



Prosody and Bare Nouns in Mongolian*

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1 Introduction

- prosody of bare nouns in Mongolian
- compare regular bare nouns with pseudo incorporated objects (PNI)
- analyze under Match Theory (Selkirk, 2009; Elfner, 2015)
- propose a modification to Match Theory
- intonational phrase, ι , phonological phrase, ϕ , and phonological word, ω match exclusively to phases (Chomsky, 2001, *inter alia*)
- idea based on Compton and Pittman (2010); Kratzer and Selkirk (2007); Newell (2008); Ershova (2020)
 - DP and v P phases map to ϕ , and
 - n P phase maps to ω .
- initial LH contour found on full objects and bare objects with wide scope
- PNI objects (diagnosed by narrow scope) lack initial LH contour
- Mongolian prosody: LH contour is related to the ω
- propose that the LH contour appears at the left edge of a ϕ .
- offer prosodic evidence for the distinction between "full" bare objects (DOM?) and PNI in addition to the morphosyntactic evidence discussed by Guntsetseg (2016).
- Roadmap:
 - Section 2 - Background:

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- * Match Theory, Pseudo Noun Incorporation and Differential Object Marking
- * PNI and DOM in Mongolian
- * prosodic properties of Mongolian
- Section 3 - Methodology
- Section 4 - Results
 - * PNI and non-PNI bare nouns differ in terms of prosody
 - * PNI nouns lack initial LH contour
- Section 5 - Analysis
- Section 6 - Conclusion

2 Background

- theoretical and empirical background
- discussion of Match Theory
- differential object marking (DOM) and pseudo noun incorporation (PNI)
- differences?
- discussion of DOM and PNI in Mongolian following Guntsetseg's Guntsetseg (2016) discussion.

2.1 Match Theory

- direct relationship between syntactic structure and prosodic structure
 - violable constraints (Elfner, 2015; Selkirk, 2009, 2011).
 - constraints as follows:
- (1) Match Theory Constraints
 - (a) CP - ι (CP with illocutionary force?)
 - (b) XP - ϕ
 - (c) X - ω
 - growing body of research: prosodic categories correlate to syntactic *phases* (Compton and Pittman, 2010; Newell, 2008; Kratzer and Selkirk, 2007; Ershova, 2020).
 - no consensus on how phases match with prosodic categories
 - no consensus on phase heads!
 - will propose the following mapping
 - (2) Match Theory Constraints
 - (a) CP - ι (CP with illocutionary force?)
 - (b) KP, *v*P - ϕ
 - (c) *n*P - ω

2.2 DOM and PNI

- 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
- Spanish example (Fábregas, 2013, p.1).¹

(3) Spanish DOM

- (a) *Encontré un problema.*
I.found a problem
'I found a problem'
- (b) *Encontré a un superviviente.*
I.found K a survivor
'I found a survivor'

- (3 a): direct object has no visible case marker
- in (3 b) the case marker *a* is present
- usual trend: animate nouns trigger DOM while inanimate nouns do not
- PNI: noun (typically the object) is bare or has reduced morphology (Massam, 2001; Dayal, 2011).
- semantic properties that resemble canonical noun incorporation (Mithun, 1984).
- example of PNI in Niuean (Massam, 2001).

(4) Niuean

- (a) *Kua fakahū he ekekafo e tohi.*
PVF send ERG doctor ABS letter
'The doctor sent the letter.'
- (b) *Kua fakahū tohi e ekekafo*
PFV send letter ABS doctor
'The doctor sent the letter.'

- regular transitive construction in (4 a) has case marking on the subject and on the object
- PNI construction in (4 b), case marking is absent on the object

¹The morpheme *a* in Spanish is glossed as K (for the K head, case). The actual identity of this marker is a matter of debate.

- subject is marked with absolutive case
- PNI: object is adjacent to verb
- DOM and PNI bear many striking surface similarities
- how to distinguish?
- DOM is associated with a larger structure than PNI
- Finnish: DOM is not marked by absence of case but by partitive case (Kiparsky, 1998)
- DOM/non-DOM contrast involves only a minor difference in structure
- PNI: typically lack higher functional morphology altogether
- significantly decreased structure

2.3 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)

- (5) (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) gives the following example of PNI in Mongolian.

- (6) *Bi öčigdor nom unš-san*
 I yesterday book read-PST
 ‘Yesterday, I did book-reading.’

- discuss the difference between the obligatorily caseless examples, (5 c) and PNI, (6) shortly
- summarize Guntsetseg’s findings
- interactions among the properties that affect DOM in Mongolian
- remains to be worked out

Property	ACC case marking
pronoun	obligatory
proper name	obligatory
definite NP	obligatory
indef specific NP	optional
indef non-specific NP	unavailable
PNI noun	unavailable

Table 1: Accusative Case Marking on different types of Objects in Mongolian

- Guntsetseg makes the approximate observations in Table 1
- animacy scale interacts with the properties in Table 1 in ways that are not fully clear, yet
- Guntsetseg gives the following properties of PNI nouns in Mongolian (Guntsetseg, 2016, p.61ff)
- generally in line with the usual syntactic and semantic properties of PNI found in other languages (Dayal, 2011; Massam, 2001).

1 generally adjacent to the verb

2 no determiners or demonstratives

3 no postpositions or case markers

4 can be modified by an adjective

5 no plural marking

6 narrow scope

7 low discourse transparency

- discussed extensively by Guntsetseg
- move on to the prosodic properties

3 Methodology

- Four native speakers of Mongolian from Ulaanbaatar living in Seoul were given a randomized list of sentences to record
- PNI, DOM and a number of filler sentences (24 test sentences and 57 filler sentences).
- Each participant received 30,000 won for participating in the experiment.

- The following factors were tested.
 - 1 Accusative case - present or absent
 - 2 Plural marking present or absent
 - 3 wide or narrow scope
 - 4 animacy: human, animate, inanimate
 - preliminary investigation: only bare nouns were examined and compared with wide scope and narrow scope
 - PNI = bare nouns with narrow scope
 - DOM = bare nouns with wide scope
 - example: (in test, sentences were written in Mongolian Cyrillic script)
- (7) Test examples for Mongolian PNI and DOM, respectively
- (a) *Bi guu saa-maar baina ...ali ch guu hamaagui*
 I mare milk-INF want ...any mare will do
 ‘I want to milk a mare...any mare will do’
- (b) *Bi guu saa-maar baina ...ter tsagaan guu*
 I mare milk-INF want ...that white mare
 ‘I want to milk a mare...that white mare’
- 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

4 Results

- results were grouped as bare nouns versus non-bare nouns
- Bare nouns: nouns with no plural or case marking
- non-bare noun has either plural marking, case marking, or both
- did not consider nominals with articles or adjectives
- Some results were discarded due to disfluencies or unconnected speech
- recorded whether there was a definite LH pitch contour on the noun or whether the pitch contour was flat

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

Table 2: Pitch contours on nouns

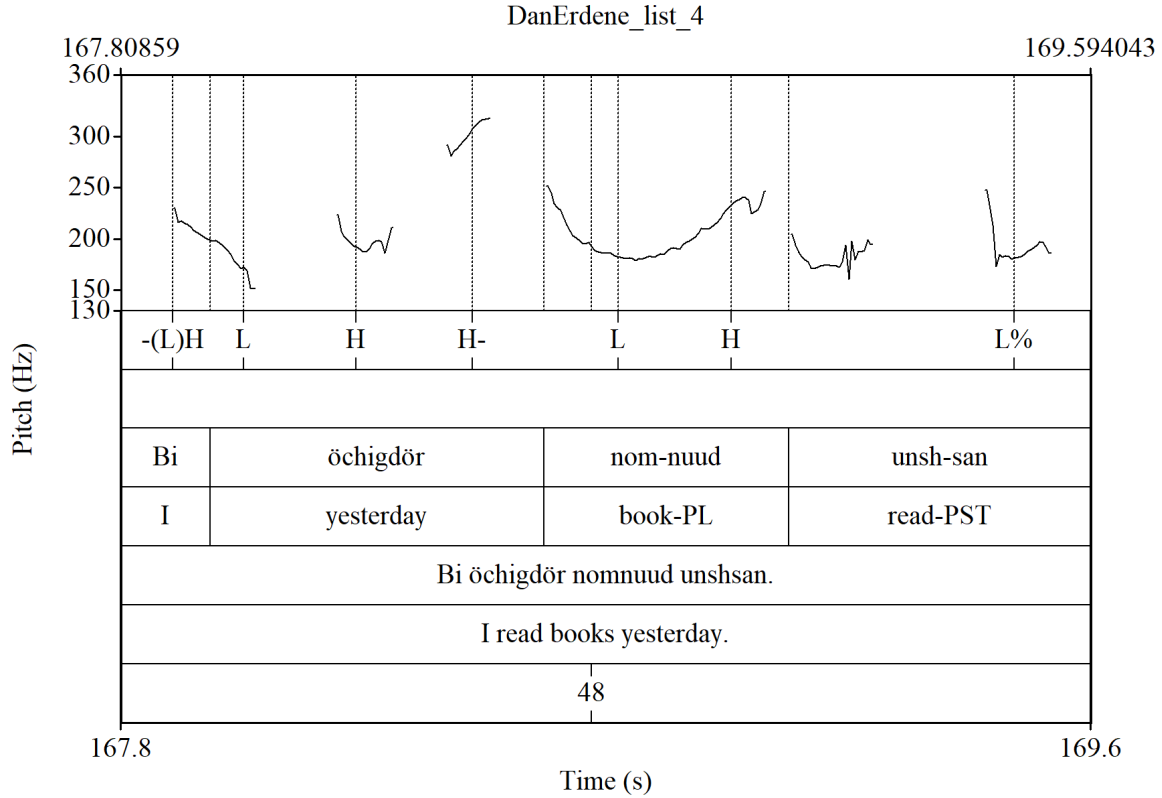


Figure 1: Plural Noun

- results are shown in Table 2
- bare, narrow scope - only 1 item had a clear LH contour
- others had a narrow pitch contour (unclear if a true LH contour)
- Objects with plural marking or case marking (or both) clearly showed the LH contour typical of ω s, see Figure 1.
- PNI nouns (bare, narrow scope) in nearly all cases lack this contour
- 5 cases - only 1 is clear-cut; other 4 have marginal rises
- example shown in Figure 2
- did not examine animacy as the number of tokens was too small

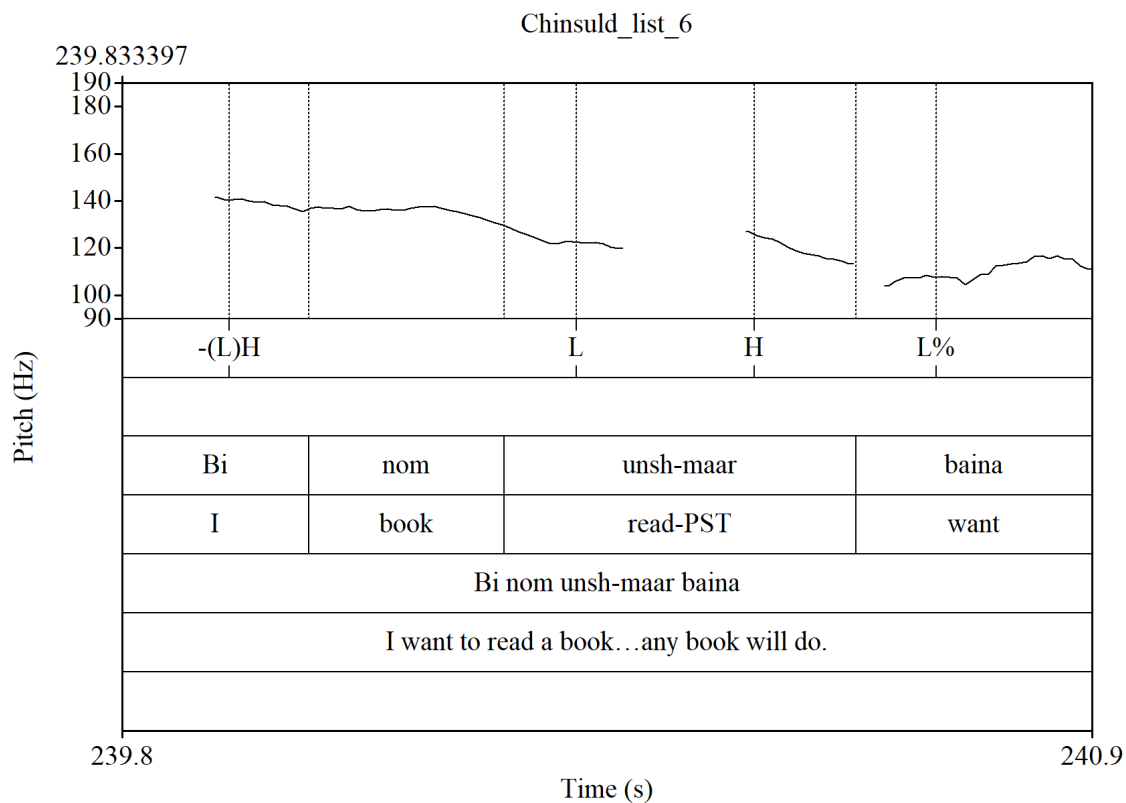


Figure 2: Bare noun, narrow scope

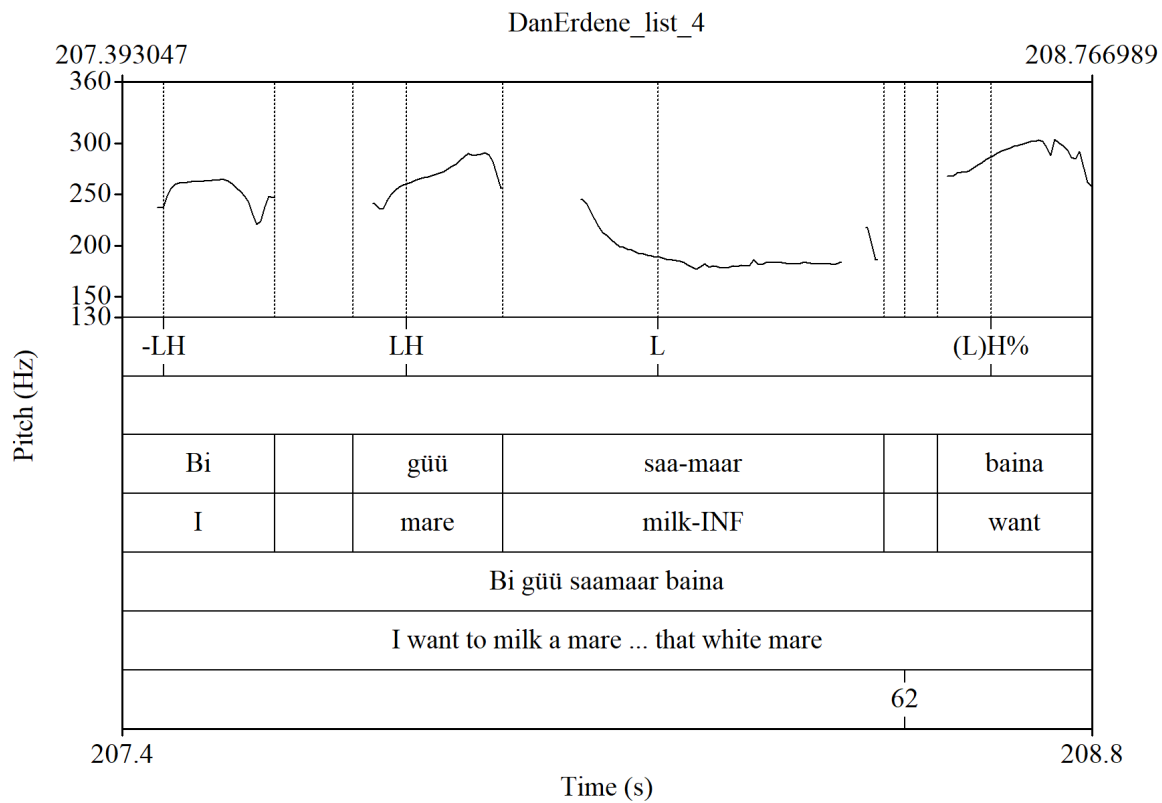
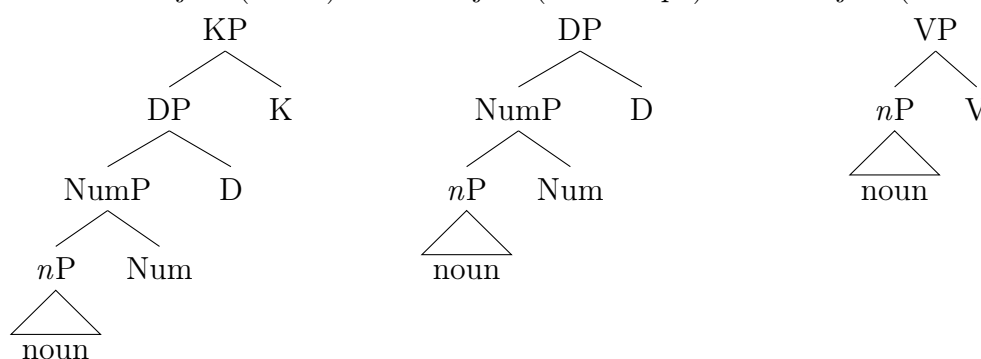


Figure 3: Bare Noun, wide scope

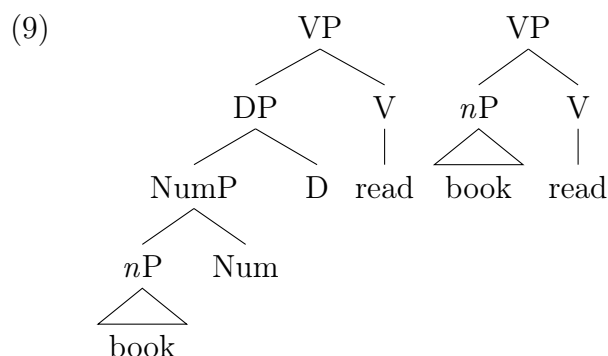
5 Discussion

- ω bears initial LH contour in Mongolian (Karlsson, 2014)
- full noun phrases (including those with overt number or case morphology) and morphologically bare nouns with wide scope shows this contour
- morphologically bare nouns with narrow scope do not bear this contour
- narrow scope is a prototypical property of PNI (Dayal, 2011)
- assume the bare nouns with narrow scope have been pseudo incorporated
- the bare nouns with wide scope are full DPs that lack DOM and just happen to be singular (i.e., no number marking)
- a head is incorporated in morphological incorporation (in the sense of Baker, 1988)
- PNI involves the incorporation of a phrase
- adopt the analysis in López (2012) for convenience
- assume PNI involves a structure no larger than nP , akin to Massam (2001)
- following are the three structures

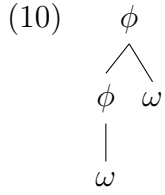
(8) case-marked object (DOM) bare object (wide scope) PNI object (narrow scope)



- all XPs map to ϕ under Match Theory
- therefore, no difference between a full DP and a NP expected; see example (9)
- the left tree is a non-case-marked full DP (bare noun with wide scope) and the right tree a PNI noun (narrow scope)



- trees in (9) resembles (10) after pruning empty categories

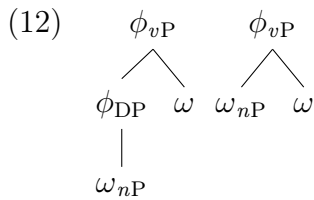


- standard Match Theory fails to predict any prosodic difference between the two
- propose that the phases map to prosodic categories (Compton and Pittman (2010), Kratzer and Selkirk (2007), and Newell (2008))
- propose that the CP phase maps to ι (although not considering the whole clause)
- vP and DP phases map to ϕ^2
- nP phase maps to ω
- initial LH contour as a property of ϕ rather than ω^3

(11) Proposed Match Theory Constraints

- CP = ι
- DP = ϕ
- vP = ϕ
- nP = ω

- aims to capture how the difference in the structure between the wide-scope bare object and the PNI object is responsible for the difference in the prosodic structure
- (9) restructured on the proposal in (11) in (12)



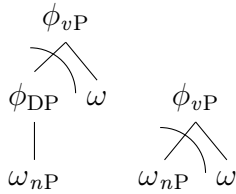
- both the full DP object as a ϕ and the PNI object as a ω are still dominated by a higher ϕ , which should have a LH contour at its left edge
- to counteract the effect of the higher ϕ , the notion of an extended projection is added (Grimshaw, 1990)
- Richards (2016) and Sheehan et al. (2017) both exploit the notion of an extended projection to distinguish the nominal domain from the verbal domain

²We eschew the question of whether D or K is the phase head.

³Alternatively, one could say that DP maps to ω and nP maps to a smaller category. In the absence of evidence for an additional prosodic category, we stick to the schema in (11).

- propose that once an extended projection is topped off, its prosodic structure is computed
- not every phase, but only the highest phase in an extended projection is sent to Spell-Out
- consequences of this proposal are not examined here⁴
- (13) represents the result of Spell-Out of the extended nominal projections, indicated with the arcs
- tree on the left (the bare noun with wide scope) is a ϕ , thus an initial LH contour
- tree on the right is a ω , so does not show such contour

(13) Prosodic Trees with Spell-Out Domains



6 Conclusion

- focused on a difference between morphologically bare PNI (with narrow scope) and non-PNI nouns (with wide scope) in Mongolian
- bare non-PNI nouns have an initial LH contour, and bare PNI nouns lack this
- argued that non-PNI bare nouns are full DPs and that PNI nouns are nPs
- an analysis couched within Match Theory cannot account for the facts as given, thus the following amendment
- assume that only phases map to prosodic categories (Compton and Pittman (2010))
- DP (or KP) maps to ϕ , vP maps to ϕ , and nP maps to ω
- assuming the initial LH contour as a property of ϕ , not ω , the facts fall into place
- the bare PNI noun, being an nP is a ω and lacks the LH contour
- the wide-scope bare object, being a full DP, is a ϕ , thus possesses the LH contour

⁴One interesting consequence is that in a full clause *wh*-movement need not target *SpecvP* to reach CP. This is a welcome consequence as there is considerable less evidence for the *SpecvP* escape hatch. For instance, so far as we know, there are no *wh*-copy constructions found in *SpecvP*. See Legate (2003) and Rackowski and Richards (2005), however, for evidence of *SpecvP* as an escape hatch.

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