Morphological conditions on movement chain resolution: Inuktitut noun incorporation revisited*

Michelle Yuan (myuan@ucsd.edu)

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Abstract

Recent research on the Copy Theory of Movement has suggested that the realization of movement chains may be regulated by well-formedness conditions governing complex word formation, such as the Stray Affix Filter (e.g. Nunes, 2004; Landau, 2006). This paper extends this idea to account for certain underdocumented patterns of noun incorporation in Inuktitut (Eastern Canadian Inuit). I provide novel data showing that, in Inuktitut, incorporated nominals are able to participate in case and agreement alternations and undergo phrasal movement—thus, they are *syntactically active* despite being incorporated into the verb. These findings challenge prior characterizations of Inuit incorporation, especially ones in which incorporated nouns are treated as structurally reduced and thus syntactically inert (e.g. Bok-Bennema and Groos, 1988; van Geenhoven, 1998; Johns, 2007; Branigan and Wharram, 2019). I instead pursue an analysis in which incorporation in at least Inuktitut takes place solely to satisfy the morphosyntactic requirements of certain verbs that are lexically specified as affixal (cf. Sadock, 1985, 1991). That incorporated nouns invariably surface within the verb complex even when extracted follows straightforwardly from the aforementioned interaction between chain resolution and the Stray Affix Filter.

1 Introduction

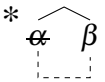
According to the Copy Theory of Movement (Chomsky, 1995, 2000, 2001), movement chains are created by merging copies of a syntactic element in multiple syntactic positions, rather than by leaving traces of the moving element. Certain copies within this movement chain are then rendered phonetically non-overt (i.e. deleted), with the choice of which copies to delete or spell-out determined by various grammatical considerations evaluated at PF (Nunes, 1995, 2004; Abels, 2001; Bošković, 2001; Bobaljik, 2002; Chomsky, 2005; Landau, 2006; Kandybowicz, 2007, 2008, 2009; Martinovic, 2017; van Urk, 2018; Scott, 2021; Bleaman, 2022, a.o.).[1]

This paper investigates one such consideration: how movement chain resolution may be regulated by conditions on the well-formedness of complex words. I focus in particular on the *Stray Affix Filter*—the requirement that affixes and other types of bound morphology be hosted by overt material (Lasnik, 1981, 1995; Baker, 1988). As further developed by Nunes (2004), Landau (2006), and others, adherence to the Stray Affix Filter may prevent the deletion of a movement copy, if that copy happens to serve as a stem for an affixal element. This logic can be schematized abstractly in (1): if an element α forms part of a complex

*Acknowledgments will be included in a later version of this paper.

[1]There is also a body of literature theorizing that the surface position of displaced elements may be determined phonologically without adopting the Copy Theory of Movement (e.g. Cecchetto et al., 2009; Richards, 2010, 2016; Branan, 2018). This work is beyond the scope of this paper and will not be discussed here, although a major question for future research is whether the phenomena being investigated in this paper are amenable to such alternative analyses.

word with some other element β (indicated by dashed square bracketing), then α must be morphologically overt.[2]

(1) 

I present new evidence for this interaction, from noun incorporation in the (Eastern Canadian) Inuktitut varieties of the Inuit language. In Inuit, incorporation of a direct object is obligatorily triggered by a small set of affixal verbs, underlined throughout this paper (Sadock, 1980, 1985, 1986, 1991; Bok-Bennema and Groos, 1988; Johns, 1999, 2007, 2009; Compton and Pittman, 2010b; Branigan and Wharram, 2019, a.o.). The novel empirical contribution I make is that *incorporated objects in Inuktitut are syntactically active*, and, in particular, may undergo phrasal movement. An initial illustration is presented in (2), which shows that affixal verbs in Inuktitut may be passivized. Crucially, the nominal (*aasivaq* 'spider') incorporated into the passivized verb (*tuq* 'consume') may bind a subject-oriented anaphor, suggesting that it has undergone *A-movement* to a derived position for subjects.

(2) **Inuktitut: Passivization of incorporated nominal**

aasivar-tuq-ta-u-juq nuliaqta-**mi**-nut
spider-consume-PASS.PART-be-3S.S mate-POSS.REFL-ALLAT
'The spider$_i$ is being eaten by its$_i$ mate.'

We will see that incorporated nouns also participate in case and agreement alternations commonly analyzed as resulting from object shift (e.g. Bittner and Hale 1996a,b; Woolford 2017; Yuan 2022) and may be Ā-extracted through relativization.

Importantly, these findings have ramifications for the theoretical and typological treatment of noun incorporation in Inuktitut. The syntactically active nature of these nominals is difficult to reconcile with the predominant treatment of incorporated nouns in Inuit (and other languages) as structurally reduced and thus inert (e.g. van Geenhoven, 2002; Johns, 2007, 2009; Compton and Pittman, 2010b). Similarly, incorporation constructions in Inuktitut are not detransitivized, in contrast to what has been proposed for other languages, but rather have the same argument structural properties as non-incorporating transitive constructions in the language. These properties are instead generally in line with the conclusions of Sadock (1985, 1991) in his Autolexical Theory (see also Bok-Bennema and Groos 1988), though I will offer a different formal implementation.

I argue that such patterns follow straightforwardly from the aforementioned logic of copy spell-out within a complex word: if noun incorporation takes place to satisfy the morphological subcategorization requirements of an affixal verb (and not any requirements of the nouns themselves), then this should force lower copy spell-out in configurations in which the noun has undergone movement. Assuming a unidirectional mapping from the syntax to the morphology, as in a framework such as Distributed Morphology (Halle and Marantz, 1993), I develop a postsyntactic analysis of complex word-formation in Inuktitut based on iterative operations of M(orphological)-Merger (e.g. Marantz, 1988; Embick and Noyer, 2001) between structurally adjacent heads, for instance, between the verb and the head of its nominal complement. Importantly, the application of M-Merger is insensitive to the syntactic behaviour of the nominal. As a result, at the point of movement chain resolution, the movement copies that have undergone M-Merger with the verb will be unable to be deleted, given the Stray Affix Filter. This line of analysis allows us to unify noun incorporation in Inuktitut with various other morphological patterns of movement chain resolution, and allows us

[2]Throughout most of this paper, I use the dashed square underbracketing seen in (1) as a simplified illustration of the affixation relationship between nodes in a structure. This representation is intended to be agnostic towards the exact morphosyntactic process responsible for affixation, though I will develop a concrete analysis in §4.2.

to identify other cases of syntactically active incorporated nouns cross-linguistically.

This paper is organized as follows. §2 starts with a short overview of prior work on the Stray Affix Filter and its effect on movement chain resolution, and highlights the potential contribution of Inuktitut noun incorporation to this line of inquiry. In §3, I present key morphosyntactic properties of Inuktitut (and Inuit as a whole). In the next sections (§§4-6), I demonstrate that incorporated objects in Inuktitut are accessible to syntactic movement operations, with the incorporation patterns resulting from the aforementioned interaction between the Stray Affix Filter and copy spell-out. §4 shows that these nominals may undergo A-movement via passivization (as seen above) and offers a postsyntactic analysis of incorporation. §5 demonstrates that incorporation constructions in Inuktitut alternate between ergative and antipassive morphosyntax, just like other transitive constructions in the language; this too follows from the present analysis when coupled with existing movement-based accounts of such alternations. §6 then extends the account to $\bar{\text{A}}$-movement, which occurs in relativization contexts, and briefly considers the issue of multiple copy spell-out. Finally, §7 discusses similar incorporation patterns cross-linguistically and highlights additional points of morphosyntactic variation in light of the findings of this paper.

2 Movement chain resolution and the Stray Affix Filter

The Stray Affix Filter of Lasnik (1981, 1995) is a constraint against affixes and other types of bound morphemes surfacing without morphologically overt stems. While originally formulated to account for raising and lowering interactions between V^0 and T^0 at surface-structure (e.g. head movement and affix-hopping), it has more recently been reframed as a morphological condition operating at PF (e.g. Bobaljik, 2002; Landau, 2006). In this paper, we are interested in the idea that adherence to the Stray Affix Filter may affect postsyntactic deletion processes invoked in movement chain reduction. Providing some cross-linguistic case studies exemplifying this idea will set the stage for investigating noun incorporation in Inuktitut.

2.1 Cross-linguistic illustrations and an empirical gap

A particularly common strand of research ties the Stray Affix Filter to patterns of VP-movement cross-linguistically, as the V^0-T^0 affixation requirement may result in multiple copy spell-out of the fronted V^0 (e.g. Abels, 2001; Landau, 2006; Kandybowicz, 2007, 2008; Hein, 2017; Bleaman, 2022). This is illustrated here with VP-topicalization in Hebrew, as analyzed by Landau (2006).[3] In (3a), we see the expected copy spell-out pattern of phrasal movement in Hebrew: highest copy spell-out occurs (because of intonational requirements on topics), and all lower copies are deleted. However, in (3b), a second instance of V^0, the head of the lower copy of the topicalized VP, is also realized, suggesting that the deletion of all lower copies may be overridden in select contexts. Landau (2006) argues that this doubling pattern arises due to the Stray Affix Filter. Because the inflectional features of finite T^0 require an overt host, and because the V^0 of the lower VP copy serves as the host for T^0's features, this instance of V^0 may not be deleted (in contrast, the lower DP copy is still deleted, since there is no reason for it to be pronounced). This is schematized in (3c).[4]

[3]There are also some accounts of verb doubling cross-linguistically that explicitly argue against the multiple copy spell-out analysis. For instance, Aboh and Dyakonova (2009), Kandybowicz and Torrence (2021), and others advocate for parallel chain formation, whereby movement movement chains stem from a single tail; Müller (2016) proposes that verb doubling may be reduced to phonological copying.

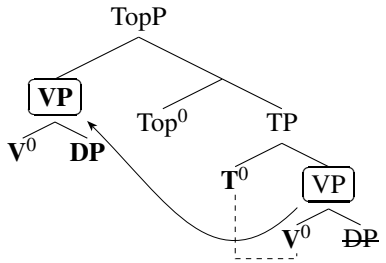
[4]See also Banerjee (2021) for discussion of a similar effect found in the domain of VP-ellipsis—as expected, if movement chain resolution and ellipsis may be unified as both involving postsyntactic deletion under identity (e.g. Chomsky, 1995; Merchant, 2001; Saab, 2022). Banerjee shows that some portmanteaux formed across an ellipsis boundary may not be divisible ellipsis. Interestingly, Banerjee also shows that there are portmanteaux that *may* be divided by ellipsis, suggesting different ways of creating portmanteaux; the latter point will be briefly discussed in §7.2.

(3) **Hebrew: Verb (non-)doubling in VP-fronting**

a. [$_{VP}$ **le'horid** et ha-maym], Gil hištadel ~~VP~~
INF.flush ACC the-water, Gil tried
'To flush the toilet, Gil tried.' (Landau, 2006, p. 38)

b. [$_{VP}$ **le'hasbir** et ha-kišalon], hu lo **hisbir**
INF.explain ACC the-failure he not PST.explain
'As for explaining the failure, he didn't explain.' (Landau, 2006, p. 53)

c.



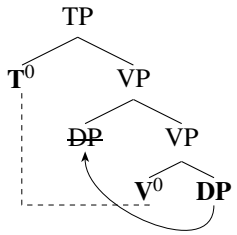
The affixation requirement between V^0 and a higher head has also been argued to interact with independent instances of phrasal movement. For instance, Bobaljik (2002) provides a postsyntactic account of Holmberg's Generalization (Holmberg, 1986, et seq.) that connects constraints on object movement in Scandinavian languages to constraints on verbal inflection. For our purposes, the relevant aspect of this generalization is that, if the lexical verb does not undergo head movement, object shift is also impossible. As exemplified with Swedish in (4a-b), this can be seen in embedded finite clauses, since verbs do not move in such contexts. Bobaljik (2002) argues that, despite surface appearances, object shift takes place in *both* constructions below, but in (4b) this movement step is obscured due to obligatory spell-out of the lower movement copy. Assuming that object shift targets the VP-edge, Bobaljik (2002) proposes that pronouncing the higher movement copy would disrupt the surface adjacency between V^0 and T^0, thus preventing Merger of the two; in contrast, pronunciation of the *in situ* copy obviates this issue. This interaction is illustrated in (4c).

(4) **Swedish: No object shift if lexical verb remains *in situ***

a. Det är troligt [$_{CP}$ att de [$_{VP}$ läste **den**]
it is probable that they read it
'It is probably that they read it.'

b. *Det är troligt [$_{CP}$ att de **den** läste __] (Bobaljik 2002, p. 208)

c.



Beyond these V^0-T^0 interactions, another well-documented area concerns the fact that, in many languages, the surface position of clitics tracks movement of their hosts. For instance, Boškovič (2001) analyzes the variable placement of clitics in Bosnian-Croatian-Serbian (BCS) in terms of movement copy spell-out, as regulated by the surface positions of their verbal hosts. Similarly, Talić (2019) argues that the clitic status of certain P^0s in some dialects of BCS forces them to exceptionally pied-pipe with left-branch extracted XPs.

With all that said, there is a striking paucity of research on the Stray Affix Filter affecting movement chains consisting of *full DPs*. This gap is especially glaring, given that the vast majority of research on phrasal movement has otherwise focused on the movement properties of DPs. To my knowledge, the aforementioned postsyntactic analysis of Bobaljik (2002) is one of the only existing explorations of this idea; however, the underpinnings of Holmberg's Generalization continue to be debated, such that Bobaljik's (2002) account is far from conclusive.[5] Moreover, although there is a lot of other work on the postsyntactic resolution of DP movement chains, this work has focused on various other morphological considerations—but not the specific issue of Stray Affix effects.[6] Thus, while various different morphological considerations have been shown to affect copy pronunciation and deletion patterns cross-linguistically, the specific empirical gap outlined above remains.

Again, this is not ideal, even if the gap is purely accidental: if phrasal movement chains are all created equally, regardless of the syntactic category of the extracted element, then the interactions with the Stray Affix Filter shown above should be straightforwardly replicable with DP movement chains as well.

2.2 The utility of noun incorporation

In the remainder of this paper, I argue that these interactions between DP movement and the Stray Affix Filter are found in noun incorporation contexts in Inuktitut. This conflicts with the typical analysis of incorporated nouns as structurally reduced (e.g. N^0s, NPs), as well as with theories of noun incorporation and complex word-formation that explicitly rule out the incorporation of full DPs to begin with (e.g. Baker, 1988; Baker et al., 2005; Compton and Pittman, 2010b). However, if the analysis of Inuktitut in this paper is correct, then we must conclude that such treatments are too strong (furthermore, comparable patterns found in other languages will be provided in §7). In fact, the aforementioned interaction between DP movement and the Stray Affix Filter will be shown to be remarkably transparent in Inuktitut, due to the systematic and productive nature of its noun incorporation process as well as its polysynthetic status more generally.

As further motivation for this idea, it is already known (from non-polysynthetic languages) that heads of full DPs may affix to verbal hosts.[7] This is illustrated in (5a-b) with determiners in Galician and Malagasy. Both examples below may be modeled as V^0 forming a complex word with a structurally adjacent D^0, as in (5c).[8] This approach is highly reminiscent of N^0-to-V^0 head movement accounts of noun incorporation (e.g. Baker, 1988, 2009; Baker et al., 2005), the difference being that, because the nominal is not structurally reduced, it is D^0 that incorporates.

(5) **D^0-to-V^0 incorporation cross-linguistically**

a. E de quén$_k$ viche-**lo**$_i$ [$_{DP}$ __$_i$ retrato __$_k$]
and of whom saw.you-the portrait
'So, who have you seen the portrait of?' (Galician; Uriagereka 1988, p. 81)

b. Voa-voha-**n'-ilay** vavy ilay varavarana
PV-open-N-DEM girl DEM door
'That door was opened by that girl.' (Malagasy; Ting 2023, p. 1)

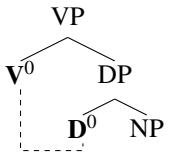
[5] See Vikner (2017) for a recent overview of issues and competing analyses, including counterarguments against the postsyntactic approach of Bobaljik (2002).

[6] For instance, Reintges et al. (2006) propose that lower copy spell-out in Coptic may occur to circumvent the doubly-filled COMP filter when an overt complementizer is present. Kandybowicz (2007, 2009) ties the partial spell-out of lower movement copies to the *that*-trace effect in Nupe. Finally, Scott (2021) shows that lower partial copy spell-out occurring in P-stranding movement contexts in Swahili may satisfy a minimal word requirement in the language. Again, the existing work investigates a variety of morphological conditions on copy spell-out, but crucially not the Stray Affix Filter.

[7] Thank you to a reviewer for bringing this up.

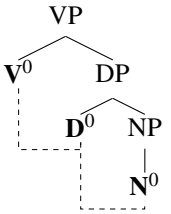
[8] This is indeed what Ting (2023) proposes for so-called *n-bonding* in Malagasy, as seen in (5b).

c.



It then becomes easy to see how incorporation of *an entire DP* into a verb fits into this approach. In addition to D^0 affixing to V^0, N^0 may affix to D^0, and so on:

(6) **Full DP incorporation through V^0+D^0+N^0 affixation**



In the remainder of this paper, I argue that the noun incorporation constructions in Inuktitut are best modeled in this exactly this way. This approach captures the fact that they may be targeted by movement operations. This, in turn, fills in the aforementioned empirical gap: the reason why extracted DPs may ultimately surface as incorporated in Inuktitut is due to the Stray Affix Filter.

3 Morphosyntactic overview of noun incorporation in Inuit

Turning now to Inuktitut, this section provides relevant grammatical background on Inuktitut and Inuit, including key properties of noun incorporation.

3.1 Background

The Inuit language is a dialect continuum (belonging to the Inuit-Yupik-Unangan language family) that spans the North American Arctic and Greenland; Inuktitut is the name commonly used for the varieties spoken in Nunavut and other Inuit land areas in the Eastern Canadian Arctic.[9] Unless explicitly indicated, the uncited data presented in this paper were elicited by the author during three fieldwork trips between August 2016 and October 2017 in the community of Iqaluit, Nunavut. Supplementary data were later elicited remotely (online) in 2018 and 2019. These elicited examples represent produced sentences and grammatical judgments from seven speakers of various North Baffin, South Baffin, and Kivalliq varieties of Inuktitut spoken in Nunavut.[10]

[9] A broader term, Inuktut, has been recently adopted and also includes Western Canadian Inuit varieties not considered here.

[10] For all examples elicited in my fieldwork, I indicate the community that the Inuktitut speaker who produced it hails from. The abbreviations I use are as follows: AB = Arctic Bay, AR = Arviat, CH = Coral Harbour, IG = Igloolik, IQ = Iqaluit, PI = Pond Inlet. For cited examples from published sources on Inuktitut, additional abbreviations include: BL = Baker Lake, PG = Pangnirtung. Finally, for cited examples from published sources that do not indicate specific communities, I indicate broader regions using the following abbreviations: K= Kalaallisut, L = Labrador, NB = North Baffin, NK = Nunavik; SB = South Baffin. The inclusion of this level of detail is intended to serve two purposes. First, it accounts for morphophonological differences across data points (although these differences do not affect the morphosyntactic generalizations formed in this paper). Second, and more pertinently, some of the empirical findings in this paper are unattested in the existing literature on Inuit noun incorporation. It is not clear at this time whether this is due to dialectal variation and whether the Inuktitut data reported in this paper are replicable for other Inuit varieties (indeed, Jerrold Sadock [p.c] has suggested that these patterns do not exist in Kalaallisut). The speaker information included here is thus intended to aid future research on this topic.

Inuit displays base SOV word order, though other non-neutral word orders are also commonly attested (e.g. Fortescue, 1984, 1993; Tersis and Carter-Thomas, 2005), and is described as polysynthetic, with productive noun incorporation. As illustrated in (7) with Inuktitut, it has a large number of suffixal verbs, adjectives, and adverbs, and individual complex words (verbs) that may express propositional-level meanings (Fortescue 1992, 2017; Compton and Pittman 2010b; Compton 2012; see also Mahieu and Tersis 2009).

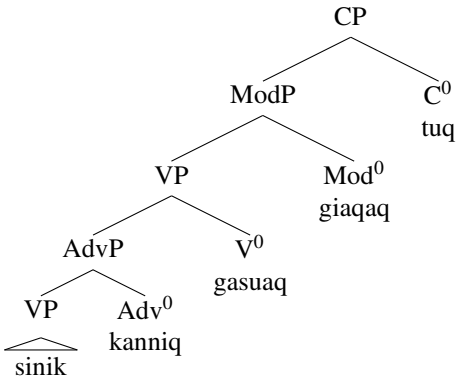
(7) **Polysynthetic complex words in Inuit**

a. qarisauja-ralaa-kulu-tuqa-nnguaq
computer-small-adorable-old-pretend
'an old adorable small pretend computer' (such as a toy computer) (SB; Compton 2016, p. 183)

b. sini-kanni-gasua-riaqaq-tuq
sleep-again-try-should-3S.S
'S/he should try to sleep again. (SB; Compton 2015, p. 559)

Complex nouns and verbs contain a root at the leftmost edge of the word, followed by various derivational and inflectional suffixes. Inuit morpheme order generally adheres to the Mirror Principle, with left-to-right morpheme order straightforwardly mapping to the order of syntactic heads if a right-headed structure is assumed. This is schematized by the simplified structure in (8), corresponding to the sentence in (7b).[11] Verbal agreement is found in the CP-domain (Johns 2007; Compton 2016, 2018; Yuan 2018, 2021, 2022; Compton and Yuan to appear).[12]

(8) **Simplified structure of complex word in Inuktitut (= (7b))**



Inuit displays an ergative case alignment, as shown in (9a-b); throughout this paper, I refer to the type of transitive construction exemplified in (9b) as the *ergative construction*. These data also show that ϕ-agreement indexes both ABS and ERG arguments. The ergative construction alternates with the *antipassive construction*, exemplified in (9c); here, the logical transitive subject, now ABS, is the only argument indexed by ϕ-agreement, while the logical object bears the so-called 'modalis' (MOD) case and is not encoded by agreement morphology. Note also that the verb in (9c) bears an antipassive suffix, though the exact realization (and presence) of this suffix depends on the verb stem (e.g. Fortescue, 1996; Spreng, 2012).

[11] For the purposes of this paper, modifiers such as adverbs are treated as heads that project along the clausal spine, rather than phrasal adjuncts, following Cinque (1999) (*pace* Compton 2017).

[12] As discussed by Compton (2016, 2018), Yuan (2021), and others, that agreement is in the CP-domain is evidenced not only by its rightmost position within the verb but also the fact that it tends to surface as portmanteaux with clause type morphology.

(9) **Intransitive, ergative, and antipassive constructions**

a. **igalaaq** surak-tuq
window.ABS break-3S.S
'The window broke.'

b. Taiviti-**up** **igalaaq** surak-tanga
David-ERG window.ABS break-3S.S/3S.O
'David broke the window.'

c. **Taiviti** igalaar-**mik** surak-**si**-juq
David.ABS window-MOD break-AP-3S.S
'David broke the window.' (AB)

While antipassive constructions are often regarded as syntactically intransitive in many languages, with the logical object demoted from core to oblique status (see Polinsky 2017 and Janic and Witzlack-Makarevich 2021 for recent overviews), this is not an accurate characterization of antipassives in Eastern Canadian Inuit varieties. Prior work has established that transitive constructions in these varieties are *predominantly* expressed with the antipassive construction, whereas the ergative construction is comparatively constrained (Johns, 2001, 2006, 2017; Carrier, 2012, 2017, 2020; Murasugi, 2017; Yuan, 2018, 2021, 2022). It is therefore difficult to conceptualize antipassive constructions as detransitivized versions of ergative constructions. Rather, *both* antipassive and ergative constructions are argument-structurally transitive, with the choice of construction determined by various grammatical factors. This is relevant because noun incorporation constructions in Inuit are often assumed to be essentially antipassive constructions (Bittner and Hale 1996b; van Geenhoven 1998; Branigan and Wharram 2019, cf. Baker 1988). I will ultimately show in §5 that some incorporation constructions in Inuktitut *are* antipassive—but others are ergative.

3.2 Noun incorporation in Inuit

In Inuit noun incorporation constructions, the incorporated nominal is the leftmost morpheme in the verb complex, adjacent to the verb. That the nominal is indeed incorporated can be inferred by its lack of case morphology in these contexts, as well as by the occurrence of regular word-internal morphophonological processes that apply at the morpheme boundary between the noun and the verb (Dorais, 1985, 1986; Bobaljik, 1996).[13] In (10) below, the incorporated object lacks the case morphology found on the stranded adjective modifying it. In addition, the final segment of the nominal is deleted in this context (/k/ $\rightarrow \emptyset$).[14]

(10) **Noun incorporation in Inuktitut (Inuit)**

Ulak **ujami**-liu-qqau-juq piu-ju-**mik**
Ulak.ABS necklace-make-REC.PST-3S.S beautiful-PART-MOD
'Ulak made a beautiful necklace.' (necklace = *ujamik*) (CH)

The case and agreement properties seen in (10) highly resemble the antipassive construction: the logical transitive subject is ABS and is indexed by verbal ϕ-agreement, while modifiers associated with the incorporated object are MOD. That the MOD case is due to concord with the incorporated noun has been known since Sadock (1980). Evidence for concord comes from the fact that it also encodes the nominal's grammatical number in *pluralia tantum* contexts, even when a morphosyntactically plural nominal is semantically singular:

[13] See also Arnhold et al. (to appear) on prosodic diagnostics for word boundaries.

[14] The exact effect depends on the initial segment of the following morpheme, and moreover varies by Inuit dialect. For discussion of the exact morphophonological processes that surface, as well as their variation across Inuit, see Dorais (1985, 1986) and Bobaljik (1996).

(11) **Modifiers of incorporated nouns display case and number concord**

ataatsi-**nik** qamuti-qar-poq
one-MOD.PL carriage-have-3S.S
'He has one carriage.' (K; Sadock 1980, p. 309)

The presence of case concord on stranded modifiers will be useful later, as it will help diagnose the case assigned to the incorporated nominals.

3.2.1 Incorporating verbs are affixal

Cross-linguistically, noun incorporation into a verb complex tends to be optional, as illustrated in (12) with Mapudungun.

(12) **Mapudungun: Noun incorporation is optional**

a. Ñi chao kintu-le-y **ta.chi pu waka**
my father seek-PROG-IND.3SS the COLL cow
'My father is looking for the cows.'

b. Ñi chao kintu-**waka**-le-y
my father seek-cow-PROG-IND.3SS
'My father is looking for the cows.' (Baker et al. 2005, p. 139, citing Salas 1992)

In contrast, a defining feature of Inuit noun incorporation is that it is *obligatory* with a small set of verbs, and otherwise impossible with all other verbs (e.g. Sadock, 1980, 1986, 1991; Johns, 2007, 2009). This is illustrated in (13). Because incorporating verbs in Inuit require affixation to an object, they are often referred to as *affixal verbs* (e.g. Woodbury and Sadock, 1986; Johns, 1999), a term I also use here.[15]

(13) **Inuit noun incorporation is obligatory**

a. **pitsi**-tu-vunga
dried.fish-consume-IND.1S.S
'I'm eating dried fish.'

b. ***pitsi-mik** tu-vunga
dried.fish-MOD consume-IND.1S.S
Intended: 'I'm eating dried fish.' (L; Johns 2007, p. 541)

Following Johns (2007, 2009) and Cook and Johns (2009), the affixal incorporating verbs are light verbs (v^0s) (cf. Hale and Keyser, 1993) while the verbs that do not incorporate are lexical verbs (V^0s), though nothing crucial hinges on this; affixal verbs tend to be more semantically bleached (with fewer s-selectional requirements) than non-affixal verbs. This property is illustrated in (14) with *liri* 'do.'[16]

(14) **Incorporating (affixal) verbs are light verbs**

a. nunasiuti-liri-junga
car-do-1S.S
'I am working on (i.e. fixing) a car.' (IQ)

[15] Since the obligatoriness of incorporation in Inuit is tied to some property of the verb, rather than any properties of the nouns that end up incorporated, the Inuit pattern is distinct from that found in languages in which certain classes of *nouns* obligatorily incorporate. For instance, in Southern Tiwa, inanimate nouns (as well as some other classes of nouns) must undergo incorporation (e.g. Allen et al., 1984).

[16] See Johns (2007, pp. 547–556) for a comprehensive list of incorporating verbs.

b. amuumaju-liri-junga
clam-do-1S.S
'I'm preparing clams.' (IQ)

c. uqalimaaga-liri-junga
book-do-1S.S
'I'm writing a book.' (IQ)

Affixal verbs in Inuit extend beyond just the ones that incorporate a noun. There are also affixal verbs that may incorporate other verbal stems, as well as larger sequences containing tense and mood morphology, as in (15). Building on Pittman (2006, 2009), I assume that these constructions involve the syntactic embedding of *v*Ps and TPs, respectively, as reflected by the bracketing.[17] Note that (15b) additionally shows that affixal verbs may embed other affixal (e.g., noun-incorporating) verbs.

(15) **Affixal verbs incorporating *v*P and TP constituents**

a. [$_{vP}$ Jaani-up nunasiuti-nga aqi]-gasuaq-tara
Jaani-GEN car-POSS.3S.ABS fix -try-1S.S/3S.O
'I am trying to fix Jaani's car.' (IQ)

b. [$_{vP}$ Ulak [$_{DP}$ uuminga ujami]-taa]-qu-jara
Ulak.ABS DEM.MOD necklace -get -want-1S.S/3S.O
'I want Ulak to get this necklace.' (CH)

c. [$_{TP}$ igalaaq siqumi-ta-u-qqau]-niraq-tara
window.ABS shatter-PASS.PART-be-REC.PST -say-1S.S/3S.O
'I said that the window was shattered.' (IG)

This shows that 'noun incorporation' in Inuit is a subtype of a broader pattern of complex word formation, with the verbs given above differing solely in their c-selectional requirements. Thus, there is no theoretically significant distinction between the noun-incorporating verbal affixes and other verbal affixes in the language.

3.2.2 Incorporated nominals are DPs

It has been known since Sadock (1980) that incorporated nominals in Inuit are referential, as they may serve as antecedents for pronouns introduced into the discourse (see also Sadock 1985, 1986, 1991; Johns 2007). This is illustrated in (16).

(16) **Incorporated nominals are referential**

a. Johnny **uvirniru**$_i$-liu-laur-mat
Johnny.ABS shirt-make-PST-CAUS.3S.S
'Johnny made a shirt$_i$.'

b. nulia-nga angirra-rami (***pro***$_i$) taku-llu-ni-**uk**
wife-POSS.3S.ABS home-CAUS.4S.S see-CTMP-4S.S-3S.O
'And his wife came home and she saw it$_i$.' (PI; Johns 2007, p. 539)

It is often assumed that incorporated nominals are structurally reduced cross-linguistically, as they generally surface as bare forms within the verb complex. A particularly influential proposal by Baker (1988) takes incorporated nominals to be N^0s (see also Baker et al. 2005; Baker 2009). This analysis has been extended

[17] See also Woodbury and Sadock (1986), Pittman (2006, 2009), Cook and Johns (2009), Compton and Pittman (2010b), and Yuan (to appear) for further discussion.

to Inuit by van Geenhoven (1998, 2002); similarly, Johns (2007, 2009) proposes that incorporated nominals in Inuktitut are bare roots.[18] However, I highlight here three facts that provide initial clues that incorporated nominals in Inuktitut are in fact not necessarily simplex, and, more broadly, not syntactically smaller than their standalone counterparts.

First, as shown by Compton (2013) and Beach (2011), a variety of suffixes (e.g. both derivational and inflectional morphology) may be incorporated alongside a noun, (17), suggesting that the incorporated element may be an internally complex constituent.[19] Therefore, incorporated nominals in Inuktitut are neither bare heads nor bare roots. These data are, however, compatible with phrasal analyses: for instance, Compton and Pittman (2010b) and Branigan and Wharram (2019) propose that incorporated nouns in Inuit are NPs that lack DP shells.[20]

(17) **Incorporated elements may be complex**

a. **[iglu-tsiava-nngua]**-qaq-tuq
house-great-pretend-have-3S.S
'(S)he has a great pretend house.' (SB; Compton 2013, p. 3)

b. **[niri-ja-tsaq]**-siuq-tunga
eat-TRNS.PTCP-potential-look.for-1S.S
'I am looking for something that can be eaten.' (SB; Beach 2011, p. 355)

However, the incorporated element may in fact be as large as a DP.[21] The examples in (18) show that simplex DPs such as proper names, pronouns, and wh-words may undergo incorporation in Inuktitut (and remain referential or quantificational).

(18) **Incorporation of DPs in Inuktitut**

a. Qallupilluq **Miali**-tu-niaq-pa?
Qallupilluq.ABS Miali-consume-NR.FUT-INT.3S.S
'Is Qallupilluq [a sea monster] going to eat Miali?' (SB; Johns 2009, p. 191)

b. Guuti **uvanga**-liu-lauq-tuq
God.ABS 1S.PRON-make-PST-3S.S
'God made me.' (AB)

c. **suna**-tuq-pin?[22]
what-consume-INT.2S.S
'What are you eating?' (BL; Johns 2007, p. 560)

[18] As a reviewer points out, Johns (2007, 2009) does not necessarily exclude the incorporation of complex material, such as DPs inflected for case and possessive agreement. An example of this is given in (20b) of this paper. Johns (2007) proposes that such constructions contain both a $\sqrt{N}$ and a $\sqrt{P}$ (expressed by the oblique case), and it is explicitly the latter that is targeted for incorporation. However, it is unclear how examples such as (17), with incorporated nouns containing non-P suffixal material, would be handled under this account, assuming that these suffixes are not roots (Compton, 2012).

[19] See also Barrie and Mathieu (2016) on Onondaga (Iroquian) and Ojibwe (Algonquian).

[20] In the specific implementation by Branigan and Wharram (2019), antipassivized and incorporated nouns are generated with a DP layer, but D^0 may then be syntactically deleted via a special mechanism. As noted in §3.2, a working assumption I make in this paper will be somewhat similar in spirit, except I take the incorporated element to remain a DP syntactically.

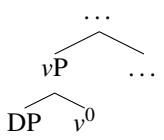
[21] There may be variation across Inuit in this respect: Johns (2009, p. 190) suggests that the ability for DPs to be incorporated may be more productive in Inuktitut than in other varieties such as Kalaallisut. However, this is still restricted by the choice of verb in Inuktitut. For instance, the incorporating verb *qaq* 'have' imposes a definiteness restriction on its complement (e.g. Milsark, 1974), thus preventing the incorporation of a definite DP altogether. The generalizations here thus pertain only to constructions that lack such restrictions. In addition, some Inuktitut speakers generally disprefer the incorporation of animate nominals, finding such constructions to sound rude (see also fn. 27). I leave further investigation of this latter issue for future research, though additional relevant discussion can be found in Beach (2011), p. 341 and Johns (2009), p. 191. Thank you to a reviewer for bringing this up.

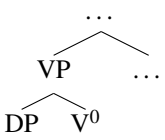
On this basis, Compton (2013) proposes that incorporated nominals in Inuktitut are in fact DPs but simply lack an outermost KP layer (cf. Bittner and Hale, 1996b). Under such an approach, incorporated nominals are only slightly smaller than their standalone counterparts, in being unable to bear case and other kinds of inflectional morphology (see also Bok-Bennema and Groos 1988 for a similar approach).

In what follows, I build on Compton (2013) in taking affixal verbs to embed DPs rather than smaller nominal constituents, but depart in one crucial respect: I argue that incorporated nominals in Inuktitut are *not* structurally reduced at all. We will see that these nominals are accessible to the full range of case, agreement, and movement operations that apply to standalone nominals in the language, pointing towards a uniform analysis of incorporated and non-incorporated objects. Moreover, as structurally reduced incorporated nominals tend to be syntactically inert cross-linguistically (e.g. Massam, 2001; Levin, 2015), the fact that such incorporated nouns are syntactically active in Inuktitut suggests that they are full DPs.

Thus, I assume the structures in (19), for incorporation and non-incorporation constructions, respectively. These differ in the exact category of verb (v^0 vs. V^0, which, as mentioned above, maps to the affixal vs. non-affixal status of the verb), but not in the size of nominal complement.

(19) **Incorporating and non-incorporating verbs both embed DPs**

a.


b.


Why do incorporated nominals lack inflectional morphology, then, in contrast to their standalone counterparts? While I do not provide a definitive answer here, I follow Sadock (1985, 1991) in taking this absence to be morphological in nature, rather than reflective of a syntactic difference. For Sadock, the non-isomorphism between syntax and morphology follows from his Autolexical Theory. As another possible implementation, suppose that incorporated nouns contain all requisite syntactic projections (including those whose heads are typically exponed as inflectional morphology), but certain terminals may be later deleted (for instance, via a postsyntactic operation of *obliteration*, in the sense of Arregi and Nevins 2012). The result would be the absence of inflectional morphology on an incorporated noun. Note also that this is somewhat in the spirit of the proposal of Branigan and Wharram (2019), in which the DP layer of a nominal is syntactically deleted upon incorporation (see also fn. 20); however, my suggestion is to take the deletion process to be postsyntactic rather than syntactic.

Incidentally, it has been known since Sadock (1980) that some affixal verbs in Inuit do permit their nominal complements to bear inflectional morphology (see also Sadock 2002, 2003; Johns 2007, 2009), meaning that the absence of this morphology in other cases cannot be a universal property of Inuit noun incorporation. As shown in (20), the verb *uquuji* 'resemble' permits the incorporation of DPs bearing possessive morphology, and some verbs additionally incorporate DPs bearing oblique case in order to encode location or direction:[23]

[22]Given that this paper focuses on movement of incorporated nominals, a question that arises is whether the wh-word in (18c) has undergone wh-movement, despite its incorporated appearance. Prior work has shown that word order in wh-questions in Inuktitut is somewhat constrained compared to their declarative counterparts, suggesting the occurrence of $\bar{A}$-movement (Gillon, 1999; Sherkina-Lieber, 2004). However, these accounts differ in whether this movement targets Spec-CP (Gillon, 1999) or Spec-*v*P (Sherkina-Lieber, 2004). Therefore, data such as (18c) plausibly constitute another instance of movement followed by lower copy spell-out. That being said, I set wh-questions aside for the remainder of this paper due to lack of available data.

[23]That the incorporated noun in (20b) bears case is evidenced by the occurrence of an allomorphic alternation displayed by oblique case markers (Johns, 2007). For the locative case, the morphs are *mi*∼*ni*.

(20) **Incorporation of DPs with inflectional morphology**

a. Kiuru **[angaju-ngi]**-uquuji-juq
Kiuru.ABS elder-POSS.3S/3P-resemble-3S.S
'Carol resembles her elder relatives.' (AB)

b. **[illu-ni]**-it-tut
house-LOC.PL-V-3P.S
'They are in the houses.' (SB; Johns 2007, p. 561)

Regardless, an assumption (or a suspension of disbelief) along these lines is needed so that we may proceed with the rest of the paper.[24] As we will see, allowing incorporated and non-incorporated nominals to share a common syntax yields novel analytical and theoretical directions that would otherwise be non-starters if we were to maintain the typical treatment of incorporated nouns. I will therefore leave for future work the question of whether the syntactic findings of this paper can be reconciled with the morphological appearance of the nouns in question.

4 Movement of incorporated nouns in Inuktitut: Illustration from passives

In the next three sections (§4-6), I present consecutive arguments that incorporated nominals in Inuktitut may undergo the same types of phrasal movement available to non-incorporated DPs in the language. Here, I start by showing that incorporated nominals in Inuktitut may undergo *passivization* to a derived subject position. Such passive constructions therefore involve *covert A-movement* (Polinsky and Potsdam, 2013), with the in situ movement copy obligatorily realized due to the Stray Affix effect imposed by the affixal verb. I then sketch an analysis of such movement and incorporation interactions in Inuktitut, which will inform the following sections.

4.1 Covert A-movement of incorporated nominals

Johns (2009) observes that incorporation constructions in Inuktitut may contain passive morphology, such as the passive participial suffix (*taq*∼*jaq*) and an affixal copula (*u* 'be'), (21). Though striking data on their own, Johns does not discuss these examples further nor is an analysis provided. To my knowledge, these types of constructions are not attested in any other literature on Inuit incorporation.

[24] For instance, a potential challenge, raised by a reviewer, comes from the fact that the verbs in (20) also permit standalone possessors bearing GEN case morphology, while the verbs that do not permit incorporated inflected DPs also do not permit them to be possessed by GEN possessors. This is shown in the Inuktitut example in (ia) (modeled after ex. (4) from Johns (2009, p. 187)). This, on the face of it, might suggest a syntactic explanation for the absence of inflectional morphology on incorporated nouns. However, note that this is actually a point of variation across Inuit: Sadock (1980, 1991) shows that Kalaallisut does permit this pattern, as in (ib). I take this to indicate that a much deeper investigation of (non-)occurrence of inflectional morphology is needed, but that a morphological account cannot be ruled out.

(i) **Variation across Inuit in availability of GEN possessor**

a. ***Jaani-up nunasiuti(-nga)**-liri-junga
Jaani-GEN car(-POSS.3S/3S)-do-1S.S
Intended: 'I am working on Jaani's car.' (IQ)

b. **kunngi-p pani-passua**-qar-poq
king-GEN daughter-many-have-INDIC.3S.S
'There were many princesses (lit. king's daughters).' (K; Sadock 1991, p. 96)

(21) **Passivized incorporation constructions in Inuktitut**

a. [tuttu-miniq]-tuq-**ta-u**-juq
caribou-former-consume-PASS.PART-be-3S.S
'The caribou meat is being eaten.' (NB; Johns 2009, p. 195)

b. ujami-liuq-**ta-u**-juq
necklace-make-PASS.PART-be-3S.S
'The necklace is being made.' (SB; Johns 2009, p. 195)

I now argue that these passivized incorporation constructions involve *genuine A-movement* of the internal argument to subject position, coupled with spell-out of the lower movement copy due to its incorporated status. This is thus an instance of *covert A-movement* (e.g. Bobaljik, 2002; Polinsky and Potsdam, 2013; Deal, 2013, 2017; Kishimoto, 2013), a point I return to shortly.

The examples in (22) below establish that passive constructions in Inuktitut are indeed expressed with the passive morphology also seen above, and illustrate various properties that help diagnose movement of the internal argument to a structurally high subject position. The passivized subject is ABS and is cross-referenced by subject ϕ-agreement on the verb; the agent bears allative (oblique) case. The passivized subject may also bind an anaphor contained within the oblique agent (the anaphor in (22b) is expressed by a reflexive possessive suffix *mi*); thus, passivization in Inuktitut may create new binding relations between DPs. These properties allow us to conclude that passivized arguments move to a derived A-position. I take this position to be Spec-TP, following Yuan (2018).[25]

(22) **Case, agreement, and binding in passive constructions**

a. angajuqa-tua-mma sua-qqau-jaanga
parent-only-POSS.1S/3P.ERG scold-REC.PST-3S.S/1S.O
'Only my parents scolded me…' (IG)

b. **asi-kka** suak-**ta-u**-qqau-nngit-**tuit** angajuqa-**mi**-nut
other-POSS.1S/3P.ABS scold-PASS.PART-be-REC.PST-NEG-3P.S parent-POSS.REFL-ALLAT
'The others$_i$ were not scolded by their$_i$ parents.' (IG)

Importantly, a closer look at the passivized incorporation constructions introduced above reveals that these constructions display all of the aforementioned properties of (canonical) passive constructions. Therefore, the incorporated noun must also be analyzed as undergoing syntactic movement to subject position. First, passivized incorporation constructions in Inuktitut are productive, and exist in multiple dialects (already seen in (21)). Besides *tuq* 'consume' and *liuq* 'make', as given in (21) above, other affixal verbs may be passivized as well. Additional examples are provided in (23a) with the noun-incorporating verb *taaq* 'get', and in (23b) with *qu* 'tell', which embeds a verbal constituent (Pittman, 2006, 2009). While the constructions in (23) differ in whether the promoted internal argument is incorporated or standalone, this is exactly the point: this distinction does not matter syntactically.

(23) **Various affixal verbs may be passivized**

a. **ujami**-taa-ri-**ja-u**-juq[26]
necklace-get-TR-PASS.PART-be-3S.S
'The necklace was received.' (PI)

[25] Yuan (2018, ch. 6) provides evidence from expletives, ECM, and sentential idioms for the existence of a derived subject position in Inuktitut, and shows that this position is distinct from (lower than) the clause-peripheral position to which nominals in Inuit are otherwise thought to move.

b. **Ulak** uuminga ujami-taa-qu-**ja-u**-qqau-juq
Ulak.ABS DEM.MOD necklace-get-tell-PASS.PART-be-REC.PST-3S.S
'Ulak was told to get this necklace.' (CH)

Passivized incorporated nominals may be indexed by subject ϕ-agreement on the verb. Although this has already been shown with 3S agreement morphology in the examples given above, this could in principle be analyzed as default agreement, perhaps surfacing in the absence of a viable goal (Preminger, 2011, 2014). However, compare (21b) to (24) below: when the incorporated noun is understood as plural, the verb likewise bears 3P agreement (see also (25b-c)).

(24) **Passivized incorporated noun can trigger 3P agreement**
ujami-liuq-ta-u-**jut**
necklace-make-PASS.PART-be-3P.S
'The necklaces are being made.' (CH)

Moreover, stranded elements associated with passivized incorporated nominals are ABS, as shown throughout (25). Recall from §3.2 that this is due to case concord. Thus, we may conclude that the incorporated nominals are ABS themselves.

(25) **ABS stranded modifiers of passivized incorporated nominals**

a. **una** aasivar-tuq-ta-u-qqau-juq
DEM.ABS spider-consume-PASS.PART-be-REC.PST-3S.S
'This spider was being eaten (e.g. if you can see remnants of it).' (IQ)

b. **pingasut** ujami-liuq-ta-u-jut
three.ABS necklace-make-PASS.PART-be-3P.S
'Three necklaces are being made.' (CH)

c. **tamarmik** uqalimaaga-liuq-ta-u-juit NRI-up qaujisaqti-ngin-nut
every.ABS book-make-PASS.PART-be-3P.S NRI-GEN researcher-POSS.3P-ALLAT
'All the books were worked on by the NRI's researchers.' (AB)

Finally, for at least a subset of Inuktitut speakers consulted,[27] passivization of an incorporated noun may create a new antecedent for anaphor binding. This is shown again in (26), repeated from (2). That the internal argument is able to bind into the oblique agent provides further evidence that it has undergone movement to a derived subject position. This also indicates that these constructions cannot be analyzed as impersonal passive constructions with themes that do not raise.

(26) **Passivization of incorporated noun creates new binding antecedent**

a. uumajuq **aasivar**-tu-qqau-juq
animal.ABS spider-consume-REC.PST-3S.S
'The animal ate a spider.' (IQ)

[26]The presence of the transitivizing suffix *gi∼ri* in (23a) will be briefly discussed in §5.2.

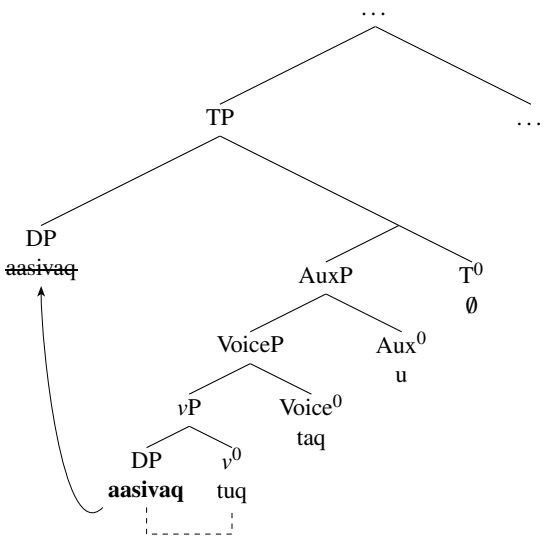
[27] An important caveat here is that the binding pattern in (26b) was accepted by only some speakers. When prompted further for commentary, two speakers who did not accept (26b) independently indicated that they found the topic of the sentence to be distasteful; those speakers both accepted and readily produced passivized incorporation constructions otherwise. It is therefore not clear at this time whether the pattern in (26b) is genuinely ungrammatical for a subset of speakers or simply pragmatically inappropriate. Fn. 21 may also be relevant here; some speakers find the incorporation of animate nominals to sound 'rude'. I leave a deeper examination of this issue for future research.

b. **aasivar**-tuq-ta-u-juq nuliaqta-**mi**-nut
spider-consume-PASS.PART-be-3S.S mate-POSS.REFL-ALLAT
'The spider$_i$ is being eaten by its$_i$ mate.' (AB)

To sum up, I have provided multiple pieces of evidence that passivized incorporated nominals have undergone A-movement to a derived subject position. This allows them to display all the morphosyntactic properties otherwise associated with standalone passivized ABS subjects.

The fact that these passivized nominals surface within the verb complex follows straightforwardly from the proposal put forth in this paper: the movement copy that hosts the affixal verb must be spelled-out, in accordance with the Stray Affix Filter. The derivation of a passivized incorporation construction is given in (27), for the construction in (26b) (though it will be further developed in §4.2). I assume that the internal argument is base-generated as the complement of the affixal verb (v^0), and locate the passive suffix and the copula in Voice^0 and Aux^0 respectively. As noted above, the landing site of A-movement is taken to be Spec-TP. However, because the *in situ* copy of the passivized DP serves as the host for the bound morphology in v^0, it is that copy that is obligatorily pronounced. Finally, I assume that the higher movement copy in Spec-TP is deleted in accordance with general principles of chain reduction—for instance, economy conditions disfavouring multiple copy spell-out (e.g. Nunes, 1995, 2004; Landau, 2006).

(27) **A-movement in Inuktitut noun incorporation**



Finally, beyond incorporation, the present discussion offers a novel and straightforward diagnostic of covert A-movement. As pointed out by Polinsky and Potsdam (2013), covert A-movement constructions are generally difficult to detect and appear cross-linguistically rare compared to their overt counterparts (though see Branigan (2000); Bobaljik (2002); Potsdam and Polinsky (2012); Deal (2019) for attested cases). Given the interaction between syntactic movement and the Stray Affix Filter developed in this paper, an internal argument that undergoes A-movement may be forced to be pronounced *in situ* if its selecting verb is affixal—thus resulting in covert A-movement. This logic is moreover not Inuktitut-specific, and is potentially replicable in other morphologically complex languages (see §7).

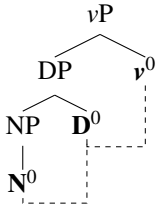
In the next sections, I provide two additional incorporation patterns that further solidify these conclusions. Before that, however, I flesh out the mechanics of complex word-formation in the language in §4.2 below.

4.2 Analysis: Syntactic movement and postsyntactic Merger

We have just seen that incorporated nominals in Inuktitut are syntactically active. What is therefore needed is an account that allows nominals to undergo both syntactic movement and noun incorporation. This conclusion is broadly consistent with Sadock (1985, 1991), the only other analysis (to my knowledge) of Inuit noun incorporation that does not assume structural deficiency of the incorporated element. Specifically, Sadock's Autolexical Theory hypothesizes that syntax and morphology operate in tandem and semi-independently, resulting in non-isomorphisms between syntactic and morphological representations; incorporation takes place due to the morphological subcategorization requirements of certain verbs. This captures how incorporated objects display syntactic properties otherwise found in standalone objects.

While I follow this general approach—specifically, that incorporation in Inuktitut arises from a morphological operation, whose application does not consider the syntactic behaviour of the object in question—I do not think that positing autolexical structures is needed. A unidirectional and transparent mapping from the syntax to the morphological component, as assumed under a Distributed Morphology framework (Halle and Marantz, 1993), may readily capture the Inuktitut data. As already alluded to in §2.2, we may generate syntactically active incorporated nouns through consecutive v^0+D^0+N^0 affixation. This is illustrated as (28), an Inuktitut-specific update from (6). In explicitly ordering syntactic and morphological operations, we may make testable predictions about the timing of these grammatical processes (see §7.2).[28]

(28) **Full DP incorporation through v^0+D^0+N^0 affixation**



Within this framework, affixation may be derived by a process of *Morphological Merger* (henceforth 'Merger'), in which two structurally adjacent heads are rebracketed to form a complex head, (29) (cf. Marantz, 1988). The elements within this newly created complex head are realized as morphologically bound.

(29) **Morphological Merger (definition from Bobaljik 2017)**
A syntactic complementation relation: [X^0 YP]
may be realized in the morphology as an affixation relation:
X affixed to Y, the head of YP: [[Y] X] or [[X [Y]]

Though the bracketing in (29) indicates that X^0 *lowers* down to Y^0, the question of whether Merger proceeds upward or downward does not matter for our purposes, especially given recent work unifying (upward) head movement and (lowering) Merger. For instance, Harizanov and Gribanova (2019) propose a general postsyntactic operation, Amalgamation, in which lowering and raising are simply directional feature specifications. Similarly, in Arregi and Pietraszko's (2021) conception of syntactic head movement, putative postsyntactic lowering is reformulated as lower copy spell-out. For expository ease, I continue to use "Merger" as a neutral label, abstracting away from these analytical options. I also continue to assume that this word-building process is postsyntactic, though I believe the patterns in this paper are largely compatible with a syntactic approach to head movement as well, especially when coupled with the Copy Theory of Movement (Ar-

[28] As a reviewer points out, Bok-Bennema and Groos (1988) also develop an account of Inuit incorporation that relies on a notion of adjacency reminiscent of the Merger account to be developed below. Despite this analytical similarity, their account diverges from the present one in a number of respects, most notably in that they assume that incorporated nouns are smaller than their standalone counterparts and that incorporation renders the nominals transparent for case-assignment purposes.

regi and Pietraszko, 2021).[29] Nothing in this paper empirically hinges on this, but it does permit a clearer theoretical unification with other cases of postsyntactically-derived noun incorporation, as I discuss in §7.2.

Given (29), which explicitly references syntactic complementation, Merger proceeds between *structurally adjacent heads*; heads of adjunct phrases cannot be targeted in this system. The idea that Merger ignores adjuncts that may otherwise intervene indicates that it does not operate over linear strings (Embick and Noyer, 2001; Bobaljik, 1995, 2002; Harizanov and Gribanova, 2019).[30] This is also the case in the varieties of Inuktitut surveyed here, as adjuncts modifying nominals may not undergo incorporation in lieu of the nominals themselves.[31] This is exemplified in (30a-b) with the modifier *guulu* 'gold', a nominal itself. This nominal *is* able to undergo incorporation when serving as a complement, as (30c) shows—just not when functioning as an adjunct.

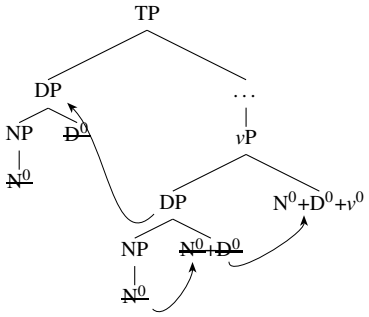
(30) **Nominal may not be incorporated in adjunct position**

a. **guulu-mik** ujami-taa-ruma-junga
gold-MOD necklace-get-want-1S.S
'I want to get a gold necklace.'

b. *ujaming-mik **guulu**-taa-ruma-junga
necklace-MOD gold-get-want-1S.S
Intended: 'I want to get a gold necklace.'

[29]Thank you to a reviewer for pointing this out. Under this approach, phrasal movement of an incorporated nominal would amount to remnant movement of the DP, as in (i). The Stray Affix effect on incorporated nominals would still operate, forcing pronunciation of the copy of the raised N^0.

(i) **D^0+v^0 head movement and DP phrasal movement**



[30]Embick and Noyer (2001) differentiate between what they call "Lowering Merger" and "Local Dislocation Merger", whereby only the former is able to ignore adjuncts. This will be revisited in §7.2.

[31]A reviewer points out that, in the Tarramiut (Nunavik) varieties of Inuktitut, modifiers do seem to be able to undergo incorporation. Such examples will be addressed in §7.2, as they may reflect dialectal variation within Inuktitut pertaining to the exact postsyntactic mechanisms underlying incorporation. For the (Nunavut) varieties I focus on in this paper, I am not aware of any convincing examples of modifier (adjunct) incorporation. Some putative examples are given below, from Johns (2007) and from a reviewer's comments, respectively. However, none of these are incorporated elements are adjuncts. Although Johns (2007) characterizes *savirajaq* in (ia) as an incorporated adjective, it appears to be a nominal object, given that its modification by *-tuinnaq* 'only' does not yield an adverbial meaning (such as 'noun only of metal'). In (ib), the incorporated elements seem to be predicative, complements of the copula *u* 'be'.

(i) **Apparent incorporation of modifiers (adjuncts) in Inuktitut**

a. **saviraja-tuinna**-qaq-tuq
metal-only-have-3S.S
'There's only a metal one (a paddle).' (SB; Johns 2007, p. 560)

b. **pingasu**-u-qqau-galuar-mata **marrutu**-u-lir-llutik
three-be-REC.PST-although-CAUS.3P.S two-be-PROG-CTMP.3P.S
'They were three but they are now two.' (NB; from reviewer)

c. **guulu**-taa-ruma-junga
gold-get-want-1S.S
'I want to get some gold.' (IQ)

This Merger-based approach to noun incorporation can be readily synthesized with the algorithm responsible for movement chain resolution, as both take place in the postsyntactic component of the grammar. Suppose an order of operations as in (31):

(31) **Proposed order of operations**
a. Syntactic movement
b. Merger between structurally adjacent heads
c. Movement chain resolution (regulated by the Stray Affix Filter)
d. Vocabulary Insertion[32]

After syntactic movement and word-formation (which may result in a movement copy being part of a complex word), the algorithm responsible for copy spell-out and deletion applies. The Stray Affix Filter operates on this movement chain resolution algorithm by preventing the deletion of any copies that have undergone Merger (Nunes, 2004; Landau, 2006). In Inuktitut, this means that movement copies that have undergone noun incorporation must be obligatorily spelled out with the affixal verb.

5 A movement analysis of 'ergative' incorporation constructions

I now extend the analysis to case and agreement alternations in incorporation constructions. I demonstrate that noun incorporation constructions in Inuktitut are not strictly antipassive; rather, they *alternate* between antipassive and ergative. These alternations are argued to reflect (non-)movement of the object.

5.1 Ergative vs. antipassive alternations

Noun incorporation constructions in Inuit have been characterized as appearing intransitive or antipassive in nature, with subjects appearing as ABS and modifiers of incorporated objects marked with MOD case, and with only subject agreement present on the verb. However, Johns (2009) and Beach (2011) have both independently observed that incorporated nominals in Inuktitut may in fact also be cross-referenced by object agreement, as illustrated in (32). These data do not figure into any other literature on Inuit incorporation and it is not clear whether they hold in other varieties beyond Inuktitut. They are moreover left unanalyzed by both authors.

(32) **Agreement with incorporated objects in Inuktitut**
a. iqaluk-tuq-**para**!
fish-consume-IND.1S.S/3S.O
'I'm eating the fish!' (SB; Johns 2009, p. 195)

b. kuu-kkuuq-**tara**
river-go.through-1S.S/3S.O
'I am going through the river.' (SB; Beach 2011, p. 369)

In my fieldwork, I have found that this pattern is quite productive among the speakers consulted and is also attested with a variety of verbs. This is shown throughout (33)-(34).[33] Note that the (b) examples below

[32] See Saab (2022) on the idea that VI follows, and may be bled by, deletion processes.

[33] However, not all incorporating verbs may participate in this type of case/agreement alternation. For instance, constructions containing the verb *qaq* 'have' must remain antipassive, possibly related to the definiteness restriction this verb imposes (see fn.

feature a slight difference in meaning from their non-ergative counterparts above (the translations provided by the speakers who produced the Inuktitut sentences), a point which we will return to in §5.3 below.

(33) **Agreement alternations with *liri* 'do'**

a. nunasiuti-liri-juma-junga
car-do-want-1S.S
'I want to work on a/the car.' (CH)

b. nunasiuti-liri-juma-**jara**
car-do-want-1S.S/3S.O
'That car, I want to work on it.' (CH)

(34) **Agreement alternations with *taaq* 'get'**

a. ujami-taa-ruma-junga
necklace-get-want-1S.S
'I want to get a necklace/necklaces.' (AB)

b. ujami-taa-ri-juma-**jakka**
necklace-get-TR-want-1S.S/3P.O
'I want to get these necklaces.' (AB)

Importantly, this pattern is distinct from other patterns of object agreement in incorporation contexts, discussed in prior Inuit literature (e.g. van Geenhoven, 2002). In (35a), for instance, object agreement indexes the standalone indirect object of a ditransitive construction, rather than the incorporated direct object itself (which is MOD). Similarly, in (35b-c), the incorporated elements appear to be functioning as secondary predicates; the targets of object agreement are the standalone arguments shared between the two predicates. The incorporated nominal itself is not cross-referenced by agreement in any of these examples.

(35) **Agreement with standalone objects in incorporation constructions**

a. Miali-up **Diane** ujami-liuq-**taa** (amisu-nit)
Mary-ERG Diane.ABS necklace-make-3S.S/3S.O (many-MOD.PL)
'Mary has made Diane (many) necklaces.' (SB; Carrier 2016, p. 3)

b. (*pro*) **atigi** kumila-gi-**jara**
(1S.PRON.ERG) sweater.ABS worm-have.as-1S.S/3S.O
'My sweater is itchy.' (Lit. 'I have the sweater as worm.') (AR)

c. **(*pro*)** pingasu-u-tip-**pakka**
(3S.PRON.ABS) three-be-think-IND.1S.S/3P.O
'I thought them to be three.' (K; Bok-Bennema and Groos 1988, p. 45)

I now show that the constructions in (32)-(34) are in fact *ergative constructions* (henceforth, *ergative incorporation constructions*). Object agreement arises in these contexts because the incorporated objects are ABS. As (36)-(37) demonstrate, transitive subjects of such constructions bear ERG case, and modifiers of the incorporated nominals appear ABS. Thus, noun incorporation constructions in Inuktitut *alternate* between antipassive and ergative.

21). However, a reviewer correctly points out that it may have a transitive counterpart, *gi*∼*ri*, often glossed as 'have as.' The latter is discussed in fn. 34.

(36) **Antipassive vs. ergative incorporation constructions with *-liuq* 'make'**

a. Ulak **ujami**-liu-qqau-juq piu-ju-**mik**
Ulak.ABS necklace-make-REC.PST-3S.S beautiful-PART-MOD
'Ulak made a beautiful necklace.' (CH)

b. Ula-**up** **ujami**-liu-qqau-**janga** **piu-juq**
Ulak-ERG necklace-make-REC.PST-3S.S/3S.O beautiful-PART.ABS
'Ulak made this beautiful necklace.' (CH)

(37) **Antipassive vs. ergative incorporation constructions with *-tuq* 'consume'**

a. Taiviti **sivalaar**-tu-ruma-juq
David.ABS cookie-consume-want-3S.S
'David wants to eat the cookie/cookies.' (AB)

b. Taiviti-**up** **sivalaar**-tu-ruma-**jangit**
David-ERG biscuit-consume-want-3S.S/3P.O
'David wants to eat these cookies.' (AB)

Recall that previous analyses of Inuit have likened noun incorporation to antipassivization (e.g. van Geenhoven 1998; Branigan and Wharram 2019); while this is not incorrect, we may now see that this only captures half of the overall picture.

That being said, a notable difference between affixal and non-affixal verbs is that the former generally do not bear antipassive morphology. Rather, for most affixal verb stems, whether the overall construction is antipassive or ergative can only be determined based on its case and agreement frame. There are some exceptions, however. Affixal verbs that embed *v*P and TP complements do bear overt antipassive morphology, as shown in (38a-b) (compare with (15b)-(15c) above). Moreover, as seen in (23a) and (34) above, the noun-incorporating verb *taaq* 'get' bears additional transitivizing morphology *gi∼ri* in the ergative construction.[34]

(38) **Antipassivization of *v*P/TP-embedding affixal verbs**

a. (*pro*) Jaani-**mik** ani-qu-**ji**-junga
(1S.PRON.ABS) Jaani-MOD leave-want-AP-1S.S
'I want Jaani to leave.' (AB; Yuan 2018, p. 213)

b. Jaani ani-nira-**i**-qqau-juq Miali-**mik**
Jaani.ABS leave-say-AP-REC.PST-3S.S Miali-MOD
'Jaani said that Miali left.' (PG; Yuan 2018, p. 213)

Conversely, non-affixal verbs do very often bear antipassive morphology when antipassivized, as shown in examples such as (9) in §3.1.[35] Although it is not clear why this difference holds, I tentatively suggest that the ergative incorporation constructions are a more recent innovation in Inuktitut, perhaps having developed on analogy with existing ergative vs. antipassive alternations in the language (such as those in (38)). This idea is consistent with the fact that antipassive incorporation constructions are found across Inuit (and related Yupik languages), while the ergative incorporation constructions seem to only be attested in Inuktitut, not to mention severely underdocumented. Under this view, there would be no reason for noun incorporation

[34]This morphology is often glossed as 'have as' in the Inuit literature; as seen in examples such as (35b), this morpheme may introduce an additional argument. The argument-introducing instance of *gi∼ri* seems to be diachronically related yet synchronically distinct from that in (23a) and (34), in which the morpheme does not contribute additional argument structure. I assume that this is the result of grammaticalization.

[35]Whether a given (non-affixal) verb occurs with antipassive morphology or not is moreover largely predictable by its argument structural and inner aspectual properties (e.g. Fortescue, 1984; Spreng, 2012; Basilico, 2019).

constructions to develop verbal antipassive morphology to begin with.

Regardless of their grammatical origins, I will continue to assume that the ergative and antipassive incorporation constructions are at least *synchronically* equivalent to other ergative and antipassive constructions in the language.

5.2 Against a hyponymous doubling analysis

Before turning to movement in ergative incorporation constructions, I briefly argue against an alternative treatment of the data shown so far: could it be that the target of object agreement is not the incorporated noun, but rather a *distinct argument*, on par with the examples in (35) above? Indeed, this idea has been furthered by Rosen (1989), Chung and Ladusaw (2004), and Barrie (2015) for incorporation constructions in a variety of languages. According to this view, the incorporated noun is a classifier or modifier of some other standalone nominal, which is the true object of the verb. Evidence for this approach primarily comes from the possibility of *hyponymous doubling*, in which the incorporated noun is necessarily understood as less specific (or more generic) than the standalone doubled noun. An example from Onandaga is given below in (39). In the same spirit, the true object in the Inuktitut examples above could be a null *pro*, or perhaps a stranded modifier if one is present.

(39) **Onandaga: Hyponymous doubling of incorporated objects**

wa$^{?}$-k-**naskw**-a-hnino-$^{?}$-ne$^{?}$ **kwihskwihs**

FACT-1SG.AG-animal-EPEN-buy-PUNC-NE pig

'I bought a pig.' (Barrie 2015, p. 241)

Hyponymous doubling requires that the meaning of the incorporated noun *properly include* the meaning of the standalone double. However, this is not a requirement in Inuktitut. As shown in (40), nominal modifiers[36] do not need to be conceptually related to their incorporated counterparts at all.[37]

(40) **Non-hyponymous nominal modifiers are permitted in Inuktitut**

a. **guulu** **ujami**-taa-ri-ruma-jara

gold.thing.ABS necklace-get-TR-want-1S.S/3S.O

'I want to get this gold necklace.' (IQ)

Alternative hypothesized meaning: #'I want to necklace-get this gold thing.'

b. [$_{RC}$ **nutaaq** **ujami**-taa-ri-qqau-jait] taku-juma-jara[38]

new.thing.ABS necklace-get-TR-REC.PST-2S.S/3S.O see-want-1S.S/3S.O

'I want to see the new necklace you got.' (PI)

Alternative hypothesized meaning: #'I want to see the new thing you necklace-got.'

In fact, true hyponymous doubling is not permitted in incorporation constructions in Inuktitut, as shown by the ungrammatical nature of (41) below. This example was constructed in parallel with the Onandaga example above, with the incorporated object *niqi* 'meat' intended to serve as a classifier doubled by the standalone nominal *tuktuminiq* 'caribou meat'. The commentary provided by the speaker who provided the grammaticality judgment for this sentence moreover indicates that the ill-formedness stems specifically

[36] Following Compton (2012), putative standalone (non-affixal) modifiers in Inuit, such as *nutaaq* 'new thing' and *guulu* 'gold thing' in (40), are not adjectives, but are actually nominals that stand in apposition with the nominals they apparently modify.

[37] Related to this, a reviewer points out that Compton and Pittman (2010a) state that the standalone doubling element must be "more specific in meaning than the incorporated noun" (p. 95). However, given examples such as (40), in which neither nominal is more specific than the other, I believe that it may be more accurate to reframe this as a requirement that the standalone element *must not be less specific*. This, again, is not quite like hyponymous doubling cross-linguistically.

from the doubling of the two nominals. The impossibility of hyponymous doubling in incorporation has also been explicitly noted by Sadock (1985, 1991) for Kalaallisut.[39]

(41) **No hyponymous doubling of nominals in Inuktitut**[40]

*__tuktu-miniq__ __niqi__-tu-ruma-jara
caribou-former.ABS meat-consume-want-1S.S/3S.O
Intended: 'I want to meat-eat this caribou meat.' (IQ)
Speaker's comment: "Sounds like, 'this caribou meat, I want to eat the meat'."

Together, these facts challenge the hyponymous doubling analysis. I conclude that the agreement patterns shown above genuinely target the incorporated object.

5.3 Object movement in ergative incorporation constructions

I now argue that ergative incorporation constructions in Inuktitut are derived by movement of the (incorporated) object to a clause-peripheral position. The *in situ* movement copy is spelled out due to the affixal nature of the incorporating verb, just as we have seen for passivized internal arguments in §4. This analysis builds on much prior work on Inuit and Inuit-Yupik-Unangan more broadly, in which the case and agreement differences that typify the ergative vs. antipassive alternation are argued to reflect the structural height of the transitive object—specifically, whether it raises out of the verb phrase or remains *in situ* (Johns 1987, 1992; Murasugi 1992, 1997; Bittner 1994; Bittner and Hale 1996a,b; Manga 1996; Woolford 2017; Yuan 2018, 2021, 2022). Below, (42a) provides a simplified illustration of how an ABS object of an ergative construction moves from its base-generated position to the clausal periphery (e.g., Spec-CP). From this position, it c-commands the ERG subject (represented as occupying Spec-TP, the derived subject position).[41] The idea that the object raises past the subject is a common proposal for *syntactically ergative languages*, including but not limited to Inuit, a point I return to shortly.[42] Note that if C^0 bears a feature bundle such as

[39]This seems to be a point of variation across the wider Inuit-Yupik language (sub)family, as Woodbury (2004) shows that hyponymous doubling *is* permitted in Cup'ik. This may indicate that noun incorporation in Yupik requires a different analysis than that proposed in this paper for Inuktitut.

(i) **Cup'ik: Hyponymous doubling of incorporated objects**

a. **can'giira-neng** **neqe**-ngqerr-ameng
blackfish-MOD.PL fish-have-CONSEQ.3REFL.PL.S
Literally: 'when they have fish, blackfish'

b. ***neq-neng** **can'giira**-ngqerr-ameng
fish-MOD.PL blackfish-have-CONSEQ.3REFL.PL.S
Literally (intended): 'when they have blackfish, fish' (Woodbury, 2004, p. 163)

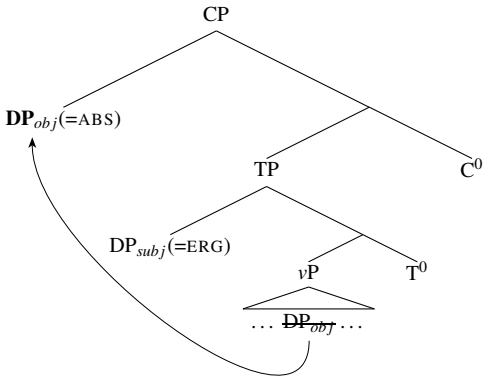
[40]A reviewer suggests that this construction may be better in a antipassive case frame, with a MOD hyponymous object, as in the Cup'ik data given in footnote 39. In the absence of available data, this is difficult to assess, though, as mentioned earlier, Sadock (1985, 1991) has at least claimed that hyponymous doubling is not possible for more closely related Inuit varieties such as Kalaallisut.

[41]Reviewers wonder if the high ABS object analysis may be undermined by the fact that ERG subjects bind ABS objects, and not the other way around. This ultimately depends on how exactly binding is achieved. Much work has argued that binding is actually achieved through a mediating $Voice^0$ (e.g. Kratzer, 2009; Ahn, 2015; Murphy and Meyase, 2020). This proposal has been recently extended to certain syntactically ergative languages by Ershova (2019, 2023), precisely to explain why raising the ABS object past the ERG subject need not reverse the binding relations. I assume that type of approach may be tenable for Inuit as well, especially given that Inuit binding has been described as subject-oriented (Bittner, 1994; Manning, 1996), meaning that c-command by itself is not adequate to achieve a binding dependency.

[42]As a reviewer notes, we may need to posit an additional step of movement of the ERG subject to an even higher position within the expanded CP-domain, to account for the SOV word order of the language. This may also contribute to certain scopal properties of ERG subjects (e.g. Wharram, 2003; Branigan and Wharram, 2019), which I have set aside in this paper (as my focus is on the

[uϕ,EPP] (not shown below for brevity), then it will display ϕ-agreement with the object that it targets for movement.[43]

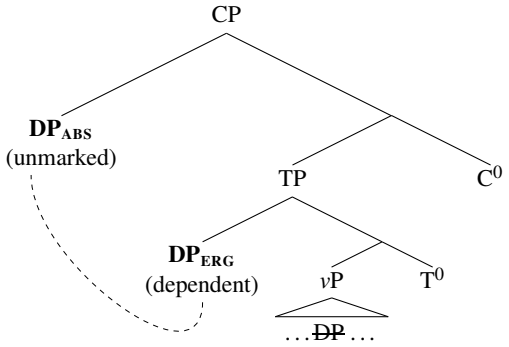
(42) **Derivation of ergative construction**



In contrast, MOD objects of antipassive constructions do not move. As such, there is no object ϕ-agreement in antipassive constructions. An antipassive construction would thus look identical to (42), except that the object remains in its base position.

This movement step may additionally derive the ERG-ABS case patterning of the ergative construction. Here, I adopt a simplified version of Yuan (2018, 2021, 2022): ERG case is a *dependent* case (e.g. Marantz, 1991; Baker, 2015), assigned to the subject only in the presence of an additional *v*P-external argument. Therefore, ERG case is assigned *after* object movement, to the lower of two *v*P-external nominals.[44] Finally, the object is realized as ABS, an unmarked case assigned to *v*P-external nominals that do not receive dependent ERG case. This is shown in (43).

(43) **Downward dependent ERG in Inuktitut (based on Yuan 2022, ex. 15)**



In contrast, because there is no object movement in the antipassive construction, the subject lacks a so-called case competitor within the *v*P-external domain and thus cannot be assigned dependent ERG case. Instead, the subject is realized as ABS, the *v*P-external unmarked case. Yuan (2022) assumes that a second unmarked case, MOD, is assigned to the *in situ* object inside the *v*P.

Having established these assumptions, we return to ergative incorporation constructions. These constructions are given again below:

objects). The trees provided in this section would thus reflect pre-scrambling points of the derivation.

[43] Yuan (2018, 2021, 2022) labels the relevant head as AgrO^0, but locates it within the extended CP-domain (Rizzi, 1997). Yuan also argues that, in Inuktitut, object movement to Spec-AgrOP ultimately yields pronominal clitic-doubling, in that the high movement copy is converted into a pronoun that co-occurs with the full DP object (Baker and Kramer, 2018). For simplicity, I abstract away from this additional step here, though the incorporation facts are fully compatible with this approach.

[44] See Baker and Bobaljik (2017) and Yuan (2018, 2022) for empirical evidence for a dependent treatment of ERG case assignment in Inuit-Yupik-Unangan.

(44) **Inuktitut: Ergative incorporation constructions**

a. Ula-**up** **ujami**-liu-qqau-**janga** **piu-juq**
Ulak-ERG necklace-make-REC.PST-3S.S/3S.O beautiful-PART.ABS
'Ulak made this beautiful necklace.' (CH)

b. Taiviti-**up** **sivalaar**-tu-ruma-**jangit**
David-ERG biscuit-consume-want-3S.S/3P.O
'David wants to eat these cookies.' (AB)

The availability of ERG case in (44) suggests that noun incorporation does not disrupt case assignment to the subject. If ERG case assignment is dependent, then the incorporated object must be able to participate in the dependent case algorithm. This is fully expected given our analysis thus far, since incorporated nominals are taken to be syntactically active, but is in contrast to the cross-linguistically more common picture of incorporation *bleeding* ERG case assignment to the subject. The latter is illustrated with Chukchi (Levin, 2015; Baker and Bobaljik, 2017):

(45) **Chukchi: No ERG subjects in incorporation contexts**

a. ətləg-**e** **mətqəmət** (kawkaw-ək) kili-nin
father-ERG butter.ABS bread-LOC spread.on-3S>3S
'The father spread the butter (on the bread).'

b. ətləg-**ən** (kawkaw-ək) **mətqə**-rkele-nen
father-ABS bread-LOC butter-spread.on-3S>3S
'The father spread butter (on the bread).' (Polinskaja and Nedjalkov, 1987)

Object movement in ergative constructions is not necessarily evidenced by changes in sentence-level word order, but by various syntactic and semantic properties that hold of ABS objects. I show that these characteristics are displayed by objects of ergative incorporation constructions as well.

First, the high locus of ABS objects leads to the syntactically ergative appearance of Inuit, in that ABS subjects and objects occupy a uniformly high position and behave accordingly. Most notably, only ABS arguments may participate in certain Ā-dependencies, such as relativization (e.g. Creider, 1978; Fortescue, 1984; Johns, 1987; Bittner, 1994; Murasugi, 1997).[45] An example of ABS object relativization is given in (46). I assume that the relativized nominal *miiqqat* 'children' is base-generated in the embedded clause (where it serves as case competitor for the ERG subject), but is deleted under identity given the presence of the clause-external head; see §6.1 for further details. There is much evidence from other syntactically ergative languages indicating that this kind of restriction can be directly derived from the structurally high locus of ABS subjects and objects alike (e.g. Tada, 1993; Aldridge, 2004; Coon et al., 2021; Branan and Erlewine, to appear); see also Murasugi (1992, 1997) for an Inuit-specific analysis that explicitly builds on this assumption.

(46) **Relativized objects must be ABS**

miiqqat [$_{RC}$ Juuna-p __ paari-sai]
child.PL Juuna-ERG **(ABS)** look.after-PTCP.3S.S/3P.O
'the children that Juuna is looking after' (K; Bittner 1994, p. 55)

As already shown in (40b) above, ABS objects of ergative incorporation constructions may be relativized as well. This is more clearly shown by the minimal pair in (47) (further examples will be provided in

[45] In Inuit, this restriction is not found in wh-questions or other types of constructions that could be analyzed as involving Ā-movement; it is only seen in relativization.

§6).[46] While the sentence in (47a) reinforces the fact that objects of ergative incorporation constructions may be relativized, the more crucial example is the ill-formed (47b), which shows that MOD (i.e., non-ABS) incorporated objects *cannot* be relativized. In the latter, that would-be relativized incorporated nominal is an antipassive object is indicated by the ABS case of the subject and the absence of object ϕ-agreement on the verb.

(47) **Incorporated relativized objects must be ABS**

a. tii-tu-ruma-jara [$_{RC}$ Jaani-**up** **tii**-taa-ri-qqau-**janga**]
tea-consume-want-1S.S/3S.O Jaani-ERG tea-get-TR-REC.PST-3S.S/3S.O
'I want to drink the tea that Jaani got.' (IQ)

b. *tii-tu-ruma-jara [$_{RC}$ **Jaani** **tii**-taa-qqau-**juq**]
tea-consume-want-1S.S/3S.O Jaani.ABS tea-get-REC.PST-3S.S
Intended: 'I want to drink the tea that Jaani got.' (IQ)

Therefore, like standalone objects, incorporated objects in Inuktitut display a relativization restriction targeting only ABS arguments.

Second, the occurrence of object movement dovetails with the well-known observation that ABS objects in Inuit are obligatorily interpreted as *specific* or with *wide scope* relative to the other elements in the clause (Bittner, 1987, 1994; Bittner and Hale, 1996a,b; Manga, 1996; Wharram, 2003; Beach, 2011; Woolford, 2017; Yuan, 2022).[47] Accordingly, the *v*P-internal locus of antipassive (MOD) objects explains why they may not be relativized and why they may be interpreted as non-specific or with narrow scope. The relevant contrast is illustrated in (48) below with MOD and ABS objects relative to the quantificational adverb *qautamaat* 'each day', with the translations coming from Beach's (2011) grammar of Inuktitut.[48]

(48) **Specificity/scope properties of MOD vs. ABS objects in Inuktitut**

a. qau-tamaat (*pro*) qimmi-**mik** taku-qatta-tunga
day-all.PL (1S.PRON.ABS) dog-MOD see-HAB-1S.S
'Each day, I see a dog (and the sentence doesn't say that it's a 'specific' dog).'

b. qau-tamaat (*pro*) **qimmiq** taku-qatta-tara
day-all.PL (1S.PRON.ERG) dog.ABS see-HAB-1S.S/3S.O
'Each day, I see a dog (a specific dog).' (NK; Beach 2011, pp. 53-54)

Recall that many of the antipassive and ergative incorporation constructions provided above have had distinct English translations. This is, I argue, reflective of the semantic interpretation of ABS objects in the language. This effect is more clearly shown in (49a-b), which illustrate scopal relations. The contexts were provided by the Inuktitut speaker who produced these constructions, when asked for felicitous scenarios in which

[46] That these examples contain multiple instances of the nominal *tii* 'tea' will be addressed in §6.

[47] Though this paper casts the semantic interpretation of ABS objects in terms of specificity or wide scope, the effect is not well-understood and may differ by Inuit dialect. It has also been described as pertaining to definiteness (Fortescue, 1984; Hallman, 2008), topicality (Berge, 1997, 2011; Johns and Kučerová, 2017; Carrier, 2020), and D-linking (Yuan, 2018, 2021, 2022). All of these different characterizations are compatible with the high locus of ABS objects. See also fn. 48.

[48] As discussed by Yuan (2018, 2021, 2022), the exact interpretations available to MOD antipassive objects depend on the Inuit variety in question, as this is linked to a broader point of variation pertaining to the relative robustness of ergativity in these varieties (Johns, 1999, et seq.). Yuan observes that, in Eastern Canadian Inuit, MOD objects may be interpreted as non-specific/narrow scope *or* specific/wide scope (also reflected in the Nunavik dialect examples in (48), from Beach (2011)); in contrast, in Kalaallisut, only the non-specific/narrow scope reading is available in most antipassive contexts (Bittner, 1994). For expository purposes, this paper focuses on the contrast between the (obligatory) specific/wide scope reading of ABS objects and the (available but not obligatory) non-specific/narrow scope reading of MOD objects, since the primary goal is to show that this contrast also holds in incorporation contexts. See Beach (2011, pp. 341-343) and Yuan (2018, pp. 163-164) for evidence that the scopal ambiguity of MOD objects is available for both standalone and incorporated objects in Inuktitut, and see fn. 49 of this paper for further discussion.

each sentence could be uttered. In contrast to (49a), an antipassive incorporation construction, the object of the ergative incorporation construction in (49b) is interpreted as taking wide scope relative to negation and the modal *gunnaq*.[49]

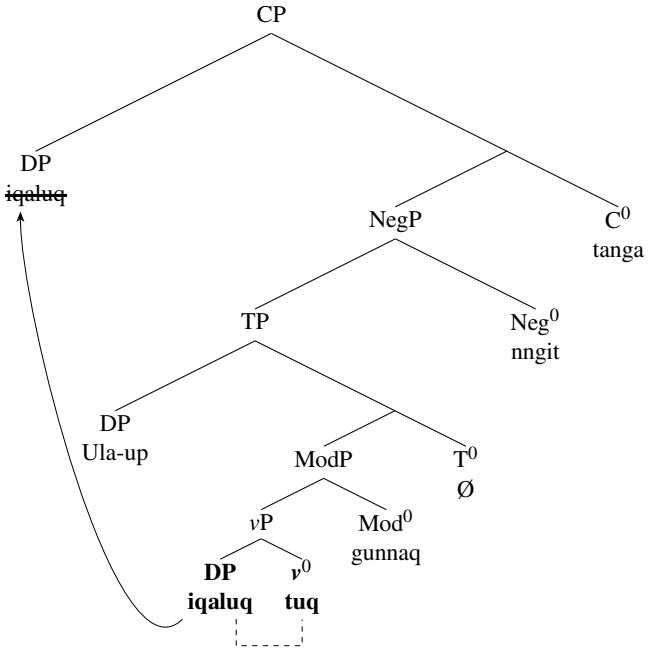
(49) **Specificity/scope properties of MOD vs. ABS incorporated objects**

a. *Felicitous context provided by speaker:* "Ulak has a seafood allergy."
Ulak **iqalu**-tu-runna-nngit-tuq
Ulak.ABS fish-consume-MODAL-NEG-3S.S
'Ulak can't/won't eat (any) fish.' ($\diamond/\neg > \exists$) (CH)

b. *Felicitous context provided by speaker:* "Ulak won't eat salmon if there is Arctic char around."
Ula-up **iqalu**-tu-runna-nngit-tanga
Ulak-ERG fish-consume-MODAL-NEG-3S.S/3S.O
'Ulak won't eat a particular fish.' ($\exists > \diamond/\neg$) (CH)

Altogether, these properties of objects of ergative incorporation constructions strongly suggest that they should be analyzed as ABS objects, undergoing movement to the clausal periphery. As schematized below in (50), representing (49b), the resulting derivation is very similar to that for passivized incorporated nominals (§4). Incorporated ABS objects result from the obligatory spell-out of the *in situ* movement copy. This is, in turn, triggered by the affixal nature of the verb. The higher copy is deleted in accordance with general principles of chain reduction.

(50) **Derivation of ergative incorporation construction**



As alluded to above, the structure of an antipassive incorporation construction would differ only in that there is no object movement to Spec-CP. Still, incorporation takes place via Merger between v^0 and the head of its DP complement.

To conclude, in this section I have argued that the analysis of movement and incorporation developed in §4 may be extended to *ergative incorporation constructions*. Incorporation constructions alternate between

[49] As indicated in fn. 48, the non-ergative construction in (49a) is actually semantically ambiguous in that the incorporated object may also take wide scope over negation (in contrast, (49b) is not semantically ambiguous and only has one reading).

antipassive and ergative; these differ solely in whether the object remains in situ or raises to a clause-peripheral position above the (ERG) subject. Once again, that incorporated objects are ultimately realized within the verb complex follows from the Stray Affix Filter, which forces spell-out of movement copies that host morphologically bound material.

6 Movement, incorporation, and copy spell-out in relative clauses

I now briefly extend the present account to noun incorporation in relativization contexts. I show that relativization also reveals variable patterns of movement chain resolution, resulting from the choice of verb in the matrix and embedded clauses.

6.1 Variable spell-out loci in relative clauses

The possibility that incorporated nominals may be relativized is briefly raised by Johns (2009, p. 193), though it is noted therein that this may be an artefact of their English translations.[50] However, as repeated in (51), that relativization is truly taking place comes from the fact that, in these contexts, these nominals must be ABS.

(51) **Relativized incorporated nominals must be ABS**

a. tii-tu-ruma-jara [$_{RC}$ Jaani-**up** **tii**-taa-ri-qqau-**janga**]
tea-consume-want-1S.S/3S.O Jaani-ERG tea-get-TR-REC.PST-3S.S/3S.O
'I want to drink the tea that Jaani got.' (IQ)

b. *tii-tu-ruma-jara [$_{RC}$ **Jaani** **tii**-taa-qqau-**juq**]
tea-consume-want-1S.S/3S.O Jaani.ABS tea-get-REC.PST-3S.S
Intended: 'I want to drink the tea that Jaani got.' (IQ)

In (51a), note also that the relativized nominal is morphologically realized in *both* the embedded and matrix clauses. Compare this to another relativization pattern introduced earlier in (40b), repeated as (52):

(52) **Relativized nominal realized only in RC**

[$_{RC}$ **nutaaq** **ujami**-taa-ri-qqau-jait] taku-juma-jara
new.thing.ABS necklace-get-TR-REC.PST-2S.S/3S.O see-want-1S.S/3S.O
'I want to see the new necklace you got.' (PI)

I suggest that the examples in (51a) and (52) are derivationally identical, but simply display *different patterns of movement chain resolution*. In (52), the relativized nominal surfaces inside the embedded clause due to the affixal nature of the embedded verb. In (51a), however, because both verbs are affixal, the relativized nominal is pronounced twice. In line with the analysis thus far, we may view this as an instance of *multiple copy spell-out*.[51]

[50] Indeed, it is not always evident which is the matrix clause and which is the embedded relative clause, given that they are often morphologically identical. In (51b), however, this distinction *is* made obvious by the ungrammatical example, given that the language lacks case restrictions in matrix clauses. Similarly, in (53), the relative clause bears case concord with the matrix relative head. It is only when both clauses are ERG-ABS that we must rely solely on English translations.

[51] In addition to (51a), the example in (i) below, from Johns (2009), contains a full nominal *uqalimaagaq* 'book' incorporated into the embedded verb and a morpheme *pi* incorporated into the matrix verb. In prior work, *pi* has been analyzed as a 'dummy' pronoun (akin to an expletive) (Johns, 2007) or as a generalized pro-form (Compton and Pittman, 2010a). I tentatively raise the possibility that (i) also reflects multiple copy spell-out, with *pi* being a partially-realized movement copy. It has been observed in many languages that certain members of a movement chain may sometimes be realized as a pronoun (e.g. van Urk, 2018; Baier, 2018). Similarly, certain instances of pronominal resumption have been analyzed as partial movement copies (e.g. Koopman, 1984;

Indeed, due to the biclausal nature of relative clauses, we may systematically manipulate the choice of verbs, thus yielding different patterns of copy spell-out. This is further demonstrated with (53a-c), which form a minimal triplet. These examples were produced by the same speaker as (51a), but are additionally useful because the relativized 'head' is MOD in the matrix clause, resulting in case concord on the relative clause itself. The example in (53a) is parallel to (52a) in that both verbs are affixal, resulting in doubling. In (53b), the embedded verb *taaq* 'get' is affixal, while the matrix verb *imiq* 'drink' is not, resulting in the relativized nominal surfacing only in the embedded clause. Finally, (53c) shows the opposite patterning, with the relativized argument surfacing only in the matrix clause; this is because the matrix verb is affixal while the embedded verb is not. Notice that these examples are nearly identical in their translations, with only slight differences in the lexical semantics of the verbs in question. Again, these constructions simply reflect different ways of spelling out a single movement chain.[52]

(53) **Different patterns of copy realization**

a. **tii**-tu-ruma-junga [$_{RC}$ ibbit **tii**-taa-ri-lauq-tanga]-nit
tea-consume-want-1S.S 2S.ERG tea-get-TR-PST-3S.S/3S.O-MOD
'I want to drink the tea that you got.'

b. imi-ruma-junga [$_{RC}$ ibbit **tii**-taa-ri-lauq-tanga]-nit
drink-want-1S.S 2S.ERG tea-get-TR-PST-3S.S/3S.O-MOD
'I want to drink the tea that you got.'

c. **tii**-tu-ruma-junga [$_{RC}$ ibbit niuvi-lauq-tanga]-nit
tea-consume-want-1S.S 2S.ERG buy-PST-3S.S/3S.O-MOD
'I want to drink the tea that you bought.' (IQ)

Importantly, these findings allow us to adjudicate between different analyses of relative clause formation. The fact that the relativized argument may be realized within the relative clause, as in (52b) and (53a), is incompatible with approaches to relativization in which the Ā-extracted element is null, such as the null operator analysis of Chomsky (1977). However, it is compatible with a *matching* analysis, wherein the Ā-extracted nominal within the relative clause is co-indexed with its clause-external head (e.g. Hulsey and Sauerland, 2006; Deal, 2016).[53] In this way, the Inuktitut data are reminiscent of similar patterns of variable spell-out within relative clauses cross-linguistically, such as in Nez Perce. In the Nez Perce examples in (54), the relative pronoun may be realized in the embedded Spec-TP position or the embedded Spec-CP position (Deal, 2016), and in both cases co-occurs with a clause-external head.

Sichel, 2014). Further work is needed to properly assess this idea and better understand the distribution and usage of *pi* in Inuktitut.

(i) **Relativized incorporation construction with *pi***
[$_{RC}$ **uqalimaaga**-siuq-tara] **pi**-taqa-nngit-tuq
book-look.for-1S.S/3S.O PRON-EXIST-NEG-3S.S
'The book that I am looking for isn't there.' (NB; Johns 2009, p. 193)

[52] Although in previous sections of this paper I have systematically compared incorporation constructions with their non-incorporating counterparts, it is not straightforward to do this with relative clauses in Inuit. This is because the word order patterns in cross-clausal constructions in Inuit have not been systematically explored before to begin with. As such, there is no baseline to which we may compare relativized incorporation construction. For these reasons, this section focuses only on the incorporation constructions, in which it is clear where exactly the nominal is surfacing.

[53] While a purely *raising* analysis (e.g. Kayne, 1994; Bhatt, 2002) also appears compatible with the incorporation data, there may be Inuit-specific reasons against adopting this approach.

(54) **Nez Perce: Variable spell-out positions of relativized arguments**

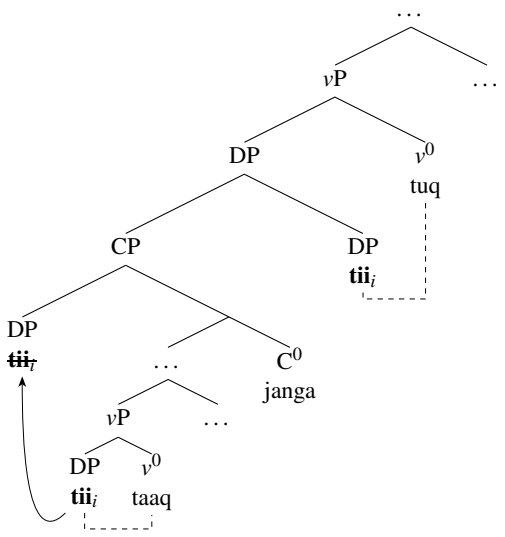
a. **picpic** [$_{RC}$ ke **yox̂** kine hi-pinmix-saqa]
cat.NOM C RP.NOM here AGR-sleep-TAM
'the cat that was sleeping here'

b. **picpic** [$_{RC}$ **yox̂** ke __ kine hi-pinmix-saqa]
cat.NOM RP.NOM C here AGR-sleep-TAM
'the cat that was sleeping here' (Deal, 2016, p. 428)

Simplified representations of the constructions in (53a-c) are thus given throughout (55a-c). Following Compton (2012), relative clauses in Inuktitut may be represented as standing in apposition with the full DPs they modify.[54] These structures share a common syntactic derivation, but simply differ in their spell-out patterns. In (55a), both the relativized object and its clause-external head are pronounced overtly, since both verbs are affixal in these constructions. In (55b), only the *in situ* copy of the relativized nominal is spelled-out, while, in (55c), only the clause-external DP is pronounced. Note that, while the clause-external nominal is not a movement copy, we may still assume that its appearance is regulated by a broader notion of *deletion under identity*, given that it is co-indexed with the Ā-element.

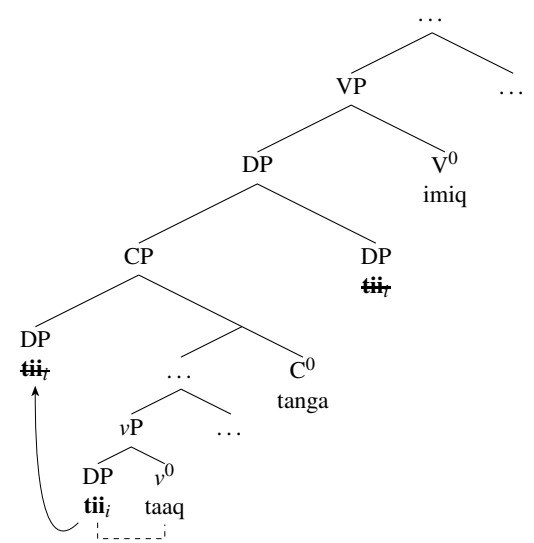
(55) **Copy realization options in relativized incorporation constructions**

a.

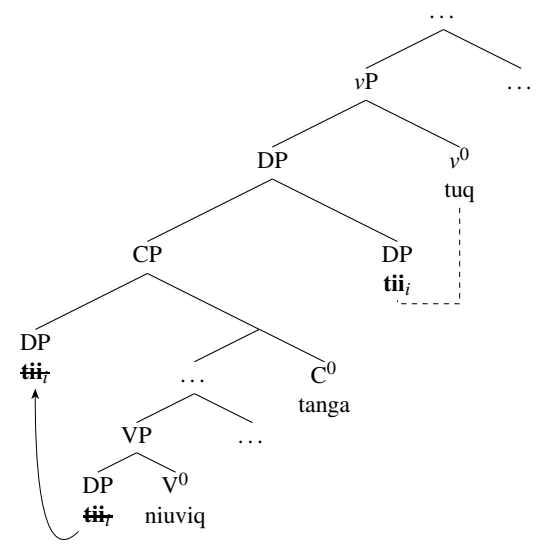


[54] As mentioned in fn. 36, Compton's (2012) proposes that the relative clauses are themselves nominal in nature, such that relative clause structures involve DP-DP apposition (see also Johns 1992 and Yuan 2013). This nominalization step is omitted in this paper for clarity, but is compatible with the present analysis.

b.



c.



6.2 Relativized incorporation constructions are not internally-headed

The Inuktitut examples in which the relativized nominal is pronounced within the embedded clause, e.g., (53b), have surface similarities with *internally-headed relative clauses* (IHRCs) found cross-linguistically. In many languages, IHRCs co-exist with externally-headed relative clauses (EHRCs), as shown below with Japanese. Much prior work on such phenomena has taken them to be syntactically and semantically distinct constructions (Basilico, 1996; Shimoyama, 1999; Hastings, 2004; Bogal-Allbritten and Moulton, 2017). However, this goes against the analysis of Inuktitut relativized incorporation constructions developed above, which takes them to be uniformly syntactically derived by Ā-movement. Thus, I now demonstrate that apparent IHRCs in Inuktitut do not behave semantically like IHRCs in other languages.

The relevant semantic difference is most evident when the relativized argument is modified by a quantifier. In (56), whether the quantifier surfaces within or outside of the relative clause determines the interpretation of the sentence. In (56b), the clause-internal quantifier is only able to take clause-internal scope.

(56) **Japanese: Different interpretations of EHRCs/IHRCs with 'most'**

a. Taro-wa [[Yoko-ga reezooko-ni irete-oita] **kukkii-o hotondo**] paatii-ni motte itta
Taro-TOP Yoko-NOM refrigerator-NI put-AUX cookie-ACC most party-LOC brought
'Taro brought most cookies that Yoko had put in the refrigerator to the party.'

b. Taro-wa [[Yoko-ga reezooko-ni **kukkii-o hotondo** irete-oita]-no]-o paatii-ni
Taro-TOP Yoko-NOM refrigerator-NI cookie-ACC most put-AUX-NM-ACC party-LOC
motte itta
brought
'Yoko put {most cookies}$_i$ in the refrigerator and Taro brought them$_i$ to the party.' (Shimoyama, 1999, p. 149-150)

Importantly, the comparable constructions in Inuktitut *do not* display the interpretive effect found in Japanese IHRCs. As shown in (57), quantifiers associated with incorporated nominals in Inuktitut are interpreted with *matrix scope*. The context for the example in (57b) is first provided in (57a), to exclude the clause-internal interpretation of the quantifier. The fact that (57b) is felicitous reveals that, despite its surface position within the relative clause, the relativized nominal is being interpreted outside of the relative clause.

(57) **Inuktitut: Relativized incorporated objects take head-external scope**

a. Kiuru **tallima-nik ujami**-liu-laur-mat takkua tamarmik
Carol.ABS five-PL.MOD necklace-make-PST-CAUS.3S.S DEM.PL.ABS all.ABS
niuviaksa-ri-laur-tangit
for.sale-have.as-PST-3S.S/3P.O
'Having made five necklaces, Carol had them all for sale...'

b. ...kisiani Taiviti-up niuvi-lauq-tanga [$_{RC}$ Kiuru-up **atausi-tuaq**
...but David-ERG buy-PST-3S.S/3S.O Carol-ERG one-only.ABS
ujami-liu-lauq-tanga]
necklace-make-PST-PART.3S.S/3S.O
'...but David bought only one necklace that Carol made.'
Not: #'Carol made {only one necklace}$_i$ and David bought it$_i$.' (AB)

This is expected under the matching analysis of Inuktitut incorporation constructions. The example in (57b) would have an abstract structure such as (55b), in that the head of the relative clause in the matrix clause is deleted under identity with the incorporated constituent in the embedded clause. We do not predict any semantic differences if the surface position of the relativized nominal is determined solely through morphological factors such as the Stray Affix Filter.

Although the present treatment of Inuktitut departs from the line of analysis furthered by Basilico (1996) and others, it is in the spirit of other, earlier approaches to IHRCs that take the relative head to undergo covert Ā-movement via LF-movement (e.g. Broadwell, 1985; Cole, 1987; Cole and Hermon, 1994). As pointed out by both Basilico (1996) and Shimoyama (1999), what appear to be IHRCs may in fact be a heterogeneous class cross-linguistically, with distinct syntactic and semantic properties. Therefore, we may assume that the contrast between Japanese and Inuktitut IHRCs reflects different strategies in forming such constructions.

6.3 Interim summary

This paper has presented several pieces of evidence that incorporated nominals in Inuktitut may undergo phrasal movement: they may be passivized, undergo object shift, and be relativized. That they are ultimately realized within the verb complex is due to the Stray Affix Filter. This, in turn, is imposed by the morphological requirements of the incorporating (affixal) verbs. Noun incorporation in Inuktitut therefore

offers novel evidence for the idea that conditions on complex word-formation may interact with the resolution of movement chains.

7 Syntactically active incorporated nouns cross-linguistically

In the remainder of this paper, I demonstrate that syntactically active incorporated nouns are attested in other languages. This, in turn, leads us to further consider the Merger operation responsible for postsyntactically-derived incorporation.

7.1 Postsyntactic incorporation in Nuu-chah-nulth and Fijian

Earlier, I proposed that postsyntactic Merger of v^0+D^0+N^0 produces the appearance of syntactically active incorporated nouns. Given the simplicity of this system, it should be attested in other languages as well. I show that this is borne out.

First, as pointed out by Johns (2007), there are other polysynthetic languages that have affixal verbs that obligatorily trigger noun incorporation. Johns mentions Nuu-chah-nulth (Wakashan) and Chukchi (Chukotko-Kamchatkan), but a broader survey suggests that the Northern Wakashan language Kwak'wala (Littell, 2016), and the Iroquoian language Oneida (Barrie, 2011) may also have obligatorily incorporating affixal verbs.[55]

I focus on Nuu-chah-nulth, given the availability of relevant data. First, (58) establishes that certain verbs in the language are classified as obligatorily incorporating:

(58) **Nuu-chah-nulth: Affixal verbs trigger obligatory noun incorporation**

a. **maḥt'a**-'aap-mit-ʔiiš čakup
house-buy-PST-3.IND man
'A man bought a house.'

b. *'aap-mit-ʔiiš **maḥt'ii** čakup
buy-PST-3.IND house man
Intended: 'A man bought a house.' (Wojdak, 2008, p. 78)

Following Wojdak (2008), incorporation in Nuu-chah-nulth takes place postsyntactically. We predict, then, that nouns incorporated into affixal verbs in Nuu-chah-nulth should remain syntactically active, just as they do in Inuktitut. This seems to be borne out. Wojdak (2008) suggests incorporated objects in Nuu-chah-nulth may be passivized and relativized (though she does not provide the kind of supporting syntactic evidence given for Inuktitut). The examples in (59a-b) demonstrate that noun incorporation constructions may contain passive morphology, concomitant with subject agreement and demotion of the agent. Wojdak considers the construction in (59b) to truly involve syntactic movement, concluding, "the syntactic movement of *k'^{w}aq* does not affect its spell-out position hosting the affixal predicate" (p. 202).

[55] A language having affixal verbs that obligatorily incorporate does not preclude that language from also displaying more 'canonical' incorporation processes (though Inuktitut only has the former). For instance, Johns (2007) cites Chukchi (Chukotko-Kamchatkan) has having both types of incorporation, differentiable by the choice of verb (Kurebito 1998, 2001, *pace* Spencer 1995). Kurebito shows that incorporation is obligatory for a closed class of semantically bleached affixal verbs ('make', 'get', etc.)—as in Inuit. In contrast, for other verbs in the language, incorporation is optional and results in a non-specific reading of the object. The Chukchi example given in (45) of this paper illustrates the optional type.

(59) **Nuu-chah-nulth: Passivization of incorporated nouns**

a. **k'^{w}aq**-'iic-ʔiiš k^{w}aaʔuuc
spawned.herring.eggs-consume-3.IND grandchild
'Grandchild is eating spawned herring eggs.'

b. **k'^{w}aq**-'iic-ck^{w}i-'at-ʔiiš ʔuuš-qḥ-'at
spawned.herring.eggs-consume-EVID-PASS-3.IND some-do.by-PASS
'Spawned herring eggs must have been eaten by someone.' (Wojdak, 2008, p. 201)

Similarly, in (60b), the relative pronoun *yaq* is incorporated into the embedded affixal verb (if the verb is non-affixal, as in (60a), the relative pronoun is standalone and serves as the host for various second-position inflectional morphemes). This is, again, similar to incorporation in Inuktitut, except the clause-internal nominal undergoing Ā-extraction is a relative pronoun rather than a full nominal.

(60) **Nuu-chah-nulth: Relativization of incorporated nouns**

a. ƛ'iiḥ-umɬ-ʔiiš **šuwis** [**yaq-čiɬ-mit-ii** maakuk čakup-ʔii]
red-RD-3SG.IND shoes REL-AUX-PST-3SG.IRL buy man-DET
'The shoes the man bought are red.'

b. k^{w}inʔaɬ-mit-ʔiiš John **łučʔin** [**yaq**-'aap-mit-ʔiitk]
like-PST-3.IND John dress REL-buy-PST-2SG.RL
'John liked the dress you bought.' (Wojdak, 2008, pp. 93, 57)

Therefore, incorporation in Nuu-chah-nulth behaves very similarly to incorporation in Inuktitut: it is triggered by affixal verbs, and incorporated nominals remain syntactically active and accessible for movement operations.

A second, though distinct, illustration can be found in Fijian (Oceanic), as seen through the analysis of van Urk (2020). In Fijian, a predicate-initial language, proper names and pronouns in object position must be pseudo noun incorporated. As (61a) shows, they cannot surface with an article, otherwise present when these nominals are in subject position; in contrast, common nouns in object position do still require the article, (61b). Moreover, these objects must surface *immediately adjacent* to the verb stem, as postverbal adverbial particles cannot intervene in such contexts.

(61) **Fijian: Proper names and pronominal objects adjacent to verb**

a. e a **kau-ti** **Jone / au** mai ko Eroni
3SG PST bring-TR.PR Jone 1SG DIR ART.PR Eroni
'Eroni brought Jone/me.'

b. e a **kau-ta** mai **na** **ilokoloko** ko Eroni
3SG PST bring-TR.N DIR ART.N pillow ART.PR Eroni
'Eroni brought the pillows.' (van Urk, 2020, p. 314)

Thus, in contrast to Inuktitut and Nuu-chah-nulth, pseudo noun incorporation in Fijian is not driven by morphological requirements of the verb, but rather by syntactic requirements of the nominal object. van Urk (2020) analyzes this as a Differential Object Marking pattern, in that proper names and pronouns must be formally licensed (Kalin, 2018). Proper names and pronouns are DPs and are thus subject to the Case Filter (in contrast, common nouns are structurally reduced). Following Levin (2015), Merger between the verb and an object allows it to become part of the extended verbal projection, thus rendering the Case Filter vacuous. Thus, pseudo noun incorporation allows DP objects to be licensed postsyntactically.

That these incorporated proper names and pronouns are syntactically active comes from the crucial

observation that extraction of an embedded non-object argument may feed pseudo noun incorporation if it lands in a position immediately following the matrix verb. In (62a), the wh-pronoun (denoting an embedded subject) may appear without its article due to its adjacency with the verb; (62b) shows once again that pseudo noun incorporation is blocked if a linearly intervening element is present.

(62) **Fijian: Movement of embedded wh-pronoun feeds incorporation**

a. au a gai **kila-i** [$_{CP}$ **cei** e talei-taka ko Eroni] nanoa
1SG PST GAI know-TR.PR who 3SG like-TR.N ART.PR Eroni yesterday
'I found out yesterday who Eroni likes.'

b. *au a gai **kila-i** nanoa [$_{CP}$ **cei** e talei-taka ko Eroni]
1SG PST GAI know-TR.PR yesterday who 3SG like-TR.N ART.PR Eroni
Intended: 'I found out yesterday who Eroni likes.' (van Urk, 2020, p. 339)

The same blocking pattern is shown in (63). In the presence of an overt complementizer in C^0, (63a), a clefted proper name must not appear without its article. However, the article may be dropped if the complementizer happens to be null, (63b).

(63) **Fijian: Overt intervening material blocks incorporation**

a. au **kila-a** [$_{CP}$ ni ***(ko)** **Eroni** e a rai-ci iko]
1SG know-TR.N C DET.PR Eroni 3SG PST see-TR.PR 2SG
'I know Eroni saw you.'

b. au **kila-a** [$_{CP}$ **Eroni** e na sure-ti Jone]
1SG know-TR.N Eroni 3SG FUT invite-TR.PR Jone
'I know Eroni will invite Jone.' (van Urk, 2020, p. 338)

Therefore, nominals that undergo Merger with the verb in Fijian are syntactically active. Additionally, in Fijian, syntactic movement of the nominal may even *directly feed* incorporation: Ā-movement to the clausal periphery allows an embedded DP to be licensed via adjacency with the higher verb. Importantly, as van Urk (2020) points out, these data reveal that the relevant licensing effect pertains to *linear adjacency*, rather than structural adjacency. In (62), postposing the adjunct *nanoa* 'yesterday' counterbleeds object licensing; (63) shows that the morphological overtness of the complementizer matters well. Finally, the fact that incorporation is permitted across a CP boundary suggests that it is insensitive to syntactically-defined locality domains.

7.2 Incorporation via Lowering vs. Local Dislocation

The above discussion of Fijian reveals an important empirical difference with Inuktitut. Recall that, in Inuktitut, incorporation is sensitive to *structural adjacency*, rather than linear adjacency. As repeated in (64), for instance, modifiers of incorporated nominals are ignored. In §4.2, I proposed that this is a byproduct of the Merger operation that underlies incorporation in Inuktitut. If Merger operates over structurally adjacent heads formed through complementation (Embick and Noyer, 2001; Bobaljik, 1995, 2002; Harizanov and Gribanova, 2019), then adjuncts do not intervene.

(64) **No incorporation of adjuncts in Inuktitut**

a. **guulu-mik** ujami-taa-ruma-junga
gold-MOD necklace-get-want-1S.S
'I want to get a gold necklace.'

b. *ujaming-mik **guulu**-taa-ruma-junga
necklace-MOD gold-get-want-1S.S
Intended: 'I want to get a gold necklace.' (IQ)

Strikingly, the opposite pattern holds in Nuu-chah-nulth—suggesting that Nuu-chah-nulth behaves more similarly to Fijian. As shown by Wojdak (2008), when an affixal verb takes a modified nominal as its complement, only the *modifier* may be incorporated. This is illustrated in (65) below with an adjectival modifier, but the same pattern holds for quantifiers and determiners, and for adverbs that modify incorporated VPs (Wojdak, 2008, pp. 44-53). As with van Urk (2020), these facts (and others not shown here) motivate Wojdak to generalize that incorporation in Nuu-chah-nulth is driven by considerations of *linear order*.

(65) **Nuu-chah-nulth: Obligatory adjunct incorporation**

a. **haʔum**-'iic-ʔiiš-ʔaɬ ʔaapinis
tasty-consume-3.IND-PL apples
'They are eating delicious apples.'

b. ***ʔaapinis**-'iic-ʔiiš-ʔaɬ haʔum
apples-consume-3.IND-PL tasty
Intended: 'They are eating delicious apples.' (Wojdak, 2008, p. 44)

Zooming out, we can see that, while Inuktitut, Nuu-chah-nulth, and Fijian all share a type of noun incorporation derived by postsyntactic Merger, they differ in whether Merger is sensitive to *structural adjacency* (Inuktitut) or *linear adjacency* (Nuu-chah-nulth and Fijian). This dovetails with a theoretical distinction posited by Embick and Noyer (2001), who posit (at least) two subspecies of Merger, termed *Lowering*[56] and *Local Dislocation*, respectively. As schematized in (66), Lowering precedes Vocabulary Insertion, while Local Dislocation either is concomitant with or follows it.

(66) **Lowering vs. Local Dislocation (Embick and Noyer 2001, p. 566)**

(Syntactic derivation)
|
PF/LF branching
Lowering | ← Hierarchical arrangement of morphemes
Vocabulary Insertion / Local Dislocation | ← Linearization imposed by Vocabulary Insertion
...
|
Phonological Form

Because Lowering takes place relatively early in the postsyntactic component, it is sensitive to hierarchical structure rather than linear order, and may ignore intervening elements such as adjuncts. It also operates over abstract nodes, regardless of their morphological exponence. This is the character of Inuktitut noun incorporation. In contrast, Local Dislocation, being at least as late as Vocabulary Insertion, is sensitive to linear adjacency as well as the overt morphological properties of the elements in question. This is the case for both Nuu-chah-nulth and Fijian, according to the analyses of Wojdak (2008) and van Urk (2020).

Thus, in this section, I have shown that these subtypes of Merger, as proposed by Embick and Noyer (2001), are also relevant to noun incorporation patterns found cross-linguistically. Moreover, just as syntactically-derived noun incorporation is not homogeneous in nature (Baker et al. e.g. 2005, cf. Mithun 1984), postsyntactically-derived noun incorporation may similarly be viewed as displaying organized points of variation. Zooming out, then, the Nuu-chah-nulth and Fijian patterns offer additional support for the analysis of Inuktitut incor-

[56] As indicated in the discussion in §4.2 (especially in fn. 29), it is not important in the current paper whether Merger is truly directionally downwards, i.e., actually lowering. I continue to use the term Lowering here, however, in my discussion of Embick and Noyer (2001).

poration put forth in this paper. Not only do they demonstrate the cross-linguistic import of the account, but they further elucidate our understanding of postsyntactic word-formation operations.

Before concluding, I address a potential complication for the account of Inuktitut developed here, in light of the above discussion of postsyntactic timing. A reviewer points out that Inuktitut dialects spoken in Nunavik permit the incorporation of adjuncts (see also fn. 31). As shown in (67), this pattern is similar to the Nuu-chah-nulth examples given in (65), except it is optional rather than obligatory.

(67) **Optional incorporation of modifiers in Nunavik dialects**

a. illu-nik **pingasu**-liu-laur-tunga
house-MOD.PL three-make-PST-1S.S
'I built three houses.'
Also possible: *pingasu-nik illu-liu-laur-tunga*

b. **[aupar-tu]**-liar-tunga illu-mut
red-PART-go.to-1S.S house-ALL
'I went to the red house.'
Also possible: *illu-liar-tunga aupar-tu-mut* (NK; Beach 2011, pp. 357-358)

This challenges the analysis of Inuktitut noun incorporation insofar as it shows that (Lowering) Merger cannot capture *all* Inuktitut data. Rather, there seems to be dialectal variation within Inuktitut pointing towards small differences in how exactly noun incorporation is derived. I believe that we may once again appeal to the timing of the relevant word-formation operation: if incorporation in Nunavik Inuktitut takes place later than in the Nunavut varieties surveyed in this paper, this may capture why the affixal verbs in (67) are not able to differentiate complements and adjuncts.

There is also another property of Nunavik Inuktitut that potentially supports this direction. The same reviewer notes that these dialects also permit what has been termed *stem ellipsis* (Dorais, 1988; Swift and Allen, 2002; Mauro and Turenne, 2018), in that verb bases may be dropped if contextually salient, stranding suffixes. Mauro and Turenne (2018) additionally show that incorporated nominals may be elided as well, stranding the affixal verb, as in (68). Crucially, according to Mauro and Turenne (2018), such constructions are not permitted in the Nunavut dialects.

(68) **Stem ellipsis may target incorporated nominal in Nunavik dialects**

A: **illu**-liur-paa?
house-make-INT.3S.S
'Is s/he building a house?'

B: aa, **[...]**-liur-tuq
yes ELLIP-make-3S.S
'Yes, s/he is.' (Mauro and Turenne, 2018, p. 145)

These examples are, of course, highly surprising from both typological and theoretical perspectives, as they are essentially violations of the Stray Affix Filter. However, they are at least consistent with the idea that the relevant word-building mechanism in the Nunavik dialects applies late in the postsyntactic component (and may suggest that it takes place even later than in Nuu-chah-nulth and Fijian, which do not display anything like stem ellipsis).[57] It is also worth noting that parallel patterns have been identified by Banerjee (2021), in that portmanteaux formed across a VP-ellipsis boundary vary cross-linguistically in whether they may be divided by ellipsis (see also fn. 4 of this paper). The portmanteaux that do not survive ellipsis are

[57]Indeed, in Compton and Pittman's (2010b) theory of complex word-formation in Inuit, wherein syntactic phases correspond to phonological words, the existence of "stem" ellipsis in Nunavik Inuktitut is one of the motivating factors for positing a fully phonological approach to word-formation.

likewise analyzed by Banerjee as formed rather late in the postsyntactic component. Overall, then, while these Nunavik Inuktitut patterns are incongruent with what I have otherwise shown in this paper, they show that complex word-formation processes may differ even within dialects of a single language.

8 Conclusion

This paper has presented novel evidence for the idea that movement chain resolution may be shaped by conditions on morphological well-formedness, such as the Stray Affix Filter. Building on prior work on V(P)-movement patterns cross-linguistically, a close examination of noun incorporation in Inuktitut has revealed that DPs incorporated into the verb complex display a similar interaction. This analysis crucially necessitates a departure from the typical treatment of incorporated nouns in Inuktitut (and in many other languages) as structurally reduced compared to their standalone counterparts. Incorporated and non-incorporated internal arguments in Inuktitut may undergo the same types of phrasal movement; the only syntactic distinction between the two is in whether the selecting verbal head is affixal or not.

This paper has also developed a postsyntactic analysis of that Inuktitut incorporation, based on iterative applications of postsyntactic Merger (Lowering) between structurally adjacent heads. This not only captures the syntactically active profile of incorporated elements, but it offers a way of capturing the interaction between affixation and movement chain resolution. Moreover, other languages with syntactically active incorporated nominals may be analyzed in a similar vein, with variation in the exact timing of the postsyntactic Merger operation.

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