

Prosodic boundaries and EPP in Swahili

Proposal. In theory, the precise motivation for affixation has not been entirely settled. Noyer (1992) and Hankamer & Mikkelsen (2018) argue that the identity of an affix is recognized in syntax-free contexts or in postsyntactic environments. On the other hand, Richards (2010, 2016) proposes a way of identifying affixes by looking into their metrical dependencies initially detected in narrow syntax. Here, I argue alongside Richards (2016) that these suprasegmental features are visible in syntax and that they trigger XP-movements. I further propose that Swahili tense affixes require metrical boundaries on *both* left and right of their peripheries. The metrical boundary on the right is satisfied by the phonological content inside νP . The metrical boundary on its left is satisfied by an XP targeting spec,TP which eventually gives rise to the desired EPP-effect.

Contiguity Theory. According to Richards (2010, 2016), overt movements triggered by uninterpretable features such as [wh] and EPP (Chomsky 1995) are reanalyzed as operations sensitive to suprasegmental features. This suggests that the driving cause for syntactic movements are related to prosodic requirements which must be satisfied prior to spell-out. Richards discusses motivations for movement which are compatible with Match Theory (Selkirk 2009, 2011). Probe-Goal Contiguity and Affix Support are introduced here:

- (1) Probe-Goal Contiguity
Given a probe α and a goal β , α and β must be dominated by a single φ , within which β is Contiguity-prominent.
- (2) Affix Support
If a head is an affix, there must be a metrical boundary in the direction in which it attaches.

Wh-in-situ. Bantu languages in general (e.g., Chicheŵa, Kilega, Kinande, and Swahili) do not undergo obligatory *wh*-movement:

- (3) a. wa-á-pátsa bambo **chi-yáani**
1-TAM-give 1.father 7-what
'What has she/he given to Father?' (Chicheŵa; Cheng & Downing 2011)
- b. huyu m-tu m-refu a-na-penda **nini**
1.this 1-man 1-tall 3rd.sg-PRES-like what
'What does this tall man like?' (Swahili)

Abstracting away from a purely syntactic approach, Richards uses Probe-Goal Contiguity to explain the lack of obligatory *wh*-movement. Within Contiguity Theory (CT), the prosodic edge of XPs and the direction of syntactic headedness are the key factors determining overt movement. Bresnan & Kanerva (1989) argue that phrase boundaries in Chicheŵa are at the right edge. Richards (2010) verifies this notion and claims that Swahili XPs also share the same prosodic trait. Since Chicheŵa and Swahili are head-initial languages, their Cs are situated to the left of TPs.

- (4) a. $[_{CP} C [_{TP} wa-á-pátsa bambo DP[chi-yáani]]]$ [= (3a)]
 $\rightarrow [_{\varphi} C_{\alpha} \dots [_{\omega} chi-yáani]_{\beta}]_{prosodic\ active\ edge}]_{prosodic\ active\ edge}$
- b. $[_{CP} C TP[huyu m-tu m-refu a-na-penda DP[nini]]]$ [= (3b)]
 $\rightarrow [_{\varphi} C_{\alpha} \dots [_{\omega} nini]_{\beta}]_{prosodic\ active\ edge}]_{prosodic\ active\ edge}$

(4) shows that the probe ($\alpha = C$) and goal ($\beta = wh$ -word) are dominated by a single φ in which the goal is Contiguity-prominent (β is not linearly separated from the prosodically active edge of φ). Hence, Bantu *wh*-in-situ satisfies Probe-Goal Contiguity. This indicates that prosodic contiguity is preserved without having to move *wh*-elements.

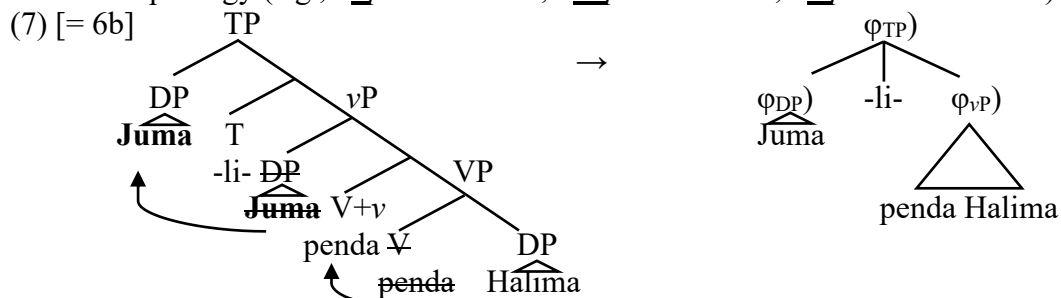
EPP in Swahili. Interestingly however, the lack of obligatory *wh*-movement does not suggest that all XP-movements are banned in Swahili. In fact, Carstens (2005, 2011) explicitly point out that Bantu languages in general display EPP. Here, I show that Swahili subject raising and locative inversion are such cases.

- (5) a. **Juma** a-ta-nunua ma-embe [subject raising]
 Juma 3rd.sg-FUT-buy 6-mango
 ‘Juma will buy mangoes.’
 b. **bonde-ni** ku-na-lima wa-nawake [locative inversion]
 5.valley-17.LOC 17-PRES-cultivate 2-woman
 ‘There in the valley women are cultivating.’ (Ashton 1994)

Similar to how C and the *wh*-word satisfy Probe-Goal Contiguity, the probe T and the goal XP (e.g., *Juma* in (5a) and *bondeni* in (5b)) are prosodically contiguous without having to move the goal to spec,TP. In this regard, Probe-Goal Contiguity cannot explain the prosodic motivation for EPP. Alternatively, we have to rely on Affix Support which is another phonological requirement defined in (2). Similar to how English Ts satisfy Affix Support, I argue that Swahili Ts satisfy Affix Support by moving an XP up to spec,TP. A crucial difference between the two languages is that English Ts are suffixal, whereas Swahili Ts are not. The following examples illustrate the different positioning of tense morphemes:

- (6) a. John like-**d** Mary.
 b. Juma a-**li**-penda Halima
 Juma 3rd.sg-PST-like Halima
 ‘Juma liked Halima.’

Here, we have to properly address the prosodic status of Swahili Ts. To begin with, I accept Richards’ view that Affix Support in a head-initial language triggers EPP only when T requires a metrical boundary on its left. A less studied approach to handling this issue is to say that Ts require metrical boundaries on *both* of their edges. Richards (2016) abstracts away from mentioning affixes requiring multiple metrical boundaries. Here, I propose that Swahili tense markers are such cases which properly explain the EPP facts and the realization of the verbal morphology (e.g., *alipenda* ‘liked’, *anapenda* ‘likes’, *atapenda* ‘will like’).



In (7), Contiguity between T and the subject is not at risk, since they are immediately adjacent to one another. Additionally, Affix Support for both edges of T is fully satisfied, since ϕ_{DP} provides the left metrical boundary and ϕ_{VP} provides the right boundary. The subject agreement marker *a-* is introduced after the subject *Juma* raises to spec,TP which is well in line with how EPP triggers agreement in Bantu (Carstens 2005, 2011). All in all, a well-formed derivation results using the phonology-sensitive model of grammar.

Conclusion & Implication. I argued that Affix Support applies to affixes in need of one or more prosodic boundaries. This implies that affixes in need of multiple metrical boundaries validate syntactic movement. From a cross-linguistic viewpoint, other Bantu languages such as Chicheŵa and Kilega are highly likely to display the same phonological motivation for movement as Swahili. Close examination on metrical dependencies and EPP will shed further light on the status of Ts in Bantu and possibly other languages.

Selected references. Carstens, V. 2005. Agree and EPP in Bantu. *NLLT* 23: 219-279. ----. 2011. Hyperactivity and hyperagreement in Bantu. *Lingua* 121: 721-741. Richards, N. 2010. *Uttering trees*. MA: The MIT Press. ----. 2016. *Contiguity theory*. MA: The MIT Press. Selkirk, E. 2011. The syntax-phonology interface. In *The Handbook of Phonological Theory*. 435-484. J. Goldsmith, J. Riggle, & A. C. L. Yu (eds.). Oxford: Wiley-Blackwell.