ENG 235: Morphology and Syntax of English — Fall Semester 2004: TUE/FRI 13.30-15.00
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CLASS 3-4: BUILDING WORDS

SOME TERMINOLOGY: MORPH & CO.

A **morpheme** is the *smallest string of sounds carrying information about meaning/function*.

• **free morphemes** can stand on their own, i.e. be words
• **bound morphemes** need to attach to something

(1) a. house
b. house-s

• morphemes that are not words (i.e. those that are bound) are called **affixes**
• depending on their position, we have a ***prefix, suffix, infix, circumfix*** *(?)*
• affixes can be **category-sensitive**

(2) a. polite (adjective) – polite*ness* (noun)
b. drive (verb) – driv*er* (noun)

We can say that affixes attach to **stems** and that the most embedded stem in a complex word is called the **root** (i.e. it is a simple stem). Note that while **all affixes are bound** (bound morphemes), **not all roots are free** morphemes, some can be bound as well.

(3) a. leg-ible, aud-ience, magn-ify (associated with **Romance roots**)
b. cran-berry, huckle-berry, gorm-less (**cranberry morphemes**)

What is a word? We might now have a better answer than last class: A word is the **smallest free form** found in language. And yes, we can still distinguish **simple** from **complex** words.

• **roots belong to lexical categories** (i.e. nouns, verbs, adjectives, prepositions)

(4) a. care (verb, root) – care*ful* (adjective)
b. careful (adjective, stem) – careful*ness* (noun)

MORE TERMINOLOGY: THE ALLOMORPH

Morphemes may come in **more than one form**:

(5) a. hand-s, dog-s, nun-s [z]
b. cat-s, dock-s, trap-s [s]

The **plural morpheme *–s*** is pronounced differently in (5a) and (5b). Is it the **same or two different morphemes**? It is **one morpheme with two different realizations** depending on the phonological environment. It is [-s] after [t], [k], [p] and [-z] after [d], [g], [n] — What is it that makes these two sets different? **The first is [–voice], the second [+voice].**

(6) a. [Z] → [s] / [–voice] ____
b. [Z] → [z] / [+voice] ____

Vowels can be said to be inherently voiced, so they take the [z]-realization as well: *day-s*.

One further possibility of realizing the plural morpheme is **after sounds like [-s], [-z]**:

(7) bus-es, box-es, maze-s [ɪz] (or [ɛz])

(6) c. [Z] → [ɪz] / [coronal, fricative] ____

The rule in (6c) should actually **apply before** those in (6a,b). Why? Because if in the case of *bus* for example, where *–s* is [-voice], we apply the rule in (6a) that would give us the plural morpheme *–s* only, so we have no way of accounting for the presence of [ɪz]. In other words, we'll get the wrong result. **(Some sibilants are a subset of all voiceless consonants.)**

(8) *Allomorphic English plural rule*
[Z] → [ɪz] / [coronal, fricative] ____
[s] / [-voice] ____
[z] / [+voice] ____

The three different realizations of the plural morpheme [Z] are called **allomorphs**. In cases **allomorphs are predicted by the phonological environment** (this is relevant for the relation between morphology and phonology, which we will not consider in this course).

Something very similar can be said for the **past tense morpheme** *-ed*: [ɪd/ɛd], [d], [t].

But not only phonology determines allomorphy: the **lexicon** and **grammar** do as well.

(9) a. laugh, cliff — laughs, cliffs [s]
b. wife, loaf — *wifes, *loafs *[s]
c. — wives, loaves [z]

(10) *my wife's job* ➲ 's: [s]

It looks like the "word" *wife* comes in two allomorphs as well: **free *wife*** and **bound *wive***.

Lastly, it must be pointed out that although intuitive, **correlating morphemes with meaning** is not (always) accurate. (cf. "Morphemes are the smallest unit pairing sound and meaning.") Recall that we defined morphemes in terms of meaning **or** function — for a good reason.

(11) a. return, restore… [rɪ], [rɛ]
b. re-turn, re-store… [rɪ], *[rɛ]

(12) a. involve, revolve
b. #involution / involvement, revolution / * revolvement

WORDS AND GRAMMAR

Some suffixes are **dependent on the grammatical context**, others are not:

(13) a. endure-**s**, endur-**ed**, endur-**ing** [***inflection***: trade in function]
b. endur-**ance**, endur-**able**, endur-**er** [***derivation***: trade in meaning]

The forms in (13a) are all inflections of the verb *endure*. We capture their relation by calling the underlying form a **lexeme**, in this case ENDURE (which intuitively is the most basic form).

(14) a. The banks in Cyprus have funny opening hours. [noun$_1$ BANK]
b. We all sit on the banks and wait. [noun$_2$ BANK]
c. Everyone banks on something. [verb BANK]

REGULAR AND IRREGULAR INFLECTION

(15) a. walk – walk-ed / lip – lips
b. go – went / tooth – teeth

Regular inflection comes in different allomorphs of the same underlying inflectional morpheme. **Irregular inflection**, on the other hand, is often an instance of **suppletion**: *distinct roots that stand in suppletive relationship as representatives of one lexeme.*

(16) pianist-**s**, ox-**en**, formul-**ae**, cact-**i**

As we're not dealing with **roots**, it's easier to use the notion '**suffix**' rather than 'morpheme'.

FORMS OF LEXICAL CATEGORIES

Nominal inflection in English is pretty much restricted to **number**. The suffix *–s* is a **plural morpheme** (for **count nouns**) alongside which we can postulate a **zero plural** or **zero suffix** *–Ø* (for some domesticated or hunted animals). Others are formed with a **periphrastic form**.

Determiners and **pronouns** don't fit into the **open class**, but there is something interesting in this connection we can say: e.g. THAT surfaces as *that* or *those*, or SHE as *she/her* and so on. **Case** is marked only on pronouns in English and again the notion of lexeme comes in handy.

Verbal inflection marks **person**, **number**, **tense**. In English, we really only get third person singular *–s* (past *–ed*, participial *–ing* / *-en*), but the lexeme BE has a fuller paradigm. If two or more forms of some lexeme are systematically used elsewhere, we speak of **syncretism**.

Adjectives in English only mark the dimension of **comparison** (for some, periphrastically).

PREAMBLE: MORE DEFINITIONS

Negative definition of "**derivational**": *Suffixes that are not inflectional must be derivational.*

The **base** is *a partially complete word form to which a suffix attaches*.
• one result is an **inflected word form**, the other a **new lexeme** (derivational)
• the base for an affixation process is what remains when an affix is **removed**

DERIVATIONS: THE BASICS

Derivational morphology deals with **word formation** (often resulting in a **new word class**):

(17) a. happy, *un*happy, happi*ness*, *un*happi*ness*
b. care, care*less*, care*less*ness, *care*ness*less
c. educate, educat*ion*; generate, generat*ion*
d. custom, custom*ize*, custom*iz*ation

Affixes attach to roots or stems and form new words; better to say: they **attach to bases**. Sometimes we may not see an overt morpheme (*zero-derivation*). This is called **conversion**:

(18) cut (N) – cut (V); fish (N) – fish (V)

Morphemes seem to come in a **fixed order**, so for example we have *prefixes*, *suffixes* etc. However, they also seem to **care *what* they attach to**:

(19) a. quick – quick*ly*; soft – soft*ly*; care – *care*ly* *-ly*: Adj ⇨ Adv
b. quick – quick*ness*; soft – soft*ness*; care – *care*ness* *-ness*: Adj ⇨ N
c. care – care*less* – careless*ness* (*quick*less*, *soft*less*) *-less*: N ⇨ Adj
d. joy – *en*joy; danger – *en*danger *en-*: N ⇨ V

So *-ly* attaches to adjectives and forms adverbs, *-ness* attaches to adjectives and forms nouns, *en-* attaches to nouns and gives us verbs. In all the above examples the meaning of the whole is determined by the meaning of the parts, **compositionality** (but this is not always the case).

(20) a. amuse – amuse*ment*, enjoy – enjoy*ment*
b. cure – cur*able* – *in*cur*able*

• **N ⇨ N**: 'small X', 'female X', inhabitant of X', 'state of being an X', 'devotee of/expert on X'
• **X ⇨ N**: *-ity*, *-ness*, *-ism* — *-ance/ence*, *-ment*, *-ing*, *-ion/tion/ation*, *-al*, *-er* — stress, final C, V
• **A ⇨ A**: *un-* + *-able*, *-ful* (English/Germanic) — *in-* + *-ible*, *-al* (Latinate/Romance)
• **X ⇨ A**: passive/participle *-ed*, *-en*, *-ing* (test: *very*) — *-able*, *-ent/ant*, *-ive* — *-ful*, *-less*, *-al*, *-ish*
• **V ⇨ V**: *re-*, *un-*, *de-*, *dis-* (all through prefixation!) — V-change: transitivity (causativity)
• **X ⇨ V**: *de-*, *-ise/ize*, *-fy/ify* — final voicing/V-change — *en-*/*em-* (plus others, e.g. *-en*)

COMPOUNDS: AN OVERVIEW

A **compound** is a *word that contains more than one root*.

(21) a. high schóol, black bóard, green hóuse, white hóuse, toy fáctory [NP phrases]
b. híghschool, blácкboard, gréen house, Whíte House, tóy factory [compounds]

• compound **verbs**: VV, NV, AV, PV (these are all **right-headed**)
• compound **adjectives**: NA, AA, PA **(?*VA**: *fail-safe*, **sing-happy*)
• compound **nouns**: VN, NN, AN, PN (main **stress** on left, right-headed)

Headless compounds are also known as **exocentric** ("center outside").
- *faintheart* (not about a heart or a faint), *pickpocket*, *killjoy*, *cutpurse*
- VP-N: *take-off*, *sell-out*, *wrap-in*, *sit-in*; PN-A: *overland, in-house, offshore, downmarket*

Right-headed (most English) & **left-headed** (*attorney general*) compounds are **endocentric**.

COMPOUNDS: SOME PROPERTIES

Compounding is **recursive**.

(22) a. film society
b. student film society
c. student film society committee

Compounds have a **constituent structure** (allowing disambiguation).

(23) a. student [film society]
b. [student film] society

Elements of compounds are **related** to each other: head-modifier, predicate-argument, apposition.

(24) a. film society, hand-wash, footpath …
b. truck driver, language teacher …
c. learner-driver, mother-child …

Compounds can be **endocentric** or **exocentric**:

(25) a. film society, truck driver …
b. pickpocket, push up …

Lack of referential properties of the non-head:

(26) a. film society (no reference to specific film)
b. truck driver (no reference to a specific truck)

Compounds show **morphological integrity**: they cannot be split up by other elements.

PRIMARY (ROOT) VS. SECONDARY (VERBAL, SYNTHETIC) COMPOUNDS

Primary compounds are formed with simple words, e.g. *greenhouse, postal order*.
Secondary compounds have a complex word as their head, e.g. *truck driver, truck driving*.

What counts as a synthetic compound?

- The non-head is an **argument**: *truck driver, slum clearance*…
- Perhaps passive **participles**: *hand-made, moth-eaten*…
- Perhaps compounds based on **adjectives**: *machine readable*…

Properties of synthetic compounds:

1. The verb's **internal argument** is satisfied by the non-head: drive a truck – truck driver
2. The **subject** can never be the non-head: *child driver (a child who drives)
3. The non-head could be an **adjunct**: act fast – fast acting, eaten by moths – moth eaten
4. The heads of synthetic compounds inherit the **argument structure** of the verb

RELATED ISSUES: BLENDS, ACRONYMS, PHRASALS

Did you know... *lord* = *loaf* 'bread' + *warden* 'guardian', *woman* = *wife* 'female' + *mon* 'person'

Blends : *smoke* + *fog* = *smog*

Acronyms : UCY = *U*niversity of *CY*prus, *S*kin*h*eads *a*gainst *R*acial *P*rejudice = SHARP
- distinction: *initialisms* vs. *reverse acronyms*

Eponyms : *guy*, *spartan, kleenex*, *atlas*
- based on *personal/geographical/commercial* names, literature, folklore, or mythology

Shortening: *influenza* ⇨ *flu*

Combining forms : *anthrop(o) + (o)logy*

Phrasal words : *jack-in-the-box* (**jacks-in-the-box*, **people-in-the-street — devoted to syntax*)
- only (?) occurrence of left-headed word forms in English? (*attorney general* and so on)

THE STRUCTURE OF WORDS

Based on **structural properties**, we can talk better about possibilities and generalizations.

compounds: [[non-head] head]

derivations: [$_3$prefix- [[[ROOT] -suffix$_1$] -suffix$_2$]]
[*BASE$_1$*]
[*BASE$_2$*]
[*BASE$_3$*]

inflections: [[[[[ROOT] -suffix$_D$] -suffix$_D$] -suffix$_I$] *-suffix$_D$]

We see structure everywhere, and given that word formation is the result of organized processes, it shouldn't come as a surprise to see **structure on the word level**. Just as phrase structure rules tell us which elements combine to form phrases on the sentence level, here too we have **rules**: the morphological rules that create word forms (roots, bases, affixes).

The **simplest structure** is that of a **simple word** giving its word class or category:

(27) a. N — morphology b. V — kill c. A — black d. P — on

(28) a. [morphology]$_N$ b. [kill]$_V$ c. [black]$_A$ d. [on]$_P$

How do we then **derive new word forms**? By assuming that affixes have a category too, in other words: **all morphemes are heads** (cf. discussion on the **lexical entry** for roots/affixes).

(29) a. [[*morphologi*]$_N$ *-cal*]$_A$ b. [[*kill*]$_V$ *-er*]$_N$ c. [*black*]$_A$ *-en*]$_V$

The same goes for **more complex derivations**, very similar to phrase structure rules:

(31) a. [[[*de-* [[*mystifi-*]$_V$ *-(c)ation*]$_N$]$_N$ *-al*]$_A$ *-ism*]$_N$
b. [*un-* [[grace]$_N$ *-ful*]$_A$]$_A$
c. *[[*un-* [*grace*]$_N$]$_N$ *-ful*]$_A$

- **compounds**, too, can be represented this way — and **ambiguities** can be dissolved
- **bracketing paradox**: a derivational suffix attaches to a phrase, not to a word or root.

*Always bear in mind **rules &regularities** (which kind of affix goes with which word class).*

EXERCISES

ENGLISH WORD DIVISION

1. Analyze the following words into morphs using the model given below:

	Eample:	*inequality*	Prefix(es) in-	Root Suffix(es) equal -ity
(a)	hospitalization			
(b)	invisibly			
(c)	uninteresting			
(d)	undercooked			
(e)	transcontinental			
(f)	ungrammatical			
(g)	reinforcement			
(h)	prototypical			
(i)	unforgettable			
(j)	impropriety			
(k)	disfunctional			
(l)	inconsiderate			
(m)	postcolonial			
(n)	unlikelihood			
(o)	relationship			
(p)	asymmetrical			
(q)	hypersensitivity			
(r)	unfriendliness			
(s)	interdependence			
(t)	monotheism			

2. Is *-ly* an inflectional or a derivational affix?

Like an inflectional affix, it seems to attach to many (though not all) the members of the class of adjective, as in *quickly, helpfully, sadly, regretably, softly, sharply, foolishly*. If *-ly* is an inflectional suffix marking the grammatical category adverb, then it should meet the following criteria for inflectional suffixes:

(a) never change the part of speech of a root,
(b) follow, not precede, any derivational suffixes,
(c) affix to virtually any member of the category adjective.

Does *-ly* meet these criteria? Try to think of examples which violate these principles.

WRITING MORPHEMIC RULES

1. Examine the following past tense forms in English:

hated	*pulled*	*roared*	*walked*
raided	*opened*	*hugged*	*pushed*
faded	*groomed*	*robbed*	*missed*
fitted	*mowed*	*bruised*	*hoped*
mated	*cried*	*loved*	*fetched*
loaded	*paid*	*judged*	*laughed*

(a) Determine the allomorphs of this inflectional suffix.
(b) Determine the conditioning environments for each of the allomorphs.
(c) Decide on the underlying (or "elsewhere") form of this morpheme from which the other allomorphs are derived. For what reasons did you choose this particular form as base?
(d) Write a morphemic rule.
(e) Consider the following past tense forms. How are they conditioned? How are they realized?

sang	*bought*	*cut*	*went*
rang	*fought*	*put*	*were*

2. Consider the following words:

illegal	*ineligible*	*inactive*	*imbibe*
irrelevant	*intolerant*	*indeterminate*	*immature*
impossible	*insecure*	*illogical*	*irregular*
immoral	*infamous*	*imbalance*	*injudicious*
impatient	*injury*	*ingrate*	*incongruous*

(a) Determine the allomorphs of this derivational prefix.
(b) Determine the conditioning factors for each of the allomorphs.
(c) Decide on the underlying (or "elsewhere") form of this morpheme from which the other allomorphs are derived. Justify the base form.
(d) Write a morphemic rule.
(e) State the meaning of the morpheme.
(f) Why are the forms *ignoble* and *ignominious,* which presumably contain the same prefix, a problem? Try to account for this problem. (Hint: Look up the etymologies of the words.)

3. Consider the following words:

collect	*cohabit*	*collide*
correct	*coalesce*	*corrode*
connect	*collate*	*confess*
commute	*commend*	*cohere*
combat	*contend*	*coexist*
compute	*consent*	*coincide*
compare	*condemn*	

(a) Determine the allomorphs of this derivational prefix.
(b) Write a morphemic rule specifying underlying form, allomorphs, and environments.
(c) State the meaning of the morpheme, if possible.

4. Consider the following pairs of words:

sign	*signature*
design	*designation*
resign	*resignation*

(a) What is the root allomorphy exhibited by all of the forms?
(b) Write a morphemic rule for the first set of words.

DERIVATIONAL PREFIXES AND SUFIXES

1. Sort the suffixes in the words below according to their class-changing function.

The categories include the following: [There are two examples of each suffix.]

(a) N > N
(b) V > N
(c) A > N
(d) N/A > V
(e) N > A
(f) V > A
(g) N/A > Adv

broaden	*syntactic*	*width*	*socialist*
absorbent	*falsehood*	*closure*	*straighten*
rhetorician	*clockwise*	*refusal*	*vaccinate*
gangster	*stardom*	*warmth*	*hopeless*
twofold	*trial*	*accidental*	*selfish*
advisory	*likelihood*	*friendless*	*politician*
idealist	*mobster*	*kingdom*	*facilitate*
flippant	*contradictory*	*boyish*	*seizure*
manifold	*stepwise*	*thankless*	*global*
historic	*penniless*		

2. Can you think of a reason why *-en* may attach to some adjectives, but not to others?

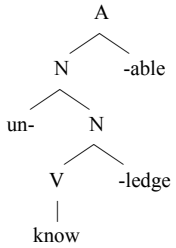
blacken	*broaden*	*stiffen*	*ripen*
deafen	*tighten*	*soften*	*loosen*
**thinen*	**longen*	**slimen*	
**nearen*	**slowen*	**narrowen*	
**highen*	**holyen*	**noblen*	

3. Can you think of a reason why *-ed* may attach to some nouns, but not to others?

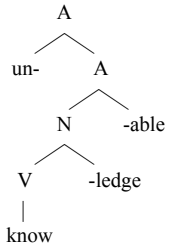
brown-haired	*kind-hearted*	*low-spirited*
left-handed	*narrow-minded*	*strong-headed*
**brown-coated*	**heavy-pursed*	**long-skirted*
**one-childed*	**two-catted*	**silly-hatted*

4. Which is the proper derivation of *unknowledgeable*? Explain.

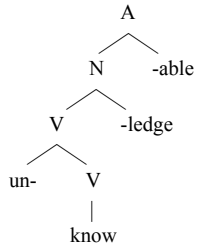
(a)



(b)



(c)



PREFIXATION

1. Consider the following words:

disbelief	*dishonorable*	*dislike*
discomfort	*dispassionate*	*disconnect*
disharmony	*dismissive*	*disclose*
disorder	*disgraceful*	*disinfect*
displeasure	*disorderly*	*disown*
dishonest	*dissimilar*	*discontinuous*
discharge	*disobey*	*distrust*

(a) What kinds of bases does the prefix *dis-* attach to? Give an example of each.
(b) What kinds of roots does the prefix *dis-* attach to? Explain.
(c) Is it a class-maintaining or class-changing prefix?
(d) What are the two meanings of the prefix? Name and give an example from the list above of each of the two meanings.
(e) In addition to derivation, what process of word formation is involved in the formation of the following words?

disarm	*distrust*	*dismember*	*disfigure*
disband	*discolor*	*discourage*	*disbar*

(f) What problem do the following words pose for morphological analysis? Explain.

discern	*disgust*	*dissipate*	*disburse*
disparage	*dismantle*	*dispel*	*discreet*

(g) Would you say that the following words contain the *dis*-prefix or a different one? Explain.

denude	*deforest*	*demerit*	*declassify*
deform	*degrade*	*denounce*	*decode*
detract	*deflower*	*deflect*	*defrost*

(h) Analyze the following words into morphs and label each morph as R (=root), DP (=derivational prefix), DS (=derivational suffix), and IS (=inflectional suffix). Specify the grammatical function of the affixes and the part of speech of the root.

Ex.: DISCOURAGEMENT *dis-* (DP) + *courage* (R – noun) + *-ment* (DS – nominalizer)

disheartening *disproportionately* *disqualification* *disenchantments* *disinterested*

(i) Draw a tree diagram showing the derivation of the word *disreputable*.

2. Consider the follow words:

antisocial	*antibacterial*	*antihistamine*
antibody	*antinuclear*	*antihygienic*
anticlimax	*antihero*	*antiseptic*

(a) What bases does the prefix *anti-* attach to? Give an example of each.
(b) What kinds of roots does the prefix *anti-* attach to? Explain.
(c) Is the prefix class-changing or class-maintaining?
(d)Give the meaning of the prefix.
(e) What problem do the following words pose for morphological analysis? Explain.

antipathy	*antidote*	*antithetic*	*antibiotic*

(f) In addition to derivation what process is involved in the formation of the following words?

antiwar	*antifreeze*	*antislip*
antitrust	*antiknock*	*antiwrinkle*

(g) What problem do the following words pose for morphemic analysis? Explain.

antacid	*Antarctic*	*antepileptic*

(h) Analyze the following words as in (1h) above:

antibacterial	*antiperspirant*	*antirevolutionary*
anticommercialization		*antidisestablishmentarianism*

(i) Give a tree diagram showing the derivation of the word *antidepressant*.

COMPOUNDING

1. Identify the syntactic pattern in each of the following compounds & express it in a rule.

Example: 'gravedigger' — N + V + *-er* > N

(a) hovercraft
(b) dairyman
(c) bath-towel
(d) goldfish
(e) inroads
(f) bystander
(g) setback
(h) meltdown
(i) blackout
(j) stand-in
(k) turnout
(l) money-hungry
(m) dugout
(n) hardhearted
(o) homesick
(p) proofread
(q) overqualified
(r) overachieve
(s) badmouth
(t) redhead
(u) birth control
(v) breakfast
(w) thoroughgoing
(x) quick-change
(y) lukewarm
(z) law-abiding
(aa) far-reaching
(bb) homemade
(cc) clean-cut
(dd) fighter-bomber
(ee) earthenware
(ff) driver's seat
(gg) baking powder
(hh) drip-coffee
(ii) wisecrack
(jj) snowplow

2. The following words are compounds which also include derivational affixes. Analyze the words, identifying the roots and their parts of speech, as well all the affixes and their function as nominalizer, verbalizer, adjectivalizer, or adverbializer.

Example: 'housekeeper' — *house* (root – noun) + *keep* (root – verb) + *-er* (nominalizer)

(a) flightworthiness
(b) chatterbox
(c) owner-occupied
(d) freedom-loving
(e) handicraft
(f) broken-hearted
(g) safety-tested
(h) worldly-wise
(i) antiaircraft
(j) machine-readable
(k) chartered accountant

MINOR PROCESSES OF WORD FORMATION

1. Identify the process of word formation responsible for each of the following words.

(a) curio
(b) (to) laze
(c) (to) network
(d) (to) cohere
(e) (a) sitcom
(f) (the) muppets
(g) (a) what-not
(h) margarine
(i) dystopia
(j) serendipity
(k) diesel
(l) (a) ha-ha
(m) (to) make up
(n) (to) total
(o) (the) hereafter
(p) amphetamine
(q) (a) construct
(r) (the) chunnel
(s) guestimate
(t) canary
(u) brain-gain
(v) boojum
(w) gaffe-slack
(x) psycho
(y) walkie-talkie
(z) bonfire

2. The words in column A have been created from the corresponding words in B. Indicate the word formation process responsible for the creation of each word in column A.

	Column A	Column B
(a)	sprig	spray + twig
(b)	nostril	nosu + thyrl 'hole' [in Old English]
(c)	bookie	bookmaker
(d)	van	caravan
(e)	Amerindian	American Indian
(f)	CD	compact disc
(g)	RAM	random access memory
(h)	televise	television
(i)	xerox	xeroxography
(j)	telathon	television + marathon
(k)	sci-fi	science fiction
(l)	elect	election
(m)	deli	delicatessen
(n)	scuba	self-contained underwater breathing apparatus
(o)	scavenge	scavenger
(p)	jell	jelly