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 ($\iota$)
    Phonological Phrase ($\phi$)
    Phonological Word ($\omega$)
    Foot (F)
    Syllable ($\sigma$)
    Mora ($\mu$)

• $\iota$, $\phi$, and $\omega$ 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 \( \iota \):
  - parenthetical expressions
  - nonrestrictive relative clauses
  - tag questions
  - vocatives
  - interjections
  - certain moved elements

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

2.2.2 Phonological Phrase

(7) Iambic Reversal

a. Tennesseé
   b. Ténnessee Williams

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

(8) a. John perseveres.
   John pérseveres gládly.
   John persevére gládly and diligently.

   b. Rabbits reproduce.
   Rabbits réproduce quíckly.
   Rabbits reproducé quickly and effortlessly.

- \( V + \text{Adv} \rightarrow \) one phonological phrase, \( \phi \)
- \( V + [\text{Adv and Adv}] \rightarrow V \) and \( [\text{Adv and Adv}] \) form two separate \( \phi \)'s
2.3 Noun Incorporation

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

(9) Noun Incorporation - Onondaga¹ (Woodbury, 1975)

a. waʔhahninúʔ neʔ oyékwa?
   waʔ-ha-lminuʔ? neʔ oyék-ʔa?
   FACT-3SG.M.AG-buy-PUNC NE NPREF-tobacco-NFS
   ‘He bought tobacco.’

b. waʔhayékwhahninúʔ?
   waʔ-hayékwa-yék-a-lminuʔ?
   FACT-3SG.M.AG-tobacco-EPEN-buy-PUNC
   ‘He bought tobacco.’

(10) a. 

   VP
   /  \
   V  KP
   /  \
   hminu  neʔ oyékwa?

b. 

   VP
   /  \
   V  nP
   /  \
   hminu  yékwa

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

(11) hodaʔditshó:da?
   ho- [at-aʔtshR]- 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)

¹Abbreviations: DEM - demonstrative; EPEN - epenthetic; FACT - factual; IC - initial change (signals past tense);
IMPF - imperfective; INV - inverse; MID - middle voice; NEG - negative; OHV - 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
PVF 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) Nimáátomaikaksooyihpa okonóksitokihkitaan
nit-maat-oma-ik-ii-ooyi-hpa okonok-sitok-ihkita-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

<table>
<thead>
<tr>
<th>type</th>
<th>meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>VTA</td>
<td>verb transitive animate</td>
</tr>
<tr>
<td>VTI</td>
<td>verb transitive inanimate</td>
</tr>
<tr>
<td>VAI</td>
<td>verb animate intransitive</td>
</tr>
<tr>
<td>VII</td>
<td>verb inanimate intransitive</td>
</tr>
</tbody>
</table>

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

a. Náíhkiitatsiwa omi pi’kssí
   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 napayini
   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 impoverished 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 ponokáómítaa
   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    ponokaomita
   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’

(18) Semantic characteristics of IN

a. Ííhkaniyaapiyaawa píítaa
   iihkan–yaapi–yi–aawa    piitaa
   all–see.AI–PL–3PL.PRN eagle
   ‘They all saw an eagle.’ (∀ > ∃, ∗∃ > ∀)

b. Omiksi aapi’siks áwaatoyaawa ?Nitáyoohto aapi’si
   om–iki 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-AI-PL–3PL.PRN hear
   ‘I heard a coyote/coyotes.’

Semantics - IN takes narrow scope, lacks a referent (non-specific and indefinite), and displays
number-neutrality
I–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 áipíhtakiwa omahkóóhko kókists.
   ann–wa J wai’piht–aki–wa omahk–ooktok–istsi
   ‘Joel hauled some big rocks.’

b. Nitsííhkoonimaahpinnaan nááto’kska piitáikoiks [plural + numeral]
   1–IC–find–AI–1PL two eagle–DIM–PL
   ‘We found two eaglets.’

c. Áóhpaa takit mamííyistsi áiksistsipiiksaa kinistsi [plural + relative clause]
   ‘Carry pieces of firewood that are already chopped!’

- Structure of PNI in Blackfoot

(20) VP
    /\     |
   V     NumP
    |      |
lahkaniyaapiyaawa #P
   /\      /\      |
   nááto’kska nP Num
   /\      |
   piitaaikoan ikși Num'

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. Nitsíipommoawa oma amopístaan matónnii
   I.transferred.to.him DEM bundle yesterday
   ‘I transferred him/her that bundle yesterday’
b. Nitsúpommaki amopístaan matónnii
transferred.AI bundle yesterday
‘I transferred a bundle yesterday’

c. Nitsúpommaki matónnii amopístaan
transferred.AI yesterday bundle
‘I transferred a bundle yesterday.’

d. Amopístaan nitsúpommaki matónnii
bundle transferred.AI yesterday
‘I transferred a bundle yesterday.’

e. Matónnii nitsúpommaki amopístaan
yesterday bundle transferred.AI
‘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 i to clause (CP)
- Match $\phi$ to XP
- Match $\omega$ 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)
```
CP
  C
  |      |
  |      |
  TP
  |      |
  |      |
  TP
  |      |
  T
  |      |
 VP
  |      |
  V
  |      |
aiskiitaa
  is
  cooking
  |      |
  |      |
  NumP
  |      |
nitawaaki
  chicken
```

(24)
```
\(\tau\)
  \(\phi\)
  \(\phi\)
  \(\phi_{1a}\)
  aiskiitaa
  is
  cooking
  \(\phi\)
  nitawaaki
  chicken
```

11
• Both $\phi_{1a}$ and $\phi_{1b}$ are minimal $\phi$'s

• $\phi_{1a}$ does not have final devoicing
• $\phi_{1b}$ has final devoicing
• no way to capture this asymmetry
• cannot relate all XPs to $\phi$
• Prosodic Hierarchy = Syntactic Hierarchy (phases) (Newell, 2008; Kahnemuyipour, 2009)
• Match Theory is sensitive to phases rather than to syntactic categories
  – Match $\iota$ to CP
  – Match $\phi$ to $v$P and KP
  – Match $\omega$ to $n$P
• final-devoicing at right edge of $\phi$.

(27)

- **STRONGSTART** - a prosodic category cannot begin with a weaker element
- in (27) $\phi_1$ has two daughters: $\omega$ and $\phi$
- violation of **STRONGSTART** - left daughter is weaker than right daughter
- restructured as follows

(28)
• right edge of $\phi$ exhibits final-devoicing
• PNI structure

(29)

```
  \[ \begin{array}{c}
    \phi \\
    \omega \\
    \text{aiskiitaa}
  \end{array} \quad \begin{array}{c}
    \omega \\
    \text{nitawaaki}
  \end{array} \quad \begin{array}{c}
    \phi \\
    \text{annohk}
  \end{array} \\
\text{is cooking} \quad \text{chicken} \quad \text{now}
\]```

• 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

References


