

Pseudo Noun Incorporation in Blackfoot*

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1 Introduction

We discuss pseudo noun incorporation (PNI) in Blackfoot (Algic), contrasting data from younger speakers with those from older speakers. We show that younger speakers exhibit more freedom in movement of the PNI object. We examine the prosodic properties of PNI, noting that there is a prosodic boundary between the verb and the full object (final-devoicing) but that no prosodic boundary between the verb and the PNI object is found.

We adopt the analysis of PNI in Bliss (2018). Namely, PNI results from *nominal restructuring*, meaning that the PNI object is a reduced nominal, lacking DP and KP. We relate size of PNI nominal to phase structure. Following Newell (2008), we will note the redundancy between the prosodic hierarchy and the syntactic hierarchy (phase structure) and argue that one can be dispensed with.

2 Background

2.1 Theoretical Background We assume the following structures for nominals and for clauses.

- (1) (a) nominal structure: KP > DP > NumP > *n*P > NP
- (b) clausal structure: CP > TP > AspP > *v*P > VP

We also assume C and *v* as phase heads (Chomsky, 2001) as well as D (Svenonius, 2004) and *n* (Newell, 2008; Windsor, 2017; Chomsky, 2001). We also assume the basic architecture of the prosodic hierarchy (Nespor, 1999; Nespor & Vogel, 1986; Selkirk, 1984, 1986), although we revisit the issue later. The dominant view is that syntactic structure and prosodic structure are distinct (ex. Jun, 1998). An emerging view, however, is that syntactic structure and prosodic structure are one and the same, thus one can be eliminated (Newell, 2008; Newell & Scheer, 2017; Kahnemuyipour, 2009). Evidence for distinct prosodic structure is found in data such as the following.

- (2) [This is the cat] [that chased the rat] [that stole the cheese] (prosodic structure)
- (3) This is [the cat that chased [the rat that stole [the cheese]]] (syntactic structure)

Observe the lack of isomorphism between the syntactic and prosodic structures. With the advent of Optimality Theory (Prince & Smolensky, 1993, 2004) the availability of violable constraints that could favour a prosodic structure that is non-isomorphic with syntactic structure is a possibility.

2.2 Pseudo Noun Incorporation Caseless nominals undergo PNI (Dayal, 2011; Massam, 2001). The PNI nominal is typically a bare *n*P or NumP. That is there is typically no DP or KP projection. Consider the following Niuean examples.

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- (4) *Kua fakahū he ekekafo e tohi.*
 PVF send ERG doctor ABS letter
 ‘The doctor sent the letter.’
- (5) *Kua fakahū tohi e ekekafo .*
 PFV send letter ABS doctor
 ‘The doctor sent the letter.’

Observe that the PNI example in (5) is caseless and that the subject appears with absolutive case. Massam also notes that the PNI object must be adjacent to the verb. See Massam (2001, 2009) and Dayal (2011) for further information on PNI.

2.3 Blackfoot Blackfoot is an Algonquian language of the Algic family. It is spoken in southern Alberta (Canada) and Montana (USA). There are about 5000 speakers, and the language is undergoing language shift to English due to aggressive colonialization. Typologically, it is polysynthetic and exhibits complex verbal morphology. Consider the following example (Bliss, 2018:ex. (41)).

- (6) *Nimáátomaikaksooyihpa okonóksitokihkitaan*
 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.’

The verbal morphology of Blackfoot is quite complex, so we concentrate on those aspects that are of relevance here. The animacy of the absolutive argument encoded on the verbal morphology, a property that is common to all Algonquian languages (Goddard, 1979; Rhodes, 1976; Bloomfield, 1946, 1957; Wolfart, 1973). As mentioned above, in a transitive verb the animacy of object is encoded and in an intransitive verb the animacy of subject is encoded. The following abbreviations are used.

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

Here are some examples of animacy agreement in Blackfoot (Bliss, 2018:ex.3(b,c)). Observe that (7) contains a transitive animate verb (TA) as the direct object is animate. In (8) the direct object is inanimate, so the verb is inflected as a transitive inanimate verb (TI).

- (7) *Náihkiitatsiwa omi pi'kssú*
 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.’
- (8) *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.’

In (6), the verb is marked as an intransitive verb (AI) rather than as a transitive verb because the object has undergone PNI, the topic of the next section.

3 Blackfoot PNI

Recall that in (6) the verb appears with intransitive agreement. Crucially, when the direct object lacks a demonstrative, the verb may inflect as though it were intransitive, a property found in other Algonquian languages, too (Rhodes, 1991; Taylor, 1969; Frantz, 1991; Bliss, 2018; Glougie, 2000). It was Bliss (2018) who drew the parallel between the phenomenon in Blackfoot and PNI in other languages. The following example illustrates a minimal pair (Bliss, 2018:ex.(8)).

- (9) *Náyiisoyiwa* *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.'

- (10) *Náyiisakiwa* *ponokáómitaa*
 na-yiis-aki-wa ponokaomitaa
 EVID-feed-AI-PROX horse
 'He fed a horse/horses.'

Bliss (2018) argues that the PNI object is VP-internal based on VP pro-form facts and strict adjacency. The reader is referred to Bliss' discussion for the pro-form replacement diagnostic. In terms of strict adjacency, Bliss observes that the PNI object is always immediately post-verbal. The object in (9) can appear pre-verbally, but that in (10) cannot as shown in (12). This attests to the idea that the object in (9) is a DP, while that in (12) is a NumP or NP (Bliss, 2018:ex(9)).

- (11) *Anni* *óta'si* *náyiisoyiwa*
 ann-yi w-ot'as-yi na-yiis-o-yii-wa
 DEM-SG.OBV 3-horse-SG.OBV EVID-feed-TA-DIR-PROX
 'He fed his horse.'

- (12) **Ponokáómitaa* *náyiisakiwa*
 ponokaomitaa na-yiis-aki-wa
 horse EVID-feed-AI-PROX
 '(He fed a horse/horses).'

Turning to semantic aspect of PNI, Bliss (2018) and Glougie (2000) show that the PNI'd noun takes narrow scope, lacks a referent (i.e., is non-specific and indefinite), and displays number-neutrality. Consider the following examples (Bliss, 2018).

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

- (14) *Omiksi* *aapí'siks* *áwaatoyaawa* *#Nitáyoohito* *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.'

- (15) *Nitayááksooyo'si* *maatááki*
 nit-yaak-ioyo'si maataaki
 1-FUT-cook.AI potato
 'I am going to cook a potato/some potatoes.'

Turning to the morphosyntax of PNI, the incorporated noun can be inflected for plurals and host various nominal modifiers but cannot host demonstratives. Consider the following examples (Bliss, 2018).

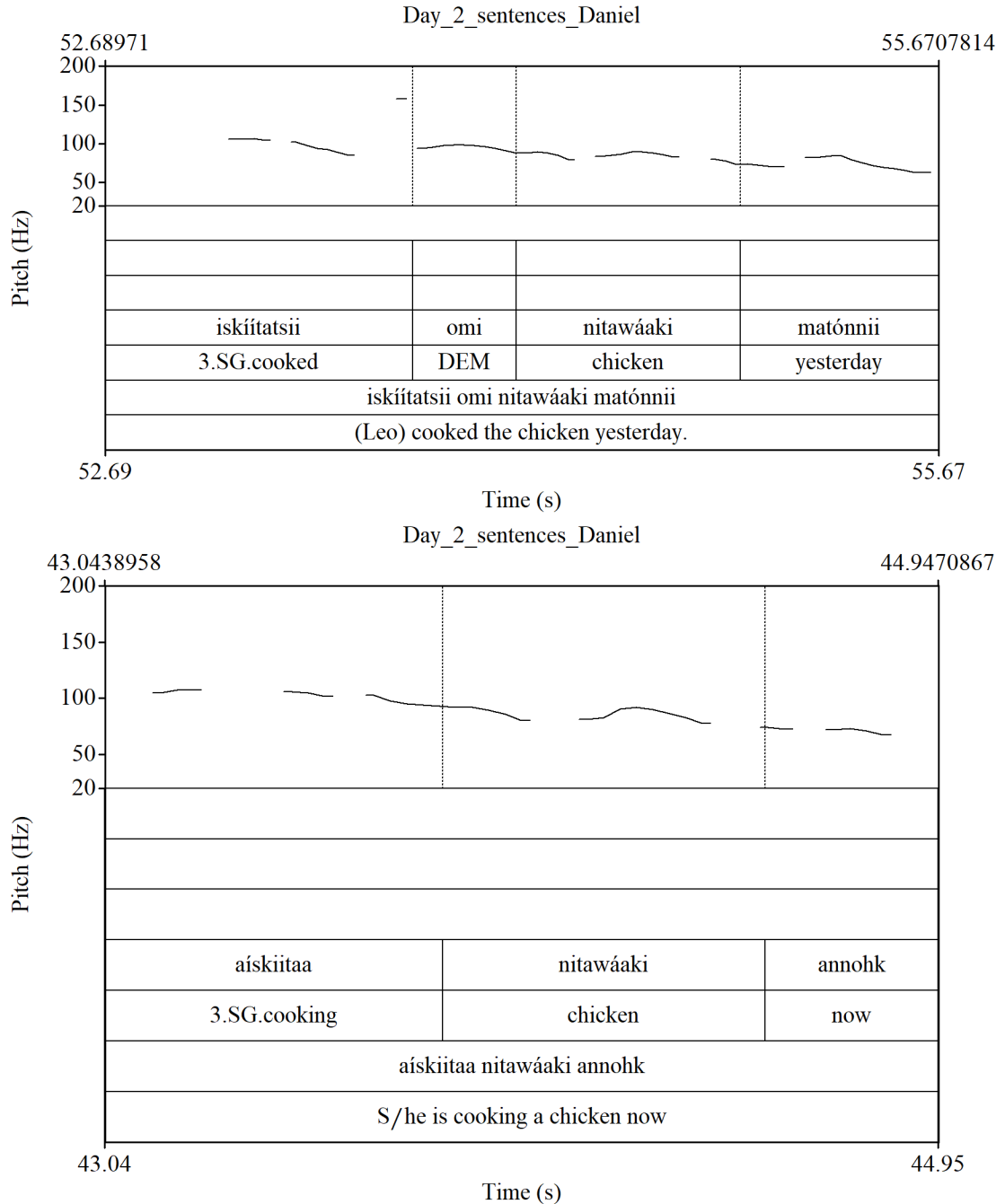
- (16) *Anna Joel ái'pihtakiwa omahkóóhкотokists.*
 ann-wa J wai'piht-aki-wa omahk-oohkotok-istsi
 DEM-SG.PROX J haul-AI-PROX big-rock-PL
 'Joel hauled some big rocks.'
- (17) *Nitsíhkoonimaahpinnaan nááto'kska piitáíkoaiks [plural + numeral]*
 nit-ii-ohkoon-imaah-pinnaan naato'kska piitaa-ikoan-iksi
 1-IC-find-AI-1PL two eagle-DIM-PL
 'We found two eaglets.'
- (18) *Nitáíkskimaa (*oma) ponoká [demonstrative]*
 nit-a-ikskim-aa om-wa ponoka
 1-IMPF-hunt-AI DEM-SG.PROX elk
 'Intended: 'I am hunting that elk!'

3.1 Current Work In our recent field research (Calgary, Alberta; July 24-27, 2019), we observed that strict adjacency between the verb and the incorporated noun, suggested by Bliss, is not necessarily required. According to our speakers, PNI allows an adverb to intervene between the verb and the PNI'd object, and the PNI'd object can be preposed.

- (19) *Nitsípommoawa oma amopístaan matónnii*
 I.transferred.to.him DEM bundle yesterday
 'I transferred him/her that bundle yesterday.'
- (20) *Nitsípommaki amopístaan matónnii*
 I.transferred.AI bundle yesterday
 'I transferred a bundle yesterday.'
- (21) *Nitsípommaki matónnii amopístaan*
 I.transferred.AI yesterday bundle
 'I transferred a bundle yesterday.'
- (22) *Amopístaan nitsípommaki matónnii*
 bundle I.transferred.AI yesterday
 'I transferred a bundle yesterday.'
- (23) *Matónnii nitsípommaki amopístaan*
 yesterday I.transferred.AI bundle
 'I transferred a bundle yesterday.'

Observe that temporal adverbials such as *matónnii* ('yesterday'), which typically adjoins TP, can appear between verb and the PNI'd object, (21). Also the PNI'd object can precede the verb, (22).

We turn now to some prosodic facts to elucidate the structure of PNI. First, final devoicing is indicative of prosodic boundary (Windsor, 2017). Observe that there is slight verb-final devoicing with full KP object. There is no verb-final devoicing with PNI object, however.



3.2 Summary The following properties of PNI were observed to correspond to Bliss' previous work and our own fieldwork: lack of demonstratives, intransitive agreement on verb, low scope. Note that not all of these were shown in this report due to space constraints. The following properties of PNI were found to differ from Bliss's discussion: freer movement (can be preverbal), adverbs can intervene between the verb and the PNI object, a weaker prosodic boundary between V and PNI object (not tested in Bliss). In the next section we present our analyses of these facts.

4 Discussion

That the PNI object lacks demonstratives indicates absence of the KP and DP layers in the PNI object. Plural marking, however, suggests that the PNI object contains a NumP. Following Windsor (2017), final-

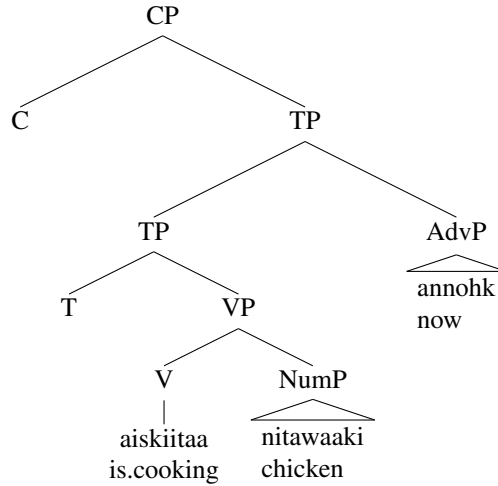
devoicing marks right edge of ϕ . Given that final-devoicing is not found with PNI object, we deduce that the verb and the PNI object do not correspond to two separate ϕ s. Although we revisit Windsor's claim later.

Recall also the following constraints assumed by Match Theory.

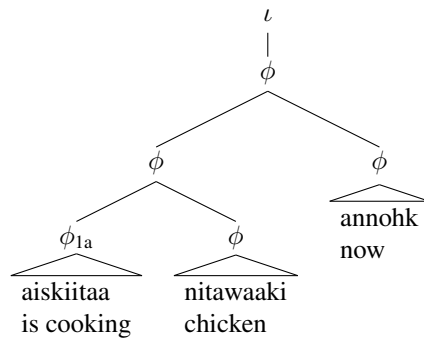
- (24) (a) Match ι to clause (CP)
- (b) Match ϕ to XP
- (c) Match ω to X (syntactic word)

Windsor argues that the verbal complex is a phonological phrase rather than a phonological word, based on final devoicing on the verb. Compare (25), the PNI case, and (27), the ordinary VP case.

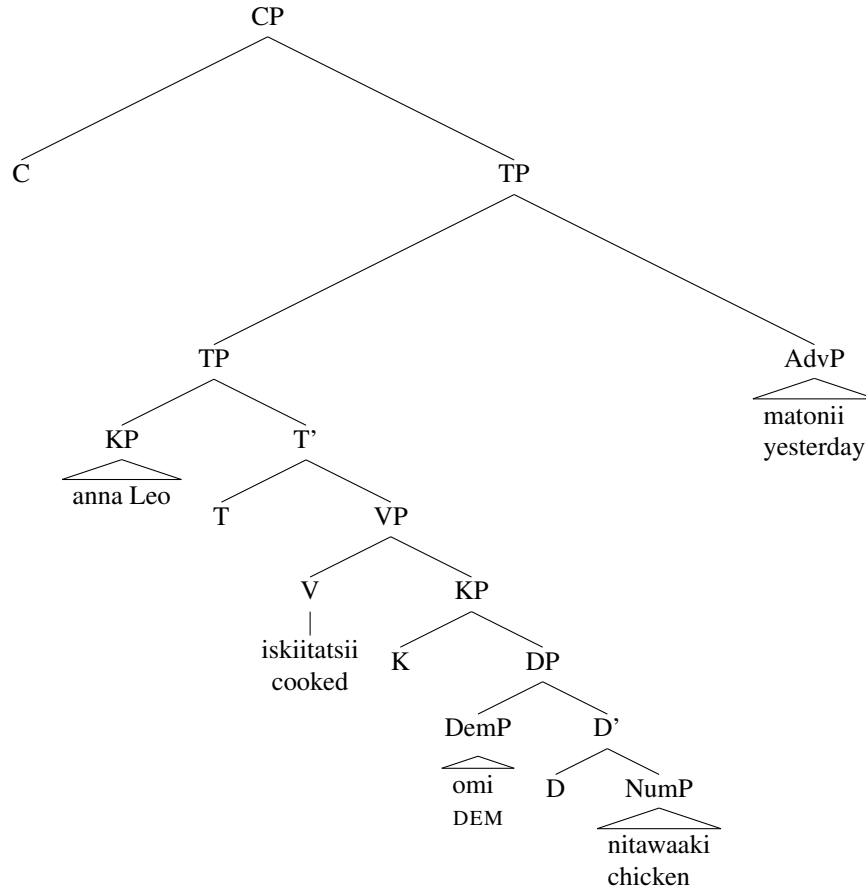
(25)



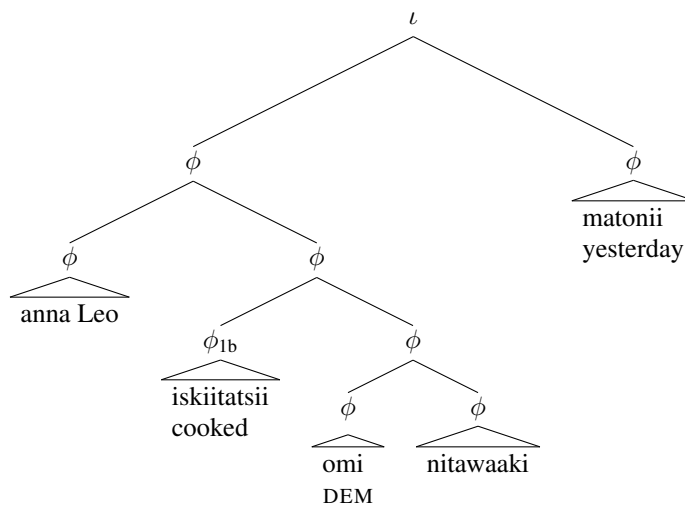
(26)



(27)



(28)



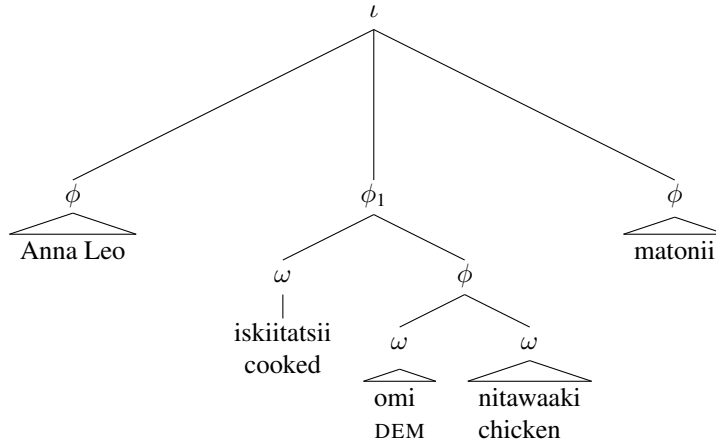
According to Match Theory, both ϕ_{1a} and ϕ_{1b} are minimal ϕ 's, as they are both phrases. Yet, only ϕ_{1b} has final devoicing, rendering traditional Match descriptively inadequate for this asymmetry. Crucially, one cannot relate all XPs to ϕ to account for prosody in Blackfoot.

A line of studies that attempt to equate Prosodic Hierarchy with Syntactic Hierarchy (phases). Newell (2008), Kahnemuyipour (2009), and Kratzer & Selkirk (2007) maintain that Match Theory is sensitive to phases rather than to syntactic categories (Selkirk, 2011). Taking this proposal to its logical conclusion, (24) can be reformulated as follows. We leave open the possibility for cross-linguistic variation for which prosodic category maps to which phase.

- (29) (a) Match ι to CP
- (b) Match ϕ to ν P and KP
- (c) Match ω to n P

This reformulated Match Theory gives rise to an altered version of (28), which is shown in (30). Observe that the verb now corresponds to ω rather than to ϕ . This may require a re-thinking of Windsor’s conclusions, but we come back to this point later.

(30)

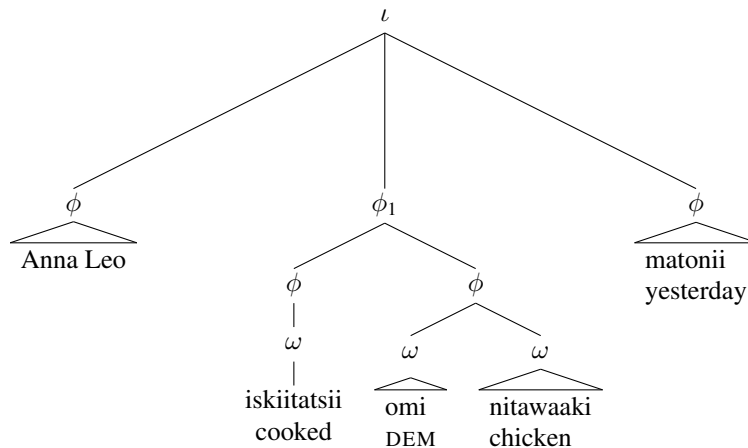


Furthermore, we adopt the following prosodic constraint (Selkirk, 2011; Elfner, 2015; Elfner & Bennett, 2019).

- (31) STRONGSTART - a prosodic category cannot begin with a weaker element

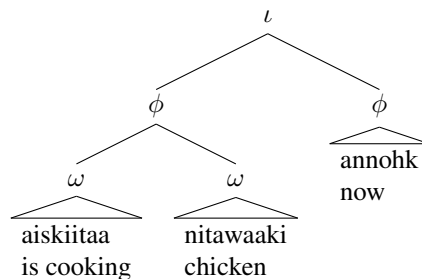
In (30) ϕ_1 has two daughters, namely, ω and ϕ . It violates STRONGSTART since the left daughter is weaker than the right daughter. The restructured tree is as follows:

(32)



Now we have a context where the right edge of ϕ exhibits final-devoicing. With the revised Match Theory, the prosodic structure of the PNI example in 25 looks as follows:

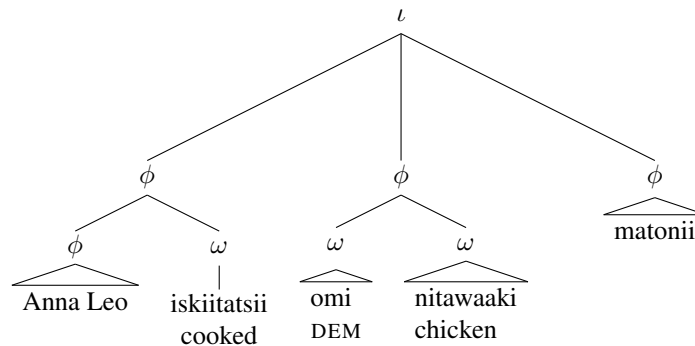
(33)



Here, both the verb and the object are phonological words, without any violation of STRONGSTART. Therefore, no final-devoicing is expected on the verb.

There is an alternative story of the restructuring in (30) (thanks to Seunghun Lee). That is, the phonological tendency towards STRONGSTART incorporates the verb, which triggered the violation of STRONGSTART, into the preceding phonological phrase, which dominates the subject ('Anna Leo'). The restructured tree is shown (34).

(34)



Returning to Windsor's proposal in which the verb constitutes its own ϕ observe that in 34 the verb now coincides with the right edge of a ϕ . Also, in the first alternative, 30, the verb projects a ϕ . Thus, both of these alternatives salvage Windsor's proposal while accounting for the lack of right-edge devoicing in 33.

5 Conclusion

We examined PNI in Blackfoot in younger speakers. In addition to greater freedom in movement of the PNI object, we noted the following prosodic correlate of PNI. There is a prosodic boundary evidenced by final-devoicing between the verb and the full KP object; however, between the verb and the PNI object no prosodic boundary is observed. Traditional Match Theory, which assumes prosody is sensitive to any phrases, did not provide any insight into this asymmetry. If we assume Match Theory makes reference only to phase heads, then the asymmetry falls into place. This is a small step toward the unification of Match Theory and Phase Theory.

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