

26 Prefixing versus Suffixing in Inflectional Morphology

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1 Defining the values

This map shows the overall extent to which languages use prefixes versus suffixes in their inflectional morphology. The following inflectional affixes were considered:

- (i) case affixes on nouns (see Map 51)
- (ii) pronominal subject affixes on verbs
- (iii) tense-aspect affixes on verbs (see Map 69)
- (iv) plural affixes on nouns (see Map 33)
- (v) pronominal possessive affixes on nouns (see Map 57)
- (vi) definite or indefinite affixes on nouns (see Maps 37 and 38)
- (vii) pronominal object affixes on verbs
- (viii) negative affixes on verbs (see Map 112)
- (ix) interrogative affixes on verbs (see Map 116)
- (x) adverbial subordinator affixes on verbs (see Map 94)

Explanations of these various categories of affixes can be found in the chapters accompanying the maps cited in the above list. Pronominal subject affixes and pronominal object affixes are defined similarly to the definitions used in Chapters 100, 102, and 104 except that (i) affixes coding gender or number but not person are included here, and (ii) clitics that can attach to words other than the verb are not included here.

Languages were assigned a **prefixing index** and a **suffixing index** in the following way. For each affix type above for which the language predominantly employs prefixes, one point was assigned to the prefixing index for the language, and analogously for the suffixing index. If for a given affix type, a language has both prefixes and suffixes with neither deemed dominant, half a point was added to both the prefixing index and the suffixing index of the language. However, the first three affix types in the above list were considered sufficiently important that they were assigned twice as many points as the other affix types: for each of these affix types, if a language predominantly employs prefixes, two points were added to the prefixing index of the language and analogously for suffixes. If for one of these three types, a language has both prefixes and suffixes with neither deemed dominant, one point was added to both the prefixing index and the suffixing index of the language. In the discussion below, I will refer to the sum of the prefixing index and the suffixing index as the **affixing index**. Note that the number of distinct morphemes of a given type was not considered: for example, a language with a single tense-aspect suffix was coded the same as a language with many tense-aspect suffixes. Derivational affixes and other types of inflectional affixes were not considered.

We can illustrate the calculation of these indices for Nuauulu (Austronesian; Seram Island, Indonesia). Nuauulu has pronominal subject prefixes on verbs, as in (1a), contributing two points to its prefixing index; a plural suffix on nouns, also illustrated in (1a), contributing one point to its suffixing index; and both possessive prefixes and possessive suffixes, as in (1b) and (1c), contributing half a point to the prefixing index and half a point to the suffixing index.

(1) Nuauulu (Bolton 1990: 45, 54)

- a. *i-au-sipu* *api-a*
3SG-CAUS-get.down thing-PL
'She put down her things.'
- b. *au* *we-topi*
1SG 1SG.POSS-hat
'my hat'
- c. *unu-e*
head-3SG.POSS
'his head'

Nuauulu has what look like pronominal object suffixes on verbs, but these are excluded here since they attach to a postverbal adverb, when there is one, rather than to the verb, as in (2).

(2) Nuauulu (Bolton 1990: 89)

arei-mo, wa-ni a-rime kuru-i
this-TOP EXIST-PROX 1PL.EXCL-hold tightly-3SG.OBJ
'We are holding it tightly.'

Nuauulu does not have affixes belonging to any of the other categories listed above, so it has a prefixing index of 2.5 and a suffixing index of 1.5. The prefixing index for Nuauulu is 62.5 per cent of the amount of its affixing index (2.5 prefixing points out of a total of 4 = 2.5 + 1.5). According to the definitions given below, Nuauulu counts as a language with a moderate preference for prefixing.

○	1. Little or no inflectional morphology	122
●	2. Predominantly suffixing	382
◊	3. Moderate preference for suffixing	114
◈	4. Approximately equal amounts of suffixing and prefixing	130
◈	5. Moderate preference for prefixing	92
●	6. Predominantly prefixing	54
	total	894

The first value shown on the map is for **languages which have little or no inflectional prefixing or suffixing**. A language is classified as a language of this type if its affixing index is two or less. An example of a language of this type is Thai, which is completely lacking in inflectional affixes of the categories examined. A more borderline case of this type is Vai (Mande; Liberia; Welmers 1976), in which the only inflectional affixes I record are suffixes for tense-aspect, which gives the language an affixing index of only two. Other less frequent inflectional methods like infixation, tonal affixes, and stem changes were ignored, so that a language might count as a language with little inflectional prefixing or suffixing but still have affixation of these other types. For example, Dinka (Nilotic; Sudan; Nebel 1948) employs stem changes for case and for plural, but the only suffixes or prefixes I record are a definite suffix and possessive suffixes, which give the language an affixing index of only two, which means that it is shown as having little or no inflectional prefixing or suffixing.

For all the remaining types, the affixing index must be greater than two. The types differ from each other in the relative amount of prefixing and suffixing.

The second type is **languages which are predominantly suffixing**, defined for the purposes of this map as languages with a suffixing index which is more than 80 per cent of its affixing index. The highest suffixing index in the sample is eleven, represented by two languages, West Greenlandic (Eskimo; Fortescue 1984) and Central Yup'ik (Eskimo; Alaska; Reed et al. 1977); both of these languages are exclusively suffixing for the affix categories examined. This type also includes languages with considerably less affixation, but what affixation they have is largely if not entirely suffixing, as long as the affixing index is greater than two. For example, Korana (Central Khoisan; South Africa; Meinhof 1930) has an affixing index of three, with suffixes for case (two points) and plural (one point) and no inflectional prefixes.

The third type is **languages with a moderate preference for suffixes**, defined as languages in which the suffixing index is more than 60 per cent of the affixing index but not more than 80 per cent. An example of such a language is Beja (Cushitic; Sudan; Reinisch 1893), which has a suffixing index of ten and a prefixing index of three (so that its suffixing index is 77 per cent of its affixing index). An example of a language of this type with less morphology is Mokilese (Oceanic; Micronesia; Harrison and Albert 1976), which has a suffixing index of two and a prefixing index of one.

The fourth type is **languages with approximately equal amounts of suffixing and prefixing**, defined here as languages with a suffixing index that is greater than or equal to 40 per cent of the affixing index and less than or equal to 60 per cent of the affixing index. An example of a language of this type with considerable inflectional morphology is Ubykh (North-West Caucasian; Turkey; Charachidze 1989), whose suffixing index and prefixing index are both 5.5. An example of a language of this type with less inflectional morphology is Kiribati (Oceanic; Kiribati; Groves et al. 1985), whose suffixing index and prefixing index are both two.

The fifth type is **languages with a moderate preference for prefixes**, where the prefixing index is more than 60 per cent of the affixing index but not more than 80 per cent. An example of such a language is Mohawk (Iroquoian; New York State and Ontario; Bonvillain 1973), which has a prefixing index of six and a suffixing index of three. An example of this type with less morphology is Au (Torricelli; Papua New Guinea; Scorza 1985), which has a prefixing index of two and a suffixing index of one. Nuaulu, used above to illustrate the calculation of the indices, is also a language of this type.

The last type is **languages which are predominantly prefixing** in their inflectional morphology, defined here as languages with a prefixing index that is more than 80 per cent of its affixing index. The highest prefixing index in the sample is 9.5 and is found in Hunde (Bantu; Democratic Republic of Congo; Kahombo 1992). Hunde is not exclusively prefixing; it has a suffixing index of 0.5, due to its having both possessive prefixes and possessive suffixes, with neither dominant. Again, this type includes languages with less morphology, as long as their affixing index is greater than two and their affixes are primarily prefixes. For example, Sango (Adamawa-Ubangi, Niger-Congo; Central African Republic; Samarin 1967) has an affixing index of three, with pronominal prefixes on verbs (two points) and plural prefixes on nouns (one point).

2 Geographical distribution

The map shows an overall preference for suffixes. In fact, of the five types other than those with little affixation, those which are predominantly suffixing are about as frequent as the other four types combined (382 versus 390), and outnumber those which are predominantly prefixing by about seven to one. In general, the areas where one finds languages with a moderate preference for suffixes are similar to those where one finds a strong preference for suffixes, and similarly to a lesser extent for prefixes, so it is possible to speak of two basic types, languages with more prefixing and languages with more suffixing, and to discuss the geographical distribution of these two basic types.

The preference for suffixes is especially strong on the mainland of Eurasia, where there are very few languages with more prefixing: in fact only five exceptions are shown, Ket (Yeniseian; Siberia; Werner 1997), Temiar (Aslian, Mon-Khmer; Malaysia; Benjamin 1976), and three Tibeto-Burman languages. Even languages with approximately the same amount of prefixing and suffixing are quite infrequent in this area. The suffixing preference is even stronger in Australia, where languages with a prefixing preference are restricted to the north; the languages in most of Australia not only display a suffixing preference, but a strong one. Languages with more suffixing also form the dominant type in South America, though for

many of the languages here, the preference is a weak one. New Guinea also exhibits a suffixing preference, at least in areas closer to the centre. Around the edges, there are some languages with a preference for prefixes; some of these are Austronesian languages, but others belong to the Torricelli, East Bird's Head, and West Papuan families.

In North America, there are more languages preferring suffixes overall, but there are also clear areal patterns. Within 800 kilometers of the western coast of Canada and the United States, the languages are predominantly suffixing. To the east of this area, the two basic types are about equally common. Languages with more prefixing are in the majority in Mesoamerica.

In Africa, both types are common overall, again with clear areal patterns. In the southern half of the continent, languages with more prefixes predominate: the majority of these are Bantu languages, but one also finds more prefixing among the Adamawa-Ubangi languages to the north of Bantu. The greatest number of languages on the map that are predominantly prefixing (and not just moderately prefixing) is in Africa. Although the majority of these are Bantu languages, there are also a number of other Niger-Congo and Nilo-Saharan languages.

Languages with approximately equal amounts of prefixing and suffixing are more common in areas where there are both many languages with more prefixing and many languages with more suffixing, notably in central Africa and North America, rather than in areas where languages with suffixes predominate. Such languages are also common in South America.

Languages with little inflectional prefixation or suffixation are concentrated in two areas. The larger area stretches from South-East Asia south to the Austronesian languages of Indonesia, the Philippines, and east into the Pacific. The other area is in a belt across the middle of Africa, though there are also many languages in this region with somewhat more inflectional morphology. But the only area in which all languages shown are of this type is on mainland South-East Asia, from Vietnam to Thailand and stretching north into adjacent areas in China. In the other areas where languages of this type are common, among Austronesian languages and in Africa, they are interspersed with languages of other types. Among Austronesian languages, those other types are typically ones involving more prefixing. In the area in Africa where languages with little or no affixation are common, all other types are common as well.

3 Theoretical issues

Perhaps the largest theoretical question is why suffixes are more frequent than prefixes. Various hypotheses have been offered. Among them is the idea that prefixes make lexical recognition more difficult, especially if it is more difficult to identify the beginning of stems (Cutler et al. 1986). Suffixes do not present a problem, since identifying the ends of stems is less important for lexical recognition. Further discussion is found in Greenberg (1957), Hall (1988), and Bybee et al. (1990). It should be noted that different categories of affixes exhibit different degrees of preference for suffixes. For example, case affixes exhibit a particularly strong suffixing preference; case prefixes are fairly rare (see Map 51). On the other hand, pronominal possessive prefixes are approximately as common as suffixes (see Map 57).