

Morphology (Seminar *Introduction to Linguistics*, Andrew McIntyre)

1. Morphology and morphemes

- **Morphology:** Study of the mental knowledge and processes involved in the structure of words and the creation of new (forms of) words.
- **Morphemes:** the smallest linguistic elements with a meaning or grammatical function. Examples of words *segmented* into morphemes:
- (1) dis-pleas-ure; nerv-ous; electr-ic; walk-ed; tree-s; who-se
- Some words consist of single morphemes (*to, that, tree*).
- Morphemes can, but need not, consist of a single sound (*sing-s, walk-ed*).

A. Look at the morpheme divisions in (1). Mark for discussion in the class any examples of divisions (or lack of divisions) which you do not understand.

2. Types of morphemes

- **Free morphemes** can, and **bound morphemes** cannot, occur as independent words. (Simplest test for word: it can stand alone as the answer to a question.)

- (2) re-act-iv-at-ion time schedule-s

B. Isolate the morphemes in the words below, and say whether they are bound or free: *psychopathic, reinterpretation, paperback writer, flounder fisherman, well-established, schoolmasterish, knitting needle*

- **Cranberry morph(eme)s (=unique morph(eme)s):** bound morphemes occurring in only one word in a language.
- (3) cranberry, inert, inane, inept, unkempt, disgruntled, umpteen, affable
- **Affixes:** bound morphemes which have one or more identifiable semantic or grammatical functions/meanings and which occur in more than one word in the language.
- (4) a. oldest; speaks, spoken; dogs, four-teen-th, driver, painful, beautify
b. nonentity, unclear, ultra-stupid, behead
c. anti-dis-e-stabl-ish-ment-arian-ism
- **Base:** the morpheme(s) to which an affix is attached. (Advanced point: don't confuse *base* with **root** (base consisting of a single morpheme); **stem** (base for inflectional affixes (defined below), possibly consisting of more than one morpheme).)
- **Prefixes:** affixes pronounced before base. **Suffixes:** affixes pronounced after base.
- **Prefix** =affix before base; **suffix** =affix after base; **infix** =affix inside base; **circumfix** =affix consisting of both a prefix and a suffix
- **Portmanteau morpheme** = single indivisible morpheme realising more than one feature. (The term is applied when the features are realised by separate morphemes in the same language, and less frequently in other languages.)
- (5) *were* (BE+past), *she* (3rd person+singular+feminine+subject)
- **Clitics:** a cross between an affix and a word. They are phonologically so short they can't be pronounced alone, they need to join to other words. Like words, their position is determined partly by syntactic rules. They are sometimes short forms of larger words.
- (6) I'm, he's, you've
- (7) Hasn't she gone? (Contrast with parallel question with non-clitic *not*.)
- (8) [the man in the kitchens]'s wife

3. Allomorphy

- **Allomorphy:** the phenomenon in which a morpheme has more than one **allomorph** (=variant in pronunciation):
- (9) a. an owl b. a tree
- (10) a. dogz [z] b. catz [s] c. busez [ɪz] d. *sheep* [] e. *oxen*

- (11) a. duke, duke-dom; b. duch-ess, duch-y
- (12) a. re-ceive, re-ceiv-er, re-ceiv-able; de-ceive, de-ceiv-able; con-ceiv-able
b. re-cept-ion, re-cept-ive; de-cept-ion; con-cept, con-cept-ion, con-cept-ual
- (13) a. em-prison, em-body, em-power, em-bolden, em-bitter, em-panel
b. en-chain, en-danger, en-list, en-train, en-slave, en-snare, en-tangle, en-large
- If the allomorphs of a morpheme are phonologically unrelated, we speak of **suppletion**:
- (14) go/wen-t; be/am/is/was; good/bett-er; one/first

Three types of allomorphy

- **Phonologically conditioned allomorphy:** the choice of allomorph is predictable on the basis of the pronunciation of adjacent morphemes:

- (15) Allomorphs of the indefinite article:

an (before vowels): *an eye/elephant/owl*
a (before consonants): *a leg/dog/brick/stone*

- (16) Allomorphs of the regular past tense morpheme

a. /ɪd/ (after [d,t]): *defeated, hated, waded, threaded*
b. /t/ (after all other voiceless sounds): *hissed, ripped, picked*,
c. /d/ (after all other voiced sounds): *fizzed, wedged, measured, howled*

- (17) Some allomorphs of the negative prefix *in-*

a. /ɪm/ (before bilabial sounds): *impossible, immature*,
b. /ɪl/ (before /l/): *illegal, illegible*
c. /ɪn/ (elsewhere): *ineligible, inexpensive, independent*

- **Morphologically conditioned allomorphy:** choice of allomorph is determined by specific morphemes, not by phonological facts. E.g. *-sume* in (18) becomes *-sumpt-* in (19). (20) shows that this is not predictable from phonological laws of English.

- (18) consume, presume, subsume, resume, assume

- (19) consumption, presumption, resumption, assumption; consumptive, presumptuous

- (20) defumable/*defumtible, rezoomable/*rezumptible and consumtable/ consumable

- **Lexically conditioned allomorphy:** the choice of allomorph is unpredictable, thus memorised on a word-by-word basis. E.g. the plural morphemes in *oxen, sheep, children* are lexically conditioned, as it doesn't follow from general principles of English morphology or phonology (cf. *foxes*/**foxen*, *two beeps*/**beep*).

C. Can you think of a German example of the following phenomena?

(i) suppletion (ii) allomorphy (a case not involving suppletion)

D. Are the allomorphs below lexically, phonological or morphologically conditioned?

1. The prefix *en-/em-* in forming verbs meaning '(cause to) enter a particular thing or state': *emprison, embody, empower, embolden, embitter, empanel, enchain, endanger, enlist, entrain, enslave, ensnare, entangle, enlarge*
2. The alternation between /sɪd/ and /ses/ in the following contexts:
proceed/procession; recede/recession/recessive; concede/concession

3. Allomorphy involving voicing of final consonant of bases of *-s* plurals:
 - a. Voicing: *wives* (cf. *wife*), *leaves*, *thieves*, *shelves*, *lives*, *knives*, *loaves*, *calves*, *hooves*, *halves*, *wolves*; *houses*; *mouthes*,
 - b. No voicing: *cliffs*, *safes*, *proofs*, *fifes*; *cloths*, *fifths*, *births*
 - c. Either (depending on the speaker): *wharfs/wharves*, *dwarfs/dwarves*, *roofs/rooves*; *sheafs/sheaves*, *oafs*, *oaths*, *booths*, *baths*, *paths*
4. Allomorphs of the English noun plural morpheme spelt <(e)s>.

a. [z]: *dogs, cabs, hives, vans, guns, fangs, battles, trees, lies, keys*
b. [s]: *cups, cats, deaths, kicks, cliffs*
c. [ɪz]: *breezes, buses, dishes, edges, notches, foxes*

E. Why would it be a mistake to call [z] and [s] in the previous question allophones of a phoneme? (Hint: consider *lonesome*, *tiresome*, *fulsome*, *awsome*.)

- (Optional:) Some linguists speak of **morphs** (concrete pieces of phonology, e.g. –s), which realise morphemes (defined as abstract grammatical notions like PLURAL). Allomorphs are thus morphs that realise a morpheme (just like allophones are the phones that realise a phoneme). Other linguists eschew the term *morph* since *allomorph* is usable in most contexts where one could use *morph* but not *morpheme*. There is little point in saying that the morph *dog* realises the morpheme DOG (or worse, that *cran-* realises the morpheme CRAN- in *cranberry*).

4. Morphological processes: Creating or changing the form of words

4.1. Affixation (defined above)

4.2. Compounding

- creating a word (a **compound**) by combining two words. Either or both of these words might itself be a compound. If so, we have an instance of *recursion* (=a situation where a particular rule applies to a structure which was created by the same rule).

- (21) girlfriend, chalk dust, blackbird, upload, seasick
 (22) World Trade Center conspiracy theory website managers

4.3. Conversion (zero derivation)

- change of syntactic category (e.g. noun, verb) of a word without adding affixes. It may involve a stress change or other minor changes in the base. Some linguists see conversion as addition of *zero affixes* (=unpronounced affixes), while others say there is no affix.

- (23) N>V: *torch* (a house), *access* (a file), *hammer*, *butter*, *accent*, *sign*, *blossom*, *e-mail*
 V>N: *a look*, *call*, *crack*, *cry*, *meet*, *walk*
 A>V: *slow* (the tempo), *cool* (the wine), *busy* (oneself), *bare*, *humble*, *empty*
 (24) *compóund_V* vs. *cómpound_N*; *conflict*, *contest*, *protest*, *decrease*, *insult*, *remake*, *torment*, *transfer*, *reject*, *refill*, *remake*
 (25) *shelf/shelve*; *house/hou[z]e*; *advise/advice*

4.4. Clipping

- shortening a word by deleting *phonological material* (not necessarily morphemes):

- (26) *prof* (<professor), *influenza*, *laboratory*, *steroids*, *Vietnam*, *situation comedy*; *prefabricated*, *detoxification centre*, *Rolling Stones*

4.5. Blending

- merging of two words in which at least one of them undergoes clipping:

- (27) *carjack* (*hijack*+*car*), *stagflation*, *Reaganomics*, *guesstimate*, *infotainment*

4.6. Backformation

- the formation of a new word by removing an affix:

- (28) *self-destruct* (from *self-destruction*)
 → not formed by compounding of *self*+*destruct*, since *destruct* (an allomorph of *destroy*) is otherwise only found with suffixes: *destruction*, *destructive*, *indestructable*)
 (29) *dissertate* (<*dissertation*), *liase* (<*liason*), *enthuse* (<*enthusiasm*), *emote* (<*emotion*), *combust* (<*combustion*), *redact* (<*redaction*), *opine* (<*opinion*)
 → Here the shorter words sound “less normal” and aren’t acceptable to every native speaker, suggesting they are perceived as being derived from the longer words.

- **Backformation vs. clipping**: Backformation involves the removal of affixes and changes meaning (and often syntactic category). Clipping is the deletion of random phonological material (not specifically affixes) and doesn’t change meaning/category. (The only effect relevant to meaning is a change in style level: *prof* is less formal than *professor*.)

- The words in (30) were originally backformations, but we only know this from *diachronic* evidence (e.g. etymological dictionaries), which children don’t have access to in learning the language. (30) should thus not be called backformations in a *synchronic* analysis.

- (30) a. *edit* (<*editor*), *sculpt* (<*sculptor*), *burgle* (<*burglar*), *laze* (<*lazy*), *preempt* (<*preemption*), *scavenge* (<*scavenger*), *swindle* (<*swindler*), *resurrect* (<*resurrection*)
 b. *cherry* (< French *cerise*; final /z/ taken as plural affix; singular backformed from it)
 c. *pea* (< Old English *pise* ‘a quantity of peas’; singular non-countable noun)
 d. *stave*_(noun) <*staves* (older plural of *staff* in the sense ‘stick’)

- The structures in (31) look like compound verbs, but are actually backformations, since structures of this type don’t exist unless there is a longer affixed word. It is impossible to form compound verbs of the type [V N V] directly in English.

- (31) *vacuum-clean* (<*vacuum cleaner*), *aircondition* (<*airconditioning*), *handfeed* (<*handfeeding*), *skydive* (<*skydiving*), *babysit* (<*babysitting*), *speed-read* (<*speedreading*), *copy-edit* (<*copy editing*), *fundraise* (<*fundraising*), *benchpress* (<*benchpressing*), *headbang* (<*headbanging*), *slamdance* (<*slamdancing*)

4.7. Ablaut

- creation of new (form of a) word by changing vowel in the base word:

- (32) *sing/sang*; *man/men*; *louse/lice*; *sit/seat*; *live/life*
 (33) Causative verbs: *rise/raise*; *lie/lay*; *sit/set*; *fall/fell* (as in *to fell a tree*)

- Ablaut combined with other processes: *child/children*, *say/says*

4.8. Acronymy and abbreviation

- **Acronyms** words formed by taking the initial letters from the words in a compound or phrase and pronouncing the word spelled by them.

- (34) *NATO*, *UNICEF*, *AIDS*, *RAM*, *Moodle*

- **Abbreviations** are like acronyms, but the names of the letters are pronounced.

- (35) *BBC*, *tlc*, *PLO*, *cd*, *AC/DC* (Anti-Christian Devil Children?)

4.9. Reduplication

- **Reduplication**: repetition of part of a word. Less important in English (mainly child speak, onomatopoeia; lists in Marchand 430ff), but can be a very important way of forming new (forms of) words in other languages.

- (36) *lovey-dovey*, *super-duper*, *boogie-woogie*, *teeny-weeny*, *byebye*

- (37) Ablaut reduplication: *chit-chat*, *criss-cross*, *kitty-cat*, *pitter-patter*, *splish-splash*

- (38) *Shm*-reduplication (US): *I have no money*. - *Money-shmoney!* (‘Stuff the money!’)

- syntax-shmyntax*, *sorry-shmorry*, *Facebook-shmfacebook*, *Beatles-shmeatles*

- (39) Latin: *cucurri* ‘I ran’ (<*currere* ‘run’); *pedendi/pendere* ‘hang’

- (40) Gothic: *faiƿah* ‘I caught’ (<*fahan* ‘catch’); *lailaik/laihan* ‘jump’, *lailot/letan* ‘let’

F. Name the morphological processes used in forming the words in italics below. In some cases more than one process was used. Note that some of the words are occasionalisms (words used rarely, not part of the standard vocabulary).

1. *twiggle* (<*twist* and *wiggle*; produced as a speech error)
2. *barbi* (<*barbecue*; Australian)
3. *un-p.c.* (‘not politically correct’)
4. *ASIO* [erziou] (=Australian Security and Intelligence Organisation)
5. *flautist* (‘flute player’)
6. they *tidied* the room
7. *mike* (<*microphone*)
8. *FacMac* (‘MacIntosh computer at Sydney University Faculty of Arts’)
9. it *out-herods* Herod (=is more like H. than H. himself; Shakespeare, Hamlet)
10. *crash* a party (‘go uninvited’ <*gatecrash* < *gatecrasher* ‘uninvited guest’)

11. [vidʌb] (<[vidʌbəlju] ‘Volkswagen’)
12. *laser* (<Light Amplification by Stimulated Emission of Radiation)
13. *d-jane* (‘female dj’; < disc jockey, Jane)
14. *a Dead head* (an aficionado of the band ‘The Grateful Dead’)
15. Shall we *nuke* them, Ron? (‘attack them with nuclear bombs’)
16. *monokini* (‘one-piece swimsuit’; <*bikini*-*Bikini* (island in Marshall Islands))
17. they whitewashed the wall; they deadlocked the door
18. socialism, liberalism, capitalism and other *ism*'s

- G. Can you find German examples for the following morphological phenomena?
 1. abbreviation 2. acronymy 3. conversion 4. clipping 5. blending
- H. How were the verbs in the examples below formed? Two answers are possible.
 a. they colour-changed the garment; b. they whitewashed the wall
 c. I deadlocked the door

5. Inflection versus derivation

- **Derivation** (=word formation): The use of morphological processes to create *new words*.
 - **Inflection**: Morphological operations changing the form of a word in response to syntactic requirements. Native speakers have an intuition that *inflection doesn't create a new word, it just results in a different form of the same word*.
- (41) Examples of derivational affixes:
killer, kingdom, painful, greenish, vulgarise, beautify, nonentity, pseudoproblem, unclear, ultra-stupid, behead, circumnavigate
- (42) Inflection in English:
 a. with verbs: rides, riding, rode, ridden
 b. with adjectives: older, oldest
 c. with nouns: dogs, oxen, men
 d. with numbers: seventh
- (43) Examples of inflection that English lacks:
 a. agreement on German adjectives: *gute Musik / guter Wein*
 b. case inflection on German nouns: *der Name / den Namen / des Namens*
 c. passive inflection in Latin: *amo* ‘I love’ / *amor* ‘I am loved’
- The inflection-derivation distinction is hard to define precisely. More specific criteria:
- (44) Derivation changes the meaning of a word, while inflection either does not (e.g. *sing/sings; they/them*) or does so only with regard to a feature which is part of the grammar rather than the vocabulary of the language (*dog/dogs; talks/talked*).
- (45) Inflection is **obligatory**, being forced by syntactic requirements. With derivation, we can decide whether we use it or not (e.g. *green* vs *greenish, fascist* vs. *neo-fascist*).
- (46) Inflection is mostly on the edge of a word, 'outside' derivation, since inflection occurs after derivation. E.g. *piglets* vs. **pigset*.
- (47) Derivation may change syntactic category ([_N[_A[_Ncheer]ful]ness]), inflection does not.
- (48) Inflection is **semantically regular** (if it does change meaning). E.g. *Xs* nearly always produces the meaning ‘plural of X’, while semantic effects of derivational affixes are often unpredictable (*profess/profession, commit/commission, steal/stealth*).
- (49) Inflection can't be repeated, while derivation can: *neo-neo-conservative* vs. **two dogs-es* (intended meaning: 'two groups of dogs').
- (50) Derivation is not always fully **productive**: Cf. *piglet* but **doglet, *horselet*. Inflection is almost completely **productive**. There are only a few verbs in English that don't have a complete set of inflectional forms: *quoth* (past only), *abide, beware, stride* (no past participle), *dive* (no past tense for some speakers)

- (a) *betterment, worsen, lessen, mostly*
 (b) *glasses*
 (c) the forms of the modal auxiliaries *must, may, can, shall, need* (in *he needn't go*)
 (d) a *filling/boring meal, a heated debate; his singing was lousy*
 ((d) has two possible answers, depending on whether conversion is involved.)

- Exceptions to these criteria lead some linguists to deny that the inflection-derivation distinction is real. Proponents of the distinction point to aphasics mastering derivation but not inflection.
- The group of inflected forms of a particular word (e.g. *child, children; drives, driving, drove, driven*) is called a **paradigm**.
- The different inflected forms of the same word could in one sense be seen as *different words* and in another sense as *the same word*. A term for the latter sense of ‘word’ is **lexeme**. Thus, the lexeme WALK is realised by the forms *walk, walks, walking, walked*.
- The member of a paradigm used for naming lexemes (e.g. in definitions) is the **citation form**. In English citation forms are the singular form of nouns and the infinitive of verbs:
 (51) Speaker A: *He transmogrified it.* Speaker B: *What does transmogrify mean?*
 (52) Speaker A: *I saw six troglodytes.* Speaker B: *What is a troglodyte?*

6. Types of compounds

- **Endocentric compounds**: AB is an instance of B: *houseboat* is a type of *boat*, *boathouse* is a *house*; a person who is *seasick* is *sick*. In endocentric compounds, the final element is the **head**, and the other element(s) provide additional information about the head.
 (53) [_N _N]_N: *chess table, strawberry jam, diesel motor, bookshelf*
 (54) [_V _N]_N: *crybaby, scrubwoman, bakehouse*
 (55) [Participle _N]_N: *filing cabinet, reading class, writing table, drinking water*
 (56) [_A _N]_N: *blackbird, drydock, redbrick, wetsuit*
 (57) [Particle/Preposition _N]_N: *outhouse, outgrowth, undergrowth, offprint*
 (58) [_N _A]_A: *bloodthirsty, pain-free, theory-neutral, colourblind, class-specific, sky blue*
 - **Verbal** (or **synthetic**) **compounds**: Special type of endocentric compound where left-hand element is interpreted like the object of a verb related to the item on the right:
 (59) *truck driver* (cf. *drive a truck*), *bottle opener, mountain climbing, church-going*
 - **Exocentric compounds**: AB is neither an A nor a B: a *sabretooth* is neither a tooth nor a sabre, but a tiger with teeth resembling sabres. *Exocentric* means literally ‘out-centred’, i.e. the ‘centre’, i.e. head, is not in the compound. Note also that calling a compound *exocentric* isn't the same as saying that its meaning has nothing to do with the meanings of the parts of the compound. In most examples below, you can see that the compound's meaning clearly is related to that of its parts.
 (60) [_A _N]_N: *paleface, redskin, redneck, highbrow, redback* (=spider with a red back)
 (61) [_N _N]_N: *skinhead, egghead, airhead, blockhead*
 (62) [_V _N]_N: *pickpocket, spoilsport, killjoy, answerphone*
 (63) [_V Particle]_N: *handout, putdown, sit-in, walkout, breakdown, fallout, bailout, pushup*
 (64) [_P _N]_N: *afterbirth, afternoon, underground*
 - **Copulative compounds**: AB is A and B.
 (65) [_N _N]_N: *owner-builder, producer-director, singer-songwriter, secretary-lover*
 (66) [_A _A]_A: *bittersweet, deaf-mute*
- J. State whether these compounds are endocentric, exocentric or copulative (some may belong to more than one class): *birdbrain, wheelchair, hunchback, author-publisher, loudmouth, greenback, apple tree*

I. Which of the following data are exceptions for which criterion in (44)-(50)?

7. More on the notion 'head'

- The **head** is the element that determines the semantic and grammatical characteristics of the whole word.
- Since endocentric compounds have heads, it follows that endocentric compounds form their plural in the same way as their heads do. E.g. *scrubwomen*, *firemen*. Exocentric compounds, being headless, are not inflected in the same way as their righthand members: *still lifes*, *lowlives* (cf. *lives*), *walkmans*, *sabre teeth*, *tenderfoots*, *bigfoots*
- Exocentric compounds, being headless, don't necessarily have a constituent with the same syntactic category as that of the whole compound: *sit-in* doesn't contain a noun.
- **Right-Hand Head Rule**: The head of a word is on the right in English.
- Consequence: Prefixes do not (normally) produce category changes: [un[[love]_Nly]_A].

A. Indicate why the following phenomena could be seen as exceptions to the Right-Hand Head Rule. Do they prove that the RHR is wrong, or can you think of ways of reconciling them with the RHR?

1. *enrich*, *enthroned*, *beheaded*, *derailed*
2. *he wised up to the conspiracy* (=became aware of it)

B. Some English speakers say *sister_s-in-law_s*, *governor_s-general_s*, while most speakers use only one *-s* in either of the positions. Can you find possible reasons for this variation?

8. Constraints on morphological processes

8.1. Productivity

➤ **Productivity**: The ability of an affix or process to form new words.

- (67) Very **productive** affixes:
- a. *-er*: *baker*, *runner*, *thinker*, *producer*, *emailer*, *SMS-er*...
 - b. *-wise*: *timewise*, *moneywise*, *jobwise*, *healthwise*; *productivity-wise*...
 - c. *-ful*: *armful*, *fistful*, *drawerful*, *mouthful*; *potful*, *bath tubful*, *coffinful*...
- (68) An **unproductive** affix: *-th* only occurs in the words in (a); new formations impossible.
- a. *breadth*, *growth*, *health*, *length*, *stealth* (<*steal*), *strength*, *warmth*, *wealth*, *width*
 - b. **illth*, **wholth*, **newth*, **badth*, **goodth*, **coolth*, **drunkth*
- (69) Very productive processes in English: compounding, conversion
- (70) Unproductive processes in English: ablaut

8.2. Blocking

➤ The formation of new words can be **blocked** by existing words with same meaning.

- C. Which words block the following words? **ungood*, **seeable*, **stealer*
- D. *Cooker* means 'stove' but cannot mean 'person who cooks'. Why?

8.3. Phonological constraints

- An affix/process might require or disallow bases with particular phonological properties.
 - Example: The comparative morpheme *-er* disallows bases of more than one syllable excepting bisyllabic bases ending in syllabic [n], [l] or [i] (Spencer 1991:399):
- (71) **popularer*, **putrider*, **slothfuller*, **surrealer*; **dangerouser*, **curiouser*
- (72) *longer*, *nicer*, *fuller*; *greasier*, *fancier*, *commoner*, *subtler*, *nobler*

E. Are the words *lecturer*, *composer*, *programmer*, *provider* exceptions to what was said about comparative affix *-er*? If not, why not?

F. Use the following data to determine a phonological constraint on the noun-forming suffix *-al*. Hint: it has something to do with stress.

- a. *arrival*, *denial*, *approval*, *disposal*, *refusal*, *retrieval*, *dispersal*, *reversal*
- b. **tamperal*, **boycottal*, **gatheral*, **orderal*, **potteral*

G. Are the following words exceptions to what was said about the affix *-al* in the previous exercise? *political*, *judgmental*, *original*, *suicidal*

- Point from exercises E, G: Just as two unrelated words can be *homophonous*, i.e. pronounced the same way (*made/maid*), unrelated affixes can be homophonous. Other examples: *-s* (*Stuart* 's *sister* *hates* *plastic* *forks*).

8.4. Semantic/pragmatic constraints

H. Speculate on how the following data could be explained in terms of a non-phonological constraint which we might call 'informativeness':

bearded people, *freckled people*, *one-legged people*, **legged people*, *cold-hearted people*, **hearted people*, *short-sighted people*, **sighted people* (*sighted* is, however, used in the blind community)

9. Motivation, lexicalisation and the lexicon

➤ The product of a morphological process is **motivated** or **compositional** if the meaning is predictable from the meanings of the parts. If not, we say it is **idiomatic** or **lexicalised**:

- (73) Completely compositional: *dog owner*, *car race*, *gold bracelet*, *uninterpretable*
- (74) Partly idiomatic (meaning slightly narrower/wider than expected): *blackboard*, *wetsuit*, *unreadable* (in sense 'boring to read'), *wheelchair* (only for disabled people)
- (75) Totally idiomatic: *blackmail*, *cupboard*, *butterfly*, *hedgehog*, *profession*, *landlord*
- More exactly, *lexicalised* means that the word has an entry in the (**mental**) **lexicon**, our mental 'dictionary', the part of our memory containing unpredictable knowledge about the meaning and pronunciation of morphemes or words.

➤ Examples of **lexical entries**:

- (76) (simplified) lexical entry for *sing*:
- Pronunciation: infinitive: /sɪŋ/, past tense /sæŋ/, participle: /sɪŋg/
- Semantics (rough): 'create musical sounds using one's voice'
- (77) (simplified) lexical entry for *watchmaker*:
- Pronunciation: /wɒtʃˈmeɪkə/
- Semantics: 'person who makes *or repairs* watches *and similar devices*' (italics highlight what is idiomatic in the meaning)

➤ Every morpheme has a lexical entry (because the sound-meaning correspondence is unpredictable). Every word formed by a morphological process that is not 100% compositional must also have a lexical entry.

- I. What, if anything, is idiomatic about the following words? *uneasy*, *hangman*, *shelve*, *forehead*, *table leg*, *midwife*, *understand*, *loudspeaker*, *cranberry*
- J. Name three idiomatic English or German compounds or affixed words.

➤ Sometimes words which were completely lexicalised at one stage in the history of a language are reinterpreted as at least partly motivated by subsequent generations. This is an instance of **folk etymology**. Examples:

(78) **hamburger**: Original use: a German word meaning '(something) from Hamburg'
Folk etymological assumption: the word involves *ham* in sense 'meat from pig' and (by subtraction) *burger* means roughly 'sandwich'. Hence we now find *beefburger*, *cheeseburger*.

(79) **bridegroom**: Original use: Old English *brydguma* (literally 'bride man'). *Guma* was once a free morpheme meaning 'man', but became a cranberry morpheme, used only in *brydeguma*.

Folk etymology: people assumed *guma* (later *goom*) was really *groom*, giving the word a more motivated interpretation (he 'grooms' the bride)

(80) **inflammable**: Original use: 'able to burn' (non-compositional meaning)

Folk etymology: people assumed that the word had a compositional meaning; they took *in* to be the negative prefix found in *incompetent*, *inconvenient* and many others. Thus, *inflammable* came to mean ‘not burnable’.

10. More details on analysing the structure of words

10.1. Some advice on segmenting words into morphemes

- We are interested in sounds, not spelling. The divisions *happi-ness*, *vari-ous*, *he tri-es*, *fitt-ing* are correct, even though *happi*, *vari*, *tri*, *fitt* are misspelt. You could also write *happy-ness*, *vary-ous*, *he try-s*, *fit-ing*. Using IPA transcriptions would also be good.
- Subtraction: *ept* in *inept* is a morpheme since *in* is a morpheme (witness its negative semantics, similar to that in *incompetent*).
- Semantic clues: *-er* is a morpheme in *butcher* (although there is no verb **butch*) as it names an agent, as in *teacher*, *worker*. There is no evidence that *-er* a morpheme in *badger*.
- Systematic allomorphy: *-sume* in *resume* and *-pel* in *repel* are morphemes because they have allomorphs (*-sump-*, *-puls-*) that appear with other words, cf. (81). This supports a division into morphemes although the morphemes do not mean anything on their own.

- (81) a. *consume/consumption*, *resume/resumption*, *presume/presumption*
b. *repel/repulsion*, *compel/compulsion*, *expel/expulsion*

K. Should *-ation* in the words in 1 below be divided into two morphemes? Hint: look at the examples in 2 and 3, and remember the notion of allomorphy.

- normalisation*, *invitation*, *interpretation*, *accusation*, *deformation*, *taxation*
- action*, *confusion*, *inspection*, *option*, *election*, *division*, *destruction*, *invasion*, *fusion*, *dominion*, *function*, *nation*
- imitation*, *translation*, *intimidation*, *education*, *contemplation*
- justification*, *edification*, *purification*, *identification*

L. How would you analyse the string *ification* in group 4 in the last question?

M. What speaks for/against the division of the following words into morphemes?

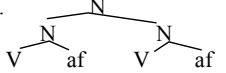
- nor-th / sou-th / ea-st / we-st*
- h-ear*
- th-is / th-ey / th-ere*

N. The initial consonant clusters in the following words are sometimes claimed to be meaningful. Assess the evidence for/against treating them as morphemes?

- flash*, *flimmer*, *flicker*, *flame*, *flare* (*fl-* ‘moving light’)
- glitter*, *glimmer*, *glow*, *gleam*, *glisten* (*gl-* ‘light emanating from something’)
- slush*, *slurp*, *slop*, *slime*, *slobber* (*sl-* ‘wet’)

10.2. Constituency

- Words with three or more morphemes are formed with constituents each consisting of two morphemes. This can be expressed using trees or labelled bracketing. Examples:

- (82) a.  b. $[_N [_N [_V \text{ govern}]] [_{af} \text{ ment}]] [_N [_V \text{ employ}]] [_{af} \text{ ee}]]$

govern ment employ ee

Evidence for the structure in (82):

- government* and *employee* exist as independent words.
- government* and *employee* are semantic units; **ment-employ* means nothing.
- *ment-employ* is also wrong as we know that *ment* is a suffix, not a prefix.



- (83) a.  b.  (wrong analysis!)

un happi ness

un happi ness

Here (a) is right and (b) is wrong (even though *happiness* is a possible word) since *un-* attaches to adjectives (*unlucky*, *unlovely*) but not to nouns (**unluck*, **unlove*).

- (84) gives two ways of describing conversion. In (a/b) conversion is seen as just a change in category. (c/d) assumes a silent (=unpronounced) affix. The choice is open to debate.

- (84) a.  b. $[_V [_N \text{ access}]]$ c.  d. $[_V [_N \text{ access}]] [_{af} \emptyset]$

- Some linguists believe that affixes like *-ment* in *government* and the proposed zero affix in *to access* have their own category. Thus, *af* would be N in (82) and V in (84).

O. Segment the following words into morphemes and indicate their structure using trees. Some cases have more than one possible analysis.

- seasickness
- overtired
- paperback writer
- nail polish remover
- professionalism
- unnerving
- uninventiveness
- familiarise
- truckfulls

11. Two types of affixes and the Level Ordering Hypothesis

11.1. Two classes of affixes

- **Non-neutral affixes** (=Level I affixes): can change phonological segments and stress of the base. The boundary between affix and base is a weak boundary, written as +.
- **Neutral affixes** (=Level II affixes): never affect stress, segmental properties of base. The boundary between affix and base is ‘stronger’, symbolised as #.

- Examples (*-ity* is non-neutral, *-ness* is neutral):

- (85) a. *sane* [sɛm] → *sane+ity* [sæntɪ]
b. *electric* [ələktrɪk] → *electric+ity* [ələktrɪsɪtɪ]
c. *rapacious*, *credulous* → *rapacity*, *credulity*

(86) *tired#ness*, *drunken#ness*, *fit#ness*, *absurd#ness*, *happy#ness*

- (87) a. *curious* [ˈkjʊəriəs] → *curious+ity* [kjʊəriˈɒsɪtɪ], *curious#ness* [ˈkjʊəriəsənəs]
b. *profane#ness/profan+ity*; *productive#ness/productiv+ity*; *morbid#ness/morbid+ity*

- A non-neutral affix doesn’t necessarily change the phonological properties of the base in all words: *absurd+ity* (we know *-ity* is non-neutral from other words seen above).

- Other differences besides phonological ones:

- Non-neutral affixes are less **productive** than neutral ones, e.g. *#ness* is more productive than *+ity*:

- (88) a. *gloriousness*?/gloriosity; *kindness*/*kindity; *vileness*/*vility
b. *pugnaciousness*?/pugnacity; *gothicness*?/gothicity [[°]= not accepted by all]

- Words formed with non-neutral affixes are often **lexicalised** (unpredictable meaning):

(89) *prob+ity*, *univers+ity*, *fidel+ity*

- Non-neutral affixes can attach to **bound roots** (roots that aren’t freestanding words):

(90) *prob+ity*, *de+ity*, *impun+ity*, *fidel+ity*

- Rough tendency: Non-neutral affixes have (and combine with bases with) phonological properties typical of morphemes of Romance/Latinate/Greek origin, and neutral affixes prefer Germanic words.

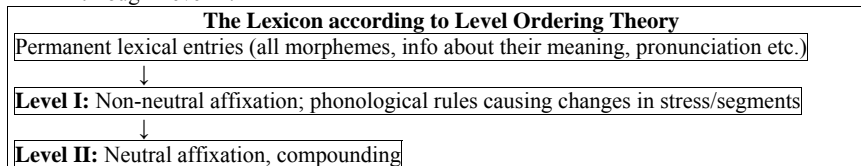
P. Decide whether the affixes in the words given below are neutral or non-neutral:

- Nouns with *-th*: *width*, *length*, *breadth*, *growth*, *health*, *strength*, *warmth*, *wealth*
- Nouns with *-ship*: *friendship*, *directorship*, *editorship*, *fellowship*, *apprenticeship*
- Nouns with *-hood*: *motherhood*, *falsehood*, *priesthood*, *neighbourhood*, *unlikelihood*
- Nouns with *-ee*: *escapee*, *absentee*, *divorcee*, *trainee*, *appointee*, *employee*
- Adjectives with *-al*: *beneficial*, *centrosial*, *ancestral*, *accidental*, *sentimental*, *ornamental*
- Nouns with *-er*: *downloader*, *e-mailer*, *embezzler*, *experimenter*, *writer*
- Adjectives with *-ic*: *strategic*, *satanic*, *photographic*, *organic*, *democratic*, *fantastic*
- Verbs with *-ify*: *personify*, *electrify*, *syllabify*, *liquidify*, *demonify*

9. Adverbs with *-ly*: *appreciatively, commonly, secretively, intelligently*
 10. Adjectives with *-ive*:
 a. *persuasive, productive, creative, administrative, permissive, elusive*
 b. *expensive, conducive, primitive*

11.2. The Level Ordering Hypothesis

- Level ordering hypothesis makes the following claims:
 a. Non-neutral affixes are attached before neutral affixes.
 b. This is because the lexicon is organised into two *levels (strata)*, Level I (where non-neutral affixation happens) and Level II (where neutral affixation happens).
 c. The levels are *ordered* such that the stem passes through Level I before passing through Level II.



- This is an instance of a *lexicalist* theory of morphology. In such theories, the lexicon is not just a dictionary-like part of the mind, but is also a component which can *create new words*. (This assumption is related to the lexicalist approach to argument structure seen earlier, in which lexical operations can change the meaning/argument structure of a verb.)
 ➤ **Evidence for the Level Ordering Hypothesis:** Non-neutral affixes should be closer to the base than neutral affixes. Many examples support this:
 (91) a. *industri+al#ly; combat+ive#ness;*
 b. *hope#less#ness vs. *hope#less+ity;*
 c. *fear#ful#ness vs. *fear#ful+ity*
 d. **[[war#hero]+ic], *[[street#music]+al]* [compounding Level II]
- Level Ordering also accounts for **blocking** effects: a word formed with a non-neutral affix will block (i.e. prevent the formation of) a word with a neutral affix if it has the same meaning:
 (92) *decent/decen+cy/*decent#ness; complacent/complacen+cy/*complacent#ness*
*aberrant/aberran+cy/*aberrant#ness; constant/constan+cy/*constant#ness*
 (93) a. *apply/applic+ant/*apply#er; account/account+ant/*account#er*
*participate/particip+ant/*participat#er;*
 b. *defend+ent (person defending in court)/defend#er (person defending, not in court)*

11.3. An extension: Conversion

- Level ordering theory was extended to conversion as follows (Kiparsky 1982):
 A. Verb-to-Noun (V>N) conversion happens at Level I.
 B. Noun-to-Verb (N>V) conversion happens at Level II.
 ➤ Evidence:
 ➤ V>N conversion is far less productive than V>N conversion:
 (94) a guide, a cook, a spy, a bore; *a teach, *a boil, *an annoy
 ➤ V>N conversion blocks the Level II affix *-er*:
 (95) *guiden/*guider, spyN/*spyer, boreN/*borer, cookN (cooker =stove, not person cooking)*
 ➤ V>N conversion, unlike N>V conversion, can change stress, so it must be Level I.
 (96) a. *constrúct_V / cónstruct_N* Likewise:
 b. *download, pervert, rebel, reject, retard, survey, transplant, transport*

- Possible to convert nouns with Level I affixes, but not Level II affixes, to verbs
 (97) a. to *partit+ion*, to *commiss+ion*; to *engin+eer*; to *rever+ence*, to *refer+ence*
 b. **to sing#er, *to beat#ing; *to free#dom, *to prompt#ness, *to alcohol#ism*
 ➤ It is possible to do a N>V (Level II) conversion based on a V>N conversion (Level I), but one can't go in the other direction. (In the examples below, the direction of conversion is seen from the meaning.)
 (98) a. to *protést* > a *prótest* > *prótest* 'stage a prótest'
 (demonstater may *prótest*, but children can only *protést*)
 b. to *discóunt* > a *díscout* > *díscout* 'sell at a discount'
 c. to *digést* > a *dígést* ('summary') > *to dígest* 'make a digest of'
 d. to *compóund* > a *cómpound* > *to cómpound* 'make a compound of'
 (99) a *pattern* > to *pattern* > *a *pattern* 'act of patterning something'

11.4. Problems with level ordering

- No explanation has been offered yet for why there should be levels in the lexicon.
 ➤ Rare exceptions to claim that Level I affixation can never appear after Level II affixation:
 (100) a. *understand#abil+ity; recognis#abil+ity; approach#abil+ity*
 b. *[[un#grammatical]+ity]* [*un* goes with adjectives, not nouns, so *un-* should be added before *-ity*]
 ➤ In some cases, a Level I affix seems to attach to a whole phrase. Since phrases are formed in the syntax, not the lexicon, there is no way they can be formed at Level I.
 (101) *[[generative grammar]+ian]* = person who does generative grammar, not a generative person who does grammar
 (102) *[[nuclear physic]+ist]* =physics can be nuclear, physicists can't
 ➤ Some affixes seem to behave either like Level I or Level II:
 (103) *divisible/dividable, cómparable/comparáble; tólerable/tolerátable*
 ➤ Because of these problems there are several alternatives to the level ordering approach. We don't have time to discuss these here. See Plag (2003:173ff) on other approaches.

12. References

- Most references below are introductory textbooks on morphology. (Excerpts from one by Plag are available from the central moodle site for this course.) Marchand 1969 is a useful handbook giving a lot of data on particular affixes and types of compounds. The works marked with # are rather technical studies cited for various reasons.
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