

A classic problem in syntax is to account for the cross-linguistic difference between *wh*-in situ and *wh*-movement. Richards (2010), assuming a multiple spell-out model and an edged-based mapping between syntax and phonology, argues that this difference falls out from how *wh*-domains in a language are created. Well-formed *wh*-prosody minimizes the number of Minor [prosodic] Phrase boundaries between a *wh*-phrase and the complementizer C associated with the scope of the *wh*-phrase. In an in-situ language such as Chichewa, which has an initial C and in which the right edge of XPs are mapped with a prosodic boundary, the *wh*-domain is created by aligning the right edge of the *wh*-phrase with a Minor Phrase. Since the *wh*-phrase is within the *wh*-domain of the complementizer, no movement is warranted (parentheses indicate phrasing):

$$(\text{MinP } C \text{ [DP]}) (\text{MinP [DP } \mathbf{wh} \text{]}) (\text{MinP [DP]}) \rightarrow (\text{MinP } C \text{ [DP] [DP } \mathbf{wh} \text{]}) (\text{MinP [DP]})$$

(adapted from Richards' (73), p. 185)

Richard's approach predicts that the syntactic properties of *wh*-questions should be the same in all languages with the same prosodic phrasing and position of the complementizer.

In this paper, we compare Chichewa and Zulu, two *wh*-in situ Bantu languages, and argue that (a) though the prosodic properties of the two languages are similar, the syntactic properties of the *wh*-questions are different; and (b) the lack of *wh*-subject in situ (i.e., in SpecTP) in both Chichewa and Zulu is independent of syntax-phonology mapping. Instead, a ban against extraction from TP leads to the cleft strategy for *wh*-subjects.

Relevant data: Both Chichewa and Zulu have the canonical word order S V IO O Adjunct (see (1)). As shown in (2a,b), for non-subject *wh*-questions, both Chichewa and Zulu allow the *wh*-object to remain in-situ. In particular, the *wh*-object does not undergo movement to the left (where the C⁰ position is). However, Zulu differs from Chichewa in that (a) *wh*-phrases MUST appear immediately after the verb (IAV) in Zulu (3). Any canonical noun phrase intervening between the *wh*-phrase and the verb must "exit" the vP. And (b), the *wh*-phrase must be at the right edge of the vP; any canonical noun phrase which originates inside the vP and to the right of the *wh*-phrase must "exit" the vP. The data in (4) show that non-subject *wh*-morphemes have a variable position in Chichewa: IAV or canonical.

Our proposal: *Contra* Richards (2010), we argue that the syntactic domain that syntax-phonology mapping pays attention to is phases (vP and CP), rather than the complement of a phase head. That is, phonological mapping is NOT based on spell-out domains. Rather, syntax generates several possible output linear orders, which are evaluated by the constraints in (6). A syntactic constraint (HPC) optimizes placing *wh*-phrases in the Highest Phrase in vP, and a phonological constraint (FPC) optimizes phrasal stress on *wh*-phrases. One ranking makes IAV optimal for Zulu: HPC, FPC >> STAY, while the reversed ranking of HPC and STAY makes the canonical position optimal for Chichewa. Under the assumption that global (vs. local) considerations are undesirable, the interface between narrow syntax and prosodic phrasal building is limited to the mapping between two types of boundaries.

We conclude the talk by taking up the analysis of *Subject wh*-questions. Richards (2010) predicts that *wh*-subjects in both Chichewa and Zulu will also be in-situ, since the *wh*-subject should be able to assert a right-edge phonological boundary, just like a *wh*-object. However, this is contrary to fact: *wh*-subjects are obligatorily clefted in both languages (see (5)). Based on intervention effects demonstrated by non-subject *wh*-questions (7), and thus LF extraction of *wh*-feature, we suggest that the cleft-strategy is used to avoid direct extraction from SpecTP (see Chomsky 2008, Shlonsky 2007).

- (1)a. (wa-patsa bambo tambaala) b. (ú-Síph' ú-phékél' ú-Thánd' in-kû:khu)
 S/HE.TAM-give 1.father 5.rooster 1-Sipho 1SM-cooked 1-Thandi 9-chicken
 'S/he has given father the rooster.' 'Sipho cooked chicken for Thandi.'
- (2) Wh-object in situ in Chichewa and Zulu - question morphemes underlined
- a. Chichewa (Downing 2005) b. Zulu
 (a-na-ményá chiyáani) (ndi mwáálá) (ú-nhla:nhlá) (ú-thwéle:-ni)(ngó-bhasikí:di)
 S/HE-TAM-hit what with 3.rock 1-Nhlanhla 1SM-carry-what with.1a-basket
 'What did he hit with the rock?' 'What is Nhlanhla carrying in the basket?'
- (3) Obligatory IAV for non-subject wh-words in Zulu (Cheng & Downing, to appear)
- a. (bá-m-níké:-ni) ú-Sî:pho) b. (u-wa-thwéle ngâ:n) (ámá-tha:nga)
 3PL-1OM-give-what 1-Sipho 2SG-6OM-carry how 6-pumpkin
 'What did they give to Sipho?' 'How are you carrying the pumpkins?'
 (IO follows O; cf. (1b)) (DO follows adjunct)
- (4) IAV for non-subject wh-words NOT obligatory in Chichewa (cf. (1a))
- a. (wa-patsa chiyáani) (baambo) 'What has s/he given to father?' -IAV
 S/HE.TAM-give what 1.father
- OR b. (wa-patsa bambo chiyáani) 'What has s/he given to father?' -canonical
 S/HE.TAM-give 1.father what
- (5) Subject wh-words are obligatorily clefted in Zulu and Chichewa
- a. (ndaáni) (á-ná-m-dyétsá nsóomba) 'Who fed him fish?' (Chichewa)
 1.who REL.1SM-TAM-1OM-feed 10.fish
- b. (u-bá:n) (ó-thwel' á-má-tha:nga) 'Who is carrying the pumpkins?' (Zulu)
 COP1a-who REL1-carry 6-pumpkin
 (tone and/or morphology of the verbs show these are clefts)
- (6) Constraints (syntactic and prosodic) accounting for position (IAV and not)
- a. ALIGNR[PHASE, INTPh] (ALIGNR-PHASE): Align the right edge of every phase (vP/CP) with the right edge of an Intonation Phrase (IntPh).
- b. ALIGNR[INTPh, PHASE] (ALIGNR-INTPh): Align the right edge of every Intonation Phrase (IntPh) with the right edge of a phase (vP/CP).
- c. HIGHEST PHRASE CONDITION (HPC), adapted Kratzer & Selkirk (2007): Prominence [i.e., focus] is licensed within the highest phrase (HP) in the minimal vP phase. More precisely: If prominent [focused], then in the Highest Phrase.
- d. FOCUS-PROMINENCE CONSTRAINT (FPC; Samek-Lodovici 2005): Focused constituents must be assigned prosodic prominence (i.e., phrasal stress).
- e. STAY: Don't move constituents.
- (7) a. *u-Sipho aka-theng-anga-ni 'What didn't Sipho buy?'
 1-Sipho 1.NEG-buy-NEG-what
- b. *u-Sipho aka-y-anga-phi 'Where didn't Sipho go?'
 1-Sipho 1.NEG-go-NEG-where

Selected references – Richards, N. (2010) *Uttering Trees*, MIT Press. /Shlonsky, U. 2007. On the immovability of subjects. Ms.