

Introduction to Linguistics  
 Homework 2: Morphology and Lexikon  
**Due: 21 November, 2006**

In this homework we combine morphology with phonology. You should make sure your rules work for the entire range of examples, that your notation is proper, and that your rules are as general as possible. Also explain your answers; Tell us why you think that answer you gave is a good one, what assumptions you make and, if appropriate, what new data might show your answer to be right or wrong.

**1. Swahili verbal morphology (20 pts).** Swahili is a language spoken in East Africa. As the following example shows, Swahili verbs are so complex, that they can sometimes convey the meaning of an entire sentence on their own:

atanipenda	“he will like me”	atanipiga	“he will beat me”
atakupenda	“he will like you”	atakupiga	“he will beat you”
atampenda	“he will like him”	atampiga	“he will beat him”
atatupenda	“he will like us”	ananipiga	“he is beating me”
atawapenda	“he will like them”	anakupiga	“he is beating you”
nitakupenda	“I will like you”	anampiga	“he is beating him”
nitampenda	“I will like him”	amekupiga	“he has beaten you”
nitawapenda	“I will like them”	amenipiga	“he has beaten me”
utanipenda	“you will like me”	amempiga	“he has beaten him”
utampenda	“you will like him”	alinipiga	“he beat me”
tutampenda	“we will like him”	alikutiga	“he beat you”
watampenda	“they will like him”	alimpiga	“he beat him”
atakusumbau	“he will annoy you”	wametulipa	“they have paid us”
unamsumbau	“you are annoying him”	tulikulipa	“we paid you”

a. Give the Swahili morphemes corresponding to the following English morphemes: *I, me, us, you* (as subject), *you* (as object), *he, him, they, them, -ed* (past tense), *will* (future), *is+ing* (present progressive), *has+en* (present perfect), and the verbal roots *like, annoy, beat* and *pay*.

b. Illustrate how the morphemes combine by giving inflected forms of the verbs *annoy* and *pay* each that do NOT appear in the above list with their translation into English. Make sure you make use of the greater portion of the morphemes (give two or three different forms each)

**2. Mende Tone (35 pts)** Mende is a Niger-Congo language spoken in Africa. Tone is a distinctive feature in Mende. In the data below the diacritic marks on the verbs:  $\acute{\quad}$ ,  $\grave{\quad}$ ,  $\hat{\quad}$ , and  $\tilde{\quad}$  indicate high tone, low tone, falling tone and rising tone respectively.

ndá	'mouth'	ndámá	'on (the) mouth'	ndáhá	'in (the)mouth'
kpà	'debt'	kpàmà	'on debt'	kpàhà	'in debt'
mbû	'owl'	mbúmà	'on (the) owl'	mbúhà	'in (the) owl'
mbă	'rice'	mbàmá	'on rice'	mbàhà	'in rice'
ngúlú	'tree'	ngúlúmá	'on (the) tree'	ngúlúhá	'in (the) tree'
bèlè	'trousers'	bèlèmà	'on (the)trousers'	bèlèhà	'in (the)trousers'
kényà	'uncle'	kényàmà	'on (the) uncle'	kényàhà	'in (the) uncle'
njàhâ	'woman'	njàhámà	'on (the) woman'	njàháhà	'in (the) woman'
nàvó	'money'	nàvómá	'on money'	nàvóhá	'in money'
kélélé	'fraction'	kéléléamá	'on fraction'	kéléléhá	'in fraction'
kpàkàlì	'chair'	kpàkàlimà	'on (the) chair'	kpàkàlihà	'in (the) chair'
félàmà	'junction'	félàmàmà	'on (the) junction'	félàmàhà	'in (the) junction'
ndàvúlá	'sling'	ndàvúlámá	'on (the) sling'	ndàvúláhà	'in (the) sling'
nìkìlì	'peanut'	nìkìlimà	'on (the) peanut'	nìkìlihà	'in (the) peanut'

a) List the allomorphs for the morpheme meaning 'on' or 'on (the)' and the allomorphs for the morpheme meaning 'in' or 'in (the)'.

b) Propose underlying forms for the morphemes (including the noun stems) and give rules for generating the surface forms from them.

Use the following feature specification for tones:

[+tonestart,+toneend] for high tone,

[-tonestart,-toneend] for low tone,

[-tonestart,+toneend] for rising and

[+tonestart,-toneend] for falling.

[á] = [+back,+low,-high,-round,+tonestart,+toned]

[ú] = [+back,-low,+high,+round,+tonestart,-toneend].

c) Finally, list the different tunes that there are in the forms in the table (tune = sequence of tones). Consider a rising tone a sequence of a low tone and a high tone and a falling tone a sequence of a high tone and a low tone.

So, for example: the form mbùmà has the tune HLL.

DON'T list a tune for every form. Make a list of the distinct tunes and formulate a generalization about the possible tunes.

### 3. Derivational morphology (45 points). German knows many words ending in "-itis".

Probably all of them are derived by currently productive rules that would allow for more words to be formed according to the same rule, and these rules show a regular effect on meaning, i.e. they show how the meaning of the newly formed word ending in "-itis" is related to the meaning of the base.

Here are some examples of such words:

*Poliomyelitis, Elephantitis, Telefonitis, Nephritis, Subventionitis, Spionitis, Mobiltelefonitis, Arthritis, Hollanditis, Invasionitis, Doktoritis, Assimilitis, Enzephalitis, Pluralitis, Spenderitis, Reformitis, Barcelonitis, Kolitis, Coxitis, Karajanitis, Vielzuvielitis, Gutachteritis, Dichteritis.*

Note that the some of these word formations, in particular those that make use of Classical Greek or Latin, do not properly use a Greek or Latin base, but rather a so-called formative. For instance poliomyel-, arthr-, enzephal-, kol-, cox- are such formatives that occur in many (German) medical terms, such as "Arthrose", "Enzephalogramm".

This is what you should do: Try to find the productive derivation rules for all the above words on "-itis". Each rule must contain the following information:

1. What are the constraints on the base? What part of speech, what semantic, syntactic, morphological, or phonological properties must the base have ? (For formatives you can make do with only the semantic properties.)
2. How is the -itis word semantically related to the base? Give an informal description
3. Does the rule have any exceptions? If you can find some, list them.
4. For each rule that you find, give all those of the above words that are derived by that rule, plus two or three more words that can be derived by the same rule.

You should be able to find three (possibly more) such rules that would cover most of the cases in the list above. Please list those cases from the list that your rules do not cover; There should not be more than four words left on this list.

Note that the rules must be formulated in such a way that they can apply "blind": All conditions for their application must be contained in the rule, and if there are exceptions, they must be listed.

Note also that this task is limited to the words on the example list above. Your rules need not cover words that are not on the list (attempting that would be a very complex job), but you may still look for exceptions to your rules: words that would be possible according to your rules, but are in fact not possible.