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POLYSYNTHESIS THROUGH DERIVATION:
THE SEMANTICS OF VERBALIZERS IN WEST GREENLANDIC

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MA THESIS

Polysynthesis through derivation: the semantics of verbalizers in West Greenlandic

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Abstract

In Inuit-Yupik languages (one branch of Inuit-Yupik-Unangan or 'Eskimo-Aleut'), much of the structure traditionally associated with syntax is accomplished solely through bound suffixes. Over the past decades, it has been suggested that what unites these several hundred suffixes is their semantics, with Mithun (1999: 50) noting that Inuit-Yupik suffixes tend to be "more diffuse and/or general in their meaning than their root counterparts," and Cook and Johns (2009: 156) arguing that they universally "do not add any kind of encyclopedic semantics [...], but merely quantify or restrict the semantics of the preceding stem." This absence of polysemy and encyclopedic semantics is now widely considered a defining characteristic of Inuit-Yupik suffixes, and forms the foundation of modern theories on word formation in the languages.

This thesis takes a different perspective, and argues that a lack of encyclopedic semantics cannot be considered a universal property of Inuit-Yupik suffixes. Based on corpus and elicitation data, it presents a detailed analysis of the semantics of nine verbalizers in West Greenlandic, and each of them is shown to add highly specific lexical content to the preceding root, posing a major issue for the aforementioned theories on word formation. As an alternative, it is proposed that these suffixes are exclusively derivational in nature, making Inuit-Yupik words no different from agglutatinatively-formed words in many other language families.

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Index of glosses

>	direction of transitivity
1	first person
2	second person
3	third person
4	fourth person obviative
ABS	absolutive case
ABL	ablative case
ACC	accusative case
ALL	allative case
ASP	aspect
CAUS	causative mood
CONT	contemporative mood
COP	copula
DIST	distal
EQU	equalis case
FUT	future tense
HAB	habitual
IMP	imperative mood
IND	indicative mood
INF	infinitive
INS	instrumental case
INT	interrogative mood
IP	‘intransitive participle’ (§2.3.1.3)
LOC	locative case
M	masculine
N	neuter
NEG	negation
NMLZ	nominalizer
OPT	optative mood
PASS	passive
PCL	particle
PERF	perfect aspect
PL	plural
POSS	possessive
PP	‘passive participle’ (§2.3.1.3)
PRE	prefix
PROL	prolative case
PST	past tense
QUOT	quotative
REFL	reflexive
REL	relative case
SG	singular
SUF	suffix

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1. Introduction

In Inuit-Yupik (IY) languages,[1] spoken across the North American Arctic, much of the structure traditionally associated with syntax is accomplished solely through suffixation. The languages feature a closed class of several hundreds of bound morphemes which can add all manner of complex information to a root. The average word contains between two and three of these suffixes[2] (cf. Allen & Dench 2015: 395), although much more complex combinations are possible. A typical example is the Inuktitut utterance in (1). This single phonological word consists of a root *iglu* 'house', an inflectional ending *-tuq*, and three bound suffixes in between: *-jjuaq* 'big', *-liuq* 'make' and *-lauq* 'PST'.[3]

South Baffin Inuktitut

(1) *Iglu–jjua–liu–lauq–tuq.*
house–big–make–PST–IND.3SG
'She made a big house.' (Compton & Pittman 2010b: 2167)[4]

This word formation through suffixation has seen a great deal of discussion over the last fifty years (see for instance Rischel 1972; Sadock 1980; Van Geenhoven 1998; Johns 2007). It has been loosely compared to phenomena like lexical affixation and noun incorporation (e.g., Gerdts 1998), but a lack of true equivalents in other language families has made it difficult to place within existing typologies and frameworks. A recurring point of debate is how it should be analyzed synchronically: although these suffixes have long been considered derivational (e.g., Smith 1978), the modern consensus is that examples like (1) cannot be an instance of derivation, and that IY languages must instead feature a process of what Sadock (1980: 300) calls "syntactic word formation". In IY words, he argues, "ordinary rules of syntax, including inflectional rules, operate before the constituency of these words is established" (ibid.: 302). How exactly such a process of 'syntactic word formation' should be conceived is a major concern in the literature.

A closely related issue that has intrigued various scholars over the years is what unites this closed class of several hundred suffixes, and how this class came to exist (e.g., Fortescue 1992; Mithun 1997, 1999; Tersis & Mahieu 2006; Cook & Johns 2009). Grammaticalization from roots is considered an unlikely origin, as the suffixes rarely show any phonological resemblance to modern roots. Some have suggested that the

[1] Inuit-Yupik forms a single branch of the Inuit-Yupik-Unangan family. It is also known as the 'Eskimo' branch of the 'Eskimo-Aleut' family.

[2] Besides 'suffixes', these morphemes have also been referred to as 'affixes', 'infixes' and 'postbases'. They are to be distinguished from endings, of which each word contains exactly one at the very end, such as *-tuq* in (1).

[3] Note that the majority of IY suffixes exhibit strong allomorphy, which can sometimes obscure morpheme boundaries (see §2.3.2).

[4] Unless indicated otherwise, orthography, glosses and translations are taken over from the sources cited. Because of large variation in glossing practices, glosses are normalized in a way that does not impact their analysis. Examples from West and East Greenlandic are updated to use standard orthography.

answer lies in their general semantics, noting that IY suffixes tend to be "more diffuse and/or general in their meaning than their root counterparts" (Mithun 1999: 50) and that they "do not add any kind of encyclopedic semantics [...], but merely quantify or restrict the semantics of the preceding stem" (Cook & Johns 2009: 156). This notion that IY suffixes entirely lack encyclopedic meaning has given rise to an innovative and relatively recent theory regarding word formation in the languages (Johns 2007; Compton & Pittman 2010b; Compton 2012), which suggests that the realization of these morphemes as suffixes is a mere side effect of their diffuse semantics. This theory proposes that all IY suffixes are simply verbs, adjectives and adverbs (*-liuq* 'make', *-jjuaq* 'big' and *-lauq* 'PST' in (1), respectively), and that in the case of verbs, what makes them distinct from roots is their lack of encyclopedic meaning (or 'root semantics') and truth-conditional force.[5] It is then proposed that IY languages feature a syntactic operation which requires roots to move to the leftmost periphery, and that phonological words are underlyingly syntactic phases. This is what causes all 'non-roots' to be realized as suffixes. As Johns (2007: 544) puts it, "it is the nature of the verbs which makes them affixes, not vice-versa." This remains a widespread theory on IY word formation (e.g., Massam 2017: 16; Haspelmath 2018: 320; Melchin 2019: 22; Yuan 2023; Mikkelsen & Thrane 2024).

Since this theory is centred around the notion that IY verbalizing suffixes are suffixes fundamentally because they lack encyclopedic meaning, it is vital that this is the case for every single verbalizing suffix in the languages, synchronically and without exception, as similarly pointed out by Johns (2007: 544). However, this is not a given. A select number of verbalizing suffixes across IY varieties, which tend to be glossed over in the literature, express meanings that cannot be defined without involving some amount of encyclopedic knowledge. Examples include West Greenlandic *-erniar* 'sell' (Fortescue 1984: 323), Inuktut *-illi* 'break' (IUT 2020: 29) and Central Alaskan Yupik *-kcugi* 'strike with a projectile in the N' (Jacobson 2012: 773). Moreover, recent advances in semantic theory suggest that some verbalizing suffixes widely considered to have diffuse and non-encylopedic semantics are perhaps better thought of as highly polysemous, such as East Greenlandic *-ter* 'put on; give; cover with; install' (Tersis & Mahieu 2006: 166). Capturing these various specific meanings would similarly require a definition that incorporates encyclopedic knowledge.

As we can see, this relatively small selection of suffixes has the potential to pose major issues for our current understanding of IY word formation, and raises the following question, which forms the main research question for this thesis:

- To what extent does the meaning of Inuit-Yupik verbalizing suffixes require reference to encyclopedic knowledge, and what are the consequences for their status as elements in the grammatical system?

[5] Working within the framework of Distributed Morphology (Harley & Noyer 2000), Cook & Johns (2009: 158) consider all suffixes to be non-encylopedic 'f-morphemes'. All roots, in contrast, are encyclopedic 'l-morphemes'.

The first part of this question will be answered in §5, which presents the results of a case study of nine potentially encyclopedic verbalizing suffixes in one IY variety, West Greenlandic. The study combines corpus-based research with targeted elicitation, and set out to exhaustively document what meaning said suffixes can and do express in the language. The theoretical basis for this study is Relational Morphology (Jackendoff & Audring 2020), and it may be classified as usage-based: on the basis of how these suffixes are attested in corpora and how they are available to be used by speakers, the study aims to catalog the specific patterns and rules (or 'schemas') that make up these suffixes. Next, §6 will use the results of this study to outline an alternative analysis of IY suffixation, answering the second part of the above research question.

This thesis is structured as follows. The next chapter introduces the Inuit-Yupik languages and the phenomenon at hand in more detail, and §3 discusses the various existing theories on IY word formation. A discussion of previous semantic theories is presented in §4, alongside the methodology and theoretical framework used for the aforementioned study. As mentioned, §5 puts forward the results of this study, and based on these results, §6 proposes an alternative analysis of IY suffixation. Finally, a conclusion is given in §7, alongside some points of further research.

2. The Inuit-Yupik languages

This chapter will give background on the Inuit-Yupik languages, with particular focus on their word formation through suffixation. The internal classification of the languages is first discussed in §2.1, before moving on to their linguistic characteristics in §2.2. Finally, §2.3 will present various aspects of Inuit-Yupik suffixation.

2.1. The Inuit-Yupik-Unangan family

Inuit-Yupik forms a single branch of the Inuit-Yupik-Unangan (IYU) family, the sole other branch being Unangan. IYU languages are spoken across a vast area, from the eastern tip of Siberia in the west to Greenland in the east (Figure 1).

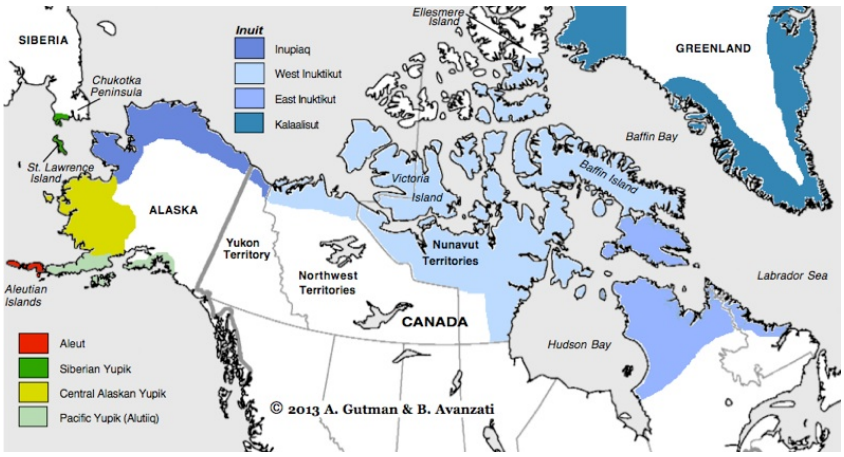


Figure 1: The geographical distribution of the IYU languages (Gutman & Avanzati 2013)

The Unangan branch consists of a single language, Aleut, spoken by under 80 people in the Aleutian islands in western Alaska (Alaska Native Language Center 2024). All other languages in the family fall under the Inuit-Yupik branch, which is itself split between Inuit, Yupik and the extinct Sirenik language, whose further classification is unclear (Fortescue et al. 2010: x–xi). Inuit comprises a single dialect continuum horizontally across the North American Arctic, although certain varieties enjoy a higher degree of institutionalization, most notably Kalaallisut or Greenlandic (Greenland), Inuktitut (northern Canada) and Iñupiaq (northern Alaska). Yupik is spoken in the eastern tip of Siberia and in western Alaska, and is considered to consist of various distinct languages. Berge's (2016) internal classification of the IYU family is shown below, with major varieties italicized.

Inuit-Yupik-Unangan

- Unangan
    - *Aleut*
- Inuit-Yupik

- *Sirenik*
- Yupik
  - *Alutiiq*
  - *Central Alaskan Yupik*
  - *Naukan Yupik*
  - *Central Siberian Yupik*
- Inuit
  - *Iñupiaq*
  - *Inuvialuktun*
  - *Inuktitut*
  - *Greenlandic*

Fortescue (2013: 340) dates the split between Inuit and Yupik to around the year 1000. This relatively recent split explains why the two branches are structurally extremely similar, especially in comparison with the more distant Unangan branch. Because of these similarities, this thesis presents examples from various IY varieties, although focus will be placed on West Greenlandic.

West Greenlandic is the primary variety of Greenlandic, which is spoken by around 57,700 speakers primarily in Greenland and Denmark (Eberhard et al. 2024). This thesis uses 'West Greenlandic' over the endonym 'Kalaallisut' since the latter refers to both the Greenlandic language as a whole as well as its primary variety; institutes like the Language Secretariat of Greenland (oqaasileriffik.gl) use the two names interchangeably. Greenlandic is the largest IYU language by number of speakers, and enjoys an exceptionally high level of institutionalization for an Indigenous American language, being the sole official language within the country of Greenland. Most speakers of Greenlandic are bilingual in Danish (Frøshaug & Stende 2021: 31).

The Inuit-Yupik-Unangan family is more commonly known as 'Eskimo-Aleut' or 'Eskaleut', in which case the Inuit-Yupik branch is referred to as 'Eskimo'. Given the increasingly controversial nature of the term 'Eskimo' in some locales, some linguists now include a disclaimer when using it, stressing that it is "to be understood as a purely technical linguistic term" (Fortescue et al. 2010: x). Others, however, have started to forego use of the term altogether, instead opting for the compound Inuit-Yupik (e.g., Joanis et al. 2020; Lyberth et al. 2022; Berge et al. forthcoming). This thesis takes the latter approach.

2.2. Characteristics of Inuit-Yupik

As briefly touched upon in §1, IY languages accomplish much of the structure traditionally associated with syntax solely through a system of bound suffixes. According to Allen (1996: 14), a word like (2) is common "in terms of number, type and function of morphemes."

Inuktitut

(2) *Annuraar–sima–lukat–siti–paujaalu–u–mi–juq.*
clothe–PERF–unusually–well–very–COP–also–IND.3SG
'She also dresses up very unusually.' (Allen 1996: 14)

It has long been posited that the IY orthographic word forms a single prosodic unit (e.g., Fortescue 1980: 260; Sadock 1980: 302–3), and Arnhold et al. (2018) provide concrete evidence from South Baffin Inuktitut in support of this notion. Because of this word formation through suffixation as well as the high morpheme-per-word ratio and so-called 'sentence words' that follow from it, IY languages are widely considered polysynthetic (e.g., Sadock 2017), and have been called "arguably the most polysynthetic family in the world" (Fortescue 2009: 257). However, some (most notably Baker 1996) have excluded IY languages in qualitative definitions of polysynthesis, as the languages do not feature prototypical noun incorporation (see §2.3.1.1). Structurally, IY suffixation shows most similarities to lexical affixation as found in Wakashan and Chukotko-Kamchatkan (Johns 2007: 567–70), although no language family possesses a system with the wealth and diversity of suffixes found in IY.

2.2.1. Parts of speech

Barring a few exceptions, all IY words fall into one of three major classes: nouns, verbs and a heterogeneous class of uninflected words commonly called 'particles' (e.g., Fortescue 1984: 203). Nouns take nominal inflectional endings, which mark number, case and personal possession; verbs take verbal inflectional endings, marked for mood, person and number. The class of uninflected particles covers a wide range of functions, including adverbials.

IY languages do not feature a syntactic class of adjectives. Instead, concepts typically associated with this word class tend to be expressed through the use of verbs. Consider the verbs *ullak-* 'run' (3a) and *quviasuk-* 'be happy' (3b), which receive identical conjugation.

Inuktut

(3a) *Ullak–tunga.*
run–IND.1SG
'I run.' (IUT 2018: 62)

(3b) *Quviasuk–tunga.*
be_happy–IND.1SG
'I am happy.' (ibid.)

All IY nouns and verbs follow a highly regular building block-like pattern, exemplified in (4). Any given noun or verb consists of a single nominal or verbal root[6] (*savaatilik* 'shepherd'), optionally followed by one or several suffixes (*-nngor* 'become'), followed by a single nominal or verbal inflectional ending (second person singular indicative *-putit*), optionally followed by one or several clitics (quotative *=gooq*).

(4) *Savaatili–nngor–putin=ngooq.*
shepherd–become–IND.2SG=QUOT
'It is said you have become a shepherd.' (Fortescue 1984: 71)[7]

In words that contain more than one suffix, their ordering is primarily determined by scope: the meaning scopes over the material to which the suffix attaches (Fortescue 1984: 313). Consider the sentences in (5).

(5a) *Ornis–sinnaa–nngil–ara.*
come–can–NEG–IND.1SG>3SG
'I cannot come to him.' (Fortescue 1984: 313)

(5b) *Ornin–ngis–sinnaa–vara.*
come–NEG–can–IND.1SG>3SG
'I can refrain from coming to him.' (ibid.)

In (5a), *-nngit* 'NEG' follows *-sinnaa* 'be able to', and thus scopes over it, adding up to 'not be able to'. In (5b), the ordering and scope are reversed, yielding the meaning 'be able to not'. While some have argued that semantic scope is the sole motivator of IY suffix ordering (see §3.1), the modern consensus is that some possible orderings cannot be accounted for using scope (e.g., Fortescue 1980). This is discussed further in §6.1.

2.2.2. Morphosyntactic alignment

IY languages feature ergative-absolutive alignment, which is marked by means of inflectional endings ('cases') on nouns. Three cases in particular are relevant in marking basic speech act participants: the absolutive, relative and instrumental. In intransitive clauses, the subject is marked for the absolutive case (6).

[6] Because what constitutes a stem or root in IY languages is often unclear (cf. Dorais 2017), this thesis follows Mithun (1999: 48–57) and Johns (2007) and uses only 'root' throughout. Other authors instead opt for 'stem' (e.g., Dorais 2017) or 'base' (e.g., Fortescue et al. 2010).

[7] Throughout this thesis, examples for which the language is not specified are from West Greenlandic.

(6) *Qitsu–it* *pinnguar–put.*
cat–ABS.PL play–IND.3PL
'The cats are playing.' (Kahn & Valijärvi 2022: 50)

In transitive clauses, the object is marked for the absolutive case, and the agent is marked for the relative case (7). Note that transitive verbs feature polypersonal agreement, i.e., the verb is marked for both agent and object.

(7) *Naja–p* *nanoq* *taku–aa.*
Naja–REL.SG polar_bear.ABS.SG see–IND.3SG > 3SG
'Naja saw the polar bear.' (Kahn & Valijärvi 2022: 56)

Clauses with an indefinite object are treated as intransitive, with the object marked for the instrumental case. Certain verbs can directly take both intransitive and transitive verbal endings, such as *taku-* 'see' in (7–8).

(8) *Naja* *nanu–mik* *taku–voq.*
Naja.ABS.SG polar.bear–INS.SG see–IND.3SG
'Naja saw a polar bear.' (Kahn & Valijärvi 2022: 56)

Other verbs are exclusively transitive, and require the addition of antipassive *-i* to be able to take intransitive endings. An example is *toqut-* 'kill' in (9).

(9a) *Inu–it* ***toqup****–pai.*
person–ABS.PL **kill**–IND.3SG > 3PL
'He killed the people.' (Fortescue 1984: 86)

(9b) *Inun–nik* ***toqut–si****–voq.*
people–INS.PL **kill–ANTIP**–IND.3SG
'He killed people.' (ibid.)

Besides marking indefinite objects, the instrumental case is also used to mark a variety of modifiers, such as instruments (10), adverb-like modifiers (11) and indirect objects, such as *iisartagannik* 'pills' in (12).

(10) ***Allaam–mik*** *allap–para.*
pen–INS.SG write–IND.1SG > 3SG
'I wrote it with a pen.' (Kahn & Valijärvi 2022: 54)

(11) ***Nipituumik*** *erinarsor–poq.*
loudly.INS.SG sing–IND.3SG
'She sings loudly.' (ibid.: 59)

The core predication in IY languages follows a basic word order S-O-X-V, where X is occupied by adverbial elements and indirect objects (Fortescue 1993).[8] An example is given in (12).

(12) *Nakorsa–p* *Piili* *iisartagan–nik* *tuni–vaa.*
doctor–REL.SG Pele.ABS.SG pill–INS.PL give–IND.3SG > 3SG
S O X V
'The doctor gave Pele some pills.' (Trondhjem & Arnhold 2024: 6)

This order can be altered to mark information structure. For West Greenlandic, Trondhjem & Arnhold (2024: 19) note that an established topic tends to precede the basic S-O-X-V structure, and that an element that is new information or is placed in focus tends to follow it. Based on this, they propose a structure Topic-S-O-X-V-Focus. An example of postponed focus is *piniartup* 'hunter' in (13a); compare the more neutral utterance in (13b).

(13a) *Puisi* *pisar–aa* *piniartu–p.*
seal.ABS.SG catch–IND.3SG > 3SG hunter–REL.SG
O V FOCUS
'It was the hunter that caught the seal.' (Trondhjem & Arnhold 2024: 17)

(13b) *Piniartu–p* *puisi* *pisar–aa.*
hunter–REL.SG seal.ABS.SG catch–IND.3SG > 3SG
S O V
'The hunter caught the seal.' (ibid.)

2.3. Characteristics of Inuit-Yupik suffixation

Because their status as elements within the grammatical system is debated, this section aims to present a neutral and descriptive overview of IY suffixation, in order to set the stage for the discussion of its various analyses in §3. The section starts out with an overview of the four main suffix types found in IY languages (§2.3.1), before continuing onto two issues in the study of individual suffixes: allomorphy (§2.3.2) and polycategoriality (§2.3.3).

[8] Since suffixes are not themselves constituents, they attach on nouns and verbs irrespective of this order.

2.3.1. Suffix types

While all IY suffixes share the attribute of requiring a base to which to attach, by no means do they form a homogeneous class. The linguist who has done the most formal and systematic research into IY suffixes is Fortescue (1979, 1980, 1983, 1984), who divides them into no less than 26 classes, loosely based on their semantics and relative position within the word. While such a detailed analysis is beyond the scope of this thesis, the remainder of this section aims to characterize the variety of IY suffixes through four main types, based on the kind of base to which they attach (verbal or nominal) as well as the kind of base they generate (verbal or nominal).

2.3.1.1. Verbalizers or N > V suffixes

Verbalizing suffixes have seen the most discussion in the existing literature (e.g., Rischel 1972; Sadock 1980, 1991; Rosen 1989; Van Geenhoven 1998; Johns 2007, 2009), primarily because they show certain similarities with noun incorporation. This suffix type is therefore also referred to as "noun-incorporating verbs" (Johns 2007: 542). Verbalizing suffixes attach to nouns and create verbs, generally semantically incorporating the noun as an indefinite object (14).

(14) *Kaagi–**lior**–put.*
cake–**make**–IND.3PL
'They made cake/a cake/cakes.' (Van Geenhoven 1998: 1)

Van Geenhoven (1998) argues that in examples like (14), verbalizing suffixes generate an indefinite predicate: *kaagelior-* denotes 'cake-making' as a general activity, but contains no information regarding the number of cakes, nor does it refer to any specific cake. This follows from sentences like (15), for which only the first interpretation is available.

(15) *Vittu* *cykili–ssar–**sior**–poq.*
Vittus.ABS.SG bike–FUT–**seek**–IND.3SG
i. 'Vittus is looking for an arbitrary bike/bikes.'
ii. # 'There is/are a specific bike/bikes such that Vittus is looking for it/them.'
(Van Geenhoven 1998: 28)

The generic and non-specific reference of verbalized nouns is also highly typical of prototypical noun incorporation, as found in language families like Iroquoian and Algonquian (Gerdts 1998: 85). Consider the Onondaga sentences below: compare the free-standing object *oyv?kwa?* 'tobacco' (16a) with the incorporated *yv?kwa* 'id.' (16b), and note that the verb in both examples is *(a)hninu* 'buy'.

Onondaga (Iroquoian)

(16a) *Wa?–ha–hninu–?* *ne?* ***o–yv?kw–a?.***
PST–3SG.M > 3SG.N–buy-ASP the **PRE–tobacco–SUF**
'He bought the tobacco.' (Baker 1988: 76–7, citing H. Woodbury 1975)

(16b) *Wa?–ha–**yv?kw**–ahni:nu–?.*
PST–3SG.M > 3SG.N–**tobacco**–buy–ASP
'He bought (a kind of) tobacco.' (ibid.)

Nevertheless, the noun incorporation in (16b) is generally considered wholly distinct from IY verbalizing suffixes (cf. Sapir 1911; Baker 1996), for the reason that in IY languages, only suffixes can 'incorporate' nouns in this way, which do not otherwise appear as free-standing verbs. The suffix *-lior* 'make', for instance, can only appear as a suffix (14), and not as a free-standing verb (17); compare free-standing verb root *neri-* 'eat' in (18), for which the opposite is true.

(17) ** Kaagi–mik* ***lior**–put.*
cake–INS.SG make–IND.3PL
Intended: 'They made a cake.' (cf. Van Geenhoven 1998: 1)

(18a) *Kaagi–mik* ***neri**–vunga.*
cake–INS.SG eat–IND.1SG
'I am eating cake.' (cf. Kahn & Valijärvi 2022: 315)

(18b) ** Kaagi–**neri**–vunga.*
cake–eat–IND.1SG
Intended: 'I am eating cake.' (ibid.)

Given their lack of referentiality, one of the most striking and debated features of verbalized nouns is their ability to take external modifiers, such as *nutaamik* 'fresh' in (19b). This is discussed further in §3.2.

(19a) *Esta* *aalisagar–**si**–voq.*
Esther.ABS.SG fish–**get**–IND.3SG
'Esther got (a) fish.' (Van Geenhoven 1998: 18)

(19b) *Esta* *nutaa–mik* *aalisagar–**si**–voq.*
Esther.ABS.SG fresh–INS.SG fish–**get**–IND.3SG
'Esther got (a) fresh fish.' (ibid.)

Among the verbalizers, we primarily find suffixes related to having and acquiring, such as *-si* 'get' in (19) above and *-qar* 'have' (20). Also common are suffixes designating resemblance, such as *-sunnip* 'smell like' (21).

(20) *Pukkitsormiu–sut* *atisa–**qar**–poq.*
Dutch_person–EQU.SG clothes–have–IND.3SG
'She is dressed like a Dutch person.' (Kahn & Valijärvi 2022: 64)

(21) *Ataata–ma* *biili–ku–ani* *cigaretsi–**sunnip**–poq.*
father–REL.SG.POSS.1SG car–former–LOC.SG.POSS.4SG[9] cigarette–**smell_like**–IND.3SG
'It smells of cigarettes in my father's old car.' (ibid.: 127)

Two particularly common verbalizing suffixes, *-u* 'be' (22) and *-nngor* 'become' (23), can be analyzed as copulas. These suffixes do not semantically incorporate the noun to which they attach as an indefinite object, but as a nominal predicate (cf. Kahn & Valijärvi 2022: 304–5).

(22) *Sulisu–**u**–vunga.*
employee–**COP**–IND.1SG
'I am an employee.' (Kahn & Valijärvi 2022: 304)

(23) *Erne–ra* *nakorsa–**nngor**–poq.*
son–ABS.SG.POSS.1SG doctor–**become**–IND.3SG
'My son became a doctor.' (ibid.: 305)

2.3.1.2. V > V suffixes

V > V suffixes are themselves a highly heterogeneous class. They add various kinds of information to the verb to which they attach, including but not limited to degree (24), frequency (25), intent (26), modality (27) and expressive meaning (28).

(24) *nutaa–**ngajat**–tu–t*
be_new–**almost**–IP–ABS.PL
'things that are almost new' (Fortescue 1984: 136)

(25) *Puisi–nniar–**tar**–punga.*
seal–hunt–**HAB**–IND.1SG
'I go seal hunting often.' (Kahn & Valijärvi 2022: 202)

[9] The 'fourth person' or 'obviative', refers to a previously introduced third-person referent, rather than a new referent.

(26) *Oqar–poq* *agger–**niar**–luni.*
say–IND.3SG come–**intend_to**–CONT.4SG
'He said he was planning to come.' (ibid.: 180)

(27) *Najaaraq* *suliffim–mini* *ulapip–**pasip**–poq.*
Najaaraq.ABS.SG work–LOC.SG.POSS.4SG be_busy–**seem**–IND.3SG
'Najaaraq seems to be busy at work.' (ibid.: 209)

(28) *Tiki–**llarumaar**–poq.*
come–**surely**–IND.3SG
'He will come, just wait and see!' (Fortescue 1984: 296)

Tense and aspect, which are not obligatorily marked on IY verbs, are also expressed by means of V>V suffixes, such as perfect aspect *-reer* (29).

(29) *Qitsuk* *nere–**reer**–poq.*
cat.ABS.SG eat–**PERF**–IND.3SG
'The cat has eaten.' (Kahn & Valijärvi 2022: 192)

Finally, we also find a number of valency-increasing and valency-decreasing suffixes. An example of the former is causative *-tit* (30b).

(30a) *Ilinniartu–t* *kalaallisut* *oqalup–put.*
student–ABS.PL Greenlandic speak–IND.3PL
'The students are speaking Greenlandic.' (cf. Kahn & Valijärvi 2022: 211)

(30b) *Ilinniartu–t* *kalaallisut* *oqalut–**tip**–pakka.*
student–ABS.PL Greenlandic speak–**cause**–IND.1SG>3PL
'I am getting the students to speak Greenlandic.' (ibid.)

An example of a valency-decreasing suffix is passivizing *-neqar* (31b).

(31a) *Meeqqa–p* *ujarak* *tigu–aa.*
child–REL.SG stone.ABS.SG take–IND.3SG>3SG
'The child takes the stone.' (Trondhjem & Arnhold 2024: 14)

(31b) *Ujarak* *(meeqqa–mit)* *tigu–**neqar**–poq.*
stong.ABS.SG child–ALL.SG take–**PASS**–IND.3SG
'The stone is taken (by the child).' (ibid.)

2.3.1.3. Nominalizers or V>N suffixes

Nominalizers turn verbs into nominals, and make up the smallest IY suffix class. Among them, we find instruments (32), locations (33) and abstract nominalizers (34).

(32) *Nannun–**niuti**–kkuminar–torujussuu–voq.*
catch_polar_bears–**tool**–be_good_as–very–IND.3SG
'He [a dog] is really good for catching polar bears with.'
(Fortescue 1984: 315, glosses adapted)

(33) *aamaruti–ssar–sior–**vi**–tua–a–soq*
coal–FUT–search–**place**–only–COP–IP.ABS.SG
'which is the only place for getting coal' (ibid.: 315)

(34) *Siku–mi* *angallan–**neq*** *inerteqqutaa–voq.*
ice–LOC.SG go–**NMLZ** be_forbidden–IND.3SG
'Going on the ice is forbidden.' (Kahn & Valijärvi 2022: 51)

This type also contains a large number of agentives, such as *-llammak* 'one who is good at' (35).

(35) *mersu–**llammak***
sew–one_good_at
'one good at sewing' (Fortescue 1984: 319)

Two more highly frequent nominalizers, *-soq* and *-saq*, are commonly called 'participles' because they are often used to modify other nouns through juxtaposition. As Compton (2016: 194) points out, however, all IY nouns can modify other nouns in this way, suggesting that these 'participles' are perhaps better thought of as agentives. The first of these is the so-called 'intransitive participle' *-soq*, which can generally be translated as 'someone who/something which VERBS' (36).

(36) *Igaffim–mi* *neri–**so**–qar–poq.*
kitchen–LOC.SG eat–**IP**–exist–IND.3SG
'There is someone eating in the kitchen.' (Kahn & Valijärvi 2022: 251)

The second is the 'passive participle' *-saq*, which can be translated as 'someone who/something which is VERBed' (37–38).

(37) *neqi* *sia–**taq***
meat.ABS.SG fry–**PP.ABS.SG**
'meat that is fried; fried meat' (Kahn & Valijärvi 2022: 331)

(38) *Qimmeq* *tammar–sima–soq* *uja–**ga**–a–voq.*
dog.ABS.SG go_missing–PERF–IP.ABS.SG look_for–**PP**–COP–IND.3SG
'The missing dog is being looked for (lit. 'something which is looked for').' (ibid.: 219)

2.3.1.4. N>N suffixes

N>N suffixes add information to the noun to which they attach. Compton (2008) points out that these suffixes can generally be classified as non-intersective adjectives, denoting attributes like size (39), age (40) and quality (41).

(39) *Qatannguti–ga* *illo–**rsua**–qar–poq.*
sibling–ABS.SG.POSS.1SG house–**big**–have–IND.3SG
'My sibling has a big house.' (Kahn & Valijärvi 2022: 127)

(40) *Illoqarfit–**taaq*** *angi–voq.*
town–**new.ABS.SG** be_big–IND.3SG
'The new part of town is big.' (ibid.: 128)

(41) *umiarsua–**palaaq***
boat–bad.ABS.SG
'a useless boat' (Fortescue 1984: 318)

Other examples include quantity (42), companions (43) and 'former' (44).

(42) *Sinersor–luni* *tutto–**rpassuit*** *takussaa–pput.*
follow_coast–CONT.4SG caribou–**many.ABS.PL** be_visible–IND.3PL
'When one followed the coast, many caribou could be seen.' (Fortescue 1984: 149)

(43) *Qallunaa–**qata**–asa* *oqaluffigi–ler–paat.*
Dane–**fellow**–REL.PL.POSS.3SG speak_to–begin–IND.3PL>3SG
'His fellow Danes began to speak to him.' (ibid.: 96)

(44) *Ataata–ma* *biili–**ku**–ani* *cigaretsi–sunnip–poq.*
father–REL.SG.POSS.1SG car–**former**–LOC.SG.POSS.4SG cigarette–smell_like–IND.3SG
'It smells of cigarettes in my father's old car.' (Kahn & Valijärvi 2022: 127)

2.3.2. Allomorphy

Inuit languages, and in particular the easternmost varieties spoken in Canada and Greenland, are notable for having undergone a lot of phonological simplification, much of it within the last century. For West Greenlandic, this entails the relatively recent loss of all consonant clusters save for /ts/ and those starting in <r> /ʁ/ (Fortescue 2013: 341–2). This has resulted in a lot of variation in how suffixes behave in word formation. Most suffixes exhibit more than one form, and a class of 'truncative' suffixes causes the removal of a preceding consonant, which often obscures morpheme boundaries. A typical example is the intransitive participle suffix commonly cited as *-soq*, which exhibits the forms *-toq*, *-soq*, *-tsoq, -tor*, *-sor*, *-tsor, -tu*, *-su*, *-tsu, -to*, *-so* and *-tso*, depending on context. Four examples are given below (45).

(45a) *Qimmeq* *tammar–sima–**soq*** *uja–ga–a–voq.*
dog.ABS.SG go_missing–PERF–**IP.ABS.SG** look_for–PP–COP–IND.3SG
'The missing dog is being looked for.' (Kahn & Valijärvi 2022: 219)

(45b) *Niviarsiaraq* *naalat–**tor**–suu–voq.*
girl.ABS.SG behave_well–**IP**–good–IND.3SG
'The girl is behaving very well.' (ibid.: 252)

(45c) *piniar–**tu**–u–gama*
hunt–**IP**–COP–CAUS.1SG
'because I am a hunter' (ibid.: 168)

(45d) *Igaffim–mi* *neri–**so**–qar–poq.*
kitchen–LOC.SG eat–**IP**–have–IND.3SG
'There is someone eating in the kitchen.' (ibid.: 251)

2.3.3. Polycategoricality

A number of IY roots appear to exist as both nouns and verbs, with distinct but nonetheless closely related meanings. An example is the pair of nominal *imeq* 'water' (46a) and verbal *imer-* 'drink' (46b).

(46a) *Ataata–p* *Ivalu* ***imer**–mik* *tuni–vaa.*
father–REL.SG Ivalu.ABS.SG **water**–INS.SG give–IND.3SG>3SG
'Father gives some water to Ivalu.' (Kahn & Valijärvi 2022: 311)

(46b) ***Imer**–neru–sariaqar–putit.*
drink–more–must–IND.2SG
'You must drink more.' (Fortescue 1984: 292)

This feature extends to IY suffixes, some of which fall under more than one of the four types described in §2.3.1. An example is *-taaq*, which exists as both a N>N suffix 'new' (47a) and a N>V suffix 'get a new one' (47b). Other examples include *-ter* 'V repeatedly; cover in N' (§5.3) and *-erniar* 'sell N; seller of N' (§5.6).

(47a) *Illoqarfit–**taaq*** *angi–voq.*
town–**new.ABS.SG** be_big–IND.3SG
'The new part of town is big.' (Kahn & Valijärvi 2022: 128)

(47b) *Aaqqati–**taar**–pit?*
mitten–**get_new**–INT.2SG
'Have you got new gloves?' (ibid.)

What makes this phenomenon striking is that, as Sadock (1999: 399) points out, "there is no productive zero derivation in [Inuit-Yupik] that could obscure the boundary between nominal and verbal roots and tems such as there is in English," although zero derivation might have become productive again in very restricted contexts (see §5.7). Moreover, Mithun (2017) argues that pairs like the above are far too common to be accidental homophony, noting that 12% of roots listed in Jacobson's (2012) dictionary of Central Alaskan Yupik have both a nominal and a verbal use.

Mithun (2017) discusses a number of these pairs, and argues that many show semantic relationships that are similar to those found in derivation between roots and overtly derived stems. Examples from Central Alaskan Yupik include pairs of roots involving clothing and putting on clothing, such as nominal *taqmak* 'dress' verbal *tagmag-* 'put on a dress', as well as pairs designating actions and tools, like verbal *kuvya-* 'fish by driftnetting' and nominal *kuvya* 'fishnet' (ibid.: 164). Some pairs futhermore show clear evidence of directionality, having been derived from early loanwords, or having only one of the two forms in particular dialects. Mithun also notes that gaps are fully unpredictable: speakers simply know which verbal roots have a nominal counterpart or vice versa, and which do not. Based on this, she proposes that IY languages must have featured productive zero derivation at some point in the past, which generated these pairs of nominal and verbal roots.

While historical zero derivation could certainly account for the pairs of nominal and verbal roots, it does not directly explain the existence of similar pairs within suffixation. Fortescue (1992: 8) discusses grammaticalization from roots as a potential origin for IY suffixes, but concludes that none of them "can

be related to lexical bases, despite the lexical 'weight' of many of them." Johns (2007: 571) comes to a similar conclusion, and notes that "a grammaticalization account [...] is faced with an overwhelming lack of evidence, both synchronic and diachronic." As an alternative, Mithun (2017: 173–4) suggests IY languages may at some point in the past have had more flexible lexical categories overall. She draws a comparison to 'polycategorical' items which Lois et al. (2017: 2) identify in Mayan languages: roots and affixes which "can function as different parts of speech with no change of form." Although there are some other signs of 'historical polycategoricality' in IY languages, such as strong similarities between paradigms of nominal and verbal inflection (Mithun 2017: 169–70), this remains pure speculation. The origin of this phenomenon, as well as the synchronic relations within pairs of roots and and pairs of suffixes, hence remain an open question.

3. Theoretical approaches to Inuit-Yupik suffixation

The word formation through suffixation discussed in §2.3 has made IY languages difficult to place within existing theoretical frameworks. This chapter presents the major theoretical approaches to IY suffixation that have been presented in the past fifty years, which ultimately gave rise to the now widespread semantico-syntactic theory pioneered by Johns (2007) (§3.3).

3.1. Derivation

The oldest theory on IY word formation has its foundations in Egede (1760: 162–3) and Kleinschmidt (1851), and is centred around the notion that IY suffixes are exclusively derivational morphemes, which attach to a root and generate a new root in the process. This makes IY words virtually identical to complex, agglutinatively-formed words in a language like English, such as *antidisestablishmentarianism*. An instructive example of how this theory treats IY word formation is the word in (48).

Labrador Inuttut

(48) *Taku–giasi–sima–vuk.*
see–begin–PERF–IND.3SG
'He had begun to see.' (Smith 1978: 47, glosses mine)

Here, the verb root *taku-* 'see' is combined with V>V suffix *-giasi* 'begin to VERB', yielding a new verb *takugiasi-* 'begin to see'. To this new verb, a V>V suffix *-sima* 'have VERBed' is attached, creating the verb *takugiasisima-* 'to have begun to see'. This verb is then conjugated for the third person singular indicative using inflectional ending *-vuk*, yielding the final form *takugiasisimavuk* 'he had begun to see'.

A relatively modern use of the theory in its purest form is found in Smith (1978), who proposes that for all words in Labrador Inuttut, the co-occurrence and ordering of suffixes is determined solely by semantic scope. He notes that while the phrase in (48) is felicitous, inverting the order of suffixes *-giasi* 'begin' and perfect aspect *-sima* yields an infelicitous sentence, as in (49).

Labrador Inuttut

(49) *# Taku–sima–giasi–vuk.*
see–PERF–begin–IND.3SG
'He is beginning to have already seen.' (Smith 1978: 47, glosses mine)

Smith (1978: 47) notes that the ungrammaticality of (49) is unsurprising, since "it is clear that it is [...] self-contradictory to speak of 'being about to do while having finished doing *something*'" (emphasis original). He then concludes (ibid.) that "[e]xamples such as these illustrate that co-occurrence and order restrictions of [Labrador Inuttut suffixes] must be stated in semantic as opposed to syntactic terms."

3.2. Syntactic word formation: Rischel (1972) and Sadock (1980, 1985)

Rischel (1972) and Sadock (1980) present a wealth of examples involving West Greenlandic verbalizing suffixes, which they argue pose major problems for any analysis that considers these suffixes strictly derivational. As touched upon in §2.3.1.1, verbalizing suffixes attach to a noun and create verbs, generally semantically incorporating the noun as an indefinite object (50).

(50) *Kaagi–lior–put.*
cake–make–IND.3PL
'They made cake/a cake/cakes.' (Van Geenhoven 1998: 1)

Following Smith's (1978) derivational approach, when *-lior* 'make' in (50) is attached to *kaagi* 'cake', this generates a verb *kaagilior-* 'cake-make'. As Van Geenhoven (1998: 28) points out, this newly-created verb contains no information regarding the number of cakes, nor does it refer to any specific cake. As Rischel (1972) and Sadock (1980) show, however, verbalizing suffixes can take external modifiers, previously discussed in §2.3.1.1. These appear to modify the verbalized noun, suggesting that despite having been verbalized, these nouns retain some referential properties. An example of an external modifier is *kusanartumik* 'beautiful' in (51).

(51) *Kusanar–tu–mik* *sapangar–si–voq.*
be_beautiful–IP–INS.SG bead–get–IND.3SG
'He got a beautiful bead.' (Sadock 1980: 307, glosses mine)

Besides external modifiers, verbalized nouns can also take external possessors. A common possessive construction in IY languages is shown in (52), with the possessor *tuttup* 'caribou' marked for relative case.

(52) *tuttu–p* *neqa–a*
caribou–REL.SG meat–ABS.SG.POSS.3SG
'the meat of a caribou; caribou meat' (Rischel 1972: 61, glosses mine)

Rischel (1972: 63) points out that verbalized nouns can also be posssessed in this way. In (53), *tuttup* 'caribou' now modifies the verbalized noun *neqi* 'meat'.[10]

(53) *Tuttu–p* *neqi–tor–poq.*
caribou–REL.SG meat–eat–IND.3SG
'He eats caribou meat. (Rischel 1972: 63, glosses mine)

[10] Note that since in IY, subjects are marked for the absolutive case, the sentence in (53) cannot mean 'The caribou eats meat.'

One more striking phenomenon pointed out by Sadock (1980: 311) is that verbalized nouns can be referred back to in the discourse context. In (54), a sequence of sentences from a children's book, verbalized *timmisartoq* 'airplane' (54a) is referred to in the subsequent sentence through verbal agreement suffixes *-poq* and *-luni* (54b).

(54a) *Suulut* ***timmisartu****–lior–poq.*
Søren.ABS.SG **airplane**–make–IND.3SG
'Søren made an airplane.' (Sadock 1980: 311, glosses mine)

(54b) *Suulusa–qar–****poq*** *aquute–qar–****luni*** *= lu.*
wing–have–**IND.3SG** rudder–have–**CONT.4SG** = and
'It has wings and a rudder.' (ibid.)

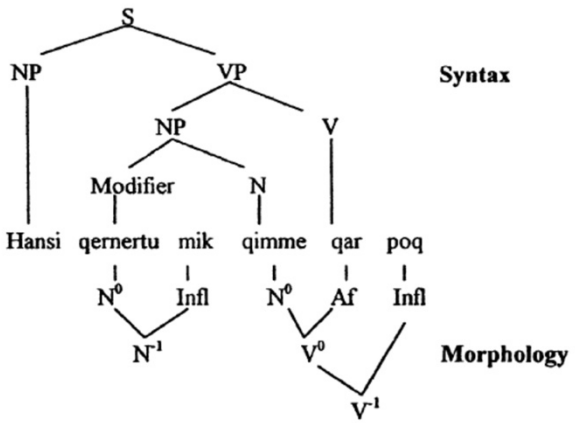
The processes that generate examples like the above, Sadock (1980: 315) argues, must involve both morphology and syntax at once, since they show that nouns that have been verbalized through derivational morphology can be affected by external modifiers and possessors, and can serve as antecedents for anaphora. He points out that these examples therefore pose major issues for exclusively derivational analyses of IY suffixation. More importantly, however, they also pose major problems for widespread views of the organization of grammar, such as the 'lexicalist hypothesis' generally ascribed to Chomsky (1970). This foundational hypothesis in many modern approaches to morphology and syntax contends that "the system of grammar that assembles words is separate from the system of grammar that assembles phrases out of words" (Bruening 2018: 1), and hence "requires that syntactic relations hold among whole words, not pieces of words" (A. Woodbury 2017: 552). Sadock argues that the above examples show that this hypothesis does not hold up for IY word formation:

> In [West Greenlandic], the incorporated nominal displays many syntactic, semantic, and discourse functional features of independent nominals—features which much recent work would lead us to doubt could characterize proper subparts of words. Linguistic theory must therefore allow for some limited interpenetration of the two modules of syntax and morphology. (Sadock 1986: 19)

Sadock (1985, 1991) would later go on to develop his theory of Autolexical Syntax in order to account for examples like the above. This theory allows for processes that are simultaneously morphological and syntactic: IY verbalizing suffixes are hence "taken to be transitive verbs in the syntax and, at the same time, verb-forming suffixes in the morphology" (Sadock 2003b: 185). An example is the sentence in (55a), which is represented in Autolexical Syntax as (55b).

(55a) *Hansi* *qerner–tu–mik* *qimme–qar–poq.*
Hans.ABS.SG be_black–IP–INS.SG dog–have–IND.3SG
'Hans has a black dog.' (Sadock 2003b: 185)

(55b)



(ibid.)

On the morphological level, *-qar* 'have' is treated as a suffix verbalizing noun *qimmeq* 'dog', and the resulting verb is not in any way connected to *qernertumik* 'black'. On the syntactic level, however, *qernertumik* forms a noun phrase with *qimmeq*, which allows the former to modify the latter.

Subsequent analyses of IY word formation, such as Bok-Bennema & Groos (1988), Bittner (1994) and Van Geenhoven (1998), follow Sadock's (1985) approach, and consider IY word formation both morphological and syntactic at the same time.

3.3. Semantico-syntactic analyses: Johns (2007), Compton & Pittman (2010b) and Compton (2012)

In a highly influential article, Johns (2007) deviates from the analyses proposed by Sadock (1980) and later authors, and argues that IY suffixation is not derivational, but an exclusively syntactic phenomenon, akin to noun incorporation.[11] She notes one particular omission in the discussion on IY suffixation:

> [A]lthough every linguist working in this area is fully aware that NI in Inuktitut is not a fully productive phenomenon, but is restricted to a finite set of verbs, no one has attempted to provide any explanation for the question which arises from this fact: why is noun incorporation restricted to this particular set of verbs? (Johns 2007: 540–1)

[11] Johns (2007) exclusively refers to IY verbalizing suffixes as 'noun-incorporating verbs' (NI), albeit noting (ibid.: 537) that "the analysis proposed does not utilize the traditional concept of incorporation as a nominal argument moving to form a complex predicate within the verbal domain." This section will continue to use the term 'suffix'. The discussion of whether prototypical noun incorporation (as found in, e.g., Algonquian and Iroquoian) is a syntactic or morphological process is beyond the scope of this thesis.

Indeed, previous theories on what unites the closed class of IY suffixes are sparse, and provide no definitive answers. An example is Mithun (1999: 48–57), who examines the semantics of some verbalizing suffixes in Central Alaskan Yupik, in order to determine what makes them distinct from verbal roots. One of the suffixes she discusses is *-tur* (56), cognate with West Greenlandic *-tor* discussed in §5.1.

Central Alaskan Yupik

(56a) *akutar–**tur**–tuq*
ice_cream–**eat**–IND.3SG
'He's eating ice cream.' (Mithun 1999: 50, glosses mine)

(56b) *atkug–**tur**–tuq*
parka–**wear**–IND.3SG
'He's wearing a parka.' (ibid.)

(56c) *puyur–**tur**–tuq*
cigarette–**smoke**–IND.3SG
'He's smoking.' (ibid.)

According to Mithun (1999: 50), *-tur* "is as general as the English 'have' in 'have some ice cream', 'have a jacket', [...] 'have a smoke'." After discussing a number of verbalizing suffixes, she concludes (ibid.) that "[t]hough the meanings of the verb-like suffixes may seem quite specific in particular contexts, they are typically more diffuse and/or general in meaning than their root counterparts." Tersis & Mahieu (2006) examine verbalizing suffixes in East Greenlandic and note this same tendency, but similarly do not consider it a universal characteristic.

Johns (2007) takes the idea that IY verbalizing suffixes show a tendency to be relatively diffuse in meaning, and makes it the foundational notion for a theory on IY word formation. IY verbalizing suffixes, she argues, are universally light verbs: they "do not contain the rich and complex semantic content which characterizes full verbal entries" (ibid.: 537). Johns' (2007) theory is based on the framework of Distributed Morphology (Halle & Marantz 1993; Harley & Noyer 2000), which makes a formal distinction between lexical elements (l-morphemes) and grammatical or functional elements (f-morphemes). Consider the sentences in (57).

(57a) *The cat chased a mouse.*
(57b) *The shark chased a fish.*
(Harley & Noyer 2000: 355)

According to Harley & Noyer (2000: 355), the use of the morphemes *the*, *-ed* and *a* in (57) is completely determined by the grammar of the speaker; there is "no choice as regards vocabulary insertion." These are

f-morphemes, which form a closed class of elements and solely consist of formal properties, such as [definite], [past] and [indefinite]. Their use in (57) contrasts with the use of l-morphemes *cat*, *mouse*, *shark* *fish* and *chase*, for which the speaker makes a choice of which morpheme to insert based on truth-conditional force. A crucial difference between l-morphemes and f-morphemes is that the latter, by definition, entirely lack encyclopedic meaning: they make no reference to real-world concepts like *cat* or *shark*, but only to abstract, grammatical properties.

Johns (2007) argues that in IY languages, 'affixhood' and 'roothood' are not intrinsic properties of morphemes, an assumption made by all previous analyses of IY word formation. Instead, she proposes that affixhood and roothood are determined syntactically, based on the semantics of the morpheme in question: all l-morphemes are realized as roots, and all f-morphemes are realized as suffixes.[12] The core principles behind this theory are put forward by Pesetsky (1995: 152), who argues that "syntactic selection by a predicate [...] is predictable from semantic properties of that predicate." Johns (2007: 558–9) proposes a syntactic operation in IY languages which requires the highest l-morpheme in a given phrase to move up to C, i.e., the highest syntactic node or leftmost position in the word. In a phrase that contains a lexical verb, such as *miqsu-* 'sew' in (58), this will be the l-morpheme that is moved up. The other l-morpheme in this phrase, nominal *kamiik* 'boots', is located at a lower level than *miqsu-*, and hence remains unaffected by this syntactic operation. This causes it to stay in its original position, all the way to the right, where it will be realized as a separate root.

South Baffin Inuktitut

(58) ***Miqsu**–gaju–nngit–tuq* *kamiing–nit.*
sew–often–NEG–IND.3SG boot–INS.PL
'She doesn't often sew boots.' (Johns 2007: 558)

However, if we replace lexical verb *miqsu-* 'sew' with a light verb, such as *-liuq* 'make', the phrase no longer contains an l-morpheme verb. The highest (and only) l-morpheme is now the noun (here: *umiat* 'boats'), causing this noun to move to the leftmost position in the word instead (59).

South Baffin Inuktitut

(59) *Umia–**liu**–gaju–nngit–tuq.*
boat–**make**–often–NEG–IND.3SG
'She doesn't often make boats.' (Johns 2007: 559)

[12] Johns (2007: 547) refers to these morphemes somewhat vaguely as "√ROOTS" and "non-√ROOTS", respectively. Cook & Johns (2009: 158) later adopt the more commonplace (cf. Harley & Noyer 2000: 355) terminology of 'l-morphemes' and 'f-morphemes', which is used here for sake of consistency.

Compton & Pittman (2006, 2010b) argue that the formation of prosodic words in IY langauges is a post-syntactic process, where words "correspond to the domains of CP and DP" (Compton & Pittman 2010b: 2167). In other words, "the morphologically complex unit usually referred to as a word in Inuktitut [...] is actually a phonological word corresponding to a syntactic phase" (Compton & Pittman 2006: 1). This, they argue, is what causes f-morphemes like *-liuq* 'make' in (59) to be realized as suffixes, and l-morphemes like *kamiik* 'boots' (58) and *umiat* 'boats' (59) to be realized as roots.

According to its proponents, this semantico-syntactic theory of IY word formation enjoys a number of benefits over previous theories. Johns (2007: 544) points out that it provides a clear and definitive answer to the question of the origin of IY suffixes, by proposing that these suffixes are generated synchronically as a result of their non-encylopedic semantics. She also notes (ibid.) that this theory has the empirical benefit of being falsifiable, since "[c]ounterevidence to the claim made here would be the existence of NI verbs with root semantics." Previous analyses, which all start from the standpoint that affixhood is an intrinstic property, "cannot be falsified" (ibid.) and are unable to explain "why there are no NI verbs like 'break', 'tickle', 'cook'" (ibid.: 542). Compton & Pittman (2010b: 2167) furthermore argue that the semantico-syntactic theory makes IY 'sentence words' structurally much more similar to sentences in other, non-polysynthetic language families, in turn making IY languages much less typologically idiosyncratic. After all, under this theory, "Inuit's morphological component need not be any more complex than that of more isolating languages" (ibid.).

Of course, this theory can only work if all elements realized as suffixes are in fact f-morphemes, i.e., if they do not make reference to encyclopedic knowledge but solely consist of formal properties (Harley & Noyer 2000: 355). After all, this theory cannot explain and therefore precludes the existence of l-morphemes that are realized as suffixes. Johns (2007), whose focus is on verbalizing suffixes, argues that all of them can be defined using solely formal, non-encyclopedic properties which have precedence in the literature. She adopts Fortescue's (1983) classification of the some ninety verbalizing suffixes found in various IY varieties, and provides examples from each of his nine semantic classes, arguing that each of them lacks encyclopedic knowledge.

One of the non-encylopedic properties Johns (2007) uses is copula 'be', which she represents as "identity operator" $[I]_v$ (ibid.: 548). On its own, this is used to represent copula *-u* (60).

(60) Mittimatalingmiutitut Inuktitut
Saali *ilisaiji–**u**–juq.*
Sally teacher–**COP**–IND.3SG
$[I]_v$
'Sally is a teacher.' (Johns 2007: 548)

Another non-encyclopedic property used by Johns (2007) is $[DO]_V$, which she adopts from Harley (2005). This is a light verb 'do' which "denotes an unspecified prolonged activity which involves the nominal" (Johns 2007: 548). This property is used to define Inuktitut *-liri*, which she argues has a general meaning 'be occupied with' (61).

Mittimatalingmiutitut Inuktitut

(61a) *Qukiuti–**liri**–juq.*
rifle–**do_with**–IND.3SG
$[DO]_v$
'She is playing with/fixing the rifle.' (Johns 2007: 548)

(61b) *Kiguti–**liri**–ji.*
tooth–**do_with**–NMLZ
$[DO]_v$
'dentist' (ibid.)

The core idea behind this approach is that the general meaning of these elements can be altered by restrictions or combinations. For instance, $[I]_v$ can be restricted to one of the physical senses, in which case it expresses "the evaluation of the identity of something or someone through physical properties" (Johns 2007: 553). An example is (62), in which $[I]_v$ is restricted to identity solely in visual detail.

Utkuhiksalingmiutitut Inuktitut

(62) *Qamiuti–**qpaluk**–tuq.*
sled–**resemble**–IND.3SG
$[I_{vision}]$
'It looks like a sled.' (Johns 2007: 553)

An example of the combining of properties is (63), in which $[I]_v$ is combined with the property [eventive], represented as 'e'. This expresses "an event resulting in stative [I]" (Johns 2007: 552), which can be translated as 'become'.

Mittimatalingmiutitut Inuktitut

(63) *Kigusiriji–**nnguq**–tuq.*
dentist–**become**–IND.3SG
$e[I]_v$
'He has become a dentist.' (Johns 2007: 552)

Finally, Johns (2007: 556) discusses Inuktitut *-tuq*, a direct cognate of Central Alaskan Yupik *-tur* discussed in (56) above, which Mithun (1999: 50) characterized as 'eat; wear; smoke'. Johns (2007: 556) notes that Utkuhiksalingmiutitut Inuktitut *-tuq* exhibits the same uses as its Yupik cognate,[13] and she combines several properties to account for this variety in meaning. She defines it as [DO e[I]], which indicates that this suffix "involves an activity such that the reference of the nominal becomes subsumed within that of the subject" (ibid.). Using this terminology, the use of *-tuq* in (64) expresses that the reference of caribou meat is being subsumed within that of the speaker; i.e., the speaker is eating caribou meat.

Labrador Inuktitut

(64) *Tuttu–vini–**tu**–vunga.*
caribou–former–**consume**–IND.1SG
[DO e[I]]
'I am eating caribou meat.' (Johns 2007: 555)

By rolling all the variation in meaning found in *-tuq* into one overarching, monosemous definition, Johns (2007) provides a more concrete formulation of Mithun's (1999: 50) impression that IY suffixes "may seem quite specific in particular contexts, [but] are typically more diffuse and/or general in meaning." As Cook & Johns (2009: 158) put it: "[a]pparent variations in meaning which might lead one to consider polysemy in fact result from differents [sic] contexts in which the morpheme occurs." This conclusion is discussed further in §4.1.

Cook & Johns (2009: 154–7) extend Johns' (2007) analysis of verbalizing suffixes to the other suffix types distinguished in §2.3.1, and contend (Cook & Johns 2009: 154) "that all [suffixes] are f-morphemes in the sense of Harley & Noyer" (2000). For example, they discuss how V > V suffixes, many of which add adverbial meaning to the verb to which they attach, may be considered universally non-encyclopedic:

> [A]dverbs describing specific emotion (e.g., happily) and vivid adverbs describing a situation (e.g., thirstily) are absent from this class. Inuktitut adverbial postbases therefore do not add any kind of encyclopedic semantics to the verb complex, but merely quantify or restrict the semantics of the preceding stem. (Cook & Johns 2009: 156)

However, extending this analysis to the other suffix types presents a fundamental issue. Recall that under Harley & Noyer's (2000: 355) definition, f-morphemes are chosen deterministically with "no choice as regards vocabulary insertion." As Compton (2012: 124) points out, however, most N > N and V > V suffixes are completely optional, and not predictable from the larger syntactic environment. Examples include V > V suffixes *-saaq* 'quickly' (65b) and *-ngaaq* 'instead' (66b).

[13] Johns (2007: 556) remarks that the 'wear' use found in Central Alaskan Yupik is also found in the Utkuhiksalingmiutitut dialect of Inuktitut, but absent from some other dialects.

South Baffin Inuktitut

(65a) *Ani–tuq.*
go_out–IND.3SG
'He left.' (cf. Compton 2012: 130)

(65b) *Ani–**saaq**–tuq.*
go_out–**quickly**–IND.3SG
'He left quickly.' (ibid.)

(66a) *Ani–kasa–kkanni–tuq.*
go_out–almost–again–IND.3SG
'She almost left again.' (cf. Compton 2012: 125)

(66b) *Ani–kasa–kkanni–**ngaaq**–tuq.*
go–out–almost–again–**instead**–IND.3SG
'Instead, she almost left again.' (ibid.)

Compton (2012: 124) argues that these suffixes cannot be considered f-morphemes under Harley & Noyer's (2000: 355) definition:

> [S]uch forms do not seem reducible to a subset of the morphosyntactic features made available by Universal Grammar. In particular, Harley & Noyer attribute "truth-conditional force" (p. 355) to l-morphemes, and yet elements such as *saaq* 'quickly' or *ngaaq* 'instead' arguably affect truth conditions, suggesting that they too are l-morphemes. (Compton 2012: 124)

Nevertheless, Compton (2008, 2012) follows Johns (2007) in arguing that IY word formation is an exclusively syntactic phenomenon. He proposes various alternative syntactic analyses to account for specifically N>N and V>V suffixes, which do not require them to be f-morphemes.[14] As regards verbalizing suffixes, however, Compton (2012: 124) embraces Johns' (2007) theory that they universally "correspond to functional categories." In other words, the theory continues to preclude the existence of verbalizing suffixes that reference encyclopedic knowledge.

The semantico-syntactic theory developed by Johns (2007), Compton & Pittman (2010b) and Compton (2012) remains the most widely accepted theory on IY word formation, continues to be expanded upon (e.g., Spreng 2012; Barrie & Mathieu 2016; Arnhold et al. 2018; Melchin 2019; Yuan 2021, 2023) and has

[14] A treatment of IY nominalizing suffixes, the fourth suffix type distinguished in §2.3.1, is notably absent from any of the sources cited here.

also been applied to various non-IYU languages, such as Halkomelem (Salishan; Wiltschko 2009) and Mohawk (Iroquoian; DeCaire et al. 2017).

4. Methodology

A foundational proposition for the semantico-syntactic theory discussed in §3.3 is that all IY verbalizing suffixes are f-morphemes, i.e., they do not make reference to encyclopedic knowledge but solely consist of formal properties (Harley & Noyer 2000: 355). A number of verbalizing suffixes across IY varieties, however, express meanings that cannot easily be defined without involving some amount of encyclopedic knowledge, either because they are defined in the literature in strikingly lexical terms or because an underspecified, 'functional' definition cannot account for their full range of meanings. The majority of these suffixes have never been studied in detail, and are only documented in brief, often single-word dictionary entries.

To examine whether these potentially encyclopedic verbalizing suffixes do indeed pose an issue for the above theory, a case study of nine of these suffixes in West Greenlandic was conducted. This study combines corpus-based research with targeted elicitation, and set out to exhaustively document what meaning said suffixes can and do express in the language. This chapter first discusses and reconsiders a semantic assumption that underlies previous research into these suffixes (§4.1), then introduces the framework of Relational Morphology (§4.2), and finally presents the methodology used in the study at hand (§4.3), the results of which are discussed in the next chapter.

4.1. Inuit-Yupik suffixes are polysemous, not underspecified

Prior to Johns (2007), the primary aim of research into the semantics of individual IY suffixes was to explain how it is possible that morphemes with a notably "lexical 'weight'" (Fortescue 1992: 8) are realized as affixes. Mithun (1999: 48) points out that such 'lexical affixes' go against the intuitions of most linguists:

> It is generally assumed that roots carry the central meanings of words, and that affixes simply modify them, often in relatively abstract ways. We expect roots to have meaning like 'mouth' or 'hunt' and affixes to mark distinctions like past tense or causation. (Mithun 1999: 48)

As discussed in §3.3, a core part of Mithun's (1999) explanation is the idea that many of these suffixes are not, in fact, lexical, but semantically underspecified. Her main example of this is Central Alaskan Yupik *-tur*, which exhibits a large variety in meaning (67).

Central Alaskan Yupik

(67a) *Akutar–**tur**–tuq.*
ice_cream–**eat**–IND.3SG
'He's eating ice cream.' (Mithun 1999: 50, glosses mine)

(67b) *Atkug–**tur**–tuq.*
parka–**wear**–IND.3SG
'He's wearing a parka.' (ibid.)

(67c) *Aug–**tur**–tuq.*
blood–**take**–IND.3SG
'He's taking Communion' (ibid.)

(67d) *Puyur–**tur**–tuq.*
cigarette–**smoke**–IND.3SG
'He's smoking.' (ibid.)

(67e) *Umyuar–**tur**–tuq.*
mind–**use**–IND.3SG
'He's thinking.' (ibid.)

As shown in §3.3, Mithun (1999: 50) proposes that *-tur* is actually a monosemous light verb, arguing that it is "as general as the English 'have' in 'have some ice cream', 'have a jacket', 'have Communion', 'have a smoke', and 'have a thought'." Tersis & Mahieu (2006) take a similar approach, and note that the use of East Greenlandic *-ter* in different contexts results in a large number of different translations in French (68).

East Greenlandic

(68a) *Isi–**ter**–poq.*
hood–**put_on**–IND.3SG
'He puts on a hood.' (Tersis & Mahieu 2006: 166, translation mine)

(68b) *Pitaata–**ter**–paa.*
knife–**give**–IND.3SG > 3SG
'He gives him a knife.' (ibid.)

(68c) *Amaqqaa–**ter**–paa.*
fat–**coat**–IND.3SG > 3SG
'He coats it with grease.' (ibid.)

(68d) *Imer–**ter**–paa.*
water–**water**–IND.3SG > 3SG
'He waters it.' (ibid.)

(68e) *Normu–**ter**–paa.*
number–**install**–IND.3SG > 3SG
'He puts a number on her (i.e., on her house).' (ibid.)

Similarly to Mithun (1999), Tersis & Mahieu (2006: 166–7) argue that East Greenlandic *-ter* has a single meaning. The apparent polysemy in (68), they argue, is the result of translation into French or English, since these languages are unable to express the meaning of *-ter* in a single word. They define this meaning as denoting a "momentary process by which an agent (often human) brings something (possibly itself) into superficial contact with something else"[15] (ibid.: 167).

Tersis & Mahieu (2006: 166–7) argue that the issue of defining East Greenlandic *-ter* shows strong similarities with the issue of defining the Ancient Greek verb *tréphô*, which roughly means 'feed'. Benveniste (1966: 292–3) shows that the use of this verb also results in various different translations in French or English (69).

Ancient Greek (Indo-European)

(69a) ***tréph–ein*** *paídas*
feed–INF child.ACC.PL
'raise children' (Benveniste 1966: 292, glosses and translation mine)

(69b) ***tréph–ein*** *khaíthên*
feed–INF hair.ACC.SG
'let one's hair grow' (ibid.)

(69c) ***tréph–ein*** *gála*
feed–INF milk.ACC.SG
'let milk curdle' (ibid.)

A speaker of French or English would use three different verbs to express the concepts in (69): should we therefore consider these distinct uses of *tréphô*? Beneviste (1966: 292) rejects this option, and argues instead that *tréphô* has a single underlying meaning "to promote by appropiate care the development of what is subject to growth."[16] A use like *tréphein gála* 'let milk curdle' in (69c), then, is considered simply a metaphorical extension of this core meaning:

[15] Original French: "processus momentané par lequel un agent (souvent humain) met quelque chose (éventuellement lui-même) en contact superficiel avec autre chose".

[16] Original French: "favoriser par des soins appropriés le développement ce qui est soumis à la croissance".

> It is nothing other than an idiomatic liaison of *tréphein* in the sense of 'let it grow, encourage growth' which it has everywhere. […] There is therefore no longer the issue of classifying the meanings of *tréphô*, since there is only one meaning, the same everywhere. We can conclude that *trépho* 'to curdle' does not exist; there is a use of *tréphô gála* which creates an association which is unusual for us, but explainable in the Greek contexts. (Beneviste 1966: 293)[17]

The conclusions that these three authors arrive at, feel intuitive: the reason that Central Alaskan Yupik *-tur*, East Greenlandic *-ter* and Ancient Greek *tréphô* seem polysemous, is that they correspond to several apparently unrelated words in a language like English or French. Uses like *tréphein gála* 'let milk curdle', the theory goes, are not actually distinct uses, but are metaphorically derived by each speaker individually from a core, underlying meaning. This idea receives formal treatment from Cowper (1995) in what she terms the 'strong monosemy principle', in which polysemy is considered a last resort. She argues that when a morpheme seems to have more than one meaning, this meaning should in principle be considered "derivable, either from the composition of the lexical item with other items in the sentence, or from extralinguistic considerations" (Cowper 1995: 3). Only when two uses of a morpheme "cannot be unified through underspecification, then they must be treated as distinct lexical entries" (ibid.). Cook & Johns (2009: 158) adopt this principle in their analysis of IY suffixes.

These 'underspecified' analyses, however, present a number of considerable issues. The first is the issue of overgeneration: if, following Tersis & Mahieu (2006: 167), East Greenlandic *-ter* denotes a 'momentary process by which an agent brings something into superficial contact with something else', then why are its real-world uses mostly restricted to the meanings found in (68)? Under this definition, we might also expect uses like 'put bread on a plate', 'clean a table' or 'touch something with one's finger', all of which could be characterized as momentary processes in which something is brought into contact with the surface of something else. And yet, these uses of *-ter* are nowhere to be found (cf. Tersis 2008: 376–7). Tersis & Mahieu's (2006: 167) monosemous definition of *-ter* may serve as a useful summary of the variety in attested uses, but cannot serve as the full conceptual definition speakers of East Greenlandic have stored in their mental lexicon.

A similar issue presents itself with Mithun's (1999: 50) characterization of Central Alaskan Yupik *-tur* as a monosemous light verb "as general as the English 'have'." While the two morphemes do share a lot of uses, they cannot have the exact same core meaning: whereas Yupik *-tur* can express wearing an article of clothing, such as in *atkugtur-* 'wear a parka' (67b), this is not a possible use of English *have* (cf. Brugman

[17] Original French: "Ce n'est rien d'autre qu'une liaison idiomatique de *tréphein* au sens de «laisser croître, favoriser la croissance» qu'il a partout. […] Il n'y a donc plus de problème du classement des sens de *tréphô*, puisqu'il n'y a qu'un sens, partout le même. On peut conclure que *tréphô* «cailler» n'existe pas ; il existe un emploi de *tréphô gála* qui crée une association pour nous insolite, mais explicable dans les contextes grecs."

1988).[18] Conversely, Yupik *-tur* exhibits no uses like 'have a conversation' or possessive 'have five dollars' (cf. Jacobson 2012: 888). Even if Yupik *-tur* and English *have* are both considered light verbs, these differences in meaning explain why in-depth semantic analyses of individual light verbs tend to conclude that they form "a multidimensional network of senses" (Brugman 1988: i), and why cross-linguistic surveys of light verbs define their properties in collocational, not semantic terms (e.g., Butt 2010: 71–2). In other words, if Yupik *-tur* and English *have* are both light verbs to be defined using functional properties in the sense of Johns (2007), this definition will not be able to account for their differences in meaning.

A more fundamental issue with the above definitions is their over-reliance on what Enfield (2002: 85) terms "online extension", i.e., the idea that related meanings of a morpheme are not stored, but derived on the spot through metaphors and pragmatic implicatures. He discusses emotion terms in Southeast Asian languages, many of which use the word for 'heart' (or another internal organ) in most expressions describing emotion. An example is Lao *caj*^{3} 'heart', which can be used both to refer to the bodily organ (70a) and to express a variety of emotions (70b).

Lao (Kra-Dai)

(70a) *sùù*^{4} *hua*^{3}–***caj***^{3} *kaj*^{1} *loo*^{2} *nùng*^{1} *nèè*^{1}
buy head–**heart** chicken kilogram one PCL
'[I'll] buy one kilo of chicken hearts, thanks.' (Enfield 2002: 87)

(70b) *tok*^{2}–***caj***^{3}
fall–**heart**
'surprised; startled' (ibid.: 88)

Enfield (2002: 91–2) notes that in the view of many linguists working on Southeast Asian languages (most famously Lakoff 1987), words like *caj*^{3} 'heart' are monosemous. It is argued that both of these uses of *caj*^{3} refer to the physical bodily organ, and that the difference is solely pragmatic: (70a) references the heart in a literal sense, and (70b) in a metaphorical sense. Enfield (2002: 94–6) takes issue with this notion. While he does not deny that the use in (70b) is clearly historically derived from the one in (70a) in some way, he argues that it cannot be considered an **online** extension, i.e., an active metaphor. Instead, the use of *caj*^{3} 'heart' in (70b) should be considered an **imposed** extension, which is conventionalized and learned. After all, Lao speakers refer to the heart as the locus of emotion because they have heard other speakers do so, and not because they somehow instinctively know that the organ in their chest can be used to express a variety of emotions. This view is supported by experimental evidence from Keysar & Bly (1999), who find that conventionalized metaphors only make sense *because* we know what they mean, and not vice versa. As Enfield (2002: 97) points out, referring to *tok*^{2}*-caj*^{3} 'surprised' in (70b):

[18] Confusingly, Mithun (1999: 50) does compare this use of Yupik *-tur* to English *have a jacket*. Unlike the Yupik construction, however, this use of *have* can only express being in possession of a jacket, and not wearing it.

> One can somehow naturally think of the feeling of surprise as being like one's heart dropping. However, if asked to attribute a meaning to the combination 'fall heart' out of context and with no prior clue as to its real meaning, many would guess wrong. If overall meanings of such combinations were directly predictable from the semantics of components, then a given combination in any language should have the same meaning. (Enfield 2002: 97)

In Enfield's (2002) view, online extension is restricted to a speaker making a conscious creative decision to use metaphorical speech or to otherwise extend the use of a morpheme in an unconventional way. Any other semantic extension should in principle be considered historical, and therefore imposed: "today's polysemy is yesterday's pragmatic implicature" (ibid.: 97). That is to say, speakers of Central Alaskan Yupik use *-tur* to express 'eating ice cream', 'wearing a parka' or 'smoking a cigarette' because they have learned through linguistic experience that these are ways in which the morpheme can be used, and not because they are metaphorically extending an underspecified underlying meaning based on the contexts 'ice cream', 'parka' or 'cigarette'. Cowper's (1995) 'strong monosemy principle' and the underspecified definitions that follow from it overgenerate and cannot account for minute differences in meaning across languages.

4.2. Relational Morphology

The theoretical basis for the conducted study is Relational Morphology (RM; Jackendoff & Audring 2020, 2021), a constructionist framework that combines many of the ideas put forward in Construction Grammar (e.g., Goldberg 2006) and Construction Morphology (Booij 2010) with the notion of the Parallel Architecture (Jackendoff 2011). As with these prior constructionist frameworks, a core idea of RM is that 'rules of grammar' are stored in the lexicon as constructions (or 'schemas'), alongside words. A key difference, however, is that in RM, schemas explicitly do not only fulfill a generative function, but also a relational function. Jackendoff & Audring (2020: 4) point out that while an idiomatic expression like *raining cats and dogs* must be listed in the lexicon because of its idiosyncratic semantics, it also contains two perfectly regular instances of the English plural *-s*, indicating a relation with this plural schema. This schema can hence be used **generatively** to create nonce formations like *wugs*, but it can also be used **relationally** to express generalizations across lexically listed collocations.

An important consequence of this notion is that while not all schemas can be used generatively, they all have a relational function. The English suffix *-en*, for instance, consistently creates deadjectival verbs with the meaning '(cause to) become A', and is found in forms like *darken*, *widen*, *harden*, *tighten* and *sharpen* (Jackendoff & Audring 2021: 16). While this schema cannot be used generatively, as English speakers do not create or accept any new forms using *-en*, learners of English will nonetheless recognize and store the strong pattern among listed forms in *-en*, signalling the existence of a relational schema motivating these forms. In this view, then, the grammar is centred not around productive rules, as is the case in generative frameworks, but around these relational links and patterns: lexical items and their properties are acquired

and stored as they appear in use. This view is reminiscent of Enfield's (2002) criticism on the monosemist position discussed in the previous section: whether various senses of a lexical item can be reconciled through underspecification and subsequent metaphorical extension, is irrelevant, since this is fundamentally not how these items are acquired and stored. Adopting RM has similar consequences for Johns' (2007: 544) claim that considering affixhood an intrinsic feature "overgenerates and cannot be falsified". Since schemas are acquired as they appear in use, RM has no underlying representations: a synchronic analysis based on the surface-level observation that IY suffixes are all suffixing in nature is hence the only type of analysis available.

4.3. Methodology

This section introduces the methodology used in the case study of nine verbalizers in West Greenlandic, each selected on the basis of being defined in previous literature in strikingly lexical terms.

4.3.1. Corpus

An important reason for conducting this study on West Greenlandic in particular is the availability of a large-scale corpus developed by Oqaasileriffik (2024). As of July 2024, the corpus contains some 23.7 million tokens sourced from a variety of texts and genres, primarily news articles and digitized books and magazines, and it continues to be expanded (cf. Jeremiassen 2021: 5). Each of the suffixes under study was looked up in the corpus using regular expressions, and an average of 4,333 tokens were analyzed. Wiechetek et al.'s (2022) morphological parser for West Greenlandic was used to weed out the bulk of false positives, with further analysis conducted manually. The number of tokens analyzed ranges from 237 for the relatively rare *-lerngusaat* (§5.5) to 10,000 for the suffix *-tor* (§5.1), whose high similarity to other common suffixes (most notably 'intransitive participle' *-toq*, see §2.3.2) resulted in many false positives. The corpus data for each suffix was compared to and supplemented with entries listed in two West Greenlandic–English dictionaries (Schultz-Lorentzen 1927; University of Chicago & Oqaasileriffik 2018), two West Greenlandic–Danish dictionaries (Kleinschmidt 1871; Ilinniusiorfik 2010) and two reference grammars of West Greenlandic (Fortescue 1984; Kahn & Valijärvi 2022).

4.3.2. Elicitation

Based on the results of the corpus study, the semantics and extensibility of the nine suffixes was studied by means of elicitation with three speakers: AP, RB and SP. Elicitation took place in Nuuk, Greenland, in June 2024. All three speakers grew up in settlements in the Disko Bay area in western Greenland and have lived in Nuuk for much of their adult life. They are all native speakers of West Greenlandic and Danish, and learned English at a later age.

For each of the suffixes under study, speakers were first asked to translate a number of English sentences which, based on the corpus study and existing literature, were deemed likely to prompt use of the suffix

in question. If one or more of the speaker's translations did not include the suffix, they were then asked to give their opinion on an alternative sentence that did include it. This initial setup was followed by further questions, acceptability judgements and targeted elicitation. Wherever possible, speakers were provided with detailed contexts and settings for the translation tasks and felicity judgements, taking cues from Matthewson (2004) and Louie (2015). Notable disagreements in speaker judgement are mentioned alongside the examples in question.

The elicited material, supplemented with corpus data, was used to create a semantic profile for each of the suffixes, and to propose a historical development for their modern uses. For this purpose, each suffix was compared with entries in suffix dictionaries of other IY varieties: East Greenlandic (Tersis 2008), Eastern Canadian Inuktitut (Harper 1979; Schneider 1979); Western Canadian Inuktitut (Briggs et al. 2015) and Central Alaskan Yupik (Jacobson 2012), as well as Fortescue et al.'s (2010) comparative dictionary of Inuit-Yupik.

5. Encyclopedic verbalizers in West Greenlandic

Based on the corpus study and elicitation described in §4.3, this chapter presents a detailed analysis of nine encyclopedic verbalizers in West Greenlandic, with a focus on their semantics and historical development.

5.1. *-tor* 'consume; wear; use N'

The suffix *-tor* has seen a lot of discussion in the literature, primarily because it is known to consistently express a number of highly distinct meanings across IY varieties, most commonly 'use', 'consume', 'wear' and 'travel in'. Various explanations have been offered as to how *-tor* ended up with these meanings, either synchronically or diachronically; some of these were discussed previously in §3.3 and §4.1. The suffix *-tor* alternates with a form *-sor* in relatively complex ways; see Fortescue (1984: 345–9) for a detailed overview.

Tersis (1996: 88), Mithun (1999: 50), Tersis & Mahieu (2006: 168) and Johns (2007: 556) contend that cognates of *-tor* are monosemous (light) verbs. To cover the aforementioned variety in meaning, they each propose highly diffuse definitions for the suffix, such as that it denotes a "one-off constructive endocentric action"[19] (Tersis 1996: 88), "involves an activity such that the reference of the nominal becomes subsumed within that of the subject" (Johns 2007: 556) or that it expresses an "occasional process whereby an agent (often human) performs a series of repetitive movements with something"[20] (Tersis & Mahieu 2006: 168).

Fortescue et al. (2010: 473–4) propose that 'wear' and 'travel in' are historically derived from the more basic 'use' through semantic narrowing. As for 'consume', they suggest that this use of *-tor* was already a common use of the suffix in Proto-Inuit-Yupik, and reconstruct a proto-form **-tur* 'use; consume'.

In West Greenlandic, most of the uses of *-tor* outlined above are missing: the suffix is used generatively only with the uses related to 'consume' (§5.1.1). Fortescue (1984: 9) defines this use of the suffix as 'eat/drink', but this definition seems too restrictive. In fact, we find four major semantic fields under 'consume': *-tor* is used with foods ('eat N'), with drinks ('drink N'), with drugs that can be smoked ('smoke N') and with energy sources ('be powered by N'). Besides 'consume', the only commonality among listed forms is in a sense 'use' (§5.1.2). An overview is given in Figure 2.

[19] Original French: "action constructive ponctuelle endocentrique".

[20] Original French: "processus occasionnel par lequel un agent (souvent humain) effectue une série de mouvements répétitifs avec quelque chose".

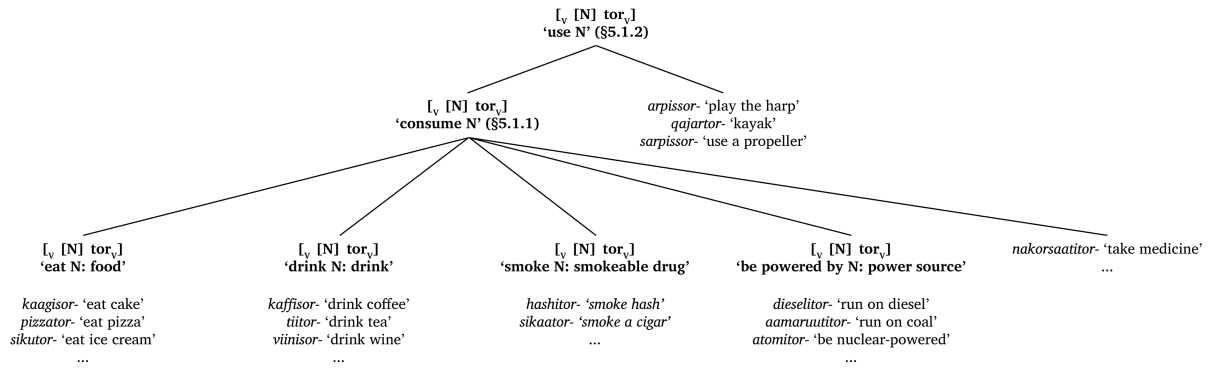


Figure 2: Uses of -tor

5.1.1. *-tor* 'consume N'

As mentioned, speakers only produce and accept new forms with *-tor* in the sense of 'consume N'. Use of the suffix is a common strategy for denoting eating or drinking (71–72).

(71) *Pizza–**tor**–langa!*
pizza–**eat**–OPT.1SG
'I wish I was eating pizza!' (Kahn & Valijärvi 2022: 163)

(72) *Mamar–tu–mik* *kaffi–**sor**–pugut.*
be_tasty–IP–INS.SG coffee–**drink**–IND.1PL
'We drink good coffee.' (ibid.: 57)

Besides eating and drinking, *-tor* is also used to denote smoking (73–74).

(73) *Sikaa–**tor**–poq.*
cigar–**smoke**–IND.3SG
'He is smoking a cigar.' (University of Chicago & Oqaasileriffik 2018)

(74) *Hashi–**tor**–tar–punga.*
hash–**smoke**–HAB–IND.1SG
'I smoke hash.' (RB)

The suffix can be used with anything that is consumed through the mouth; for example, it is commonly used to denote taking oral medication (75). It appears that the noun in question must be consumed; it cannot be used to denote chewing gum, for instance (76).

(75) *Nakorsaati–**tor**–punga.*
medicine–**consume**–IND.1SG
'I am taking medicine.' (RB)

(76) *# Tamorasaar–**tor**–punga.*
gum–**consume**–IND.1SG
Intended: 'I am chewing gum.' (SP)

Finally, *-tor* can also express 'consume' in the context of an energy source, such as *dieselitor-* 'run on diesel' (77), *kallerup-innitor-* 'be electric' (78) and *atomitor-* 'be nuclear-powered' (80). While this use of *-tor* likely originated as a metaphor (much like how cars can 'slurp diesel' in English), it is now the standard way to denote the energy source of appliances, cars and power plants.

(77) *Biili* *dieseli–**tor**–tuu–voq.*
car.ABS.SG diesel–**consume**–HAB–IND.3SG
'The car runs on diesel.' (RB)

(78) *biili* *kallerup-inni–**tor**–toq*
car.ABS.SG electricity–**consume**–IP.ABS.SG
'electric car' (RB)

(79) *Nukissiorfik* *aamaruuti–**tor**–tuu–voq.*
power_plant.ABS.SG coal–**consume**–HAB–IND.3SG
'The power plant runs on coal.' (RB)

(80) *nukissiorfik* *atomi–**tor**–toq*
power_plant.ABS.SG atom–**consume**–IP.ABS.SG
'nuclear power plant' (University of Chicago & Oqaasileriffik 2018)

5.1.2. *-tor* 'use N'

Besides the generative use 'consume', cognates of *-tor* in other IY varieties are often cited as exhibiting various other uses, most commonly 'use', 'wear' and 'travel in' (cf. Fortescue et al. 2010: 473–4). The 'wear' sense is not attested in West Greenlandic, and is similarly not accepted by speakers (81).

(81) *Kavaaja–**tor**–pit?*
coat–**TOR**–INT.2SG
i. # 'Are you wearing a coat?'
ii. ? 'Are you eating a coat?' (RB)

The ‘travel in’ use is attested in only two forms, both derived from boats. The first of these is *qajartor-*, derived from *qajaq* ‘kayak’. One speaker noted that (82) might be used as a pun, making use of the double meaning of *qajaq* as both a kayak and a Greenlandic brand of beer.

(82) *Qajar–**tor**–tar–pit?*
kayak–**TOR**–HAB–INT.2SG
i. ‘Do you kayak?’
ii. ‘Do you drink Qajaq?’ (RB)

The other boat used with *-tor* is the umiak, a traditional passenger boat (83). All speakers were in agreement that *umiartor-* can only refer to a person steering the umiak, and not to passengers.

(83) *Umiar–**tor**–punga.*
umiak–**steer**–IND.1SG
i. ‘I am steering the umiak.’
ii. # ‘I am a passenger on the umiak.’ (SP)

Use of *-tor* with other boats or vehicles was never accepted (84).

(84a) *# Gummibådi–**tor**–punga.*
dinghy–**steer**–IND.1SG
Intended: ‘I am steering a dinghy.’ (RB)

(84b) *# Ikaartaati–**tor**–punga.*
ferry–**steer**–IND.1SG
Intended: ‘I am sailing a ferry.’ (RB)

(84c) *# Taxa–**tor**–punga.*
taxi–**steer**–IND.1SG
Intended: ‘I am driving a taxi.’ (RB)

Now, while forms with *-tor* in the sense of ‘wear’ and ‘travel in’ are almost completely absent from West Greenlandic, the more general sense of ‘use’ is more common. Forms with *-tor* ‘use N’ are listed under a separate entry in Ilinniusiorfik (2010), and these include *isersor-* ‘use one’s eyes’, *sarpissor-* ‘use a propeller’ and *qilaatersor-* ‘beat the drum’. An in-context example is given in (85).

(85) *Umiatsiaq* *sarpis–**sor**–tuu–voq.*
boat.ABS.SG propeller–**use**–HAB–IND.3SG
'The boat uses a propeller.' (RB)

Altogether, the dictionaries cited here contain 31 phonologically transparent forms in which *-tor* more or less denotes 'use', such as *qanersor-* 'chew' (lit. 'use one's mouth'), *paperortor-* 'swim using one's tail' and *silattor* 'be sensible' (lit. 'use intelligence'). One notable form is *arpissor-* 'play the harp', derived from an early Danish loan *arpik* 'harp'. This form strongly suggests that this use of *-tor* was still extensible relatively recently, and that forms with this use of *-tor* are not necessarily all inherited from Proto-Inuit.

5.2. *-ler* 'put on; install; cover with; provide N'

The suffix *-ler*, defined by Fortescue (1984: 323) as 'provide' and by Kahn & Valijärvi (2022: 306) as 'equip with', is perhaps the most multifunctional suffix in West Greenlandic. It is a truncative suffix, causing the removal of the final consonant of the noun to which it attaches, and it realizes as *-ser* following /t/ and as *-ker* following /aq/. While Fortescue's (1984: 323) relatively vague definition 'provide' is attested in a number of listed forms, it cannot be used generatively (§5.2.4): speakers only produce and accept new forms with *-ler* in several highly restricted use cases (Figure 3), which are discussed individually below. Most of these uses are also found with combined suffix *-lersor*, discussed in §5.2.6.

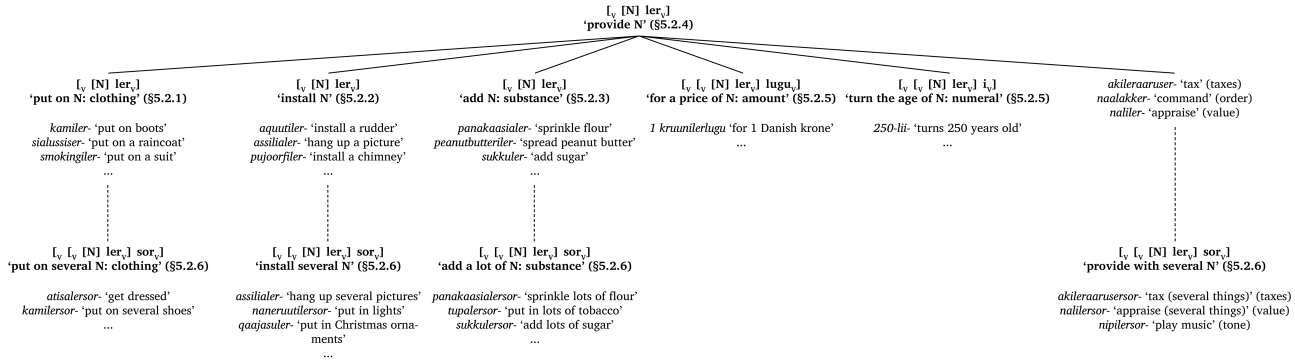


Figure 3: Uses of -ler

West Greenlandic also features a V>V suffix *-ler* 'begin to V'. Since this suffix is both etymologically unrelated (cf. Fortescue et al. 2010: 448–9) and semantically dissimilar to verbalizing *-ler*, this is best considered an entirely distinct suffix.

5.2.1. *-ler* 'put on an article of clothing N'

Firstly, *-ler* can be used to denote putting on an article of clothing. When combined with an intransitive ending, the resulting verb denotes a reflexive 'put N on oneself' (86); when used transitively, it means 'put N on someone else' (87).

(86) *Sialler–pat* *sialussi–**ser**–punga.*
rain–CAUS.3SG raincoat–**put_on**–IND.3SG
'I am putting on a raincoat because it's raining.' (SP)

(87) *Kami–**ler**–paa.*
boot–**put_on**–IND.3SG > 3SG
'She's putting boots on him.' (RB)

5.2.2. *-ler* 'attach N'

-ler can also be used to denote attaching virtually any object onto something else, the latter of which takes on the role of direct object (88).

(88) *Iigaq* *assilia–**ler**–paa.*
wall.ABS.SG picture–**install**–IND.3SG > 3SG
'He's hanging a picture on the wall.' (RB)

It appears that the object must be attached semi-permanently; for instance, *-ler* cannot be used to denote simply placing an item on a table (89).

(89) *# Nerrivik* *puuguta–**li**–laar–iuk.*
table.ABS.SG plate–**install**–please–IMP.2SG > 3SG
Intended: 'Please put the plate on the table.' (SP)

Ilinniusiorfik (2010) provides some further examples in the same vein, such as *pituuta**ler**paa* 'he provides [the boat] with a mooring line' and *aquuti**ler**paa* 'he puts the rudder on [the boat]', from *pituutaq* 'mooring line' and *aquut* 'rudder', respectively.

5.2.3. *-ler* 'add a substance N'

The suffix is also used to denote adding a variety of substances (liquids, powders, etc.) to something. This use of *-ler* generally denotes smearing, spreading or sprinkling (90–91).

(90) *Nagittaa–ngikallar–anni* *panakaasia–**li**–laar–iuk.*
knead–before–CAUS.2SG > 4SG flour–**add**–please–IMP.2SG > 3SG
'Before kneading the dough, sprinkle some flour on it.' (RB)

(91) *Peanutbutteri–**ler**–para.*
peanut_butter–**add**–IND.1SG > 3SG
'I am spreading peanut butter on [the bread].' (RB)

However, it can also be used to denote adding a given substance in a more general sense. For instance, (92) is a typical way to ask whether someone takes sugar in their coffee or tea.

(92) *Sukku–**ler**–tar–pit?*
sugar–**add**–HAB–INT.2SG
'Do you take sugar?' (RB)

Interestingly, a number of forms with this meaning take suffix *-ter* (§5.3) rather than *-ler*. The existence of a form with *-ter* blocks the use of a form with *-ler* with the same sense; for instance, speakers do not accept a verb *imerler-* 'water' (93b). The same holds true for verbs *tara**tser**-* 'salt' and *orsuuti**ter**-* 'grease'.

(93a) *Naasoq* *imer–**ter**–para.*
plant.ABS.SG water–**add**–IND.1SG>3SG
'I am watering the plant.' (RB)

(93b) ** Naasoq* *imer–**ler**–para.*
plant.ABS.SG water–**add**–IND.1SG>3SG
Intended: 'I am watering the plant.' (RB)

The relation between *-ter* and *-ler* is discussed further in §5.3.

5.2.4. *-ler* 'give N'

In a large number of listed forms, *-ler* expresses roughly 'provide' or 'give': dictionary entries (University of Chicago & Oqaasileriffik 2018) include *nali**ler**-* 'appraise' (lit. 'give a value'), *naalak**ker**-* 'command' (lit. 'give an order') and *aningaasa**ler**-* 'invest' (lit. 'give money'). Kahn & Valijärvi (2022: 214) suggest that this use of *-ler* can be extended to new forms, and provide the examples in (94).

(94a) *Tupa–**ler**–para.*
tobacco–**give**–IND.1SG>3SG
'I got him/her tobacco.' (Kahn & Valijärvi 2022: 214)

(94b) *Tupa–**ler**–punga.*
tobacco–**give**–IND.1SG
'I got myself tobacco.' (ibid.)

However, these examples could not be replicated: speakers do not accept (94b), and only accept (94a) in the context of 'putting tobacco in one's pipe', using the sense of *-ler* discussed in §5.2.3 (95).

(95) *Pujortaat* *tupa–**ler**–para.*
pipe.ABS.SG tobacco–**add**–IND.1SG > 3SG
'I put tobacco in the pipe.' (RB)

Overall, it appears that *-ler* cannot be used to create new forms with a general sense of 'give', and is restricted to the senses and semantic domains discussed elsewhere in this section (96–97).

(96) *Kami–**ler**–pakkit.*
boot–**LER**–IND.1SG > 2SG
i. 'I am putting boots on you.'
ii. # 'I am giving you a pair of boots.' (SP)

(97) *Assilia–**ler**–paa.*
picture–**LER**–IND.3SG > 3SG
i. 'He put up a picture.'
ii. # 'He gave him a picture.' (RB)

5.2.5. *-lerlugu* 'for a price of N' and *-lii* 'turn N years old'

Finally, *-ler* is also used in two fixed constructions. The first is the combination of *-ler* and two endings in the contemporative verbal mood, *-lugu* and *-lugit*, which can be used to denote a price, such as *1 kruunilerlugu* 'for 1 Danish krone' (98). This sense of *-ler* is not available with any other moods (99). The use of either singular *-lugu* or plural *-lugit* is determined by the number of the seller.

(98) *Kangersuatsia–mi* *aalisakkerivik* *Royal Greenland A/S–ip*
Kangersuatsiaq–LOC.SG fish_house.ABS.SG Royal Greenland A/S–REL.SG
Hans Mathiasseni–mut *1 kruuni–**ler–lugu*** *tuni–vaa.*
Hans Mathiassen–ALL.SG 1 krone–**LER–CONT.4SG > 3SG** give–IND.3SG > 3SG
'Royal Greenland A/S sold the fish house in Kangersuatsiaq to Hans Mathiassen for 1 Danish krone.' (Sermitsiaq 2018)

(99) ** Sarulli–t* *50 kruuni–**ler**–put.*
cod–ABS.PL 50 kroner–**LER**–IND.3PL
Intended: 'The cods cost 50 kroner.' (SP)

The second is the combination of *-ler* and antipassive *-i*, which can be used to denote something or someone turning a particular age (100).

(100) *Kangaamiut* *ukiu–nik* *250–**li–i**–voq.*
Kangaamiut.ABS.SG year–INS.PL 250–**LER–ANTIP**–IND.3SG
'Kangaamiut (a settlement) is turning 250 years old.' (KNR 2005)

5.2.6. *-lersor* 'put on; install; add; provide several N'

The suffix *-ler* is often found in combination with suffix *-(r)sor*, which roughly denotes a repeated action. The combination *-lersor* marks that the verbalized noun is plural, or in the case of mass nouns, a large amount. Both Fortescue (1984) and Kahn & Valijärvi (2022) consider *-(r)sor* unproductive, and hence treat *-lersor* as entirely distinct from *-ler*; Ilinniusiorfik (2010) similarly lists entries with *-lersor* separately from those with *-ler*. However, since *-lersor* is used with all of the different senses of *-ler* presented in this section (101–103), it seems more economical to assume a synchronic relationship between the two suffixes, and consider them sister constructions.

(101) *Roskilde* *kami–**lersor**–poq.*
Roskilde.ABS.SG boot–**put_on_several**–IND.3SG
'Roskilde [a Danish city] is putting on many *kamikker* [traditional Inuit boots].
(i.e., the city is hosting a Greenlandic festival)' (Sermitsiaq 2011)

(102) *Iigaq* *assilia–**lersor**–paa.*
wall.ABS.SG picture–**install_several**–IND.3SG > 3SG
'He's hanging several pictures on the wall.' (RB)

(103) *Pujortaat* *tupa–**lersor**–para.*
pipe.ABS.SG tobacco–**add_several**–IND.1SG > 3SG
'I put a lot of tobacco in the pipe.' (RB)

Moreover, speakers are generally highly aware that the two suffixes form a kind of pair. Compare *assilialersor-* 'hang up several pictures' (102) with *aasilialer-* 'hang up a picture' (104).

(104) *Iigaq* *assilia–**ler**–paa.*
wall.ABS.SG picture–**install**–IND.3SG > 3SG
'He's hanging a picture on the wall.' (RB)

When asked about the difference between (102) and (104), one speaker noted that the use of *-lersor* over *-ler* emphasizes the plurality of the verbalized noun. While *-lersor* can only be used if the noun is plural, *-ler* does not necessarily require a singular interpretation; for instance, the speaker expressed no preference between (105a) and (105b).

(105a) *Marlussu–nik* *assilia–**ler**–paa.*
couple–INS.PL picture–**install**–IND.3SG > 3SG
'He put up a couple of pictures.' (RB)

(105b) *Marlussu–nik* *assilia–**lersor**–paa.*
couple–INS.PL picture–**install_several**–IND.3SG > 3SG
'He put up a couple of pictures.' (RB)

Much like *-ler*, *-lersor* is found in a number of listed forms with a more general sense 'give; provide' (§5.2.4). An example is *nipilersor-* 'play music' (lit. 'give sounds') (106).

(106) *Ki–kkut* ***nipilersu**–ler–pat?*
who–PROL **play_music**–going_to–INT.3SG
'Who is going to play music?' (Kahn & Valijärvi 2022: 95)

5.3. *-ter* 'cover in a substance N'

Tersis & Mahieu (2006) explore the East Greenlandic suffix *-ter*, and note that the suffix has a large variety of different meanings (107), as previously discussed in §3.1.

East Greenlandic

(107a) *Isi–**ter**–poq.*
hood–**put_on**–IND.3SG
'He puts on a hood.' (Tersis & Mahieu 2006: 166, translation mine)

(107b) *Pitaata–**ter**–paa.*
knife–**give**–IND.3SG > 3SG
'He gives him a knife.' (ibid.)

(107c) *Normu–**ter**–paa.*
number–**install**–IND.3SG > 3SG
'He puts a number on her (i.e., on her house).' (ibid.)

(107d) *Amaqqaa–**ter**–paa.*
fat–**add**–IND.3SG > 3SG
'He coats it with grease.' (ibid.)

(107e) *Imer–**ter**–paa.*
water–**add**–IND.3SG > 3SG
'He waters it.' (ibid.)

East and West Greenlandic are generally extremely similar, and are often considered dialects of a larger Greenlandic language (e.g., Mennecier 1995: 4). What is striking, then, is West Greenlandic *-ter* only exhibits the use in (107d) and (107e), roughly denoting the addition of a substance to something (108–109).[21]

(108) *Naasoq* *imer–**ter**–para.*
plant.ABS.SG water–**add**–IND.1SG > 3SG
'I am watering the plant.' (RB)

(109) *Naqittagaq* *tara–**tser**–para.*
dough.ABS.SG salt–**add**–IND.1SG > 3SG
'I am adding salt to the dough.' (SP)

Moreover, this suffix is attested in only nine combinations, each with a particular substance. Further examples include *orsuuti**ter***- 'cover in grease', *aa**tser***- 'cover in blood' and *mingu**tser***- 'cover in dirt' (Ilinniusiorfik 2010). Speakers do not accept any new formations with *-ter* in a similar vein, instead opting to use *-ler* (§5.2.3) in all cases (110–111).

(110a) * *Peanutbutteri–**ter**–para.*
peanut_butter–**add**–IND.1SG > 3SG
Intended: 'I am spreading peanut butter on it.' (RB)

(110b) *Peanutbutteri–**ler**–para.*
peanut_butter–**add**–IND.1SG > 3SG
'I am spreading peanut butter on [the bread].' (RB)

(111a) * *Sukku–**ter**–para.*
sugar–**add**–IND.1SG > 3SG
Intended: 'I am adding sugar to it.' (RB)

[21] Assibilation of /t/ preceding /i∼ɛ/ is common in West Greenlandic, and speakers realized *-ter* as [tsæʁ] in all contexts. In some cases, this pronunciation is reflected in the spelling, such as in the verb *taratser*- (109), which is attested only with *-tser*. Other verbs are only found with *-ter*, such as *imerter*- (108). This thesis follows the spelling used by Ilinniusiorfik (2010) and University of Chicago & Oqaasileriffik (2018).

(111b) *Sukku–**ler**–para.*
sugar–**add**–IND.1SG>3SG
'I am adding sugar to it.' (RB)

In fact, as shown in §5.2, West Greenlandic uses *-ler* for all of the uses of East Greenlandic *-ter* identified by Tersis & Mahieu (2006) in (107). The relation between these two suffixes is worth discussing in more detail.

Fortescue et al. (2010: 449) cite cognates of *-ler* from virtually all major IY varieties and Aleut, and note that its semantics are consistently along the lines of 'provide'. The only variety that does not have a similar suffix *-ler* is East Greenlandic (cf. Tersis 2008), suggesting that it merged with *-ter* in this variety.[22]

The development of *-ter* is somewhat more complex. According to Fortescue et al. (2010: 471–2), most IY varieties only feature a V>V suffix *-ter* which roughly means 'gradually; bit by bit'. Briggs et al. (2015: 618) discuss this suffix in Western Canadian Inuktitut and note that it emphasizes that an action makes up multiple actions (112b).

Utkuhiksalingmiut Inuktitut
(112a) *Qami–tara.*
extinguish–IND.1SG>3SG
'I put it out. (e.g., an electric light)' (Briggs et al. 2015: 618)

(112b) *Qap–**tiq**–tara.*
extinguish–**bit_by_bit**–IND.1SG>3SG
i. 'I put out a campfire, by **repeatedly** dumping water on it.'
ii. 'I put out **all** the lights in the house.' (ibid.)

This V>V suffix is also found in West Greenlandic, where it similarly marks that an action took place over a large area, on something large, or for an extended period of time (113).

(113) *Angerlarsimaffin–ni* *illoqarfim–mi=lu* *qulleeqq–at*
home–LOC.PL town–LOC.SG=and light–ABS.PL
qaammaqqut–aa–lluar–tu–t *ikiti–**ter**–sima–pput.*
light_source–COP–well–IP–ABS.PL ignite–**bit_by_bit**–PERF–IND.3PL
'Bright lights have been lit **all over** our homes and town.' (Kommune Kujalleq 2023)

[22] The unrelated (cf. Fortescue et al. 2010: 448–9) V>V suffix *-ler* 'begin to' has similarly become *-ter* in East Greenlandic (cf. Tersis 2008: 378), suggesting that this is a more widespread phonological development.

The N > V suffix *-ter* 'cover in N', conversely, is found only in East Greenlandic and in the aforementioned nine listed forms in West Greenlandic, suggesting that it is a relatively recent development. A clue to its origin is the fact that in West Greenlandic, it often denotes not only that a substance is added to something, but specifically that the substance is sprinkled, smeared or otherwise added in a gradual manner. Since V > V *-ter* similarly denotes a gradual activity, it seems likely that the N > V suffix is somehow derived from it (see §2.3.3 for more examples of 'polycategorical' suffixes). In West Greenlandic, N > V *-ter* has merged with *-ler* and become the use of this suffix described in §5.2.3; in East Greenlandic, the opposite occurred, and all uses exhibited by *-ler* in other IY varieties are now expressed through *-ter*.

5.4. *-lersaar* and *-likkersaar* 'tell about N'

Fortescue (1984) and Ilinniusiorfik (2010) note the existence of a suffix *-lersaar*, which can be used both as a V > V suffix 'plan to V' (114) and as a N > V suffix 'tell about N' (115).

(114) *Aalla–**lersaar**–poq.*
leave–**plan**–IND.3SG
'He plans to leave.' (Fortescue 1984: 292)

(115) *Angalani–**lersaar**–poq.*
journey–**tell_about**–IND.3SG
'He told of his travels.' (ibid.: 323)

The origin of *-lersaar* is unclear, although the V > V suffix 'plan to V' does have a potential cognate in Central Alaskan Yupik verb *pillerkir-* 'predict; make plans' (Jacobson 2012: 495–6).[23] In West Greenlandic, this suffix is a common way to denote future plans or wishes (116).

(116) *Ilinniarfi–up* *ilinniar–fik* *nutaaq* *2008–mi* *augusti–mi*
school–REL.SG learn–place.ABS.SG new.ABS.SG 2008–LOC.SG August–LOC.SG
*aallartin–nia–**lersaar**–aa.*
set_up–intend–**plan**–IND.3SG > 3SG
'The school has plans to set up a new study program in August 2008.' (Sermitsiaq 2008)

The N > V suffix 'tell about N', however, is much less ubiquitous than Fortescue (1984) and Ilinniusiorfik (2010) suggest. In the entire Oqaasileriffik (2024) corpus, it is attested exclusively in combination with

[23] Jacobson (2012: 495–6) suggests that Yupik *pillerkir-* is transparently composed of expletive root *pi-* and suffixes *-lleq*, *-kaq* and *-ir*, the semantic sum of which roughly adds up to 'deal with a future event'. In West Greenlandic, the combination of *pi-* and *-lersaar* (*pilersaar-*) similarly means 'have plans', and the relation between suffixes and corresponding verbs with *pi-* appears relatively salient to speakers (see §5.5 for more discussion on this matter). It is unknown whether Central Alaskan Yupik also features a suffix *-llerkir* alongside *pillerkir-*.

nominalizing suffixes *-neq* ‘act of V-ing’ and *-ut* ‘tool for V-ing’, yielding the collocations *-lersaarneq* ‘act of telling about N’ (117) and *-lersaarut* ‘story about N’ (118). These collocations are also found in a number of lexicalized forms, such as *piviusulersaarut* ‘documentary’ (lit. ‘story about reality’) in (117).

(117) *piviusulersaarut* *nutaaq* *qivittu–**lersaarner**–mik* *sammisa–lik*
documentary.ABS.SG new.ABS.SG qivittoq–**telling_of**–INS.SG topic–having.ABS.SG
‘a new documentary on [the tradition of] telling stories about *qivittut* [mythical creatures]’
(Hansen 2016)

(118) *Erinna–l=li* *tammajui–tsu–t* *nuannari–neqa–qi–su–l=lu*
song–ABS.PL=but be_immortal–IP–ABS.PL enjoy–PASS–very–IP–ABS.PL=and
*asanninni–**lersaarut**–aa–pput* *Asasannut* *aamma* *Lis Mari.*
love–**story_about**–COP–IND.3PL Asasannut and Lis Mari
[regarding a band’s setlist] ‘But the most enjoyable evergreens were the love stories Asasannut and Lis Mari.’ (Sermitsiaq 2014)

During elicitation, speakers did not produce any forms with N > V *-lersaar*. Instead, they exclusively opted for a suffix *-likkersaar* (119a), which is not found in any of the literature cited here. Corresponding forms with *-lersaar* were not accepted (119b).

(119a) *Qitsu–**likkersaar**–poq.*
cat–**tell_about**–IND.3SG
‘She told about her cat.’ (RB)

(119b) * *Qitsu–**lersaar**–poq.*
cat–**tell_about**–IND.3SG
Intended: ‘She told about her cat.’ (RB)

Forms in *-lersaarut* and *-lersaarneq* were deemed acceptable, but speakers strongly preferred *-likkersaarut* and *-likkersaarneq* (120a). One speaker noted that (120b) sounded “very old-fashioned”.

(120a) *Filmi* *pisimasu–**likkersaarut**–aa–voq.*
film.ABS.SG event–story_about–COP–IND.3SG
‘The film is a story about true events.’ (RB)

(120b) *? Filmi* *pisimasu–**lersaarut**–aa–voq.*
film.ABS.SG event–story_about–COP–IND.3SG
‘The film is a story about true events.’ (RB)

The same speaker suggested that forms in *-likkersaar* are considered substandard, and are "how the youth would say it." While this attitude towards the suffix would explain its absence in modern dictionaries and other literature, *-likkersaar* shows widespread use in formal sources like news articles and government texts, and its oldest attestation in the Oqaasileriffik (2024) corpus dates to 1987. Forms in *-likkersaarut* account for 56% of all tokens with *-likkersaar*, its high frequency suggesting that *-likkersaarut* is itself listed as a distinct suffix (cf. Hay 2001); *-likkersaarneq*, in contrast, accounts for only 16%.

There is no discernible difference in meaning between forms with N > V *-lersaar* and those with *-likkersaar*; for instance, Hansen's (2016) article cited in (117) above uses the two interchangeably (121).

(121) *Qivittu–**likkersaarut**–aa–voq.*
qivittoq–**story_about**–COP–IND.3SG
'It is a story about *qivittut* [mythical creatures].' (Hansen 2016)

Given its identical semantics and similar form, it seems likely that *-likkersaar* is somehow derived from *-lersaar*, but no combination of *-lersaar* and another suffix would transparently result in the form *-likkersaar*. One option is the combination of *-lik* 'having N; the existence of N' (122) and *-lersaar*. While the semantic sum of these parts ('tell about the existence of N') is explainable in contexts like (123), phonologically, this combination would synchronically result in *-lilersaar*.

(122) *Inu–**lik*** *ali–vunga.*
person–**having.ABS.SG** leave–IND.1SG
'There were people when I left.' (RB)

(123) *Aliortuga–**likkersaar**–poq.*
ghost–**tell_about**–IND.3SG
'He's telling about (the existence of) a ghost.' (RB)

To summarize, West Greenlandic features a V > V suffix *-lersaar* 'plan to V' and a related N > V suffix *-lersaar* 'tell about N', although the latter is considered old-fashioned and is found only in collocations with nominalizers *-neq* and *-ut*. Instead, speakers express 'tell about N' using a suffix *-likkersaar*, which is also most commonly used in combination with the aforementioned nominalizers.

5.5. *-lerngusaat* 'fight over N'

Fortescue (1984: 323) and Ilinniusiorfik (2010) note the existence of a suffix *-lerngusaat* 'fight over N'. This suffix expresses that multiple entities are fighting amongst each other over something, and is hence only found with plural subjects (124–125). The suffix is relatively rare, with only 237 tokens in the Oqaasileriffik (2024) corpus.

(124) *Nerisa–ssa–**lerngusaap**–put.*
food–FUT–**fight_over**–IND.3PL
'They are fighting over food.' (Fortescue 1984: 323)

(125) *Appa–**lerngusaap**–put.*
murre–**fight_over**–IND.3PL
'They are scrambling to get hold of the murres [birds].' (Ilinniusiorfik 2010, glosses mine)

It is often used in news articles to denote political struggles over territory or fishing rights (126). The majority of news articles that use the suffix use it only in their headline or subheading, suggesting that it is deemed somewhat creative or attention-grabbing.

(126) *Kalaalli–t* *qallunaa–l=lu* *qalasersua–**lerngusaap**–put.*
Greenlander–ABS.PL Dane–ABS.PL=and North_Pole–**fight_over**_IND.3PL
'Greenland and Denmark are fighting over the North Pole.' (KNR 2011)

Now, despite its use in written texts, speakers never used the suffix without prompting during elicitation. Instead, they universally opted for a verb *pilerngut-* 'fight over', with the thing being fought over expressed as the object of this verb (127a). Corresponding forms with *-lerngusaat* (127b) were deemed acceptable.

(127a) *Naaja–t* *iffia–p* ***pilerngup**–put.*
seagull–ABS.PL bread–REL.SG **fight_over**–IND.3PL
'The seagulls are fighting over a piece of bread.' (RB)

(127b) *Naaja–t* *iffia–**lerngusaap**–put.*
seagull–ABS.PL bread–**fight_over**–IND.3PL
'The seagulls are fighting over a piece of bread.' (RB)

Interestingly, one speaker noted being entirely unfamiliar with the suffix *-lerngusaat*, but nevertheless noted that (127b) "sounds okay". When asked how they knew (127b) sounds okay despite their unfamiliarity with the suffix, they suggested that the suffix *-lerngusaat* can be derived from the verb *pilerngut-*: "if I remove the *pi-*, it is still the same." This relation between *-lerngusaat* and *pilerngut-* is worth discussing in more detail.

All IY varieties feature a morpheme *pi-* which functions as an "empty" root (Dorais 2017: 144).[24] This root is used in various semantic or syntactic strategies to use suffixes without filling up the semantic slot

[24] The most detailed analysis of *pi-* is by Compton & Pittman (2010a), who analyze the morpheme within their semantico-syntactic theory (§3.3) and consider it a "syntactic pro-form" (ibid.: 1).

provided by the root to which they attach. As an example, consider the suffix *-niar* 'hunt for N' (§5.7), which can be attached to a noun to denote hunting of that item (128), but can also be attached to *pi-* to denote hunting in a general sense (129).

(128) ***Puisi–nniar**–tar–punga.*
seal–hunt–HAB–IND.1SG
'I regularly go seal hunting.' (Kahn & Valijärvi 2022: 202)

(129) *Piitaq* *sisamassaanik* ***pi–niar**–poq.*
Piitaq.ABS.SG fourth.INS.PL **PI–hunt**–IND.3SG
'Piitaq is hunting for the fourth time.' (ibid.: 118)

As for *-lerngusaa* and *pilerngut-*, it is actually unclear whether the suffix precedes the verb with *pi-* or vice versa. Fortescue et al. (2010: 286) reconstruct a Proto-Inuit verb *pilinʀu- 'be envious' which metathesized into *pilirngu-* in eastern Inuit varieties, but they express uncertainty over whether this verb was in fact formed with *pi-*, or is only coincidentally similar. The suffix is not exclusive to West Greenlandic, as Schneider (1970) notes the existence of a similar root-suffix pair in Eastern Canadian Inuktitut: the verb *pilirngu-* 'be jealous of someone who received when one got nothing' and the suffix *-lirngu* 'be unhappy about not having received N'. Regardless of which came first, there appears to be a strong pattern across IY languages of verbs starting in *pi-* and corresponding suffixes, such as in (128–129). While this pattern deserves further research, it does suggest that speakers may be able to back-form suffixes from any verb starting in *pi-*, as long as the verb in question has a clear open semantic slot, as in *piniar-* 'hunt for (something)'. It is hence possible that the speaker cited above was able to discern a suffix in the verb *pilerngut-* 'fight over (something)' based on its similar semantic structure.

One more striking difference is that the suffix *-lerngusaat* is exclusively attested ending in *-saat*, whereas this is almost never found on the verb *pilerngut-*: the Oqaasileriffik (2024) corpus contains only eight tokens with *pilerngusaat-*, most of which are from sources over 50 years old. The Ilinniusiorfik (2008) monolingual dictionary lists both *pilerngut-* and *pilerngusaat-*, and suggests the latter is transparently derived from *pilerngut-* 'fight over N' and an intensifying suffix *-saat*.[25] It is unclear why exactly the suffix *-lerngusaat* is only found in this 'intensified' form while the corresponding verb *pilerngut-* is used almost exclusively without this intensifying suffix.

[25] It should be noted that this suffix is not attested elsewhere, and demands further study. It may be related to the suffix *-saar* 'try to V at all costs' (cf. Fortescue et al. 2010: 436).

5.6. *-erniar* ‘sell N’

The suffix *-erniar* has not been discussed in the literature beyond a brief mention of its existence in Fortescue (1984: 323) and Kahn & Valijärvi (2022: 306), who both define it as ‘sell’ (130). After /a/, it is realized as *-arniar*.

(130) *Orsu–**erniar**–pugut.*
blubber–**sell**–IND.1PL
‘We are selling blubber.’ (Fortescue 1984: 323)

The suffix appears to be exclusive to Greenlandic, and is a phonologically transparent combination of the suffixes *-er* ‘lose one’s N’ (131) and *-niar* ‘intend to V’ (132).

(131) *Siuta–**ar**–poq.*
ear–**lose**–IND.3SG
‘He lost his ear.’ (RB)

(132) *Aalisartoq* *siku–kkoor–**niar**–poq.*
fisherman.ABS.SG ice–go_via–**intend**–IND.3SG
‘The fisherman intends to go over the ice.’ (Kahn & Valijärvi 2022: 310)

While it is easy to imagine how this combination ‘intend to lose one’s N’ might have shifted to ‘sell N’,[26] the compositional reading is no longer available. A monetary transaction must be involved (133).

(133) *Kaffivim–mi* *kaage–**erniar**–put.*
Kaffivik–LOC.SG cake–**sell**–IND.3PL
i. ‘They’re selling cakes at Kaffivik [a café].’
ii. # ‘Kaffivik is trying to get rid of cakes (because they baked too many).’
iii. # ‘Kaffivik is giving away cakes.’ (SP)

Unlike the majority of IY verbalizers, *-erniar* can only denote selling in a habitual sense with a collective interpretation of the noun; it cannot be used to refer to an individual sale (134).

[26] The shift may have been influenced by the unrelated (cf. Fortescue et al. 2010: 257–8) root *niuer(niar)-* ‘(intend to) conduct business’.

(134) *Mobiile–**erniar**–pit?*
phone–**sell**–INT.2SG
i. ‘Are you selling phones?’
ii. # ‘Are you selling your phone?’ (RB)

In this habitual sense, however, *-erniar* appears to be the primary strategy used to express selling. Referring to an individual sale instead requires the use of a more general verb *tuni-* ‘give’ (135); one speaker noted that whether the item is sold or given away is left to context, and both interpretations are available. If the act of selling is to be emphasized, causative *pisisi-* ‘sell’ may be used (136).

(135) *Mobiili* ***tuni**–viuk?*
phone.ABS.SG **give**–INT.2SG > 3SG
‘Did you give away/sell your phone?’ (RB)

(136) *Johanni–p* *naasun–nik* *marlun–nik* ***pisi–si**–paanga.*
Johan–REL.SG plant–INS.PL two–INS.PL **buy–cause**–IND.3SG > 1SG
‘Johan sold me two plants.’ (RB)

There appear to be no further restrictions: *-erniar* can be used with any item that could reasonably be sold, and the act of selling can be modified or situated in the past or future (137).

(137) *Air Greenlandi* *billetse–**erniar**–unnaar–allar–poq.*
Air_Greenland.ABS.SG ticket–**sell**–not_anymore–for_now–IND.3SG
‘Air Greenland has stopped selling tickets for the time being.’ (Hyldal 2022)

Besides its use as a verbalizer, *-erniar* also exists as a N > N suffix meaning ‘a seller of N’. Like its verbalizing counterpart, this suffix denotes habitual selling with a collective interpretation of the noun, making the forms created by this suffixes very similar to compounds with English *seller*, such as *bookseller*. Because of this, N > N *-erniar* is used primarily to denote professions, such as *inuerniaq* ‘slave trader’ (lit. ‘person seller’), *naasuerniaq* ‘florist’ and *immusuaarniaq* ‘cheesemonger’ (cf. University of Chicago & Oqaasileriffik 2018).

5.7. *-t* ‘kill N’ and *-nniar* ‘hunt for N’

Most IY varieties feature a suffix *-t* which denotes the catching and killing of an animal in a hunt or when fishing. An example from Western Canadian Inuktitut is (138), derived from *tuktu* ‘caribou’.

Utkuhiksalingmiutut Inuktitut

(138) *Tuktu–**t**–tunga.*
caribou–**kill**–IND.1SG
'I shot a caribou.' (Briggs et al. 2015: 595–6)

While the suffix is clearly *-t* or *-te* in IY varieties that permit more complex consonant clusters (cf. Fortescue et al. 2010: 469), in West Greenlandic, it has assimilated to the preceding or following consonant in all contexts. As a result, it is synchronically only visible as gemination of this consonant (139), or even invisible if the noun to which it attaches already ends in a consonant (140).[27]

(139) *Puisi–**p**–punga.*
seal–**kill**–IND.1SG
'I caught a seal.' (cf. *puisi* 'seal') (RB)

(140) *Sarullip–**Ø**–punga.*
cod–**kill**–IND.1SG
'I caught a cod.' (cf. *sarullik* 'cod') (SP)

Despite its invisibility, speakers readily produce new forms with non-Greenlandic animals when asked. A telling example is (141), derived from the noun *nagguaatsoq* 'elephant'.

(141) *Nagguaatsor–**Ø**–put.*
elephant–**kill**–IND.3PL
'They caught an elephant.' (SP)

Now, while the combination of this noun, the suffix *-t* and the ending *-put* should yield the form *nagguaatsupput,* we instead find *nagguaatsorput*, as if the ending *-put* was attached directly to the noun.[28] This example, which was reproduced by all speakers, strongly suggests that speakers of West Greenlandic derive new verbs meaning 'kill N' not by adding a suffix, but through zero derivation. This phenomenon

[27] Synchronically, *-t* is a 'truncative' suffix (cf. Kahn & Valijärvi 2022: 12–3), prompting removal of the final consonant of the root to which it attaches. When attached to *sarullik* 'cod' in (140), *-t* selects a form *sarulli-*, yielding the verb *sarullit-* 'catch cod'; adding the ending *-punga* then selects a form *sarullip-* of this verb. Within RM, these processes can be considered a blending of the base and affix (cf. Jackendoff & Audring 2020: 195–6), although a peculiarity with truncative suffixes is that the blended segment is phonologically empty: combining *sarullik* and *-t* results in the removal of /k/, which might be formalized as $/_1$sɑʁuɬ:i$_2$*∅*$_1$t$_2$/$_3$.

[28] Combining *nagguaatsoq* 'elephant' and *-t* should result in the removal of the former's final /q/, yielding *nagguaatsut-* 'catch elephants'; adding the ending *-put* would then select a form *nagguaatsup-* of this verb (see note 27 for a discussion of 'truncative' suffixes). The form all speakers produced, however, *nagguaatsorput*, contains <r> /ʁ/, an allophone of /q/ before consonants. Since *-t* should have removed this /q/, this form strongly implies that this is a combination of the noun *nagguaatsoq* 'elephant' and ending *-put* without *-t*.

adds an interesting perspective to the common notion that zero derivation in IY languages is solely something of the past (see §2.3.3). The suffix will continue to be cited as *-t* for clarity.

Since *-t* refers not to hunting itself but only to the very act of catching and killing an animal, which is only certain once it has already happened, the suffix is used almost exclusively in past tense. Nevertheless, speakers take no issue with using *-t* in present or future tense, as long as the context allows for it (142).

(142) *Qanorluunniit* *puisi–**s**–saa–nga.*
no_matter_what seal–**kill**–FUT–IND.1SG
'No matter what, I am going to catch a seal.' (RB)

To denote going out with the intention to hunt, instead a suffix *-niar* is used, historically the combination of *-t* and a suffix *-niar* 'intend to V'. (143).

(143) *Kanajor–**niar**–pit?*
arctic_sculpin–**hunt**–INT.2SG
'Are you going fishing for arctic sculpin?' (SP)

When asked for a translation of 'The trophy hunter killed an elephant', one speaker was adamant that *-t* (or *-niar*) could not be used in this context, since trophy hunters "do not kill the animal for food". The speaker instead opted for a verb *toqut-* 'kill; murder'. Within the context that elephants are in fact hunted for food, they were happy to produce the sentence in (141) above. Another speaker expressed a similar sentiment, and came up with *naagguaatsorniapiluttoq* as a translation for 'trophy hunter' (144).

(144) *naagguaatsor–**nia**–pilut–toq*
elephant–**hunt**–violently–IP.ABS.SG
'trophy hunter (lit. 'one who hunts elephants in a violent way')' (RB)

The suffix *-t*, and by extension *-niar*, appears to have historically been used in other contexts besides killing and hunting, with Kleinschmidt's (1871) dictionary listing the verbs *paarnarniar-* 'gather berries' (from *paarnaq* 'berry') and *ujaranniar-* 'gather rocks' (from *ujarak* 'rock'). A similar use is found in Yupik cognate *-te*, which Jacobson (2012: 877–8) suggests can be used generatively to create verbs meaning 'obtain N'. In West Greenlandic, however, this sense seems to have been lost entirely, as no speaker would accept the aforementioned verbs. One speaker put it bluntly: "When you use *-niar*, you have to kill it and eat it. You do not eat rocks, and you do not kill berries." This characterization is supported by other senses along the lines of 'hunt' that are unavailable (145–146).

(145) *Qilanngan–**niar**–punga.*
puffin–**hunt**–IND.1SG
i. # ‘I am going on puffin safari.’
ii. ‘I am hunting puffins for food.’ (SP)

(146) *Takornarian–**niar**–punga.*
tourist–**hunt**–IND.1SG
i. # ‘I am looking for tourists to scam.’
ii. ? ‘I am hunting tourists for food.’ (RB)

Lastly, one speaker noted that *-niar* can be used colloquially to express looking for a date (147a), and can also be used with names in the sense of ‘try to score N’ (147b).

(147a) *Unnugu* *arnar–**niar**–saa–nga.*
tonight woman–**hunt**–FUT–IND.1SG
‘Tonight I am going to look for a date.’ (RB)

(147b) *Unnugu* *Malu–**niar**–saa–nga.*
tonight Malu–**hunt**–FUT–IND.1SG
‘Tonight I am going to try to score Malu.’ (RB, name changed)

5.8. Discussion

A foundational claim for the semantico-syntactic theory discussed in §3.3 is that all IY verbalizing suffixes are f-morphemes in the sense of Harley & Noyer (2000: 355), i.e., they do not make reference to encyclopedic knowledge but solely consist of formal properties. As Johns (2007: 544) puts it: “[c]ounterevidence to the claim made here would be the existence of [verbalizers] with root semantics.” This chapter has presented nine such verbalizers in West Greenlandic.

Some of these verbalizers cannot be analyzed as f-morphemes because of the highly restrictive contexts and semantic domains with which they can be used. For instance, the various uses of *-tor* (§5.1) and *-ler* (§5.2) could certainly be summarized as simply ‘use’ and ‘give’, respectively, but these simplistic definitions cannot account for the many contexts in which these suffixes cannot be used. As discussed in §4.1, such definitions overgenerate: if ‘use’ and ‘give’ were the full conceptual definition speakers of West Greenlandic have stored in their mental lexicon, we would expect basic extensions of these definitions, like (148) and (149), to be available. The fact that they are not, shows that we must resort to polysemous definitions, in which each of the various senses is accounted for without overgeneration.

(148) *# Taxa–**tor**–punga.*
taxi–**use**–IND.1SG
Intended: ‘I am driving a taxi.’ (RB)

(149) *# Nerrivik puuguta–**li**–laar–iuk.*
table.ABS.SG plate–**give**–please–IMP.2SG > 3SG
Intended: ‘Please put the plate on the table.’ (SP)

Other verbalizers must be considered l-morphemes rather than f-morphemes for the simple reason that they unmistakably exert “truth-conditional force”, which Harley & Noyer (2000: 355) cite as a key property of l-morphemes. After all, speakers clearly have “choice as regards vocabulary insertion” (ibid.) when using verbalizers like *-lerngusaat* ‘fight over N’ (§5.5) and *-t* ‘kill N’ (§5.7), and opting for a different verb or construction plainly affects truth-conditionality. Fighting over, eating and selling cake are fundamentally different actions, yet can be contrasted through verbalizers alone (150).

(150a) *Kaagi–**lerngusaap**–put.*
cake–fight_over–IND.3PL
‘They are fighting over some cake.’ (RB)

(150b) *Kaagi–**sor**–put.*
cake–eat–IND.3PL
‘They eat cake.’ (SP)

(150c) *Kaage–**erniar**–put.*
cake–sell–IND.3PL
‘They sell cake.’ (SP)

On top of this, it is highly unlikely that there exists a definition made up of solely formal properties that can define a verbalizer like *-erniar* ‘sell’ (§5.6), which is only felicitous if a situation involves the very real-world concept of a monetary transaction (151).

(151) *Kaffivim–mi kaage–**erniar**–put.*
Kaffivik–LOC.SG cake–**sell**–IND.3PL
i. ‘They’re selling cakes at Kaffivik [a café].’
ii. # ‘Kaffivik is trying to get rid of cakes (because they baked too many).’
iii. # ‘Kaffivik is giving away cakes.’ (SP)

While it is likely impossible to prove this definitively, since there exists no exhaustive list of such formal properties, we may find the next best thing in Jackendoff (1992), whose semantic formalisms are adopted by Johns (2007). Jackendoff (1992: 191) similarly defines English *sell* as denoting an exchange in which one entity gives the other the item being sold, and the other gives 'money' in return, consolidating the idea that this verbalizer cannot be defined without incorporating encyclopedic knowledge.

It is important to note that the nine verbalizers discussed in this chapter are undeniably exceptions, as the overwhelming majority conforms quite neatly to Mithun's (1999: 50) observation that IY suffixes "are typically more diffuse and/or general in meaning." Moreover, this tendency is supported by the historical development of the verbalizers discussed here: although they are each clearly encyclopedic as used in contemporary West Greenlandic, there are strong indications for all nine verbalizers that they expressed a more diffuse meaning at some point in the past. Some, like *-likkersaar* 'tell about N' (§5.4) and *-erniar* 'sell N' (§5.6), are the result of collocations of other suffixes that underwent semantic narrowing; others, like *-tor* 'use' (§5.1) and *-ler* 'give' (§5.2), can only be used generatively within specific senses or with specific semantic domains, but nevertheless exist in a large number of lexicalized forms that seem to show much fewer restrictions in a previous stage of the language. In other words, while Johns' (2007) theory on IY suffixation cannot account for the semantics of some IY suffixes today, it has the potential to be highly relevant in the study of the origin of IY suffixes.

If the absence of encyclopedic semantics is not a universal property of IY suffixes, this means that our current understanding of IY word formation is mistaken. This raises the question of what could serve as an alternative basis for an analysis of IY word formation: what is it that unites IY suffixes? The most straightforward answer, echoed in virtually every such analysis prior to Johns (2007), is the simple fact that these elements are all suffixing in nature. In the next chapter, we make a return to the literature to explore how IY suffixes might be analyzed as exclusively derivational suffixes, by revisiting a number of common arguments that have been pitted against such an analysis.

6. Inuit-Yupik suffixation as derivation: reassessing the evidence

The idea that IY suffixes are derivational in nature can be traced back all the way to Egede (1760: 162–3) and Kleinschmidt (1851), and remains in use today as a heuristic for briefly introducing the structure of IY words (e.g., Johns 2015; Lyberth et al. 2022: 18). However, the possibility of a strictly derivational analysis of IY suffixation has not been entertained since the 1980s, when it was disparaged by a series of highly-influential articles (Fortescue 1980; Sadock 1980, 1985, 1986). Nowadays, this option generally does not even come up in literature reviews on IY word formation (e.g., Johns 2007; Compton 2012).

Nevertheless, the aforementioned articles do not seem to have it as their goal to 'debunk' such an approach, and Fortescue (1980: 262) even notes that "there is something intuitively correct" about a strictly derivational analysis. Rather, Fortescue (1980) and Sadock's (1980) aim is to point out interesting and problematic phenomena and provide explanations that may account for them, and using the linguistic frameworks available to them at the time, these phenomena lead them to conclude that IY suffixation must be at some level a syntactic process. These conclusions gave rise to a range of linguists attempting to reconcile these perceived syntactic aspects with the otherwise morphological nature of IY suffixation (Bok-Bennema & Groos 1988; Sadock 1991; Bittner 1994; Van Geenhoven 1998), ultimately leading to Johns' (2007) elimination of this morphological nature and proposal that IY suffixation is solely a syntactic process.

In the forty years since Fortescue (1980) and Sadock (1980) drew these oft-cited conclusions, however, many of the phenomena they consider problematic have been documented and studied in various other languages, polysynthetic and more isolating alike. In many cases, these phenomena have demanded alternative analyses, many of which could also be applied to IY. This suggests that a strictly derivational analysis of IY suffixation, which Fortescue (1980: 262) considers "intuitively correct" but simply impossible, may be more attainable than previously thought. The aim of this chapter is hence to address some of the most common arguments pitted against a strictly derivational analysis of IY suffixation, and to discover to what extent an alternative analysis may be available. More specifically, this chapter explores to what extent these problematic phenomena can be accounted for if we adopt the approach put forward by Smith (1978), discussed in more detail in §3.1.

Besides the perceived syntactic phenomena discussed in this chapter, we also find a different kind of argument raised against derivational analyses of IY suffixation: scholars like Fortescue (1980), Collis (1985) and De Reuse (1994, 2009) essentially argue that IY suffixes are derivational in all but name. Because many of these suffixes exhibit properties like near-limitless productivity, recursion and a variable order of elements, which these scholars consider not traditionally associated with derivation, they conclude that IY suffixation is not derivation, but something very close to it: a morphological process they call "internal syntax" (Fortescue 1980: 260) or "productive noninflectional concatenation (PNC)" (De Reuse

2009: 21).[29] A similar view is expressed by Sadock (2001: 263), who argues that IY suffixation cannot be derivation since "it is the only normal device available for the expression of certain very basic ideas, such as existence, possession, and predication of nominal properties." Sadock (ibid.) argues that derivation should primarily be "a system for the construction of new words", but that IY suffixation is instead "part and parcel of the expressive machinery of the languages" (ibid.). While the discussion of which exact properties should be associated with derivation cross-linguistically is important in its own right (see for instance Bybee 1985 and Lieber 2017), it goes beyond the scope of this chapter. The sole aim of this chapter is to show that a strictly derivational analysis of IY as introduced in §3.1 is theoretically possible.

6.1. Suffix ordering

Perhaps the most direct criticism of a derivational analysis of IY suffixation is found in an oft-cited article by Fortescue (1980), in which he argues that such an analysis cannot account for all available and unavailable orderings of suffixes in West Greenlandic. To account for this flaw, Fortescue (1980: 261) proposes instead to formalize semantic scope into a set of seven phrase-structure rules, which dictate the relative position of 26 semantic suffix classes within the word. These rules yield virtually the same ordering of suffixes, but no longer rely directly on semantic scope. An example is the rule in (152), which dictates that within a verb (V), a verbal base (V_b) or verbalized noun ($N_b + V_r$) is always followed first by Fortescue's class of verbal extenders (V_e), then negating suffix *-nngit* (V_{neg}), and finally the class of verbal modifiers (V_{mod}).

(152) $V \rightarrow [\ V_b \text{ or } N_b + V_r\ ]\ (+V_e)\ (+V_{neg})\ (+V_{mod})$ (Fortescue 1980: 261)

Surely, such a radical new approach to IY word formation should be accompanied by overwhelming evidence that the status quo falls short. Nevertheless, Fortescue (1980: 262) provides but a single example of a phrase that he argues should be felicitous following semantic scope, but is not:[30]

> [A]ccording to [the derivational approach], there should be no difference in acceptability between, say, *sinittarumaarpoq* 'he will sleep on several occasions' and **sinikkumaartarpoq*, roughly 'he on several occasions will sleep', with the same two affixes. But the latter, though "logical", is ill-formed. (Fortescue 1980: 262, orthography modernized)

[29] De Reuse (2009: 28) notes that under this definition, affixes like English *anti-* and Dutch diminutive *-tje* are similarly not derivational, because the former can be applied recursively and the latter exhibits full productivity. He considers them both instances of PNC.

[30] Fortescue (1980: 270) acknowledges that "there has not been space to present overwhelming evidence for the correctness of the rules presented", yet does not provide any further examples of supposed scopal violations in his other work on IY suffixation (Fortescue 1979, 1983, 1984).

Representing the reverse ordering of these two suffixes by changing the order of constituents in the English translation, however, is misleading. If we analyze these two examples using following Smith's (1978) derivational approach, it immediately becomes clear why (153b) is infelicitous.

(153a) *Sinit–tar–umaar–poq.*
sleep–HAB–FUT–IND.3SG
'At some point in the future, he will sleep regularly.'
(Fortescue 1980: 262, glosses and translation mine)

(153b) *# Sinik–kumaar–tar–poq.*
sleep–FUT–HAB–IND.3SG
'He is regularly in the state of going to sleep at some point in the future.' (ibid.)

The suffix *-jumaar* denotes a "vague indefinite future" (Fortescue 1984: 275), glossed here as 'FUT'. Following Smith (1978), (153a) shows this suffix scoping over the verb *sinittar-* 'sleep regularly', yielding the unproblematic verb *sinittarumaar-* 'sleep regularly at some point in the future'. In (153b), however, habitual *-tar* scopes over a verb *sinikkumaar-* 'be going to sleep at some point in the future', implying that the person referred to is habitually in the state of 'going to sleep at an undetermined future point in time'. It seems self-explanatory that such a repetition of a vague future is impossible, or at the very least something no one would ever feel the need to express. As Smith (1978: 47) predicted (see §3.1), semantic scope alone is enough to explain which orderings of IY suffixes are available, and which are not.

6.2. External modifiers

One of the most common arguments pitted against a derivational analysis of IY suffixation is the fact that verbalized nouns can take what appear to be external modifiers. As discussed in §3.2, Rischel (1972) and Sadock (1980) present several examples of this phenomenon, many of which continue to be cited to this day (e.g., Compton 2012). Two examples are given below (154–5).

(154) *Kusanar–tu–mik* *sapangar–si–voq.*
be_beautiful–IP–INS.SG bead–get–IND.3SG
'He got a beautiful bead.' (Sadock 1980: 307, glosses mine)

(155) *Hansi* *qerner–tu–mik* *qimme–qar–poq.*
Hans.ABS.SG be_black–IP–INS.SG dog–have–IND.3SG
'Hans has a black dog.' (Sadock 2003b: 185)

Sadock (1980) and subsequent authors characterize elements like *kusanartumik* 'beautiful' and *qernertumik* 'black' as adjectives modifying verbalized nouns. Such an analysis quickly leads to the conclusion that IY suffixation must involve some kind of syntactic process. However, it is worth discussing in more detail

what exactly is the function of these elements. Recall from §2.2.1 that IY languages do not feature a syntactic class of adjectives, and that concepts typically associated with this word class are generally expressed through the use of verbs. An example using *kusanar-* 'be beautiful' is (156).

(156) *Venedig* *Parisi–mit* ***kusanar****–ne–rumaar–poq.*
Venice.ABS.SG Paris–ABL.SG **be_beautiful**–more–somewhat–IND.3SG
'Venice is a bit prettier than Paris.' (Kahn & Valijärvi 2022: 135)

Like all verbs, these 'adjectival verbs' can be nominalized through the use of 'intransitive participle' *-toq*, which creates a form that may be translated as 'one who VERBS'. Nominalizing *qerner-* 'be black' in this way yields a noun 'one who is black; something which is black' (157).

(157) ***Qerner–tu****–nngua–nik* *uparuartu–ler–put.*
be_black–IP–small–INS.PL point_at–begin–IND.3PL
'They began to point at some small black things.' (Fortescue 1984: 256)

When nominalized adjectival verbs are used in the multifunctional instrumental case, they can express the various uses of this case outlined in §2.2.1, ranging from indefinite direct objects (158) to adverbial modifiers (159–60).

(158) ***Pisariaqar–tu–nik*** *ikinnguti–nnit* *nassi–tip–punga.*
be_necessary–IP–INS.PL friend–ABL.SG.POSS.1SG send–cause–IND.1SG
'I had my friend send **some necessary things**.' (Fortescue 1984: 85)

(159) *Ellen* ***kusanar–tu–mik*** *allat–tar–poq.*
Ellen.ABS.SG **be_beautiful–IP–INS.SG** write–HAB–IND.3SG
'Ellen writes **beautifully**.' (Kahn & Valijärvi 2022: 302)

(160) *Illu–ni* ***tungujor–tu–mik*** *qalipap–paa.*
house–ABS.SG.POSS.4SG **be_blue–IP–INS.SG** paint–IND.3SG>3SG
'He's painting his house **blue**.' (ibid.: 130)

In other words, *kusanartumik* 'beautiful' and *qernertumik* 'black' in (154–5) above should not be characterized as adjectives, even though that is how they are translated into English. Instead, based on their functions elsewhere in the language, these elements should be considered indefinite direct objects ('a beautiful one') or adverbs ('beautifully'). Both of these options would result in a fully unproblematic analysis of Sadock's (1980, 2003b) examples, since (158–60) show that verbs (and therefore also verbalized nouns) can take both indefinite direct objects and adverbs without issue.

In fact, analyzing these elements as indefinite direct objects highlights a strong similarity with phenomena in other languages. Most languages that feature prototypical noun incorporation also allow for incorporated nouns to take an 'external modifier', much like IY verbalized nouns. An example is the Mohawk phrase in (161), in which an adjective *kanekwarúnyu* 'dotted' appears to modify the incorporated noun *akya'tawi'tsher* 'dress'.

Mohawk (Iroquoian)

(161) *Kanekwarúnyu* *wa'–k–akya'tawi'tsher–ú:ni.*
dotted.DIST PST–1SG–dress–make
'I made a polka-dotted dress.' (Mithun 1984: 870)

Mithun (1984: 870) points out that, although *kanekwarúnyu* 'dotted' is characterized as an adjective modifying a noun, it can also appear without a noun, serving the function of a direct object (162).

Mohawk (Iroquoian)

(162) *Kanekwarúnyu* *wa'katkáhtho.*
dotted.DIST PST.1SG.see
'I saw a polka-dotted one.' (Mithun 1984: 870)

Mithun (1984: 870) then suggests that, based on its ability to function as a standalone noun, *kanekwarúnyu* 'dotted' in (161) could also be interpreted as a direct object of *akya'tawi'tsherú:ni*, making the latter a regular transitive verb 'dress-make' . To illustrate this, she (ibid.) proposes the alternative translation 'I dress-made a polka-dotted one'. This idea is expanded upon by Baker (1995: 9), who argues that "a form like *nakt-a-hninu* 'bed-buy' [...] is syntactically identical to *hninu* 'buy', the only difference being that *nakt-a-hninu* places many more selectional restrictions on its object (such as that the NP must be a type of bed)."

If we adopt similar translations for Sadock's (1980, 2003b) examples of IY external modifiers, we get the following (163–4):

(163) *Kusanar–tu–mik* *sapangar–si–voq.*
be_beautiful–IP–INS.SG bead–get–IND.3SG
'He bead-got a beautiful one.' (Sadock 1980: 307, glosses and translation mine)

(164) *Hansi* *qerner–tu–mik* *qimme–qar–poq.*
Hans.ABS.SG be_black–IP–INS.SG dog–have–IND.3SG
'Hans dog-has a black one.' (Sadock 2003b: 185, translation mine)

Now, the fact that this analysis results in constructions that are somewhat uneasy to render in English is a likely reason as to why it has been entertained by so few linguists. However, constructions like these, in which a semantically incorporated object is elaborated upon in the direct object of the verb, are more common cross-linguistically, and a strikingly similar construction is found in Ancient Greek (Asraf 2021). Various Indo-European languages feature an $[\text{N V}]_{\text{V}}$ compounding construction which exhibits the semantics of prototypical noun incorporation (cf. Carlson 2006), and has therefore been called "quasi-incorporation" (Booij 2009: 5). Asraf (2021) points out that in Ancient Greek specifically, this phenomenon shows another important similarity with the above examples from West Greenlandic and Mohawk: the ability to take direct objects that elaborate upon the incorporated noun. A typical example is (165), in which the verb *oinokhoéô* 'wine-pour' takes a direct object *néktar* 'nectar', specifying the type of wine poured.[31]

Ancient Greek (Indo-European)

(165) *metà* *dé* *sphisi* *pótnia* *Hêbê* *néktar* ***e–ôino–khó–ei***
amid PCL them queen Hebe nectar.ACC.SG **PST–wine–pour–IND.3SG**
'In their midst queenly Hebe wine-poured them nectar.'
(Asraf 2021: 63, transliteration and glosses mine)

Another reason for analyzing IY 'external modifiers' not as adjectives, but as arguments to the verbal complex as a whole, is the existence of copular verbalizers *-u* 'be' and *-nngor* 'become'. As mentioned in §2.3.1.1, these two suffixes do not semantically incorporate the noun to which they attach as an indefinite object, but as a predicate nominal (166).

(166) *Erne–ra* *nakorsa–**nngor**–poq.*
son–ABS.SG.POSS.1SG doctor–**become**–IND.3SG
'My son doctor-became. / My son became a doctor.' (Kahn & Valijärvi 2022: 305)

Now, we would expect verbs derived by these two copular suffixes to act themselves as copulas, which take subject complements rather than direct objects. In other words, we would expect their external modifiers to be marked not as direct objects, but as predicate nominals. This is exactly what we find: *-u* 'be' and *-nngor* 'become' are the only verbalizers to take external modifiers marked for the absolutive case, rather than the instrumental case.[32] In (167), for instance, *tusaamasoq* 'a famous one' serves as a predicate nominal to *palasinngor-* 'priest-become', derived from *palasi* 'priest'.

[31] The potential empirical issues in a morphosyntactic analysis of Ancient Greek cannot be overstated: there are no native speakers from which to elicit (in)felicitous examples, and the relatively few extant texts are largely theatrical and poetic in nature. Nevertheless, Asraf (2021: 42) holds that this 'quasi-incorporation' was a productive construction in Ancient Greek, pointing to its consistent semantics and a large number of hapax legomena within a variety of (prosaic) texts and genres.

[32] This case contrast is also noted by Mikkelsen & Thrane (2024: 2).

(167) *Joorut* *palasi–nngor–poq* *tusaama–soq.*
Jørgen.ABS.SG priest–become–IND.3SG be_famous–IP.ABS.SG
'Jørgen priest-became a famous one. / Jørgen became a famous priest.' (Sadock 1986: 27)

In conclusion, Rischel (1972) and Sadock's (1980, 2003b) characterization of these elements as adjectives modifying semantically incorporated nouns is mistaken, as this does not match the use of these elements elsewhere in the language. Rather, these elements should be analyzed as arguments to the verbal complex as a whole, either as predicate nominals (in the case of copular *-u* 'be' and *-nngor* 'become') or as indefinite direct objects (with all other verbalizers). Such an analysis is compatible with virtually any theoretical framework, and removes the need to consider IY suffixation to be to some degree a syntactic process. Finally, while such constructions are difficult to render in English, they are more common cross-linguistically, with clear parallels in Mohawk and Ancient Greek.

6.3. Possessor stranding

Another commonly-cited phenomenon first pointed out by Rischel (1972) and Sadock (1980) is possessor stranding, in which a verbalized noun is modified by an external possessor. An example is (168), in which verbalized *neqi* 'meat' appears to be possessed by *tuttup* 'caribou'.

(168) *Tuttu–p* *neqi–tor–poq.*
caribou–REL.SG meat–eat–IND.3SG
'He eats caribou meat. (Rischel 1972: 63, glosses mine)

Sadock (1980: 309) argues that "[t]he fact that incorporated nouns can be possessed is exceedingly important evidence for a syntactic incorporation rule, since sentences like [(168)] could not otherwise exist." Nevertheless, he also notes (ibid.: 310) that this construction is not fully productive, showing constraints "with regard both to the identity of the incorporating suffix and to the nature of the possessor." As Johns (2009: 187) points out, however, this is somewhat of an understatement, as outside of one specific context discussed below, no new formations of this kind are permitted whatsoever. For instance, a verbalized noun can never be possessed by a specific possessor, such as in (169–70).

(169) ** Palasi–p* *qimmi–u–voq.*
priest–REL.SG dog–COP–IND.3SG
Intended: 'It is the priest's dog.' (Fortescue 1984: 331, glosses mine)

Baffin Inuktitut

(170) ** Piita–up* *savi–siuq–tunga.*
Peter–REL.SG knife–search–IND.1SG
Intended: 'I am looking for Peter's knife.' (Johns 2009: 187)

In fact, all of the literature on possessor stranding in IY cited here repeatedly presents only the same five examples, all from West Greenlandic: *tuttup neqi-* ‘caribou meat’, *puisip neqi-* ‘seal meat’, *qimmip ami-* ‘dog skin’, *kunngip pani-* ‘princess’ (lit. ‘king’s daughter’) and *sissap naalaga-* ‘chief of the shore’. All of these examples have in common that the combination of the possessor and possessum cannot have a compositional reading. For instance, as Rischel (1972: 71) points out, *tuttup neqi-* ‘caribou meat’ in (168) can only refer to the general concept of caribou meat, and not to the meat of a specific caribou. This property, in combination with the highly limited number of examples of this phenomenon, strongly suggests that the construction is restricted to lexicalized combinations of a possessor and possessum, together functioning as a single root (171).

(171) *Kunngip pani–passua–qar–poq.*
princess–many–exist–IND.3SG
‘There are many princesses.’ (Sadock 2003a: 47, glosses adapted)

Supporting this analysis is the fact that speakers frequently use the above combinations of possessor and possessum without marking the possessum, such as *puisip neqi* ‘seal meat’ in (172a) instead of the prescribed *puisip neqaa* (172b). When asked for the difference, one speaker expressed a strong preference for *puisip neqi*, suggesting that *puisip neqaa* implies the meat of a specific seal. With any other possessor and possessum, leaving the possessum unmarked in this way is deemed ungrammatical (173).

(172a) *puisi–p* ***neqi*** *sia–taq*
seal–REL.SG **meat.ABS.SG** fry–PP.ABS.SG
‘fried seal meat’ (RB)

(172b) *puisi–p* ***neqa–a***
seal–REL.SG **meat–ABS.SG.POSS.3SG**
‘the meat of a (specific) seal’ (RB)

(173a) * *meeqqa–p* *qimmeq*
child–REL.SG dog.ABS.SG
Intended: ‘the child’s dog’ (cf. Kahn & Valijärvi 2022: 49)

(173b) *meeqqa–p* *qimmi–a*
child–REL.SG dog–ABS.SG.POSS.3SG
‘the child’s dog’ (ibid.)

Moreover, Van Geenhoven (2001: 266) notes that external modifiers like *pinnersumik* 'pretty' (see §6.2) may not be inserted in between the possessor and possessum (174b), consolidating the idea that the possessor is not in fact 'stranded', but functions as a single root together with the possessum.

(174a) *Festi–mi* *pinner–su–mik* *kunngip_pane–qar–poq.*
party–LOC.SG be_pretty–IP–INS.SG princess–exist–IND.3SG
'There was a pretty princess at the party.' (Van Geenhoven 2001: 266, glosses adapted)

(174b) * *Festi–mi* *kunngi–p* *pinner–su–mik* *pane–qar–poq.*
party–LOC.SG king–REL.SG be_pretty–IP–INS.SG daughter–exist–IND.3SG
Intended: 'There was a pretty princess at the party.' (ibid.)

Finally, there is one set of verbalizers with which possessor stranding is in fact a common occurrence: the case-derived verbalizers. These are suffixes derived from the four spatial noun cases (allative, ablative, prolative and locative), which create motion verbs with the meaning of the case in question (175).

(175a) *illu–**mut***
house–**ALL.SG**
'to the house'

(175b) *Illu–**mukar**–put.*
house–**go_to.SG**–IND.3PL
'They went to the house.' (Sadock 2001: 267)

What sets these suffixes apart from all other verbalizers is that they are not single suffixes, but exist as a full paradigm of forms denoting number and possession, just like the case endings from which they have been derived. For instance, compare the forms in (175) with those in (176).

(176a) *illu–**tsinnut***
house–**ALL.SG.POSS.1PL**
'to our house'

(176b) *Illu–**tsinnukar**–put.*
house–**go_to.SG.POSS.1PL**–IND.3PL
'They went to our house.' (Sadock 2001: 267)

When taking external possessors, case-derived verbalizers are similarly marked for number and possession (177).

North Baffin Inuktitut

(177a) *Piita–up* *illu–**nganit***
Peter–REL.SG house–**ABL.SG.POSS.3SG**
'from Peter's house' (cf. IUT 2018: 39, glosses mine)

(177b) *Piita–up* *illu–**nganingaaq**–tugut.*
Peter–REL.SG house–**come_from.SG.POSS.3SG**–IND.1PL
'We are coming from Peter's house.' (Johns 2009: 189)

Sadock (2001: 267–8) discusses these case-derived verbalizers and, based on the above properties, comes to the conclusion that they must be considered entirely distinct from all other IY verbalizers. He proposes that these verbalizers consist of regular nominal endings marked for number and possession followed by a kind of clitic, *=kar* in (175–6) and *=ngaaq* in (177). These clitics, which Sadock (2001: 268) terms "derivational clitics", take a noun that is 'complete' (i.e., has a nominal ending) (178a) and turn it back into a root that is available for derivational processes (178b).

(178a) *illu–**mut***
house–**ALL.SG**
'to the house'

(178b) *Illu–**mu**=**kar**–uma–nngil–aq.*
house–**ALL.SG**=**go**–want–NEG–IND.3SG
'She does not want to go to the house.'
(Sadock 2001: 268)

Under such an analysis, the confounding possessor-stranding phrase in (177b) would be derived from the unproblematic noun phrase in (177a) through the use of a clitic *=ngaaq* 'come from', neutralizing the issue presented by possessor stranding. Moreover, Sadock's (2001) analysis is supported by the verbalizer derived from the locative case, *-miip* 'be at', which is virtually the only IY suffix with a clear origin (cf. Fortescue 1992). This suffix is a univerbation of the locative case ending and a verb *ip-* 'be' (179a–b), which still exists as a separate verb in certain fixed constructions in West Greenlandic (180).

(179a) *illu–**mi***
house–**LOC.SG**
'in the house'

(179b) *Illu–**mi**=**ip**–put.*
house–**LOC.SG**=**be**–IND.3PL
'They are in the house.' (RB)

(180) *Qanoq* ***ip**–pit?*
how **be**–INT.2SG
'How are you?' (cf. Kahn & Valijärvi 2022: 23, glosses mine)

In conclusion, possessor stranding can only occur in combination with case-derived verbalizers. While these verbalizers present an interesting phenomenon that deserves to be explored further, it is clear that they are entirely distinct from other IY verbalizers in terms of origin, form and function. Outside of case-derived verbalizers, possessor stranding does not exist: what appear to be a small number of examples of possessor stranding are in fact lexicalized combinations of a possessor and possessum, together serving as a single root.

6.4. Referential properties

Sadock's (1980) final reason for rejecting a derivational analysis of IY word formation is that verbalized nouns can be referred back to in the discourse context. In (181), a sequence of sentences from a children's book, verbalized *timmisartoq* 'airplane' (181a) is referred to in the subsequent sentence through verbal endings *-poq* and *-luni* (181b).

(181a) *Suulut* ***timmisartu****–lior–poq.*
Søren.ABS.SG **airplane**–make–IND.3SG
'Søren made an airplane.' (Sadock 1980: 311, glosses mine)

(181b) *Suulusa–qar–****poq*** *aquute–qar–****luni*** *= lu.*
wing–have–**IND.3SG** rudder–have–**CONT.4SG** = and
'It has wings and a rudder.' (ibid.)

According to Sadock (1991: 86), examples like these show that a form like *timmisartulior-* 'airplane-make' cannot be the result of derivation, since this would violate Postal's (1969) 'anaphoric island hypothesis'. This hypothesis posits that only whole words can have independent referential or discourse properties, and not pieces of words. Postal (1969) argues that it is universally impossible to make reference to words that constitute part of the structure of another word, such as in (182).

(182) * *The best* ***wombat****meat comes from young* ***ones****.* (Postal 1969: 226)

Since *timmisartoq* 'airplane' in (181) does have referential properties, despite being part of a larger word, Sadock (1980: 311) concludes that semantically incorporated elements must function as a separate entity on a syntactic level, arguing that "these facts constitute an ironclad argument for syntactic incorporation". This conclusion is reiterated by Bittner (1994), Van Geenhoven (1998) and Johns (2009).

Postal's (1969) hypothesis, however, has come under a lot of criticism (Corum 1973; Ward et al. 1991; Cornish 2005) for being overly prescriptive: as Corum (1973) and Ward et al. (1991) point out, many of the English constructions Postal (1969) considers ungrammatical do in fact occur in natural speech. In fact, it is even possible to refer to concepts that are not morphologically present in another word, but only constitute part of the meaning of another word, such as how use of the word *pregnant* in (183) implies an argument 'baby'. This argument is then retrieved using pronoun *it*, without a trace of unnaturalness.

(183) *Joan is six months* ***pregnant****, and she has already knitted a bonnet and gloves for* ***it****.*
(Cornish 2005: 9)

Sadock's (1980) syntactic approach to IY word formation could not account for the English example in (179), since *pregnant* introduces a referential entity 'baby' that is not morphologically part of it, but only implied by it. What is interesting, then, is that we find examples very similar to (183) in IY languages. In (184a), for instance, the verb *qaannior-* 'kayak-make' introduces a kayak as a referential entity, which is then retrieved using verbal ending *-paa* in (184b).

(184a) *Luutivi–up* *assut* *qusanar–tu–mik* ***qaannior–paa.***
Luutivik–REL.SG very be_beautiful–IP–INS.SG **kayak_make**–IND.3SG > 3SG
'Luutivik made him a very beautiful kayak.' (Sadock 1986: 23)

(184b) *Inuuissiorni–ssaa–nut* *utaqqi–si–ler–**paa.***
birthday–FUT–ALL.SG.POSS.3SG wait–cause–begin–**IND.3SG > 3SG**
'He put it away for his birthday.' (ibid.)

Sadock (1986: 23) notes that the verb *qaannior-* 'kayak-make' is opaque: although it is etymologically derived from *qajaq* 'kayak' and verbalizer *-lior* 'make', this combination should synchronically result in the form *qajarlior-*. Synchronically speaking, then, *qaannior-* 'kayak-make' does not morphologically contain the word *qajaq* 'kayak', just as English *pregnant* does not morphologically contain the word *baby*. Sadock's (1980) syntactic analysis of IY word formation, just like those of subsequent scholars, cannot account for these instances of implicit reference.

As an alternative, we may adopt the approach put forward by Cornish (2005) to account for implicit reference in English. In (183), he argues, what enables the pronoun *it* to retrieve the argument 'baby' is the fact that *pregnant* means 'to have conceived a baby', "where 'a baby' is a nuclear argument in relation to the predicate 'conceived'" (Cornish 2005: 16). In other words, it is the fact that 'baby' is a highly salient and specific argument within the meaning of *pregnant* that allows it to be retrieved anaphorically. Under this approach, it should come as no surprise that any IY verbalized noun can be retrieved in this way, since *qajaq* 'kayak' is naturally a nuclear argument within the derived verb *qaannior-* 'kayak-make'. This approach is easily adapted to Relational Morphology (§4.2): *qaannior-* 'kayak-make' is linked to both *qajaq* 'kayak' and *-lior* 'make' on a semantic level (allowing for it to be anaphorically retrieved), but not on a morphosyntactic or phonological level. Anderson (2000) outlines a similar approach for Mohawk (Iroquoian), in which incorporated nouns similarly have referential properties. He argues that in languages that feature noun incorporation or denominal verbs, this "is an operation that 'unifies' the semantics of the noun with the argument of the verb" (Anderson 2000: 18–9) in a way that allows such nouns to retain referential properties.

6.5. Verbalized names

As mentioned in §2.3.1.1, IY verbalizing suffixes generate what Van Geenhoven (1998: 28) terms an 'indefinite predicate'. A verb like *cykilissarsior-* (185) denotes 'bike-searching' as a general activity, but contains no information regarding the number of bikes, nor does it refer to any specific bike.

(185) *Vittu* ***cykili–ssar–sior****–poq.*
Vittus.ABS.SG **bike–FUT–seek**–IND.3SG
i. 'Vittus is looking for an arbitrary bike/bikes.'
ii. # 'There is/are a specific bike/bikes such that Vittus is looking for it/them.'
(Van Geenhoven 1998: 28)

Johns (2009: 190–2) rejects this 'indefinite predicate' analysis, noting that some IY verbalizers can also be attached to names. An example is Inuktitut *-ngujaaq* 'look like', which is equally acceptable on common nouns (186a) and on names (186b).

North Baffin Inuktitut
(186a) *Natsi–ngujaaq–tuq.*
seal–look_like–IND.3SG
'She looks like a seal.' (Johns 2009: 191)

(186b) *Miali–ngujaaq–tuq.*
Mary–look_like–IND.3SG
'She looks like Mary.' (ibid.)

Johns (2009: 190) argues that a predicate analysis of IY word formation suggests "that the position of the incorporated nominal must be restricted to kinds or properties." This excludes names, which do not refer to a kind or property but to a specific referential entity; after all, (186b) can only refer to a specific person called Mary. According to Johns (2009: 192), this entails that Van Geenhoven's (1998) analysis cannot account for and therefore precludes the verbalization of names. However, it is worth exploring in more detail what exactly is the difference between common nouns and names, and what it means for these elements to be verbalized or otherwise semantically incorporated.

Common nouns are used to categorize entities based on their shared properties, whereas names are used to identify different individuals. That is to say, there is a common denominator between all seals, but no real common denominator between all people called Mary. When a speaker wishes to attribute the properties of one kind of referent to another referent (i.e., say something 'looks like'), this can only be done succesfully if all interlocutors agree upon the referent and the attributed properties. In the case of common nouns, this will result in an indefinite interpretation of the referent: given that all entities called

'seal' share a common set of properties, there is no need to make reference to any specific seal. In the case of names, however, only a definite interpretation is available, since interlocutors must agree upon which specific person called Mary is being referenced.

In this sense, IY verbalizers are no different from a suffix like English *-like*, which when combined with common nouns denotes a generic sense (*seal-like*) and denotes a specific sense when combined with names (*Mary-like*). In fact, Necker & Tronci (2019: 212) discuss an Italian verbalizing suffix *-eggiare* 'behave like' that functions exactly like Inuktitut *-ngujaaq* 'look like' in (186). This suffix can be added on nouns denoting a person of a certain nationality, which creates a verb that expresses behaving like a person of said nationality. An example is the verb *americaneggiare* 'behave like an American', which, like *natsingujaaq-* 'look like a seal', only has a generic interpretation and does not refer to any specific American. However, *-eggiare* can also be combined with names, in which case it can only refer to a specific person. Necker & Tronci (2019: 212) cite the examples *petrarcheggiare* 'follow the literary trend of Petrarch' and *catoneggiare* 'imitate Cato', both derived from famous individuals, but Flavio Pisciotta (p.c.) points out that in colloquial Italian, use of this suffix can be extended to any name, as long as all interlocutors agree on which person is being referenced (187).[33]

Italian (Indo-European)

(187)	*Se*	*ne*	*andava*	***federich–eggia–ndo***	*per*	*la*	*strada.*
	REFL	PCL	walked	**Federico–behave_like–PART**	on	the	street

'He walked down the street just like Federico does.'

As with Italian *-eggiare* 'behave like', a predicate-generating analysis of IY verbalizers does not have to distinguish between the verbalization of common nouns and names, because their differences can be accounted for in purely pragmatic terms. Johns (2009: 190) may be right that Van Geenhoven's (1998) term 'indefinite predicate' is inaccurate, given that some of these predicates are shown to have a specific reference, but it is not true that "the incorporated nominal as predicate analyses must be adjusted in order to explain data such as that in [(186)]" (Johns 2009: 192).

Finally, one more example presented by Johns (2009) seems to support Van Geenhoven's (1998) idea that IY verbalizers generate predicates that denote an activity, even when combined with names. Johns (2009: 191) notes that a speaker of North Baffin Inuktitut "was not happy with a version of [(188)], describing it as 'rude'."

[33] Mauri & Masini (2024: 178) note that a similar Italian verbalizing suffix *-izzare* 'become like' can similarly be used with any name, "as long as the person's property and/or behavior are sufficiently known to both speaker and listener."

South Baffin Inuktitut

(188) *Qallupilluq* *Miali–tu–niar–pa?*
Qallupilluq.ABS.SG Mary–consume–near_future–INT.3SG
'Is Qallupilluq [a sea monster] going to eat Mary?' (Johns 2009: 191)

Johns (2009: 191) notes that the perceived rudeness of this example is unexplained, and demands "future research". If we follow Van Geenhoven (1998) and consider *Miali-tu-* a predicate, however, it seems unsurprising that the speaker did not like presenting 'Mary-eating' as an activity one can partake in, considering they must have been familiar with the Mary in question for this sentence to have any meaning. Johns (2009: 191) points out that the corresponding sentence involving a common noun 'caribou meat' was considered unproblematic by all speakers.

6.6. Conclusion

Much of the argumentation in this chapter is adopted from linguists arguing for a morphological analysis of prototypical noun incorporation, such as Mithun (1984) and Anderson (2000). With noun incorporation, such analyses retain the issue that noun-incorporating verbs can also appear on their own as non-incorporating verbs, which has been put forward as an argument for analyzing such constructions as syntactic (e.g., Sadock 1986; Baker 1996). In IY languages, however, the only verbs that 'incorporate' are the mostly closed class of verbalizers, which can only appear as suffixes, and are never used as standalone verb roots. Johns (2007: 544) argues that an analysis of IY suffixation should not start from the standpoint that these elements are suffixes since such an analysis "cannot be falsified", but this is perhaps the only property shared by all of them.

Scholars like Fortescue (1980), Sadock (1980), Bok-Bennema & Groos (1988), Bittner (1994) and Van Geenhoven (1998) each recognize this important fact, but observe various phenomena that they argue pose major issues for any strictly derivational analysis of IY suffixation. The aim of this chapter, then, was to re-examine these phenomena and to determine whether an alternative analysis may be available, under which they no longer present any problems for a derivational analysis. We have seen that supposed violations of semantic scope, which play a major role in Fortescue's (1980) argumention, simply do not exist: there are no examples of it anywhere in the literature. The same goes for Sadock's (1980) possessor stranding, of which there are only five examples, each showing strong signs of lexicalization. Next, Rischel's (1972) oft-cited external modifiers are better analyzed as direct objects, and the fact that verbalized nouns have referential properties, pointed out by Sadock (1980) and Johns (2009), is only problematic under the outdated anaphoric island hypothesis (Postal 1969). Finally, Johns' (2009) claim that the verbalization of names cannot result in a predicate is refuted by the existence of uncontroversially predicate-generating verbalizers that can be used in combination with names in various Indo-European languages.

7. Conclusion

Over the past fifty years, the IY languages have continually presented major issues for mainstream ways of thinking about language, and in many ways, they continue to do so. Much of the research into these languages has focused on how speakers express a variety of basic ideas exclusively through a system of bound suffixes, and how this closed class of several hundred suffixes came to exist. The modern consensus is that, at the very least for IY verbalizing suffixes, the answer to both lies in semantics: a foundational claim for Johns' (2007) widely-adopted semantico-syntactic theory of IY word formation (§3.3) is that these verbalizers are universally light verbs, realized as suffixes because of their lack of encyclopedic semantics and truth-conditional force. This theory cannot account for and therefore precludes the existence of verbalizers with encyclopedic semantics and/or truth-conditional force.

The primary aim of this thesis was to explore to what extent this claim holds true in a case study of nine potentially encyclopedic verbalizers in West Greenlandic. After an introduction of IY suffixation in §2 and the various theories proposed to explain its synchronic functioning in §3, §4.1 examined previous analyses of the semantics of IY verbalizers, all of which conclude that they are light verbs that are diffuse and/or non-encylopedic in meaning. It was shown that these analyses overly rely on metaphorical extension, resulting in definitions that overgenerate and fail to account for the full variety of (un)attested uses. These underspecified definitions should hence be thought of more as summaries of the attested uses than as full, conceptual definitions.

Against this background, §5 presented the results of the aforementioned case study, and showed that all of the nine verbalizers under study present issues for Johns' (2007) claim in some way. Some are used only in highly restrictive contexts and semantic domains, which entails that any potential non-encyclopedic and 'underspecified' definition would suffer the same issues as those found in the previous analyses outlined above. Other verbalizers unmistakably exert truth-conditional force, since speakers are clearly shown to have "choice as regards vocabulary insertion" (Harley & Noyer 2000: 355). Finally, some verbalizers can simply only be defined in a way that makes reference to encyclopedic knowledge, since this knowledge is shown to be an integral part of their meaning.

Since Johns' (2007) semantico-syntactic theory precludes the existence of such verbalizers, it cannot be used to explain IY word formation in its current form. For this reason, §6 outlined a possible alternative, and re-examined some arguments commonly pitted against the relatively old idea that IY suffixes are exclusively derivational in nature. It was shown that for all of the phenomena put forward in these arguments, there exists an alternative analysis that makes them wholly unproblematic, making a strictly derivational analysis of IY word formation much more attainable than previously thought. While the details of what such an analysis should look like may be filled out in the future, the conclusion of this thesis is that the strictly derivational analysis of IY word formation put forward by Smith (1978) (§3.1),

for all its simplicity, is more capable of explaining how speakers of IY languages construct their words than the complex syntax-based theories that followed it.

Lastly, a number of phenomena touched upon in this thesis demand future research. The first is the fact mentioned in §5.8 that the nine verbalizers discussed in this thesis are undeniably exceptions, and that the overwhelming majority conforms quite neatly to Mithun's (1999: 50) observation that IY suffixes "are typically more diffuse and/or general in meaning." Moreover, each of the verbalizers discussed here shows strong indications of having expressed a more diffuse meaning at some point in the past. This tendency may hence present a new avenue in the historical study of IY suffixation, a field which has thus far been mostly a dead end (cf. Fortescue 1992).

A similar phenomenon demanding future study is the synchronic relation between 'polycategorical' pairs of roots and pairs of suffixes, discussed in §2.3.3. While these pairs are generally seen as homonyms (e.g., Mithun 2017), they do exhibit highly regular semantics reminiscent of derivation, suggesting that such pairs may synchronically feature some relational links.

Also highly understudied are the case-derived verbalizers, discussed in §6.3 but otherwise only briefly mentioned by Sadock (2001). While IY suffixes are usually discussed as if they form a unified system (e.g., Cook & Johns 2009), this handful of verbalizers paints a different picture, transparently consisting of the full paradigms of noun case endings followed by a kind of clitic, and exhibiting phenomena not found with any other IY suffixes, such as possessor stranding.

Finally, there is the issue of productivity: as discussed in §5, some of the verbalizers under study were deemed acceptable by speakers in a range of uses never attested in the corpus; most notably *-lerngusaat* 'fight over N' (§5.5) and *-t* 'kill N' (§5.7). This issue was beyond the scope of this thesis, but invokes questions of priming in semantic fieldwork (cf. Matthewson 2004) and the relation between different types of productivity (cf. Barðdal 2008), to be addressed in a future study.

Bibliography

Alaska Native Language Center. (2024, January 19). *How Many Speakers are There of Each Alaska Native Language?* https://www.commerce.alaska.gov/web/dcra/AKNativeLanguagePreservationAdvisoryCouncil/Languages.aspx

Allen, S. (1996). *Aspects of argument structure acquisition in Inuktitut*. John Benjamins Publishing Company.

Allen, S., & Dench, C. (2015). Calculating mean length of utterance for eastern Canadian Inuktitut. *First Language*, *35*(4–5), 377–406. https://doi.org/10.1177/0142723715596648

Anderson, S. R. (2000). Lexicalism, incorporated (or incorporation, lexicalized). In A. Okrent & J. Boyle (Eds.), *The 36th Meeting of the Chicago Linguistic Society: The Panels* (pp. 13–34). Chicago Linguistic Society.

Arnhold, A., Compton, R. J., & Elfner, E. (2018). Prosody and wordhood in South Baffin Inuktitut. In M. Keough, N. Weber, A. Anghelescu, S. Chen, E. Guntly, K. Johnson, D. Reisinger, & O. Tkachman (Eds.), *Proceedings of the Workshop on Structure and Constituency in Languages of the Americas 21* (pp. 30–39). University of British Columbia.

Asraf, N. (2021). The Mechanism of Noun Incorporation in Ancient Greek. *Glotta*, *97*, 36–72.

Baker, M. C. (1995). Lexical and nonlexical noun incorporation. In U. Egli, P. Pause, C. Schwarze, A. von Stechow, & G. Wienold (Eds.), *Lexical Knowledge in the Organization of Language* (pp. 3–33). John Benjamins Publishing Company.

Baker, M. C. (1996). *The polysynthesis parameter*. Oxford University Press.

Barðdal, J. (2008). *Productivity: Evidence from Case and Argument Structure in Icelandic*. John Benjamins Publishing Company.

Barrie, M., & Mathieu, E. (2016). Noun incorporation and phrasal movement. *Natural Language & Linguistic Theory*, *34*(1), 1–51. https://doi.org/10.1007/s11049-015-9296-6

Benveniste, É. (1966). Problèmes sémantiques de la reconstruction. In É. Benveniste (Ed.), *Problèmes de linguistique générale* (pp. 289–307). Gallimard.

Berge, A. (2016). Eskimo-Aleut. In M. Aronoff (Ed.), *Oxford Research Encyclopedia of Linguistics*. Oxford University Press. https://doi.org/10.1093/acrefore/9780199384655.013.9

Berge, A., Arnhold, A., & Trondhjem, N. B. (Eds.). (Forthcoming). *The Oxford Handbook of the Unangan, Yupik and Inuit languages*. Oxford University Press.

Bittner, M. (1994). *Case, scope, and binding*. Kluwer Academic Publishers.

Bok-Bennema, R., & Groos, A. (1988). Adjacency and Incorporation. In M. Everaert, M. Trommelen, & R. Huybregt (Eds.), *Morphology and Modularity* (pp. 33–56). De Gruyter Mouton. https://doi.org/10.1515/9783110882674-015

Booij, G. (2009). A Constructional Analysis of Quasi-Incorporation in Dutch. *Gengo Kenkyu*, *135*, 5–27.

Booij, G. (2010). *Construction Morphology*. Oxford University Press.

Briggs, J. L., Johns, A., & Cook, C. (2015). *Utkuhikšalingmiut Uqauhiitigut Uqauhiliurut: Dictionary of Utkuhiksalingmiut Inuktitut Postbase Suffixes*. Nunavut Arctic College.

Brugman, C. M. (1988). *The Syntax and Semantics of HAVE and its Complements* [PhD dissertation, University of California, Berkeley].

Bybee, J. L. (1985). *Morphology: A Study of the Relation between Meaning and Form*. John Benjamins Publishing Company.

Carlson, G. (2006). The Meaningful Bounds of Incorporation. In L. Tasmowski & S. Vogeleer (Eds.), *Non-definiteness and Plurality* (pp. 35–50). John Benjamins Publishing Company.

Collis, D. R. F. (1985). Iconic Relativity and Inuktitut Language Maintenance. *International Journal of American Linguistics*, *51*(4), 372–374.

Compton, R. J. (2008). Restrictions on the Use of Predicate Modification in Inuktitut. In S. K. Chin & H. Fusheini (Eds.), *Proceedings of the Workshop on Structure and Constituency in the Languages of the Americas XXII* (pp. 39–50). University of British Columbia.

Compton, R. J. (2012). *The Syntax and Semantics of Modification in Inuktitut: Adjectives and Adverbs in a Polysynthetic Language* [PhD dissertation]. University of Toronto.

Compton, R. J., & Pittman, C. (2006). *Affixhood is syntactically determined in Inuktitut*. Workshop on Theoretical Morphology, University of Leipzig, Leipzig. https://home.uni-leipzig.de/jtrommer/WOTM2/Compton-Pittman.pdf

Compton, R. J., & Pittman, C. (2010a). Pi as a syntactic pro-form in Inuktitut noun-incorporation and beyond. *The University of British Columbia Working Papers in Linguistics*, *29*, 85–97.

Compton, R. J., & Pittman, C. (2010b). Word-formation by phase in Inuit. *Lingua*, *120*(9), 2167–2192. https://doi.org/10.1016/j.lingua.2010.03.012

Cook, C., & Johns, A. (2009). Determining the semantics of Inuktitut postbases. In M.-A. Mahieu & N. Tersis (Eds.), *Variations on Polysynthesis: The Eskaleut languages* (pp. 149–170). John Benjamins Publishing.

Cornish, F. (2005). *Degrees of indirectness: Two types of implicit referents and their retrieval via unaccented pronouns* (p. 199–220). John Benjamins. https://univ-tlse2.hal.science/hal-00967378

Corum, C. (1973). Anaphoric Peninsulas. *Chicago Linguistic Society*, *9*, 89–97.

Cowper, E. A. (1995). English Participle Constructions. *Canadian Journal of Linguistics/Revue Canadienne de Linguistique*, *40*(1), 1–38. https://doi.org/10.1017/S0008413100015668

de Reuse, W. J. (1994). *Siberian Yupik Eskimo: The language and its contacts with Chuckchi*. University of Utah Press.

de Reuse, W. J. (2009). Polysynthesis as a typological feature: An attempt at a characterization from Eskimo and Athabascan perspectives. In M.-A. Mahieu & N. Tersis (Eds.), *Variations on Polysynthesis: The Eskaleut languages* (pp. 19–34). John Benjamins Publishing.

DeCaire, R., Johns, A., & Kučerová, I. (2017). On optionality in Mohawk noun incorporation. *Toronto Working Papers in Linguistics*, *39*. https://twpl.library.utoronto.ca/index.php/twpl/article/view/28604

Dorais, L.-J. (2017). The Lexicon in Polysynthetic Languages. In M. Fortescue, M. Mithun, & N. Evans (Eds.), *The Oxford Handbook of Polysynthesis* (pp. 135–157). Oxford University Press.

Eberhard, D. M., Simons, G. F., & Fennig, C. D. (Eds.). (2024). *Ethnologue: Languages of the World* (27th ed.). SIL International. http://www.ethnologue.com

Egede, P. (1760). *Grammatica Grönlandica Danico-Latina*. Gottmann, Frid. Kisel.

Enfield, N. J. (2002). Semantic analysis of body parts in emotion terminology: Avoiding the exoticisms of "obstinate monosemy" and "online extension." *Pragmatics & Cognition*, *10*(1), 85–106.

Fortescue, M. (1979). The relationship between derivation and external syntax in West Greenlandic. In T. Petterson (Ed.), *Proceedings from the Fifth Scandinavian Conference of Linguistics*. Alqvist & Wiksell.

Fortescue, M. (1980). Affix ordering in West Greenlandic Derivational Processes. *International Journal of American Linguistics*, *46*(4), 259–278.

Fortescue, M. (1983). *A comparative manual of affixes for the inuit dialects of Greenland, Canada and Alaska*. Nyt Nordisk Forlag.

Fortescue, M. (1984). *West Greenlandic*. Croom Helm.

Fortescue, M. (1992). Morphophonemic Complexity and Typological Stability in a Polysynthetic Language Family. *International Journal of American Linguistics*, *58*(2), 242–248. https://doi.org/10.1086/ijal.58.2.3519761

Fortescue, M. (1993). Eskimo word order variation and its contact-induced perturbation. *Journal of Linguistics*, *29*(2), 267–289. https://doi.org/10.1017/S0022226700000335

Fortescue, M. (2002). The rise and fall of polysynthesis in the Eskimo-Aleut family. In N. Evans & H.-J. Sasse (Eds.), *Problems of Polysynthesis* (pp. 257–278). Akademie Verlag. https://doi.org/10.1524/9783050080956.257

Fortescue, M. (2013). North America: Eskimo-Aleut linguistic history. In I. Ness & P. Bellwood (Eds.), *The encyclopedia of global human migration* (Vol. 1, pp. 340–345). Wiley-Blackwell.

Fortescue, M., Jacobson, S. A., & Kaplan, L. D. (2010). *Comparative Eskimo dictionary: With Aleut cognates* (2nd ed.). Alaska Native Language Center, University of Alaska.

Frøshaug, A. S., & Stende, T. (2021). *Har Norden et språkfellesskap?* Nordic Council of Ministers. https://pub.norden.org/nord2021-001/nord2021-001.pdf

Gerdts, D. B. (1998). Incorporation. In A. Spencer & A. M. Zwicky (Eds.), *The handbook of morphology* (pp. 84–100). Blackwell.

Goldberg, A. (2006). *Constructions at Work: The Nature of Generalization in Language*. Oxford University Press.

Gutman, A., & Avanzati, B. (2013). *Eskimo-Aleut Languages*. The Language Gulper. https://www.languagesgulper.com/eng/Eskimo.html

Halle, M., & Marantz, A. (1993). Distributed Morphology and the Pieces of Inflection. In K. Hale & S. J. Keyser (Eds.), *The view from Building 20: Essays in linguistics in honor of Sylvain Bromberger* (pp. 111–176). The MIT Press.

Hansen, P. (2016, January 4). *Piviusulersaarut nutaaq qivittulersaarnermik sammisalik*. KNR. https://knr.gl/kl/nutaarsiassat/piviusulersaarut-nutaaq-qivittulersaarnermik-sammisalik

Harley, H. (2005). How Do Verbs Get Their Names? Denominal verbs, Manner Incorporation, and the Ontology of Verb Roots in English. In N. Erteschik-Shir & T. Rapoport (Eds.), *The Syntax of Aspect: Deriving Thematic and Aspectual Interpretation* (pp. 42–64). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199280445.003.0003

Harley, H., & Noyer, R. (2000). Formal Versus Encyclopedic Properties of Vocabulary: Evidence from Nominalisations. In B. Peeters (Ed.), *The Lexicon-Encyclopedia Interface* (1st ed., Vol. 5, pp. 349–374). Brill.

Harper, K. (1979). *Suffixes of the Eskimo dialects of Cumberland Peninsula and North Baffin Island*. National Museum of Man.

Haspelmath, M. (2018). The last word on polysynthesis: A review article. *Linguistic Typology*, *22*(2), 307–326. https://doi.org/10.1515/lingty-2018-0011

Hay, J. (2001). Lexical frequency in morphology: Is everything relative? *Linguistics*, *36*(6), 1041–1070.

Hyldal, C. (2022, August 5). *Nuummut Maniitsumullu timmisartuussinissaraluit anorersuarnera peqqutaalluni taamaatittut kinguartittullu*. KNR. https://www.knr.gl/kl/nutaarsiassat/timmisartuussinissanik-anorersuarnera-peqqutaalluni-taamaatitseqqittoq

Ilinniusiorfik. (2008). *Oqaasersiorfik: Kalaallisut oqaatsit isumaat allannissaallu*. Ilinniusiorfik.

Ilinniusiorfik. (2010). *Dansk/Kalaallisut*. Ilinniusiorfik. https://iserasuaat.gl/daka/

Inuit Uqausinginnik Taiguusiliuqtiit (IUT). (2018). *Inuktut Uqausiup Aaqqiksuutingit: Inuktut Reference Grammar*. Inuit Uqausinginnik Taiguusiliuqtiit.

Inuit Uqausinginnik Taiguusiliuqtiit (IUT). (2020). *Inuktut Uqausiliurut: Inuktut Affix Dictionary*. Inuit Uqausinginnik Taiguusiliuqtiit.

Jackendoff, R. (1992). *Semantic Structures*. The MIT Press.

Jackendoff, R. (2011). What is the human language faculty?: Two views. *Language*, *87*(3), 586–624.

Jackendoff, R., & Audring, J. (2020). *The texture of the lexicon: Relational morphology and the parallel architecture*. Oxford University Press. https://doi.org/10.1093/oso/9780198827900.001.0001

Jackendoff, R., & Audring, J. (2021). Relational Morphology: A Cousin of Construction Grammar. In M. Putnam, A. Fábregas, & E. Wittenberg (Eds.), *Defining Construction: Insights Into the Emergence and Generation of Linguistic Representations* (pp. 13–24). Frontiers Media SA. https://doi.org/10.3389/fpsyg.2020.02241

Jacobson, S. A. (2012). *Yup'ik Eskimo Dictionary* (2nd ed.). Alaska Native Language Center.

Jeremiassen, M. (2021, October 28). *Korpus databasen på Oqaasileriffik*. Opening ceremony of Ilisimatusarfik Centre for Language Research, Nuuk. https://da.uni.gl/media/vfcarsjl/korpus-databasen-paa-oqaasileriffik.pdf

Joanis, E., Knowles, R., Kuhn, R., Larkin, S., Littell, P., Lo, C., Stewart, D., & Micher, J. (2020). *The Nunavut Hansard Inuktitut–English Parallel Corpus 3.0* [Dataset]. NRC Digital Repository. https://doi.org/10.4224/40001819

Johns, A. (2007). Restricting Noun Incorporation: Root Movement. *Natural Language & Linguistic Theory*, *25*(3), 535–576.

Johns, A. (2009). Additional facts about noun incorporation (in Inuktitut). *Lingua*, *119*(2), 185–198. https://doi.org/10.1016/j.lingua.2007.10.009

Johns, A. (2015). Eskimo-Aleut. In R. Lieber & P. Štekauer (Eds.), *The Oxford Handbook of Derivational Morphology* (pp. 702–723). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199641642.013.0037

Kahn, L., & Valijärvi, R.-L. (2022). *West Greenlandic: An essential grammar*. Routledge.

Keysar, B., & Bly, B. M. (1999). Swimming against the current: Do idioms reflect conceptual structure? *Journal of Pragmatics*, *31*(12), 1559–1578. https://doi.org/10.1016/S0378-2166(99)00004-1

Kleinschmidt, S. (1851). *Grammatik der grönländischen Sprache mit theilweisem Einschluss des Labradordialects*. G. Reimer. https://doi.org/10.1515/9783111698830

Kleinschmidt, S. (1871). *Den grønlandske ordbog*. L. Kleins bogtrykkeri.

KNR. (2005, June 26). *Kangaamiut 250-liivoq*. https://knr.gl/kl/nutaarsiassat/kangaamiut-250-liivoq

KNR. (2011, February 28). *Kalaallit qallunaallu qalasersualerngusaapput*. https://knr.gl/kl/nutaarsiassat/kalaallit-qallunaallu-qalasersualerngusaapput

Kommune Kujalleq. (2023, December 3). *Nakuusaaqqani ilaasortat sapaassuarmi oqalugiaataat*. https://www.kujalleq.gl/kal/nutaarsiassat/2023/12/nakuusaaqqani-ilaasortat-sapaassuarmi-oqalugiaataat/

Lieber, R. (2017). Derivational Morphology. In M. Aronoff (Ed.), *Oxford Research Encyclopedia of Linguistics*. Oxford University Press. https://doi.org/10.1093/acrefore/9780199384655.013.248

Lois, X., Vapnarsky, V., Becquey, C., & Becquelin, A. M. (2017). Polycategoriality and hybridity across Mayan languages. In Valentina Vapnarsky & Edy Veneziano (Eds.), *Lexical Polycategoriality: Cross-linguistic, Cross-theoretical and Language Acquisition Approaches* (pp. 101–153). John Benjamins Publishing Company.

Louie, M. (2015). The Problem with No-Nonsense Elicitation Plans (for Semantic Fieldwork). In M. R. Bochnak & L. Matthewson (Eds.), *Methodologies in Semantic Fieldwork* (pp. 47–71). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780190212339.003.0003

Lyberth, M. L., Schmidt, S., Nielsen, N., & Allerup, P. (2022). *Hovedresultater af grønlandsktalende småbørns (8-36 mdr.) sproglige og kommunikative udvikling*. Government of Greenland. https://da.uni.gl/media/2yvdnp3u/hovedresultater-af-groenlandsktalende-smaaboerns-8-36-mdr-sproglige-og-kommunikative-udvikling.pdf

Massam, D. (2017). Incorporation and Pseudo-Incorporation in Syntax. In M. Aronoff (Ed.), *Oxford Research Encyclopedia of Linguistics*. Oxford University Press. https://doi.org/10.1093/acrefore/9780199384655.013.190

Matthewson, L. (2004). On the methodology of semantic fieldwork. *International Journal of American Linguistics*, *70*(4), 369–415.

Mauri, C., & Masini, F. (2024). Multi-layered indexicality: When proper names become categories. In P. J. Nielsen & M. S. Sansiñena (Eds.), *Indexicality* (pp. 171–196). De Gruyter Mouton. https://doi.org/10.1515/9783110791433-005

Melchin, P. (2019). *The Semantic Basis for Selectional Restrictions* [PhD dissertation, University of Ottawa]. https://doi.org/10.20381/ruor-23083

Mennecier, P. (1995). *Le tunumiisut, dialecte inuit du Groenland oriental: Description et analyse*. Peeters Publishers.

Mikkelsen, L., & Thrane, E. (2024, April 26). *Copular clauses in Kalaallisut: Implications for case.* Workshop on Structure and Constituency in Languages of the Americas (WSCLA) 27, Toronto. https://wscla2024.ca/wp-content/uploads/2024/04/wscla2024-mikkelsenthrane.pdf

Mithun, M. (1984). The Evolution of Noun Incorporation. *Language*, *60*(4), 847–894. https://doi.org/10.2307/413800

Mithun, M. (1997). Lexical Affixes and Morphological Typology. In J. L. Bybee, J. Haiman, & S. A. Thompson (Eds.), *Essays on Language Function and Language Type: Dedicated to T. Givón* (pp. 357–371). John Benjamins Publishing Company.

Mithun, M. (1999). *The languages of native North America*. Cambridge University Press.

Mithun, M. (2017). Polycategoricality and zero derivation. In V. Vapnarsky & E. Veneziano (Eds.), *Lexical Polycategoriality: Cross-linguistic, Cross-theoretical and Language Acquisition Approaches* (pp. 155–174). John Benjamins Publishing Company.

Mølgaard, N. (2011, August 22). *Video: Straffeqattaarneq takoqqiguk*. KNR. https://knr.gl/kl/nutaarsiassat/video-straffeqattaarneq-takoqqiguk

Necker, H., & Tronci, L. (2019). From proper names to common nouns: Italian -ismo/-ista and Ancient Greek -ismós/-istḗs formations. *Namenkundliche Informationen*, 209–232. https://doi.org/10.58938/ni609

Oqaasileriffik. (2024). *Allagaatinik katersuivik* [Dataset]. https://oqaasileriffik.gl/oqaaserpassualerineq/allagaatinik-katersuivik/

Pesetsky, D. (1995). *Zero syntax: Experiencers and cascades*. The MIT Press.

Postal, P. M. (1969). Anaphoric Islands. In *Papers from the Fifth Regional Meeting of the Chicago Linguistic Society* (pp. 205–239). Chicago Linguistic Society.

Rischel, J. (1972). Derivation as a syntactic process in Greenlandic. In F. Kiefer (Ed.), *Derivational processes* (pp. 60–73). Research Group for Quantitative Linguistics.

Rosen, S. T. (1989). Two Types of Noun Incorporation: A Lexical Analysis. *Language*, *65*(2), 294–317. https://doi.org/10.2307/415334

Sadock, J. M. (1980). Noun incorporation in Greenlandic: A case of syntactic word formation. *Language*, *56*(2), 300–319. https://doi.org/10.1353/lan.1980.0036

Sadock, J. M. (1985). Autolexical Syntax: A Proposal for the Treatment of Noun Incorporation and Similar Phenomena. *Natural Language & Linguistic Theory*, *3*(4), 379–439.

Sadock, J. M. (1986). Some Notes on Noun Incorporation. *Language*, *62*(1), 19–31. https://doi.org/10.2307/415598

Sadock, J. M. (1991). *Autolexical syntax: A theory of parallel grammatical representations*. The University of Chicago Press.

Sadock, J. M. (1999). The Nominalist Theory of Eskimo: A Case Study in Scientific Self-Deception. *International Journal of American Linguistics*, *65*(4), 383–406.

Sadock, J. M. (2001). How special are Eskimo-Aleut languages? In *CLS 37: The Panels (The proceedings from the Parasessions of the Chicago Linguistic Society's Thirty-seventh Annual Meeting)* (pp. 263–276). The Chicago Linguistic Society.

Sadock, J. M. (2003a). *A grammar of Kalaallisut (West Greenlandic Inuttut)*. LINCOM Europa.

Sadock, J. M. (2003b). Autolexical Syntax. In *International Encyclopedia of Linguistics* (2nd ed., Vol. 1, pp. 184–186). Oxford University Press.

Sadock, J. M. (2017). The Subjectivity of the Notion of Polysynthesis. In M. Fortescue, M. Mithun, & N. Evans (Eds.), *The Oxford Handbook of Polysynthesis* (pp. 99–114). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199683208.013.7

Sapir, E. (1911). The Problem of Noun Incorporation in American Languages. *American Anthropologist*, *13*(2), 250–282.

Schneider, L. (1970). *Dictionnaire français-esquimau du parler de l'Ungava et contrées limitrophes*. Presses de l'Université Laval.

Schneider, L. (1979). *Dictionnaire des infixes de l'esquimau de l'Ungava* (2nd ed.). Ministère des Richesses naturelles, Direction générale du Nouveau-Québec.

Schultz-Lorentzen, C. W. (1927). *Dictionary of the West Greenland Eskimo Language*. C.A. Reitzel.

Sermitsiaq. (2008, June 22). *Akademi-merkonomit nutaat*. https://kl.sermitsiaq.ag/inuiagatigiit/akademi-merkonomit-nutaat/897019

Sermitsiaq. (2011, January 26). *Roskilde kamilersorpoq*. https://kl.sermitsiaq.ag/inuiagatigiit/roskilde-kamilersorpoq/729141

Sermitsiaq. (2014, October 22). *Juaaka ukiuni 45-nngortorsiornerminut atatillugu Nuummi tusarnaartitsissaaq*. https://kl.sermitsiaq.ag/inuiagatigiit/juaaka-ukiuni-45-nngortorsiornerminut-atatillugu-nuummi-tusarnaartitsissaaq/777754

Sermitsiaq. (2018, November 24). *Kangersuatsiaq neriuutissaaruttoq*. https://kl.sermitsiaq.ag/inuussutissarsiutit/kangersuatsiaq-neriuutissaaruttoq/910424

Smith, L. R. (1978). Some properties of Labrador Inuttut verbal derivation. *Études/Inuit/Studies*, *2*(2), 37–48.

Spreng, B. (2012). *Viewpoint aspect in Inuktitut: The syntax and semantics of antipassives*. University of Toronto.

Tersis, N. (1996). Le couple statique-dynamique. In N. Tersis & M. Therrien (Eds.), *La dynamique dans la langue et la culture inuit* (pp. 75–93). Peeters.

Tersis, N. (2008). *Forme et sens des mots du tunumiisut, lexique inuit du Groenland oriental: Lexique tunumiisut-anglais-danois*. Peeters.

Tersis, N., & Mahieu, M.-A. (2006). Sémantique des affixes incorporants en langue inuit (Groenland oriental). *Études/Inuit/Studies*, *30*(1), 157–181. https://doi.org/10.7202/016155ar

Trondhjem, N. B., & Arnhold, A. (2024, April 26). *Information structure in Kalaallisut: Overview and outlook*. Workshop on Structure and Constituency in Languages of the Americas (WSCLA) 27, Toronto. https://wscla2024.ca/wp-content/uploads/2024/04/wscla2024-trondhjemarnhold-slides.pdf

University of Chicago & Oqaasileriffik. (2018). *Greenlandic-English Dictionary*. Oqaasileriffik. https://ordbog.gl/2018-kal-eng/

Van Geenhoven, V. (1998). *Semantic incorporation and indefinite descriptions: Semantic and syntactic aspects of noun incorporation in West Greenlandic*. CSLI Publications.

Van Geenhoven, V. (2001). Noun Incorporation. *Glot International*, *5*(8), 261–271.

Ward, G., Sproat, R., & McKoon, G. (1991). A Pragmatic Analysis of So-Called Anaphoric Islands. *Language*, *67*(3), 439–474. https://doi.org/10.2307/415034

Wiechetek, L., Hiovain-Asikainen, K., Mikkelsen, I. L. S., Moshagen, S., Pirinen, F., Trosterud, T., & Gaup, B. (2022). Unmasking the Myth of Effortless Big Data—Making an Open Source Multi-lingual Infrastructure and Building Language Resources from Scratch. In N. Calzolari, F. Béchet, P. Blache, K. Choukri, C. Cieri, T. Declerck, S. Goggi, H. Isahara, B. Maegaard, J. Mariani, H. Mazo, J. Odijk, & S. Piperidis (Eds.), *Proceedings of the 13th Conference on Language Resources and Evaluation (LREC 2022)* (pp. 1167–1177). European Language Resources Association. https://aclanthology.org/2022.lrec-1.125

Wiltschko, M. (2009). √Root incorporation: Evidence from lexical suffixes in Halkomelem Salish. *Lingua*, *119*(2), 199–223. https://doi.org/10.1016/j.lingua.2007.10.012

Woodbury, A. C. (2017). Central Alaskan Yupik (Eskimo-Aleut): A sketch of morphologically orthodox polysynthesis. In M. Fortescue, M. Mithun, & N. Evans (Eds.), *The Oxford Handbook of Polysynthesis* (pp. 536–559). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199683208.013.30

Woodbury, H. (1975). Onondaga Noun Incorporation: Some Notes on the Interdependence of Syntax and Semantics. *International Journal of American Linguistics*, *41*(1), 10–20.

Yuan, M. (2021). Diagnosing object agreement vs. Clitic doubling: An Inuit case study. *Linguistic Inquiry*, *52*(1), 153–179.

Yuan, M. (2023). Case as an Anaphor Agreement Effect: Evidence from Inuktitut. *Linguistic Inquiry*, *54*(2), 413–428. https://doi.org/10.1162/ling_a_00443