

Establishing and Maintaining Morpheme Order

Words are composed of meaningful parts that linguists call **morphemes**. For example, *cat-s* contains two morphemes – one meaning something like ‘feline’ and the other ‘plural’; *cantaloup* contains only one morpheme. Thus the notion of morpheme has nothing to do with length.

Some languages have words that contain many morphemes; a short example from the language Abxaz is given in (1), where hyphens separate morphemes. The first morpheme tells us that the subject is second person (‘you’) and masculine, the second that the object is third person neuter (‘it’), and the third that the base meaning is ‘read’.

- (1) *w-a-px~ojʔ* Abkhaz
 2M.SU-3N.OBJ-read
 ‘you (masculine) are reading it’

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Specific kinds of morphemes most often occur in certain positions relative to others. These may be thought of as their universally preferred or expected positions, as indicated in

Table 1, where SU represents the person and number of the subject, OBJ the person and number of the (indirect or direct) object, TNS the tense, ASP the aspect, and DERIV derivational morphemes. (The meaning of the latter is discussed below.)

SU	OBJ	MOOD	TNS	ASP	DERIV	ROOT	DERIV	ASP	TNS	MOOD	OBJ	SU
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Table 1. Universally preferred linear order of morphemes in the verb.

We notice immediately that the morphemes in Table 1 are in mirror-image linear order on either side of the root, and that some morphemes are usually “inside” or “outside” certain others. The suffix *-en* is an example of a derivational morpheme, which builds a new word, and Table 2 shows how the parts of the word *dark-en-s* fit with the order of Table 1.

						dark	en					s
SU	OBJ	MOOD	TNS	ASP	DERIV	ROOT	DERIV	ASP	TNS	MOOD	OBJ	SU

Table 2. Example of linear order of morphemes in the verb in English

Table 3 gives the preferred universal order for nouns and pronouns, but not in mirror-image; and Table 4 shows how the morphemes of the word *comput-ation-s* fit this order.

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ROOT	DERIV	NUMBER	CASE
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Table 3. Preferred order in the noun or pronoun

compute	ation	s	
ROOT	DERIV	NUMBER	CASE

Table 4. Example of order in the noun in English

Tables 1 and 3 raise various questions: Why are morphemes (usually) in these orders, instead of some other orders? How do morphemes get into these orders historically? Given that all languages are constantly changing, how do languages maintain the preferred orders?

The answer to the first question is, at least in part, that morphemes are in this order because it represents semantic scope. If one part of a word is within the semantic scope of another, the meaning of the latter applies to the former. Thus, the order of elements in *((dark)en)s* indicates iconically that the final *-s*, which means a third person singular subject, applies not just to *-en*, and not just to *dark*, but to the whole of *dark-en*. Similarly the final *-s* in *((comput)ation)s*, which means now plural, applies not just to part of what precedes it, but to the whole, *computation*.

However, it is the other questions above that appeal especially to a historical linguist. Complex words are built up historically, step by step, usually one morpheme at a time. It has been hypothesized that the order of morphemes reflects the order in which they are added. While there is certainly some truth in this, it does not seem to be the whole story.

Sometimes, though rarely, morphemes change their position after they have been added to a word. Usually this kind of change puts them more in line with the ideal in Table 1. An example is given in (2). The examples are from Georgian, spoken in the Republic of Georgia. When the former word *me* meaning ‘indefinite’ was added to the word for ‘what’ it became a derivational morpheme and was not in the preferred position indicated in Table 3. The change in order shown in (2b) brought it in line with Table 3, as shown in Table 5.

- | | | |
|-----|---|--|
| (2) | <p>(a) <i>ra-s'me</i>
 what-DAT'INDEF
 ROOT-CASE'DERIV
 ‘something’</p> <p>(b) <i>ra-me-s</i>
 what-INDEF-DAT
 ROOT-DERIV-CASE
 ‘something’</p> | <p>Old Georgian</p> <p>Modern Georgian</p> |
|-----|---|--|

ra	me		s
ROOT	DERIV	NUMBER	CASE

Table 5. Preferred order established in Modern Georgian

A second way languages maintain morpheme order even through a variety of kinds of change is by assigning a new function to a morpheme in keeping with its order. An example of this comes from Laz, a language

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related to Georgian. (The examples on the left have asterisks to indicate, as is conventional, that the forms are reconstructed, that is, inferred or hypothetical.) In the older, inherited pattern, which we can be relatively sure of because of the structure of nouns in its sister languages, several suffixes began with *i*. On this basis, speakers began to use *i* before all suffixes in the singular, so that, in effect its function changed. It became a marker of the singular number. This is summarized as the change from the system in Table 6 to that in Table 7.

(3)	(a) Inherited pattern	(b) Attested pattern			
	Nom	*k'oč-i *k'oč-ep-i	k'oč-i	k'oč-epe	'man'
	Nar	*k'oč-k *k'oč-ep-k	k'oč-i-k	k'oč-epe-k	
	Dat	*k'oč-s *k'oč-ep-s	k'oč-i-s	k'oč-epe-s	
	Gen	*k'oč-iš(i) *k'oč-ep-iš(i)	k'oč-i-š(i)	k'oč-epe-š(i)	
	All	*k'oč-iša *k'oč-ep-iša	k'oč-i-ša	k'oč-epe-ša	
	Abl	*k'oč-iše(n) *k'oč-ep-iše(n)	k'oč-i-še(n)	k'oč-epe-še(n)	
	Inst	*k'oč-it *k'oč-ep-it	k'oč-i-te	k'oč-epe-te	

k'oč			i
ROOT	DERIV	NUMBER	CASE

Table 6. Morpheme order in nominative case, inherited pattern

k'oč		i	∅
ROOT	DERIV	NUMBER	CASE

Table 7. Morpheme order in nominative case, attested pattern

A third way of maintaining preferred morpheme order is through loss of a trapped morpheme. The example here is again taken from Georgian, and it illustrates the common change of an auxiliary becoming part of a main verb. In eighth century (and earlier) Georgian the first person subject form of the intransitive pluperfect had the form (for example) *damalul v̄iq' av* 'I had hidden', where *damalul* corresponds to 'hidden', and *v̄iq' av* is the past tense of the auxiliary 'be'. The underlined *v* in *v̄iq' av* indicates that the subject is first person singular, 'I'. The first person subject marker is always a prefix this way in the verb, though it is not always the first prefix. The problem arises when the two words merge into one, **damalulv̄iq' av*, maintaining the same meaning. Here *v* is not in its accustomed place, at or near the beginning of the verb. The solution that speakers found was to remove it from its earlier position and insert it near the beginning of the word, in keeping with other verb forms in Georgian: *damaluliq' av(i)*. (The final *i* is an irrelevant addition that happened about the same time.) Although this appears to be movement, evidence from other examples suggests that it is rather loss in one position and insertion in the other.

Thus, we find that languages have at least three ways of establishing and maintaining something close to the universally preferred orders shown in Tables 1 and 3. As we saw in example (2), languages occasionally move a morpheme, changing its order relative to others. They may assign

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a new function to part of a word, in keeping with its position in the word, as illustrated in (3). A morpheme that occurs in a position not in keeping with the preferred orders of Tables 1 and 3 may be lost, as we saw in the Georgian pluperfect.