Incorporating verbs in Inuktitut noun incorporation: Functional or lexical elements?*

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Abstract: This paper focuses on the nature of incorporating verbs in Inuktitut noun incorporation, which have traditionally been treated as functional categories in the literature (Sapir 1911, Johns 2007, among others). It explores further this possibility by applying criteria defining functional categories cross-linguistically (Abney 1987, Muysken 2008) to incorporating verbs as well as to Inuktitut lexical verbs and functional categories for which there is more consensus as to their status, in order to compare their behavior.

Keywords: Inuktitut, morpho-syntax, noun incorporation, incorporating verbs

1 Introduction

The Inuit language is a dialect continuum spoken in the Artic across a very extended area ranging from Alaska in the West to Greenland in the East. It is part of the Eskimo-Aleut language family. Inuktitut, on which we will focus here, forms the group of dialects spoken in North-Eastern Canada. In this paper we will examine noun incorporation (NI) and more specifically on the grammatical status of incorporating verbs.

Noun incorporation, following the definition given by Massam (2009, p. 537), is "a grammatical construction where a nominal that would canonically be expressed as an independent argument or adjunct is instead in some way incorporated into the verbal element of the sentence, forming part of the predicate." An example of such a construction in Inuktitut is given in (1a), while (1b) shows an alternative non-incorporating construction with the object of the verb as a separate word:

(1) a. **tuttu**-siur-tuq.
caribou-look.for-DECL.3SG[1]
'S/he's caribou hunting.'

b. **tuttu**-mik maqai-tuq.
caribou-MOD.SG hunt-DECL.3SG
'S/he hunts a caribou.'

In (1a) the object of the sentence, *tuttu*, is incorporated by the verb *siuq* (*siur* in the example above) being attached to it in a single word. Noun incorporation in Inuktitut differs from its

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[1] Glosses from borrowed examples have been modified for reasons of uniformity. Abbreviations used in the examples are the following: NEG = negation, DECL = declarative, IND = indicative, CAUS = causative, INTERR = interrogative, 1, 2, 3 = person, SG = singular, PL = plural, DU = dual, POSS = possessive, ABS = absolutive, REL = relative, MOD = modalis, LOC = locative, ALLAT = allative. Agent and Patient are separated by a slash.

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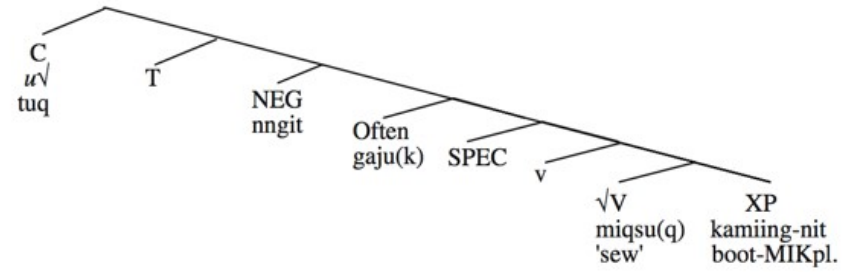
equivalent in other polysynthetic languages of Northern America in its being restricted to a class of verbs which are used exclusively in incorporation constructions (henceforth incorporating verbs, or IVs), and not in the alternative constructions as in (1b). In other words, in Inuktitut, NI is mandatory with IVs, and impossible with other verbs.

NI in Inuktitut has been studied for over a century and has been given different analyses. Sapir (1911) notices the particular status of verbs involved in NI and terms them denominative verbs since; according to him, these "verbal elements are not verb stems but the verb-forming affixes" (p. 254). Following this insight, Johns (2007) argues that IVs are not lexical elements (or roots) but functional elements (which she argues to be "light verbs"). These verbs would form a separate class, a closed one, whose members have very general meanings. In her analysis, it is this lack of a root that explains the structure of NI, due to a syntactic operation which "fronts a lexical element to the leftmost position in the verb complex" (Johns 2007, p. 537). The IV alone cannot stand as a word—it needs a root to incorporate. In this approach, there is a probe located on the mood morpheme in C that looks for a lexical root. Beginning at the top of the tree, the probe moves the first root encountered to the leftmost position of the word. In (2), the first root encountered is the verb *miqsu(q)*, deriving the verb *miqsugajunngittuq*, the noun *kamiingnit* being derived as another word. In (3), however, the verb *liu(q)* is not a root according to Johns (2007), so the first root encountered is the noun *umia(q)*, deriving a verb with noun incorporation: *umialiugajunngittuq*.

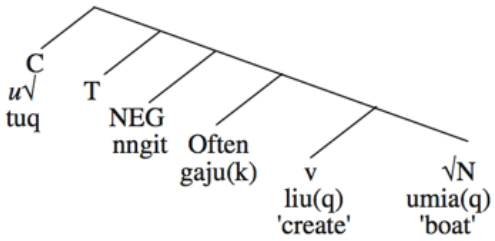
(2) a. **miqsu**-gaju-nngit-tuq **kamiing**-nit.
sew-OFTEN-NEG-DECL.3SG **boot**-MOD.PL
'S/he hardly ever sews boots.' (South Baffin from Johns 2007: 558)

b.



(3) a. **umia-liu**-gaju-nngit-tuq.
boat-create-OFTEN-NEG-DECL.3SG
'S/he doesn't often make boats.' (South Baffin from Johns 2007: 559)

b.



We adopt Johns's view that IVs form a separate class of verbs, given the categorical nature of NI in this language. However, we wish here to explore the claim that IVs lack a root by taking a closer look at the criteria for identifying roots found in Johns (2007) as well as morpho-syntactic criteria defining functional categories cross-linguistically given in Abney (1987) and discussed in Muysken (2008), to see how they apply to IVs. According to these criteria, functional categories (i) form a closed class, (ii) are phonologically and morphologically dependent, (iii) have one unique complement which is not an argument, and (iv) lack descriptive content.

However, according to Muysken (2008), although there are clear opposing tendencies for lexical and functional categories, there is no clear divide between them. According to Langacker (1990), functional and lexical categories appear to be two ends of a continuum. In Muysken's multi-dimensional perspective, this impression of gradience given by the behavior of both categories stems from the fact that the dimensions (morpho-syntax, phonology and semantics) are independent: an element could be functional in the morpho-syntax and lexical in the phonology. Overall, these authors conclude that there's no sharp distinction between the two categories. Our findings, to be presented below, reach a similar conclusion for IVs in Inuktitut, showing that they are somewhere in between two poles of a continuum, where prototypical functional categories and prototypical lexical verbs stand more clearly at each end.

Another issue is that the criteria for distinguishing lexical and functional categories are not easily transposable in every language. Applying them to categorize a group of words in a given language can be misleading. It is for this reason that we apply them also to more straightforwardly lexical verbs (like *maqait* in (1b)) and to other functional categories in Inuktitut for which there is more consensus as to their status. We'll see from this comparison that IVs do exhibit some functional properties but that they don't behave in all respects like other functional categories, challenging the view that IVs are truly functional.

2 Criteria to identify functional categories

2.1 Closed class

IVs in Inuktitut seem to be a closed class. Fortescue (1980) lists around 90 verbalisers (IVs) for West Greenlandic, a closely related Inuit dialect. Although this number is relatively high and difficult to establish precisely (as sometimes two different forms are given for one entry and at other times two forms correspond to two entries which appear to be almost synonymous), IVs do seem to be limited in number. It appears that IVs are never borrowed. Trying to create borrowed IVs leads to ungrammaticality, as shown in (4), while borrowed lexical verbs don't necessarily cause ungrammaticality, as in (5):

(4) *qajuq-**make**-jutit.
soup-**make**-DECL.2SG
'You're soup-making.'

(5) **download**-jara.
download-DECL.1SG/3SG
'I'm downloading it.'

Lexical verbs are an open class since it is possible to create new verbs by borrowing them, as in (5). Functional categories, on the other hand, seem to be a closed class. We don't find evidence

of borrowing (Compton, personal communication). Thus, the following are more clearly established as functional categories in Inuktitut (this list is not exhaustive):

(6) (a) negation: *-nngit*
(b) modals: *-guma* 'want', *-gunnaq* 'be able', *-giaqaq* 'must' and *-gasuaq* 'try'
(c) tense-aspect-mood (TAM) markers: *-liq* (present); *-lauq*, *-qqau*, *-kainna* (past); *-laaq*, *-langa* (future)
(d) verb agreement with subject and object in number and person (which is a big but limited paradigm, fused with mode)
(e) noun agreement in number and case (which is also a limited paradigm)
(f) nominalisers: *-giaq*, *-niq*, *-ti*, *-vik*

IVs therefore seem to behave like functional categories in being members of a closed class, unlike regular lexical verbs.

2.2 Phonological and morphological dependence

Lexical categories are phonologically and morphologically independent, contrary to functional categories (Muysken, 2008). Since IVs cannot be used as words on their own (without the incorporated noun), unlike regular verbs, they seem to be functional. For example, the regular verb *sanajuq* in (7a) can be a word on its own even without its object (7b), whereas the IV *liuqtuq* needs its object to form a word, as can be seen in the contrast between (8a) and (8b):

(7) a. illu-mik sana-juq.
house-MOD.SG build-DECL.3SG
'S/he's building a house.'

b. sana-juq.
build-DECL.3SG
'S/he's building.'

(8) a. illu-liuq-tuq.
house-make-DECL.3SG
'S/he's house-building.'

b. *liuq-tuq.
make-DECL.3SG
Intended: 'S/he's building.'

There is one exception to this: in the Nunavik dialect, it is possible to have an independent IV (not attached to a noun), but only in a context where the object has already been mentioned, as in the answer to a question (9). This phenomenon is called stem ellipsis and is described in Dorais (1988) and Swift & Allen (2002).

(9) illu-liur-paa?
house-make-INTERR.3SG
'Is s/he building a house?'

aa, […]-**liur**-tuq.
yes, […]-**make**-DECL.3SG
'Yes, s/he is.'

However, a number of functional categories in the language seem also to behave like that, such as negation (10), modals (11), tense (12), mood (13) and nominalisers (14):

(10) illu-liur-paa ?
house-make-INTERR.3SG
'Is s/he building a house?'

auka, […]-**nngit**-tuq.
no, […]-**NEG**-DECL.3SG
'No, s/he's not.'

(11) kaapi-tu-ruma-vit ?
coffee-consume-WANT.TO-INTERR.2SG
'Do you want to drink coffee?'

aa, […]-**ruma**-junga.
yes, […]-**WANT.TO**-DECL.1SG
'Yes, I want to.'

(12) niri-laur-paa?
eat-DISTANT.PAST-DECL.3SG
'Did s/he eat?'

aa, […]-**laur**-tuq.
yes, […]-**DISTANT.PAST**-DECL.3SG
'Yes, s/he did.'

(13) tukisi-vit?
understand-INTERR.2SG
'Do you understand?'

aa, […]-**junga**.
yes, […]-**DECL.1SG**
'Yes, I do.'

(14) niri-vit niri-vim-mi?
eat-INTERR.2SG eat-PLACE-LOC
'Are you eating in the dining room?'

aa, […]-**vim**-mi.
yes, […]-**PLACE**-LOC
'Yes, in the (dining) room.'

The only functional categories that cannot trigger ellipsis seem to be case and number (fused together):

(15) illu-nik sana-vit?
house-MOD.PL build-INTERR.2SG
'Are you building houses?'

*aa, **nik** (sana-junga).
Yes, **MOD.PL** (build-DECL.1SG)
Intended: 'Yes, I am (building houses).'

Given that the same phenomenon of ellipsis can be observed across many functional categories, IVs do not appear to be more independent than functional categories. In contexts where ellipsis does not work, IVs are as dependent as functional categories, while regular verbs are phonologically and morphologically independent in the sense that they do not need to be attached by any stem.

2.3 Transitivity

Muysken (2008) explains that the criterion of transitivity is divided into four sub-criteria. First, functional categories have an obligatory complement. This holds for IVs, as in (16), which cannot be intransitive in the way that lexical verbs can be, as in (17).

(16) * liuq-tuq.[2]
make-DECL.3SG
'S/he's building.'

(17) sinit-tuq.
sleep-DECL.3SG
'S/he's sleeping.'

[2] Once again, ellipsis is an exception to this generalization.

Second, functional items can have only one complement according to Muysken. However, it seems that IVs can have two complements, as in the following examples where they have an incorporated argument and an additional object:

(18) **Miali** **pani**-gi-jara.
Mary **daughter**-have.as-DECL.1SG/3SG
'I have Mary as daughter.'

(19) Nuka-p **puisi** **ame**-er-paa.
Nuka-REL.SG **seal**.ABS.SG **skin**-remove-IND.3SG/3SG
'Nuka removed the skin from the seal.' (Kalaallisut from Van Geenhoven 2002 :761)

In (18), the IV *gi* 'have as' takes two complements: the incorporated noun *panik* and the absolutive-marked noun *Miali* which is referred to in the double verb ending (*-jara*). Similarly, in (19), the IV *er* has the incorporated noun *ame* as well as the absolutive noun *puisi* as complements.

Third, the complement of a functional category has a specific category. This is true for IVs, whose complements must be nouns:

(20) **qukiuti**-liri-juq.
rifle-occupy.oneself.with-DECL.3SG
'S/he's playing with her/his rifle.'

(21) * **sini**-liri-juq.
sleep-occupy.oneself.with-DECL.3SG
Intended: 'S/he's (busy) sleeping.'[3]

Fourth, the complement of a functional category is not an argument. According to Muysken (2008), DPs, CPs and PPs are the three possible types of arguments. The complements of IVs are not full DPs (nor CPs or PPs), and therefore are not arguments, contrary to the complements of lexical verbs. The examples (22) and (23) show that the noun *kaapi*, unmarked for case, is only compatible with an IV, as in (22a) and (23a), while the full DP with a modalis case marker *kaapimik* is only compatible with a lexical verb, as in (22b) and (23b).

(22) a. **kaapi**-tur-tunga.
coffee-consume-DECL.1SG
'I'm having coffee'

b. * **kaapi-mik**-tur-tunga.
coffee-MOD.SG-consume-DECL.1SG
Intended: 'I'm having coffee.'

(23) a. ***kaapi** imir-tunga.
coffee drink-DECL.1SG
Intended: 'I'm drinking coffee.'

b. **kaapi-mik** imir-tunga.
coffee-MOD.SG drink-DECL.1SG
'I'm drinking coffee.'

However, the complement doesn't seem to be a bare noun root either, since possession can be incorporated with the noun with IVs of motion, as observed by Johns (2007):

[3] Instead of *-liri*, one could use the modal *-gasuaq* 'try to'/'be in the process of' which combines with verbs, e.g., *sini-gasuar-tuq* 'She's trying to sleep'.

(24) illu-**ga**-no-vunga
house-**1POSS**-go.to-IND.1SG
'I'm going to my house.' (Labrador from Johns 2007: 544, ex. 23c)

In the Nunavik dialect, a similar example shows that the allative case marker can also be incorporated with the possessed noun:

(25) illu-**ga**-**nu**-up-punga.
house-**1POSS-ALLAT**.go.to-IND.1SG
'I'm going to my house.'

Compton & Pittman (2010) give an analysis of the incorporated complement having a structure bigger than a bare noun but smaller than a full DP. That the complement seems to be a real argument is also indicated by the fact that NI introduces a new referent in the discourse, as shown by Sadock (1980). In the Greenlandic example in (26), the incorporated noun *timmisartuq* 'airplane' is referred to in the second sentence where it is understood that it is the subject of the IV *qaq* 'have' (shown by the agreement):

(26) Suulut-Ø **timmisartu**-lior-poq.
Søren-ABS.SG **airplane**-make-IND.3SG

Suluusa-qar-**poq** aqqute-qar-**lluni**=lu.
wing-have-**IND.3SG** rudder-have-**INF.4SG**-and
'Søren made an airplane. It has wings and a rudder.' (Greenlandic from Sadock 1980:311)

The four sub-criteria for transitivity therefore show that IVs share similarities with both functional and lexical categories as described in Muysken (2008).

Applying these four sub-criteria to lexical verbs shows both similarities and contrasts with IVs. For instance, lexical verbs are not obligatorily transitive, unlike IVs:

(27) sinit-tuq.
sleep-DECL.3SG
'S/he sleeps.'

Instead, like IVs, they can be transitive, as in (28), or ditransitive, as in (29):

(28) **tuttu-mik** maqai-tuq.
caribou-MOD.SG hunt-DECL.3SG
'S/he hunts caribou.'

(29) Jaani-up **aapu-Ø** tuni-janga **Miali-mut**
Johnny-REL.SG **apple-ABS.SG** give-DECL.3SG/3SG **Mary-ALLAT.SG**
'Johnny gives an apple to Mary.' (Compton 2017:837, ex.11)

As we can see from the case marking of the complements in (28) and (29), complements of regular verbs are full DPs, which is evidence for their being arguments. Lexical verbs can also take a CP complement, as in (30), whereas IVs cannot take CPs:

(30) Isuma-vunga **tamanna-Ø** **iliqqusiq-Ø**
think-IND.1SG **near.object-ABS.SG** **habit-ABS.SG**

kajusi-vallia-niaq-tuq.
carry.on-increasingly-NEAR.FUTURE-DECL.3SG
'I think that is the process to move towards.'
(Nunavut, from the Nunavut's Hansard, Legislative Assembly of Nunavut)

Applying the same sub-criteria to functional categories shows that IVs have more similarities with them than with lexical verbs regarding transitivity. First, functional categories have an obligatory complement, like IVs (except in cases of ellipsis, but even then, there is an implicit complement):

(31) a. niri-nngit-tunga.
eat-NEG-DECL.1SG
'I'm not eating.'

b. ***nngit**-tunga.
NEG-DECL.1SG
'I'm not'

(32) a. niri-ruma-junga.
eat-WANT.TO-DECL.1SG
'I want to eat.'

b. ***ruma**-junga.
WANT.TO-DECL.1SG
'I want to.'

(33) a. niri-laaq-tunga.
eat-DISTANT.FUTURE-DECL.1SG
'I will eat (tomorrow or after).'

b. ***laaq**-tunga.
DISTANT.FUTURE-DECL.1SG
'I will (tomorrow or after).'

(34) a. niri-laur-tunga.
eat-DISTANT.PAST-DECL.1SG
'I ate (yesterday or before).'

b. ***laur**-tunga.
DISTANT.PAST-DECL.1SG
'I did (yesterday or before).'

(35) a. niri-junga.
eat-DECL.1SG
'I'm eating.'

b. ***junga**.
DECL.1SG
Intended: 'I am (eating).'

(36) a. illu-nik sana-junga.
house-MOD.PL build-DECL.1SG
'I'm building houses.'

b. ***nik** sana-junga.
MOD.PL build-DECL.1SG
Intended: 'I am building houses.'

Second, we are not aware of any cases in which functional elements have more than one complement: the only complement is the stem preceding them, e.g., the verb *niri* in (31) to (35) and the noun *illu* in (36).

Third, the complement of functional categories has a specific category, like IVs: a noun for case and number marking and a verb for nominalisation, verb endings, TAM markers, modals and negation.

Fourth, complements of functional categories are not arguments, unlike those for IVs: they are not full DPs when they are nominal like in (36a) (noun case/number marker *-nik* doesn't take a full DP as its complement but just the noun *illu*), nor CPs or PPs.

In sum, in terms of the criterion of transitivity, IVs behave like functional categories in several respects (such as having an obligatory complement of a specific category), but not all

(such as having the possibility of two complements and the possibility of having a complement that is an argument).

2.4 Underspecified meaning

Abney (1987) states that functional categories cross-linguistically lack descriptive content. Similarly, Johns (2007) points out that IVs are "very basic verbs'', with a "fundamentally less distinct'' semantics (pp. 542-543). Crucially for her analysis, these verbs are "underspecified for meaning'' (p. 555) and therefore have "no substantive lexical material'', and, as a result, no root (p. 543). For example, the meaning of *tuq* as in (37) and (38) below is better translated as 'consume' rather than 'eat' or 'drink' according to Mithun (1999).

(37) tuttu-vini-**tu**-vunga.
caribou-FORMER-**consume**-IND.1SG
'I'm eating caribou meat.' (Labrador from Johns 2007:555)

(38) tii-**tuq**-tunga.
tea-**consume**-DECL.1SG
'I'm drinking tea.' (South Baffin from Johns 2007:555)

Johns (2007) adds that *tuq* can also be translated by 'wear' or 'use' in Utkuhiksalingmiutitut. This is also the case in the Nunavik dialect:

(39) qajaq-**tu**-tuq.
kayak-**use**-DECL.3SG
'S/he's doing kayak (literally: s/he uses a kayak).'

Hence IVs would seem to have an underspecified meaning. Johns predicts that IVs "include no manner, no change of state nor adjectival properties" (Johns 2007, p. 547).

According to Johns, all IVs are derived from only three basic light verbs: *be*, *have*, and *do*, plus operators like negation (∼) and quantity (Q) as in the example below:

(40) a. $[\sim P_{have}]_{v}Q$
b. savi-kiksa-rama
knife-not.have.enough-CAUS.1S
'I am short of knives.' (Mittimatalingmiutitut from Johns 2007:549)

Tersis and Mahieu (2006) argue, however, that although the meaning of IVs is abstract, it is quite precise. The apparent underspecification is an impression given by translation of one IV as many different verbs in other languages like English or French. To illustrate this hypothesis, they attempt to give precise definitions for several IVs in Tunumiisut, an Inuit dialect spoken in Eastern Greenland. For example, their translation for *suq* (the tunumiisut equivalent for *tuq*) is "occasional process by which an (often human) agent performs a series of repetitive movements with something'' (Tersis and Mahieu 2006, p. 167). This definition is more specific than what Johns states, and, if correct, implies a manner in the action evoked, contra Johns (2007).

Perhaps more straightforwardly, examples of relatively precise IVs are given in Johns (2007), presented as IVs based on the light verb *be* ('I' in (a) examples of (41-44)) plus operators of vision, action, sound and smell to account for their meanings.

(41) a. [I_{vision}]
b. Naatali-uqquuji-juq.
Natalie-resemble-DECL.3S
'S/he looks like Natalie.' (Mittimatalingmiutitut from Johns 2007:545)

(42) a. [I_{action}]
b. Naatali-jjuujaaq-tuq.
Natalie-act.like-DECL.3S
'S/he is acting like Natalie.' (Mittimatalingmiutitut from Johns 2007:553)

(43) a. [I_{sound}]
b. uqqusaut-Ø sikituur-valuk-tuq.
furnace-ABS.SG skidoo-sound.like-DECL.3S
'The furnace sounds like a skidoo.' (Mittimatalingmiutitut from Johns 2007:553)

(44) a. [I_{smell}]
b. uniq-sunniq-tuq.
armpit-smell.like-DECL.3S
'It smells like an armpit.' (Mittimatalingmiutitut from Johns 2007:553)

We did not compare IVs with lexical verbs and with functional categories for this criterion due to our uncertainty of how to prove if a meaning is specified, and to what extent. We assume, following Johns and others, that lexical verbs permit a highly specified meaning, contrary to functional categories.

3 Conclusion

In summary, IVs show some differences with functional categories: they can have more than one complement and the main complement (the incorporated noun) seems to be an argument. However, they behave in most respects like functional categories because they are a closed class, they are morpho-phonologically dependent on the complement (aside from cases of ellipsis), they obligatorily have (at least) one complement, and this complement is of a specific category.

These mixed results seem to advocate for a blurred division between lexical and functional categories (as proposed by Muysken 2008 and Langacker 1990), with IVs not belonging clearly to either class. Results are presented in Table 1, where it can be seen that in some respects (highlighted in red) IVs behave like functional categories and in the others (highlighted in blue) they behave like lexical verbs. Question marks indicate that a result is not clear to us.

Table 1 Summary of the criteria for functional categories, applied to lexical verbs, IVs, and functional categories in Inuktitut

Criteria		Lexical verbs	IVs	Functional categories
Closed class		NO	YES	YES
Morpho-phonological dependence		NO	YES	YES
Transitivity	Obligatory complement	NO	YES	YES
	Only one complement	NO	NO	YES
	Specific category	NO	YES	YES
	Complement is an argument	YES	YES (?)	NO
Underspecified meaning		NO (?)	NO/YES (?)	YES (?)

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