

Subject/Object Asymmetries in Northern Iroquoian*

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Michael Jonathan Mathew Barrie. 2023. **Subject/Object Asymmetries in Northern Iroquoian**. *Studies in Generative Grammar*, 33-4. 425-440. This squib examines two seldom discussed subject/object asymmetries in Northern Iroquoian. Namely, (i) agreement is found with incorporated subjects but not with incorporated objects, and (ii) *wh*-movement is possible with incorporated human subjects but not with incorporated human objects. A primary goal of this squib is to add these two asymmetries to the discussion on noun incorporation and Northern Iroquoian grammar in general. Current theories of noun incorporation provide no solution. There is also no proposal in the generative tradition that accounts for the complex agreement patterns found in Northern Iroquoian. Although I provide no solution here, I point to a potential solution involving separate subject and object probes. I implore future researchers to take these asymmetries into account when analyzing Northern Iroquoian grammar and noun incorporation in general.

Keywords: noun incorporation, Northern Iroquoian, *wh*-movement, agreement, subject/object asymmetries

1. Introduction

It is well known that noun incorporation (NI) can occur with both direct objects and unaccusative subjects in a number of languages (Baker 1988, Rice 1991). I

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** Professor

discuss here two seldom mentioned asymmetries found in NI in Northern Iroquoian, a branch of the Iroquoian family spoken in eastern North America on the border between Canada and the United States.¹

- (1) a. NI and agreement: absent with objects, obligatory with subjects
- b. NI and *wh*-movement: restricted to non-human objects, unrestricted on subjects

As Baker (1996) discusses at length, object agreement and NI of objects are in complementary distribution, an ingredient necessary for his Polysynthesis Macroparameter. However, as we will see, when the subject of an unaccusative verb undergoes NI, agreement is obligatory. This is the first asymmetry listed above. Baker also discusses NI and *wh*-movement, where he notes that a nominal cannot both be the target of *wh*-movement and NI. This holds only for human objects, however, and not for unaccusative subjects. Human unaccusative subjects can undergo NI and *wh*-movement. This is the second asymmetry listed above. I discuss the ramifications of these asymmetries for our understanding of NI and argue for a configurational approach to Northern Iroquoian, contra Koenig and Michelson (2015).

This paper concludes with a discussion on the impact of this analysis on our understanding of polysynthesis. Baker (1996) proposed the Morphological Visibility Condition (MVC), which is purported to link the complementary distribution of agreement and NI. Clearly, the results of the current discussion are problematic for Baker's theory. I conclude that a macroparametric approach is on the wrong track and that a microparametric approach as expounded in Mattissen (2004) should be explored.

The remainder of this paper is structured as follows. Section 2 introduces aspects of Northern Iroquoian languages pertinent to this study and also presents the theoretical background necessary for the analysis. It also presents the analysis for cyclic Agree in Béjar & Rezac (2009). Section 3 illustrates the core paradigm to be analyzed, including a full discussion of the generalizations in (1) as well as additional data distinguishing the properties of incorporated human nouns from those of non-human nouns. Section 4 presents the analysis of NI and agreement that accounts for the data in section 3. Section 5 discusses the implications of

¹ The first asymmetry was first noted in Koenig & Michelson (2008, 2015), where they discussed the implications of this agreement on Baker's (1996) Morphological Visibility Parameter (MVC), although they do not discuss it in terms of a subject/object asymmetry. The second asymmetry was discussed first in Barrie (2016).

these findings with respect to our understanding of polysynthetic languages. Section 6 is a brief conclusion.

2. Background

2.1. Northern Iroquoian

The Northern Iroquoian branch of the Iroquoian family consists of six extant languages of which Mohawk, Cayuga, Onondaga and Oneida are discussed here. The extant Northern Iroquoian languages share a similar enough morpho-syntax that comparisons of the sort proposed here can normally be generalized across the sub-branch, as noted, for example, in Koenig and Michelson (2015). The Mohawk data are from various works by Baker and Mithun. The Oneida data are principally from Koenig & Michelson (2008, 2015) and Michelson & Doxtator (2002). The Cayuga and Onondaga data are principally from my own field work, but also come from Froman et al. (2002) and Woodbury (2003), respectively. Other sources are noted as they appear. All extant Northern Iroquoian languages are highly endangered, although Mohawk has had a great deal of success in revitalization and Cayuga has started a revitalization program.

Northern Iroquoian languages are polysynthetic in that they exhibit NI, complex morphology, and full subject and object agreement (Murasugi, 2014). They are discourse configurational in that they all exhibit free word order, discontinuous constituency, and massive pro-drop (Hale 1983). Agreement in Northern Iroquoian languages is quite complex, referencing both the subject and the object, as stated. The agreement morphemes encode person, gender, number (including singular, dual, and plural), and clusivity for subjects. Agreement is found only for humans and sometimes for animals, though this is not common. See Barrie and Uchihara (2019) for more details and a general overview of Iroquoian. Consider the following partial paradigm for Onondaga.² As mentioned, agreement is found for human arguments only. Thus, example (2a) is formally

² The following abbreviations are used in this paper: AG – agent, BEN – benefactive, CAUS – causative, CIS – cislocative, DIM – diminutive, EPEN – epenthetic, F – feminine, FACT – factive (a type of mood), F/I – feminine indefinite, HAB – habitual, JOIN – joiner vowel (an epenthetic vowel separating the incorporated noun and the verb root), M – masculine, NE – a nominal particle in Northern Iroquoian languages, NFS – noun forming suffix, NPREF – nominal prefix, NLZR – nominalizer, PAT – patient, PUNC – punctual (akin to perfective aspect). SG – singular, SEC.HAB – secondary habitual, STAT – stative.

intransitive.³ In examples (2b) and (2c) distinct agreement morphemes can be teased apart for the subject and object; however, in example (2d) both the subject and the object are represented by a portmanteau morpheme.⁴ Note that the grammatical notions of subject and object are in dispute in Northern Iroquoian. I follow the Iroquoianist tradition of labelling the agreement morphemes as agent (AG) and patient (PAT). For clarity, in the following examples the agent (subject) agreement morpheme are in **boldface**, the patient (object) agreement morphemes are underlined, and the portmanteau morphemes are both **boldfaced and underlined**.

- | | |
|---|--|
| (2) a. hagéha?
ha -kẹ-ha?
3SG.M.AG-see-HAB
‘He sees it.’ | b. hákgeha?
ha - <u>ak</u> -kẹ-ha?
3SG.M.AG- <u>1SG.PAT</u> -see-HAB
‘He sees me.’ |
| c. gogéha?
<u>kq</u> -kẹ-ha?
<u>1SG.AG:2SG.PAT</u> -see-HAB
‘I see you.’ | d. hesgéha?
<u>he</u> - s -kẹ-ha?
<u>3SG.M.PAT-2SG</u> -see-HAB
‘You see him.’ |

Agreement with *wh*-phrases follows the generalization from above. Specifically, there is agreement with human *wh*-phrases but not with non-human *wh*-phrases (except with some animals). Consider the following Onondaga paradigm. Observe that agreement is found only on the form corresponding to who. Note that when the identity of an individual is uncertain or unclear the feminine form is used.

- | |
|--|
| (3) a. Nwade? wa?sége?
nwate? wa?-s-e-kẹ-?
what FACT-2SG.AG-EPEN-see-PUNC
‘What did you see?’ |
| b. Gaenigae? wa?sége?
kaenikaε? wa?-s-e-kẹ-?
which FACT-2SG.AG-EPEN-see-PUNC |

³ That semantically transitive predicates are formally intransitive was first argued by Koenig & Michaelson (2008) on the basis of the split-accusative agreement system in Northern Iroquoian.

⁴ For further discussion on agreement morphology in other Northern Iroquoian languages the reader is referred to Lounsbury (1949) and Chafe (1960). Although distinct subject and object agreement morphemes can sometimes be discerned, they are often portmanteaux and are glossed as a single morpheme in the Iroquoianist literature. I follow the same convention here.

- 'Which one (thing) did you see?'
- c. Shqʔ waʔshéǵeʔʔ
 shqʔ waʔ-she-ké-ʔ
 who FACT-2SG.AG:3.F/I.PAT-see-PUNC
 'Who did you see?'

Finally, as noun incorporation (NI) is central to the discussion here, I illustrate the basic properties of this construction here. Consider the following Onondaga examples (Woodbury 1975).

- (4) a. waʔhahninúʔ neʔ oyékwaʔ
 waʔ-ha-hninu-ʔ neʔ o-yékw-aʔ
 FACT-3SG.M.AG-buy-PUNC NE NPREF-tobacco-NFS
 'He bought tobacco.'
- b. waʔhayékwahninúʔ
 waʔ-ha-yékw-a-hninu-ʔ
 FACT-3SG.M.AG-tobacco-JOIN-buy-PUNC
 'He bought tobacco.'

The first sentence contains an inflected verb with a full, phrasal direct object. In the second example, the nominal root of the direct object is stripped of its inflectional morphology and appears inside the verbal complex to the left of the verbal root. Note that in this example a joiner vowel (JOIN) breaks up the consonant cluster. It differs from other epenthetic vowels, so is given the name 'joiner vowel'.

Core to this discussion is the size of the incorporated noun. Although NI has been argued to arise by head movement (Baker 1988, 2009), more recent investigations reveal that the incorporated noun is actually a small phrase that incorporates into the verbal complex (Barrie 2015, Barrie & Mathieu 2016). Given that the incorporated noun sometimes appears with an overt nominalizer, and given the prior research just cited, I assume that the incorporated noun is a phrase. Note, though, that whether NI arises by head movement or by XP movement does not affect the current discussion, so I eschew an in depth discussion.

2.2. Polysynthesis

Baker (1996) proposes an overarching, macroparametric theory that distinguishes

polysynthetic languages such as Mohawk from non-polysynthetic ones, such as English. He proposes the so-called Morphological Visibility Condition (MVC), which states that a verb must assign its theta-roles to a distinct word-internal morpheme. This morpheme could be either an agreement affix or an incorporated noun (IN). Thus, in polysynthetic languages NI and agreement are in complementary distribution. Only one or the other is needed according to the MVC. Thus, NI takes place to satisfy the MVC only if no agreement marker referencing the object is present. The relevant scenarios are shown below with Baker's (1996:21) original Mohawk examples, with square brackets added to indicate the word that contains the verbal root.

- (5) a. *[Ra-núhwe'-s] ne owirá'a.
 3SG.M.AG-like-HAB NE baby
 ('He likes babies.')
- b. [Shako-núhwe'-s] (ne owirá'a).
 3SG.M.AG:3.PL.PAT-like-HAB NE baby
 'He likes them (babies).'
- c. [Ra-wir-a-núhwe'-s].
 3SG.M.AG-baby-JOIN-like-HAB
 'He likes babies.'
- d. *? [Shako-wir-a-núhwe'-s].
 3SG.M.AG:3.PL.PAT-baby-JOIN-like-HAB
 ('He likes babies.')

Let us assume that the verbal root *nuhwe'* ('like') is obligatorily transitive and assigns two theta-roles. Observe that in the two grammatical examples both the subject and the object are morphologically represented once each in the verbal complex (enclosed in square brackets). In (5a), the subject is morphologically represented on the verb, but the object is not, in violation of the MVC. In (5d), the object is represented twice on the verb. While this is not a violation of the MVC per se, Baker contends that the appearance of both agreement and an incorporated noun is uneconomical, hence degraded. He notes, crucially, that the MVC is silent on this point, giving examples from Mayali and Southern Tiwa where NI co-occurs with object agreement (Baker 1996: 22f).⁵ I return to this point in the conclusion.

⁵ Baker (1996:498) lists a number of properties that fall out from the MVC; however, they will not concern us here.

As seen above, there are systematic instances of NI and agreement in Northern Iroquoian, which presents a potential problem for MVC.⁶ Crucially, we will see systematic examples of NI that obligatorily co-occur with agreement. Namely, when the subject of an unaccusative undergoes NI, agreement is obligatory. While this was shown not to be fatal to the MVC in the previous paragraph, this regular and consistent pattern requires an explanation that the MVC cannot provide.

3. Noun Incorporation in Northern Iroquoian

In this section I present the properties of NI in Northern Iroquoian and how it interacts with agreement and *wh*-movement. The facts will show that a more nuanced approach to NI in Northern Iroquoian than that of Baker (1988, 1996) is required. Likewise, I will also show that the proposal of Baker et al. (2005) also cannot derive the properties shown here. Specifically, I will show that Baker's observations hold only for incorporated objects, but not for incorporated unaccusative subjects. The goal of this section is to derive a new set of generalizations of NI in Northern Iroquoian as stated below.

- (6) a. NI and agreement is in complementary distribution with incorporated objects.
- b. Agreement is obligatory with incorporated subjects.
- c. Animate incorporated objects cannot corefer with a *wh*-phrase.
- d. Animate incorporated subjects may corefer with a *wh*-phrase.

I begin with a discussion of NI and agreement and then move on to *wh*-movement.

3.1. NI and Agreement

As has been established in the literature, NI and agreement are in complementary distribution for incorporated objects (Baker 1996).⁷

⁶ In later work, Baker parameterizes NI to allow for languages that regularly allow both NI and agreement, such as Southern Tiwa (Baker & Aranovich & Golluscio 2005). Note that simply recategorizing Mohawk as allowing NI and agreement as in Southern Tiwa does not help, as we lose the generalization that NI and agreement are incompatible with object NI. See Barrie (2015) for further critique against Baker, Aranovich & Golluscio (2005).

- As Koenig & Michelson (2015) point out, the fact that subject agreement is found with unaccusatives in which NI has taken place is difficult to reconcile with

I am not sure what to make of data such as these other than to note that the other data I have presented above from several sources (including sources citing Mohawk data) clearly do show agreement with the incorporated subject in unaccusative constructions. I do note, however, that in Baker's example in i. the incorporated noun is *wir* ('baby'), which can sometimes act as a neuter noun in many languages.

Baker's MVC. Note, however, that this is not necessarily a fatal problem for the MVC. According to the MVC, either agreement or NI must take place for an argument in a polysynthetic language. Although Baker shows that Mohawk cannot have both agreement and NI with transitive verbs, he does give examples from other languages with NI in which both agreement and NI occur. He suggests that Mohawk speakers reject agreement with NI as redundant. I return to this point in the conclusion. Regardless of the viability of the MVC, the fact that unaccusatives and transitives consistently pattern as shown above calls for an explanation, and the MVC offers none.

3.2. NI and *wh*-movement

Baker also argues that NI and *wh*-movement are incompatible depending on the nature of the *wh*-XP. I review here the crucial argumentation for Baker's claim. Recall that for Baker, NI amounts to the head noun of the object NP undergoing head movement and left-adjoining to the verb.

Given that *wh*-movement must take place from an argument position to the left periphery, SpecCP, an object *wh*-phrase must originate in argument position, that is, as a sister to the verb. We can see why NI and *wh*-movement are incompatible under Baker's approach. Both the incorporated noun and the *wh*-phrase would have to originate in the same position, a contradiction. In this section I review some of Baker's original data and present novel data from NI constructions with unaccusative predicates. We will see that while *wh*-movement is restricted with direct object NI (although not exactly as Baker first argued), *wh*-movement with unaccusative subject NI is not restricted in the same way.

To begin, I discuss one piece of data Baker used to support his claim, bolstered by similar data from other Northern Iroquoian languages.

- (14) ?*Úhka t-Λ-hse-wír-a-hkw-e'? [Mohawk (Baker 1996:323)]
 who DUC-FACT-2SG.AG-baby-JOIN-pick.up-PUNC
 ('Who are you going to pick up (a baby)?')

- (15) *Shq? wa?haksa?doháe'? [Onondaga, GW, NC, speakers]
 Shq? wa?-ha-ksa?t-ohae -'?
 who FACT-3SG.M.AG-child-wash-PUNC
 ('Who (a child) did he wash?')

- (16) a. *Sqhnat asekxa?dohae'? [Cayuga, BG, RW, speakers]

- sɔhnat a-s-ksaʔt-ohae -ʔ?
 who FACT-2SG.AG-child-wash-PUNC
 ('Who (a child) did you wash?')
- b. sɔhnat asheyaʔdohaeʔ
 sɔhnat a-she-yaʔt-ohae-ʔ
 who FACT-2SG.AG.3.F/I.PAT-body-wash-PUNC
 'Who did you wash?'

The examples above, except (16b), all combine *wh*-movement of a human direct object with NI. The result is uniformly ungrammatical. Note that the incorporated noun crucially corresponds to a human noun in all the ungrammatical examples above. In the Cayuga example (17b) the incorporated noun, *yaʔ* ('body'), is not a human noun, and the corresponding *wh*-movement is licit.

As Baker notes, however, there are some instances of *wh*-movement which are compatible with NI. Consider the following examples.

- (17) Ka nikáy^Λ t-^Λ-hse-wír-a-hkw-eʔ [Mohawk (Baker 1996:323)]
 which DUC-FACT-2SG.AG-baby-JOIN-pick.up-PUNC
 'Which baby are you going to pick up?'
- (18) Gaɛnigaeʔ waʔenasgwahní:nɔ ʔʔ [Onondaga, (GW, NC, speakers)]
 kaɛnikáeʔ waʔ-s-naskw-a-hninɔ -ʔ
 which FACT-2SG-animal-JOIN-buy-PUNC
 'Which animal did you buy?'
- (19) Gaɛni:ga:ʔ asnaʔjihsgohae:ʔʔ [Cayuga, (Roronhiakehte Deer, pers. comm.)]
 kaɛnikáeʔ a-s-naʔjihsk-ohae -ʔ
 which FACT-2SG-cup-wash-PUNC
 'Which cup did you wash?'

There are also examples of full nominal phrases undergoing *wh*-movement accompanied by NI. The following sentences include instances of a *wh*-word (corresponding to which) accompanied by a nominal restriction. Since the nominal restriction is taken to be the head noun of the NP, there is now no way to account for NI under Baker's analysis. There are also examples of *wh*-phrases corresponding to what, which are also taken to be the head of the NP rather than a modifier.

- (20) a. *nwadεʔ waʔsnasgwahní:nɔʔ* [Onondaga, G.W., N.C., speakers]
nwatεʔ waʔ-s-naskw-a-hninɔʔ
 what FACT-2SG-animal-JOIN-buy-PUNC
 ‘What did you buy?’ (kind of animal presupposed)
- b. *gaɛnigáεʔ gwiʔhsgwihs waʔsnasgwahní:nɔʔ*
kaɛnikáεʔ kwiʔhskwihs waʔ-s-naskw-a-hninɔʔ
 which pig FACT-2SG-animal-JOIN-buy-PUNC
 ‘Which pig did you buy?’
- c. *Gaɛnigáεʔ gwiʔhsgwis shé:heʔ Mary waʔenasgwahní:nɔʔ*
 which pig you.think Mary she.animal-bought.it
 ‘Which pig do you think Mary bought?’
- (21) *Nahó:ten enhshnekí:raʔ* [Mohawk (Mithun & Corbett, 1999: 67)]
Nahó:ten en-hsh-nek-ihr-aʔ
 what FUT-2SG.AG-liquid-drink-PUNC
 ‘What will you drink?’

One could object at this point as argue that forms such as *nwadεʔ* (‘what’) can act as modifiers as in English (*What car did you buy?*). The following example shows that this is not possible.

- (22) **Nwadεʔ gwiʔhsgwihs waʔsnasgwahní:nɔʔ*? [Onondaga, G.W., N.C., speakers]
nwatεʔ kwiʔhskwihs waʔ-s-naskw-a-hninɔʔ
 what pig FACT-2SG.AG-animal-JOIN-buy-PUNC
 (‘What pig did you buy?’)

Moving on to unaccusatives, we see again that subjects of unaccusative verbs pattern differently. As the following examples show, *wh*-movement of a human argument is permitted, and agreement is obligatory.

- (23) a. *Sónoht eksaʔdí:yo:* [Cayuga, B.G., speaker]
sónoht e-ksaʔt-iyo:
 who 3SG.F.AG-child-nice-STAT
 ‘Who is a nice child?’
- b. **Sónoht gaksaʔdí:yo:*
sónoht ka-ksaʔt-iyo:
 who 3SG.NT.AG-child-nice-STAT
 (‘Who is a nice child?’)

- (24) Shq:ʔ eksaʔdiyóh? [Onondaga, G.W., N.C., speakers]
 shq:ʔ e-ksaʔt-iyo-h
 who 3SG.F.AG-child-be.good-STAT
 'Who is a nice girl?'

The following chart summarizes the properties of NI of unaccusative subjects and objects. Crucially, only the incorporation of objects behaves as predicted by Baker's model. The incorporation of unaccusative subjects presents a challenge. This asymmetry is also not predicted by lexicalist analyses (Rosen 1989), which have nothing to say about these subject/object asymmetries.

Table 1. Subject-Object Asymmetries in Northern Iroquoian NI

	Subject	Object
NI + Agreement	yes	no
<i>wh</i> -mvt inanimate DP	yes	yes
<i>wh</i> -mvt animate DP	yes	no

4. Discussion

The facts concerning *wh*-movement and NI require us to rethink Baker's idea that NI is derived by head movement. Note that the following ideas are developed in Barrie (2015), so I merely touch on the relevant facts here. Recall that the equivalents of which can appear with an incorporated noun, (17) - (20). Baker argues that these examples are not problematic for his theory. He proposes the structure in (25) for *which*-nominal phrases. Thus, the object in (19) has the structure in (25). The *wh*-word, *which*, undergoes *wh*-movement to the left edge of the clause and the noun head undergoes head movement, left-adjoining to the verb.

- (25) [NP which [NP [N cup]]]

What is problematic for Baker, however, are the data in (21) and (22). Clearly a full *wh*-phrase can exist alongside an incorporated noun. The solution in Barrie (2015) was to propose the following structure. The incorporated noun (*nP*) and the double (DP) originate in the same position in a single large phrase, which I represent as follows for expository purposes. Thus, the DP, if it is a *wh*-phrase,

can undergo *wh*-movement, while the *nP* can undergo NI.

(26) [XP *nP* [X' X DP]]

The core issue not explained by the MVC is the pair of Subject/Object asymmetries discussed in detail here. The agreement facts presented here strongly suggest separate subject and object probes are needed to account for the patterns described here, contra the proposal in Béjar and Rezac (2009). There is currently no agreed upon mechanism for agreement in Northern Iroquoian. Indeed there is currently no proposal to account for the difference between subject and object agreement and its interaction with aspect.⁹ I offer no proposal here, but merely express the need to add the two asymmetries here to the general discussion on this issue. Going forward, future analyses of NI in Northern Iroquoian (and in language in general) must address these differences. Note that these differences are only visible with human subjects and objects. While incorporation of a human object blocks object agreement, incorporation of a human subject does not. This suggests that the probe for subject agreement is still active after NI but that the probe for object agreement is satisfied by NI alone. I do not pursue this idea here, however. I note only that approaches that deny any notion of configurational architecture to Northern Iroquoian grammar (ex., Koenig & Michelson 2015) will have trouble accounting for these asymmetries.

5. Summary

This squib has discussed two asymmetries in NI in Northern Iroquoian, namely (i) that agreement is obligatory with incorporated human subjects but is absent with incorporated human objects, and (ii) that an incorporated human subject can corefer to a *wh*-phrase, but an incorporated human object cannot. The core objective of this paper was to introduce these two asymmetries into the general discourse on NI and on Northern Iroquoian grammar, as they have largely been ignored. Existing proposals for NI (Baker 1996, Baker et al. 2005, Barrie 2015) fail to account for these asymmetries. The goal of this paper was not to propose a solution; however, it was suggested that separate subject and object probes may be necessary to account for the facts discussed here.

⁹ The reader may recall that intransitive clauses in the stative aspect appear with object agreement rather than subject agreement.

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