

On Reducing Prosodic Categories to Phases

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Slides



Slides available at: <http://mikebarrie.com/handouts.html>

Table of Contents



- ① Introduction
- ② Background
- ③ Three Investigations
 - Korean
 - Blackfoot
 - Mongolian
- ④ Discussion

- Thanks to Victor Pan, Lawrence Cheung, and to CUHK for their gracious invitation.

Forward

- This research is the result of collaborative work with current and former members of my research team.



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Heeryun Chung



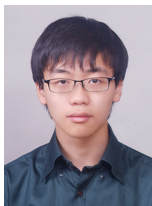
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- Thanks especially to the Blackfoot speakers we met in the summer of 2019: Daniel Crazy Bull, Randa Weasel Head, Brent Prairiechicken, Shelly Prairiechicken, Sandra Manyfeathers.



- full nominal: KP
- reduced nominal: nP or NumP (among other possibilities)
- different prosodic properties
- prosodic domains reduced to phases: vP , KP, nP - subject to variation

Table of Contents

1 Introduction

2 Background

3 Three Investigations

- Korean
- Blackfoot
- Mongolian

4 Discussion

- Innate aspects of grammar - very small
- Merge - that's it (Chomsky et al., 2019; Chomsky, 2020)
- If so, all other aspects learned
- Phase heads:
 - C - lots of cross-linguistic evidence, stable
 - *v*, D/K, *n*, P - lots of disagreement and variation (Legate, 2003; McGinnis, 2003; Boeckx and Grohmann, 2007; den Dikken, 2007; Grewendorf and Kremers, 2009; Matushansky, 2004; Gallego, 2011, 2010)
- Phases require evidence

- Selkirk (2011): study of the syntax-phonology interface goes back to at least 1968
- Chomsky and Halle (1968): nuclear stress on left-most element of a syntactic phrase
- Prosodic structure:
- separate hierarchy? (Nespor and Vogel, 1986; Jun, 1998; Selkirk, 1984)
- growing consensus - prosodic domains are defined by phases (Kratzer and Selkirk, 2007; Newell, 2008; Newell and Piggott, 2014; Newell and Scheer, 2017; Weber, 2020; Compton and Pittman, 2010)
- will investigate this hypothesis here

Table of Contents

1 Introduction

2 Background

3 Three Investigations

- Korean
- Blackfoot
- Mongolian

4 Discussion

- Utterances divided up into prosodic domains (Selkirk, 1984; Nespor and Vogel, 1986).
- Disagreement on relationship between syntax and prosody (Jun, 1998; Selkirk, 2011; Newell and Scheer, 2017; Beckman and Pierrehumbert, 1986; Pierrehumbert and Beckman, 1988).

- Domains:

Syntactic (Selkirk/Nespor & Vogel)	Intonational (Jun)
intonational phrase, ι	intonational phrase, IP
phonological phrase, ϕ	accentual phrase, AP
phonological word, ω	phonological word, PW

- Jun: AP in Korean: THLH (aspirated or fortis C \rightarrow T = H, otherwise L)

- direct relationship between syntactic structure and prosodic structure
- violable constraints (Elfner, 2015; Selkirk, 2009, 2011).
- constraints as follows:

(1) Match Theory Constraints

- ⓐ CP - ι (CP with illocutionary force?)
- ⓑ XP - ϕ
- ⓒ X - ω

- Differential Object Marking (DOM): case marking on noun varies with respect to a variety of properties (Bossong, 1991; Fábregas, 2013; López, 2012, *inter alia*):
 - humanness
 - animacy
 - specificity
 - definiteness
- usual trend: animate nouns trigger DOM while inanimate nouns do not
- Pseudo Noun Incorporation (PNI): noun (typically the object) is bare or has reduced morphology (Massam, 2001; Dayal, 2011).
- semantic properties that resemble canonical noun incorporation (Mithun, 1984).

Table of Contents

1 Introduction

2 Background

3 Three Investigations

- Korean
- Blackfoot
- Mongolian

4 Discussion

Background on Korean

- Prosodic domains correspond to:
- THLH, tone contour at left edge, T depends on onset
- lenis stop voicing (aka intersonorant voicing)

L H L H
na-nun yenga-lul miwe-hay-yo
I-TOP Younga-ACC hate-do.INF-POLITE
I hate Younga.

- (2) a *kulim*
picture [kuɾim]
'picture'
- b *motun kulim*
every picture [modun guɾim]
'every picture'

Nominalization and Case

- Case patterns in Korean nominalizations (Chung, 2019; Barrie and Chung, 2019)
- [S-NOM O-ACC V]-NLZR
- [S-GEN O V]-NLZR
- *[S-GEN O-ACC V]-NLZR
- *[S-NOM O V]-NLZR

- (3) **a** 영희가 영화를 보기를
Yenghui-ka yenghwa-lul po-ki-lul
Younghui-NOM film-ACC see-NLZR-ACC
'Younghui seeing the film'
- b** 영희의 영화를 보기를
Yenghui-uy yenghwa po-ki-lul
Younghui-GEN film see-NLZR-ACC
'Younghui's seeing the film'

- (4) ⓐ *Yenghuy-ka* *yenghwa-lul* *po-ki-lul*
 Younghui-NOM film-ACC see-NLZR-ACC
 ‘Younghui seeing the film’
- ⓑ *Yenghuy-uy* *yenghwa* *po-ki-lul*
 Younghui-GEN film see-NLZR-ACC
 ‘Younghui’s seeing the film’

- Case marked nominal: KP
- obligatorily caseless nominal: *nP*?
- Prosodic correlates of phase structure?
- KP_{OBJ} V
- nP_{OBJ} V

- Obj + V

- +son C +son

(5) a *Yenghuy-ka* ***yenghwa-lul*** *po-ki-lul*
Younghui-NOM film-ACC see-NLZR-ACC

‘Younghui seeing the film’

b *Yenghuy-uy* ***yenghwa*** *po-ki-lul*
Younghui-GEN film see-NLZR-ACC

‘Younghui’s seeing the film’

- underlined portion - test for lenis stop voicing

- boldface portion - test for THLH contour

- The comparison of VOT type

- NOM-*ki* vs. GEN-*ki*

VOT	NOM- <i>ki</i>	GEN- <i>ki</i>
Positive	30	7
Negative	6	25
Zero	6	10
Total	42	42

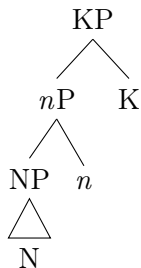
VOT	KP _{OBJ} V	nP _{OBJ} V
C not voiced	30	7
C voiced	12	35
Total	42	42

- nP_{OBJ}+verb - acts as a prosodic unit for lenis stop voicing
- KP_{OBJ} and verb - act as two separate prosodic units

- comparison of pitch patterns
- KP + V - contour reset on V
- *n*P + V - one domain for THLH contour

Discussion of Korean

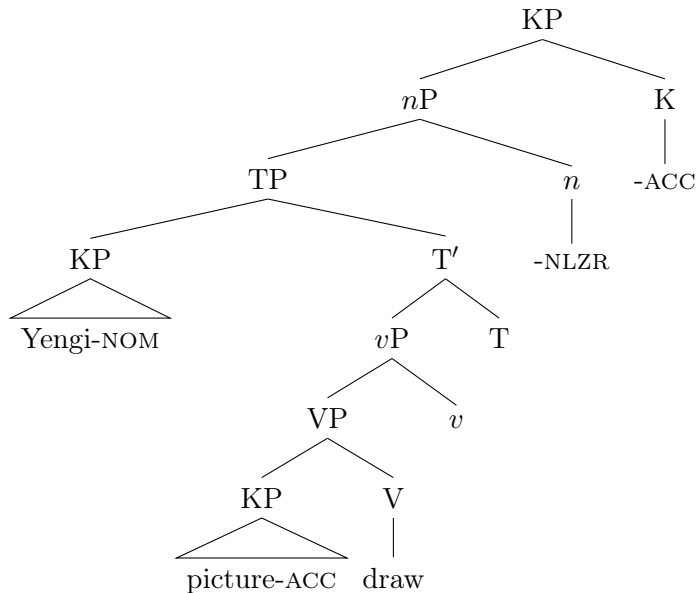
- Assume following structure for nominals
- Other functors, too (ClP, etc.) - not important here



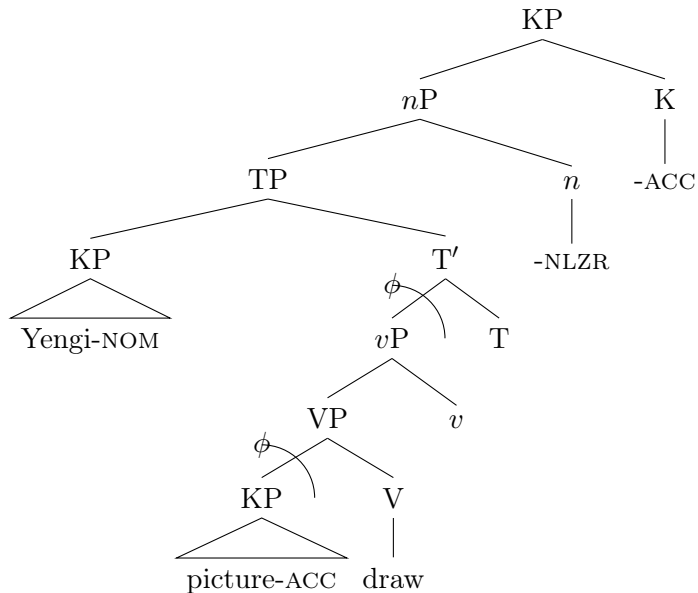
- Head movement in head final languages?
- Hard to tell (Han et al., 2007)
- No HM - N-*n*-K is a phrase $\rightarrow \phi$
- N to K HM - N-*n*-K is a head $\rightarrow \omega$

- Match Word - sensitive only to lexical roots (Selkirk and Lee, 2015)
- No difference predicted between case-marked and caseless nouns
- Phases map to prosodic domains:
 - nP maps to ω
 - KP and vP map to ϕ
- Proposed structures:

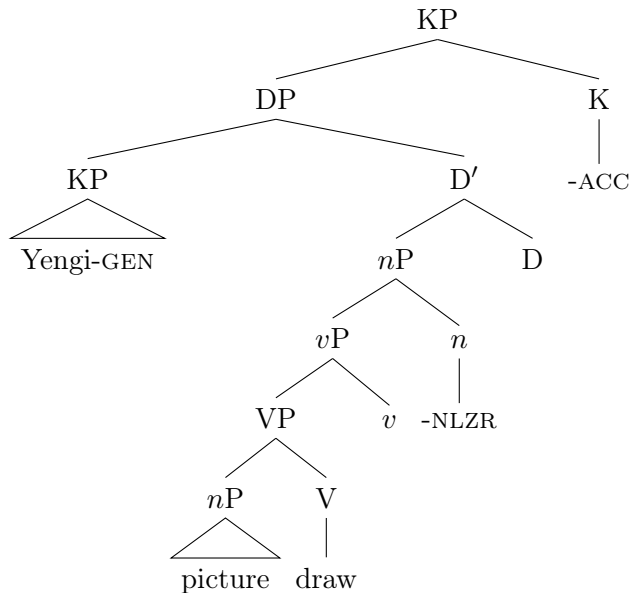
Discussion of Korean



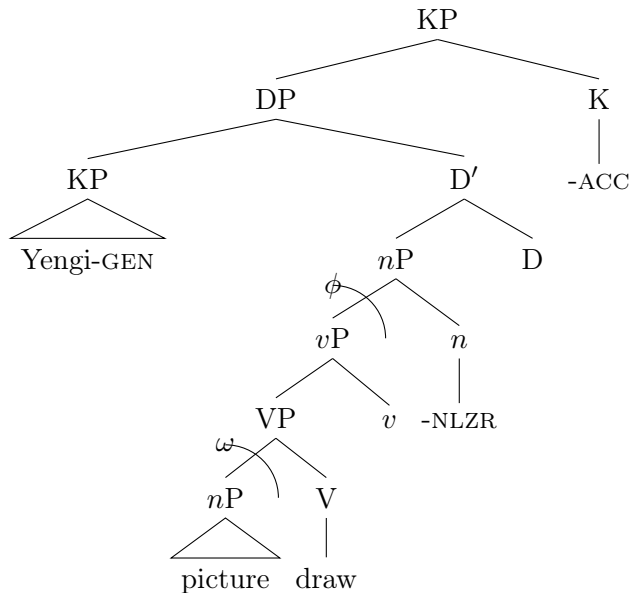
Discussion of Korean



Discussion of Korean



Discussion of Korean



Background in Blackfoot

- Algonquian language, spoken in southern Alberta (Canada) and Montana (USA).
- about 5000 speakers, undergoing language shift to English due to aggressive colonialization
- polysynthetic - complex verbal morphology

(6) *Nimáátomaikaksooyíhpa* *okonóksitokíhkitaan*
nit-maat-oma-ikak-ii-ooyi-hpa okonok-sitok-ihkitaa-n
I-NEG-yet-even-IC-eat.AI-NPI saskatoon-MID-bake-NLZR
'I have never eaten saskatoon pie.'

(7) Animacy agreement in Blackfoot (Bliss, 2018, ex.3(b,c))

Ⓐ *Náihkiitatsiwa* *omi* *pi'kssíí*
na-ihkiit-at-yii-wa om-yi pi'kssii-yi
EVID-bake-TA-DIR-PROX DEM-SG.OBV chicken-SG.OBV

‘S/he baked that chicken.’

Ⓑ *Náihkiitatooma* *omi* *napayíni*
na-ihkiit-atoom-wa om-yi napayin-yi
EVID-bake-TI-DIR-PROX DEM-SG.INAN bread-SG.INAN

‘S/he baked that bread.’

- Transitive verb - agrees with animacy of object
- TA - transitive animate (object) - chicken
- TI - transitive inanimate (object) - bread

Blackfoot Pseudo Noun Incorporation

- Full KP - demonstrative obligatory in Blackfoot
- PNI - no demonstrative, *intransitive agreement*
- Well known in the Algonquianist literature by a variety of names (Taylor, 1969; Rhodes, 1991; Frantz, 2017)
- Bliss (2018) analyzes morphosyntactically impoverished objects with an AI verb as PNI

(8) Blackfoot

Ⓐ	<i>Náyiiisoyiwa</i>	<i>anni</i>	<i>óta'si</i>
	na-yiis-o-yii-wa	ann-yi	w-ot'as-yi
	EVID-feed-TA-DIR-PROX	DEM-SG.OBV	3-horse-SG.OBV

'He fed his horse.'

Ⓑ	<i>Náyiiisakiwa</i>	<i>ponokáómitaa</i>
	na-yiis-aki-wa	ponokaomitaa
	EVID-feed-AI-PROX	horse

'He fed a horse/horses.'

- final devoicing indicative of prosodic boundary (Windsor, 2017)

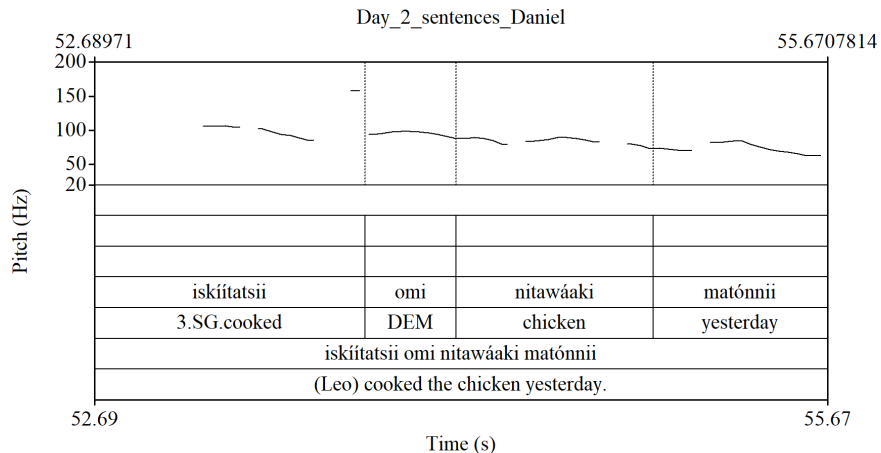
(9) a *aískiitaa nitawáaki annohk.*
a-ihkiit-aa nitawáaki annohk
DUR-bake-AI chicken now

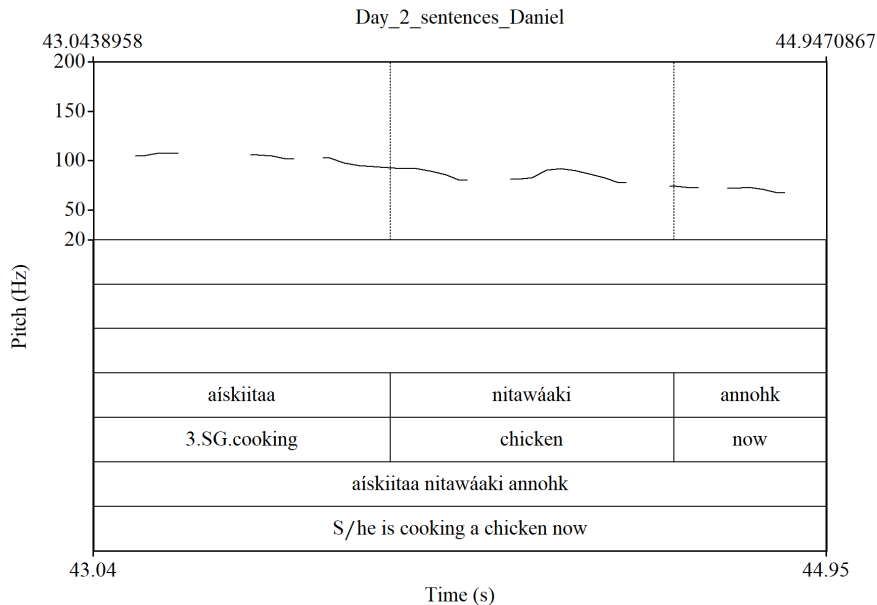
‘S/he is cooking a chicken now.’

b *Anna Leo iskíítatsii omi nitawáaki matónnii.*
Anna Leo ihkiit-at-yii omi nitawáaki matónnii
DEM Leo bake-TA-SG.OBV DEM chicken yesterday

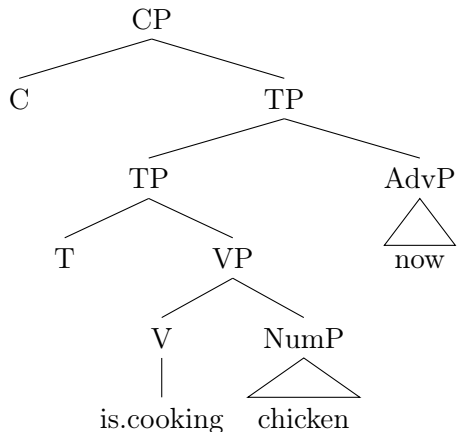
‘Leo cooked that chicken yesterday.’

- Slight verb-final devoicing with full KP object
- No verb-final devoicing with PNI object

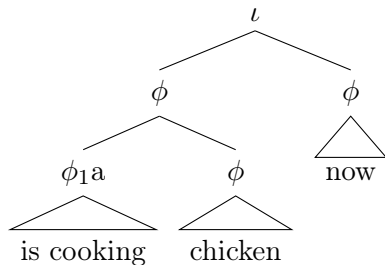




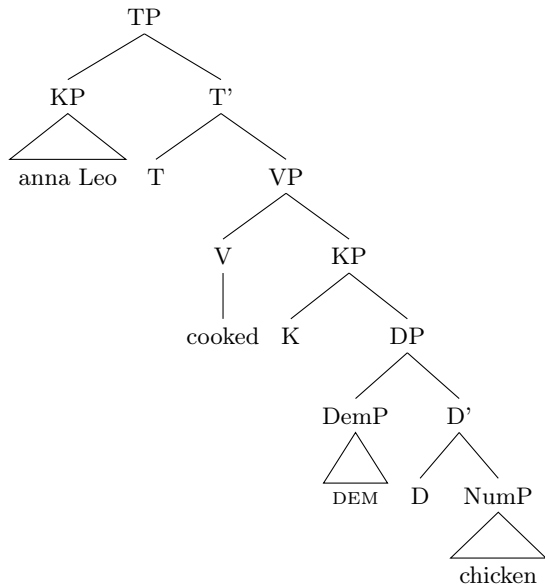
Discussion of Blackfoot



- Prosodic Structure under traditional Match Theory:

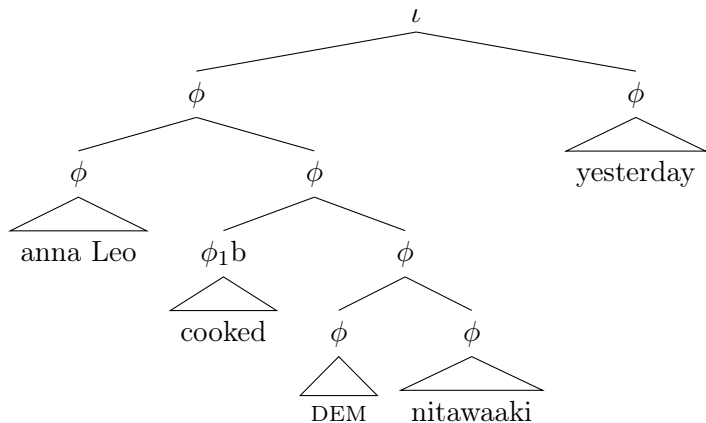


Discussion of Blackfoot



"yesterday" adjoined to TP

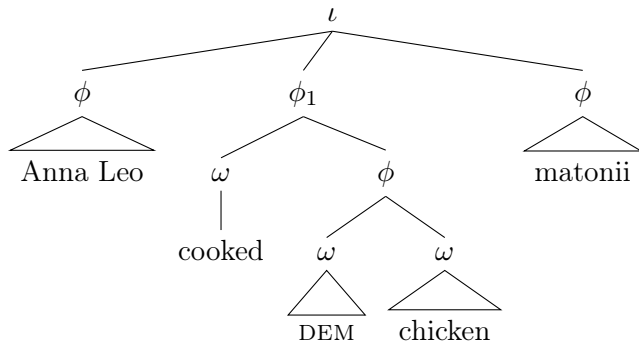
Discussion of Blackfoot



Discussion of Blackfoot

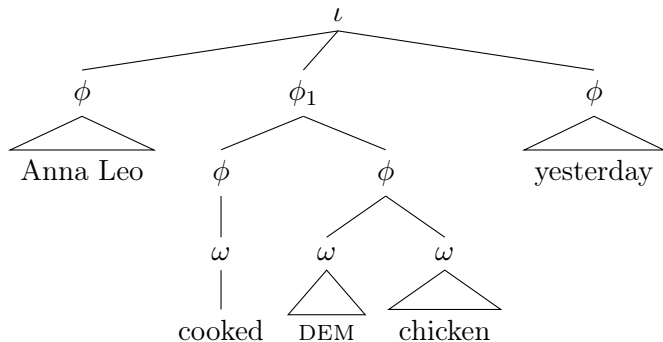
- Both ϕ_{1a} and ϕ_{1b} are minimal ϕ 's
- ϕ_{1a} does not have final devoicing
- ϕ_{1b} has final devoicing
- no way to capture this asymmetry
- cannot relate all XPs to ϕ
- Assume phases map to prosodic categories
- Match ϕ to vP and KP
- Match ω to nP (or $NumP$?)
- **final-devoicing at right edge of ϕ .**

Discussion of Blackfoot

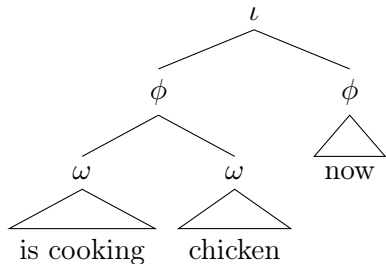


- STRONGSTART - a prosodic category cannot begin with a weaker element
- restructured as follows

Discussion of Blackfoot



■ PNI structure



- full KP and bare NumP - different prosodic domains
- diagnosed by final devoicing
- prosodic domains identified by phases
- KP $\rightarrow \phi$
- NumP $\rightarrow \omega$

DOM and PNI in Mongolian

- DOM and PNI in Mongolian studied most extensively by Guntsetseg (2016)
- animacy, definiteness, and specificity play a strong role
- portion of the variation found (Guntsetseg, 2016, p.78)

- (10) **a** *Bi ene oxin-*(yg) xar-san*
I this girl-ACC see-PST
'I saw this girl.'
- b** *Bi neg oxin-(yg) xar-san*
I a girl-ACC see-PST
'I saw a girl.'
- c** *Bi oxin-(*yg) xar-san*
I girl-ACC see-PST
'I saw a girl.'

- Guntsetseg (2016): PNI in Mongolian.

Example

Bi öčigdor nom unš-san
I yesterday book read-PST
'Yesterday, I did book-reading.'

- discuss the difference between the obligatorily caseless examples, (10c) and PNI, above

- preliminary investigation only (thanks to covid 19): bare nouns only examined
- PNI = bare nouns with narrow scope
- DOM = bare nouns with wide scope
- pitch contours of these sentences were analyzed on Praat (Boersma and Weenink, 2018)
- compared to known intonational correlates of prosodic categories in Mongolian (Karlsson, 2014)
- Karlsson: ω has initial LH contour
- TBU is the mora

- (i) definite LH pitch contour on the noun or (ii) flat contour
- results are shown in Table 1
- bare, narrow scope - only 1 item had a clear LH contour, a few had a slight LH contour
- bare, wide scope - clear LH contour
- Objects with plural marking or case marking (or both) clearly showed the LH contour typical of ω s.

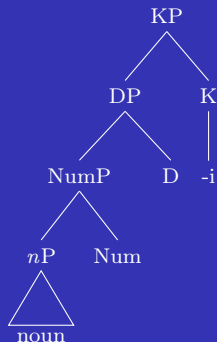
	LH contour	flat contour
non-bare	19	0
bare, narrow scope	5(1)	9
bare, wide scope	4	0

Table: Pitch contours on nouns in Mongolian

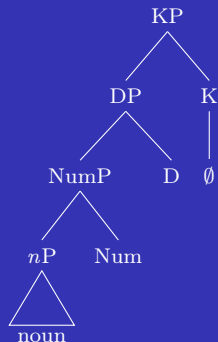
- ω bears initial LH contour in Mongolian (Karlsson, 2014)
- bare N with narrow scope (PNI) lacks this contour
- bare N with wide scope - full KP that lacks DOM and just happen to be singular (i.e., no number marking)
- assume PNI involves a structure no larger than nP , akin to Massam (2001)
- following are the two structures

Discussion

case-marked object



bare object (wide scope)

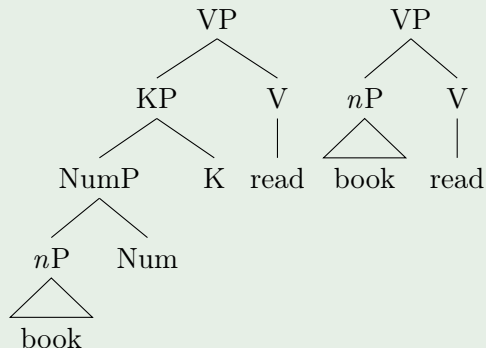


PNI object (narrow scope)



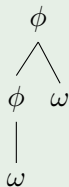
- all XPs map to ϕ under Match Theory
- therefore, no difference between a full KP and a nP expected
- centre tree - non-case-marked full KP
- right tree a PNI noun

Example



- trees above resemble following tree after pruning empty categories

Example



- standard Match Theory fails to predict any prosodic difference between the two
- phonologically null elements affect prosody (see also Paul, 2016)
- phases map to prosodic categories
- ***vP* and *KP* phases map to ϕ**
- ***nP* phase maps to ω**
- initial LH contour as a property of ϕ rather than ω

(11) Proposed Match Theory Constraints

- a CP = ι
- b KP = ϕ
- c vP = ϕ
- d nP = ω

- trees above restructured as follows

Example

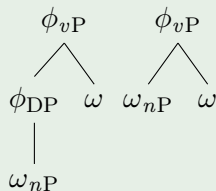


Table of Contents

1 Introduction

2 Background

3 Three Investigations

- Korean
- Blackfoot
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4 Discussion

- Evidence for KP and nP as a phase based on prosody
- Phonologically null elements can affect prosody - full pruning cannot be on the right track.
- Structurally reduced nouns in Korean, Blackfoot, and Mongolian
→ Match Theory based on phases rather than XP/ X^0 distinction
- Prosodic Hierarchy reduces to phase structure (Kratzer and Selkirk, 2007; Compton and Pittman, 2010; Newell, 2008; Newell and Piggott, 2014; Newell and Scheer, 2017; Weber, 2020)

Variation in Phase Structure

- Lack of vP phase?
- Inuktitut may lack a vP phase:
- Compton and Pittman (2010): only CP is spelled out; vP is never spelled out.
- Arnhold et al. (2018): no evidence for ϕ - only ι and ω .
- If UG contains only Merge, then phases must be learned
- observed variation in phase structure and prosodic constituency expected

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