Morphosyntactic constraints on Phonological dominance

Paula Fenger[a] Maria Kouneli[a] Jonathan David Bobaljik[b]

[a]Universität Leipzig [b]Harvard University

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Empirical focus: Dominant-(recessive) Vowel Harmony

[+ATR] vowel in a word causes all other vowels to become [+ATR]
(a.o. Halle & Vergnaud 1981; Baković 2000; Casali 2003; Nevins 2010)

Advanced Tongue Root Vowels
[+ATR]: /i,e,ɑ,o,u/
[–ATR]: /ɪ,ɛ,a,ɔ,ʊ/

Kipsigis (Kalenjin, Southern Nilotic; Kenya)

(1) /k**a**-**ɔ**-t∫**a**m/ → k**aɔ**t∫**a**m
PST-2PL-love

(2) /ŋ**oː**k-**ɪ**/ → ŋ**oː**g**i**
dog-DEM

(3) /k**a**-k**ɪ**-p**e**t / → k**ɑ**g**i**b**e**t
PST-1PL-get.lost

(4) /**a**-t∫**a**m-**e**/ → **ɑ**t∫**ɑ**m**e**
1SG-love-IPFV

No Dominant Prefix Generalization (NoDomPref)

Bi-directional Vowel Harmony, but. . . :

- Stems can influence: suffixes, prefixes (5a)
- Suffixes can influence: stems, prefixes (5b)
- Prefixes cannot influence anything (5c)

(5) a. ✓ PREF - STEM - SUFF → PREF - STEM - SUFF

b. ✓ PREF - STEM - SUFF → PREF - STEM - SUFF

c. ✗ PREF - STEM - SUFF → PREF - STEM - SUFF

(Hall et al., 1974; Baković, 2000; Moskal, 2015)

Previous accounts of No Dominant Prefix Generalization:

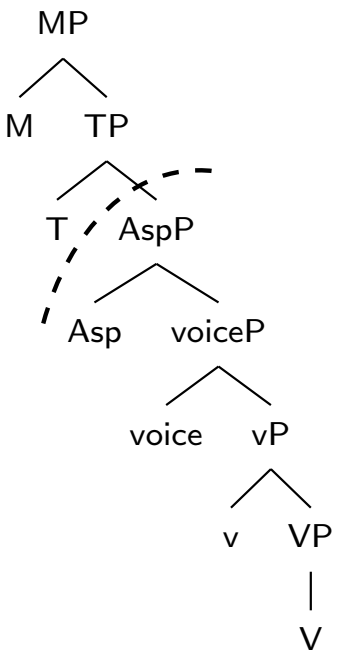
1. Constraint rankings (Baković, 2000)
2. Prefixes fall outside of the prosodic domain (Nespor & Vogel, 1986; Moskal, 2015; Bogomolets, 2020)
3. Prefixes are syntactically high (Julien, 2002; Newell, 2008)

⇒ 1-2 are ad hoc (though see Wynne et al., 2021)
⇒ Analyses only focus on prefixes, rarely on suffixes

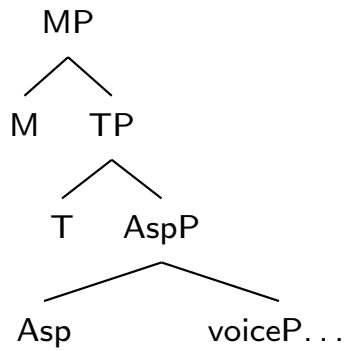
Syntactic Phases effect phonology (Newell, 2008; Fenger, 2020, a.o)

- Phase is Aspect (6a) (Harwood, 2013; Wurmbrand, 2014, a.o.),
- Spell-out of X^0 in phase, (6b) $\rightarrow$ (some) phonology is fixed

(6) a.



b.



(V-v-voice-Asp)

- Elements outside the phase have limited effects on inner phonological content
- Crucially, status of prefix or suffix should not matter.

Word building in cycles: Turkish Stress

Stress is generally expressed at the end of the word in Turkish (Lees, 1961; Kornfilt, 1997; Kabak & Vogel, 2001, a.o) :

(7)

koṣ-'**tur**	kal-'**ıyor**	bit-**ir**-'**iyor**
run-CAUS	stay-PROG	finish-CAUS-PROG
'make run'	's/he is staying'	's/he is finishing'

However, stress can never pass Aspect in the verbal domain:

(8)

kal-'**ıyor-du**	konuṣ-'**ur-du-lar**
stay-PROG-PST	speak-HAB-PST-3.PL
'was staying'	'they used to speak'

⇒ Cyclic Word building:
some phonological properties fixed at aspect cycle

- Building on 3: What are the syntactic influences on this asymmetry?
- Does height play a role?
  - If so, we should find an asymmetry in the suffixes as well.
  - Is there any systematicity as to which suffixes can influence stem/prefixes and which can't?

High=Recessive Hypothesis (NoDomHi):
Syntactically high affixes can only be recessive

Generalizations for Dominance

Prefix/Suffix versus High/Low yield different empirical patterns

1. Height: only low morphemes can alter root
   - Inflectional (Tense/Mood/Agreement) categories cannot
   - prefixes and suffixes can
2. Prefix/Suffix: only suffixes can alter roots
   - Inflectional categories can be dominant, when suffixal

	high INFL	low DERIV	ROOT	low DERIV	high INFL
low-high	✗	✓		✓	✗
prefix-suffix	✗	✗		✓	✓

Table: Patterns for generalizations

The Kipsigis (Kalenjin) verb

	INFL	DERIV	ROOT*	DERIV	INFL	
					ASP	AGR
DOM	Ø	Ø		n = 4 APPL, AP VENT, PL	n = 1	Ø
REC	n = 9 PST(3) NEG(1) AGR(5)	Ø *[n+1?]*		n = 8 ASSOC. MOT.(2), IT INSTR, INCH, MID STAT, CAUS	Ø	n = 1 AGR

Morpheme counts: Toweett (1979) (confirmed by Kouneli fieldnotes).

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The Diola-Fogny verb

	INFL	DERIV	ROOT*	DERIV	INFL	
					ASP	AGR
DOM	Ø	Ø		n = 4(+2) DIR, NEG VENT,ASP?	Ø	
REC	n = 10 FUT(2) EMPH(1) AGR(7)	Ø		n = 3(+5) REFL,INSTR INCH, ITER STAT, CAUS	n = 2 HAB INCOMP	n = 13 AGR(8) PST(3) SUB, NEG

Diola-Fogny (Niger-Congo). Morpheme counts: Sapir (1965); Casali (2018)

The Diola-Fogny verb

	INFL	DERIV	ROOT*	DERIV	INFL	
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DOM	Ø	Ø		n = 4(+2) DIR, NEG VENT,ASP?	Ø	Ø
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No Dominant high INFL: 0/23 high infl affixes are dominant — prefix/suffix not at issue

The Chukchi (Chukotko-Kamchatkan) verb

	INFL	DERIV	ROOT*	DERIV	INFL	
					ASP	AGR
DOM	Ø	Ø *[n+3?]*		n=2 INCH *[n+6?]*	Ø	
REC	n=12 FUT,COND(2) STAT(2) AGR(8)	n = 6 CAUS, APPL A.P., RECIP INTNS, ...		n = 9 DESID, ITER COLL, A.P. Th, ...	n=2 PROG Th	n = 18 ACTIVE(11) STATIVE(7)

Morpheme counts from Dunn (1999).
Add'l morphemes [n+] from Bogoraz 1922, Skorik 1967, Weinstein n.d.

The Chukchi verb

	INFL	DERIV	ROOT*	DERIV	INFL ASP	INFL AGR
DOM	Ø	Ø *[n+3?]*		n=2 INCH *[n+6?]*		Ø
REC	n=12 FUT,COND(2) STAT(2) AGR(8)	n = 6 CAUS, APPL A.P., RECIP INTNS, ...		n = 9 DESID, ITER COLL, A.P. Th, ...	n=2 PROG Th	n = 18 ACTIVE(11) STATIVE(7)

No dominant high INFL: Ø/30 high infl affixes are dominant - prefix/suffix not at issue.

The Chukchi verb

	INFL	DERIV	ROOT*	DERIV	INFL ASP	INFL AGR
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Handful of dominant prefixes? All 'low' i.e., derivational.

A note on Dominant prefixes

- Chukchi handful of dominant prefixes? E.g. intensifier kət-

(9) kət-ɣənt-et-rkən-i-tək → kət-ɣənt-at-rkən-e-tək
NTNS-run-DERIV-ASP-E-2PL
'Run!' (Skorik 1977:77)

Some morphemes with no full vowels are lexically specified as [+dominant] (Kenstowicz, 1979)

- Compound confound? kət∼ɣtə is (also) a lexical root:

(10) nə-ɣtə-qen
PTCP-hard-3SG
'(it is) strong' (Dunn, 1999, 88)

Chukchi verbs

- All 12 inflectional prefixes are recessive.
- . . . because all prefixes are recessive? maybe false
- . . . because *all* (high) inflectional affixes are recessive True!

Back to Generalizations

Three languages from three different families consistently show

1. No dominant high prefixes
   - Generally prefixes are inflectional
   - Chukchi might have derivational prefixes that are dominant
2. No dominant high suffixes
   - This is an accident under No Dominant Prefixes

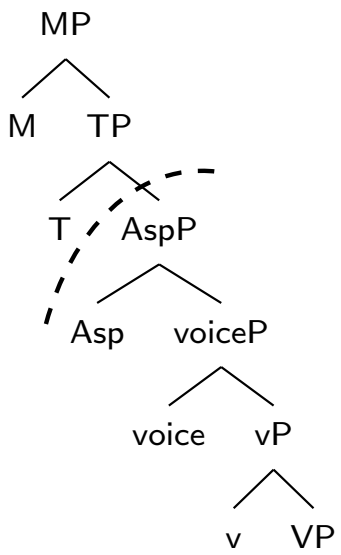
	high INFL	low DERIV	ROOT	low DERIV,ASP	high INFL
low-high	✗	✓		✓	✗
prefix-suffix	✗	✗		✓	✓

⇒ No Dominant Prefixes, when it holds, is a special case of High=Recessive Hypothesis

Potential Challenges?

Various patterns are not covered simply by high/low relative to structure in (6a):

(6a)



1. . . . Number in **adjectives** (Kipsigis)
2. . . . Case in **nouns** (Chukchi)
3. . . . Tense fusional morphemes (Karimojong)
4. . . . Agreement(?) in verbs (Turkana)
5. . . . Tense in simple verbs (Nez Perce)

1. Number in adjectives (Kipsigis)

- The plural markers -*eːn* and -*iːn*, used in plural agreement of adjectives and participles respectively, are dominant despite (potentially) being high in their domain:

(11) *Plural in adjectives*
/mʊgʊl-**eː**n/ → mu**u**l**eː**n
round-PL

(12) *Plural in participles*
/jaːt-aːt-**iː**n/ → jɑːt-ɑːt-**iː**n
open-PTCP-PL

2. Case in nouns (Chukchi)

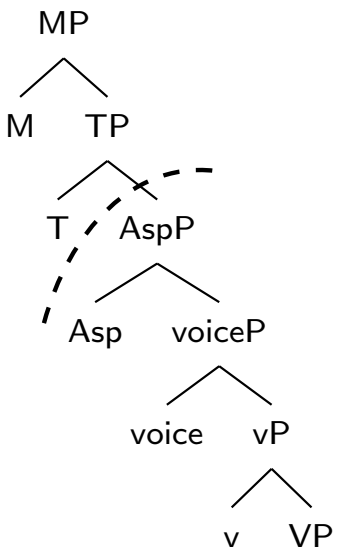
(13) *Associative circumfix in Chukchi*
/ɣ**e**-kʔ**e**l**i**-m**a**/ → ɣ**a**-kʔ**a**l**e**-m**a**/
ASS-hat-ASS
'with a hat' (Dunn 1999:332)

(14) *Dative/Allative suffix in Chukchi*
/**u**mk-čək**u**-ɣt**ə**/ → **o**mk-ə-čək**o**-ɣt**ə**/
bush-INESS-ALL
'into the bushes' (Dunn 1999:283)

Structure in (6a) makes no claims about phases/domains beyond verbs:

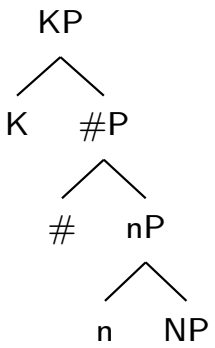
1. . . . Number in adjectives
2. . . . Case in nouns

(6a)



Possible solution? There is no phase similar to Aspect in nouns and adjectives.

(15)



3. Tense fusional morphemes (Karimojong)

- In Karimojong (Eastern Nilotic; Uganda), ATR harmony can be triggered by "the TAM marker which is at the right edge of the verb" (Lesley-Neuman, 2007, p.33).

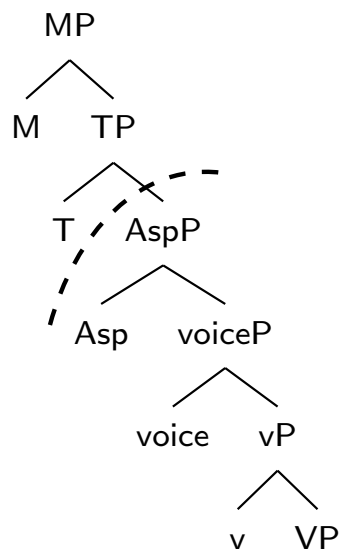
  (16) Template of the Karimojong verb:
  INFL - DER - ROOT - DER - DER - INFL

  (17) ɛ-to-dóŋ-ɑn-ɑkín-**jò**
  3S/P-CAUS-pinch-FREQ-DAT-**PASS.PRS.3S/P**
  (Lesley-Neuman, 2007, p.16)

- The TAM markers are fusional and express: Voice, Aspect (="low"), Tense, Mood, Agreement (="high").

Where is a fused voice+Asp+T exponent in (6a)?

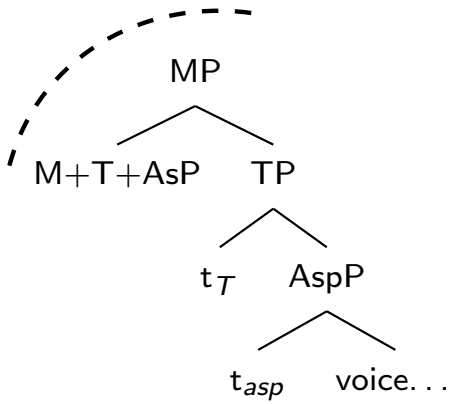
(6a)



3 Tense fusional morphemes

Alternative? Domain extension (e.g. den Dikken, 2007; Bobaljik & Wurmbrand, 2013)

(18)



4. Agreement(?) in verbs (Turkana)

- It is not always clear how to map labels in descriptive grammars to syntactic heads.
- An example of this challenge comes from Turkana (Eastern Nilotic; Kenya):
  - The verb has a slot that hosts number agreement with subjects. There are many allomorphs of the agreement morpheme.
  - Two number allomorphs (*t-è*, *t-o*) are dominant.
  - Both are used in specific aspectual environments: *t-è* in combination with the aspectual marker *-e* and *t-o* with dynamic verbs (in the indicative).
  - Are these high agreement morphemes or morphemes in the (low) Aspect area?

Conclusions: No Dominant High Affixes

- Newell (2008); Fenger (2020) a.o.: some phonological properties are fixed at the first phase/cycle within a word (Turkish stress, Japanese pitch-accent)
- This suggests a different way to approach *No Dominant Prefixes* in Vowel Harmony (established generalization with no explanation)
- Overlap for core cases, but our approach explains:
  - almost all INFL suffixes are recessive
  - some dominant prefixes in Chukchi
- Open Question: Why are some, but not all, phonological properties fixed at first phase/cycle?

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