

Morphological typology cont.

Some common typological parameters

- **Morphological typology:**

- fusion

- flexivity

- semantic density (synthesis and exponence)

- Other parameters to consider:

- position (prefix, suffix, etc.)

- locus (head vs. dependent marking)

- We start with one of the **central concepts of morphological typology**

Some common typological parameters

- **Synthesis:** internal complexity of words
= **how many morphemes per word**
i.e. to what extent a language permits morphemes to be combined to form polymorphemic words
- Traditional synthesis types:
 - analytic:** one word=one/few morphemes
 - synthetic:** one word=many morphemes
 - polysynthetic:** one word=very many morphemes

Word

Word

- **What is a word?**

Word

- Matthews 1991, Section ‘What are words?’ :
‘there have been many definitions of the word, and if any had been successful I would have given it long ago, instead of dodging the issue until now’
- Different word types (cf. Dixon & Aikhenvald 2002):
 - **orthographic word**
 - **phonological word**
 - **grammatical word**
- These three word types may **coincide**

Orthographic word

- in writing, words are **conventionally separated by spaces**

- writing conventions are often inconsistent:

e.g. **English**

cannot

vs.

must not

as one word

as two words

There appears to be no reason for this;

it is **just a convention of the language community**

Orthographic word

- in writing, words are conventionally separated by spaces
- writing conventions are often inconsistent
e.g. **the Bantu languages of southern Africa:**
a complex concatenative verb structure

two convention types used for writing word divisions:

(a) **disjunctivism** – according to which relatively simple, and short linguistic units are written and regarded as words;

(b) **conjunctivism** – according to which simple linguistic units are joined to form long words with complex morphological structures'

Orthographic word

- writing conventions are often inconsistent

e.g. **Northern Sotho**

‘we shall skin it with his knife’

- the two ways of writing this are:

(a) disjunctive system:

re tlo e bua ka thipa ya gagwe

1PL.SBJ FUT 3SG.OBJ skin with knife[9] 9 3SG.POSS

(b) conjunctive system:

retloebua kathipa yagagwe

re-tlo-e-bua ka-thipa ya-gagwe

1PL.SBJ-FUT-3SG.OBJ-skin with-knife[9] 9-3SG.POSS

Orthographic word

- different orthographic strategies have been adopted for different Bantu languages:
 - Northern Sotho, Southern Sotho and Tswana are written disjunctively
 - Zulu and Xhosa are written conjunctively
- BUT there is no inherent phonological or grammatical difference between these languages; it is just that different writing conventions are followed
- in the conjunctive system spaces are written between grammatical words (which may be long);
- in the disjunctive system spaces are written between morphemes within grammatical words

Orthographic word

- The orthographic conventions used for a language tend to reflect what the language was like at the time when an orthography was first adopted (e.g., *knee* was pronounced with an initial *k* when English was first written)
- A language may undergo considerable changes, few of which get incorporated into the orthography e.g. French has shifted from a mildly synthetic structure to one bordering on the polysynthetic, but the orthography still reflects its earlier mildly synthetic structure

Word

- Different word types (cf. Dixon & Aikhenvald 2002):
 - **orthographic word**: is not necessarily based on linguistic unity or may be inconsistent
 - **phonological word**
 - **grammatical word**

Grammatical vs. phonological word

- *'since the word is the central element of the language system, it is natural for it to face both ways: not only is it the chief subject matter of lexicology, but it is **dependent on phonology for the analysis of its sound-structure, and on syntax for the delimitation of its status in more complex configurations**'* (Ullmann 1957)
- is 'word' primarily a grammatical unit, with some phonological properties;
- or is it primarily a phonological unit, with some grammatical properties;
- or is it equally a unit in grammar and in phonology?

Grammatical vs. phonological word

- Cannot 'word' be always grammatical AND phonological unit?
- **NO, because utilising phonological AND grammatical criteria to define a single unit can lead to conflicts and mismatches**

Phonological word

- There is no single criterion which can serve to define a unit 'phonological word' in every language
- Rather there is a range of types of criteria such that every language that has a unit 'phonological word' (which is probably every language in the world) utilises a selection of these.
- Definition (Dixon & Aikhenvald 2002):
a phonological word is a phonological unit larger than the syllable (in some languages it may minimally be just one syllable) which has at least one (and generally more than one) phonological defining property chosen from the following areas:

Phonological word

- Definition (Dixon & Aikhenvald 2002):
a phonological word is a phonological unit larger than the syllable which has at least one phonological defining property:
 - (a) **Segmental features:**
 - internal syllabic and segmental structure;
 - phonetic realisations in terms of this;
 - word boundary phenomena;
 - pause phenomena

Phonological word

- Definition (Dixon & Aikhenvald 2002):
a phonological word is a phonological unit larger than the syllable which has at least one phonological defining property:
(b) **Prosodic features:**
 - stress (or accent) and/or tone assignment

Phonological word

- Definition (Dixon & Aikhenvald 2002):
a phonological word is a phonological unit larger than the syllable which has at least one phonological defining property:
(c) **Phonological rules:**
some rules apply only within a phonological word (e.g. vowel harmony);
others (external sandhi rules) apply specifically across a phonological word boundary
- there is likely to be **a close interaction between these types of features**

Phonological word: examples

(a) **Segmental features and restrictions**

- In some Australian languages a root or suffix may have one or more syllables but every phonological word must involve **at least two syllables**

Walmatjari (Hudson 1978: 37–43)

a disyllabic verb root takes a zero tense–mood suffix:

luwa-∅ ‘hit!’

a monosyllabic root must take a suffix that is at least one syllable in extent:

ya-nta ‘go!’ (here the imperative allomorph is *-nta*)

Phonological word: examples

(a) **Segmental features and restrictions**

- Mbyá Guaraní (Tupí-Guaraní)
a monosyllabic root, when used without affixes, is **obligatorily reduplicated** in order to satisfy the requirement that each word have **at least two syllables**,

e.g. root *hũ* 'black' becomes *hũʔhũ* as a complete word

Phonological word: examples

(a) **Segmental features and restrictions**

- languages in which a word-medial syllable may begin with a lateral but a word-initial syllable may not
e.g. Yingkarta (Western Australia, Dench 1998)
- word may not commence with *r* e.g. in Tariana
- in Bare (Arawak) aspirated consonants are only found in word-initial position → thus, the presence of an aspirated consonant marks the beginning of a phonological word in Bare
- etc.

Phonological word

- Definition (Dixon & Aikhenvald 2002):

a phonological word is a phonological unit larger than the syllable which has at least one phonological defining property:

(b) **Prosodic features:**

- stress (or accent) and/or tone assignment

many languages with fixed stress, e.g. on the first or last or penultimate (last but one) syllable of a phonological word → in this case, it is possible to ascertain the position of word boundaries from the location of stress
e.g. **French**: stress on the last syllable

Phonological word

- Definition (Dixon & Aikhenvald 2002):
a phonological word is a phonological unit larger than the syllable which has at least one phonological defining property:

(b) **Prosodic features:**

- stress (or accent) and/or tone assignment

e.g. **Manange** (Tibeto-Burman, Nepal)

“Single Tone Contour Word”

= stem ± prefix ± suffix ± particle (‘clitic’)

e.g. tone /3/: a high, sharp falling tone

- [sʌ⁵⁴] ‘good/tasty/wholesome’
- [ɑ⁵⁴-sʌ⁴³] NEG-good ‘not good’
- [ɑ⁵⁴-sʌ⁴³-pʌ³²] NEG-good-NOM ‘not good one’

Phonological word

- Definition (Dixon & Aikhenvald 2002):
a phonological word is a phonological unit larger than the syllable which has at least one phonological defining property:
(c) **Phonological rules:**
some rules apply only within a phonological word (e.g. vowel harmony)
in many languages the optimal analysis involves recognising underlying forms for roots and affixes and then a number of phonological rules which apply to generate the surface forms
each rule applies over a certain syntagmatic extent, many rules apply just within the phonological word

Phonological word

- Phonological word can be defined by
 - segmental features and restrictions
 - prosodic features
 - phonological rules
- Phonological words defined by these aspects do not necessarily overlap within one language
 - phonological word mismatches

Phonological word mismatches

- e.g. **Limbu** (Sino-Tibetan)

- word in terms of Glotal Stop Insertion rule:

- prefix-stem**

- /ku-e:k/ > [kuʔe:k] (3POSS-back) 'his back'

- BUT no glottal stop:

- /a-mphu-e:/ > [amphue:] (1POSS-brother-VOC) 'Brother!'

- word in terms of Coronal-to-Labial Assimilation rule:

- stem-suffix**

- /kɛlɛt/ > [nɛrɛt] 'heart'

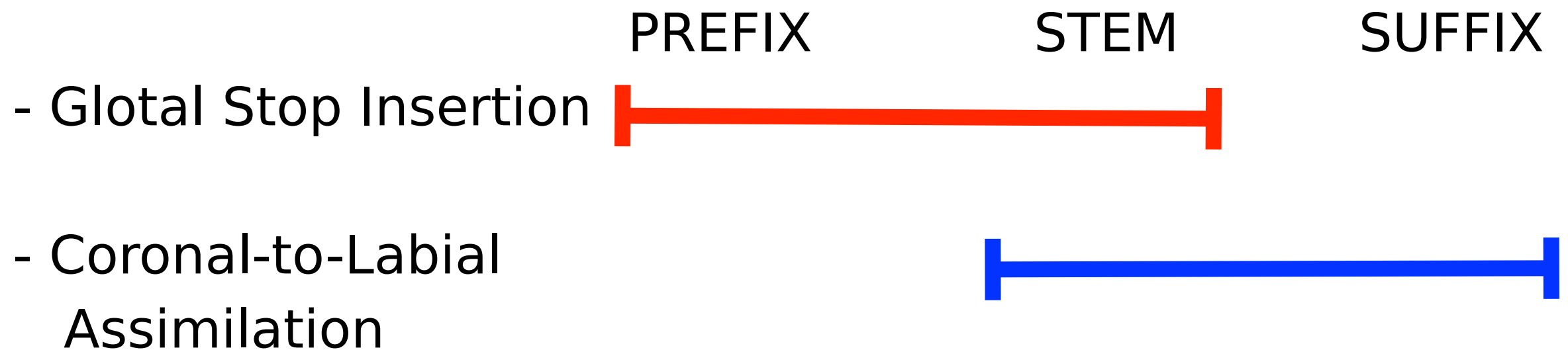
- /pha-le/ > [pha-re] (bamboo-GEN) 'of bamboo'

- BUT no assimilation:

- /kɛ-lɔʔ/ > [kɛ-lɔʔ] (2-say) 'you say'

Phonological word mismatches

- e.g. **Limbu** (Sino-Tibetan)



Grammatical word

- The grammatical word is **the smallest unit of syntax**, technically the terminal node or minimal projection (X^0) in phrase structure
- e.g. in *He worked*, *he* and *worked* are grammatical words, one simple (*he*), one complex (*worked*: root *work* + past tense suffix *-ed*)
- The formatives that are combined into a single grammatical word (*work+ed*) cannot be interrupted by phrasal constructions

Grammatical word

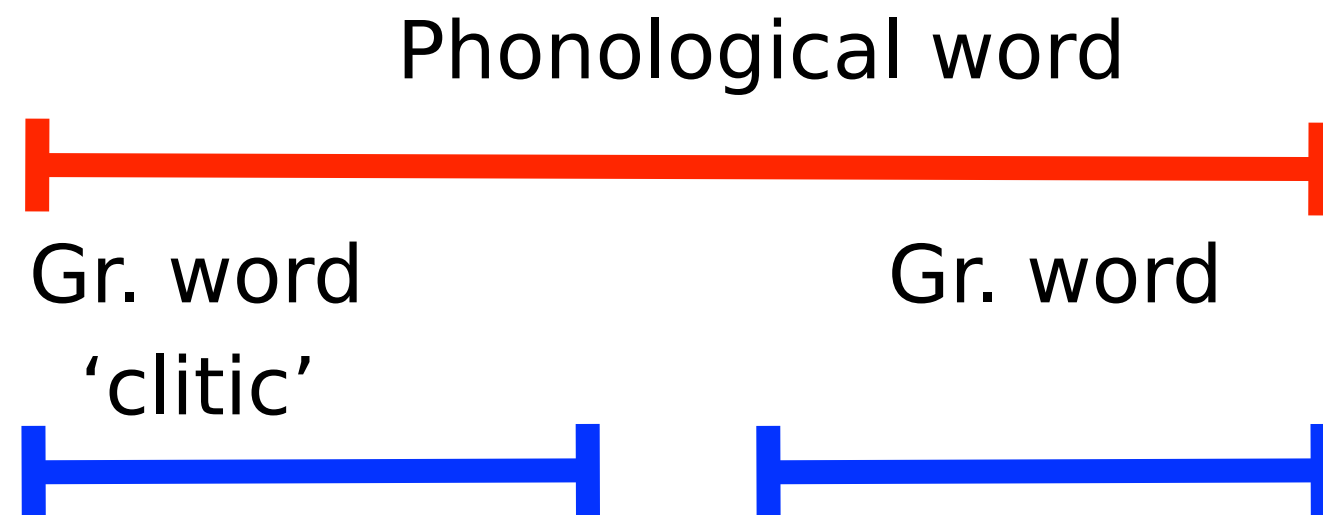
- The grammatical word is **the smallest unit of syntax**, technically the terminal node or minimal projection (X^0) in phrase structure
- *work* + *-ed*
- They formatives **never enter into syntactic dependencies such as agreement or government.**
- They usually have **fixed morpheme order**, while the ordering of grammatical words with respect to each other is commonly (though not always) freer.
- Typically, grammatical words are also phonologically coherent, but, the phonological word can be a smaller or larger unit than the grammatical word

Mismatches between grammatical words and phonological words

- e.g. **Russian** prepositions (*ot* ‘from’, *s* ‘with’) form a single phonological word with the noun they govern subject to word-internal stop voicing rule
/ot 'ʌknə/ ‘from window.GEN.SG’ > [a**t**'ʌknə]
/ot drugə/ ‘from friend.GEN.SG’ > [a**d**'drugə]
- However, prepositions are grammatical words on their own, as they **govern case** and can be **separated** from their phonological hosts **by other grammatical words**

Clitic

- The term is used in two quite different senses.
- Clitics are phonologically bound grammatical words, i.e., syntactic units like the Russian prepositions that build phonological words with their hosts



- Often indicated by equation sign:
ot=drugə ‘from=friend.GEN.SG

Word: summary

- The traditional notion of a word **conflates the orthographic, syntactic and phonological criteria**: it implies that words are both syntactically and phonologically independent units separated by spaces and that affixes are in both respects dependent units
- However, there might be mismatches between individual phonological words of a language and between orthographical, phonological, and grammatical words

Position

Position

- Position = the location of an inflectional formative relative to the word or root that hosts it
- The formative may
 - precede the host
 - follow it
 - occur inside of it
 - be detached from it
 - or various combinations of these
- There is a standard terminology which accounts for most of these positions together with the formative type and degree of fusion

Position

Position	Formative type and/or degree of fusion
before	proclitic
	prefix
inside	infix
	ablaut
	prosodic formatives (tone)
after	enclitic
	suffix
combined	simulfix (e.g. circumfix)

Position

- The formative may
 - precede the host:

- **proclitic**

ot=drug-a [dd]
from=friend-GEN

ot=pap-y [tt]
from=dad-GEN

Note:

ot 'from' is a separate grammatical word, as it governs case and can be separated from the head of the phrase;

phonologically, it builds a word with its host, as the assimilation shows

Position

- The formative may
 - precede the host:

- **prefix**

Runyoro-Rutooro

ti-tu-ka-ba-teer-a-ho-ga

NEG-1SG.SBJ-FAR.PAST-3PL.OBJ-beat-VERB.FINAL

‘We have never beaten them at all.’

Position

- The formative may
 - be placed within the root (the exact position determined phonologically or prosodically):

- **infix**

- **Sundanese**

- *-ar-* 'plural'

	<i>Singular</i>	<i>Plural</i>
'forget'	<i>poho</i>	<i>p-ar-oho</i>
'stretch'	<i>ηuliat</i>	<i>η-ar-uliat</i>
'eat'	<i>tuwanη</i>	<i>t-ar-uwanη</i>

- **What is the exact position of the infix?**
- **An example from Luganda?**

Position

- The formative may
 - several tokens of a single morpheme, realized at different places in the word, e.g.
 - **circumfix** realized as a prefix+suffix
 - German**
ge-....-t ‘participle’
ge-lieb-t
PTCP-love-PTCP
‘loved’
 - a suffix+suffix
 - Belhare** *-ŋa...-ha* ‘perfect’
*khai-**ŋa**-ŋŋ-**ha***
go-**PRF**-1SG-**PRF** ‘I’ve gone’

Locus

Locus of marking

Typological Features Template for Luganda

By **Medadi Erisa Ssentanda**

Morphological classification (2)

Luganda is generally a head-marking language at both phrase and sentence level. For instance, Omwana (N) omuto (Adj). [A little child is beating a dog]. In pronominalisation forms, it is possible to have a dependent marking in the verb phrase. For instance, Omwana omuto agikuba. [A little child is beating it]. A- [Subj], -gi- [Obj], kub-a [V].

Locus of marking

- head vs. dependent marking (Nichols 1986)
- syntactic relations on various levels can be overtly morphologically marked on one of its parts
- syntactic relations are relations between “a head” and “a dependent”
- what is head and what is dependent depends on the level

Level	Head	Dependent
Phrase	possessee	possessor
	noun	adjective
	adposition	noun
Clause	verb	arguments & adjuncts
Sentence	main clause	subordinate clause

Locus of marking

- In any kind of syntactic dependency, overt morphological marking reflecting syntactic relations may be located
 - on the head of the phrase,
 - on a non-head (i.e. on a dependent),
 - on both,
 - on neither

Locus of marking within a possessive phrase

- possessor = head, possessee = dependent
- **head marking:** on possessee
possessee-**GEN** possessor

English

*man-'**s** house*

Revision question:

is -'s a synthetic or an analytic formative?

is it mono- or poly-exponential?

Locus of marking within a possessive phrase

- possessor = head, possessee = dependent
- **dependent marking:** on possessor
possessee possessor-**PRONOMINAL AFFIX**

Hungarian (Uralic, Hungary)

az ember ház-**a**

the man house-3SG.POSS

‘the man’s house’ (lit. the man his-house)

Revision question:

is -’s a synthetic or an analytic formative?

is it mono- or poly-exponential?

Locus of marking within a possessive phrase

- possessor = head, possessee = dependent
- **double marking**: both on head and dependent

possessee-**GEN** possessor-**PRONOMINAL AFFIX**

Southern Sierra Miwok (Miwok-Costanoan; California)

cuku-**ŋ** hu:kiʔ-**hy:**

dog-**GEN** tail-**its**

‘dog's tail’ (lit. ‘of-dog its-tail’)

Locus of marking within a possessive phrase

- possessor = head, possessee = dependent
- **no marking:** possessee possessor

Tiwi (isolate; northern Australia)

jərəkəpai tuwaja

crocodile tail

‘the crocodile's tail’ (lit. ‘crocodile tail’)

Locus of marking within a possessive phrase

- possessor = head, possessee = dependent
 - **head marking:** on possessee
 - **dependent marking:** on possessor
 - **double marking:** both on head and dependent
 - **no marking**
- What about Luganda, Runyankore-Rukiga, Lango, etc.?
let's take **'teacher's book'**

Locus of marking within a possessive phrase

- possessor = head, possessee = dependent
 - **head marking:** on possessee
 - **dependent marking:** on possessor
 - **double marking:** both on head and dependent
 - **no marking**
- What about Luganda, Runyankore-Rukiga, Lango, etc.? let's take 'man's house'
- Sometimes there are splits in the marking of the noun phrase conditioned by the alienable vs. inalienable distinction

Split locus of marking

- Sometimes there are splits in the marking of the noun phrase conditioned by the alienable vs. inalienable distinction
- **inalienables:** nouns such as **kin terms** and **body parts** ('inalienable' as they typically cannot be sold or given away)
- **alienables:** the rest

Amele (Madang; New Guinea)

Naus-**na** jo

Naus-**GEN** house

'Naus's house'

ija co-**ni**

I mouth-**1SG.POSS**

'my mouth'

Naus mela-**h**-ul

Naus son-**3SG.POSS**-PL

'Naus's sons'

Locus of marking on the clause level

- refers to where clausal and phrasal relations are marked in a clause in a **clause**
- Head - verb, dependent - arguments
 - Head marking = agreement
 - Dependent marking = case and adposition marking

Locus of marking on the clause level

- Head marking

Tzutujil (Mayan; Guatemala; Dayley 1985: 282, 75)

<i>jar</i>	<i>aak'aalaa7</i>	<i>x-∅-kee-k'aaq</i>	<i>aab'aj</i>
the	boys	COMP-3SG-3PL-throw	rock

'The boys threw the rock.'

Locus of marking on the clause level

- Head marking

Panyjima (Pama-Nyungan; Western Australia; Dench 1991)

- a. Ngatha yukurru-ku mantu-yu yinya-nha.
1sNOM dog-ACC meat-ACC give-PST
'I gave the dog meat.'

Locus of marking on the clause level

- Double marking

Krongo (Kadugli; Sudan; Reh 1985)

- a. N-àdá-ŋ à?àŋ bìitì à-káaw.
1-PFV.give-TR1s NOM water.NOM DAT-person
'I gave water to the man/woman.'

Locus of marking on the clause level

- refers to where clausal and phrasal relations are marked in a clause in a **clause**
- Head - verb, dependent - arguments
 - Head marking = agreement
 - Dependent marking = case and adposition marking
- **Examples from the languages of Uganda?**