

## English Morphology Andrew McIntyre

(Proseminar 'Introduction to Synchronic Linguistics', Sommersemester 2000)

These notes are based on ch.s 2-4 and 7-8 of Bauer (1983), the set reading for the course. The coverage, the examples and organisation differ substantially from that work, however.

If a term is in bold type and underlined, it should be memorised.

When reading these notes, mark anything that is unclear and mention it in the seminar.

### 1. Morphemes and allomorphs

**Morphemes** are the smallest linguistic elements capable of having a meaning or grammatical function. They have no internal structure other than phonological structure. (1) gives examples of the division of words into morphemes. Naturally, the boundaries between words are also boundaries between morphemes.

- (1) His over-estim-at-ion of his friend-s' dis-pleas-ure at his effort-s led to a severe nerv-ous break-down which was only cure-d by an elect-ic shock therap-ist.

In some cases, it is difficult to determine the boundaries between morphemes. One problem (often swept under the carpet in introductions to morphology) is that there are morphemes which do not seem to mean anything, although they help to form an expression which means something. One example is the element *cran-*, which only occurs in the word *cranberry*. Here we can say that *cran* is a morpheme because it occurs with an element (*berry*) which itself undoubtedly is a morpheme and has its own meaning (a *cranberry* is, after all, a type of *berry*). A second example is the element *-sume* in the words in (2). This case is difficult because the initial elements (prefixes) do not seem to have any meaning either (although they occur in other words, cf. (3)). However, (4) indicates that, in response to certain other morphemes, *sume* systematically changes its form. This shows that the element *-sume* in each of the words in (2) is treated as the same entity by the grammar (=the mental system responsible for language). Notice that the alternation between *sume* and *sump* is not predictable from the phonological laws of English (otherwise we cannot explain data like *defumable*/\**defumptible*\*, *rezoomable*/\**rezumptible* and *consumptable*/*consumable*).

- (2) *consume, presume, subsume, resume, assume*

- (3) *converge, contend, preserve, pretend, submerge, subtend, reflect, retract, affirm, adduce*

- (4) *consumption, subsumption, resumption, assumption; consumptive, presumptuous*

Thus, it is true that morphemes are the smallest elements capable of having a meaning or grammatical function, but not all morphemes have a meaning or function. We may think of morphemes as the minimal elements of grammar which cannot be discussed solely with reference to our knowledge of phonetics and phonology.

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

**Free morphemes** are morphemes which can occur as independent words, while **bound morphemes** only occur when combined with other morphemes to form a word. In the expression *reactivation time schedules*, *re-*, *-ive*, *-at(e)*, *-ion* and *-s* are bound, while *act*, *active*, *time* and *schedule* are free. (Note that in the case of *reactivation time schedule*, all of these morphemes occur in a single word, despite the spelling. What is important is that *act* etc. can occur as isolated words in other contexts. Some morphologists prefer to use 'potentially free' and 'obligatorily bound' where we use 'free' and 'bound')

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

A morpheme may display **allomorphy**, i.e. have more than one form. The alternation in *consume/consumption* mentioned above was one instance of this. Each of the **realisations** (forms) of a particular morpheme is called an **allomorph**. The English plural morpheme has three allomorphs:

- (5) a. /s/ *bits, tips, tacks*,  
b. /əz/ *sneezes, bosses, fishes*  
c. /z/ *dogs, sods, slabs*

The variants in the pronunciation of the plural are **phonologically conditioned** allomorphs, because the choice depends only on the phonological characteristics of the element to which it attaches. The plural in *sheep* and *oxen* is **lexically conditioned**, because it is determined by the individual words and cannot be predicted from other principles (cf. *foxes*/\**foxen*, *two beeps*/\**beep*). In (6) we see **morphologically conditioned** allomorphy, where the choice of the allomorphs *-ceive-* or *-cept-* is systematically determined by the morphemes added to them. ((2) and (4) also illustrate this.)

- (6) a. *receiver, receivable; deceiver, deceivable; conceivable*  
b. *reception, receptive; deception; concept, conception, conceptual*

- C. Parallel to *-ceive/-cept* and *-sume/-sump*, there are pairs with *-mit/-mis* (*remit/remission*), *-duce/-duct* (*induce/induction*). Find three other words showing each allomorph. The following list of prefixes should help you: *re-*, *in-*, *pre-*, *con-* (& allomorphs *co-*, *com-*), *sub-*, *trans-*, *a(d)-*, *per-*.

- D. In the examples below, separate the words containing a prefix indicating negation (*impossible* = not possible) from the others. For the words without a negative prefix, divide the words into morphemes (if appropriate). In the cases where the prefix means 'not', is the allomorphy demonstrated by the prefix phonologically, morphologically or lexically conditioned (assuming all the forms are allomorphs of one morpheme, an assumption you may decide to reject)? You may wish to consult a dictionary to get more data on which to base your conclusions.

*ignoble, ignominious, ill-conceived, illegal, illegible, illiterate, illogical, illuminating, imbecilic, immobile, immovable, immoral, immodest, immeasurable, impenetrable, impersonal, implausible, imponderable, impossible, impromptu, indivisible, inflammable<sup>2</sup>, intended, interact, interminable, interpretable, interrogate, invisible, irrefutable, irrelevant, irredeemable, irreplaceable, irrepressible*

**Suppletion** is an extreme form of allomorphy in which two completely different roots realise the same morpheme. Examples are *go/went*, *be-/is/was/were/am*, *good/bett(er)/best* and *bad/worse/worst*, *one/first*.

In some works on morphology, you may find the term **morph** in certain cases where we have used 'morpheme'. In this usage, the forms *re* and *ceive* in *receive* or the plural endings in (5) are morphs rather than morphemes. Morphs are the concrete elements which realise or represent morphemes in a specific context. When more than one morph can realise a morpheme, we call the morphs the 'allomorphs' of this morpheme. However, many morphemes (e.g. *dog*, *slow*, *talk*) can only be realised by one morph, i.e. show no allomorphy, and it is redundant to speak of a morph *dog* which realises a morpheme {dog}. We will follow the practice of many works on morphology (e.g. Jensen 1990) in talking of 'morphemes' and 'allomorphs', but not of 'morphs'. For instance, when talking about the word *receive*, we refer to the 'morpheme' *-ceive* when its ability to turn into *-cept-* in contexts like *reception*, *receptive* is irrelevant. However, when contrasting *-ceive* and *-cept-*, we will refer to each form as an 'allomorph'.

### 2. The most important morphological phenomena

**Compounding** is the combination of two or more free morphemes (*girlfriend*, *chalk dust*, *undergrowth*, *blackbird*, *offload*, *seasick*). Note that English compounds may be written separately, unlike German ones. Spelling habits, where they are guided by school teachers and grammarians rather than by intuition, do not tell us anything about how a language works, so spelling does not indicate a difference between compounds and phrases.

- E. Classify the above compounds in terms of syntactic category (=part of speech, Wortart) (e.g. *girlfriend* = N+N) and give two additional examples of each category of compound you identify.

**Affixation** (the attachment of **affixes**) is illustrated in the following words.

- (7) Inflection: adjectives: *older, oldest*; verbs: *speaks, speaking, spoken, talked*; nouns: *dogs, oxen*; noun phrases [*the man walking around the corner*]'s hat, [*the man over there*]'s hat, [*a man I know*]'s hat  
(8) Derivation: *killer, kingdom, painful, greenish, vulgarise, beautify; nonentity, pseudoproblem, unclear, ultra-stupid, behead, circumnavigate*

Affixes are bound morphemes. Generally, affixes do not contribute the main lexical/ semantic content to the word, and are often better described in terms of functions than meanings. Affixes occur in more than one word, a criterion which distinguishes them from certain other bound morphemes discussed later.

The element to which an affix is attached is called its **base**. (There are two types of bases: **roots** are bases which consist of a single morpheme and which are not affixes, and **stems** are any type of base to which an inflectional affix is added. If you forget this distinction, it is better to use the term 'base'.)

An English affix can be either a **prefix** (before the base) or a **suffix** (after the base). Prefixes do not change the category of their bases: [un[[love]<sub>N</sub>ly]<sub>A</sub>]. (Arguably, verbs like *enthroned*, *beheaded*, *derailed* are exceptions.)

- F. Why are the following examples exceptions to the definition of affixes above: *socialism and other ism's*, *he is quite anti the government*. A German example I heard: *daß ich nicht ständig 'Studenten und Studentinnen' sage, bedeutet nicht, daß ich was gegen die Innen habe*.

**Derivation versus inflection.** Here are some criteria for distinguishing the two phenomena:

- (9) Derivation changes the meaning of a word, while inflection either does not (e.g. when it expresses agreement: *they sing* vs. *she sings*) or does so only with regard to a feature which is part of the grammar rather than the vocabulary of the language. The loss or addition of such an inflectional feature like number, tense or case would be a major upheaval in a language. Inflection tends to be an obligatory convention which is adhered to because of grammatical requirements; inflection does not usually have the purpose of communicating anything.

<sup>2</sup> *Inflammable* has been actively replaced by *flammable* (at least in Australia) because *inflammable liquid* was interpreted as meaning 'a liquid which cannot burn' rather than 'a liquid which can burn', resulting in accidents when people thought it was safe to smoke in the presence of the liquid. Had these people known more about morphology, they might still have been with us today.

<sup>1</sup> In linguistics, an asterisk (the sign \*) indicates that an expression is 'unacceptable' or 'ungrammatical', i.e. is something which no native speaker would say or write.

- (10) Inflection is typically on the edge of the word, i.e. 'outside' derivation, since inflection is the last thing to be added before the word is inserted into the sentence. E.g. *piglets* vs. *\*pigslet*.
- (11) Derivation may change the syntactic category of a word ([[cheer]<sub>1</sub>]<sub>ful</sub>]<sub>ness</sub>]<sub>s</sub>, while inflection preserves the category.
- (12) Inflection is nearly always semantically regular, while derivation is characterised by idiosyncrasies. Thus, *-s* nearly always indicates the plural of a noun, while the semantic effects of *-ion* on its base are unpredictable (*profess/profession*).
- (13) Inflection is much more productive within a syntactic category than derivation (i.e. inflection can apply to more members of the category, and does not show accidental gaps like *\*doglet*).

Additional notes and terminology relevant to inflection.

- Some doubt the reality of the inflection/derivation distinction because the criteria above have exceptions. Those who believe in the distinction point to language-impaired people who master derivation but not inflection.

G. Determine which of the following cases of affixation may be seen as an exception to which criterion in (9)-(13): *betterment*, *glasses*, *worsen*, a *filling* meal, an *interesting* debate, a *heated* debate, *\*she musted*; *\*he dived*/ *\*he dove* (judgements apply only in some varieties of English)

- English inflection is never expressed by prefixes.
- 'Word formation' = morphology other than inflection.
- The group of inflected words formed with a particular base (e.g. *child*, *children*; *drives*, *driving*, *drove*, *driven*) is called a 'paradigm'. Each specific item in a paradigm is called a 'word form'.
- We have an intuition that the word forms within a paradigm are 'the same word'. (This goes back to the idea that inflection does not really change meaning.) Instead of saying that the members of a paradigm are 'the same word' (which would be terminologically confusing), we say that they realise or instantiate the same **lexeme**. Thus, the lexeme WALK is realised by the word forms *walk*, *walks*, *walking*, *walked*. A lexeme is said to be 'abstract', because we do not see it directly; we only see the forms which realise it.
- For each lexeme, there is usually a **citation form**, i.e. the form you would look up in a dictionary. If native speakers don't know the underlined words in *he transmogrified* it or *three troglodytes*, they know instinctively to look up the forms *transmogrify* and *troglodyte*. For nouns, the citation form is the singular, and for verbs it is the infinitive (e.g. *be*, *go*, not *am*, *went*).

**Conversion (zero derivation)** is the change of category of a word without the addition of an affix:

- (14) N>V: *torch* (a house), *access* (a file), *hammer*, *butter*, *accent*, *sign*, *blossom*, *e-mail*  
 V>N: *a look*, *call*, *crack*, *cry*, *meet* (slang for *meeting*), *walk*  
 A>V: *slow* (the tempo), *cool* (the wine), *busy* (oneself), *bare*, *humble*, *empty*

Conversion is sometimes accompanied by a change in stress:

- (15) *compóund*, vs. *cómound*,; likewise: *conflict*, *contest*, *decrease*, *insult*, *refill*, *remake*, *torment*, *transfer*  
 Often, V>N conversions appear as objects of semantically empty verbs like *have/take*: *have a whinge/ smoke/ cry/ jog/ sleep/ wash/ look*; *have a kick with the football*; *take a shower*.

In English, conversion is a very productive process, by which we mean that one often finds new words formed by it.

Some morphologists see conversion as the addition of a zero affix (i.e. an affix which is not pronounced), which allows conversion and affixation to be treated alike, while others prefer to treat conversion as an operation which is different from affixation. We cannot decide this issue here.

### 3. Problems in defining affixation

We said above that affixes are not the only type of bound morpheme. Here are some other types of bound morphemes which are in some respects similar to affixes and make it hard to define what an affix is.

**Cranberry morph(eme)s** (unique morph(eme)s) are bound morphemes which occur in one compound or derivation and nowhere else: *cranberry*, *inert*, *inane*, *inept*, *disgruntled*, *umpteenth*, *affable*; *emsig*, *garstig*. Parallels with similar words (*strawberry*, *inactive*, *incompetent*, *thirteen*) suggest that these are indeed morphemes. Cranberry morphs are simply relics of words which have died out in other uses, or else result when derivations or compounds, but not their bases, are borrowed from other languages.

**Bound roots** like those in *receive*, *permit*, *subsume*; *phonology*, *telegraph*, *geography*, *telescope* are unusual because they can form words which do not contain a free morpheme (*-scope* in *telescope*, *stethoscope* etc. is not the same morpheme as that in *he has scope for improvement*). Bound roots came into English via derived words, so that they never had the chance to be used freely. Another type of bound root is seen in *fishmonger*, *slavemonger*, *whoremonger*, *war monger*, *hate monger*, where *-monger* 'person who sells or encourages something' can only be used in compounds, but was used freely in older English.

**Semi-affixes** are morphemes which are somewhere between compound constituents and affixes in that there are related free forms, but the free forms differ from the semi-affixes in meaning or form. Here are some examples I have collected:

- (16) a. *waterproof*, *fireproof*, *rainproof* (cf. *\*it is proof from/against rain* but *I poofed it against rain* (acceptable to some speakers))

- b. *drug freak*, *Rolling Stones freak*, *video freak* (cf. *\*he is a freak of videos*)  
 c. *dope head*, *Led Zeppelin head*, *morphology head*, *coffee head* (this slang use of *head* refers to a person who goes in for something in a big way, who likes something very much)  
 d. *mock-heroics*, *mock-Gothic* (cf. *\*her heroics were mock* but *to mock*)  
 e. *fireman*, *postman*, *spokesman* (semantic and phonological differences to the free use of *man*)  
 f. *brassware*, *copperware*, *kitchenware*, *tableware*, *hardware*, *gardenware* (cf. *\*ware for the garden*)

Research on English has largely ignored semi-affixes, but German research often mentions them, calling them 'Affixoid' or 'Halbaffixe' (cf. German *Schuhwerk*, *Laubwerk*, *abgasarm*, *breitartig*, *Riesensauerei*, *Heidenspaß*).

Semi-affixes illustrate one of the ways in which affixes develop diachronically. The suffix in *friendly*, *kingly* derives from an old English word *lic* which meant 'body' (related to *like/gleich* and *Leiche*), and the modern structures go back to compounds with meanings like 'having the body (i.e. *Gestalt*) of a friend'. The suffix in *painless*, *mindless* originally came from an adjective which meant 'devoid of, without', which now survives only as an affix, but was once used freely. (It is related to *lose* and Ger. *los*, cf. *loswerden*.)

### 4. Types of compounding; The 'Head' of a Word

We will not discuss the interpretation of compounds at length, since it was talked about in detail in the lecture. However, note some important classes of compounds.

**Endocentric compounds:** the compound is an instance of the entity, activity or property denoted by the last constituent (e.g. *houseboat* is a type of *boat*, *boathouse* is a type of *house*; a person who is *seasick* is *sick*).

- (17) [N N]<sub>N</sub>: *coffee table*, *telephone table*, *dinner table*, *chess table*, *word stress*, *strawberry jam*, *silkworm*, *diesel motor*, *bookshelf*...
- (18) [V N]<sub>N</sub>: *crybaby*, *scrubwoman*, *bakehouse* (this pattern is rare, usually participles are used: *filing cabinet*, *reading class*, *writing table*, *drinking water*)
- (19) [A N]<sub>N</sub>: *blackbird*, *drydock*, *redbrick*, *wetsuit*, *greenhouse*
- (20) [Particle/Preposition N]<sub>N</sub>: *outhouse*, *outgrowth*, *undergrowth*, *offprint*
- (21) [N A]<sub>N</sub>: *bloodthirsty*, *pain-free*, *theory-neutral*, *colourblind*, *class-specific*, *sky blue*

**Exocentric compounds:** the compound does not refer to an entity denoted by either constituent (a *paleface* is not a type of face, but a person who has a pale face)

- (22) [N N]<sub>N</sub>: *paleface*, *redskin*, *redneck*, *redhead*, *highbrow*, *skinhead*, *bigfoot*
- (23) [V N]<sub>N</sub>: *pickpocket*, *spoilsport*, *killjoy*, *answerphone* (Australian term for 'answering machine')
- (24) [V Particle]<sub>N</sub>: *handout*, *putdown*, *sit-in*, *walkout*, *breakdown*, *fallout*, *bailout*, *pushup*,
- (25) [P N]<sub>N</sub>: *afterbirth*, *afternoon*, *underground*

**Copulative compounds:** both constituents refer to the entity denoted by the whole compound. An *owner-builder* is both an owner of a house and its builder.

- (26) [N N]<sub>N</sub>: *owner-builder*, *maidservant*, *producer-director*, *singer-songwriter*, *secretary-lover*
- (27) [A A]<sub>N</sub>: (rare): *bittersweet*, *deaf-mute*

The right-hand constituent in endocentric (and perhaps copulative) compounds is the **head**, the element that determines the semantic and grammatical characteristics of the whole compound. Having already seen the semantic characteristics, let us mention two grammatical properties which distinguish the two classes:

- With regard to syntactic category (Wortart), we note that exocentric compounds do not necessarily have a constituent with the same category as that of the whole compound. Thus, *sit-in* is a noun, but does not contain a noun. Other exocentric compounds (e.g. the type [handful]<sub>N</sub>) have a constituent with the same category as the compound as a whole, but it is not on the right-hand side of the compound and is thus not the head. On the other hand, the category of the right-hand element of English endocentric compounds always matches that of the whole compound.
- Endocentric compounds always take the same inflection as the right-hand element: [[scrub]<sub>N</sub>]<sub>N</sub> is a type of woman. The compound is a noun because *woman* is a noun and its plural is *scrubwomen* because *women* is the plural of *woman*. Note that for many speakers exocentric compounds are not inflected in the same way as their righthand members (*sabre teeth* but: *teeth*, *tenderfoots*, *bigfoots* but *feet*, *still lifes* but *lives*), unlike endocentric compounds (*dog teeth*). This suggests that exocentric compounds do not have a head.

English derivations also (tend to) have their head on the right. This correlates with the tendency noted above whereby suffixes but not prefixes change the category of the word.

H. 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*

### 5. Lexicalisation

A morphological structure is **regular** if its meaning and form is completely predictable on the basis of the meaning of the constituents and general morphological principles. However, often the products of word formation processes are **irregular** (or **idiosyncratic**) in that they have to be memorised individually, since there

are aspects of their meaning and/or form (phonological or morphological structure) which cannot be derived from our knowledge of the parts. Examples of semantically idiosyncratic formations are given in (28), while (29) illustrates formally irregular constructions.

- (28) *strawberry*, *understand*, *loudspeaker*, *uneasy*, *blackboard* (the term was kept after the advent of green blackboards), *midwife* (this compound was formed when *wife* meant 'woman'), *watchmakers* (do not *make* watches these days)
- (29) *shelve* (<*shelf*>), *grease*<sub>er</sub> [-z] (<*grease*<sub>er</sub> [-s]>), *has* (not *\*haves*), *men* (but *cans*, *tans*)

- I. Combinations like *likeable*, *understandable*, *openable* and hundreds of others are formed on the basis of a rule which can be formulated as follows: Derivations of the form VERB+*able/tible* mean 'able to be VERBed' and are formed from transitive verbs (i.e. verbs which take a direct object). Say why the following groups of derivations cannot be (fully) predicted by this rule (the data are mainly from Anderson 1992:186-95).
- navigable*, *demonstrable*, *formulable*, *tolerable*, *separable*, *negotiable*
  - applicable*, *despicable*, *explicable*, *extensible*, *defensible*, *divisible*, *perceptible*,
  - affable*, *culpable*, *capable*, *credible*, *eligible*, *possible*, *probable*, *risible*, *edible*, *formidable*, *portable*
  - perishable*, *agreeable*, *laughable*, *listenable*, *thinkable*, *workable*
  - contemptable*, *objectionable*, *peaceable*, *reputable*, *fashionable*
  - advisable*, *exciteable*, *sensible*, *serviceable*,
- J. (For discussion in class) There are slight differences in meaning in the following pairs: *comparable/ c omparable*, *tolerable/ tolerable*, *appreciable/ appreciateable*, *operable/ operable*. What is the correlation in regularity in meaning and regularity in form in these pairs?

When speaking specifically about the meaning of a morphological structure, we say that it is **transparent** or **compositional** or **motivated** if its meaning is predictable. If it is not, we say it is **non-compositional**, **opaque** or **demotivated**. Some authors use these terms in slightly different senses, but we will not differentiate them here. The regularity of the meaning of morphological structures (i.e. their 'motivation', 'transparency' or 'compositionality') is not a black-and-white question. A partial description of compounds in terms of degree of motivation might look thus:

- (30) a. Fully compositional (*dog owner*, *car race*, *door handle*)  
 b. Semi-compositional (*wheelchair*, *pipe cleaner*). These are obviously are motivated by their constituents but are 'specialised', i.e. have a narrower meaning than we might expect (not all chairs with wheels are *wheelchairs*)  
 c. Non-compositional *blackmail*, *butterfly*, *landlord*, *hedgehog*. These are highly opaque inasmuch as at least one of the constituents has absolutely nothing to do with the meaning of the compound.  
 d. Non-compositional and also formally irregular. (*forehead*, *cupboard*)

It is worth pointing out the phenomenon of **folk etymology**. Etymology is the study of the history of words. A folk etymology is a wrong guess about the motivation of a demotivated word which leads to a change in its meaning or form. ('Wrong' is not to be understood judgementally here- there is no place for value judgements in linguistics.) For example, after *hamburger* (<*Hamburg*>) was borrowed into English, it was assumed that the phonological sequence *ham* was a morpheme equivalent to the free noun (=Schinken), which is why one now has *beefburgers* and *cheeseburgers*. Likewise, *bridegroom* ('Br utigam') goes back to an Old English word *brydguma*, formed from *guma* 'man'. Once *guma* ceased to be used, people assumed the compound was related to the noun *groom* 'person who grooms'. The interpretation of *inflammable* mentioned in footnote 2 as 'not flammable' is another instance of folk-etymology. When people spell *wierdo* 'wierd person' as *wierdow*, they are probably assuming -by folk etymology- that the *-ow* in *widow* is a suffix and that it can be attached to *wierd* as well. Folk etymology is interesting because it shows us that people seem to search for motivation in non-transparent words.

We say that irregular morphological structures are **lexicalised**. This means that they are listed (stored) in the (**mental**) **lexicon**, which is the part of the speaker's memory which contains knowledge about specific vocabulary items. (The lexicon can be thought of roughly as a dictionary. It lists words with their meaning, pronunciation and any other information needed to understand and use the words it contains.) Psycholinguistic research suggests that there are words which, even though they are completely regular, are stored in the lexicon because they are highly frequent, but for our purposes it should be noted that any word which is not 100% predictable on the basis of the morphemes of which it consists and of general principles of grammar **must** be listed in the lexicon. Note also that the lexicon contains every single morpheme in the language, since morphemes are arbitrary associations between sound and meaning. ('Arbitrary' since there is no good reason apart from arbitrary convention why e.g. *dog* means 'dog' and *cat* means 'cat'.)

## 6. Productivity

An affix is **productive** to the extent that one can form new words with it. (New words are referred to as **nonce formations** or **neologisms**, and, if they are used once and never again, as **occasionalisms**.) Examples of extremely productive affixes are those in (31).

- (31) a. *-er*: *baker*, *runner*, *thinker*, *producer*. Neologism: *emailer*  
 b. *-wise* ('-m a ig'): *timewise*, *moneywise*, *jobwise*, *healthwise*. Possible occasionalisms: *singing-wise*, *he's quite good*, but *acting-wise he's lousy*  
 c. *-ful*: *armful*, *fistful*, *drawerful*, *mouthful*. Possible occasionalisms: *potful*, *bath tubful*, *taxifull of people*
- K. Ignoring the spelling (which is a convention determined by normativists and does not necessarily tell us anything about human language actually works), it is not immediately clear that the formations with *-ful* in (31)(c) are the products of morphology rather than syntax, i.e. whether *armful* etc. are single words or are (rather parts) of phrases. Try to work out how the following data could help us in deciding the question.
- two trucks full of hay (=two trucks which are full of hay)
  - two truckfuls of hay (=two truckloads of hay)
- L. Is *-ful* an affix, a compound constituent or a semi-affix?

An unproductive suffix is *-th*. It seems only to occur in the forms in (32) and does not form new derivations (*\*illth*, *\*wholth*, *\*newth*).

- (32) *breadth*, *growth*, *health*, *length*, *stealth* (<*steal* 'sich schleichen'), *strength*, *warmth*, *wealth*, *width* (and in some varieties of English *coolth* and *height* when pronounced [-t ])

- M. Describe the idiosyncrasies in the forms with *-th* in (31).

It is worth emphasising that the productivity of an affix is not merely gauged by the number of words which can be found which have the affix, but by the **new** words which can be formed with it.

## 7. Constraints on morphological processes

Even supposedly fully productive morphological processes are limited by a number of general principles, some of which we discuss here (see also Bauer 1983:84ff). These principles have to be taken into account before we try to determine how productive a morphological process is.

**Blocking**: words formed with otherwise productive affixes are often unacceptable to native speakers because they are 'blocked' by existing words with the same meaning: *\*stealer* is blocked by *thief*, *\*ungood* by *bad*, *\*seeable* by *visible* and *\*wellness* (used by some Germans, but not by modern English speakers) is blocked by *health* and *wellbeing*. *Cooker* cannot refer to a person, because this sense is taken by the noun *cook*. Blocking is part of a more general economy-based linguistic principle whereby a form which is synonymous with (=means the same thing as) another form will either not be used or develop a different meaning. Examples of this can be seen in syntax as well: *\*the day before today* (cf. *yesterday*), *my father's father* (blocked by *grandfather* except when contrasted with *mother's father*).

**Pragmatic constraints** are constraints based on the interaction between world knowledge and language. There are many such restrictions, but we will mention only two.

- Of course, the derived word must be able to mean something. One cannot declare a type of morphological construction to be unproductive if the non-occurring forms denote impossible situations or entities. Thus, the unacceptability of *\*rekill someone* and *\*redrink the beer* does not tell us anything about the productivity of *re-*, but is due to the fact that the situations described do not occur. Likewise, forms like *\*soul holder*, *\*tree mirror*, *\*moon container* or *\*ice clock shovel* do not (yet) exist because they could not name any (as yet) existing entity.
- Situations or entities which are so unusual or specific that speakers would not require a name for them tend not to be described by word formation products. Hence, there is no word in any language which means 'smoke a cigarette within thirteen metres of a bakery', 'rotten fish in a blue guitar case' or 'a handgrenade thrown at a linguistics tutor on a Sunday'.

While on the subject of pragmatics, note that pragmatic factors affect not only productivity, but the interpretation of word formation products. For instance, the converted verb *paint* in *paint a wall* is specialised such that it can only refer to the normal way in which someone applies paint to a wall, not to a situation where paint accidentally gets splashed on a wall. Similar remarks apply to *grease* (*the pan*), *butter* (*the bread*), *torch* (*a house*). Likewise, the compounds *hothouse* and *wetsuit* do not refer to every instance of a *hot house* or *wet suit*, but are confined to more specific types which are in need of a special term.

- N. Speculate on how the following data could be explained in terms of a pragmatic 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)

**Phonological constraints**: Affixes often reject bases which have a certain phonological structure. Examples:

- The comparative morpheme *-er* cannot combine with bases which have more than one syllable excepting bisyllabic (=zweisilbig) bases ending with a syllabic *-y*, *-n* or *-l* (Spencer 1991:399): *\*popularer*, *\*putrider*, *\*slothfuller*, *\*surrealer*; *\*beautifuler*, *\*dangerouser*, *\*curiouser* but *longer*, *nicer*, *fuller*; *greasier*, *fancier*, *commoner*, *subtler*, *nobler*. This constraint is not a general phonological rule of English, since the homophonous (=identical-sounding) noun-forming suffix *-er* is not restrained in the same way: *populariser*, *humidifier*.

- The noun-forming suffix *-al* (*arrival, denial, approval, disposal, refusal, retrieval*) combines only with verbs which are stressed on the last syllable (*\*tamperal, \*boycottal*). Again, this rule applies refers to the specific affix *-al* and is not a general phonological rule. We can see this from the homonymous adjective-forming suffix (*occasional, professional, architectural*).

**Morphological constraints:** Some affixes need (or reject) bases which are termed 'foreign', 'learned' or 'Latinate'. These are forms of Latin, Greek or French origin.<sup>3</sup> Examples of affixes which only combine with Latinate words are *-ant* (*defendant, protectant, applicant, informant* but *\*writant, \*workant*) and *in-* (allomorphs *in-, il-, ir-*): *incomprehensible, impotent, illegal, impossible, inactive, intractable, irrefutable, irrelevant* (but: *\*inunderstandable, \*inpowerful, \*illawful, \*inthinkable*).

Another example of a morphological constraint on an affix is given by Aronoff (1976:53f). The adjective-forming suffix *-al* rejects bases with the suffix *-ment*, but not those where *-ment* is not a morpheme but part of the root:

- (33) *ornament, \*orna, ornamental; regiment, \*regi, regimental, fragment, \*frag, fragmental*  
 (34) *employ(ment), \*employmental; discern(ment), \*discernmental, state(ment), \*statemental*

## 8. Other word formation processes

**Backformation** is the formation of new words by the removal of an affix. When a backformation becomes established in the language, we can only tell that it is a backformation if we know the etymology of the words in question, as is the case in the following examples:

- (35) *sculpt* (from *sculptor*), *burgle* (*burglar*), *laze* (*lazy*), *proofread* (*proofreading*), *scavenge* (*scavenger*)

It is sometimes argued that the historical fact that these are backformations is irrelevant as far as the modern language is concerned. However, many backformations sound a bit strange, which suggests that speakers are somehow aware that they are somehow derived from the apparently more complex related word. Thus, words like *butle, grunted, ept* (from *butler, disgruntled, inept*) are used only in jest. (Note that in these cases, a cranberry morph is being used as a free morpheme.) Verbs like *intuit* (*intuition*) and *combust* (*combustion*) are not acceptable to all speakers.

Often, structures which look like N+V compound verbs are actually either backformations or conversions based on compound nouns where the final element can be either a noun or a verb (see (36)). It appears that there is no genuine N+V compounding in English.

- (36) a. Backformations: *to vacuum-clean* a room (*vacuum cleaner*), *aircondition* (*airconditioning*), *stagemanage* (*stagemanager*), *self-destruct* (*self-destruction*), *playact* (*playacting*), *eavesdrop* (*eavesdropper*), *breastfeed/ handfeed/ spoonfeed* (*breastfeeding* etc.), *skydive* (*skydiving*), *babysit* (*babysitting*)  
 b. Conversions: *to colour-change* a garment, *whitewash*, *deadlock*

**Clipping** is the shortening of a word by the deletion of phonological material (not necessarily corresponding to morphemes). Examples:

- (37) *prof* (from *professor*), *auto(mobile)*, *pro(stitute)*, *lab(oratory)*; (*bull*)*dozer*, (*Viet*)*nam*, *sitcom* (*situation comedy*); *Facmac* (the MacIntosh computer at the Sydney University Faculty of Arts), *Stones* (*Rolling Stones*)

**Blending** is the merging of two words in which at least one of them is distorted phonologically, often not at a morpheme boundary:

- (38) *carjack* (*hijack+car*), *stagflation* (*inflation+stagnation*), *Reaganomics* (*economics+Reagan*)

**Acronyms** are words formed by taking the initial letters from the words in a compound or phrase and pronouncing the word spelled by them. **Abbreviation** is similar, but the names of the letters are pronounced instead.

- (39) *NATO, UNICEF, AIDS, laser* (Light Amplification by Stimulated Emission of Radiation)  
 (40) *BBC, cd, AC/DC* (Anti-Christian Devil Children, according to some folk-etymologists)

## 9. References

All the works marked with a diamond are morphology textbooks. Marchand (1969) offers a large range of data. Other sources are given only for the sake of bibliographical integrity and will not be understood by students who have not covered the material in one of the textbooks.

- Anderson, S, 1992: *A-Morphous Morphology*. Cambridge.
- Aronoff, M, 1979. *Word Formation in Generative Grammar*. MIT Press.
- ❖ Bauer, L, 1983. *English Word Formation*. Cambridge.
- ❖ Bauer, L, 1988. *Introducing Linguistic Morphology*. Edinburgh University Press.
- ❖ Carstairs-McCarthy, A., 1992. *Current Morphology*. Routledge.
- ❖ Katamba, F, 1993. *Morphology*. 1993. MacMillan.

<sup>3</sup> The claim is, of course, not that native speakers have to know the origins of the affixes in order to be able to use them. Rather, English morphemes are subdivided into the Latinate and Germanic (native) classes on the basis of certain phonological and morphological properties.

- ❖ Jensen, J., 1990. *Morphology*. Benjamins.
- Marchand, H., 1969. *Categories and Types of Present-Day English Word Formation*. Munich: Beck'sche Verlagsbuchhandlung.
- ❖ Spencer, A., 1991. *Morphological Theory*. Blackwell.

### Additional questions based on the handout 'English Morphology'

- A. For the expressions in the list below, do the following things:  
 (a) divide them into morphemes,  
 (b) indicate whether each morpheme is bound or free. If it is free, indicate its syntactic category. Here are some standard abbreviations worth memorising: N(oun), V(erb), A(djective), P(reposition)  
 (c) try to group the morphemes into 'constituents', i.e. units belonging together. To help you do this, the first two examples are partly done for you.

1. unplayable [un [[play] [able]]]

We do not analyse *unplayable* as [ [ [un] [play]] able] for at least two reasons: *playable* is a word which already exists, and the incorrect analysis would involve the non-existent word *\*unplay*.

2. nude bathing oponent [[nude [[bath] [ing]]] opponent]

This is an example of a compound containing a unit larger than a word, a phrase (*nude bathing*).

The basic constituent structure is [[nude bathing] [opponent]] rather than [[nude] [bathing opponent]] because of the meaning: the structure means 'opponents of nude bathing' than 'nude opponents of bathing'.

- ilconceived
- seasickness
- nail polish remover
- destabilise
- uninventiveness
- professionalism
- unnerving
- overweight
- wine cooler
- ineffable
- theory-specific
- truckfulls

- B. Explain the difference between phonologically, morphologically and lexically conditioned allomorphy using the following phenomena as examples:

- The final morpheme in the words *proceed, accede, concede, recede* is realised as /ses/ when certain suffixes, including *-ion* (*accession, procession, concession, recession*) and *-ive* (*recessive, concessive*) are added.
- The English plural morpheme is realised as zero (i.e. does not change the pronunciation of the base) in a small set of words that have to be memorised one by one by every child or adult learning English. Examples are *dear, sheep, fish* and *dice* (for speakers who don't use *die* as the singular).
- In the verbs below, the prefix forms verbs from nouns or adjectives meaning roughly '(cause to) enter a particular thing or state'. The prefix has two allomorphs. One is /em/ before bilabial consonants and the other is /en/, used in all other contexts.  
*emprison, embody, empower, embolden, embitter, empanel; enchain, endanger, enlist, entrain, enslave, ensnare, entangle, enlarge*

- C. Name the word formation processes responsible for the words printed in italics (*Kursivschrift*) below. Sometimes two or more processes are involved. Some of the words are not established in the English vocabulary, but are occasional formations. All have been used by at least one native speaker, however. Be specific: if you find a compound, say whether it is copulative, endocentric or exocentric.

- tone-deaf* and dissatisfied *pseudo-intellectuals* who can play a couple of chords on a guitar shouldn't have any trouble getting a *recording contract* for a *singer-songwriter album* with *CBS*
- dozer* (=bulldozer) (c) it *self-destructed* (d) they *tidied* the room
- Abo* (derogatory term for an Australian Aborigine) (f) they had a *bawl* about the depressing events
- That's very *un-p.c.*
- I *twiggled* the key in the lock (speech error based on *twist* and *wiggle*)
- ASIO* [eiziu] (=Australian Security and Intelligence Organisation)
- it *out-herods* Herod (=is more like H. than H. himself; Shakespeare, Hamlet, Act 3 scene 2)
- emote* (new word meaning 'to speak emotionally about something')
- redback* (=a type of spider with a red back)