Subject/Object Asymmetries in Northern Iroquoian Noun Incorporation[*]

Abstract: Two subject/object asymmetries are reported for Northern Iroquoian Noun Incorporation: one previously observed and one reported here for the first time. It has been previously observed the when the subject of an unaccusative is incorporated, agreement with the subject is found on the verb, in contrast to Baker's famous observation in Mohawk that agreement and noun incorporation are in complementary distribution when the object is incorporated. The novel asymmetry reported here is that *wh*-movement is possible only with incorporated subjects, and not with incorporated objects. I propose that Northern Iroquoian languages have distinct subject and object agreement Probes (contra Béjar & Rezac, 2009), that differ in their prespecification (in the sense of Béjar, 2003). These two distinct Probes account for the two asymmetries noted here. This analysis has implications for theories of polysynthesis.

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 discuss here two seldom mentioned asymmetries found in NI in Northern Iroquoian.[1]

(1) a. NI and agreement: absent with objects, obligatory with subjects

b. NI and *wh*-movement: restricted on objects, unrestricted on subjects

As Baker (1996) discusses at length, object agreement and NI of objects are in complementary distribution. However, when the subject of an unaccusative undergoes NI, agreement is

[*] I wish to thank…

[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).

obligatory. This is the first asymmetry listed above. Baker also discusses NI and *wh*-movement, where he notes that a human nominal cannot both be the target of *wh*-movement and NI. This holds only for objects, however, and not for unaccusative subjects. Human unaccusative subjects can undergo NI and *wh*-movement. This is the second asymmetry listed above. I offer a unified explanation of these two asymmetries that is rooted in differing Probes for subject and object agreement. This study has clear implications for clausal agreement in Northern Iroquoian and for the analysis of polysynthesis.

The core ingredients in this account for the asymmetries in (1) are differing subject and object agreement Probes and the feature structure of nominals. I discuss these in turn. First, I assume distinct subject and object agreement Probes on the basis of the Northern Iroquoian agreement paradigm, to be clarified below. Further, I assume that these Probes differ in their pre-specified structures (Béjar, 2003, Béjar & Rezac, 2009), and, crucially, that they allow for agreement to fail (Preminger, 2014). While the object Probe is satisfied by the incorporated noun, the subject Probe is not. The subject Probe agrees with the full DP double of the incorporated noun. This gives rise both to subject agreement with NI and to the possibility of *wh*-movement with subject NI.

The second core ingredient lies in the details of the feature geometry proposed for φ-features. Specifically, I propose that the agreement inflection system of Northern Iroquoian includes both person and gender. Thus, gender is not part of the noun classification system as in many European languages, for example. In line with this approach, I propose that the gender feature, g, appears high in the feature hierarchy. In particular, it dominates the person feature, π, which encodes the discourse participants, 1st and 2nd person. Although somewhat unconventional,

this arrangement of features captures that fact that π entails the presence of g, but not vice versa, a fact which is explicated in the forthcoming discussion.

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

2 Background

2.1 Background on 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 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 rare. Although distinct agreement morphemes can usually be discerned for subject, object and number (Chafe, 1960, Lounsbury, 1949), they are typically represented as atomic entities by most Iroquoianists for ease of illustration, a practice I will follow here, unless more precise detail is required. Consider the following partial paradigm for Onondaga.[2] As mentioned, agreement is found for human

[2] The following abbreviations are used in this paper: AG – agent, BEN – benefactive, CAUS – causative, CIS – cislocative, DFLT – default, DIM – diminutive, EPEN – epenthetic, EXCL – exclusive, F – feminine, FACT – factive (a type of mood), F/I – feminine indefinite, HAB – habitual, INCL – inclusive, 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, NZLR – nominalizer, PAT – patient, PUNC – punctual (akin to perfective aspect). SG – singular, SEC.HAB – secondary habitual, SRFL – semireflexive, STAT – stative.

arguments only. Thus, example (2)a. is formally intransitive.[3] In examples (2)b. and d. distinct agreement morphemes can be teased apart for the subject and object; however, in example (2)c. both the subject and the object are represented by a portmanteau morpheme.[4]

(2) a. hagę́haʔ
ha- kę -haʔ
3.SG.M.AG- see -HAB
'He sees it.'

b. hákgęhaʔ
ha- ak- kę -haʔ
3.SG.M.AG- 1.SG.PAT- see -HAB
'He sees me.'

c. gǫgę́haʔ
kǫ- kę -haʔ
1.SG.AG:2.SG.PAT- see -HAB
'I see you.'

d. hesgę́haʔ
he- s- kę- haʔ
3.SG.M.PAT- 2.SG- 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. 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] 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).

(3) a. Nwadę́ʔ waʔségę́ʔ?
nwatę́ʔ waʔ-s-e-kę-ʔ
what FACT-2.SG.AG-EPEN-see-PUNC
'What did you see?'

b. Gaęnigaę́ʔ waʔségę́ʔ?
kaęnikaę́ʔ waʔ-s-e-kę-ʔ
which FACT-2.SG.AG-EPEN-see-PUNC
'Which one (thing) did you see?'

c. Shǫ́ʔ waʔshégę́ʔ?
shǫ́ʔ waʔ-she-kę-ʔ
who FACT-2.SG.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 oyɛ́kwaʔ
waʔ- ha- hninu- ʔ neʔ o- yɛkw -aʔ
FACT- 3.SG.M.AG - buy- PUNC NE NPREF- tobacco -NFS
'He bought tobacco.'

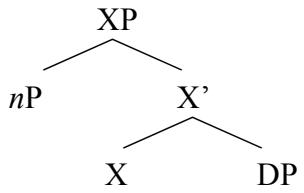
b. waʔhayɛ́kwahninúʔ
waʔ- ha- yɛkw- a- hninu- ʔ
FACT- 3.SG.M.AG - tobacco- JOIN- buy- PUNC
'He bought tobacco.'

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) appears to break up the consonant cluster.

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, 2015a, 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 an *n*P. Furthermore, Barrie (2015a) has argued that in doubling constructions the incorporated noun (*n*P) and the double (DP) originate in the same position in a single large phrase, which I represent as follows for expository purposes.[5]

(5)



Crucially for the forthcoming analysis the incorporated noun, *n*P, raises to a position inside the verbal complex, which is higher than the DP double. Thus, when the Probe on *v* or on T searches downward for a Goal, it always first finds the incorporated noun, if the incorporated noun bears matching features. This fact will be important in section 4.

2.2 Theoretical Background

2.2.1 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

[5] The precise nature of XP is not relevant to the discussion here. Note that in arguing for such a structure, Barrie (2015a) compares doubling in NI to resumption, as discussed by Boeckx (2003) and clitic doubling, as discussed by Uriagereka (1995), both of whom propose a similar structure. Finally, Barrie (2017) adduces additional support for this structure in Ott's (2015) analysis of split topics in German.

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 original Mohawk examples (1996: 21), with square brackets added to indicate the word that contains the verbal root.

(6) a. * [Ra-núhwe'-s] ne owirá'a.
3.SG.M.AG-like-HAB NE baby
('He likes babies.')

b. [Shako-núhwe'-s] (ne owirá'a).
3.SG.M.AG:3.PL.PAT-like-HAB NE baby
'He likes them (babies).'

c. [Ra-wir-a-núhwe'-s].
3.SG.M.AG-baby-JOIN-like-HAB
'He likes babies.'

d. *? [Shako-wir-a-núhwe'-s].
3.SG.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 (6)a, the subject is morphologically represented on the verb, but the object is not, in violation of the MVC. In (6)d, 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).[6] We return to this point in the conclusion.

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

As introduced above, there are systematic instances of NI and agreement in Northern Iroquoian, which presents a potential problem for MVC.[7] 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. The primary goal of this paper is to provide such an explanation.

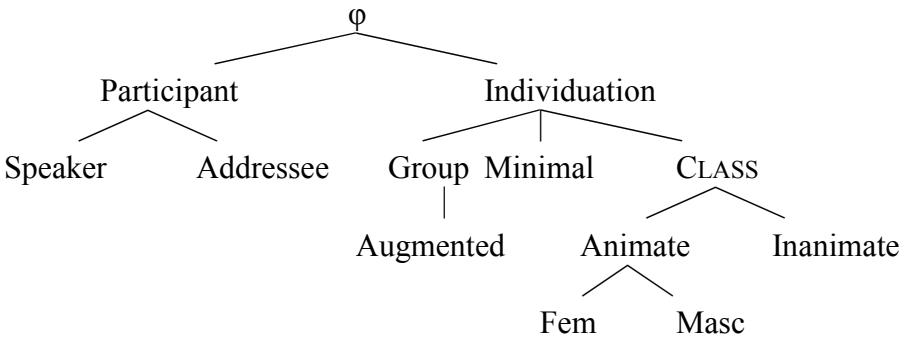
2.2.2 Feature Geometries

Based on proposals for the organization of phonological features, several researchers have proposed that morpho-syntactic features are organized into a feature geometry (Cowper, 2005, Cowper & Hall, 2005, Harley & Ritter, 2002, McGinnis, 2005). Specifically, φ-features are argued to be arranged in a geometry, although precise details vary from one proposal to the next. This lack of uniformity, however, is not a defect of the overall approach. Rather, Cowper (2005) presents a comparative analysis of tense and aspect in English and Spanish that capitalizes on differing feature geometries to capture differences in the tense/aspect system of the two languages. Thus, cross linguistic differences can be captured by positing different arrangements of features within the geometry.

[7] 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 Southern Tiwa does, does not help, as we lose the generalization that NI and agreement are incompatible with object NI. See Barrie (2015a) for further critique against Baker, Aranovich & Golluscio (2005).

Returning to the current discussion, we note that φ-features are divided into π, #, and gender (g). Consider the following the following feature geometry, as proposed by Harley & Ritter (2002).

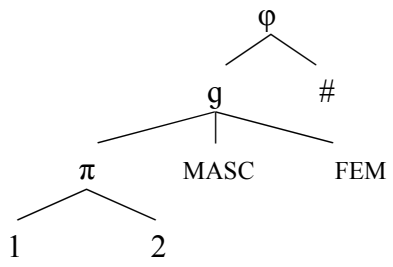
(7)



Note that the Participant projection corresponds roughly to person features, while the Individuation projection corresponds to number features (and class features). This distinction is captured in the proposed geometry in (8). Below we will see that person and number features are probed separately in Iroquoian, thus motivating the split at the top of the geometry. The participant node (represented by π here for 'person') is a dependent of g (gender). Although this may appear unconventional at first sight, note that gender in Northern Iroquoian is not used in noun classification, but rather interacts with agreement along with person. I note incidentally that there is no robust noun classification system in Iroquoian, however, in Onondaga there is a system of classification whereby nouns are distinguished by whether they're natural or man-made (Woodbury, 2003). The natural/man-made distinction is marked on the noun, but is not reflected by the verbal inflection. I will not consider class features further here. The dependency relation shown in (8) reflects the fact that 3rd person forms lack a specification for π, but do have a specification for gender.[8]

[8] The representation of gender Northern Iroquoian is not fully investigated here. For a discussion on gender in Oneida, see Michelson (2015) and Abbott (1984)

(8)



g = gender

Addressee (2), Speaker (1)

The internal composition of the π node does not matter for our discussion here. Nevertheless I note that Northern Iroquoian languages have morphological and syntactic reflexes of a clusivity distinction, so both 1 and 2 are likely necessary here.

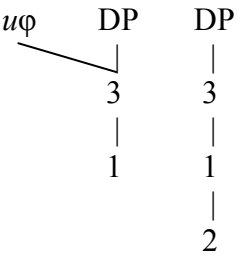
2.2.3 Cyclic Agree

Agreement in many European languages patterns consistently such that all person/number combinations form a paradigm that can be neatly captured by assuming that an unspecified φ-Probe on T targets the φ-features on the subject. Once *u*φ on T is valued, the appropriate agreement morpheme is inserted. Recent investigations into other languages, however, differ significantly from this pattern. Asymmetric agreement patterns in Basque, Georgian, and Mayan languages, among others, have necessitated a different approach. Researchers have proposed a more nuanced approach involving pre-specified Probes (Béjar, 2003, Béjar & Rezac, 2009) along with the notion that agreement can fail (Preminger, 2014). I present the basic properties of this model of agreement here.

Probes may be specified according to a feature hierarchy (as in the previous section). A highly specified probe searches for a similarly specified goal, but can settle for a less specified goal. Consider the following example, where the feature hierarchy 3-1-2 is an abbreviation of π-participant-addressee). Crucially, this differs from the geometry in (7) above; however, it is typical of most analyses along these lines, so I employ it in the illustrations below. The first example has a single Probe on T, which is unspecified for any features below *u*φ. In the

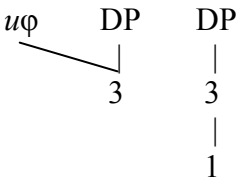
examples throughout this section the first DP is the subject or external argument and the second DP is the object or internal argument. This arrangement gives rise to a full subject agreement paradigm with no object agreement, which is the system is found in many European languages. In the following two examples, the agreement that appears on T is 1st person and 3rd person, respectively.

(9) a.



φ → 1st π

b.



φ → 3rd π

In both cases the uninterpretable φ Probe on T, being completely unspecified, is valued by the subject. The set of φ-features of the subject is copied onto the Probe giving rise to subject agreement of the kind found in English, French, Italian, and so forth.

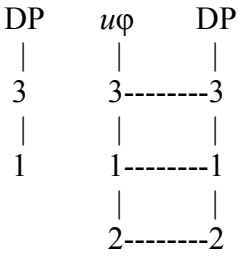
Moving along, we see that the motivation for cyclic Agree and structured Probes is found in omnivorous agreement found in a number of languages and language families such as Georgian, Algonquian, Basque, and so forth. Consider the following Nishnaabemwin (Algonquian) example, which shows preferential agreement with 2nd π (Valentine, 2001: 270), regardless of whether it's the subject or the object that bears 2nd π.

(10) a. g-waabam-i
2-see-DIR.LOC
'You see me.'

b. g-waabm-in
2-see-INV.LOC
'I see you.'

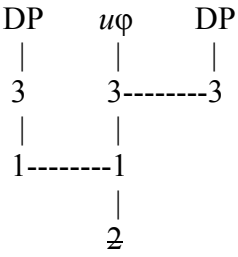
This pattern is typical of most if not all Algonquian languages. In their analysis of these facts, Bejar & Rezac (2009) propose a fully pre-specified *u*φ Probe on *v*. Consider the following derivations.

(11) a.



φ → 2nd π (with object)

b.



φ → 1st π (with subject)

In (11) *v* contains the *u*φ Probe and merges with VP, containing the object. The Probe attempts to match as many features as possible on the object. In example (11)a. the Probe fully matches the object, and 2nd π agreement with object is found. This derivation corresponds to example (10)b. In example (11)b., the Probe matches 3rd person on the object and exhausts the interpretable features of the object. It then waits until subject is merged and proceeds to match 1st person on subject. The 2nd person Probe is deleted as it fails to match with an interpretable φ-feature. This is indicated as a cross-out on the 2 Probe.

Also, recent proposals suggest that person (π) and number (#) are probed separately (Béjar & Rezac, 2009, Preminger, 2014). In this section I discuss how to implement a feature geometric analysis in Northern Iroquoian, concentrating on π and ɡ features. For an analysis of # features see Barrie (2016b).

To recapitulate, the forthcoming analysis will make use of feature geometries and articulated Probes constrained by Cyclic Agree. Additionally, I discussed Baker's Morphological Visibility Condition and how it captures polysynthetic languages from non-polysynthetic

languages. In general terms, in polysynthetic languages the verb must assign a theta-role to a morpheme internal to the verb.

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.

(12) 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).[9]

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[9] Koenig and Michelson (2008) present the following as counter examples to this generalization.

i. waʔ- shakoti- ksaʔt- áks(ʌ)- a- ht- eʔ
FACT- 3.AG:3.SG.F.PAT- child- be.bad-EPEN- CAUS- PUNC
'They spoiled her, the child.'

ii. waʔ- khey- atʌloʔsl- úny- ʌ- ʔ
FACT- 1.SG.AG.3.SG.F.PAT- friend- make- BEN- PUNC
'I made friends with her.'

(13) a. waʔhaksdęʔtshehaeʔ neʔ Reginald. [Onondaga, N.C., G.W., speakers]
waʔ- **ha-** kstęʔ- tshR- ohae- ʔ neʔ Reginald
FACT- **3.SG.M.AG-** elder- NZLR- wash- PUNC NE Reginald
'He washed Reginald.'

b. * waʔhǫwaksdęʔtshehaeʔ neʔ Reginald
waʔ- **hǫwa-** kstęʔ- tshR- ohae- ʔ neʔ R.
FACT- **3.SG.M.AG:3.SG.M.PAT-** elder- NZLR- wash- PUNC NE R.
('He washed Reginald.')

(14) a. ahaksaʔdóhae:ʔ neʔ eksá:ʔah. [Cayuga, Rohonhiakehte Deer, pc]
a- **ha-** ksaʔt- ohae -:ʔ neʔ eksa:ʔah.
FACT- **3.SG.M.AG-** child- wash -PUNC NE girl
'He washed the girl.'

b. * asahgoksaʔtóhae:ʔ neʔ eksá:ʔah.
a- **shako-** ksaʔt- ohae -:ʔ neʔ eksa:ʔah.
FACT- **3.SG.M.AG:3.PAT-** child- wash -PUNC NE girl
('He washed the girl.')

(15) lotiwilanʌ́steʔ [Oneida (Michelson & Doxtator, 2002: 579)]
loti- wil- a- nʌste -ʔ
3.M.PL.PAT- baby- JOIN- treasure -STAT
'They treasure their child.'

(16) a. **Ra-** wir- a- nuhwe' -s. [Mohawk (Baker, 1996: 21)]
3.SG.M.AG- baby- JOIN- like -HAB
'He likes babies.'

b. *? **Shako-** wir- a- nuhwe' -s.
3.SG.M.AG- baby- JOIN- like -HAB
('He likes babies.')

c. **Yako-** ksa- ht- a- yʌ. (Baker, 1996: 318)
3.SG.F.PAT- child- NZLR- JOIN- have
'She has children.'

Note, however, the presence of the benefactive and the causative marking. I assume this morphology makes available an additional Probe, thereby increasing the valency of the predicate. A more detailed investigation of these facts will have to await further research.

d. Ratonkwe li:saks (Mithun & Corbett, 1999:61)
ra- at- onkwe't- isak -s
3.SG.M.AG- SRFL- person- seek -HAB
'He hunts people.'

As mentioned, however, agreement is found when the single argument of an unaccusative is incorporated. Consider the following examples.[10]

(17) ęksaʔdí:yo: Mary [Cayuga, B.G., R.W., speakers]
ę- ksaʔt- iyo -: Mary
3.SG.F.AG- child- be.good -STAT Mary
'Mary is a nice girl.'

(18) a. yakukweʔtiyó [Oneida, (Koenig & Michelson, 2015:fn 9)]
yak- ukweʔt- iyo -ˊ
3.SG.F/I.PAT- person- be.good -STAT
'She is a good person

b. laksaʔtaksʌ (Michelson & Doxtator, 2002: 490)
la- ksaʔt- aksʌ -Ø
3.SG.M.AG- child- be.bad -STAT
'He's a bad child.'

[10] Baker (1996: 317) includes data such as the following that are at odds with the generalization above. Crucially, he reports that NI of the subject of an unaccusative fails to show agreement with the subject. Instead, pleonastic neuter agreement appears.

i. T- a'- ka- wír- ʌ' -ne'
CIS- FACT- 3.SG.NT.AG- baby- fall -PUNC
('The baby fell.')

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.

(19) a. haksaʔdiyóh [Onondaga, N.C., G.W., speakers]
ha- ksaʔt- iyo -ʹh
3.SG.M.AG- child- good -STAT
'He is a good boy.'

b. Gǫdiksaʔdówanęʔs (Woodbury, 2003: 670)
kǫti- ksaʔt- owanę -ʔs
3PL.F.PAT- child- be.large -SEC.HAB
'big girls/heavy-set girls'

c. haksaʔdahseʔáh (Woodbury, 2003: 670)
ha- ksaʔt- ahse -ʔ -áh
3.SG.M.AG- child- be.new -STAT -DIM
'He is a young man.'

(20) **r-** ukwe't- í:yo [Mohawk, (Mithun, 1984: 868)]
3.SG.M.AG- person- be.nice
'He is a good person.'

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 Baker's MVC. Note, however, that this is not necessarily a fatal problem for the MVC. According to the MVC, either or agreement or NI must take place for an argument in a polysynthetic language. Crucially for the MVC *at least* one or the other must take place. 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. As a final point, regardless of the viability of the MVC, the fact that unaccusatives and transitives consistently pattern in the way 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, we discuss one piece of data Baker used to support his claim, bolstered by similar data from other Northern Iroquoian languages.

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

(22) * Shǫʔ waʔhaksaʔdoháeʔ? [Onondaga, GW, NC, speakers]
Shǫʔ waʔ- ha- ksaʔt- ohae -ʔ?
who FACT- 3.SG.M.AG- child- wash -PUNC
('Who (a child) did he wash?')

(23) a. *Sǫhnat aseksaʔdohaeʔ? [Cayuga, BG, RW, speakers]
sǫhnat a- s- ksaʔt- ohae -ʔ?
who FACT- 2.SG.AG- child- wash -PUNC
('Who (a child) did you wash?')

b. sǫhnat asheyaʔdohaeʔ
sǫhnat a- she- yaʔt- ohae -ʔ
who FACT- 2.SG.AG:3.F/I.PAT- body- wash -PUNC
'Who did you wash?'

The examples above (except (23)b.) 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 (23)b. the

incorporated noun, *ya?t* ('body'), is not a human noun, and the corresponding *wh*-movement is licit. I return to this contrast below, near the end of section 4.

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

(24) Ka nikáyʌ t-ʌ-hse-wír-a-hkw-e'? [Mohawk (Baker1996:323)]
which DUC-FACT-2.SG.AG-baby-JOIN-pick.up-PUNC
'Which baby are you going to pick up?'

(25) Gaęnigae? wa?enasgwahní:nǫ ??
[Onondaga, (GW, NC, speakers)]

kaęnikáe?	wa?-	s-	naskw-	a-	hninǫ -?
which	FACT-	2.SG-	animal-	JOIN-	buy -PUNC

'Which animal did you buy?'

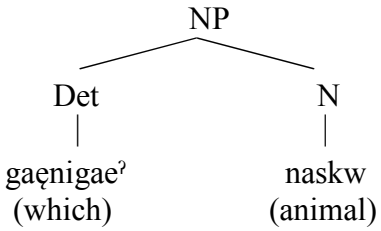
(26) Gaęni:ga:? asna?jihsgohae:??
[Cayuga, (Roronhiakehte Deer, pc)]

kaęnikáe?	a-	s-	na?jihsk-	ohae	-?
which	FACT-	2.SG-	cup-	wash	-PUNC

'Which cup did you wash?'

Baker argues that these examples are not problematic for his theory since the *wh*-element corresponding to *which* adjoins to NP and modifies the noun, which undergoes NI. Thus, the object NP in (24) has the following structure. The *wh*-determiner undergoes *wh*-movement to the left edge of the clause and the noun head undergoes head movement, left-adjoining to the verb.

(27)



What is problematic for Baker, however, are the following data. Observe that there are examples of full NPs undergoing *wh*-movement accompanied by NI.[11] The following sentences

[11] Baker (1996: 325) reports examples such the ones in (28)a. and (29) as ungrammatical. Here is a specific example that Mithun and Corbett (1999) discuss.

include instances of a *wh*-determiner (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.

(28) a. nwadę̀ʔ waʔsnasgwahní:nǫʔ [Onondaga, G.W., N.C., speakers]
nwatę̀ʔ waʔ- s- naskw- a- hninǫ- ʔ
what FACT- 2.SG- animal- JOIN- buy- PUNC
'What did you buy?' (kind of animal presupposed)

b. gaę̀nigáeʔ gwíhsgwihs waʔsnasgwahní:nǫʔ
kaę̀nikáeʔ kwihskwihs waʔ- s- naskw- a- hninǫ- ʔ
which pig FACT- 2.SG- animal- JOIN- buy- PUNC
'Which pig did you buy?'

c. Gaę̀nigaeʔ gwíhsgwis shé:heʔ Mary waʔenasgwahní:nǫ ʔ?
which pig you.think Mary she.animal-bought.it
'Which pig do you think Mary bought?'

(29) Nahó:ten enhshnekí:ra'? [Mohawk (Mithun & Corbett, 1999: 67)]
Nahó:ten en-hsh-nek-ihr-a'
what FUT-2.SG.AG-liquid-drink-PUNC
'What will you drink?'

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

(30) * Nwadę̀ʔ gwisgwis waʔsnasgwahninǫ́? [Onondaga, G.W., N.C., speakers]
nwatę̀ʔ kwiskwis waʔ-s-naskw-a-hninǫ-ˊ
what pig FACT-2.SG.AG-animal-JOIN-buy-PUNC
('What pig did you buy?')

---

i. * Nahótʌ wa- hse- ks- óhare -e'?
what FACT- 2.SG.AG- dish- wash -PUNC
('What did you dish-wash?')

Mithun and Corbett argue that the verb in i. is only ever used as an intransitive verb, so cannot host the interrogative DP as an object. Regardless, the data here show that *what* questions and *which NP* questions are both available with non-human incorporated objects.

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.

(31) a. Sǫ́noht eksaʔdí:yo: [Cayuga, B.G., speaker]
sǫnoht e-ksaʔt-iyo-:
who 3.SG.F.AG-child-nice-STAT
'Who is a nice child?'

b. * Sǫ́noht gaksaʔdí:yo:
sǫnoht ka-ksaʔt-iyo-:
who 3.SG.NT.AG-child-nice-STAT
('Who is a nice child?')

(32) Shǫ:ʔ eksaʔdiyóh? [Onondaga, G.W., N.C., speakers]
Shǫ:ʔ e- ksaʔt- iyo -h
who 3.SG.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.

	Subject	Object
NI + agreement	yes	no
wh-movement of inanimate DPs	yes	yes
wh-movement of animate DPs	yes	no

In the following section, I discuss the generalizations above and propose a solution to this subject/object asymmetry.

4 Analysis

This section discusses the generalizations above, in which we observed that NI behaves differently with the incorporation of unaccusative subjects versus objects. The analysis will rest on the assumption that Northern Iroquoian probes subjects and objects separately. The first half of the discussion will justify this claim, and the second half will discuss the precise nature of these agreement probes in light of Béjar's (2003) theory of structured probes.

4.1 Agreement in Northern Iroquoian

I argue here that Northern Iroquoian has two separate person probes, one for subject and one for object. In addition, there is one general number probe, which targets either the subject or the object (Barrie, 2016b), in line with the theory of Cyclic Agree (Béjar & Rezac, 2009, Rezac, 2004). The number probe has been previously examined and does not play a role in the discussion here, so I leave the reader to consult the references above. The proposal that Northern Iroquoian has two separate person probes requires some justification, however, especially in light of the fact that Béjar & Rezac (2009) argue for a similar analysis for Mohawk person agreement with only one person probe. Thus, I start with their analysis before moving on to a fuller picture of agreement in Northern Iroquoian.

Béjar & Rezac (2009) propose a single Probe on *v* to account for the agreement facts in Mohawk. To facilitate comparison between their proposal and the current one, I show only the Onondaga agreement paradigm, taken from Barrie (2015b). They concentrate on the following forms. The agreement morphemes are shown in boldface in their surface forms. Under the surface forms is shown a partial morphological breakdown to help the reader abstract away from morphophonological processes such as vowel epenthesis and obstruent voicing.

(33)

gǫgęhaʔ	**he**gęhaʔ	**hes**gęhaʔ	
kǫ-kęhaʔ	**he-**kęhaʔ	**hes-**kęhaʔ	
I:you-see	I:him-see	you:him-see	
I see you.	I see him.	You see him.	
sgegęhaʔ	**hák**gęhaʔ	**hyá**gęhaʔ	**ho**gęhaʔ
sk-kęhaʔ	**hak-**kęhaʔ	**hya-**kęhaʔ	**ho-**kęhaʔ
you:me-see	he:me-see	he:you-see	him-see
You see me.	He sees me.	He sees you.	It sees him.

Béjar & Rezac propose the following morphological breakdowns for the agreement markers. In addition to the single agreement slot afforded by the Probe on *v*, Béjar & Rezac also argue that an added Probe can appear on *v* in cases where the internal argument exhausts the Probe before the internal argument can enter into an agreement relation with it (the so-called inverse contexts). In the following schemata the reflex of agreement with the added Probe is underlined.

(34)

kǫ: portmanteau for 1>2 'I see you.'	he: 1[12] 'I see him.'
hes: 2 'You see him.'	s-k: 2-1 'You see me.'
ha-k: 3.INV-1 'He sees me.'	(h)s-a: 2-3.INV 'He sees you.'
h-wa: 3-DFLT (h-wa > ho) 'It sees him.'	

Let us consider the agreement paradigm in more detail. I propose, along with previous researchers on Iroquoian, that subject and object agreement comprise distinct morphemes (Chafe, 1960, Lounsbury, 1949). Consider the following examples. Again, the second line shows the component morphemes with the morphophonological processes undone for ease of comparison.

[12] Béjar & Rezac list the single agreement morpheme in *I see him* as [k] in Mohawk. I assume this is a typographical error. The correct Mohawk form has the two allomorphs [ri] and [hi]. This has consequences for their analysis, which I do not pursue here.

Consider the following first and second person forms. Two points are in order here. First, the perfect forms appear with object agreement in intransitives. Second, the inclusive/exclusive distinction is neutralized in object agreement forms.

(35)

hgęhaʔ	yagnigęhaʔ	dwagęhaʔ
k-kęhaʔ	yak-ni-kęhaʔ	t-wa-kęhaʔ
1-see	1.EXCL-DU-see	1.INCL-PL-see
‘I see it.’	‘We two see it.’	‘You all and I see it.’
wahgęh	yǫgnigęh	sgęhaʔ
wak-kęh	yǫk-ni-kęh	s-kęhaʔ
1.PAT-see	1.PAT-DU-see	2-see
‘I have seen it.’	‘We two have seen it.’	‘You see it.’

From the forms above we can deduce the following vocabulary items.

(36)

k ↔ [1] / [AG]	yak ↔ [1] / [AG, >1]
s ↔ [2] / [AG]	wak ↔ [1] / [PAT]
t ↔ [1,2] / [AG]	yǫk ↔ [1] / [PAT, >1]

Consider now the following transitive forms. Note that Chafe (1960) indicates that [sh] is an allomorph of the 3rd person masculine agreement marker in Seneca, a closely related Northern Iroquoian language. I adopt the same analysis here.

(37)

sgegęhaʔ	shagní:gęhaʔ	shední:gęhaʔ
s-k-kęhaʔ	sh-yak-ni-kęhaʔ	sh-t-ni-kęhaʔ
2-1-see	3.M-1.EXCL-DU-see	3.M-1.INCL-DU-see
‘You see me.’	‘We two see him.’	‘You and I see him.’
shǫgní:gęhaʔ	shesní:gęhaʔ	háhgęhaʔ
sh-yǫk-ni-kęhaʔ	sh-s-ni-kęhaʔ	h-wak-kęhaʔ
3.M-1.ACC-DU-see	3.M-2-DU-see	3.M-1.ACC-see
‘He sees us two.’	‘He sees you two.’	‘He sees me.’

What we observe is distinct agreement markers for the subject and the object with no distinct morphology for an added Probe.

Let us consider for a moment Béjar & Rezac's proposal for the single agreement Probe in Mohawk. They assume the participant features are organized in a dominance relation as follows. The numerals in their Probe simply indicate the corresponding person features.

(38) [*u*-3-2-1]

The form in (40)a, *I see you*, and the first form in (37), *you see me*, are derived as follows in Béjar & Rezac's analysis. In the first example, the internal argument matches and agrees with the first two features on the Probe, [*u*3] and [*u*2]. When the external argument is merged in Spec*v*P, the remaining feature undergoes cyclic Agree in their terms, matching and agreeing with the remaining [*u*1] feature. In this case, a single Probe successively matches two distinct arguments, and a portmanteau morpheme is inserted. In the second case the Probe features are exhausted by the internal argument and an added Probe is inserted to match and agree with the external argument. Note here that two distinct morphemes are inserted.

(39)

EA	*v*	IA	EA	*v*	IA
[3]	[*u*3] —[3]		[3] —	[*u*3]	[*u*3] —[3]
[2]	[*u*2] —[2]		[2] —	[*u*2]	[*u*2] —[2]
[1] —	[*u*1]			~~[*u*1]~~	[*u*1] —[1]

The analysis is problematic in a few regards. First, consider the issue of portmanteau morphology within the agreement markers. I agree with Béjar & Rezac that the 1st > 2nd marker is a portmanteau morpheme; however, there are other portmanteaux that do not fall out from their proposal. Specifically, the internal argument in (40)b exhausts the available features for the external argument, thereby requiring an added Probe. This bleeds the environment for portmanteau morphology that Béjar & Rezac proposed.

(40) a. gǫgęhaʔ
kǫ-kęhaʔ
1:2-see
'I see you.'

b. hyágęhaʔ
hya-kęhaʔ
3.M:2-see
'He sees you.'

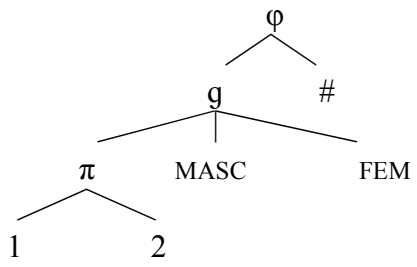
The second problem was alluded to above, namely that there are many forms in which the internal argument does not exhaust the set of features on the Probe for the external argument. Under their approach, such forms predict preferential agreement with the more highly specified argument (or portmanteau morphology as discussed above). What we observe, however, is near consistent agreement with both arguments, regardless of which one is more specified. Observe in example (37) there are several verb forms in which the external argument is less specified than the internal argument, nevertheless, two distinct agreement morphemes are found.

To recap, distinct subject and object agreement markers are generally found in Northern Iroquoian, save for a few portmanteau forms. Given the independence of subject and object agreement, I conclude that there are distinct subject and object agreement markers. Furthermore, Béjar & Rezac's analysis has nothing to say about the subject/object asymmetries presented here.

4.2 Analysis

Having established distinct subject and object agreement Probes in the previous section, I exploit this separation of duties to account for the subject/object asymmetries discussed above. Recall the proposed structure of the φ-feature hierarchy.

(41)



Given the differences in the agreement and noun incorporation data discussed above, I propose that the subject and object agreement Probes differ in their pre-specification (in the sense of

Béjar). Suppose, departing from Barrie (2012) that the agreement Probe for the object is a bare [φ] feature and that the agreement Probe for the subject is pre-specified as [φ-g].

The final ingredient in the analysis concerns the different between human noun roots and non-human noun roots. Barrie (2016a) presents data on ellipsis of human predicate nouns and of other predicates. He concludes that human noun roots differ from other roots in that they are obligatorily associated with an interpretable [H] feature that is specified for gender. Here are some of the data from Barrie's analysis:

(42) John aha:k neˀ swahyo:waˀ, neˀ hęˀne:ˀ Bill/Mary/i:
John a-ha-k-Ø neˀ swahyo:waˀ, neˀ hęˀne:ˀ Bill/Mary/i:
John FACT-3.SG.M.AG-eat-PUNC NE apple and also Bill/Mary/I/we
'John ate an apple, and so did Bill/Mary/I/we.'

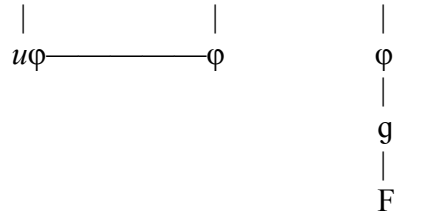
(43) John haksá:ˀah, neˀ hęˀne:ˀ Bill/*Mary/i:
John ha-ksaˀ-ah, neˀ hęˀne:ˀ Bill/*Mary/i:
John 3.SG.M.AG-child-NSF, and also Bill/*Mary/I/we
'John is a child, and so is Bill/*is Mary/am I/are we.' (speaker must be male)

This [H] feature was based on an ad hoc adaptation of Ritter and Wiltschko's (2015) use of this feature to explain certain syntactic reflexes of humanness in the syntax. Crucially, Barrie's use of this feature differed significantly of the original use in Ritter and Wiltschko. Instead, I propose that bare human nouns have a bare [φ] feature, allowing the capacity of refined phi features, which are encoded on higher projections. Crucially, only human nouns appear with an *n* that sports a [φ] feature.

We are now in a position to provide a derivation for the NI data above, which links together the properties illustrated. We start with object incorporation of a human root *ksaˀt* ('child'). Recall example (13), repeated here as (44). As a human noun root, *ksaˀt* appears with a bare [φ] feature. This feature is able to value the [*u*φ] Probe on *v*.

(44) Waʔ- **ha-** ksaʔt -ohae -ʔ neʔ Rosie. [Onondaga]
FACT- **3.SG.M-** child -wash -PUNC NE R.
'He washed (the child) Rosie.'

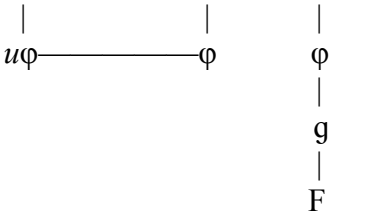
(45) [$_{vP}$ *v* [$_{VP}$ V [$_{nP}$ ksaʔt]]]] [$_{DP}$ Rosie]



In this derivation, the full DP, *Rosie*, is not agreed with. Further, there is no Vocabulary Item that matches the bare [φ] feature, hence the appearance of no agreement. I assume that *Rosie* escapes agreement by moving to a clause-peripheral position. This also explains the lack of *wh*-movement in this construction, see example (22) above, repeated as (46) below. Since *wh*-movement must take place from an argument position, the *wh*-phrase *shǫʔ* ('who') must remain in an A-position and then raise to Spec,CP. Thus, it does not have the option of escaping agreement by moving to a clause-peripheral position.

(46) * Shǫʔ waʔ- ha- ksaʔt- ohae -ʔ?
who FACT- he- child- wash -PUNC
('Who (a child) did he wash?')

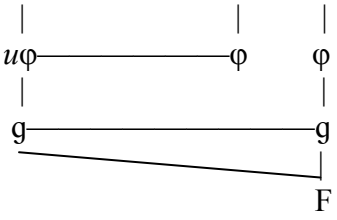
(47) [$_{vP}$ *v* [$_{VP}$ V [$_{nP}$ ksaʔt]]]] shǫ]]]]



Let us move on to the incorporation of unaccusative subjects. Recall the proposal that the subject Probe is [φ-ɡ]. Given that the incorporated noun sports only a bare [φ] feature it cannot be targeted by the Probe. Thus, the Probe looks past the bare human noun and Agrees with *Mary* in (17), repeated here.

(48) **ę**-ksaʔt -í:yo-: Mary [Cayuga]
3.SG.F.AG-child-be.good-STAT Mary
'Mary is a nice girl.'

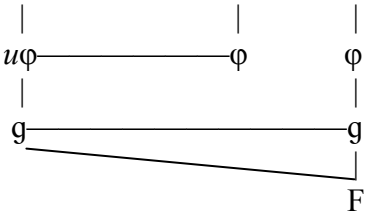
(49) [$_{CP}$ [$_{TP}$ T [$_{VP}$ V [$_{DP}$ [$_{nP}$ ksaʔt] Mary]]]]



As the schematic above shows, the subject Probe on T matches the [φ] feature on the incorporated noun. There is still an active [g] feature on the Probe, however. Thus, the Probe continues to search and finds an appropriate goal on the DP double, *Mary*. The [g] feature values the Probe, in this case with the [FEM] feature. Thus, the Probe shows agreement with the internal argument, *Mary*. We can now see how *wh*-movement is compatible with subject NI. Consider example (31)a, repeated here as example (50).

(50) Sohnat ę-ksaʔd-í:yo-:? [Cayuga, B.W., speaker]
who she-child-be.good-STAT
'Who is a nice child?'

(51) [$_{CP}$ [$_{TP}$ T [$_{VP}$ V [$_{DP}$ [$_{nP}$ ksaʔt] sohnat]]]]



Again, the schematic above shows that the internal argument, *sohnat* ('who'), matches and values the subject Probe the same way as described for (49). Since the *wh*-phrase is licensed in its A-position, it can undergo *wh*-movement to SpecCP. In both of the examples above, the incorporated noun, being a bare *n*P, cannot value the subject Probe.

The analysis proposed above makes the following prediction. Object agreement and *wh*-movement should be compatible with a human direct object if the incorporated object itself is non-human. See also example (23)b. Consider the following data.

(52) a. waʔ**khe**nętshoháeʔ neʔ Meri (Onondaga, G.W., N.C., speakers)

waʔ-	**khe-**	nętsh-	ohae-	ʔ	neʔ	Meri
FACT-	**1.SG.AG:3.SG.F.PAT-**	arm-	wash-	PUNC	NE	Mary

'I washed Mary's arm.'

b. * waʔ**g**nętshoháeʔ neʔ Meri

waʔ-	**k-**	nętsh-	ohae-	ʔ	neʔ	Meri
FACT-	**1.SG.AG-**	arm-	wash-	PUNC	NE	Mary

('I washed Mary's arm.')

c. sǫh waʔshenętshoháeʔ

sǫh	waʔ-	she-	nętsh-	ohae-	ʔ
who	FACT-	2.SG.AG:3.SG.F.PAT-	arm-	wash-	PUNC

'Whose arm did you wash?'

(53) a. Waʔshagonętsoháeʔ neʔ Rosie.

waʔ-	shago-	nęts-	ohae-	ʔ	neʔ	Rosie.
FACT-	3.SG.M.AG:3.PAT-	arm-	wash-	PUNC	NE	Rosie

'He washed Rosie's arm.'

b. * Waʔhanętsoháeʔ neʔ Rosie.

waʔ-	ha-	nęts-	ohae-	ʔ	neʔ	Rosie.
FACT-	3.SG.M.AG-	arm-	wash-	PUNC	NE	Rosie

'He washed Rosie's arm.'

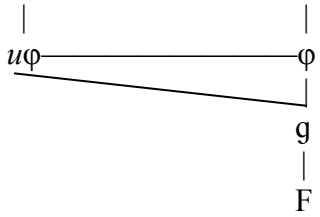
(54) waʔsknʌtshata:sé: [Oneida, Michaelson & Doxtator (2003: 413]

waʔ-	sk-	nʌtsh-	a-	tase	-ˊ:
FACT-	2.AG:1.PAT-	arm-	JOIN-	twist	-PUNC

'You twisted my arm.

Consider the analysis for (50)a.

(55) [$_{vP}$ *v* [$_{VP}$ [$_{DP}$ [$_{NP}$ nęts] Rosie]]]]



Since the incorporated noun bears no φ-features, the Probe looks past it. The full DP matches and values the Probe as shown, giving rise to 3.SG.F object agreement. Furthermore, since the full DP direct object values the Probe, then *wh*-movement of the direct object is once again available, as in (52)c and (23)b above.

To summarize, this section presented an analysis of the generalization given at the end of the previous section. To remind ourselves, the first part of the generalization is that the incorporation of human direct objects fails to trigger agreement and is incompatible with *wh*-movement. The second part of the generalization is that the incorporation of human subjects of unaccusatives *does* give rise to agreement with the incorporated noun and is compatible with *wh*-movement. This generalization was accounted for by assuming that the subject and the object Probes differed in their prespecification in the sense of Béjar (2003). Specifically, the object Probe searches for a bare [φ] feature whereas the subject Probe searches for the more specified [φ-g] feature geometry. The final piece of the puzzle was the feature specification of incorporated nouns. Human nouns were argued to have a bare [φ] feature. This bare [φ] feature blocked agreement with the full DP direct object, but not with the full DP unaccusative subject. Agreement with the full DP gives rise to overt agreement and to the possibility of *wh*-movement.

5 Discussion

This study has proposed a link between two generalizations concerning NI in Northern Iroquoian. The first is that while agreement and NI are in complementary distribution for the incorporation of objects, as discussed in Baker (1996), agreement is obligatory with NI when an unaccusative subject is incorporated, as noted in Koenig & Michelson (2015). The second generalization, which as far as I know is reported here for the first time, is that while *wh*-movement of the double of an incorporated human object is impossible, again as discussed in Baker (1996), *wh*-

movement of the double of an incorporated human unaccusative subject is possible. These two generalizations were argued to arise by virtue of the difference in the specifications of the subject and object Probes as discussed in the previous section.

This study has wider implications for our understanding of Iroquoian grammar and the nature of polysynthesis. First, according to a strict interpretation of Baker's Morphological Visibility Condition, every argument that receives a theta role from a verb must be morphologically referenced on the verb. Here's is Baker's formal definition (Baker, 1996: 17).

(56) The Morphological Visibility Condition (MVC)

> A phrase X is visible for θ-role assignment from a head Y only if it is coindexed with a morpheme in the word containing Y via:
> (i) an agreement relationship, or
> (ii) a movement relationship

Baker adduced the complementarity between agreement and noun incorporation in Mohawk, as shown in example (6), as evidence for the MVC. Baker does note that the unacceptability of both agreement and NI does not fall out from (56); however, he does mention other polysynthetic languages in which both agreement and NI are found, a fact which is not inconsistent with the MVC.

Koenig & Michelson (2015: fn 9) discuss the presence of both agreement and NI in examples such as (17) to (20), in which the subject of an unaccusative has been incorporated. They take this as one piece of evidence against Baker's MVC; however, as noted above, this is not actually fatal to the MVC. I will come back to the issue of agreement below, but here I continue to focus on Baker's Polysynthesis Parameter. Barrie (2015a) suggests that the *wh*-question data call Baker's theory into question. Indeed, Baker argued that the syntactic nature of NI (the notion that the incorporated noun starts in argument position and undergoes head movement to the verb) excludes the possibility of certain kinds of *wh*-questions. Nevertheless,

such *wh*-questions are available. However, the very analysis Barrie provides for these data provides a solution compatible with the MVC. In particular, the "Big DP" analysis allows a way for both the IN and the *wh*-phrase to appear in argument position and subsequently move to their respective positions. Instead, the most damning piece of evidence against the MVC is one not discussed in depth here, but brought up by Koenig & Michelson (2008, 2015), namely that inanimate arguments are not referenced on the verb by any kind of agreement. Thus, when such forms lack NI, they are in violation of the MVC. Though not the focus of this paper, the point is pertinent to the general discussion. Consider an Onondaga example from the beginning of this paper.

(57) waʔhahninúʔ neʔ oyɛ́kwaʔ

waʔ-	ha-	hninu-	ʔ	neʔ	o-	yɛkw	-aʔ
FACT-	3.SG.M.AG -	buy-	PUNC	NE	NPREF-	tobacco	-NFS

'He bought tobacco.'

In this example, *tobacco* has not undergone NI and is not referenced on the verb by an agreement marker. Baker suggests that such constructions have a zero object agreement marker, thus salvaging the MVC. There are two problems with positing zero object agreement. The first was discussed by Koenig & Michelson (2008, 2015). They observe that semantically transitive forms such as the one in (57) behaves as an intransitive in terms of agreement morphology (see also footnote 3). With intransitive verbs, the single argument takes active agreement except in the stative (perfect) aspect and with certain stative verbs, in which case the single argument takes patient agreement. With transitive verbs, this alternation does not take place. Forms such as the one in (57) alternate, suggesting that they are formally intransitive and thus do not have a zero agreement marker. This point has been discussed in the literature in the past, so I do not recreate the data here. The second argument against a zero agreement marker is that there is an actual 3rd person neuter agreement marker for objects (patients). It surfaces in intransitives in which the

single argument is an inanimate object. Here are two examples from Oneida (Michelson & Doxtator, 2002: 83, 123).

(58) a. yohtsí:kele?
yo- ahtsikl-e -ʔ
3.SG.NT.PAT- cloud- be/exist -STAT
'It's cloudy.'

b. yostó:u
yo- asto -ʔ -u
3.SG.NT.PAT- be.small -INCH -STAT
'It has gotten smaller.'

The agreement marker /yo-/ is exactly the form that Baker claims is null. Given that an overt form of the 3rd person neuter patient form exists, the zero agreement marker seems even less likely.

Returning to the core topic of this paper, the correlation between agreement and noun incorporation, we move to the discussion by Baker, Aranovich, and Golluscio (2005). As noted above, Baker (1996) discussed variation in polysynthetic languages with respect to agreement and NI. Baker, Aranovich, and Golluscio (2005) capture this variation by proposing differences in the fate of the trace of the incorporated noun. When the noun undergoes NI, the trace of this movement undergoes one of the following: (i) its φ-features remain intact (full agreement); (ii) its φ-features are reduced to their default value (3rd person singular agreement); or (iii) the φ-features are deleted (no agreement). The authors argue that Mohawk (and by extension Northern Iroquoian in general) takes the second option, giving rise to default agreement, which the authors take to be null, as discussed in the previous paragraphs. To maintain this analysis we would have to assume that Northern Iroquoian languages exhibit a finer degree of parameterization such that the trace of the incorporated noun in transitive constructions undergoes option (ii) as Baker *et al*. describe and that the trace in unaccusative constructions undergoes option (i). Since both are

internal arguments it is unclear how this distinction could be captured without proposing ad hoc machinery (see also footnote 7).

6 Summary

Subject and object noun incorporation in Northern Iroquoian differ in terms of agreement in that agreement is obligatory with subject NI, but is impossible with object NI. Furthermore, *wh*-movement of an animate unaccusative subject is compatible with subject NI; however, *wh*-movement of an animate object is impossible with object NI. The first subject/object asymmetry is fairly well known in the literature; however, the second asymmetry, as far as I know, is a novel observation. I proposed that both asymmetries are due to the different pre-specifications of the subject and object agreement Probes. Specifically, the object Probe is a bare [φ] feature, while the subject probe is [φ-g]. This difference in specification between the probes accounts for the difference in agreement, and the availability of *wh*-movement with incorporated subjects and the lack of *wh*-movement with objects. I have discussed the ramifications of these results on our understanding of various models of polysynthesis and have suggested, in line with Mattissen (2004) that an overarching macroparameter is too coarse to handle the range of microparametric variation found in polysynthetic languages.

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