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Tonology of Xitsonga (S53) Sentences

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Xitsonga

- Xitsonga is a Bantu language (S53, Guthrie) in Northeast South Africa and Mozambique, spoken by about 2 million people. Xitsonga in South Africa is mostly spoken in the Limpopo province.
- Relevant characteristics
  - H tone and L tone
  - H tone spreading

Setting the stage for Match Theory (from Selkirk 2012, 2013)

Prosodic Structure Formation: essential components

- A theory of universal constraints governing the correspondence between syntactic constituency and prosodic constituency (faithfulness)
- A theory of universal constraints on the nature of prosodic representation, including constraints on prosodic structure and its relation to tonal representation (markedness)
- A theory of the interaction of these constraints within particular grammars (OT constraint ranking)

Match theory of syntactic-prosodic constituency correspondence (Selkirk 2011) - the leading idea

i. Match Clause
A clause in syntactic constituent structure must be matched by a corresponding prosodic constituent, call it ι, in phonological representation.

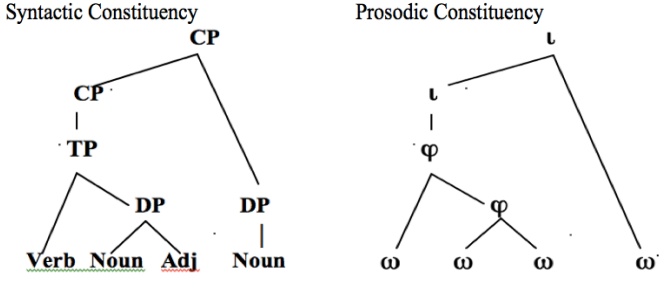
ii. Match Phrase
A phrase in syntactic constituent structure must be matched by a corresponding prosodic constituent, call it φ, in phonological representation.

iii. Match Word
A word in syntactic constituent structure must be matched by a corresponding prosodic constituent, call it ω, in phonological representation.

Predictions of Match correspondence constraints

1. A pressure for left *and* right edges of corresponding syntactic and prosodic constituents to systematically both be aligned.
2. A pressure for there to be recursive embedding of prosodic constituents corresponding to recursive embedding of syntactic constituents
3. A pressure for there to be "level-skipping" in prosodic constituents corresponding to "level-skipping" in the syntax.

Match theory predicts isomorphism of syntactic and prosodic constituency



Nonisomorphism must be due to prosodic markedness

- The constituent structure that the syntax delivers to the phonology (via Match) will be isomorphic, but it may not be phonologically ideal.
- Phonological markedness constraints may call for "readjustments", producing nonisomorphism(s).
- NB: The existence of prosodically motivated nonisomorphisms provides the fundamental argument for posting a prosodic domain structure independent of syntactic constituent structure.

Nonisomorphism must be due to prosodic markedness

FACT:

In some languages, syntactic XPs only correspond to prosodic φ if they contain at least two words

IDEA:

In some Lgs, BinMin(φ, ω) >> Match Phrase.

MARKEDNESS >> *FAITHFULNESS* vs.

In other Lgs, Match Phrase >> BinMin(φ, ω).

FAITHFULNESS >> *MARKEDNESS*

AT ISSUE: The theoretical division of labor between Match and Markedness

a. There is ample theoretical precedent for phonological constraints that call for prosodic constituent binarity, motivated in previous work on word stress, prosodic morphology, etc. E.g. BinMin (Ft, σ), BinMin (ω, σ), etc. That is, phonological theory already countenances, and leads one to expect, an appeal to the binarity of prosodic phrases:

BinMin (φ, ω)
A phonological phrase (φ) must consist of at least two prosodic words (ω)

b. Relying on an independently motivated type of markedness constraint in this modular theory of prosodic structure formation allows the theory of syntactic-prosodic constituency correspondence constraints to be accordingly restricted, in this case, removing a potential need for S-P correspondence constraints that appeal to syntactic branchingness, and leaving Match theory with the simple Match Clause, Match Phrase, Match Word formulation.

c. The question is whether a maximally simple theory of Match and a maximal theory of Markedness provide a promising foundation for a satisfying typology

TODAY

- To review the arguments for Match Theory from Xitsonga (Selkirk 2011) and deal with outstanding issues concerning φ-structure
- To show the role for
  - The Strong-Start constraint (Selkirk 2011, Elfner 2012)
  - MatchLexP and Match XP
- To show variations in domain sensitivity between two dialects of Xitsonga (Kisseberth 1994 and ours)
  - Phonological phrasing
  - Intonational phrasing

Xitsonga data

- Xitsonga data reported in Kisseberth 1994 provides evidence for,
  - ι–domains: Penultimate lengthening
  - φ–domains: H tone spreading
- Additional data of a Xitsonga dialect reported here comes from a South African Xitsonga speaker in her 20's.

Xitsonga (Kisseberth 1994; Selkirk 2011)

Crucial support for Match and Markedness theory

R *and* L φ-edge effects in Xitsonga

The limits on Xitsonga High Tone Spread diagnose right and left edges of φ

NONFINALITY (φ, H)
CRISPEDGEL(φ, H)

[See DeLacy 2003 on Maori and Elfner 2012 on Irish on other sorts of tonal phenomena showing that *both* edges of φ/XP play a role in these grammars, as predicted by Match theory].

NONFINALITY(φ, H)

(1) a. INPUT: CP[V/TP[V[va^{H}-a-tlomutela]V]V/TP]CP
they-pres.-fish 'They are fishing.'

b. OUTPUT: ι(φ(ω(v-á$^{H\text{-}}$-tlómútéé-^{H}la)ω)φ)ι

(2) a. INPUT: CP[V/TP[V[va^{H}-a-tisa]V NP[N[xi-hontlovila]N]NP]V/TP]CP
'They are bringing a giant'

b. OUTPUT: ι(φ(ω(v-á$^{H\text{-}}$-tísá)ω φ(ω(xí-hóntlóvíí-^{H}la)ω)φ)φ)ι

(3) a. CP[V/TP[[va^{H}-a-xavela]V vP[NP[N[xi-phukuphuku] NP[N[fole]N]NP]vP]V/TP]CP
'they are buying tobacco for a fool'

b. ι(φ(ω(vá^{H}xávélá)ω φ(φ(ω(xí-phúkúphú-^{H}ku)ω)φ φ(ω(foole)ω)φ)φ)φ)ι

[NB: The φ-structures seen in (b) are those predicted by Match Phrase alone on the basis of the XP structures in (a). Though the analysis of Xitsonga φ-structure will be modified below, the positions of right edge of φ, which are responsible for the effect of NONFINALITY(φ, H) on H spreading, will remain.]

CRISP EDGE-L(φ, H)

(4) a. CP[V/TP[V[va^{H}-a-susa]V NP[N[n-guluve [ta^{H}NP[N[vona^{H}]N]NP]NP]V/TP]CP
They-pres-remove pig poss theirs
'They are removing their pig (= a/the pig of theirs).'

b. ι(φ(ω(vá$^{H\text{-}}$-á-súsá-^{H})ω φ(ω(n-guluve)ω φ(ω(!ta^{H} vo!na^{H})ω)φ)φ)ι

Question:
Why is H spreading blocked in (4), but not in a sentence like (2)?

(2) b. ι(φ(ω(v-á$^{H\text{-}}$-tísá)ω φ(ω(xí-hóntlóvíí-^{H}la)ω)φ)ι [TO BE REVISED]
'They are bringing a giant'

Kisseberth 1994 observation: H spreads into a noun phrase only if it consists of a single word, as in (2); it's blocked from spreading into multi-word phrases like (4).

Selkirk 2011 analysis:

(i) H spread blocked at left edge of φ in Xitsonga through high-ranked CRISPEDGEL(φ,H) (Ito and Mester 1999).

(ii) Ranking of BINMIN(φ, ω) over MATCH PHRASE in Xitsonga

BINMIN(φ, ω)

(2') a. INPUT: $_{CP}[\ _{V/TP}[\ _{V}[\ va^{H}\text{-a-tisa}]_{V}\ _{NP}[\ _{N}[\text{xi-hontlovila}\ ]_{N}\ ]_{NP}\ ]_{V/TP}\ ]_{CP}$

'They are bringing a giant'

b. OUTPUT (REVISED): NO φ FOR SINGLE-WORD PHRASE

$_{\iota}(\ _{\varphi}(\ _{\omega}(\text{v-}\acute{a}^{H}\text{-tísá})_{\omega}\ \ _{\omega}(\text{xí-hóntlóvíí}^{H}\text{la}\ )_{\omega}\ )_{\varphi}\ )_{\iota}$

(4') a. $_{CP}[_{V/TP}[\ _{V}[va^{H}\text{-a-susa}]_{V}\ _{NP}[\ _{N}[\text{n-guluve}\ [ta^{H}{}_{NP}[\ _{N}[vona^{H}]_{N}\ ]_{NP}]_{NP}\ ]_{V/TP}\ ]_{CP}$

they-pres-remove pig poss theirs

'They are removing their pig.'

b. OUTPUT (ONLY OBJECT-INTERNAL PHRASING IS REVISED)

$_{\iota}(\ _{\varphi}(\ _{\omega}(\text{v}\acute{a}^{H}\text{-á-súsá}^{H})_{\omega}\ \varphi(\ _{\omega}(\text{n-guluve})_{\omega}\ _{\omega}(!ta^{H}\ \text{vo!na}^{H})_{\omega}\ )_{\varphi}\ )_{\varphi}\ )_{\iota}$

Xitsonga: Interim Summary

- The R and L φ-edge-sensitivity exhibited by H tone spread in Xitsonga provides evidence for the Match theory of S-P constituency correspondence.
- This φ-edge-sensitivity is embodied in phonological constraints on tone in prosodic representations -- CRISPEDGEL(φ,H) and NONFINALITY(φ,H)-- which outrank H SPREAD.
- The prosodic structure markedness constraint BINMIN(φ, ω) outranks MATCH PHRASE.

Opening up more questions

Question: In view of the effect of CrispEdgeL(φ, H) in (4), why does H spread from the verb into the 1st object in (3), despite the (presumed) syntactic analysis according to which the verb is raised to Tense and the 1st object noun is member of a two-constituent phrase (say, vP) that includes the 2nd object noun? Shouldn't H spread from the verb be blocked by the left edge of the φ corresponding to that 2-word vP?

(3') a. INPUT

$_{CP}[_{V/TP}[va^{H}\text{-a-xavela}]_{V}\ _{vP}[_{NP}[_{N}[\ \text{xi-phukuphuku}]\ _{NP}[_{N}[\ \text{fole}\ ]_{N}]_{NP}]_{vP}]_{V/TP}]_{CP}$

'they are buying tobacco for a fool'

b. OUTPUT (REVISION ACCORDING TO BINMIN(φ, ω), has no effect on CRISPEDGEL(φ, H))

* $_{\iota}(\ _{\varphi}(\ _{\omega}(\text{v}\acute{a}^{H}\text{-xávélá})_{\omega}\ \varphi(_{\omega}(\ \text{xi-phukuphuku}\ )_{\omega}\ \ _{\omega}(\ \text{foole}\ )_{\omega}\ )_{\varphi}\ )_{\iota}$

c. . OUTPUT NEEDED: GROUPING OF VERB AND FIRST OBJECT NOUN INTO A SINGLE φ, contrary to Match Phrase and input syntax.

$_{\iota}(\ _{\varphi}(\ _{\omega}(\text{v}\acute{a}^{H}\text{-xávélá})_{\omega}\ \ _{\omega}(\text{xí-phúkúphú}^{H}\ \text{ku}\ )_{\omega}\ )_{\varphi}\ \ _{\omega}(\ \text{foole}\ )_{\omega}\ )_{\varphi}\ )_{\iota}$

What prosodic markedness constraint would provide the pressure to choose the S-P nonisomorphism of (3'c) over (3'b), which respects MATCH PHRASE?

a. S: $_{V/TP}[\ _{V}[\text{verb}]_{V}\ _{vP}[\ _{NP}[\ _{N}[\text{noun}]_{N}\ ]_{NP}\ _{NP}[\ _{N}[\text{noun}]_{N}\ ]_{NP}\ ]_{vP}\ ]_{V/TP}$

b. P1: $*\ _{\varphi}(_{\omega}(\text{verb})_{\omega}\ _{\varphi}(\ _{\omega}(\text{noun})_{\omega}\ \ _{\omega}(\text{noun})_{\omega}\ )\ _{\varphi})_{\varphi}$

c. P2: $_{\varphi}(\ _{\varphi}(\ _{\omega}(\text{verb})_{\omega}\ \ _{\omega}(\text{noun})_{\omega}\ )_{\varphi}\ \ _{\omega}(\text{noun})_{\omega}\ )_{\varphi}$

'they are buying tobacco for a fool'

Strong Start provides the pressure

Strong Start (Selkirk 2011, sec 3.1.2, Elfner 2012)

$*\ (\ \pi_{n}\ \pi_{n+1}\ \ldots$

A prosodic constituent optimally begins with a leftmost daughter constituent which is not lower in the prosodic hierarchy than the constituent that immediately follows.

	STRONG START(φ)
b. $_{\varphi}(_{\omega}(\text{verb})_{\omega}\ _{\varphi}(\ _{\omega}(\text{noun})_{\omega}\ _{\omega}(\text{noun})_{\omega}\ )\ _{\varphi})_{\varphi}$	*
c. $_{\varphi}(\ _{\varphi}(\ _{\omega}(\text{verb})_{\omega}\ \ _{\omega}(\text{noun})_{\omega}\ )_{\varphi}\ \ _{\omega}(\text{noun})_{\omega}\ )_{\varphi}$	

Prosodic precedents for Strong Start

- Preference for foot over syllable in initial position of word (ω) in English, Garawa… (McCarthy and Prince 1993):

  $_{\omega}(_{Ft}(\text{Táta})_{Ft}\text{ma}_{Ft}(\text{góuchi})_{Ft})_{\omega}$ vs. $*_{\omega}(\text{Ta}\ _{Ft}(\text{táma})_{Ft}\ _{Ft}(\text{góuchi})_{Ft})_{\omega}$

- Avoidance of "proclitic" function words where possible
  - i. (Take) ((Grey) to) (London), = (Take) (Greater) (London)
  - ii. Rightward movement of initial Fnc (Bosnian-Serbo-Croatian (Werle 2009), Irish (Elfner 2012))

- And others

STRONG START >> MATCH PHRASE?

INPUT

$_{CP}[_{V/TP}[\text{va}^{H}\text{-a-xavela}]_{V}\ _{vP}[_{NP}[_{N}[\ \text{xi-phukuphuku}]\ _{NP}[_{N}[\ \text{fole}\ ]_{N}]_{NP}]_{vP}]_{V/TP}]_{CP}$

'they are buying tobacco for a fool'

OUTPUT NEEDED

$_{\iota}(\ _{\varphi}(\ _{\omega}(\text{vá}^{H}\text{-xávélá})_{\omega}\ \ _{\omega}(\text{xí-phúkúphú}^{\text{-H}}\text{ku}\ )_{\omega}\ )_{\varphi}\ \ _{\omega}(\ \text{foole}\ )_{\omega}\ )_{\varphi}\ )_{\iota}$

$_{V/TP}[\text{verb}_{vP}[_{NP}[\text{noun}]_{NP}\ _{NP}[\text{noun}]_{NP}]_{vP}]_{V/TP}$	BINMIN (φ, ω)	STRONG START	MATCH PHRASE
a. $_{\varphi}(_{\omega}(\text{verb})_{\omega}\ _{\varphi}(_{\varphi}(_{\omega}(\text{noun})_{\omega}\ _{\varphi}\ _{\varphi}(_{\omega}(\text{noun})_{\omega}\ )_{\varphi})_{\varphi})_{\varphi}$	** W	* W	√ L
b. $_{\varphi}(_{\omega}(\text{verb})_{\omega}\ _{\varphi}(\ _{\omega}(\text{noun})_{\omega}\ _{\omega}(\text{noun})_{\omega}\ )\ _{\varphi})_{\varphi}$	√	* W	** L
c. ☞ $_{\varphi}(\ _{\varphi}(\ _{\omega}(\text{verb})_{\omega}\ \ _{\omega}(\text{noun})_{\omega}\ )_{\varphi}\ \ _{\omega}(\text{noun})_{\omega}\ )_{\varphi}$	√	√	***

STRONG START >> MATCH PHRASE?

(4) a. $_{CP}[_{V/TP}[\ _{V}[va^{H}\text{-a-susa}]_{V}\ _{NP}[\ _{N}[\text{n-guluve}\ [ta^{H}{}_{NP}[\ _{N}[vona^{H}]_{N}\ ]_{NP}]_{NP}\ ]_{V/TP}\ ]_{CP}$

'They are removing their pig (= a/the pig of theirs).'

b. $_{t}(\ _{\varphi}(_{\omega}(vá^{H}\text{-á-súsá}^{\cdot H})_{\omega}\ _{\varphi}(\ _{\omega}(\text{n-guluve})_{\omega}\ _{\varphi}(\ _{\omega}(!ta^{H}\ vo!na^{H})_{\omega}\ )_{\varphi}\ )_{\varphi}\ )_{t}$

$_{V/TP}[\text{verb}\ _{NP}[\ \text{noun}\ _{NP}[\text{poss-noun}]_{NP}]_{NP}]_{V/TP}$	BINMIN (φ, ω)	STRONG START	MATCH PHRASE
a. $_{\varphi}(_{\omega}(\text{verb})_{\omega}\ _{\varphi}(_{\omega}(\text{noun})_{\omega}\ _{\varphi}(\ _{\omega}(\text{poss-noun})_{\omega}\ )_{\varphi})_{\varphi})_{\varphi}$	* W	** W	√ L
b. ☞ $_{\varphi}(_{\omega}(\text{verb})_{\omega}\ _{\varphi}(\ _{\omega}(\text{noun})_{\omega}\ _{\omega}(\text{poss-noun})_{\omega}\ )\ _{\varphi})_{\varphi}$	√	*	*
c. ● $_{\varphi}(\ _{\varphi}(\ _{\omega}(\text{verb})_{\omega}\ _{\omega}(\text{noun})_{\omega}\ )_{\varphi}\ _{\omega}(\text{poss-noun})_{\omega}\ )_{\varphi}$	√	√ L	** W

MATCH LEXP instead of MATCH PHRASE

- MATCHPHRASE makes no distinction between lexical phrasal projections (headed by N, A, V) and nonlexical projections.
- But suppose there were a constraint MATCH LEXP. It would *not* be violated by a break-up of the functional projection vP in (3'):

(i) S: $_{V/TP}[\ _{V}[\text{verb}]_{V}\ _{vP}[\ _{NP}[\ _{N}[\text{noun}]_{N}\ ]_{NP}\ _{NP}[\ _{N}[\text{noun}]_{N}\ ]_{NP}\ ]_{vP}\ ]_{V/TP}$

(ii) P: $_{\varphi}(\ _{\varphi}(\ _{\omega}(\text{verb})_{\omega}\ _{\omega}(\text{noun})_{\omega}\ )_{\varphi}\ _{\omega}(\text{noun})_{\omega}\ )_{\varphi}$

they are buying tobacco for a fool'

- But MATCH LEXP *would* be violated by a break-up of the NP projection corresponding to the complex direct object in (4):

(i) S: $_{V/TP}[\ _{V}[\text{verb}]_{V}\ _{NP}[\ _{N}[\text{noun}]_{N}\ _{NP}[\ \text{poss-}_{N}[\text{noun}]_{N}\ ]_{NP}\ ]_{NP}\ ]_{V/TP}$

(ii) P: *$_{\varphi}(\ _{\varphi}(\ _{\omega}(\text{verb})_{\omega}\ _{\omega}(\text{noun})_{\omega}\ )_{\varphi}\ _{\omega}(\text{poss-noun})_{\omega}\ )_{\varphi}$

'They are removing their pig.'

BINMIN(φ, ω) >> MATCH LEXP >> STRONG START

(4) a. $_{CP}[_{V/TP}[\ _{V}[va^{H}\text{-a-susa}]_{V}\ _{NP}[\ _{N}[\text{n-guluve}\ [ta^{H}{}_{NP}[\ _{N}[vona^{H}]_{N}\ ]_{NP}]_{NP}\ ]_{V/TP}\ ]_{CP}$

'They are removing their pig (= a/the pig of theirs).'

b. $_{t}(\ _{\varphi}(_{\omega}(vá^{H}\text{-á-súsá}^{\cdot H})_{\omega}\ _{\varphi}(\ _{\omega}(\text{n-guluve})_{\omega}\ _{\varphi}(\ _{\omega}(!ta^{H}\ vo!na^{H})_{\omega}\ )_{\varphi}\ )_{\varphi}\ )_{t}$

$_{V/TP}[\text{verb}\ _{NP}[\ \text{noun}\ _{NP}[\text{poss-noun}]_{NP}]_{NP}]_{V/TP}$	BINMIN (φ, ω)	MATCH LEXP	STRONG START
a. $_{\varphi}(_{\omega}(\text{verb})_{\omega}\ _{\varphi}(_{\omega}(\text{noun})_{\omega}\ _{\varphi}(\ _{\omega}(\text{poss-noun})_{\omega}\ )_{\varphi})_{\varphi})_{\varphi}$	* W	√ L	** W
b. ☞ $_{\varphi}(_{\omega}(\text{verb})_{\omega}\ _{\varphi}(\ _{\omega}(\text{noun})_{\omega}\ _{\omega}(\text{poss-noun})_{\omega}\ )\ _{\varphi})_{\varphi}$	√	*	*
c. $_{\varphi}(\ _{\varphi}(\ _{\omega}(\text{verb})_{\omega}\ _{\omega}(\text{noun})_{\omega}\ )_{\varphi}\ _{\omega}(\text{poss-noun})_{\omega}\ )_{\varphi}$	√	**$_{NP}$ W	√ L

BINMIN(φ, ω) >> MATCH LEXP >> STRONG START

INPUT

$_{CP}[_{V/TP}[va^{H}\text{-a-xavela}]_{V}\ _{vP}[_{NP}[_{N}[\ \text{xi-phukuphuku}]\ _{NP}[_{N}[\ \text{fole}\ ]_{N}]_{NP}]_{vP}]_{V/TP}]_{CP}$

'they are buying tobacco for a fool'

OUTPUT

$_{t}(\ _{\varphi}(\ _{\omega}(vá^{H}\text{-xávélá})_{\omega}\quad _{\omega}(xí\text{-phúkúphú}^{\cdot H}\text{ku}\ )_{\omega}\ )_{\varphi}\quad _{\omega}(\ \text{foole}\ )_{\omega}\ )_{\varphi}\ )_{t}$

$_{V/TP}[\text{verb}\ _{vP}[_{NP}[\text{noun}]_{NP}\ _{NP}[\text{noun}]_{NP}]_{vP}]_{V/TP}$	BINMIN (φ, ω)	MATCH LEXP	STRONG START
a. $_{\varphi}(_{\omega}(\text{verb})_{\omega}\ _{\varphi}(_{\varphi}(_{\omega}(\text{noun})_{\omega})_{\varphi}\ _{\varphi}(_{\omega}(\text{noun})_{\omega}\ )_{\varphi})_{\varphi})_{\varphi}$	** W	√ L	* W
b. $_{\varphi}(_{\omega}(\text{verb})_{\omega}\ _{\varphi}(\ _{\omega}(\text{noun})_{\omega}\ _{\omega}(\text{noun})_{\omega}\ )\ _{\varphi})_{\varphi}$	√	**	* W
c. ☞ $_{\varphi}(\ _{\varphi}(\ _{\omega}(\text{verb})_{\omega}\ _{\omega}(\text{noun})_{\omega}\ )_{\varphi}\ _{\omega}(\text{noun})_{\omega}\ )_{\varphi}$	√	**	√

Summary so far,

Markedness

- BINMIN(φ, ω)
- STRONG START (see also Elfner 2012 on Irish)

Match

- MATCH LEXP vs. MATCH PHRASE
- Both R and L φ-edges that correspond to LexP edges

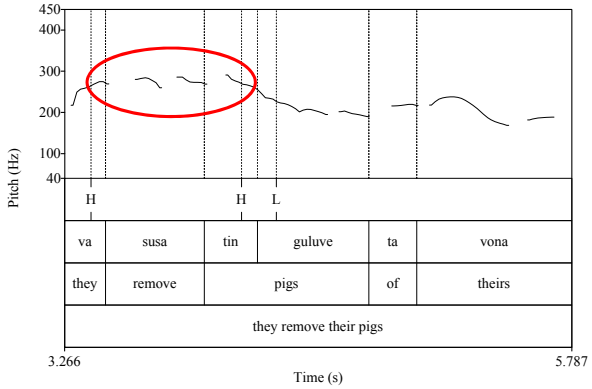
CV Class prefix

- H tone spreads into the CV class prefix [ti-]

(5) vá$^{H-}$ súsá tí$^{-H}$-nguluve ↓tá vo↓ná
they remove Cl10-pig of theirs
'they remove their pigs'

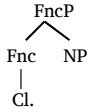
- Why does the H tone spread into the CV class prefix?

Pitch track of (5) – multi word DP with CV prefix [vá súsá [tí-nguluve ↓tá vo↓ná]]



CV Class prefix

- The CV class prefix heads a functional projection.



- H tone spreading is not blocked by what precedes the NP.

(5) a. $_{CP}[_{V/TP}[\ _{V}[va^{H}\text{-a-susa}]_{V}\ _{FncP}[ti\text{-}\ _{NP}[\ _{N}[n\text{-guluve}\ [ta^{H}{}_{NP}[\ _{N}[vona^{H}]_{N}\ ]_{NP}]_{NP}]_{FncP}]_{V/TP}\ ]_{CP}$
they-pres-remove Cl.10- pig poss theirs
'They are removing their pig (= a/the pig of theirs).'

b. $_{\iota}(\ _{\varphi}(_{\omega}(vá^{H}\text{-á-súsá})_{\omega}$ $tí^{-H}\text{-}_{\varphi}(\ _{\omega}(n\text{-guluve})_{\omega}\ _{\varphi}(\ _{\omega}(!ta^{H}\ vo!na^{H})_{\omega}\ )_{\varphi}\ )_{\iota}$

- As before, the constraint MATCH LEXP would *not* be violated by a break-up of the functional projection FP, headed by the CV class prefix in (5).

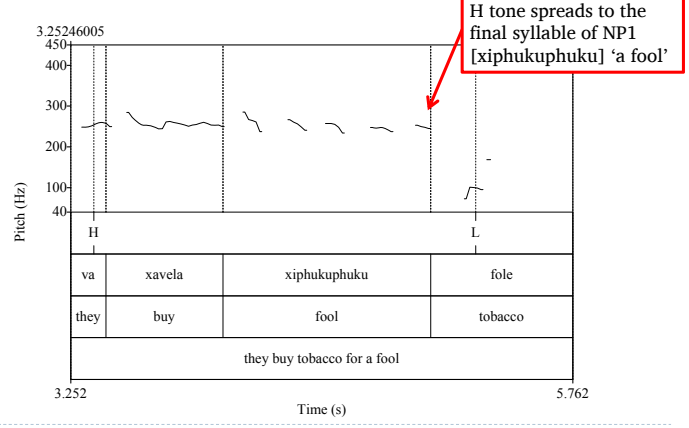
Additional data from a different Xitsonga dialect

Difference between the speech reported in Kisseberth (1994) and the speech of our consultant

- H tone spreads to the final syllable of DP1 (cf. Kisseberth 1994)
  - (6a) [[vá$^{H-}$ xavela]$_V$ $_{vP}$[[xiphukuphuku]$_{NP1}$ [foole]$_{NP2}$]$_{vP}$]$_{V/TP}$
    $_\iota$($_\varphi$($_\omega$(vá$^{H-}$-xávélá)$_\omega$ $_\omega$(xí-phúkúphúkú$^{-H}$)$_\omega$)$_\varphi$ $_\omega$(foole)$_\omega$)$_\varphi$)$_\iota$
  - H tone spreads to the R edge of a φ.
- In our consultant's speech, non-finality does not apply before the right edge of a φ, unlike Kisseberth's consultant.
- Even so, H tone spreading is still sensitive to the right edge of a φ because H tone does not spread beyond the right edge of a φ.
- Further example,
  - (6b) [[ni nyí$^{H-}$ka]$_V$ $_{vP}$[[xikoxa]$_{NP1}$ [nyama]$_{NP2}$]$_{vP}$]$_{V/TP}$ (K2-18)
  - $_\iota$($_\varphi$($_\omega$(ni nyí$^{H-}$ká)$_\omega$ $_\omega$(xíkóxá$^{-H}$)$_\omega$)$_\varphi$ $_\omega$(nyama)$_\omega$)$_\varphi$)$_\iota$
    I give old-woman meat
    'I give meat to an old woman.'

Pitch track of (6a) – two DPs

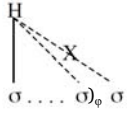
[vá xávélá $_{vP}$[[xíphúkúphúkú]$_{NP1}$ [fo:le]$_{NP2}$]$_{vP}$]$_{V/TP}$



Domain-sensitivities

(6a) [[vá$^{H-}$ xavela]$_V$ $_{vP}$[[xiphukuphuku]$_{NP1}$ [foole]$_{NP2}$]$_{vP}$]$_{V/TP}$
$_\iota$($_\varphi$($_\omega$(vá$^{H-}$-xávélá)$_\omega$ $_\omega$(xí-phúkúphúkú$^{-H}$)$_\omega$)$_\varphi$ $_\omega$(foole)$_\omega$)$_\varphi$)$_\iota$

- The phrasing in (6a) shows CRISPEDGE-R(φ,H), and not NON-FINALITY-φ, is the constraint responsible for showing sensitivity to a phonological phrase domain, in our consultant's speech.



- CRISPEDGE-R(φ,H) >> H-SPREAD

NON-FINALITY in our consultant's speech

- H tone from [va-] spreads into the following prosodic word until the penultimate syllable.

(7) a. $_{CP}[\ _{V/TP}[\ _{V}[\ va^{H}\text{-a-tisa}]_{V}\ _{NP}[\ _{N}[\text{xi-hontlovila}\ ]_{N}\ ]_{NP}\ ]_{V/TP}\ ]_{CP}$
'They are bringing a giant'

b. $_{\iota}(\ _{\varphi}(\ _{\omega}(\ \text{v-á}^{H}\text{-tísá})_{\omega}\ \ _{\omega}(\text{xí-hóntlóvíí}^{H}\text{la}\ )_{\omega}\ )_{\varphi}\ )_{\iota}$

- The H tone spreading to the penultimate syllable in (7b) suggests that non-finality is active at the intonational phrase level.

Supports for NON-FINALITY-ι from right dislocation

- Non-finality at the right edge of an intonational phrase
  - (8a) $[[\text{vanhu}]_{NP1}\ \ [[\underline{\text{vá}}\text{-}\underline{\text{lá}}\text{vá}]_{V}\ [\text{tíngúvu}]_{NP2}]_{VP}]_{TP}$ (K5-17)
  - people they-want clothes
    $_{\iota}(_{\varphi}(_{\omega}(\ )_{\omega}\ _{\varphi}(\ _{\omega}(\ )_{\omega}\ _{\omega}(\ )_{\omega}\ )_{\varphi}\ )_{\varphi}\ )_{\iota}$
- In a sentence, in which a NP1 is right-dislocated, non-finality applies, showing that there is an intonational phrase boundary before the right-dislocated NP1 [vanhu].
  - (8b) $[[[\underline{\text{vá}}\text{-}\underline{\text{lá}}\text{vá}]_{V}\ [\text{tíngúvu}]_{NP2}]_{VP}]_{TP}\ \ [\text{vanhu}]_{NP1}]_{TP}$ (K5-18)
  - they want clothes people
    $_{\iota}(_{\iota}(_{\varphi}(\ _{\omega}(\ )_{\omega}\ _{\omega}(\ )_{\omega}\ )_{\varphi}\ )_{\iota}\ \ _{\omega}(\ )_{\omega}\ )_{\iota}$

Non-finality in our consultant's Xitsonga

- Non-finality is active at the intonational phrase level but not at the phonological phrase level in the Xitsonga grammar of our consultant.

NON-FINALITY-ι
>> H-SPREAD
>> NON-FINALITY-φ

Domain Sensitivity: Our consultant vs. Kisseberth 1994

- The R and L φ -edge-sensitivities
  - H tone does not spread into a phonological phrase
    CRISPEDGEL (φ,H)
  - H tone spreads to the right edge of a phonological phrase
    CRISPEDGER (φ,H)
- The R ι-edge-sensitivity
  - H tone spread to the penultimate syllable of an intonational phrase
    NON-FINALITY-ι
- Both varieties Xitsonga (Kisseberth's and ours) show edge-sensitivities to phonological phrases and intonational phrases, but the constraints restricting the distribution of tone in the grammar differ between these two varieties of Xitsonga.

Conclusion

- The main new discussion for Xitsonga has concerned the distinction between MATCHLEXP and MATCHPHRASE.
- The phonological phrasing of a multi-word DP retains the syntactic NP grouping [V [N Mod]], while in the phrasing in double object constructions the verb groups with the first object [[V N_1] N_2].
  - The STRONG-START constraint
- Additional data from the two dialects of Xitsonga has shown how edge-sensitivities embodied differently in constraints on the distribution of tone

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