Pseudo Noun Incorporation in Blackfoot *

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1 Nutshell

1.1 Empirical

- Pseudo noun incorporation (PNI) in Blackfoot
- contrast PNI data from younger speaker with that from older speakers
- younger speakers: more freedom in movement of PNI object
- examine prosodic properties of PNI
- prosodic boundary between V and full object (final-devoicing)
- no prosodic boundary between V and PNI object

1.2 Theoretical

- PNI results from "nominal restructuring"
- PNI object is a reduced or "smaller" phrase - no DP or KP
- will relate size of PNI nominal to phase structure
- redundancy: prosodic hierarchy and syntactic hierarchy (phases)
- one can be eliminated

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2 Background

2.1 Syntactic Structure

- Assume the following structures for nominals and for clauses

(1) a. nominal structure: KP > DP > NumP > nP > NP
b. clausal structure: CP > TP > AspP > vP > VP

- KP - Case Phrase (K=Case) - encodes case morphology (LaMontagne and Travis, 1987)
- DP - Determiner Phrase (Abney, 1987; Szabolcsi, 1983)
- NumP - Number Phrase (Ritter, 1992)
- nP - categorial n phrase (may mark noun class) (Marantz, 2001; Kramer, 2015)
- NP - Noun Phrase
- Phases - units of syntax that are processed in one chunk, *spelled out*.

(2) phase heads: C, v, K (sometimes D), and n (last one assumed)

- Phase head determines unit of syntax that is spelled out

2.2 Prosodic Structure

- prosodic hierarchy (Nespor, 1999; Nespor and Vogel, 1986; Selkirk, 1984, 1986):

(3) Intonational Phrase (ι)
Phonological Phrase (ϕ)
Phonological Word (ω)
Foot (F)
Syllable (σ)
Mora (μ)

- ι, ϕ, and ω interact with syntax
- lower categories only phonologically active
- dominant view: syntactic structure $\neq$ prosodic structure
- emerging view: syntactic structure = prosodic structure (one can be eliminated)
- evidence for distinct prosodic structure (i.e., problems for unification between syntax and prosody)

(4) [This is the cat] [that chased the rat] [that stole the cheese] (prosodic structure)

(5) This is [the cat that chased [the rat that stole [the cheese]]] (syntactic structure)

2.2.1 Intonational Phrase

- domain of "intonational contour"
- usually taken to be a root clause
- items that form their own ι:
  - parenthetical expressions
  - nonrestrictive relative clauses
  - tag questions
  - vocatives
  - interjections
  - certain moved elements

(6) a. Lions [ι as you know] are dangerous.
b. My brother [ι who absolutely loves animals] just bought himself an exotic tropical bird.
c. That's Theodore's cat [ι isn't it]?
d. [ι Clarence] I'd like you to meet Mr. Smith.
e. [ιGood heavens] there's a bear in the back yard.
f. They are so cute [ι those Australian koalas]

2.2.2 Phonological Phrase

(7) Iambic Reversal
a. Tennesseé
b. Ténnessee Wílliams

- stress clash resolved through ***iambic reversal*** (IR)
- restricted to ϕ (adapted from Nespor and Vogel, 1986, 178)

(8) a. John persevéres.
John pérseveres gládly.
John persevéres gládly and diligently.
b. Rabbits reprodúce.
Rabbits réproduce quíckly.
Rabbits reprodúce quíckly and effortlessly.

- V + Adv –> one phonological phrase, ϕ
- V + [Adv and Adv] –> V and [Adv and Adv] form two separate ϕ's

2.3 Noun Incorporation

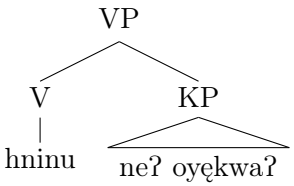
- bare N(P) or nP (root($\sqrt{}$) + categorial feature n)
- bare N incorporation: Lexical suffixation in Salish (Wiltschko, 2009).
- nP incorporation - Northern Iroquoian

(9) Noun Incorporation - Onondaga[1] (Woodbury, 1975)

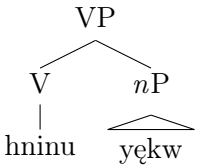
a. waʔhahninúʔ neʔ oyękwaʔ
waʔ-ha-hninu-ʔ neʔ o-**yękw**-aʔ
FACT-3SG.M.AG-buy-PUNC NE NPREF-**tobacco**-NFS
'He bought tobacco.'

b. waʔhayękwahninúʔ
waʔ-ha-**yękw**-a-hninu-ʔ
FACT-3SG.M.AG-**tobacco**-EPEN-buy-PUNC
'He bought tobacco.'

(10) a.



b.



- IN is often larger than a bare root, e.g. Onondaga (Woodbury, 2003).

(11) hodaʔditshó:daʔ
ho- [at-aʔti-tshR]- ot-aʔ
3SG.M.PAT-[SRFL-lean-NLZR]-stand.upright-STAT
'He is using a cane.'

- IN includes a semireflexive (a kind of middle voice marker) and a nominalizer.

2.4 Pseudo Noun Incorporation

- caseless nominals: undergo PNI (Dayal, 2011; Massam, 2001).
- typically a bare NumP or DP (no KP projection)

[1] Abbreviations: DEM - demonstrative; EPEN - epenthetic; FACT - factual; IC - initial change (signals past tense); IMPF - imperfective; INV - inverse; MID - middle voice; NEG - negative; OBV - obviative; PL - plural; PRN - pronoun; PROX - proximate; PUNC - punctual; SG - singular; SRFL - semireflexive NLZR - nominalizer

(12) 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.'

- PNI object in (12-b)
  - no case
  - subject marked with absolutive
- Massam: PNI object must be adjacent to the verb

2.5 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

(13) Nimáátomaikaksooyíhpa okonóksitokíhkitaan

nit-maat-oma-ikak-ii-ooyi-hpa okonok-sitok-ihkitaa-n
1-NEG-yet-even-IC-eat.AI-NPI saskatoon-MID-bake-NLZR

'I have never eaten saskatoon pie.'

- Animacy of absolutive argument encoded in verbal morphology (common to all Algonquian languages)

- transitive verb: animacy of object is encoded
- intransitive verb: animacy of subject is encoded

type	**meaning**
VTA	verb transitive animate
VTI	verb transitive inanimate
VAI	verb animate intransitive
VII	verb inanimate intransitive

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

a. Náíhkiitatsiiwa 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.'

b. Náíhkiitatooma omi napayíni

na-ihkiit-atoo-m-wa om-yi napayin-yi
EVID-bake-TI-DIR-PROX DEM-SG.INAN bread-SG.INAN

'S/he baked that bread.'

- In (13), the verb final is marked with AI (not TI) because the object is incorporated - a hallmark of PNI

3 Blackfoot PNI

3.1 Previous Work

- Bliss (2018) analyzes morphosyntactically improverished objects with an AI verb as PNI

(15) Blackfoot

a. Náyiisoyiiwa anni óta'si

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.'

b. Náyiisakiwa ponokáómitaa

na-yiis-aki-wa ponokaomitaa
EVID-feed-AI-PROX horse

'He fed a horse/horses.'

3.1.1 Diagnostics for PNI

- Syntax - IN of PNI must always be immediately post-verbal (VP-internal objects)
- the object in (15)a can appear pre-verbally, but that in (15)b cannot as shown in (16)

(16) Strict adjacency in PNI (between V and IN)

a. Anni óta'si náyiisoyiiwa

ann-yi w-ot'as-yi na-yiis-o-yii-wa
DEM-SG.OBV 3-horse-SG.OBV EVID-feed-TA-DIR-PROX

b. Náyiisakiwa ponokáómitaa

na-yiis-aki-wa ponokaomitaa
EVID-feed-AI-PROX horse

VP pro-form *ni'tóyi* (similar to English *do so*) substitutes for PNI (including IN), but cannot replace the object of a transitive verb

(17) Blackfoot *ni'tóyi* replacement test

a. Nitsóóyi immisstsíhkitaan ki anna Máí'stóó ni'tóyi

nit-ii-oo-i immisstsíhkitaan ki ann-wa M ni'tó-yi
1-IC-eat-AI frybread and DEM-SG.PROX M. same-be.II
'I ate frybread and Mai'stoo did so too.'

b. *Nitsóóyi sitókíhkitaan ki pisátsskitaan ni'tóyi

nit-ii-oo-i sitok-ihkitaa-n ki pisat-ihkitaa-n ni'tó-yi
1-IC-eat-AI MID-bake-NLZR and fancy-bake.AI-NLZR same-be.II
Intended: 'I ate pie and I ate cake too'

c. Nitohpókihpiyimawa oma ninááw ki anna Aapáání ni'tóyi

nit–ohpok–ihpiyi–m–a–wa sitokom–wa ninaa–wa ki ann–wa A
1-ACCOMP-dance-TA-DIR-PROX DEM-SG.PROX man-SG.PORX and DEM-SG.PROX A
ni'tó-yi
same-be.II
'I danced with that man and Aapaani danced with him too.'
or 'I danced with that man and I danced with Aapaanii too.'

- Semantics - IN takes narrow scope, lacks a referent (non-specific and indefinite), and displays number-neutrality

(18) Semantic characteristics of IN

a. Íihkaniyaapiyaawa píítaa

iihkan–yaapi–yi–aawa piitaa
all–see.AI–PL–3PL.PRN eagle
'They all saw an eagle.' $(\forall > \exists, *\exists > \forall)$

b. Omiksi aapí'siks áwaatoyaawa ?Nitáyoohto aapí'si

om–iksi aapi'si–iksi a–yaato–yi–aawa nit–a–yoohto aapi'si
DEM-PL coyote--PL IMPF-howl-PL-3PL.PRN 1-IMPF-hear.AI coyote
'Those coyotes are howling. ?I see a coyote/coyotes.'

c. Nitayááksooyo'si maatááki

nit–yaak–ioyo'si maataaki

1–FUT–cook.AI potato
'I am going to cook a potato/some potatoes.'

- Morphosyntax - IN can be inflected for plurals (NumP) and host various nominal modifiers but cannot host demonstrative determiners (smaller than DP)

(19) Morphosyntactic characteristics of IN

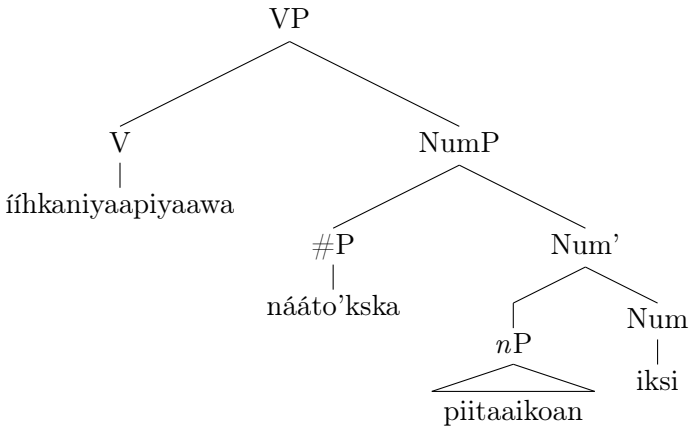
a. Anna Joel áí'pihtakiwa omahkóóhkotokists.
ann–wa J wai'piht–aki–wa omahk–oohkotok–istsi
DEM-SG.PROX J haul–AI–PROX big–rock–PL
'Joel hauled some big rocks.'

b. Nitsíihkoonimaahpinnaan nááto'kska piitáíkoaiks [plural + numeral]
nit–ii–ohkoon–imaa–hpinnaan naato'kska piitaa–ikoan–iksi
1–IC–find–AI–1PL two eagle-DIM-PL
'We found two eaglets.'

c. Áóhpaatakit mamííyistsi áíksisttsipiiksaakinistsi [plural + relative clause]
a–ohpáat–aki–t mamííyi–stsi a–iksistt–ipiiks–aaki–n–istsi
IMPF–carry–AI–IMP firewood–PL IMPF–finish–chop–AI–NOM-PL
'Carry pieces of firewood that are already chopped!'

- Structure of PNI in Blackfoot

(20)



3.2 Current Work

- In our recent field research (Calgary, Alberta; July 24-27, 2019), we discovered that strict adjacency in PNI can allow an intervening adverb and IN can be preposed.

(21) strict adjacency violated in PNI (contra Bliss' report)

a. Nitsíípommoawa oma amopístaan matónnii
I.transferred.to.him DEM bundle yesterday
'I transferred him/her that bundle yesterday'

b. Nitsíípommaki amopístaan matónnii
I.transferred.AI bundle yesterday
'I transferred a bundle yesterday'

c. Nitsíípommaki matónnii amopístaan
I.transferred.AI yesterday bundle
'I transferred a bundle yesterday.'

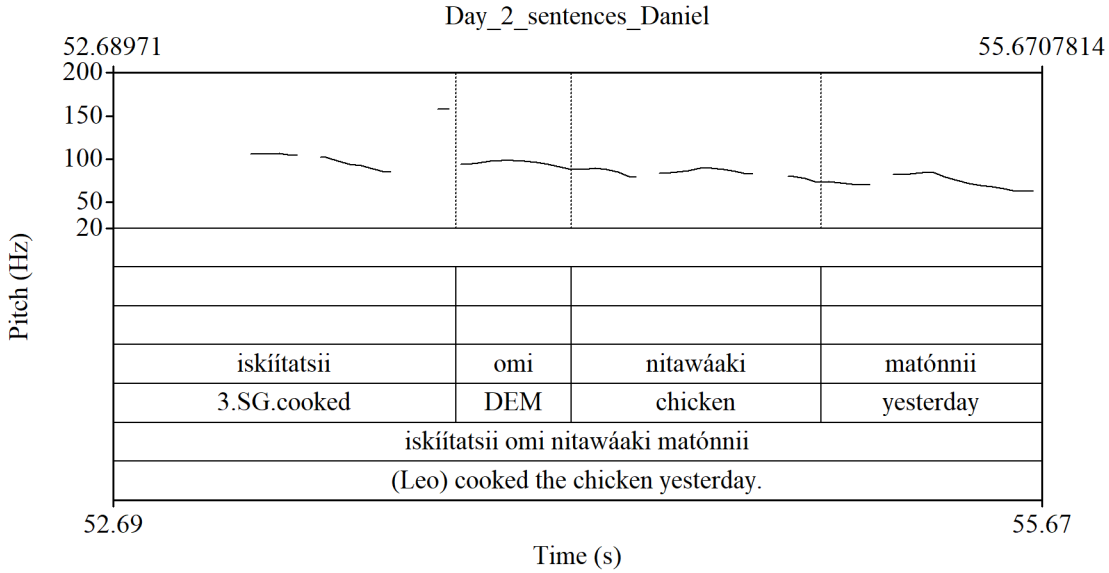
d. Amopístaan nitsíípommaki matónnii
bundle I.transferred.AI yesterday
'I transferred a bundle yesterday.'

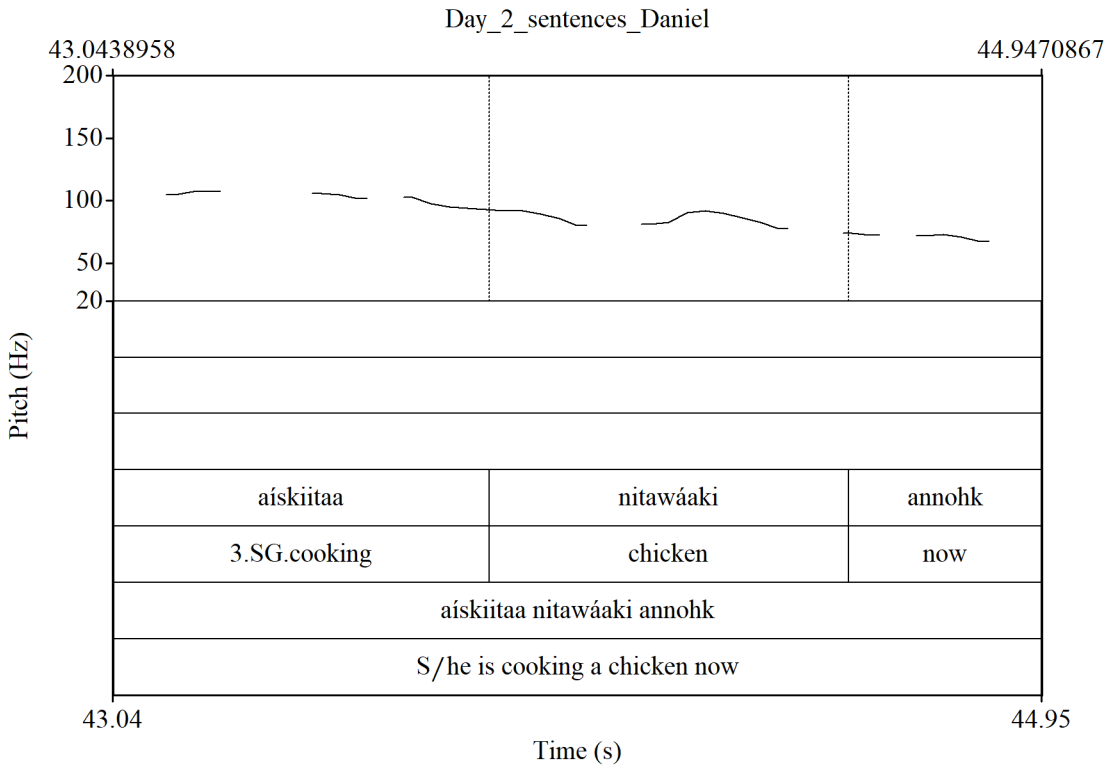
e. Matónnii nitsíípommaki amopístaan
yesterday I.transferred.AI bundle
I transferred a bundle yesterday.'

- temporal adverbials like *matónnii* can appear between verb and IN (21-c)
- IN can precede V (21-d)
- final devoicing indicative of prosodic boundary (Windsor, 2017)
- Prosodic Hierarchy (Selkirk, 1982; Nespor and Vogel, 1986):

(22) a. Intonational phrase > phonological phrase > phonological word
b. $\iota > \phi > \omega$

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





3.3 Summary

- Similar PNI properties found with Bliss
  - lack of demonstratives
  - intransitive agreement on verb
  - low scope
- PNI properties that differ from Bliss
  - freer movement (can be preverbal)
  - adverbs can intervene between N and PNI object
  - weaker prosodic boundary between V and PNI object (not tested in Bliss)

4 Discussion

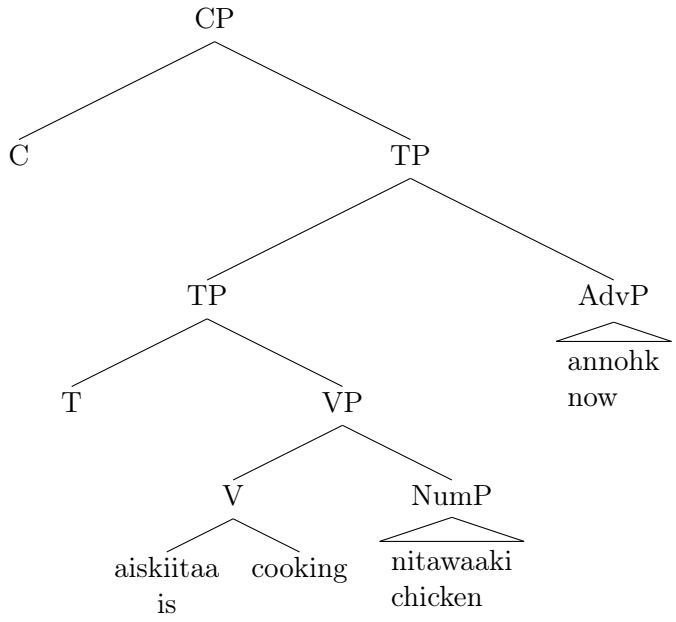
- PNI involves selection of a NumP rather than a full KP
- morphological evidence: no demonstratives; plural marking possible
- final-devoicing marks left edge of ϕ (Windsor, 2017)
- not found with PNI object
- Match Theory:
  - Match ι to clause (CP)

- Match ϕ to XP
- Match ω to X (syntactic word)

- Windsor argues that the verbal complex is a phonological phrase rather than a phonological word.

- based on final devoicing on verb

(23)



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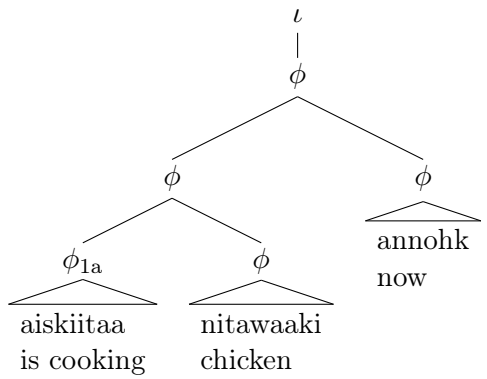

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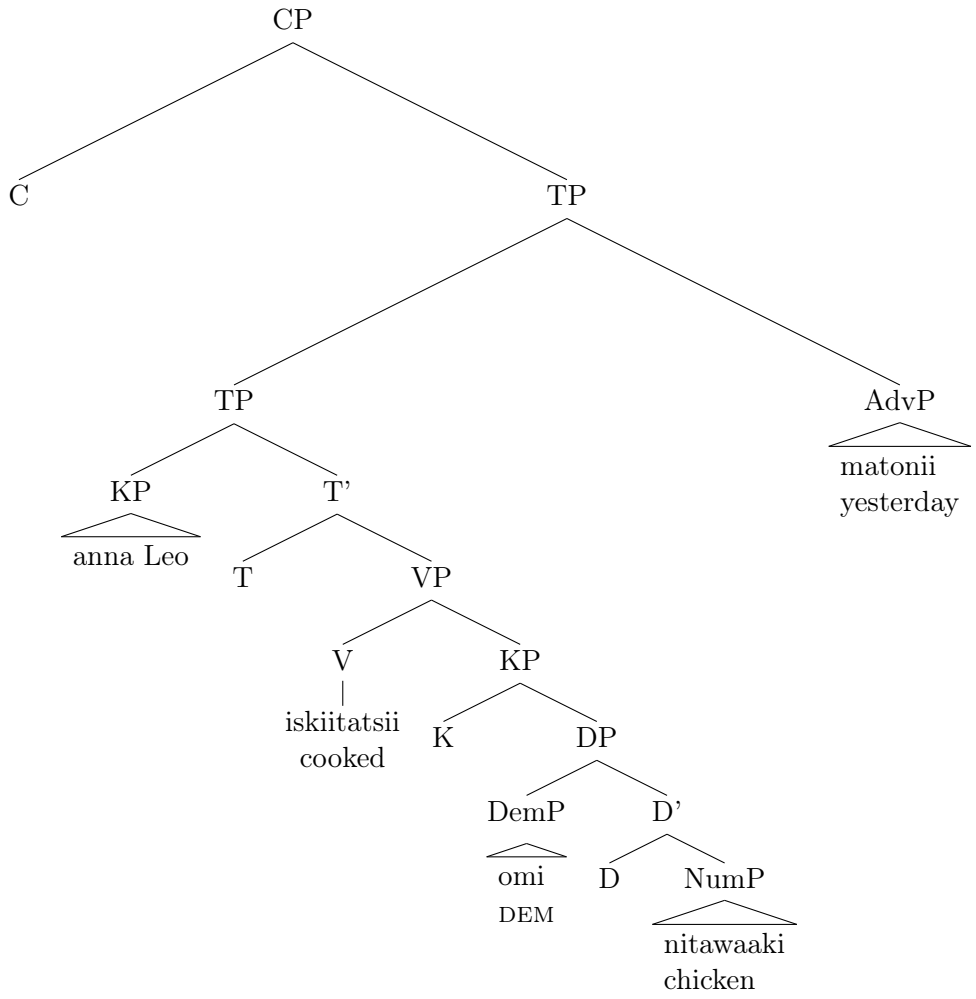

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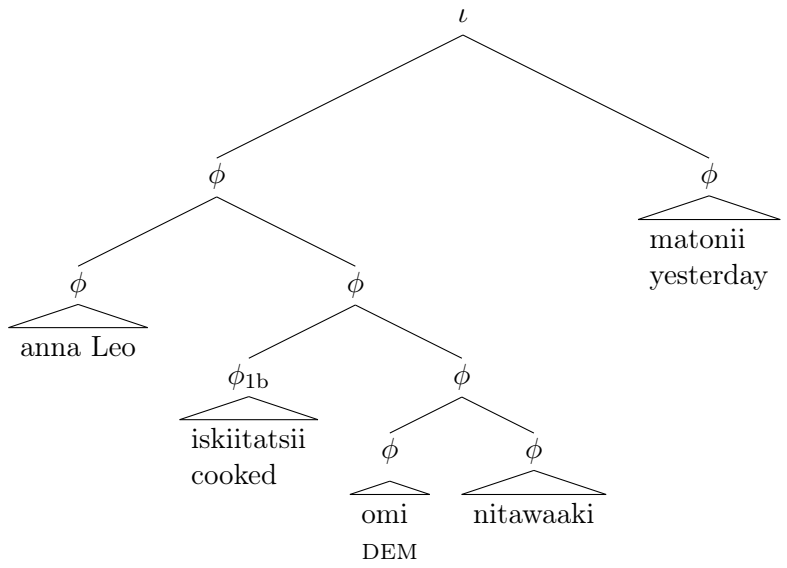
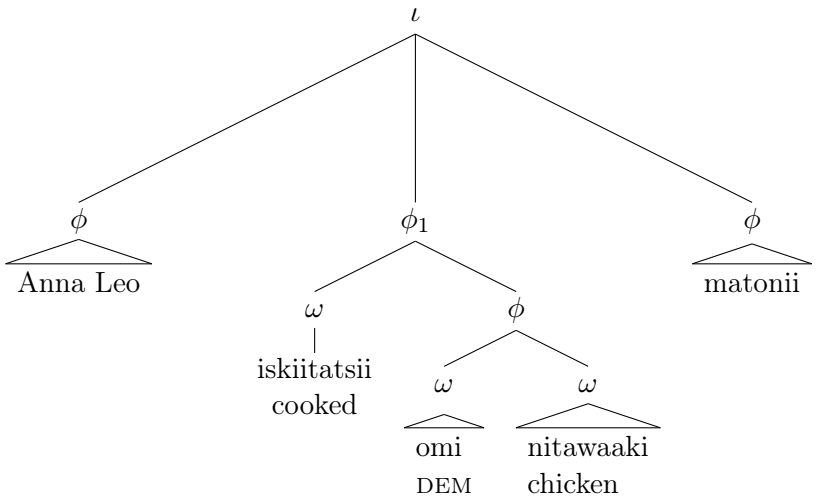


- Both ϕ_{1a} and ϕ_{1b} are minimal ϕ's
- ϕ_{1a} does not have final devoicing

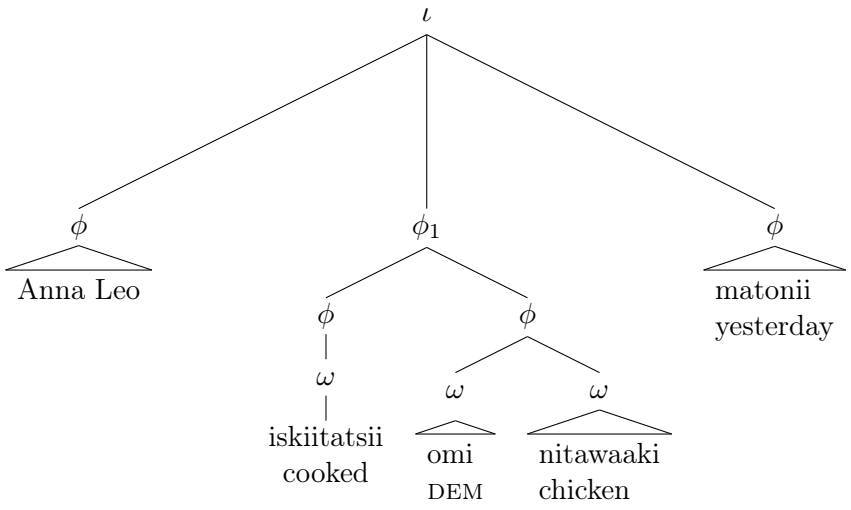
- ϕ_{1b} has final devoicing
- no way to capture this asymmetry
- cannot relate all XPs to ϕ
- Prosodic Hierarchy = Syntactic Hierarchy (phases) (Newell, 2008; Kahnemuyipour, 2009)
- Match Theory is sensitive to phases rather than to syntactic categories
  - Match ι to CP
  - Match ϕ to vP and KP
  - Match ω to nP
- final-devoicing at right edge of ϕ.

(27)



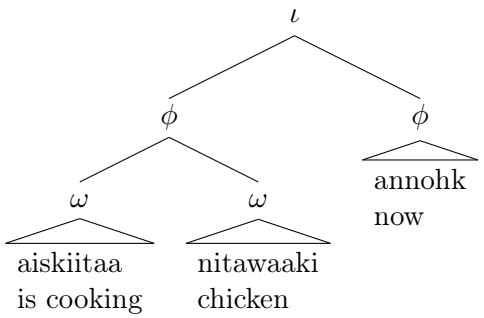
- StrongStart - a prosodic category cannot begin with a weaker element
- in (27) ϕ_1 has two daughters: ω and ϕ
- violation of StrongStart - left daughter is weaker than right daughter
- restructured as follows

(28)



- right edge of ϕ exhibits final-devoicing
- PNI structure

(29)



- no violation of StrongStart
- no restructuring necessary
- no final-devoicing on verb

5 Conclusion

- We examined PNI in younger speakers in Blackfoot
- In addition to greater freedom in movement of PNI object, we noted the following prosodic correlate of PNI
- V + full object - prosodic boundary (final-devoicing)
- V + PNI object - no prosodic boundary
- traditional Match Theory didn't provide any insight into this asymmetry
- If we assume Match Theory makes reference only to phase heads, then the asymmetry falls into place
- small step toward the unification of Match Theory and Phase Theory

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