

Root and Pattern Morphology

1. Root and pattern morphology

- Perhaps the most famous case of nonconcatenative morphology is so-called 'root and pattern' morphology, best known in semitic languages.
- With root and pattern morphology we have to extend our working definition of non-concatenative morphology.
 - It is not necessarily the case that root-and-pattern morphology fails to extend the base. The issue is that affixation seems to apply in a **discontinuous** manner, as opposed to a straightforwardly concatenative manner.

(13) Arabic (slightly modified)

	active		passive	
I	katab-a	'he wrote'	kutib-a	'it was written'
II	kattab-a	'he made write'	kuttib-a	'he was made to write'
III	kaatab-a	'he corresponded with'	kuutib-a	'he was corresponded with'
I	ʃarab-a	'he drank'	ʃurib-a	'it was drunk'
II	ʃarrab-a	'he made drink'	ʃurrib-a	'he was made to drink'
III	ʃaarab-a	'he had a drink with'	ʃuurib-a	'he was had a drink with'

- Observe: on the basis of (grammatical) meaning, there are three classes of morphemes in (13)
 - Root morphemes: pertaining to the meanings WRITE and DRINK
 - Voice morphemes: active and passive
 - Morphemes pertaining to the meaning differences in I, II and III:
 - I default
 - II causative
 - III reciprocal

Root morphemes

- Observe, on the basis of form, there is no **continuous** base corresponding to roots with meanings relating to WRITE or DRINK. However, this is not to say that there is no association between form and meaning of the roots.
 - All of the forms pertaining to 'writing' contain the consonants k-t-b

- All of the words pertaining to 'drinking' contain the consonants /r-b/.
- Proposal: the roots pertaining to WRITE and DRINK contain nothing more than their characteristic consonant segments. So the root pertaining to WRITE is /ktb/. The root pertaining to DRINK is /f-r-b/

Voice morphemes

- Observe, on the basis of form, there is no **continuous** affix corresponding to the active and passive. However, this is not to say that there is no association between form and meaning relating to voice
 - All of the forms pertaining to active contain the vowel /a/
 - All of the words pertaining to 'drinking' contain the vowels /ui/
- Proposal: the active and passive voice morphemes contain nothing more than their characteristic vowel segments. So the active is /a/ and the passive is /ui/

Morphemes pertaining to I, II, III (Binyanim)

- Observe, on the basis of form, there is no **continuous** affix corresponding to the meanings related to rows I, II, III. However, this is not to say that there is no association between form and meaning:
 - Row I: default CVCVC
 - Row II: **causative** CVCCVC
 - Row III: **reciprocal** CVVCVC
- Proposal: the morphemes related to the meaning differences in rows I, II and III contain nothing more than their characteristic skeletal tiers.
- These skeletal patterns are traditionally referred to as **binyanim** (singular **binyan**)

Autosegmental analysis:

- The tier system of Arabic has distinct tiers for consonants and vowels.
- Morphemes can be specified for only the consonant tier, only the vocalic tier, and only the skeletal tier.
 - (Note, not all morphemes in Arabic are necessarily underspecified in these ways. For example there is no reason to think the 3.sg suffix *-a* lacks the skeletal tier).

(14) Derivation of *katab-a* 'he wrote'

- binyan I morpheme gives skeletal tier
- active morphemes gives vocalic tier
- root morpheme gives consonant tier
- follow Universal Linking Convention repeated below

NOTE: I am abstracting away from the *-a* suffix which is an inflectional affix used with 3.sg subjects. The textbook treats this as part of the binyan pattern, but this is not correct, as the 3rd.subj marker is invariantly [a] regardless of the vocalic tier of the binyan. When the subject is not 3.sg this marker changes accordingly.

Input

Consonantal (root) tier: k t b

Skeletal (binyan) tier C V C V C

Vocalic (voice) tier a

Linking consonant and vocalic tiers (proceed left to right, one-to-one, as per [8.8])

Consonantal (root) tier: k t b

Skeletal (binyan) tier C V C V C

Vocalic (voice) tier a

Output

Consonantal (root) tier: k t b —> [katab]

Skeletal (binyan) tier C V C V C

Vocalic (voice) tier a

(1) Universal Linking Convention

[8.8] Universal Linking Convention

- (i) Link a sequence of autosegments (e.g., tones) with a series of elements on the skeletal tier that are capable of bearing them (e.g., link tones with vowels) (see [8.3]);
- (ii) Perform the linking going from the beginning to the end of the word. Unless specific instructions are given in the grammar of the language to do otherwise, link autosegments (e.g., tones) with units that are capable of bearing those autosegments (e.g., vowels) in a one-to-one fashion.
- (iii) Association lines do not cross in the linking process.

- **Geminates** (double CC) and **long vowels** (double VV) can involve pre-linking of slots in the skeletal tier

(14) Derivation *kuttib-a* 'he was made to write'


- binyan II morpheme gives skeletal tier
- passive morphemes gives vocalic tier
- root morpheme gives consonant tier
- follow Universal Linking Convention

NB: as above, I abstract away from the -a suffix

Input

Consonantal (root) tier: k t b

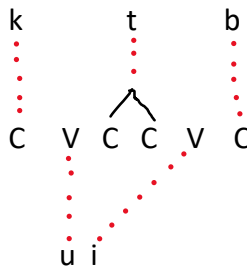
Skeletal (binyan) tier C V C C V C



Vocalic (voice) tier u i

Linking consonant and vocalic tiers (proceed left to right, one-to-one, as per [8.8])

Consonantal (root) tier:

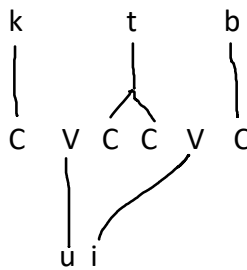


Skeletal (binyan) tier

Vocalic (voice) tier

Output

Consonantal (root) tier:



—> [kuttib]

Skeletal (binyan) tier

Vocalic (voice) tier

(15) Derivation *fuurib-a* 'he was had a drink with'

-binyan III morpheme gives skeletal tier

-passive morphemes gives vocalic tier

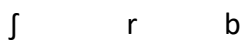
-root morpheme gives consonant tier

-follow Universal Linking Convention

NB: as above, I abstract away from the -a suffix

Input

Consonantal (root) tier:



Skeletal (binyan) tier

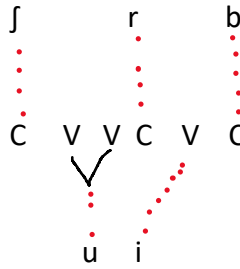


Vocalic (voice) tier



Linking consonant and vocalic tiers (proceed left to right, one-to-one, as per [8.8])

Consonantal (root) tier:

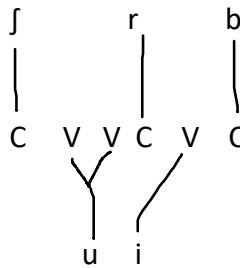


Skeletal (binyan) tier

Vocalic (voice) tier

Output

Consonantal (root) tier:



—> [fuurib]

Skeletal (binyan) tier

Vocalic (voice) tier

Question: Can you think of a way to get the output [fuurib] that would not require prelinking of the long VV?