On optionality in Mohawk noun incorporation*

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Noun incorporation is a phenomenon much discussed within Iroquoian language literature. In this paper, we consider noun incorporation in Mohawk, a language within the Iroquoian language family, and argue that what has often been considered to be optional noun incorporation is in fact primarily determined by the information structure of the clause. We show that with the exception of lexically-determined verbs that always or never incorporate, every verb may or may not incorporate its nominal object. We analyse the incorporated version as the default structure. The non-incorporated counterpart is licensed only under particular information-structure properties. We provide evidence that noun incorporation arises whenever the verb or the object noun is focused, and in turn moves to the left periphery.

1 The issue

Since Sapir (1911) linguists have considered the definition and nature of the phenomena we label as noun incorporation. This term now encompasses cases where the incorporation of a nominal is obligatory for a specific set of verbs, for example, Inuktitut (Sadock, 1980; Johns, 2007). A related term is pseudo-incorporation. In pseudo-incorporation a nominal forms a complex predicate with a verb, but without actual morpho-phonological incorporation (Massam, 2001, 2017). Thus, while some verbs in some languages require overt incorporation, pseudo-incorporation prohibits it. With this distinction in mind, we revisit one of the canonical cases of noun incorporation, that of Iroquoian. Noun incorporation in this family of languages has been claimed to result from lexical compounding (Mithun, 1984) or syntactic movement (Baker, 1996, 2009; Barrie and Mathieu, 2016). We assume the phenomenon involves syntax.

In Iroquoian languages the nominal can sometimes be found inside the verb, as in (1a) where -nakt- ‘bed’ appears to the left of the verb -hninon- meaning ‘to buy.’ It can also appear outside of the verbal complex, as in (1b). Both examples are adapted from Baker (1996: 12).

(1) a. Wa’-ke-nakt-a-hnf:non-’
   FACT-1.SG-bed-LK-buy-PUNC

   NI - Mohawk

* We acknowledge the generations of Kanien’kehá:ka (Mohawk people) who have worked tirelessly to ensure the survival of Kanien’kéha (the Mohawk language) in the face of countless and ongoing colonial pressures. Without these people and those who continue to maintain the language today, we, as well as many others studying Iroquoian languages, would be unable to complete our research. For this we are indebted to them and give them our greatest thanks and appreciation. Niawenhkó:wa / Thank you very much.

1 By adapted we mean that we unified the spelling and updated it to the current orthography. We use the following abbreviations: 1 = first person, SG = singular, F = feminine, M = masculine, LK = linker, N = neuter, NI = noun incorporation, NS = noun suffix, FAC = factual mood, HAB = habitual, LOC = locative, PUNC = punctual mood, SEMI.REFL = semi reflexive.

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Appearances then suggest that noun incorporation in Mohawk is optional.

In this paper we will place aside examples of noun incorporation where there is either a classifier inside the verbal complex or doubling of the incorporated noun both inside and outside. We restrict our discussion to constructions such as (1).

Within generative linguistics, the main question regarding Iroquoian noun incorporation has focused on the nature of the movement that introduces the nominal into the structure in (1a). For Baker (1996) the movement is Head Movement where a head X moves to left-adjoin with an immediately higher head Y. Movement into the verbal complex renders an overt nominal visible for theta-role assignment, which cannot take place if the nominal remains in the argument position. Barrie and Mathieu (2016) argue that incorporation does not arise by head movement of an N but instead by a phrasal movement of an nP selected by either a lexical V, or little v.

Neither account discusses in detail why movement might appear optional. For example, if selection triggers movement, then movement should occur in both examples in (1). Baker (1996) considers the non-incorporated nominal in (1b) to be syntactically an adjunct, instead of being in an argument position. With respect to whether or not the nominal is incorporated, he says little about the difference between (1a) vs (1b): “Such noun incorporation (NI) is very common in Mohawk [...] NI is quite productive, and speakers often consider incorporated and unincorporated versions of the same sentence to be essentially equivalent” (Baker, 1996: 12).

In this paper, we address the optionality suggested by (1). We believe rather than being something peripheral to theoretical-linguistics concerns, it is instead an important piece in our understanding of these structures. In this regard we are in line with previous non-generativist work (cf. Mithun, 1984, 1987) and intuitions expressed by speakers.

Non-generative approaches have proposed asymmetries between incorporated and non-incorporated forms. In Mithun (1984), the noun incorporation construction (1a) results from compounding of backgrounded elements, that is, those that are known or less significant. Mithun’s influential paper about the typology of noun incorporation states that: “In polysynthetic languages, the system may be extended to the discourse level. N’s reflecting known or less significant information may be incorporated to narrow the scope of the V without the distraction of a full additional NP (stage III).” (Mithun, 1984: 874).

Our position in this paper is that non-noun incorporation in Mohawk is marked, and that noun incorporation is therefore default. From this perspective, there is no optionality to noun incorporation in Mohawk. It is obligatory when it is structurally possible.2 The marked non-noun-incorporation construction requires additional explanation. The statement that the non-noun-incorporation structure is marked bears some similarity to Baker’s analysis of the non-noun-incorporation argument as an adjunct, as well as to Mithun’s view that a full NP is a “distraction.”. Our position is not novel, yet it has not been fully explored in linguistic literature. We summarize the position in (2).

(2) a. Noun incorporation is default where it is possible for it to occur. There is no optionality.
   b. Non-noun incorporation is excorporation.

We present three types of evidence to support our claim: i) from earlier Iroquoian linguistics, ii) from community knowledge of Iroquoian speakers, and iii) from Mohawk examples. We argue that excorporation (non-noun incorporation where noun incorporation is possible) requires a particular information structure (focus).

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2 By structurally possible we mean not only when a lexically-determined structure of a verb allows incorporation, but also, as we will see in section 3 of this paper, whenever other properties within the syntactic configuration “bleed” incorporation.
This asymmetry between noun incorporation and non-noun incorporation has been noticed both by speakers and linguists. Chafe (1970: 50) states regarding non-noun incorporation constructions: “For the most part, however, they [Onondaga speakers] are apt to characterize sentences like these as the kind that might be used by children or by people who do not speak the language particularly well – individuals, it would seem, who have not learned to use the incorporation rule with complete facility.”

Chafe (same page) goes on to contrast this with the noun-incorporation constructions: “We might, then, regard incorporation as marginally optional, with usually a strong preference in its favour.” We adopt a stronger view of Chafe’s description: incorporation is not marginally optional but obligatory. Under our view, the Mohawk syntactic alternants in (1) are no more equivalent than the prosodic English alternants in (3).

(3) a. JOHN bought a boat.  
    b. John bought a BOAT.

Note the qualifying phrase in (2a) ‘where it is possible for it to occur.’ There exists, in Mohawk, verbs that simply never permit noun incorporation, as in (4). At the same time, there are verbs that always require noun incorporation, as in (5). See also Barrie and Mathieu (2016).

(4) a. Kehià:ra's ne owén:na non-NI  
    k-ehiahr-a-'s ne o-wenn-a’  
    1SG-remember-LK-HAB NE N-word-NS

b. * Kewennahì:ra's NI  
   ‘I remember a word’

(5) a. Kanenstí:io NI  
    ka-nenst-iio  
    N-corn-be.good

b. * Ó:nenste kaí:io non-NI  
   o-nenst-e’ ka-iiio  
   N-corn-NS N-be.good  
   ‘The corn is good’

From this point on, we will use the term incorporating verbs for verbs that optionally incorporate their nominal object. As this is preliminary research, we limit our discussion to excorporation/non-excorporation of inanimate nouns. Section 2 reviews the type of evidence we consider, that is, data from the existing literature and data we collected. Section 3 provides an initial theoretical account of the distribution of noun incorporation and non-noun incorporation in terms of focus movement.

2 Evidence

There is long-term community knowledge of noun incorporation in Mohawk communities. High regard is often given to speakers who can create morphologically complex words with ease, while incorporating nouns with incorporating verbs when appropriate. Mithun (1984: 879) has observed that: “Speakers of polysynthetic languages often comment on a characteristic that English speakers observe more rarely: consciousness of who speaks their languages especially well. This recognition is not for public presence, but rather for stylistic skill, which appears in conversation as well as in jokes, anecdotes, legends, and formal oratory. Admired speakers generally share a specific trait: they use a variety of morphologically complex words – particularly, incorporating constructions.”
It is widely viewed among speakers as inferior, ill-formed, or “baby talk” if a noun and verb are not incorporated in times where it would be appropriate. This is exemplified in (6), showing common noun incorporation.

(6)  
  a. Oh nahátiere’ ne Sewáitis?
      Oh na-h-at-ier-e’ ne Sewatis?
      Q FAC-M.SG-SEMI.REFL-do-PUNC NE John
      ‘What did John do?’

  b. Wahahonwahní:non’
      wa-ha-honw-a-hninon-
      FAC-M.SG-boat-LK-buy-PUNC
      ‘He bought a boat’

However, given the right utterance context, a non-noun incorporation construction, as shown in (7), is required by fluent speakers. In this example, presented as a question-answer pair, incorporation (7c), although grammatically well-formed, would be inappropriate and considered infelicitous.

(7)  
  a. Q: Wahahonwahní:non’ ken ne Sewáitis? NI
      wa-ha-honw-a-hninon-
      FAC-M.SG-boat-LK-buy-PUNC Q NE John
      ‘Did John buy a boat?’

      iah. ka-’ser-e’ wa-ha-hninon-
      No. N-car-NS FAC-M.SG-buy-PUNC
      ‘No. He bought A CAR.’

  c. A2: # Iah. Waha’serehtahní:non’ NI
      iah. wa-ha-’sereht-a-hninon-
      No FAC-M.SG-car-LK-buy-PUNC
      ‘No. He bought a car’

Equally, a non-noun incorporation construction can be inappropriate. In example (8) we provide evidence of this. Unlike the non-noun-incorporation example in (5b), where non-noun incorporation is never allowed, we show examples that allow noun incorporation or non-noun incorporation. However, which structure is felicitous is again determined by the context. In the question-answer pair in (8), in principle, both noun incorporation (8b) and non-noun incorporation (8c) are well formed. However, the non-noun-incorporation answer (8c) is not appropriate given the context.

(8)  
  a. Q: Ónhka wa’ehonwahní:non’
      onhka wa’e-honw-a-hninon-
      who FAC-F.SG-boat-LK-buy-PUNC
      ‘Who bought a boat?’

  b. A1: Wá:ri wa’ehonwahní:non’
      Wari wa’e-honwa-hninon-
      Mary FAC-F.SG-boat-LK-buy-PUNC
      ‘MARY bought a boat’
3 The interaction of information structure and noun incorporation

The hypothesis we want to put forward in this paper is that whether or not a noun will be incorporated is primarily determined by the information structure of the clause. As we saw in (4) and (5), there are lexicalized exceptions but apart from this, every incorporated noun-verb complex has a non-incorporated counterpart. We argue that the incorporated version is the default structure. Its non-incorporated counterpart is licensed only under particular information-structure properties. The purpose of this section is to describe these properties and to provide a preliminary theoretical account of noun excorporation in relation to the information-structure requirement.

That information structure is a relevant factor in the syntactic distribution of incorporated vs non-incorporated nouns in Mohawk has not gone unnoticed in the previous linguistics accounts. In particular, Mithun (1984) states that the relationship can be characterized in terms of backgroundering of the incorporated noun, while Baker (1996: 290-291) implicates focus/contrast/emphasis of the non-incorporated noun. Although the notions of backgroundering and focus are not formally equivalent, they both capture the basic intuition that the relevant contrast is between information previously established in the discourse versus new information.

While we agree that these notions play a role in the excorporation process, a closer inspection of the data reveals that the contrast between new and previously established information cannot fully explain the excorporation pattern. Thus we agree with Baker and Mithun that noun excorporation requires focus/backgrounding. We, however, disagree with their characterization that it is only focus/backgrounding of the noun itself that underlies the distinction between the incorporated versus non-incorporated pattern. As we will see, focus/backgrounding of the verb also yields an excorporated pattern.

We will centre our description of the basic data patterns around the notion of emphasis. As far as we were able to establish, our pretheoretical notion of emphasis falls under the unified semantic notion of focus in the sense of Rooth (1992). However, the data collected so far do not allow us to convincingly conclude that no further refinement of the type of focus, as in Kiss (1998) and others, is needed. We will thus use the notion of focus for parts of the sentential structure which, if replaced with a variable enclosed under an existential closure, will semantically correspond to a proposition present in or entailed by the common ground, that is, presupposed.

The basic observation we will start with is that if there no emphasis in the sentence, a incorporating verb must incorporate its nominal object. We see this in (9). As in the previous discussion, we use the # symbol to indicate that the sentence is in principle grammatical but not felicitous. We indicate focus by capital letters in the English translation.

(9) a. Tier wahahonwahní:non’
   Tier wa-ha-honw-a-hhinon-’
   Peter FAC-M.SG-boat-LK-buy-PUNC

b. # Kahonwé:ia wahahí:non’ ne Tier
   ka-honwei-a’ wa-ha-hhinon-’ ne Tier
   N-boat-NS FAC-M.SG-buy-PUNC NE Peter
Before we get to the actual analysis, we need to establish some basic facts regarding subjects as Mohawk is a pro-drop language. In pro-drop languages, given pronominal subjects get dropped in the absence of any additional emphasis. If the subject is pronominal and if the subject does not carry focus, there is no overt realization of the subject pronoun. As we see in (10), pro-drop makes no difference for the noun-incorporation pattern in Mohawk. Thus if there is no emphasis within the sentence, the object noun still obligatorily incorporates.

(10) Wahahonwahní:non’
    wa-ha-hninon-’
    FAC-M.SG-buy-PUNC
    ‘He bought a boat’

If, however, the pronominal subject is focused, then it is overtly realized as an independent pronoun and appears to the left of the verbal complex (see also Mithun 1987). As in the previous examples, the presence of the overt pronominal subject does not affect the verbal complex, and in turn an incorporating verb still obligatorily incorporates its nominal object, that is, the focused pronominal subject behaves like a full NP subject in the absence of any sentential emphasis as we saw in (9a). An example demonstrating this pattern is given in (11). Note that whether or not the subject is overt has no bearing on the morphological realization of the subject agreement, as the subject always triggers agreement on the verb irrespective of its morphological realization. If a logically possible word order is not given in the following examples, it may be assumed to be not felicitous.

(11) Akaónha wa’ehonwahní:non’
    akaonha wa’-e-hhonw-a-hninon-’
    she FAC-F.SG-boat-LK-buy-PUNC
    ‘SHE bought a boat’

We can now turn to the distribution of the incorporated vs excorporated nominal objects. Crucially, if there is an emphasis on the object noun, an incorporating verb no longer incorporates such a noun. Instead, the noun surfaces in its full independent form and appears linearly to the left of the verb. An example of such a pattern is given in (12).

(12) Kahonwé:ia wa’ehnì:non’
    ka-honwei-a’ wa’-e-hninon-’
    N-boat-NS FAC-F.SG-buy-PUNC
    ‘She bought a BOAT’

If the subject is overt and there is an emphasis on the object noun, the object noun obligatorily excorporates and as in the previous case it linearly precedes the verbal complex. As for the subject, it

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3 We use the term verbal complex to have a theory-neutral description for the complex of bound morphemes that includes the verbal head and its extended functional projections.
linearly follows the verbal complex, as in (13). That the subject cannot appear in the pre-verbal position if the object noun is focused suggests that there is only one structural position to the left of the verbal complex.

(13) Kahonwé:ia wa’ehni:non’ ne Wári
    ka-honwei-a’ wa’-e-hninon-’ ne Wari
    N-boat-NS FAC-F.SG-buy-PUNC NE Mary
    ‘Mary bought a BOAT’

The pattern critical to our discussion is given in (14). As we see in this example, if the emphasis is on the verb itself instead of the noun, the noun still appears excorporated. In this case, however, the noun cannot appear in the preverbal position. Instead it appears after the verb, accompanied by an obligatory linker (NE).

(14) Wa’ehni:non’ ne kahonwé:ia
    wa’-e-hninon-’ ne ka-honwei-a’
    FAC-F.SG-buy-PUNC NE N-boat-NS
    ‘She BOUGHT a boat.’

The example in (14) in and of itself constitutes evidence against Baker’s and Mithun’s proposals that non-incorporation results from emphasis on the noun. We argue instead that nominal excorporation arises if and only if the noun or the incorporating verb itself is in focus. We argue that any emphasis within the incorporating verbal complex disrupts nominal incorporation. Recall that focus on the subject does not yield excorporation, that is, only focus in the domain of the verbal complex and its nominal object will yield excorporation.

With this new generalization in place, we can now turn to more complex examples with an emphasis on the verb. The first case to consider is a configuration in which the subject is overt and there is an emphasis on the incorporating verb. In such a case, the verb appears as the leftmost element, linearly followed by the object and the subject. Examples in (15) demonstrate this pattern. Note that the arguments must follow the verb, as in (15a) versus (15b) and (15c), and that their linear order is fixed, as seen in (15d). Furthermore, both nominal arguments require the linker NE.

(15) a. Wa’ehni:non’ ne kahonwé:ia ne Wá:ri
    wa’-e-hninon-’ ne ka-honwei-a’ ne Wá:ri
    FAC-F.SG-buy-PUNC NE N-boat-NS NE Mary

b. # Wá:ri wa’ehni:non’ ne kahonwé:ia
    Wá:ri wa’-e-hninon-’ ne ka-honwei-a’
    Mary FAC-F.SG-buy-PUNC NE N-boat-NS

c. # Kahonwé:ia wa’ehni:non’ ne Wá:ri
    ka-honwei-a’ wa’-e-hninon-’ ne Wá:ri
    N-boat-NS FAC-F.SG-buy-PUNC NE Mary

d.??* Wa’ehni:non’ ne Wá:ri ne kahonwé:i-a
    wa’-e-hninon-’ ne Wá:ri ne ka-honwei-a’
    FAC-F.SG-buy-PUNC NE Mary NE N-boat-NS
    ‘Mary BOUGHT a boat’

Note that the postverbal subject requires a structural linker (NE). Addressing the formal properties of the linker goes beyond the scope of the present paper.
Based on the data discussed so far, we argue for the generalization given in (16).

(16) **Focus generalization about Mohawk sentential structure:**
There is a focus position in the left periphery of the sentential structure of Mohawk, and any element able to associate with focus, including the verbal complex, can move to this focus position.

The generalization in (16) does not make any direct reference to incorporating verbs. As a result, the generalization predicts that verbs that do not incorporate will also appear in the left-peripheral focus position if emphasized. If the emphasis is on the non-incorporated noun instead, we expect the noun itself to appear in the left-peripheral position. As can be seen in (17), both predictions are borne out.

(17) a. Kehià:ra’s ne owén:na
   k-ehiahr-a’s ne o-wenn-a’
   1.SG-remember-LK-HAB NE N-word-NS
   ‘I REMEMBER a word’

b. Owén:na kehià:ra’s
   o-wenn-a k-ehiahr-a’s
   N-word-NS 1.SG-remember-LK-HAB
   ‘I remember a WORD’

Having established the basic distributional patterns, we turn to a theoretical account of the pattern. The core of our empirical generalization is that focused items surface as the leftmost elements in these structures. We argue that indeed all focused items move to the same syntactic position. For concreteness, we propose that focused items in Mohawk move to the specifier of CP.

The proposal makes a clear prediction. If focused elements move to the specifier of CP, then any overt realization of C must linearly follow the focused element. Testing this hypothesis is straightforward since Mohawk has a question particle. As the question-answer pairs in (18)-(20) demonstrate, the prediction is indeed borne out. If there is a focused element in a yes/no question, the focused element appears in the left periphery, immediately preceding the question particle *ken*.

(18) a. Q: Raónha ken wahahní:non’?
   raonha ken wa-ha-hninon-’?
   he Q FAC-M.SG-buy-PUNC
   ‘Did HE buy it?’

b. A1: Hen, raónha wahahní:non’
   hen, raonha wa-ha-hninon-’
   yes he FAC-M.SG-buy-PUNC
   ‘Yes, HE bought it.’

c. A2: # Hen, wahahní:non’ ne raónha
   hen, wa-ha-hninon-’ ne raonha
   yes, FAC-M.SG-buy-PUNC NE he
   ‘Yes, he BOUGHT it’

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5 See also Mithun (1987).
6 It is plausible and compatible with our data that focused items move to a designated focus position such as FocP of Rizzi (1997, 2004). Since we are not aware of any data that would directly point to a focus-specific position, we use the more general CP label.
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(19) a. Q: Wahahnínona’ ken ne raónha?
      wa-ha-hninon-‘ ken ne raonha?
      FAC-M.SG-buy-PUNC Q NE he
   ‘Did he BUY it?’

   b. A1: Hen, wahahnínona’ ne raónha
       hen, wa-ha-hninon-‘ ne raonha
       yes FAC-M.SG-buy-PUNC NE he
   ‘Yes, he BOUGHT it.’

   c. A2: # Hen, raónha wahahnínona’
       hen, raonha wa-ha-hninon-‘
       ‘Yes, HE bought it’

(20) a. Q: Wa’ehní:nona’ ken ne kahonvé:ia?
      wa’-e-hninon-‘ ken ne ka-honwei-a’
      FAC-F.SG-buy-PUNC Q NE N-boat-NS
   ‘Did she BUY a boat?’

   b. A1: Hen, wa’ehní:nona’ ne kahonvé:ia
       hen, wa’-e-hninon-‘ ne ka-honwei-a’
       yes, FAC-F.SG-buy-PUNC NE N-boat-NS
   ‘Yes, she BOUGHT a boat.’

   c. A2: # Hen, kahonvé:ia wa’ehní:nona’
       hen, ka-honwei-a’ wa’-e-hninon-‘
       yes, N-boat-NS FAC-F.SG-buy-PUNC
   ‘Yes, she bought a BOAT’

The question-answer pairs in (19) and (20) provide additional evidence supporting our core hypothesis. As we see, if the verb is in focus, the verbal complex itself raises to the left periphery, instead of the excorporated noun.

The proposal that the focused elements move to the Spec,CP makes an additional prediction. Namely, we expect that wh-words will appear in the same left-peripheral position as well. As the examples in (21) and (22) demonstrate, this prediction is borne out.

(21) a. Ónhka wa’ehní:non’?
    onhka wa’-e-hninon-‘
    who FAC-F.SG-buy-PUNC

   b. * Wa’ehní:non Ónhka?
    wa’-e-hninon-‘ onhka?
    FAC-F.SG-buy-PUNC who
   ‘Who bought it?’

(22) a. Oh naho’te’n wa’ehní:non’?
    oh naho’te’n wa’-e-hninon-‘?
    Q what FAC-F.SG-buy-PUNC
b. * Wa’ehni:non’ oh nahò:ten?
   wa’e-hninon’-’ oh naho’ten?
   FAC-F.SG-buy-PUNC Q what

‘What did he buy?’

To conclude, we argue that there is a relation between incorporation/excorporation of object nouns, and the information structure properties of the proposition. However, the relation cannot be defined as an isomorphic mapping between excorporated nouns and focus. As we saw, excorporated nouns are focused when they appear on the left, but excorporation can also arise as a by-product of focus movement of the verbal predicate to the left-periphery. This shows that noun excorporation is not an operation targeting nominals, but belongs to a more general phenomenon of focus movement to the left periphery of Mohawk clauses.

References