomorphemic and therefore indivisible.)

Example: replaces = re + place + s

- | | |
|-----------------|--------------------|
| a. retroactive | n. airsickness |
| b. befriended | o. bureaucrat |
| c. televise | p. democrat |
| d. margin | q. aristocrat |
| e. endearment | r. plutocrat |
| f. psychology | s. democracy |
| g. unpalatable | t. democratic |
| h. holiday | u. democratically |
| i. grandmother | v. democratization |
| j. morphemic | w. democratize |
| k. mistreatment | x. democratizer |
| l. deactivation | y. democratizing |
| m. saltpeter | z. democratized |

3. Match each expression under A with the one statement under B that characterizes it.

- | A | B |
|---------------|---|
| a. noisy crow | (1) compound noun |
| b. scarecrow | (2) root morpheme plus derivational prefix |
| c. the crow | (3) phrase consisting of adjective plus noun |
| d. crowlike | (4) root morpheme plus inflectional affix |
| e. crows | (5) root morpheme plus derivational suffix |
| | (6) grammatical morpheme followed by lexical morpheme |

4. Write the one proper description from the list under B for the italicized part of each word in A.

- | A | B |
|----------------|-------------------------|
| a. terrorized | (1) free root |
| b. uncivilized | (2) bound root |
| c. terrorize | (3) inflectional suffix |
| d. lukewarm | (4) derivational suffix |
| e. impossible | (5) inflectional prefix |
| | (6) derivational prefix |
| | (7) inflectional infix |
| | (8) derivational infix |

5. Part One:

Consider the following nouns in Zulu and proceed to look for the recurring forms.

umfazi	'married woman'	abafazi	'married women'
umfani	'boy'	abafani	'boys'
umzali	'parent'	abazali	'parents'
umfundisi	'teacher'	abafundisi	'teachers'
umbazi	'carver'	ababazi	'carvers'
umlimi	'farmer'	abalimi	'farmers'
umdlali	'player'	abadlali	'players'
umfundi	'reader'	abafundi	'readers'

- a. What is the morpheme meaning ‘singular’ in Zulu?
- b. What is the morpheme meaning ‘plural’ in Zulu?
- c. List the Zulu stems to which the singular and plural morphemes are attached, and give their meanings.

Part Two:

The following Zulu verbs are derived from noun stems by adding a verbal suffix.

fundisa	‘to teach’	funda	‘to read’
lima	‘to cultivate’	baza	‘to carve’

- d. Compare these words to the words in section A that are related in meaning, for example, *umfundisi* ‘teacher,’ *abafundisi* ‘teachers,’ *fundisa* ‘to teach.’ What is the derivational suffix that specifies the category verb?
 - e. What is the nominal suffix (i.e., the suffix that forms nouns)?
 - f. State the morphological noun formation rule in Zulu.
 - g. What is the stem morpheme meaning ‘read’?
 - h. What is the stem morpheme meaning ‘carve’?
6. Sweden has given the world the rock group ABBA, the automobile Volvo, and the great film director Ingmar Bergman. The Swedish language offers us a noun morphology that you can analyze with the knowledge gained reading this chapter. Consider these Swedish noun forms:

en lampa	‘a lamp’	en bil	‘a car’
en stol	‘a chair’	en soffa	‘a sofa’
en matta	‘a carpet’	en tratt	‘a funnel’
lampor	‘lamps’	bilar	‘cars’
stolar	‘chairs’	soffor	‘sofas’
mattor	‘carpets’	trattar	‘funnels’
lampan	‘the lamp’	bilen	‘the car’
stolen	‘the chair’	soffan	‘the sofa’
mattan	‘the carpet’	tratten	‘the funnel’
lamporna	‘the lamps’	bilarna	‘the cars’
stolarna	‘the chairs’	sofforna	‘the sofas’
mattorna	‘the carpets’	trattarna	‘the funnels’

- a. What is the Swedish word for the indefinite article *a* (or *an*)?
- b. What are the two forms of the plural morpheme in these data? How can you tell which plural form applies?
- c. What are the two forms of the morpheme that make a singular word definite, that is, correspond to the English article *the*? How can you tell which form applies?
- d. What is the morpheme that makes a plural word definite?
- e. In what order do the various suffixes occur when there is more than one?
- f. If *en flicka* is ‘a girl,’ what are the forms for ‘girls,’ ‘the girl,’ and ‘the girls’?
- g. If *bussarna* is ‘the buses,’ what are the forms for ‘buses’ and ‘the bus’?

7. Here are some nouns from the Philippine language Cebuano.

sibwano	'a Cebuano'
ilokano	'an Ilocano'
tagalog	'a Tagalog person'
inglis	'an Englishman'
bisaja	'a Visayan'
binisaja	'the Visayan language'
ininglis	'the English language'
tinagalog	'the Tagalog language'
inilokano	'the Ilocano language'
sinibwano	'the Cebuano language'

- What is the exact rule for deriving language names from ethnic group names?
 - What type of affixation is represented here?
 - If *suwid* meant 'a Swede' and *italo* meant 'an Italian,' what would be the words for the Swedish language and the Italian language?
 - If *finuranso* meant 'the French language' and *inunagari* meant 'the Hungarian language,' what would be the words for a Frenchman and a Hungarian?
8. The following infinitive and past participle verb forms are found in Dutch.

Root	Infinitive	Past Participle	
wandel	wandelen	gewandeld	'walk'
duw	duwen	geduwd	'push'
stofzuig	stofzuigen	gestofzuigd	'vacuum-clean'

With reference to the morphological processes of prefixing, suffixing, infixing, and circumfixing discussed in this chapter and the specific morphemes involved:

- State the morphological rule for forming an infinitive in Dutch.
 - State the morphological rule for forming the Dutch past participle form.
9. Below are some sentences in Swahili:

mtoto	amefika	'The child has arrived.'
mtoto	anafika	'The child is arriving.'
mtoto	atafika	'The child will arrive.'
watoto	wamefika	'The children have arrived.'
watoto	wanafika	'The children are arriving.'
watoto	watafika	'The children will arrive.'
mtu	amelala	'The person has slept.'
mtu	analala	'The person is sleeping.'
mtu	atalala	'The person will sleep.'
watu	wamelala	'The persons have slept.'
watu	wanalala	'The persons are sleeping.'
watu	watalala	'The persons will sleep.'
kisu	kimeanguka	'The knife has fallen.'
kisu	kinaanguka	'The knife is falling.'
kisu	kitaanguka	'The knife will fall.'

visu	vimeanguka	‘The knives have fallen.’
visu	vinaanguka	‘The knives are falling.’
visu	vitaanguka	‘The knives will fall.’
kikapu	kimeanguka	‘The basket has fallen.’
kikapu	kinaanguka	‘The basket is falling.’
kikapu	kitaanguka	‘The basket will fall.’
vikapu	vimeanguka	‘The baskets have fallen.’
vikapu	vinaanguka	‘The baskets are falling.’
vikapu	vitaanguka	‘The baskets will fall.’

One of the characteristic features of Swahili (and Bantu languages in general) is the existence of noun classes. Specific singular and plural prefixes occur with the nouns in each class. These prefixes are also used for purposes of agreement between the subject noun and the verb. In the sentences given, two of these classes are included (there are many more in the language).

a. Identify all the morphemes you can detect, and give their meanings.

Example: -toto ‘child’
m- prefix attached to singular nouns of Class I
a- prefix attached to verbs when the subject is a singular noun of Class I

Be sure to look for the other noun and verb markers, including tense markers.

- b. How is the verb constructed? That is, what kinds of morphemes are strung together and in what order?
- c. How would you say in Swahili:
- (1) “The child is falling.”
 - (2) “The baskets have arrived.”
 - (3) “The person will fall.”

10. Part One

We mentioned the morphological process of reduplication—the formation of new words through the repetition of part or all of a word—which occurs in many languages. The following examples from Samoan illustrate this kind of morphological rule.

manao	‘he wishes’	mananao	‘they wish’
matua	‘he is old’	matutua	‘they are old’
malosi	‘he is strong’	malolosi	‘they are strong’
punou	‘he bends’	punonou	‘they bend’
atamaki	‘he is wise’	atamamaki	‘they are wise’
savali	‘he travels’	pepese	‘they sing’
laga	‘he weaves’		

- a. What is the Samoan for:
- (1) ‘they weave’
 - (2) ‘they travel’
 - (3) ‘he sings’

- b. Formulate a general statement (a morphological rule) that states how to form the plural verb form from the singular verb form.

Part Two

Consider these data from M'ngong (spoken in Vietnam) with some simplifications for this exercise: (The ? is a sound called a glottal stop.)

dang	'hard'	da dang	'a little hard'
kloh	'clean'	klo kloh	'a little clean'
ndreh	'green'	ndre ndreh	'light green'
guh	'red'	go? guh	'reddish'
duh	'hot'	do? duh	'luke warm'
kat	'cold'	ka kat	'chilly'

1. What kind of morphological process do you observe to achieve the semantic effect of weakening an adjective?
 2. If *thong* meant 'light,' how would M'ngong express 'kind of light'?
 3. If *khul* meant 'evasive,' how would M'ngong express 'a little shifty'?
 4. If *lo?* meant 'a little paunchy,' how would M'ngong express 'fat'?
 5. If *kho khot* meant 'a little crazy,' how would M'ngong express 'crazy'?
 6. Formulate a general statement (a morphological rule) of how M'ngong speakers weaken certain kinds of adjectives. To be completely accurate and account for the given data, you will have to take spelling (pronunciation) into account.
11. Following are listed some words followed by incorrect (humorous?) definitions:

Word	Definition
stalemate	'husband or wife no longer interested'
effusive	'able to be merged'
tenet	'a group of ten singers'
dermatology	'a study of derms'
ingenious	'not very smart'
finesse	'a female fish'
amphibious	'able to lie on both sea and land'
deceptionist	'secretary who covers up for his boss'
mathemagician	'Bernie Madoff's accountant'
sexcedrin	'medicine for mate who says, "sorry, I have a headache"'
testostoroni	'hormonal supplement administered as pasta'
aesthetominophen	'medicine to make you look beautiful'
hitalavista	'say goodbye to those allergies'
aquapella	'singing in the shower'
melancholy	'dog that guards the cantaloupe patch'
plutocrat	'a dog that rules'

Give some possible reasons for the source of these silly “definitions.” Illustrate your answers by reference to other words or morphemes. For example, *stalemate* comes from *stale* meaning ‘having lost freshness’ and *mate* meaning ‘marriage partner.’ When mates appear to have lost their freshness, they are no longer as desirable as they once were.

12. a. Draw tree diagrams for the following words: *construal*, *disappearances*, *irreplaceability*, *misconceive*, *indecipherable*, *redarken*.
 b. Draw two tree diagrams for *undarkenable* to reveal its two meanings: ‘able to be less dark’ and ‘unable to be made dark.’
13. There are many asymmetries in English in which a root morpheme combined with a prefix constitutes a word, but without the prefix is a nonword. A number of these are given in this chapter.
 - a. Following is a list of such nonword roots. Add a prefix to each root to form an existing English word.

Words	Nonwords
_____	*descript
_____	*cognito
_____	*beknownst
_____	*peccable
_____	*promptu
_____	*plussed
_____	*domitable
_____	*nomer
_____	*crat

- b. There are many more such multimorphemic words for which the root morphemes do not constitute words by themselves. Can you list five more?
14. We have seen that the meaning of compounds is often not revealed by the meanings of their composite words. Crossword puzzles and riddles often make use of this by providing the meaning of two parts of a compound and asking for the resulting word. For example, *infielder* = diminutive/cease. Read this as asking for a word that means ‘infielder’ by combining a word that means ‘diminutive’ with a word that means ‘cease.’ The answer is *shortstop*. See if you can figure out the following:
 - a. sci-fi TV series = headliner/journey
 - b. campaign = farm building/tempest
 - c. at-home wear = tub of water/court attire
 - d. kind of pen = formal dance/sharp end
 - e. conservative = correct/part of an airplane

15. Consider the following dialogue between parent and schoolchild:

PARENT: When will you be done with your eight-page book report, dear?
 CHILD: I haven’t started it yet.

- PARENT: But it's due tomorrow, you should have begun weeks ago. Why do you always wait until the last minute?
- CHILD: I have more confidence in myself than you do.
- PARENT: Say what?
- CHILD: I mean, how long could it possibly take to read an eight-page book?

The humor is based on the ambiguity of the compound *eight-page book report*. Draw two trees similar to those in the text for *top hat rack* to reveal the ambiguity.

16. One of the characteristics of Italian is that articles and adjectives have inflectional endings that mark agreement in gender (and number) with the nouns they modify. Based on this information, answer the questions that follow the list of Italian phrases.

un uomo	'a man'
un uomo robusto	'a robust man'
un uomo robustissimo	'a very robust man'
una donna robusta	'a robust woman'
un vino rosso	'a red wine'
una faccia	'a face'
un vento secco	'a dry wind'

- What is the root morpheme meaning 'robust'?
 - What is the morpheme meaning 'very'?
 - What is the Italian for:
 - 'a robust wine'
 - 'a very red face'
 - 'a very dry wine'
17. Following is a list of words from Turkish. In Turkish, articles and morphemes indicating location are affixed to the noun.
- | | | | |
|---------|---------------|-----------|-----------------|
| deniz | 'an ocean' | evden | 'from a house' |
| denize | 'to an ocean' | evimden | 'from my house' |
| denizin | 'of an ocean' | denizimde | 'in my ocean' |
| eve | 'to a house' | elde | 'in a hand' |
- What is the Turkish morpheme meaning 'to'?
 - What kind of affixes in Turkish correspond to English prepositions (e.g., prefixes, suffixes, infixes, free morphemes)?
 - What would the Turkish word for 'from an ocean' be?
 - How many morphemes are there in the Turkish word *denizimde*?
18. The following are some verb forms in Chickasaw, a member of the Muskogean family of languages spoken in south-central Oklahoma.⁵ Chickasaw is an endangered language (see chapter 8). Currently, there are only about 100 speakers of Chickasaw, most of whom are over 70 years old.

⁵The Chickasaw examples are provided by Pamela Munro.

sachaaha	'I am tall'
chaaha	'he/she is tall'
chichaaha	'you are tall'
hoochaaha	'they are tall'
satikahbi	'I am tired'
chitikahbitok	'you were tired'
chichchokwa	'you are cold'
hopobatok	'he was hungry'
hoohopobatok	'they were hungry'
sahopoba	'I am hungry'

- a. What is the root morpheme for the following verbs?
 (1) 'to be tall' (2) 'to be hungry'
- b. What is the morpheme meaning:
 (1) past tense
 (2) 'I'
 (3) 'you'
 (4) 'he/she'
- c. If the Chickasaw root for 'to be old' is *sipokni*, how would you say:
 (1) 'You are old'
 (2) 'He was old'
 (3) 'They are old'
19. The language Little-End Egglish, whose source is revealed in exercise 14, chapter 8, exhibits the following data:
- | | | | | | |
|-----|-----------------|---------|----------------|---------|------------------|
| kul | 'omelet' | zkulego | 'my omelet' | zkulivo | 'your omelet' |
| vet | 'yolk (of egg)' | zvetego | 'my yolk' | zvetivo | 'your yolk' |
| rok | 'egg' | zrokego | 'my egg' | zrokivo | 'your egg' |
| ver | 'egg shell' | zverego | 'my egg shell' | zverivo | 'your egg shell' |
| gup | 'soufflé' | zgupego | 'my soufflé' | zgupivo | 'your soufflé' |
- a. Isolate the morphemes that indicate possession, first-person singular, and second person (we don't know whether singular, plural, or both). Indicate whether the affixes are prefixes or suffixes.
- b. Given that *vel* means egg white, how would a Little-End Egglisher say 'my egg white'?
- c. Given that *zpeivo* means 'your hard-boiled egg,' what is the word meaning 'hard-boiled egg'?
- d. If you knew that *zvetgogo* meant 'our egg yolk,' what would be likely to be the morpheme meaning 'our'?
- e. If you knew that *borokego* meant 'for my egg,' what would be likely to be the morpheme bearing the benefactive meaning 'for'?
20. Here are some data from the indigenous language Zoque spoken in Mexico. (The ? is a glottal stop.) Hint: Rearrange the data as in the Slavic example at the end of the chapter.

sohsu	'he/it cooked'	cicpa	'he/it tears
witpa	'he/it walks'	kenu	'he/it looked'
sikpa	'he/it laughs'	cihcu	'he/it tore'
ka?u	'he/it died'	sospa	'he/it cooks'
kenpa	'he/it looks'	wihtu	'he/it walked'
sihku	'he/it laughed'	ka?pa	'he/it dies'

- a. What is the past tense suffix?
 - b. What is the present tense suffix?
 - c. This language has some verb stems that assume two forms. For each verb (or stem pair), give its meaning and form(s).
 - d. What morphological environment determines which of the two forms occurs, when there are two?
21. **Research project:** Consider what are called “interfixes” such as *-o-* in English *jack-o-lantern*. They are said to be meaningless morphemes attached to two morphemes at once. What can you learn about that notion? Where do you think the *-o-* comes from? Are there languages other than English that have interfixes?