

PLIN0068 Constructed Languages

2024–25

Lecture 3: Morphology

Review + homework for next week

Write 1-2 pages about:

- **Phoneme inventory:** What segments (= primitive signals) are valid in your language?
- What sequences of segments are available in your language?
 - If your language is a spoken language, describe them in terms of **syllables**
 - If not, do you want to put (phonological) restrictions on possible sequences?

Note that there will be morphological and syntactic constraints.

Additional resources:

- [UCLA Phonological Segment Inventory Database \(UPSID\)](#)
- [Interactive IPA chart](#)

Today: Morphology

Once we have the segments/primitive signals, the next step is to form meaningful expressions out of them (= morphemes/words)

Morphology is about:

- Morphological structure and **paradigms** (networks of related words)
- Morpho-phonological rules

A lot of arbitrariness, but there are still some principles

What is a word?

It's notoriously difficult to give a general definition of what a **word** is

- For some languages (e.g., English, Japanese, Uyghur), it's possible to define the *phonological word* (e.g. in terms of accent domain, vowel harmony, etc.)
- But such a definition does not apply straightforwardly to languages with different prosodic properties (e.g., French, Mandarin Chinese)
- It also does not perfectly match the *morphological word*, e.g., for 'at a university', morpho-syntactically three words, but only one primary stress

Haspelmath (2011) argues that there's no single typologically applicable definition

What is a morpheme?

A **morpheme** is said to be the smallest meaningful expression

- /kæt/ is a morpheme
- /kæts/ is bimorphemic

But not everything is so easily segmentable

- zero morphology: *book* in Russian ([Wikitionary](#))
- ablaut: /rɪŋ/ vs. /ræŋ/ in English, see next slide for Dinka

'Kick' in Dinka

(from Arkadiev 2020)

Table 7. Non-Concatenative Morphology of Dinka Verbs ('Kick')

	simple	centrifugal	centripetal	benefactive	antipassive
Basic	wèc	wéec	wèec	wéec	wêec
1Sg	wɛɛc	wɛ́ɛc	wɛ̀ɛc	wɛ́ɛc	wɛ̀ɛc
2Sg	wèc	wɛɛc-é	wéec	wɛɛc-é	wɛ̀ɛc-é
3Sg	wèec	wéec	wèec	wéec	wêec
1Pl	wéc-kù	wéec-kù	wèec-kú	wéec-kù	wêec-kù
2Pl	wác-kà	wɛɛc-kà	wɛ̀ɛc-ká	wɛ́ɛc-kà	wɛ̀ɛc-kà
3Pl	wéc-kè	wéec-kè	wèec-ké	wéec-kè	wêec-kè
passive	wéc	wêec-è	wèec-è	wéec-è	—

Words and morphemes for your language

- No need for a general definition of words or morphemes that applies to all languages
- But you might want to define such terms for your language
 - So-called 'isolating' languages (e.g., Vietnamese) have little morphological structure; (almost) every morpheme is a word
 - We could have non-trivial morphological structure in non-spoken languages

Later in the module, you'll be asked to make some words (based on [the Leipzig-Jakarta word list](#))

Principles behind words/morphemes

Zipf's law

Zipf's law: Word frequency is inversely proportional to rank (e.g., the most frequent word is twice as more frequent as the second most frequent word)

$$\text{frequency} \propto \frac{1}{\text{rank}}$$

Zipf-Mandelbrot law for a better fit (e.g., $\alpha \approx 1$, $\beta \approx 2.7$):

$$\text{frequency} \propto \frac{1}{(\text{rank} + \beta)^\alpha}$$

see [Wikipedia](#) and [Piantadosi 2014](#) for graphs

Brevity law

The **brevity law** (Zipf's law of abbreviation): More frequent words tend to be shorter

- This need not be true in your language, but it's a reasonable law for any communication systems
- See [Bentz & Ferrer-i-Cacho 2016](#)

Minimal words

Some languages have minimal word requirements, e.g. according to Van Urk (lecture notes) nouns and verbs in Imere must have three syllables

Non-future	Future	Meaning
ee -nofo	tee-nofo	'stay'
torotoro	tee-torotoro	'sweat'
ee -kai	tee-kai	'eat'

This is arguably related to stress (primary stress falls on the antepenultimate syllable in Imere)

Morphological structure

Morphological processes

- Concatenative morphology
 - Affixation (suffix, prefix, infix, circumfix)
 - Compounding
- Non-concatinative morphology
 - mutation (ablaut; consonantal, e.g., [Welsh](#))
 - Subtraction
 - Reduplication
 - Portmanteau
 - Templatic morphology (see next slide for an example)

'Write' in Arabic

Table 6. Non-Concatenative Morphology of the Arabic Verb 'Write'

	Perfective		Imperfective		Participle	
	Active	Passive	Active	Passive	Active	Passive
Base	<i>kataba</i>	<i>kutiba</i>	<i>yaktubu</i>	<i>yuktabu</i>	<i>kātibun</i>	<i>maktūbun</i>
Causative	<i>ʔaktaba</i>	<i>ʔuktiba</i>	<i>yuktibu</i>	<i>yuktabu</i>	<i>muktibun</i>	<i>muktabun</i>
Reciprocal	<i>takātaba</i>	—	<i>yatakātabu</i>	—	<i>mutakātibun</i>	—

(from Arkadiev 2020)

Allomorphy

Morphological processes create related words

Allomorphy: The same morpheme might be realised differently in the same paradigm

- /haʊs/ 'house' vs. /haʊz/-/ɪz/ (hous-es)
- /ɛge:r/ *egér* 'mouse' vs. /ɛgeɾ/-/ɛt/ *eger-et* 'mouse-acc' in Hungarian

An extreme case of allomorphy is **suppletion**, e.g.

- *go* vs. *went*
- *person* vs. *people*
- *good* vs. *bett-er* vs. *be-st*
- *va-i* (go-2sg.pres.ind) vs. *anda-te* (go-2pl.pres.ind) in Italian

Morphophonological rules

Allomorphy may involve phonologically conditioned alternations, e.g.

- Assimilation (e.g., *in-* vs *im-* in English)
- Dissimilation (e.g., *-ālis* vs. *āris* in Latin)
- Vowel harmony (e.g. *mektep-te* 'school-loc' vs. *yighin-da* 'meeting-loc' in Uyghur)
- Neutralisation (e.g., /bɛt/ 'bed' vs. /bɛdə(n)/ 'bed-pl' in Dutch; cf. /bo:t/ 'boat' vs. /bo:tə(n)/ 'boat-pl')
- Epenthesis
- Deletion

See Odden 2005 for more examples

Natural phonological rules

- Many phonological rules apply (arguably) in order to fix phonetic/phonological issues (e.g., neutralise in perceptually less contrastive positions, break consonant clusters, etc.)
- The phonological change so triggered tends to be minimal

Impossible morphophonological rules:

- A neutralisation rule that applies to stressed syllables
- Prefix /in-/ becomes /akof-/ if the following segment is labial

Morphology for your language

- Your language can obey or disobey the brevity law
- Your language can be morphologically simple or complex
 - If it can be morphologically complex, decide what kind of morphological process to use
 - Decide if they should involve morphophonological rules

You'll be asked to make some words and morphemes before Week 5

[Klingon grammar](#)