

Phasal Words and Inverse Morpheme Order in Inuktitut*

Richard Compton

Generals paper in syntax
Department of Linguistics, University of Toronto

Committee:

Alana Johns, supervisor

Keren Rice

Diane Massam

1. Introduction*

Inuit languages have been argued to require more morphological machinery than is commonly assumed for more isolating languages (e.g. the “internal syntax” postulated by Fortescue (1980) for West Greenlandic and de Reuse (1994) for Yupik as well as the morphological module of Sadock (1991)’s theory of Autolexical Syntax.) Such a level of computation is meant to deal with polysynthetic phenomena such as noun incorporation, ‘affixal’ verbs, ‘affixal’ adjectives and adverbs, and the presence of various functional morphemes (e.g. negation, mood, modals, etc.) inside ‘verbal complexes’. For instance, the following single-word sentences contain examples of incorporated objects, verbs, adjectives, adverbs, tense, negation, and the copula:¹

- (1) iglu-jjua-liu-lauq-tuq (Igloodik, North Baffin dialect)
house-big-make-PAST-DEC.3SG
‘he/she made a big house’
- (2) uqa-limaar-vi-liu(ng)-inna-nngit-tunga
speak-all.of-LOC.NOM-make-always-NEG-DEC.1SG
‘I was not always making libraries’
- (3) alaana-u-quuji-juq
Alana-COP-seem-DEC.3SG
‘She looks like Alana’

* The ideas in sections two and three surrounding phase-based words were first presented in Compton & Pittman (2006). I would like to thank Alana Johns, my supervisor, for her invaluable feedback and encouragement. I am also indebted to Keren Rice, my second reader, for her insightful comments and questions, and to Diane Massam, my third reader, for her questions and comments at the defence. Further thanks go to Christine Pittman, with whom I spent many days discussing the structure of Inuktitut both in Toronto and Iqaluit. I would also like to thank the other faculty and graduate students in the Department of Linguistics at the University of Toronto for their comments, suggestions, and questions, often over a pint of beer. Finally, I would like to thank my partner John, whose support and understanding has been most appreciated.

¹ Unless otherwise indicated Inuktitut data is from the North Baffin dialect (Igloodik) and from the author’s notes. Abbreviations are as follows: ABS absolutive case, ALLAT allative case, CAUS causative, CONJ conjunction, COP copula, DEC declarative mood (referred to as participial in most work on Inuktitut), DIST.PAST distant past, ERG ergative case, FUT future, IMP imperative, INDIC indicative mood, INST instrumental case, INTERR interrogative mood, INTR intransitive, LOC locative case, NEG negation, NOM nominaliser, OBL oblique case, PERF perfective, PL plural, POSS possessive, REC.PAST recent past, SG singular, VRB verbaliser.

However, the presence of an extra layer of computation in the grammar, (i.e. a generative morphological component) raises questions about the syntactic component in such languages. In particular, it is not clear that the operations of such a morphological component are in any way different from those of syntax. For instance, while word order is relatively free in Inuktitut, the order of morphemes within a word appears to be strictly compositional. Based on observations by Fortescue, Mithun (1999) gives the following examples of morpheme order corresponding to syntactic/semantic composition in the related language, Yupik. In these examples morphological position correlates with semantic scope (p.43):

- (4) **yugpacuaq**
yug-**pag-cuar**
person-**big-little**
‘little giant’
- (5) **yucuarpak**
yug-**cuar-pag**
person-**little-big**
‘big midget’
- (6) ayagciq**sugnarq**ni~~ll~~ruuq
ayag-ciq-**yugnarqe**-ni-llru-u-q
go-FUT-**probably**-claim-PAST-INDIC.INTR-3SG
‘he said he would probably go’
- (7) ayagciqni~~ll~~ru**yugnarqu**q
ayag-ciq-ni-llru-**yugnarqe**-u-q
go-FUT-claim-PAST-**probably**-INDIC.INTR-3SG
‘he probably said he would go’

In (4) and (5) the order adjectives corresponds to different meanings; *cuar* ‘little’ modifying the set of ‘big person’ in (4), while in *pag* ‘big’ modifies ‘little person’ in (5). Similarly, the position of *yugnarqe* ‘probably’ in (6)-(7) determines whether it modifies

the matrix or embedded verb. Conversely, alternations in word order yield little or no difference in meaning (*ibid*):

- (8) quinak-saa-lauq-tara Alana
 ticklish-CAUSE.TO.BE-PAST-DEC.1SG.3SG Alana(ABS)
 ‘I tickled Alana.’
- (9) Alana quinak-saa-lauq-tara
 Alana(ABS) ticklish-CAUSE.TO.BE-PAST-DEC.1SG.3SG
 ‘I tickled Alana.’

These examples clearly indicate that it is the position of morphemes within words in Inuktitut, not words themselves, which corresponds to syntactic positioning in a language like English. While others (Fortescue 1980, Grimshaw & Mester 1985, Sadock 1991, de Reuse 1994) have taken this as evidence for a separate (yet similar) morphological system to account for morpheme order, I take their similarity to syntactic compositionality as evidence that syntax is responsible for both morpheme order in Inuktitut as well as the position of elements in more isolating languages.

Working within Chomsky (1995)’s Minimalist Programme, and the Strong Minimalist Thesis elaborated in Chomsky (2005), (2006), I show that the polysynthetic phenomena of Inuit languages can be accommodated within minimalist syntax without positing a generative morphological component. Phonological wordhood will be argued to be predictable from the syntax, dispensing with the need to mark individual morphemes as affixes.

1.1. Goal

The goal of this paper is to provide a minimalist account of the morphology of Inuit languages (particularly Inuktitut, West Greenlandic, and Yupik) that (A) explains the position of morphemes within words and (B) explains why certain types of

morphemes can appear word-internally, while others elements must appear as separate words.

1.2. Proposal

My proposal has two central themes. The first delimits what can and must form a word, while the second essentially derives complement-head-specifier order and, as a result, the order of morphemes within words. This proposal will also act to limit the need for morphology in Inuktitut, ideally eliminating morphological transformations and operations from the grammar.²

In this paper I assume the analysis of phases developed in Chomsky (1999), (2004), (2005), and (2006) and elaborated by Svenonius (2003) and Fox and Pesetsky (2004) whereby syntactic structure is sent to the PF and LF interfaces in chunks at various points during the derivation, thus deriving the cyclicity of movement. Chomsky argues these points to be CP and vP, based on their propositional completeness (suggesting that they should be interpretable at LF) and their phonological independence. Based on parallels with CP, Svenonius argues that DP should also constitute a phase³.

In this paper I argue that words in Inuktitut correspond only to syntactic phases. Any constituent corresponding to a CP or a DP will thus form a word. I assume that vP need not be a phase cross-linguistically based on arguments in Chomsky (2006) for the non-phase status of unaccusative/passive vPs in English.

² However, a late insertion model such as Distributed Morphology (Halle & Marantz 1993, Marantz 1997) will still be necessary to account for contextual allomorphy, multiple exponence, portmanteau morphemes, etc.

³ In fact, Svenonius suggests that there may be two nominal phases: QP and nP (or possibly OpP and NumP), which parallel the clausal phases CP and vP.

Evidence from the lack of free functional morphemes, noun incorporation (Sadock 1980, Johns 2005), the distribution of adjectives, work on affixal verbs in Pittman (to appear), the distribution of adverbs, and the presence of phonologically free conjunctions, pronouns, and *wh*-words in Inuktitut will be used to argue for a phase-based criterion for wordhood. In each case it will be shown that words correspond to full DPs and CPs while smaller syntactic structures (e.g. APs, AdvPs, bare NPs, etc.) are unable to stand alone as words. Thus, the polysynthetic nature of words in Inuktitut can be reduced to syntactic structure.

I also argue that morpheme order is based on the order of syntactic heads (i.e. the same compositional syntax as more isolating languages), not a separate morphological component. In sum, I am proposing that there is no morphology beyond Distributed Morphology and that the position of morphemes is solely syntactic. Furthermore, I propose that Kayne (1998)'s Linear Correspondence Axiom (LCA) is parametric, yielding the inverse order observed in Inuktitut words. In languages like English or French it maps asymmetric c-command of elements into a relationship of linear precedence, while in a language like Inuktitut asymmetric c-command yields linear subsequence. As a result, of this parametric LCA and phase-based word boundaries, Inuktitut does not need a more complex morphological component than do Indo-European languages.

The following section outlines my extended proposal. In §3 it will be shown that this proposal accounts for the distribution of nouns, adjectives, adverbs, verbs, and functional elements in the language.

2. Proposal

The following analysis assumes Minimalist Syntax (Chomsky 1995, 2000) and the late insertion model of Distributed Morphology (Halle & Marantz 1993, Marantz 1997), although nothing depends on the use of the latter framework.

I also employ Fox and Pesetsky (2004)'s treatment of phases in which spell-out of a phase results in the creation of an ordering statement for the elements contained therein.

2.1. The Proposal

This proposal contains two independent parts. First, I argue that word boundaries in Inuktitut correspond to phase edges. If something is a traditionally defined word⁴ in Inuktitut my analysis predicts that it constitutes a phase in syntax. This argument implicitly rejects the notions of morphological or syntactic words, instead adopting the spirit of Distributed Morphology and “Syntax all the way down” (Halle & Marantz 1993) contra previous treatments of Inuktitut which posit a complex set of separate morphological rules to deal with noun incorporation, bound adjectives, bound adverbs, etc. (see Fortescue 1980, Sadock 1991, and de Reuse 1994). Instead, wordhood will be treated as a phonological phenomenon. Given my proposal that words correspond to syntactic phases, I predict that constituents smaller than CP or DP will not be able to form independent words. Second, I argue that the morpheme order within words is most easily explained via a parameterized Linear Correspondence Axiom that can map

⁴ Sadock (1980) demonstrates that words in West Greenlandic, a related Inuit language, possess the properties normally associated with words cross-linguistically. In particular, he notes that (i) “obligatory sandhi processes operate within words”, (ii) the order of morphemes within a word is “entirely fixed by semantics” while the arrangement of words with respect to each other is relatively free, (iii) parts of words cannot be conjoined, (iv) words cannot be interrupted with “pauses or parenthetical material”, and (v) if an error is made, a speaker will return to the beginning of the word.

asymmetric c-command to either linear precedence or linear subsequence (contra Kayne 1994 who argues exclusively for linear precedence).

It is worthwhile to note that neither part of this proposal depends on the other part being true. A more powerful morphological component which acted to determine morpheme order or a movement based account of morpheme order could equally operate on constituents corresponding to phases, yielding a similar result. Conversely, if phonological dependence were indeed a property of morphemes in Inuktitut (i.e. individual affixes are marked as such), a parametric LCA could still explain the inverse order of morphemes in the language. In other words, my analysis of word boundaries and my analysis of morpheme order are separate.

2.1.1. Phases are Words

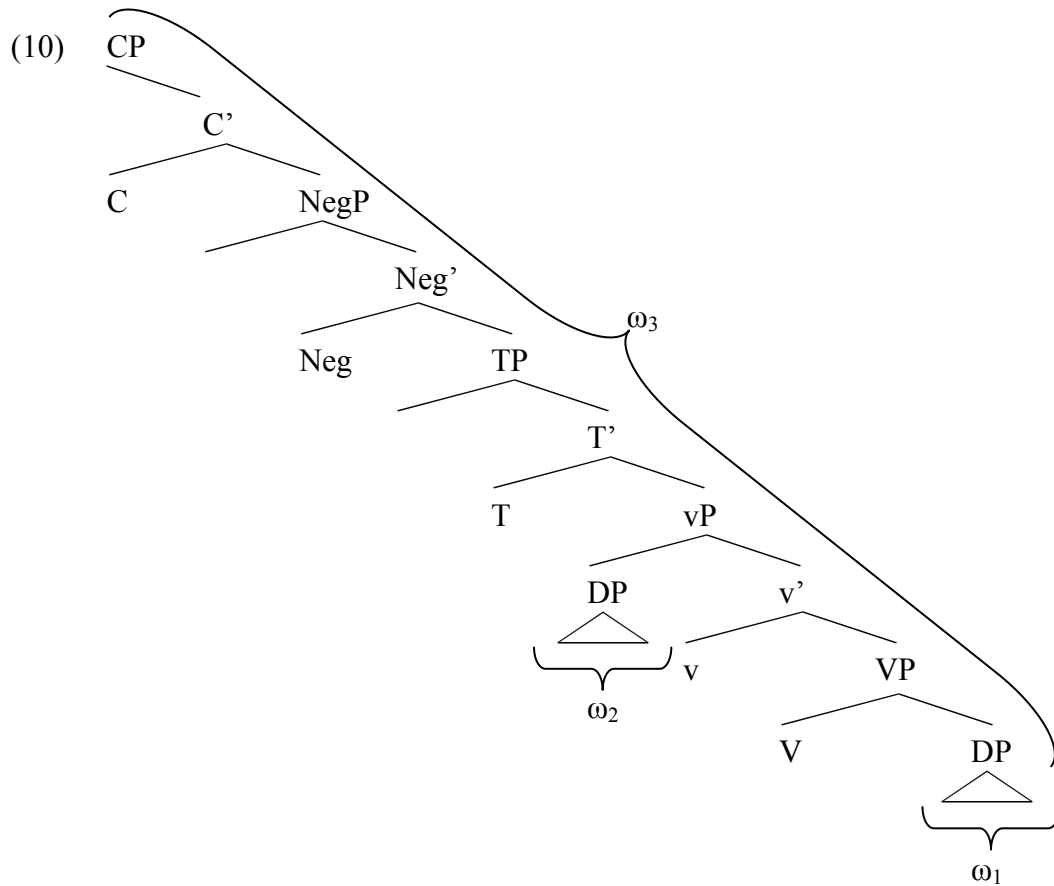
The idea that phases correspond to words in Inuktitut is motivated by the fact that what can and cannot be a word in Inuktitut is highly restricted and predictable. In the next section words in Inuktitut will be shown to be either nominal or clausal, corresponding to one of the two phase types; DP or CP. In general, only full DPs and CPs in the syntax result in free phonological words.

Following Chomsky (2006), I distinguish between phasal v*P and non-phasal vP. While the former values ACCUSATIVE case, the latter does not, instead patterning with passives and unaccusatives. Since Inuktitut (and related languages) are ergative, I assume that vP in Inuktitut does not possess the same case-checking role⁵ as in nominative-

⁵ Just as NOMINATIVE must be assigned to an argument in a transitive clause in English, ABSOLUTIVE must be assigned in Inuktitut (although it may be assigned to a covert argument, given that Inuktitut is a pro-drop language). I take this as evidence for ABSOLUTIVE being assigned in Spec,TP, thus suggesting that vP does not assign case in Inuktitut.

accusative languages and is thus not a phase⁶ (see Bok-Bennema & Groos 1988, Johns 2001).

Thus, I propose that as each CP and DP phase is spelled-out, the information sent to PF is immediately used to make a phonological word. Consequently, each (non-empty) phase in the syntax will result in one phonological word. Consider the following model:⁷



While CP, for instance, contains DP arguments, the information within each DP has already been spelt-out and mapped to phonological words (i.e. ω_1 and ω_2) by the time the CP is spelt-out. Finally, the remaining structure in CP is mapped into a complex (polysynthetic) word (i.e. ω_3 in (10)). Similarly, a structure with a subordinate CP would spell out the lower CP (minus its DPs) as a separate word, while the remaining non-DP

⁶ Similarly, Bobaljik and Branigan note that Nash (1995) proposes that ergative systems lack *v* altogether.

⁷ I ignore the ultimate position of the arguments and whether they move for case.

elements in the higher CP phase would form a separate word (see (33) below where an example is shown and discussed).

Although I refer to “CP phase” and “DP phase” throughout, note that under the most common treatment of phases it is the complements of phase heads (i.e. the complements of C and D for Inuktitut) which spell out. While we might expect to observe stranded phase heads, this is not problematic for Inuktitut since it lacks overt complementisers and determiners. Furthermore, although case (KP) is often assumed to be highest projection in the expanded DP, and we might predict that case morphemes should be realised in separate phases, the case morphology in Inuktitut does not necessarily correspond to the K head⁸. If we consider a language such as German where exponents of case can appear simultaneously on determiners, modifying adjectives, and nouns, it seems equally plausible that the case morphology in Inuktitut is also an instance of case concord albeit with a covert determiner or case head.⁹

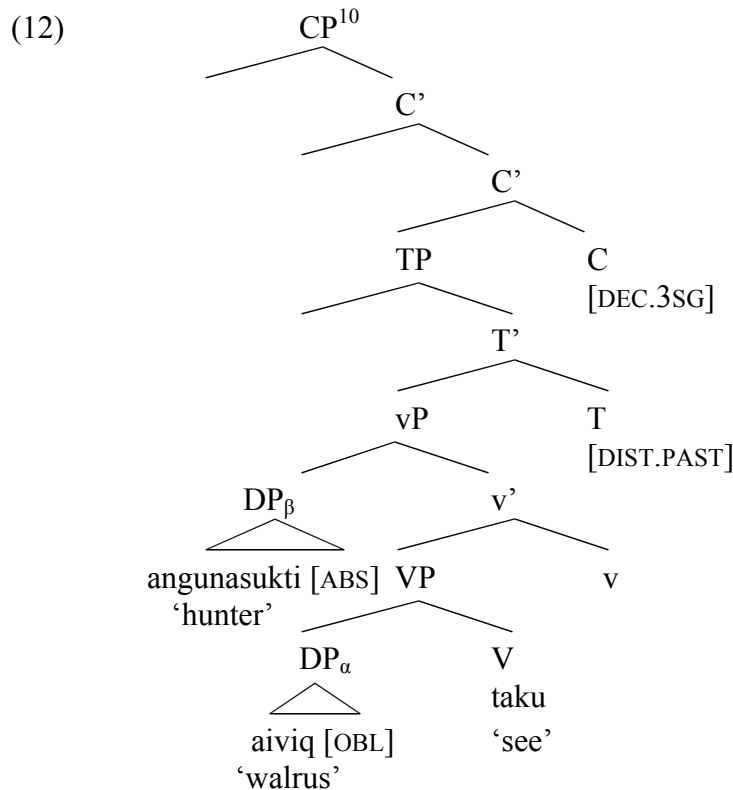
In sum, I argue that in Inuktitut (and possibly cross-linguistically) PF can begin creating prosodic constituents as soon as a phase is spelt out. Furthermore, while a more isolating language might label phases (or subparts thereof) as phonological phrases, in Inuktitut each incoming phase is labelled as a phonological word. Consider the following derivation (assuming right-headedness, for the moment). Following Chomsky (2006)’s proposal that ϕ -features are inherited from C and the portmanteau nature of mood and agreement, I have placed mood and agreement in the C domain, distant past tense has

⁸ Svenonius (2003) also warns against treating a case morpheme as an overt K head.

⁹ Similarly, the mood morphology in Inuktitut need not correspond to the C head. Assuming a more articulated CP layer (see Rizzi 1997), mood could correspond to a lower projection, while the head which triggers spell-out of the ‘CP’ phase is higher.

been placed under T, and the matrix verb under V. Arguments have been placed in the canonical AGENT and PATIENT positions (ignoring movement for case):

- (11) angunasukti taku-lauq-tuq aiving-mi
 hunter(ABS) see-DIST.PAST-DEC.3SG walrus-OBL
 ‘The hunter saw the walrus.’



- (13) First Phase (DP_α):
 {aiviq > [OBL]}
 → [aiving-mi]_ω

Second Phase (DP_β):
 {angunasukti > [ABS]}
 → [angunasukti]_ω

Third Phase (CP):
 {angunasukti > [ABS] > aiviq > [OBL] > taku > [DIST.PAST] > [3SG] > [DEC]}
 → [taku-lauq-tuq]_ω

¹⁰ Given the various possible analyses for ergative case-checking, I ignore the ultimate position of the arguments. I assume they are spelt-out as soon as they are built. However, it is equally possible that they remain in the derivation until they are valued for case. Just as the complement of v does not spell out immediately, thereby allowing phrases to move to its specifier position (i.e. the ‘escape hatch’) and checking uninterpretable features on v, it may be that DPs do not spell out until case features are valued.

By the time the CP is spelt-out, and the linear order of non-DP elements is added to the linearisation, the contents of both DPs have already been packaged into words. Thus, only the remaining roots and features in CP are packaged into the final phonological word; the verbal complex. Assuming that the spell-out of ordering information to PF is additive only, only adding new information and never altering the ordering statement (as claimed in Fox & Pesetsky 2004), and that PF must, in any case, keep track of word boundaries, the only differences between Inuktitut and more isolating languages is that PF in Inuktitut assigns phonological word boundaries to phases while in English, for instance, it is the individual linearised elements (i.e. contentful syntactic heads) that appear to be assigned word status, unless they are marked as affixes¹¹.

To summarise, this part of the proposal argues for the correspondence between syntactic phases and phonological words in Inuktitut. Both CP phases and DP phases will surface as words. In Inuktitut each phase is labelled as a phonological word, while a strongly isolating language (e.g. Chinese) would label each linearised element (i.e. syntactic head) as a phonological word. There is no need to mark individual morphemes as affixes.

2.1.2. Morpheme Order Based on Syntax

The second part of my proposal concerns the order of morphemes within words. While one might initially be inclined to say that the order of morphemes in a word is due to derivational rules specific to morphology (e.g. word-formation rules in Fortescue 1980,

¹¹ Certain heads in English may be idiosyncratically marked as affixes. For instance, the past tense morpheme *-ed* on the T head might be marked as affixal, while non-finite *to* would be unmarked.

Sadock 1991, de Reuse 1994), or even a word template, I argue that morpheme order is simply the result of syntactic position.¹²

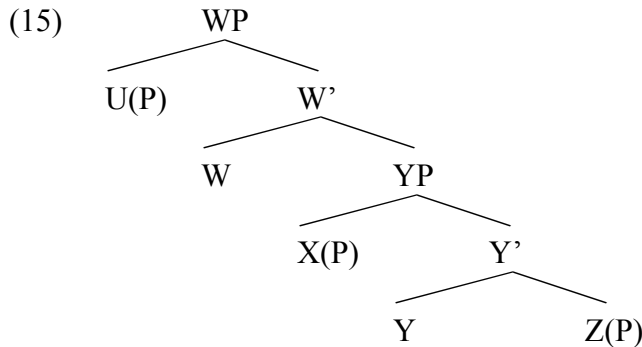
Kayne (1994) argues that linear order in syntax should be determined by asymmetric c-command, thereby dispensing with a separate mechanism for linearisation. In particular, he argues that asymmetric c-command in the syntax results in a precedence relationship. He admits the existence of the logically possible alternative that his Linear Correspondence Axiom (LCA) could map asymmetric c-command to linear subsequence instead; however he argues that this is not the case for several reasons. First, he observes that while head-initial and head-final languages are both well-attested, complement-head-specifier (CHS) order (e.g. Hixkaryana, Guarijio, etc.) is very rare, as are OSV, OVS, and VOS languages (see Greenberg, 1966). Second, he observes that while there are verb-second languages such as German, there are no verb-penultimate languages that one might predict if CHS were the underlying order. However, his arguments for precedence over subsequence are problematic. While it is true that head-specifier ordering is rare, frequency alone does not bear on the properties of UG. Had the speakers of head-specifier proto-languages been more prolific (and perhaps more militaristic), instead of, for instance, speakers of Indo-European languages, head-specifier orders might have become the cross-linguistic norm. Similarly, the observed lack of verb-penultimate languages may be an accidental gap, in particular given the low number of head-specifier languages.

¹² While I do not address the topic of scope directly, I assume throughout that the same properties of selection and semantic compositionality of more isolating languages as well as the universal hierarchy of functional projections proposed in Cinque (1999) are also operative in Inuktitut, especially given that the order of morphemes appears to correspond quite closely to Cinque's hierarchy, albeit inverted. As such, throughout I will employ "scope" in the sense of syntactic composition.

Based on these considerations, I propose the parametric LCA in (14) below.

Asymmetric c-command in a tree (e.g. (15)) may either map to precedence (as in illustrated by the linear ordering in (16)) or subsequence (as shown in (17)).

- (14) Parametric LCA
 If X asymmetrically c-commands Y, either:
 i. X precedes Y, or
 ii. X follows Y.



- (16) {U > W > X > Y > Z}

- (17) {Z > Y > X > W > U}

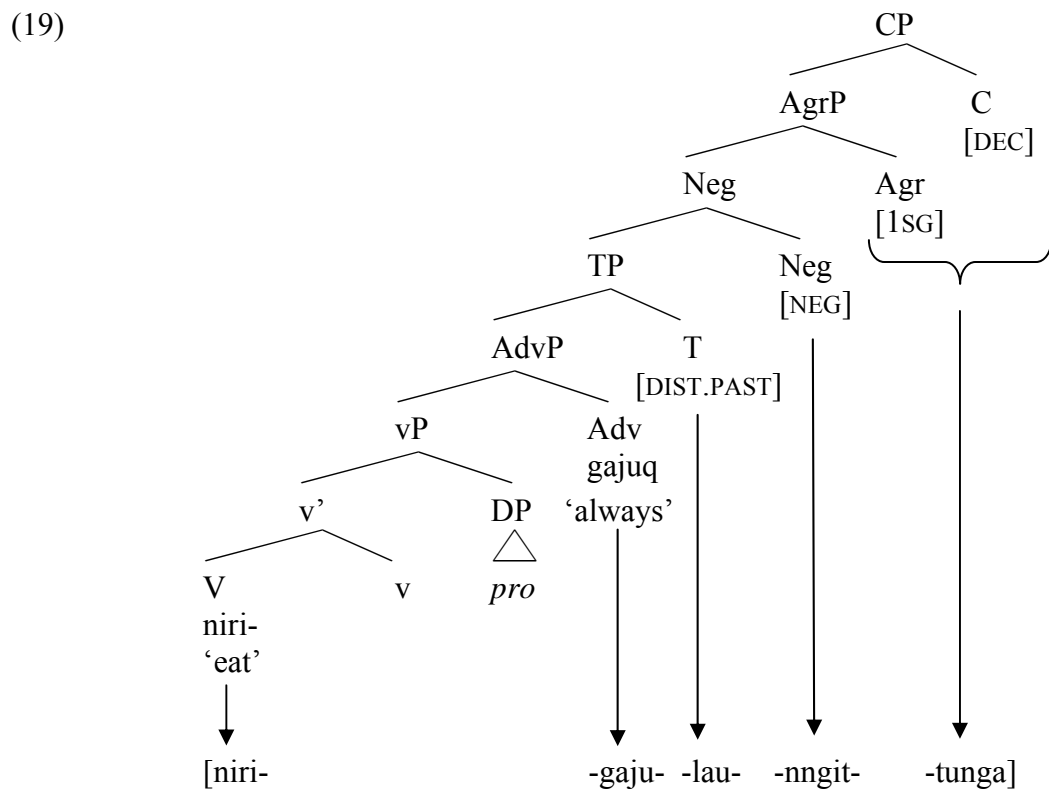
As a result, I propose the basic orders cross-linguistically to be specifier-head-complement and complement-head-specifier. Inuktitut will be analysed as an example of the latter type.

While SVO and OVS languages will be assumed to be underlyingly precedence-based and subsequence-based, respectively, other word orders could conceivably be derived via either of the settings of the parametric LCA in (14). Thus, a language like German, which is SOV in embedded clauses yet is predominantly head initial, could be analysed as precedence-based, while Japanese which is SOV yet consistently head final might be analysed as subsequence-based.

It has been observed that morphemes in Inuktitut take scope over elements to their left in the same word (see also Rice 2000 on the role of scope in ordering morphemes in

Athapaskan languages). In work on West Greenlandic, another Inuit language, Fortescue (1980) calls this the “Global Scope Rule”. Furthermore, the types of morphemes and their positions in complex words mirror the universal hierarchy of functional projections proposed in Cinque (1999), which suggests that such morphemes are positioned according to syntactic principles. I claim that the simplest account of morpheme order in complex words is that it is mapped directly from the syntax. Assuming the parametric LCA just proposed, a typical polysynthetic word in Inuktitut such as (18) could be derived as in (19):

- (18) niri-gaju-lau-nngit-tunga
 eat-always-DIST.PAST-NEG-DEC.1SG
 ‘I wasn’t always eating.’



Instead of being encoded in a separate morphological component, morpheme order is in fact a reflection of the underlying syntactic position of the morphemes. The position of

the verbal root, for instance, is not due to word-formation rules, but rather the position of the verb in the derivation and the subcategorizing properties of little *v* and other functional elements. As outlined in the previous subsection, each syntactic phase sent to PF is packaged into a phonological word.

Notice that I have not discussed word order in Inuktitut. Although intransitive¹³ clauses are usually SV¹⁴ and transitive clauses are usually SOV, this is not necessarily evidence against an underlying OVS order. Given that the position of arguments is relatively free in Inuktitut and that ergative and absolutive arguments (which are interpreted as specific/referential; see Wharram 2003, Compton 2004) appear before the verb, while oblique objects (which are interpreted as non-specific/non-referential) appear after the verb, I propose that their position is determined post-syntactically. Erteschik-Shir and Strahov (2004) argue for such an analysis of scrambling and object shift, observing that many languages mark topic/focus intonationally, which entails that information regarding topic/focus status must be available to PF. Accordingly, I propose that the position of DPs in Inuktitut is governed by information structure at PF, with specific arguments frequently being fronted and non-specific arguments frequently postposed (see also Sherkina-Lieber 2004 on the focus-fronting of *wh*-words).

In this section I have argued for a parametric Linear Correspondence Axiom whereby asymmetric c-command may either be linearised in terms of precedence or subsequence. Inuktitut is of the latter type.

¹³ Note that semantically transitive verbs in antipassive clauses are also SVO. In the antipassive the object is demoted yet may remain (optionally) with oblique case. The subject of the antipassive bears ABSOLUTIVE case and there is only subject agreement on the verb.

¹⁴ Strictly speaking, they are S-CP-O and S-O-CP given that ‘verbal complexes’ correspond to CPs.

In the next section I demonstrate that the phase-based analysis of wordhood proposed in this section explains the distribution of nouns, verbs, adjectives, and adverbs in Inuktitut.

3. Evidence for Words Corresponding to Phases

This section presents evidence for the correspondence between DP and CP phases and words in Inuktitut. In particular, I concentrate on the distribution of lexical categories and alternations exhibited between polysynthetic and more periphrastic constructions.

3.1. Lack of Free Functional Elements

An obvious consequence of words only corresponding to DPs and CPs is that we should not find any free functional morphemes (unless they are the sole members of a DP or a CP). In Inuktitut, this prediction is borne out by the lack of independent determiners, adpositions, auxiliaries, particles, modals, light verbs, etc. However, pronouns, demonstratives, and conjunctions are exceptions. While it might be argued that pronouns and demonstratives are nouns, and therefore can constitute full DPs, the same conclusion is not obvious for conjunctions. Although the words status of conjunctions appear to be an exception to the observation that words are either clauses or arguments, their status as words will also be shown to fall out from my phase-based analysis. I return to this topic in section 3.7.

While sometimes referred to as merely verbs, *verbal complexes* in Inuktitut can consist of main verbs or incorporated bare object nouns, modals, several types of light verbs, various types of adverbs, negation, tense, aspect, agreement, and mood. Consider the following examples:

- (20) iglu-liu-(ng)¹⁵-innaq-sima-junga
house-make-always-PERF-DEC.1SG
‘I have always been making houses.’
- (21) niri-gaju-lau-nngit-tunga
eat-always-DIST.PAST-NEG-DEC.1SG
‘I wasn’t always eating.’

In fact, the functional elements mentioned above are only found within verbal complexes.

As stated earlier, such functional items do not occur as separate phonological words.

Since negation, tense, aspect, mood morphology, etc. are generally assumed to correspond to functional heads in other languages, and since the only evidence in Inuktitut for such projections is within verbal complexes, I propose that verbal complexes are CPs.

3.2. Nouns & Noun-Incorporation

One phenomenon that contributes to polysynthesis in Inuktitut is noun incorporation. In the following examples a bare noun appears adjacent to the verb:

- (22) iglu-liu-lauq-tunga
house-make-DIST.PAST-DEC.1SG
‘I made a house/houses.’
- cf. iglu-mi¹⁶ or iglu-ni
house-OBL.SG house-OBL.PL
‘house’ ‘houses’

- (23) natsiq-Ø-tuq (Harvaqtuurmiutut)
seal-get-DEC.3SG
‘he/she caught a seal/seals.’
- cf. natsi(ng)-mit or natsi(ng)-nit
seal-OBL.SG seal-OBL.PL
‘seal’ ‘seals’

¹⁵ An epenthetic consonant interrupts the hiatus caused by three adjacent vowels.

¹⁶ In these examples the nouns listed for comparison are marked with the case and number with which they would surface in a corresponding intransitive (i.e. antipassive) sentence.

- (24) imiq-taaq-tunga cf. iming-mit (Harvaqtuurmiutut)
 water-get-DEC.1SG water-OBL.SG
 ‘I’m fetching water.’ ‘water’

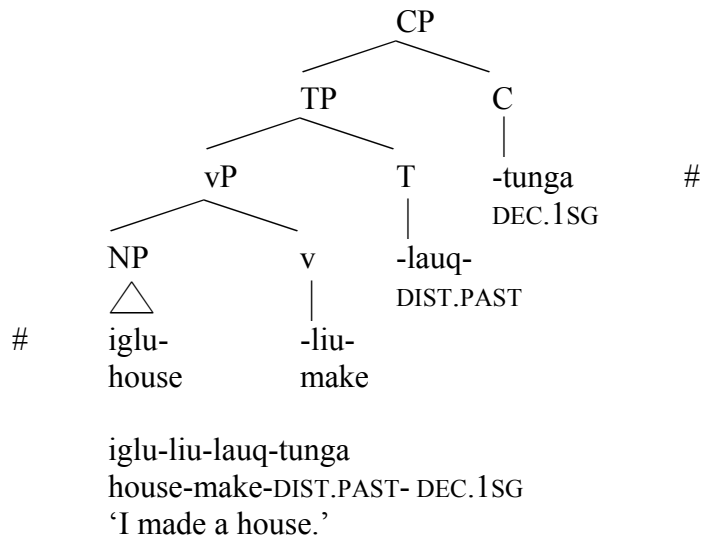
Noun incorporation suppresses the normal case and number morphology required on nouns and is restricted to objects. Notice that complex nouns can also incorporate (repeated from (2) above):

- (25) [uqa-limaar-vi]-liu(ng)-inna-nngit-tunga
 [speak/tongue-all.of-LOCATION.NOM]-make-always-NEG-DEC.1SG
 ‘I was not always making [libraries].’
- cf. uqa-limaar-vi-(ng)nit
 speak/tongue-all.of-LOCATION.NOM-OBL.PL
 ‘libraries’

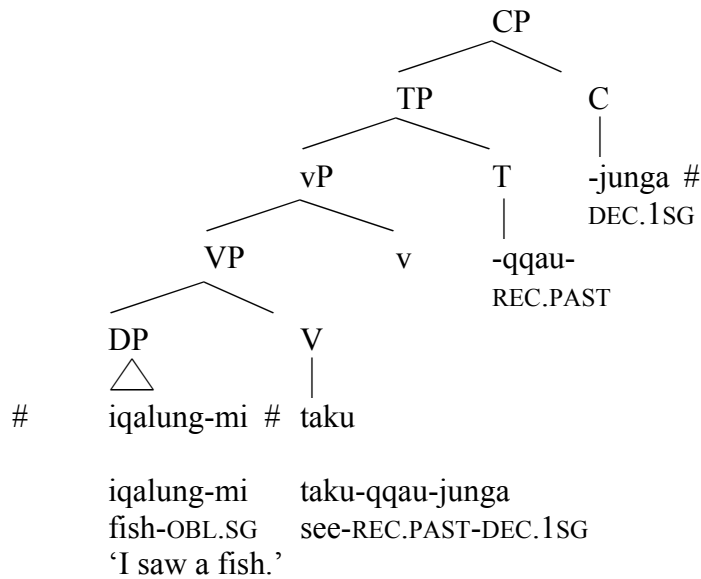
Johns (2005) demonstrates that noun incorporation in Inuktitut is restricted to occur with a closed class of light verbs which obligatorily select and incorporate a bare noun. She argues that these light verbs form a natural and predictable class, and furthermore that they are not the result of grammaticalisation (contra Mithun 1997, 1999, and Gerds and Hukari 2002).

Interestingly, if we take case and number to be indicative of a full DP, the theory presented in §2 correctly predicts the phonological distribution of nouns; a bare noun, arguably an NP without a DP layer, will be part of the same word as the little *v* which selects it, while full DPs (those with case and number) will be separate words:

(26) Noun Incorporation:



(27) Full DP object:



Thus, it is the status of the object as an NP or a full DP (with case and agreement), as subcategorised for by the verb, which corresponds to whether or not the object will undergo incorporation. The phonological incorporation of the noun is not a property of

the light verbs; rather the type of object they select (i.e. an NP) cannot stand alone as a separate word because it is not a phase.¹⁷

3.3. ‘Affixal Verbs’ and Modals

Similar to the class of noun-incorporating verbs described in the previous section, there is also a closed class of predicate incorporating verbs/modals that appear to take larger complements such as *-guma* ‘want (to)’ (see Johns 1999), *-niraq* ‘say’, and *-qu* ‘tell/want’ (see Pittman to appear). These forms appear alongside verbs in the following constructions:

- (28) ani-juma-junga
leave-want-DEC.1SG
‘I want to leave.’
- (29) Miali igla-qu-qau-jara (Pittman, to appear)¹⁸
Mary(ABS) laugh-tell-REC.PAST-DEC.1SG/3SG
I told Mary to laugh.
- (30) Janni-up niri-niraq-tanga tuktu Miali-mut (ibid)
Johnny-ERG eat-say-DEC.3SG/3SG caribou(ABS) Mary-ALLAT
Johnny said that Mary ate the caribou.

¹⁷ One exception to this analysis is presented by Johns (2006). She notes that a small set of verbs describing location and motion appear to incorporate nouns bearing oblique cases such as locative and vialis, as well as possessive inflection and number (p.7):

- (a) illu-ga-ne-vunga (Johns 2006, Labrador)
house-POSS.1SG-LOC.be.in-INDIC.1SG
‘I’m in my house.’

This is problematic for my analysis, because the object bears number and case, suggesting it is a DP and therefore should result in a separate word. However, Sadock (2002) observes that such verbs (those which allow case, possessive marking and number) appear to be clitic-like in West Greenlandic, noting that they can also occur separate from the object. Compare (b) and (c) (p.1-2):

- (b) Nuummiippunga (c) Nuummi ippoq (also: Ippoq Nuummi)
nuuk-mi-it-vunga N.-LOC be.in-INDIC.3SG
N.-LOC-be.in-INDIC.1SG ‘He/she is in Nuuk.’
‘I am in Nuuk.’

While a full analysis of these optionally attaching verbs is beyond the scope of this paper, I believe they contrast with the set of light verbs whose objects always incorporate.

¹⁸ In example (29) ‘(ABS)’ was added to the gloss and in both (29) and (30) ‘INDIC’ was changed to ‘DEC’ to avoid confusion with the labels used in this paper.

Johns (1999) argues that *-guma* is a modal, in part because it cannot licence additional arguments. Similarly, Pittman (to appear) demonstrates that *-qu* type and *-niraq* type ‘verbs’ select complements that are smaller than CP (i.e. TP or vP). She observes that while *niraq*-type verbs can take TP complements (as in (31), *ibid*) which contains tense (i.e. recent past) and *qu*-type verbs can take vP complements (as in (32), *ibid*), neither allows a complement to bear mood (i.e. declarative), which is generally assumed to be part of the CP domain.

(31) Jaani-up niri-qqau-nira-lauq-tanga tuktu Miali-mut
 Johnny-ERG eat-REC.PAST-say-DIST.PAST-DEC.3SG/3SG caribou(ABS) Mary-ALLAT
 ‘Johnny said that Mary ate the caribou.’

(32) Jaani-up niri-qu-lauq-tanga tuktu Miali-mut
 Johnny-ERG eat-want-DIST.PAST-DEC.3SG/3SG caribou(ABS) Mary-ALLAT
 ‘Johnny wanted Mary to eat the caribou.’

In contrast, phonologically independent verbs in Inuktitut can take complements bearing mood/agreement morphology:

(33) ani-juit¹⁹ qaujima-junga
 leave-DEC.3PL know-DEC.1SG
 ‘I know that they left.’

In parallel to our results with nouns, we see that only full CPs form separate phonological words. Smaller units such as TP, vP, and VP do not.

3.4. Adjectives

In addition to the alternations observed between free and incorporated nouns and free and ‘affixal’ verbs/modals, we also observe two distinct classes of adjectives in Inuktitut; (i) verb-like adjectives²⁰ and (ii) purely attributive adjectives.²¹

¹⁹ There is variation in the dialect of my consultant between *-jut/-tut* and *-juut/-tuit* (DEC.3PL).

²⁰ Dixon (2004a) argues for a distinction cross-linguistically between noun-like adjectives, verb-like adjectives, and adjectives which bear no relation to either nouns or verbs.

Below we see examples of the verb-like adjectives. These can act as main clause predicates and can be a complete sentence/utterance.

- (34) taki-juq
tall-DEC.3SG
'He/she is tall'.
- (35) sanngi-junga
strong-DEC.1SG
'I am strong'.
- (36) nanuq angi-juq
polar.bear(ABS) big-DEC.3SG
'The polar bear is big'

Furthermore, verb-like adjectives can appear in other moods, such as the interrogative, and take tense morphology, as in the following examples:

- (37) taqa-vii
tired-INTERR.2SG
'Are you tired?'
- (38) aannia-lauq-tunga
sick-DIST.PAST-DEC.1SG
'I was sick.'

Their ability to act as full clauses as well as their use with interrogative mood and tense suggest that these adjectives are full CPs. These adjectives can also modify arguments:

- (39) taki-juq angunasukti natti-Ø-qqau-juq
tall-DEC.3SG hunter(ABS) seal-get-REC.PAST-DEC.3SG
'The tall hunter caught a seal'.
- (40) angi-juq nanuq taku-lauq-tuq natting-mi
big-DEC.3SG polar.bear(ABS) see-DIST.PAST-DEC.3SG seal-OBL.SG
'The big polar bear saw the seal'.

Given their ability to act as clauses, one might conclude that the adjectives in (39)-(40) are acting as relative clauses when they modify nouns. However, when modifying

²¹ Dixon (2004b) demonstrates the existence of a similar class of adjectives in Jarawara (Arawá family).

arguments whose case morphology is overt (i.e. cases other than absolutive), a different picture emerges:

- (41) qimmi-mik qaqor-tu-mik (Sadock 2003, West Greenlandic)
 dog-OBL.SG white-DEC-OBL.SG
 ‘the white dog’
- (42) illu-ttsinnut angi-suu-mut (ibid)
 house-ALLAT.1PL.SG big-DEC-ALLAT.SG
 ‘to our big house’
- (43) angi-jur-mi iglu-liu-lauq-tunga (author’s notes)
 big-DEC-OBL.SG house-make-DIST.PAST-DEC.1SG
 ‘I made a big house’.

In these examples we see that the adjectives agree in case with the modified argument, albeit covertly when absolutive singular which is phonological null. Since bearing case is not a property we expect of clauses and since these adjectives can also stand as arguments, this data suggest that adjectives modifying nouns are DPs in apposition (as proposed in Johns 1987 for nouns and deverbal modifiers and relative clauses). Moreover, the fact that adjectives can act as arguments supports the conclusion that when they modify nouns they are in fact DPs:

- (44) mikit-tuq taku-qqau-juq angi-jur-mi
 small-DEC.3SG(ABS) see-REC.PAST-DEC.3SG big-DEC-OBL.SG
 ‘The small one saw the big one.’

In both their clausal and argument roles, the phase-based analysis correctly predicts that these adjectives will be words

A second class of adjectives exists in Inuktitut. Unlike the verb-like adjectives presented above, these purely attributive adjectives always appear attached to the NP they modify, as in (45)-(46) below:

- (45) umingma(g)-jjuaq (Mittimatalingmiutut)
 muskox-big
 ‘the/a big muskox’
- (46) iglu-viniq (South Baffin)
 house-old/former
 ‘an old house’
- (47) [iglu-jjuaq]-liu-lauq-tunga (Igloodik)
 [house-big]-make-DIST.PAST-DEC.1SG
 ‘I made a big house.’

Notably, these adjectives can never act as predicates nor can they stand alone as arguments (in contrast with the verb-like adjectives presented earlier):

- (48) umingma(g)-jjuaq
 muskox-big
 √ ‘the/a big muskox’
 * ‘the/a muskox is big’
- cf. umingmak angi-juq
 muskox big-DEC.SG
 ‘the muskox is big’
- (49) iglu-viniq
 house-old/former
 √ ‘the/an old house’
 * ‘the/an house is old’
- (50) *jjuaq
 big
 ‘the/a big one/thing’
- cf. angi-jur-mi iglu-liu-lauq-tunga
 big-DEC-OBL.SG house-make-DIST.PAST-DEC.1SG
 ‘I made a big house’.
- (51) *jjuaq-tuq
 big-DEC.3SG
 ‘it is big’
- cf. angi-juq
 big-DEC.SG
 ‘he/she/it is big’

- (52) *jjuaq-liu-lauq-tuq
 big-make-DIST.PAST-DEC.3SG
 ‘He/she made a big one/thing.’

This suggests that while verb-like adjectives correspond to full CPs and (nominalised) DPs, attributive adjectives are merely APs. Remarkably, the former set (CPs and DPs) are always separate phonological words, while the latter set (APs) always pattern as affixes on a noun. This dichotomy is predicted by the analysis of Inuktitut word boundaries corresponding to phases; since as APs the attributive adjectives will never constitute a separate phase. Later in §3.6 I return to the topic of adjectives, arguing against an analysis in which attributive adjectives are simply specified in the lexicon as affixal.

3.5. Adverbs

A similar dichotomy exists among the two kinds of adverbs in the language; (i) true adverbs and (ii) derived adverbs. While true adverbs (arguably Adv heads or phrases in the syntax) appear inside verbal complexes, derived adverbs appear as separate words. We begin with true adverbs.

True adverbs are a closed class of elements that appear in various positions to the right of the verbs they modify inside a verbal complex, as in examples (53)-(55) below:²²

- (53) ani-**saali**-juit
 leave-**early**-DEC.3PL
 ‘They left early.’

²² Fortescue (1980) presents examples illustrating that the position of these ‘affixal’ adverbs is determined by scope, for instance:

- | | | | |
|-----|--|-----|---|
| (a) | tikinn gik kallarpuq
tikit-nngit- gallar -vuq
come-NEG- still -INDIC.3SG
‘He <u>still</u> has not come.’ | (b) | tikik kallan ngilaq
tikit- gallar -nngit-vuq
come- still -NEG-INDIC.3SG
‘He still hasn’t come <u>yet</u> .’ |
|-----|--|-----|---|

However, the same is true of the position of adverbs and negation in English, for instance. Consequently, I assume the same syntactic principles are responsible for position of adverbs and negation in Inuktitut.

- (54) ani-**anik**-qqau-juit
leave-**already**-REC.PAST-DEC.3PL
'They already left.'
- (55) ani-qu-**quu**-lauq-tara (Mittimatalingmiutut)
leave-tell-**probably**-DIST.PAST-1SG/3SG
'I probably told him/her to leave.'

These adverbs can never appear alone and never take case morphology. Derived adverbs on the other hand, appear independently from the elements they modify and appear to require oblique case²³, as in the following examples:

- (56) qakkuti-kku iglu-liu-qattaq-tunga
when-VIALIS house-make-HABITUAL-DEC.1SG
'Sometimes I make a house.'
- (57) nipikit-tu-mi pisuq-qqau-junga
quiet-DEC-INST.SG walk-REC.PAST-DEC.1SG
'I walked quietly.'
- (58) uqalimaa-lauq-tara sukkait-tu-mi
read-DIST.PAST-DEC.1SG/3SG slowly-DEC-INST.SG
'I read (it) slowly.'

In (56) the *wh*-word meaning *when* is converted into *sometimes* using vialis case, while in (57)-(58) adjectives are converted into adverbs via instrumental case. Although these elements are being used adverbially, the use of case morphology suggests that they are in fact DPs. If this is correct, the phonological independence of derived adverbs is predicted under the analysis that CP and DP phases are mapped to phonological words. Similarly, the set of true adverbs are correctly predicted to appear inside the CP word (the verbal complex) since as AdvPs they do not correspond to either DPs or CPs.

²³ Thank you to Christine Pittman for pointing out the use of the instrumental case on some adverbs. Sadock (1980) and de Reuse (1994) also gloss this class of adverbs as bearing oblique case morphology.

3.6. On the Distribution of Lexical and Functional Elements

Importantly, the membership of the closed classes of (i) noun-incorporating verbs, (ii) predicate incorporating verbs/modals, (iii) purely attributive adjectives, and (iv) true adverbs offer a strong argument against an analysis which posits that affixation is marked on each lexical item. It is no coincidence that each of these sets contains a highly predictable class of semantically related elements.

To begin, Johns (2005) demonstrates that noun-incorporating verbs are in fact light verbs, based on their relative semantic underspecification and their full productivity²⁴ (see also Mithun 1999). This set consists of items with such meanings as *have, lack, be, become, get, lose, make, consume, seek*, etc. Notice also that many of these verbs have a wide array of polysemous uses in a language like English. An analysis which approached noun incorporation in terms of these verbs each being marked in the vocabulary as affixal would essentially treat their semantic relatedness and affixal status as a coincidence.

Similarly, the set of predicate incorporating verbs/modals examined by Johns (1999) and Pittman (to appear) appears to form a salient class which Dixon (2006) labels “secondary concepts” which includes (amongst other things) complement clause²⁵ taking verbs and modals. He observes that cross-linguistically these verbs cannot be used alone and require another verb (either overtly or implicitly). Yet again, it would be advantageous to explain why this related class of verbs and modals are all affixal.

²⁴ For instance, the NI verb *-tuq-* ‘consume’ can mean *eat, drink, or smoke* depending on the object.

²⁵ Dixon’s use of complement clause does not appear to imply the syntactic level CP. For instance, he uses the term to refer to non-finite/ECM constructions where the CP layer would be absent in recent formulations of Minimalism in which agreement features are inherited from C (Chomsky 2006a, 2006b).

The set of purely attributive adjectives is equally predictable. They correspond quite closely to the set of pre-nominal adjectives in French which Bouchard (2002) categorises as (i) intensional (e.g. *futur* ‘future’, *présent* ‘present’, *prochain* ‘next’, etc.) (ii) quantitative (e.g. *nouvelle* ‘new’, *seule* ‘sole, single’, *nombreux* ‘with many elements’, *autre* ‘additional’, *certain* ‘certain’, etc.) and (iii) evaluative (e.g. *bon* ‘good’, *petit* ‘small’, *grand* ‘tall’, *gros* ‘big’, etc.). In fact, among the forty-six West Greenlandic adjectives listed in Fortescue (1980) (which he refers to as ‘nominal modifiers’) thirty-four can appear pre-nominally in French in at least one of their translations (see Appendix A). None of the Inuktitut attributive adjectives involve colour, geometric shape, substance/material, place of origin, style, etc. Similarly, these types of adjectives appear post-nominally in French (and other Romance languages). The former set of adjectives also appears to form a natural class in other languages. For instance, in a string of adjectives in English, these same adjectives tend to come first in linear order (see Teyssier 1968, *inter alia*):

- (59) a *big* blue American minivan
- (60) the *old* three-storey Victorian mansion
- (61) a *good* round wood table
- (62) the *only* famous emerald bracelet

In addition, the fact that attributive adjectives in Inuktitut cannot be used predicatively parallels English adjectives such as *live* (in the biological sense), as demonstrated by Larson & Marušič (2004, pp.272-3):

- (63) a. some live thing
- b. *this thing is live

- (64) a. *some alive thing
 b. this thing is alive

While *live* can be used attributively, it cannot be used as a predicate. Conversely, *alive* shows the opposite pattern; acting as predicate but not an attributive. While a complete syntactic explanation for such patterns is beyond the scope of this paper, it appears that the lexical/selectional differences between *live* and *alive* also distinguish attributive and verb-like adjectives in Inuktitut. Yet again, an affixal analysis whereby these adjectives were labelled individually would treat membership in this highly predictable class as coincidental. Instead, I argue that the semantics of the attributive class of adjectives restricts them to modifying NPs (as is the case for English *live*). Verb-like adjectives, on the other hand, can only be use predicatively (like English *alive*) and will thus always appear in a relative clause (a CP) or in apposition (as a DP), resulting in a separate word.

The set of true adverbs is similar in nature. Among the many ‘verbal modifiers’ listed by Fortescue, thirty-four are grouped under ‘degree’, twenty-two are labelled ‘frequency and duration’, and twenty-five are called ‘manner’ (although many of these involve time, speed, and movement).²⁶ Yet again, these set of elements appears to form a natural class, coinciding with the functional projections proposed in Cinque (1999). For instance, the following projections correspond to Fortescue’s ‘degree’ adverbs (Cinque, p.106; Fortescue, pp. 276-277):

- (65) Asp_{prospective} (e.g. *almost*)

-ngajaq
 ‘almost’

- (66) Asp_{SgCompletive(I)}, Asp_{PICompletive} (e.g. *tutto*), and Asp_{SgCompletive(II)} (e.g. *completely*)

²⁶ Fortescue also includes a class of ‘phase of completion’ adverbs, however many of these affixes subsume negation and aspect. I assume that these elements correspond to NEG and ASP heads in the syntax.

-(r)luinnar 'completely'	-qqig 'completely'	-vig, -vissur 'really/completely'
-----------------------------	-----------------------	--------------------------------------

Similarly, the following projections seem to encompass all the 'frequency and duration' adverbs in Fortescue's list.

(67) Asp_{habitual} (e.g. *usually*) and Asp_{frequentative(I)} (e.g. *often*)

-(s)ar(i) 'repetition/habit'	-gajug 'often/habitually'	-kalua(ar) 'often/habitually'
-saannar 'often/all the time'	-sar 'repetition/habit'	

(68) Asp_{repetitive(I)} (e.g. *again*)

-(sur) 'repeated action'	-qattar 'again and again'	-qqig 'again/further'
-----------------------------	------------------------------	--------------------------

(69) Asp_{continuative} (e.g. *still*)

-gallar 'still/for the time being'	-juar 'continuously/still'
---------------------------------------	-------------------------------

(70) Asp_{perfect(?)} (e.g. *always*)

-(tu)innar 'always/continually'	-juaannar 'always/continually'
------------------------------------	-----------------------------------

(71) Asp_{durative} (e.g. *briefly*)

-llatsiar 'for a short while'	-mmirsur 'for some time'
----------------------------------	-----------------------------

Notably absent from Fortescue's extensive list are adverbs describing emotion (e.g. *happily, nervously, jealously, etc.*), adverbs describing an opinion of the situation (e.g. *interestingly, luckily*), and adverbs referring to specific points in time (e.g. *yesterday, now*). Many such concepts appear instead to employ the derived (i.e. nominalised) adjectives discussed earlier, while others appear to be inherently nominal (e.g. *today*,

here, now, etc.). Once again, there is no principled reason why such a consistent class of adverbs should all be marked as affixes in the lexicon. Instead, I suggest that such adverbs correspond to the functional projections proposed by Cinque, while other perhaps less functional adverbs must be derived from nouns and verbs. This analysis strongly predicts that no bound adjective or adverb will be highly contentful.

Further evidence against labelling individual morphemes as affixes comes from Artic Quebec Inuktitut. Dorais (1988) notes that in this dialect speakers can optionally omit contextually salient bases (p.10):

(72) -juujar-tuq
-seem-DEC.3SG
'looks like'

(73) -jja-ngit-tuq
-really-NEG-DEC.3SG
'does not really'

Similarly, he observes that endings (e.g. mood/agreement) can also be dropped (p.11):

(74) qanui-nngi-
have.something.wrong-NEG-
'doesn't matter'

Such data are problematic for an affixation account since the morphemes in (72)-(73) are in their expected position, despite not having a stem on which to attach. However, they can be analysed simply as cases of ellipsis in the phase-based account. Dialects which allow such forms as (72)-(74) permit ellipsis, while other dialects do not.

In sum, an analysis whereby lexical items were haphazardly marked affixal would fail to capture the generalisation that membership in the sets of light verbs, attributive adjectives, and true adverbs is highly predictable and that they form strongly related semantic classes. Instead, it is the semantic properties of each set which determine its

subcategorisation properties (i.e. noun-incorporating verbs select bare NPs, predicate incorporating verbs select for either vP or TP, purely attributive adjectives select for bare NPs, and true adverbs can select for an unknown number of projections inside CP).

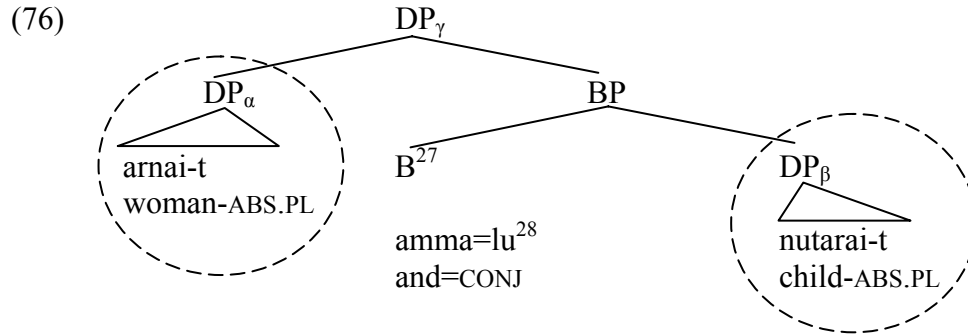
3.7. Conjunctions, Pronouns, Demonstratives, and Wh-words

Further evidence that words in Inuktitut are mapped from CP and DP phases comes from the phonological behaviour of conjunctions, pronouns, demonstratives, and wh-words.

Given the analysis that CPs and DPs form words, we might expect to find conjunctions affixed onto clauses and arguments, since they alone should not be able to form a phase. However conjunctions surface as separate words, as in (75):

- (75) arnai-t amma=lu nutarai-t sanangua-liu-lauq-tuit
 woman-ABS.PL and=CONJ child-ABS.PL carving-make-DIST.PAST-DEC.3PL
 ‘the women and the children made carvings.’

While each conjunct consists of a DP, the entire expression is also a DP (see Munn 1993). After each conjunct is spelt-out, the conjoining element (i.e. ‘and’) is the only element unique to the larger DP phase, and thus is realised alone as a separate word, as schematised in (76) below:



A similar analysis seems appropriate for conjoined CPs. It should be noted that VPs and APs do not appear able to be conjoined.

Finally, we must account for the phonological behaviour of demonstratives, wh-words, and pronouns. I claim that these too are nominal, allowing the same case and number morphology as other nominals (as in (77)-(79) below). Furthermore, they can act as arguments (as in (80)) and are able to host derivational morphology (as shown in (81)):

- (77) una inuk²⁹ (Sadock 2003, West Greenlandic)
 this.one(ABS) person(ABS)
 ‘this person’
- (78) uva-ptun pi-ung (Lowe 1985, Siglit)
 1SG.PRONOUN-SIMILARIS do-IMPER.2SG/3SG
 ‘Do it like me!’
- (79) su-min qai-vit (Lowe 1985, Siglit)
 who-ABLAT come-INTER.2SG
 ‘Where did you come from?’
- (80) sana-lauq-tara una (author’s notes)
 make-DIST.PAST-DEC.1SG.3SG this.one(ABS)
 ‘I made this one’

²⁷ It might also be the case that the conjunction is internally complex, possibly even constituting a DP.

²⁸ I ignore the enclitic *lu* which on its own also seems to possess the meaning of ‘and’/‘also’. This clitic can also occur on both conjuncts. The following examples are from Harper (1979).

- a) uvanga=lu
 I.SG(ABS)=lu
 ‘Me too.’
- b) arnar=lu anguti=lu
 woman=lu man=lu
 ‘a man and a woman’

²⁹ When acting as modifiers, demonstratives appear to be in apposition with the arguments they modify.

- (81) taimna-aluk (Lowe 1984, Siglit)
 that.one(ABS)-old/former
 ‘That one from a long time ago’

These examples show that when demonstratives, pronouns, and wh-words bear case and number, they form separate phonological words.

However, when stripped of case and number morphology, wh-words can also undergo incorporation, as illustrated in Sadock (1980) (p.312):

- (82) su-mik neri-vit (West Greenlandic)
 what-INST eat-INTERR.2SG
 ‘What did you eat?’

- (83) su-tor-pit (West Greenlandic)
 what-eat-INTERR.2SG
 ‘What did you eat?’

Again, with case and number, the wh-word in (82) is a separate phonological word, while without case and number morphology a wh-word must incorporate, as in (83).³⁰

As illustrated earlier for nouns, the phonological behaviour of pronouns, demonstratives, and wh-words appears to correlate with morphological exponents of the DP layer. Furthermore, the phonological independence of conjunctions is predicted under my analysis.

3.8. Review of Evidence for Phase-Based Wordhood

In sum, constituents smaller than DPs and CPs (such as incorporated nouns, incorporated predicates, purely attributive adjectives, and what I have called true adverbs) appear inside the DPs and CPs that contain them, while constituents which

³⁰ This suggests that wh-words (in this dialect, at least) are nouns. It may be that there is dialectal variation as to whether wh-words, pronouns, and demonstratives can incorporate. My analysis might attribute this to their category as either nouns or determiners. In dialects where they can undergo incorporation they are nouns (see Panagiotidis 2002 for an analysis of Japanese and Thai pronouns as nouns), while in other dialects where they do not incorporate they correspond to entire DPs or intransitive determiners.

correspond to DPs and CPs (such as free nouns, main verbs, verb-like adjectives, and derived adverbs) appear as separate words. Furthermore, no phonological word appears to correspond to a constituent larger than a DP or a CP; (i) noun-incorporating verbs take complements smaller than DP, (ii) predicate incorporating verbs take complements smaller than CP, (iii) attributive adjectives take complements smaller than DP, and (iv) true adverbs take complements smaller than CP.

The phonological behaviour, corresponding syntactic structure, and evidence for that the structure for each of the lexical categories discussed in this section is summarised in the table below. The shaded rows indicate phonologically free elements (again, corresponding to DPs or CPs) while the unshaded rows indicate smaller constituents which must appear inside larger CP/DP words.:

Fig. 1

Element	Phonological Word Status	Evidence for Constituency	Syntax
nouns (open class)	free from verbal complexes	case; number	$\begin{array}{c} \text{VP}^{31} \\ \wedge \\ [\text{DP}]_{\omega} \text{ [V... } \omega \end{array}$
incorporated (object) nouns (selected by a closed class of v^0)	part of a verbal complex	no case; no number	$\begin{array}{c} \text{vP} \\ \wedge \\ [\text{NP} \text{ v... } \omega \end{array}$
verbs (open class)	can be the sole verbal element in a verbal complex	mood; use as sole predicate	$\begin{array}{c} \text{CP} \\ \wedge \\ [\text{V...}]_{\omega} \end{array}$
'predicate incorporating' verbs (closed class)	cannot be the sole verbal element in a verbal complex	no mood on lower predicate (TP/vP)	$\begin{array}{c} \text{vP} \\ \wedge \\ [\text{TP/vP} \text{ v}^0 \text{... } \omega \end{array}$
verb-like adjectives (open class)	free from nouns/verbs	can be used as an argument; can bear case	$\begin{array}{c} \text{DP}_{\text{MODIFIER}} \\ \wedge \\ [\text{AP...}]_{\omega} \end{array}$
		can be used as the main verb; can bear tense, mood	$\begin{array}{c} \text{CP} \\ \wedge \\ [\text{AP...}]_{\omega} \end{array}$
attributive adjectives (closed class)	part of the modified NP	no case, no number; no use as arg./pred.; no tense, mood	$\begin{array}{c} \text{NP/AP}^{32} \\ \wedge \\ [\text{N(P)} \text{ A(P)... } \omega \end{array}$
'derived' adverbs (open class)	free from nouns/verbs	case morphology	$\begin{array}{c} \text{DP}_{\text{ADVERBIAL}} \\ \wedge \\ [\text{XP}^{33} \text{...}]_{\omega} \end{array}$
'true' adverbs (closed class)	part of the verbal complex	no case	$\begin{array}{c} \text{XP/AdvP}^{20} \\ \wedge \\ [\text{X(P)} \text{ Adv(P)... } \omega \end{array}$

³¹ To ease comparison with the data, I use right-headed structures.

³² Whether adjectives and adverbs are specifiers of the elements they modify or whether they instead head projections which dominate the elements they modify is beyond the scope of this paper.

³³ These adverbs can be derived from various categories (see examples (56)-(57) above).

As illustrated in Fig. 1, there is no evidence of phonological words containing more than a single CP or DP, as schematised in (84) below.

$$(84) \quad *[[\dots]_{CP/DP\dots}]_{XP=\omega}$$

Instead, we have observed a consistent correlation between DP and CP constituents and words in the language.

I have argued that the semantic unity of the closed classes of (i) noun-incorporating verbs, (ii) predicate incorporating verbs, (iii) attributive adjectives, and (iv) true adverbs conflicts with an account which posits that affixal properties are diacritic (i.e. properties of individual lexical items). Instead, their apparent affixal status is predicted by their selectional properties and the theory presented in §2.

Similarly, the wordhood of conjunctions, pronouns, demonstratives, and wh-words, all of which are functional, is evidence against an account which proposes a PF constraint in the language requiring that phonological words contain lexical roots (see Johns 2005 for wh-words as roots). Once again, the phonological independence of these functional items is predicted under my analysis.

4. Alternative Accounts of Inuktitut Morphology

In this section I examine previous analyses of Inuktitut ‘morphology’. I begin with Fortescue (1980).

4.1. Fortescue (1980)

In order to derive the morphology of West Greenlandic, Fortescue (1980) presents a set of recursive derivation rules. The seven word-structure rules are as follows³⁴

(p.261):

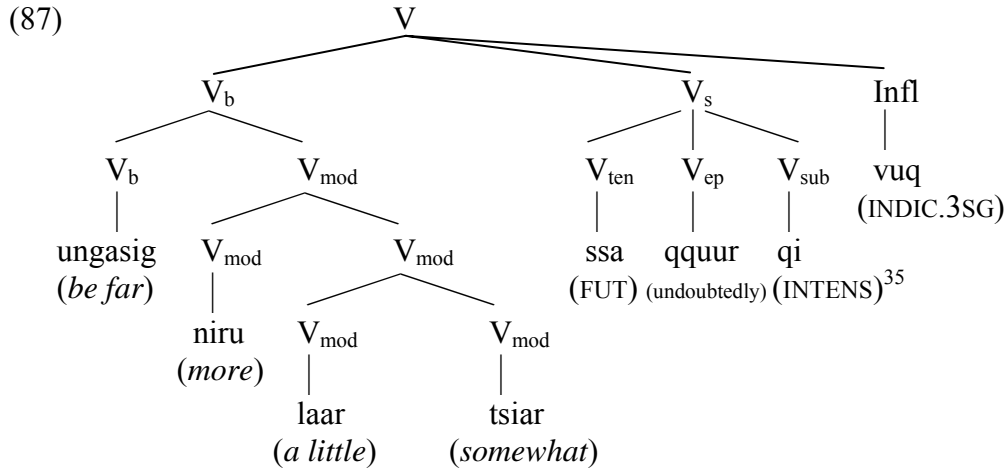
- (85)
- a. $V \rightarrow V_b (+ V_s) + \text{Infl}$
 - b. $V_b \rightarrow \left\{ \begin{array}{l} V_b \\ N_b + V_r \end{array} \right\} (+ V_e) (+ V_{\text{neg}}) (+ V_{\text{mod}})$
 - c. $V_s \rightarrow (V_{\text{ten}}) (+ V_{\text{ep}}) \left\{ \begin{array}{l} (+ V_{\text{neg}}) (+ V_{\text{sub}}) \\ (+ V_{\text{conj}}) \end{array} \right\}$
 - d. $V_{\text{mod}} \rightarrow V_{\text{mod}} (+ V_{\text{mod}})$
 - e. $V_{\text{sub}} \rightarrow V_{\text{sub}} (+ V_{\text{sub}})$
 - f. $N_b \rightarrow \left\{ \begin{array}{l} N_b \\ V_b + N_r \end{array} \right\} (+ N_e) (+ N_{\text{mod}})$
 - g. $N_{\text{mod}} \rightarrow N_{\text{mod}} (+ N_{\text{mod}})$

In addition to these rules Fortescue posits a “global scope rule” whereby “each successive affix simply modifies what is immediately to its left, that is, is superordinate in scope to everything to its left within the word” (p.260). Thus, a ‘verb’ such as (86) below (p.261-262) can be derived by first applying rule (71a) (to obtain a verbal base, a domain of sentential affixes, and inflection), followed by (71b) (to add modifiers), rule (71d) (to obtain recursive modification), and finally (71c) (in order to add tense, an epistemic affix, and a subjective/narrative affix to the sentential domain).

³⁴ Fortescue’s abbreviations include: V_b verbal base, N_b nominal base, V_s sentential verbal affix, V_r verbalizing affix, N_r nominalizing affix, V_e verbal base-expanding affix, N_e nominal base-expanding affix, V_{neg} negation, V_{mod} verbal modifier, N_{mod} nominal modifier, V_{ten} tense, V_{ep} affix of epistemic modality, V_{conj} conjunctive affix, and V_{sub} affix of subjective/narrative coloration.

- (86) ungasinnirulaatsiassaquuqaaq
ungasig-niru-laar-tsiar-ssa-qquur-qi-vuq
be.far-more-a.little-somewhat-FUT-undoubtedly-INTENS-INDIC.3SG
‘It will undoubtedly be somewhat further off.’

The rules employed to create the above ‘verb’ also allow Fortescue to generate the hierarchical structure in (87) below (p.262):



Notice that the specific order of verbal modifiers in this example is determined by the global scope rule; *tsiar* ‘somewhat’ modifies *laar* ‘a little’, which in turn modifies *niru* ‘more’.

Fortescue admits that his rules over-generate, permitting combinations of affixes that do not occur, such as an epistemic affix (e.g. *qquur* ‘undoubtedly’) with interrogative mood. In addition to the rules outlined above, he concludes that “semantic filtering” is required to rule out these combinations. While I do not consider this filtering mechanism in detail, I assume it would resemble LF in minimalist theory.

While Fortescue maintains that the system of “internal syntax” (i.e. morphology) that he is analysing must be treated separately from “external syntax” (i.e. the syntax of isolating languages), the rules in (85), the global scope rule, and the semantic filtering he

³⁵ While Fortescue glosses this morpheme with an exclamation mark, in the text he refers to it as an intensifier.

suggests bear a striking resemblance to the syntax (and semantics) of more isolating languages. For instance, the global scope rule parallels the c-command and dominance relations, semantic filtering resembles selection and semantic composition at LF, and the rules in (71d), (71e), and (71g) simply allow recursive modification, a basic property of any language. Moreover, the remaining rules mirror the commonly assumed order of functional projections (cf. Cinque 1999). Consider rules (71a)-(71c). Together, they delineate the following maximal order (ignoring iteration and noun incorporation):

- (88) verbal base > verbal extender > negation > verbal modifier > tense > epistemic modality > negation > subjective/narrative > inflection

If we note that the set of ‘verbal extenders’ listed in Fortescue are in fact the types of (light) verbs discussed in §3.3 (e.g. *ar/ur* ‘say’, *tit* ‘think that’, etc.) and that both ‘verbal modifiers’ (e.g. *jaar* ‘early’, *juaannar* ‘always/continually’, etc.) and the set of ‘subjective/narrative’ affixes (e.g. *(s)innar* ‘just’) appear to correspond to different types of adverbs, the following picture begins to immerge:

- (89) V > V/v > Neg > Adv > T > Modal > Neg > Adv > Infl (mood/agreement)

This is clearly an inverted string of the contents of a clause (CP). Similarly, rule (71f) echoes the order of elements inside an NP, with ‘nominal extender’ corresponding to derivational morphemes³⁶ (e.g. *miu(q)* ‘inhabitant of’, which similarly has derivational equivalents in English: ‘(Vancouver)-ite’, ‘(Boston)-ian’, ‘(New York)-er’, etc.) and ‘nominal modifier’ being the class of attributive adjectives discussed in §3.4.

In sum, the data presented in Fortescue (1980) and the descriptive generalisations contained within his rules can be accounted for with minimalist syntax. Furthermore, as I

³⁶ Fabb (1988) argues that even derivational morphology can be accounted for in terms of selection, contra a level-ordering analysis. He notes that “level-ordering does no extra work in ruling out suffix pairs beyond that done by independently needed selectional restrictions” (p.538).

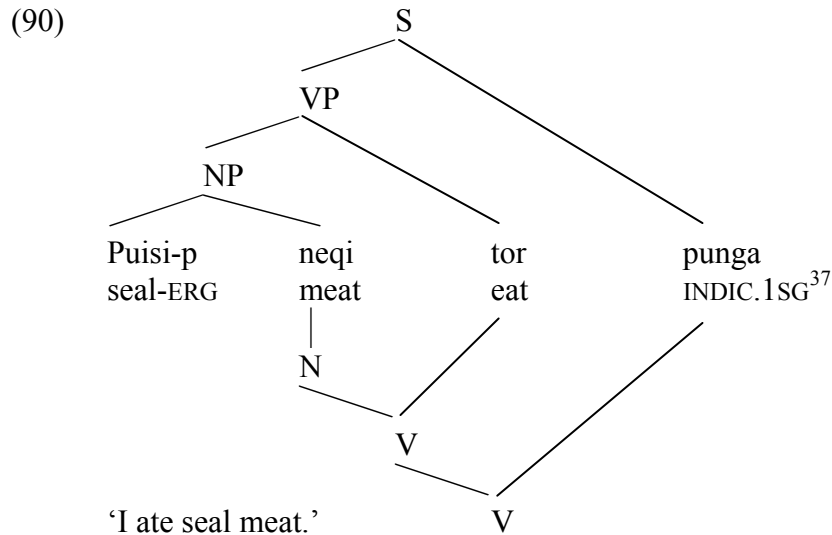
have argued in §§2-3, a theory in which phonological words correspond to phases can account for which constituents can and must appear inside a given word, something which is lacking in Fortescue's system. For example, in his system it is simply stipulated that tense (or negation, or modals, etc.) must appear within the verbal complex, while my system predicts that this is due to the fact that such items are not full CPs or DPs. In addition, the conclusion that such functional items do indeed correspond to the functional projections observed in other languages (e.g. CP, TP, vP, etc.) is favourable since it suggests that Inuktitut and more familiar languages employ the same generative mechanisms. It is not the case that Inuktitut employs a morphological component while more isolating languages employ a distinct syntactic component; instead, a single syntactic component derives both Inuktitut and isolating languages. Under Fortescue's model it's not clear what role (if any) syntax would have.

4.2. Sadock (1991)

In *Autolexical Syntax*, Sadock presents an alternative model of grammar in which syntax, morphology, and semantics are housed in separate modules which work simultaneously to generate utterances. While a full critique of this theory and Sadock's application of the theory to a number of languages and grammatical phenomena is beyond the scope of this paper, I will summarise the central claims of the theory as well as briefly discuss the theory's treatment of noun incorporation in West Greenlandic.

The theory of Autolexical Syntax aims to explain mismatches between syntax, morphology, and semantics, in particular the dual syntactic and morphological properties of cliticisation, noun incorporation, and affixation. Sadock proposes that strings possess not only syntactic structure, but also distinct hierarchical structures in separate modules

of morphology and semantics. Accordingly, syntactic constituents need not necessarily correspond to morphological or semantic constituents, and vice versa. To illustrate this redundancy and modularity, Sadock uses dual structures such as (90) below (p.x):



Thus, while syntactically (as represented by the higher tree) the possessor *puisip* 'seal's' modifies *neqi* 'meat' and the latter is also the object of the verb *tor* 'eat', morphologically (as illustrated in the lower structure) *neqi*, *tor*, and the inflectional ending form a 'verb' and *puisip* is a separate word. Sadock argues that a theory employing separate modules can account such discrepancies between syntax and morphology.

In his examination of noun incorporation, Sadock demonstrates that West Greenlandic differs from a language like Mohawk in which incorporation appears to be purely morphological. Instead, he argues that noun incorporation in West Greenlandic (and other languages) also displays syntactic properties, such as productivity³⁸ (contra the argument that noun incorporation is lexicalised), referentiality (introducing discourse referents and even proper names), the complementary distribution of objects and

³⁷ Morphemic gloss and translation added.

³⁸ Sadock numbers the possible grammatical combinations of nouns, incorporating verbs, nominal and verbal modifiers in West Greenlandic at approximately two and half billion (p.84).

incorporated objects, and the stranding of object modifiers. Sadock concludes that West Greenlandic noun incorporation necessitates a dual analysis to reconcile these syntactic properties with the surface morphology.

However, it is not clear that noun incorporation provides evidence for a separate morphological component³⁹. As I have argued, the surface phonological position of incorporates, and a number of other constituents, is predictable from their syntax. Positing a distinct morphological module with its own set of rules is unnecessary. Furthermore, my analysis simultaneously accounts for the position of incorporated nouns, purely attributive adjectives, predicate incorporating verbs, true adverbs, and a number of functional projections. Under Sadock's account each of these phenomena would require a separate treatment, or at the very least affixal properties marked on all of the relevant lexical⁴⁰ and functional items, which would obscure the observation that they each involve a predictable set of elements and a predictable structure (i.e. structures smaller than DP or CP).

In sum, the perceived mismatches between syntax and morphology in noun incorporation are better analysed as differences between the syntax and phonology of West Greenlandic as compared with more analytic languages. First, West Greenlandic (and all other Inuit dialects) possesses a set of light verbs which select bare noun phrases (although these may contain modifiers). Second, these languages apply a different level

³⁹ Equally, it is not clear that discrepancies between the syntactic position and the surface phonological position of clitics or affixes constitute evidence for a morphological module. Clitics might well be repositioned for purely phonological reasons. Also, many other morphology/syntax mismatches can be captured with a late-insertion model, such as Distributed Morphology. For example, a single vocabulary item might correspond to two or more heads in the syntax or several vocabulary items might correspond to the features of a single head.

⁴⁰ I leave open the question of whether light noun-incorporating verbs are technically lexical or functional. Johns (2005) provides evidence for the latter option. The important points for the present analysis are that these verbs form a salient class and (unlike other verbs) select bare NPs.

of the prosodic hierarchy to syntactic structure (i.e. phases are mapped to phonological words, as opposed to phonological phrases, as may be the case in other languages).

Essentially, Sadock’s theory does not offer a wider answer as to why certain constituents must form words, while other cannot. The mismatches are simply stipulated.

4.3. *de Reuse (1994)*

De Reuse (1994) examines the opposite end of the spectrum of the Eskimo branch of Eskimo-Aleut, analysing Central Siberian Yupik (CSY). Like Fortescue he posits a distinction between “external syntax” and “internal syntax” and formulates a word structure grammar to account for the latter. Furthermore, he adopts Sadock’s theory of Autolexical Syntax, thereby situating the morphological analysis below in a separate module. The following rules are intended to explain the order of morphemes in polysynthetic verbs (p.95)⁴¹:

- (91)
- a. V → Vbase⁻⁴ INFL⁻¹
 - b. Vbase⁻⁴ → Vbase⁻³ (NEG)
 - c. Vbase⁻³ → Vbase⁻² (CLASS-FREE)
 - d. Vbase⁻² → Vbase⁻¹ (PreAUX)
 - e. Vbase⁻¹ → Vbase (PreAUXvce)
 - f. PreAUX → PreAUX $\left\{ \begin{array}{l} \text{(PreAUXvce)} \\ \text{(PreAUX)} \end{array} \right\}$
 - g. NEG → NEG (CLASS-FREE)
 - h. CLASS-FREE → CLASS-FREE (CLASS-FREE)

⁴¹ The various Vbase levels (i.e. -4, -3, -2, -1) are needed by in order to allow subparts of these ‘verbs’ to be negated, be modified by an adverb, or contain additional verbal material. As such, these levels appear to mirror X-bar theory as well as syntactic projections such as vP.

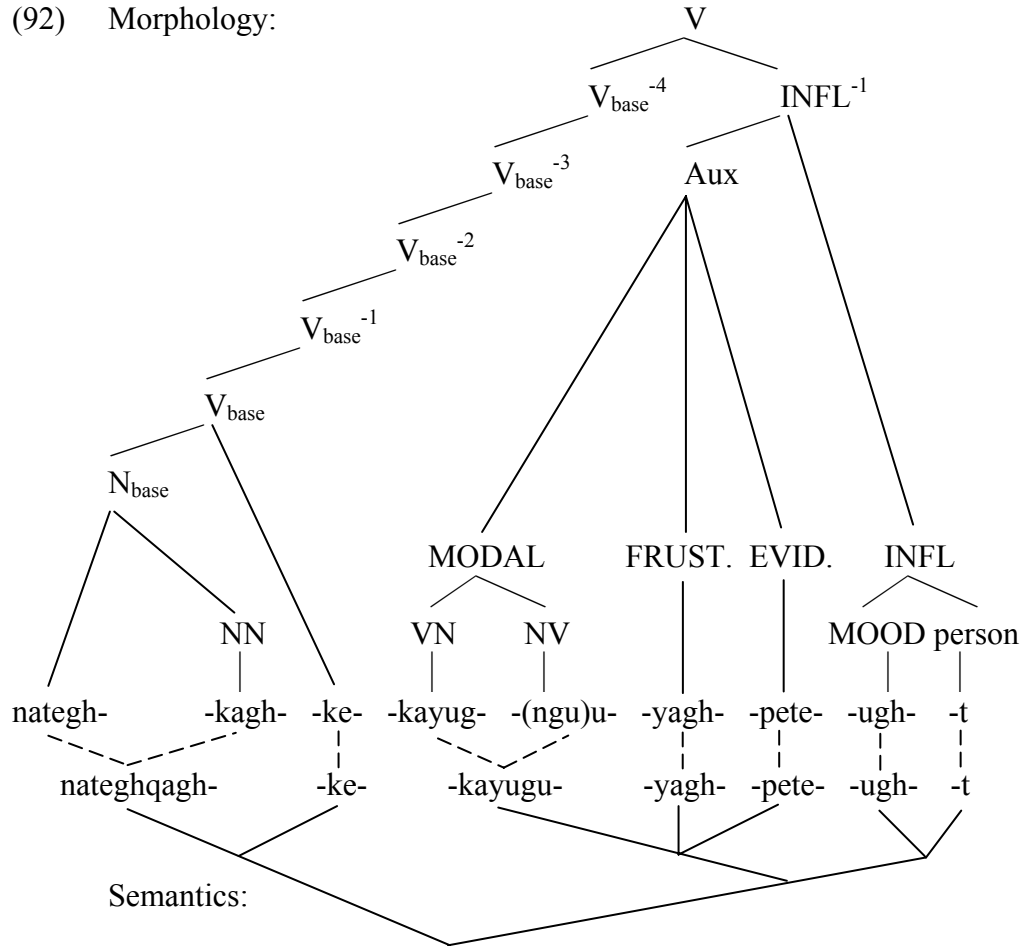
- i. INFL⁻¹ → (AUX) INFL
- j. AUX → (MODAL) (PST) (PROG) $\left\{ \begin{array}{l} \text{(FUT)} \quad \text{(EVID)} \\ \text{(FRUSTR)} \text{ (IMPUT)} \\ \text{(NEG)} \end{array} \right\}$
- k. IMPUTATIVE → IMPUTATIVE (MODAL) (PST) (PROG)
- l. INFL → MOOD Person markers

Notably, in order to improve upon the system proposed by Fortescue, de Reuse distinguishes between more types of postbases (the traditional term for such affixes in the literature of Inuit languages) than Fortescue, despite the fact that CSY has a much smaller inventory of verbal postbases (only 197 according to de Reuse, p.77).

While many of the categories above are self-explanatory, PreAUX and CLASS-FREE need further explanation. The PreAUX postbase type includes elements dealing with transitivity (e.g. causativisation), copular verbs (e.g. be, become, etc.), light verbs such as those in earlier sections on noun and predicate incorporation (e.g. want, try, etc.), adverbs (of degree, speed, difficulty, etc.), and aspect (see p.136-137 for a complete list). According to de Reuse, the set of CLASS-FREE postbases “all refer to a qualitative or quantitative judgement of the speaker”.

De Reuse employs the following tree to provide an illustration of the application of some of the rules in (91) above to create a word:

(92) Morphology:



nateghqaqegkayuguyaghpetut
 nateghqaqagh-ke-kayugu-yagh-pete-ut⁴²
 sole.of.skin.boot-have.as.one's-be.able.to-in.vain-evidently-INDIC.3PL⁴³
 'they were used for the soles of skin boots'

The upper structure in (92) corresponds to the word formation rules, while the lower structure represents de Reuse's interpretation of the combination of elements in the semantic module.

As was observed with respect to Fortescue's analysis, the hierarchy of elements described by these rules strongly mirrors that of clauses in more analytic languages.

⁴² De Reuse omits the derivational morphology from his gloss.

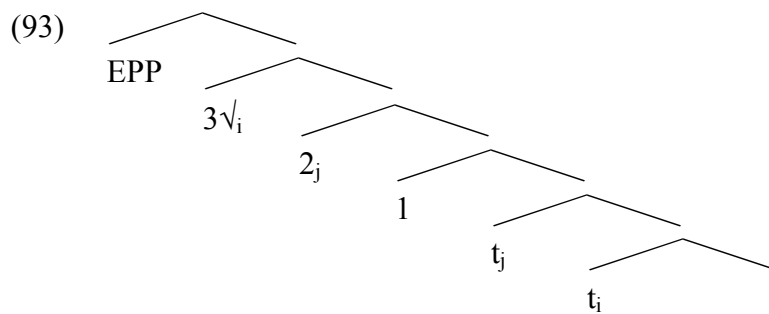
⁴³ Verbal and nominal category markers removed from glosses. These categories are predictable from the meaning of the morphemes (i.e. *pete* 'evidently' modifies a verb, *ke* 'have as one's' takes a noun, *kayugu* 'be able to' takes a verb, and *yagh* 'in vain' modifies a verb). Also, the inflectional abbreviations have been modified to be consistent with the rest of the paper.

While rules (c), (h), (g), and to some extent (d)-(f), deal with the position of different types of adverbs, Cinque (1999) also demonstrates the need for a number of positions for different classes of adverbs cross-linguistically throughout the clause. Furthermore, as illustrated in (92), the position of modals, evidentials, mood, and adverbs at the right edge of the structure is not a coincidence. The rules in (91) essentially capture an articulated CP domain (i.e. rules (a), (i)-(l)), recursive modification by adverbs (i.e. rules (c), (g), (h)), predicate negation (i.e. rule (b)), and predicate incorporating verbs (i.e. rules (d)-(f)), all of which are amenable to a purely syntactic analysis. Moreover, like Fortescue's account, de Reuse's analysis fails to explain why such a set of rules should exist. De Reuse provides no reason why certain sets of elements form words while other combinations are impossible (e.g. non-compositional or template-like combinations). Once again, the analysis proposed in §2-3 has the advantage of explaining why word classes with predictable membership consistently appear word-internally.

4.4. Johns (2005)

The account of morpheme order in Johns (2005) diverges significantly from those proposed by Fortescue, Sadock, and de Reuse. Johns observes the complementary distribution of incorporated nouns and lexical verbs as well as their position at the left edge of the verbal complex. Having shown that noun-incorporating verbs are light verbs, and thus functional, she argues that the position of both incorporated nouns and lexical verbs at the left edge of words is due to an EPP root feature which attracts lexical material to the left periphery. Johns draws parallels between this analysis and the requirement for overt subjects (e.g. as in English) and predicate fronting analyses of VOS languages.

To further explain the fact that all words in Inuktitut appear to begin with a single root, Johns proposes that the EPP root feature is present in all words. In addition, she employs root movement to explain the inverted morpheme order in Inuktitut, suggesting that “a strong relation between the selector (head) and selectee (complement)” (p.30) in Inuktitut causes first the noun-incorporating light verb to tuck in below the displaced noun, followed by the next highest head, and so on until the entire word has been inverted. The resulting structure is replicated in (93) below (Johns 2005, p.30):



Johns also points to the distribution of a dummy root as evidence for a root movement analysis. The dummy root *pi* ‘it/thing/do/get’ appears with noun and predicate incorporating verbs when a real noun or verb is absent:

(94) pi-si-juq (Johns, 2005, Qamani’tuarmitut)
 dummy-buy-DEC.3SG⁴⁴
 ‘He bought something.’

(95) pi-ji (Spalding, 1980)
 dummy-AGENT.NOM
 ‘the one who does or gets s.t.’ (lit. do-er)

According to Johns, examples (94)-(95) above demonstrate the requirement that words begin with a root.

While Johns’ analysis is able to construct Inuktitut words within syntax, dispensing with the powerful morphological modules of the previous analyses in this

⁴⁴ Gloss modified to be consistent with the abbreviations used in this paper.

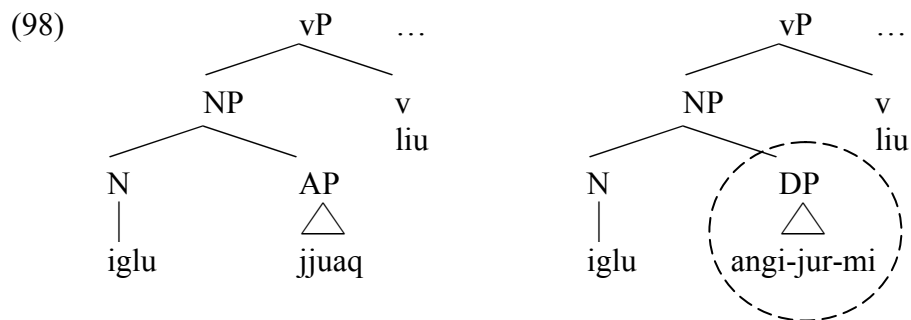
section, I argue against a root-movement analysis in favour of a base-generated order based on the following points.

First, if only verbal complexes (i.e. clauses) were inverted in Inuktitut, an EPP root feature would be a plausible solution, akin to an overt subject requirement or predicate fronting (as mentioned above). However, it is not clear why EPP features would be present in both clauses (in the CP domain) as well as arguments (in the DP domain). Why should CPs and DPs have this feature in common?

Another potential problem involves how a root movement analysis would presumably treat adjectives (although this topic is beyond the scope of her paper, which deals primarily with noun incorporation). While the purely modifying class of adjectives appear adjacent to the noun, even when incorporated, as in (96) (repeated from (47)), verb-like adjectives appear as separate words, as in (43):

- (96) [iglu-jjuaq]-liu-lauq-tunga (Igloodik dialect)
 [house-big]-make-DIST.PAST-DEC.1SG
 ‘I made a big house.’
- (97) angi-jur-mi iglu-liu-lauq-tunga
 big-DEC-OBL.SG house-make-DIST.PAST-DEC.1SG
 ‘I made a big house’.

This position of adjectives is captured in my analysis, even if both types of adjectives bear the same structural relationship to the noun, as illustrated below:



However, it is not clear in the root movement analysis why attributive adjectives could not be stranded. At the very least, it would be necessary to posit that all purely attributive adjectives are heads, thereby participating in tucking-in, to ensure that they participate in root movement.⁴⁵

Finally, while Johns' account encompasses morpheme order, it does not connect noun incorporation to the other morphological phenomena that contribute to polysynthesis in Inuktitut; predicate incorporation, attributive adjectives, true adverbs, and functional heads such as negation.

While Johns' analysis does explain the presence of the dummy root, I propose an alternative explanation. Since the dummy root always corresponds to the most deeply embedded verb or an object noun, it may simply be that Inuktitut does not permit verb or object noun ellipsis. Compare the following sentences:

- (99) Richard bought a CD but John did not.
- (100) *Richard bought a CD but John not.
- (101) Richard bought a dog and John bought one too.
- (102) *Richard bought a dog and John bought too.

These sentences demonstrate that verb and noun ellipsis is not unconstrained in English. It may be that similar constraints are operative in Inuktitut, preventing ellipsis of a verb or object noun. Instead, the pro-form *pi* serves the same function as *do* and *one* in English.

To summarise, while Johns' (2005) provides a purely syntactic account of Inuktitut morpheme order and noun incorporation, I have argued that my analysis provides a more parsimonious account of the various polysynthetic phenomena.

⁴⁵ A similar assumption would likely be required for adverbs if inversion is motivated by relationships between selecting heads and complements.

5. Conclusion

In this paper I have proposed a phase-based analysis of wordhood in Inuktitut, arguing that CP and DP phases are mapped to phonological words at PF. This treatment of words explains the behaviour of nouns, adjectives, verbs, and functional items, with constituents bearing the morphology of CPs and DPs surfacing as independent phonological words, while smaller structures cannot do so. The predictable nature of noun and predicate incorporating verbs, attributive adjectives, and true adverbs was used as evidence against marking affixal properties in the lexicon.

In addition, I have proposed one possibility for deriving the inverted order of morphemes, arguing for a parametric Linear Correspondence Axiom which can map asymmetric c-command to either a precedence relation or a subsequence relation. Arguments in Kayne (1994) against such a possibility were shown to be problematic.

To repeat the goals set out in §1.1, I have been able to formulate an analysis which (A) explains the position of morphemes within words (a consequence of their status as syntactic constituents and the parametric LCA), (B) explains why only certain types of morphemes can appear word-internally (a result of PF assigning phonological word boundaries to syntactically determined⁴⁶ phases). It appears that Inuktitut does not require its morphological component to be any more powerful than that of a more analytic language. If derivational morphology in English or French is shown to require a separate morphological component, such a component is probably necessary for Inuktitut. However, if derivational morphology in such languages can be accommodated within the

⁴⁶ Phases are syntactically determined since it is the properties of the phase heads in the syntax which trigger spellout (e.g. *v* versus *v** in Chomsky 2006).

syntax (as suggested by proponents of Distributed Morphology), the same should be possible in Inuktitut.

Appendix A: Correspondences between West Greenlandic Attributive Adjectives and French Prenominal Adjectives⁴⁷

INUKTITUT	ENGLISH	FRENCH PRENOMINAL ADJECTIVE
-(<i>pa</i>)luit	‘a few, group of’	‘quelques’
- <i>araq</i>	‘small’	‘petit’
- <i>kanniq</i>	‘almost, more or less’	‘presque’
- <i>kkajaaq</i>	‘rather big’	‘plutôt grand’
- <i>kullak</i>	‘rather big, clumsy’	‘plutôt grand’
- <i>innaq</i>	‘only’	‘seul’
- <i>kuluuq</i>	‘big’	‘grand’
- <i>ngaaq</i>	‘considerable, large’	‘considérable, grand’
- <i>ngajak</i>	‘almost’	‘presque’
- <i>nnaq/nnaaq</i>	‘main, favourite’	‘principal’
- <i>nnguaq</i>	‘small, dear’	‘petit, cher’
- <i>nnguakkuluk</i>	‘poor old’	‘pauvre vieux’
- <i>nnguujuk</i>	‘little’	‘petit’
-(<i>r</i>) <i>paat/passuit</i>	‘many’	‘plusieurs’
- <i>pajuk/piluk</i>	‘bad’	‘mauvais’
- <i>palaaq</i>	‘bad’	‘mauvais’
- <i>palaarsuaq</i>	‘damn’	‘maudit’
-(<i>r</i>) <i>piaq</i>	‘real’	‘vrai’
- <i>rujuk(suaq)</i>	‘bad, damn’	‘mauvais, maudit’
- <i>ralak/rajak</i>	‘bad, miserable’	‘mauvais, misérable’
- <i>ralaannguaq</i>	‘tiny’	‘minuscule’
- <i>rujuk</i>	‘big, bad’	‘grand, mauvais’
- <i>rujussuaq</i>	‘enormous’	‘énorme’
- <i>ssaq</i>	‘future’	‘futur’
-(<i>r</i>) <i>suaq</i>	‘big, bad’	‘grand, mauvais’
-(<i>r</i>) <i>suannguaq</i>	‘naughty’	‘vilain’
- <i>taa</i> q	‘new’	‘nouveau’
- <i>tsialak</i>	‘good, nice’	‘bon, gentil’
- <i>tsiannguaq</i>	‘good little, usable’	‘bon petit’
- <i>tuaq</i>	‘only’	‘seul’
- <i>tuqaq</i>	‘old’	‘vieux’
- <i>ugaluaq</i>	‘previous, deceased’	‘ancien’
- <i>vik</i>	‘real’	‘vrai’
- <i>vvaarik</i>	‘particularly good’	‘particulièrement bon’

⁴⁷ Based on Fortescue (1980)’s list of “nominal modifiers”.

References

- Bouchard, D. 2002. *Adjectives, Number, and Interfaces: Why Languages Vary*. Amsterdam: Elsevier.
- Chomsky, N. 2006. Approaching UG from below. ms.
- 2005. On phases. ms.
- 2000. Minimalist Inquiries: The Framework. In *Step by Step: Essays in Minimalist Syntax in Honor of Howard Lasnik*, ed. by Robert Martin, David Michaels and Juan Uriagereka, 89–155. Cambridge, MA: MIT Press.
- 1999. Derivation by Phase. *MIT Occasional Papers in Linguistics 18. MIT Working Papers in Linguistics*.
- 1995. *The Minimalist Program*. Cambridge, MA: MIT Press.
- Cinque, G. 1999. *Adverbs and functional heads: a cross-linguistic perspective*. New York: Oxford University Press.
- Compton, R. 2004. On quantifiers and bare nouns in Inuktitut. *Toronto Working Papers in Linguistics*, 23.1.
- Compton, R. and C. M. Pittman. 2006. Affixhood is syntactically determined in Inuktitut. Presented at the *Workshop on Theoretical Morphology* Leipzig, Germany.
- de Reuse, W.J. 1994. *Siberian Yupik Eskimo: The Language and Its Contacts with Chukchi*. Salt Lake City: University of Utah Press.
- Dixon, R.M.W. 2006. Complement Clauses and Complementation Strategies in Typological Perspective. In *Complementation: A Cross-Linguistic Typology*, ed. by R.M.W. Dixon and A.Y. Aikhenvald. Oxford: Oxford University Press.
- 2004a. Adjective Classes in Typological Perspective. In *Adjective Classes*, eds. R.M.W. Dixon and A.Y. Aikhenvald. Oxford: Oxford University Press.
- 2004b. The Small Adjective Class in Jarawara. In *Adjective Classes*, eds. R.M.W. Dixon and A.Y. Aikhenvald. Oxford: Oxford University Press.
- Dorais, L.-J. 1988. *Tukilik: An Inuktitut Grammar for All*. Association Inuksiutiit Katimajit Inc. & Groupe d'études Inuit et circumpolaires (GETIC), Québec.
- Erteschik-Shir, N. & N. Strahov 2003. Focus structure architecture and P-syntax. *Lingua* 114.301–323.
- Fabb, N. 1988. English Suffixation is Constrained Only by Selectional Restrictions. *NLLT* 6.527–539.
- Fortescue, M. 1980. Affix Ordering in West Greenlandic Derivational Processes. *IJAL* 46.259–78.
- Fox, D. & D. Pesetsky. 2004. Cyclic Linearization of Syntactic Structure. *Theoretical Linguistics 31, Special issue on Object Shift in Scandinavian*, ed. Katalin É. Kiss.
- Grimshaw, M. & R.-A. Mester 1985. Complex Verb Formation in Eskimo. *NLLT* 3.1–19.
- Halle, M. & A. Marantz. 1993. Distributed Morphology and the Pieces of Inflection. In *The View from Building 20*, eds. Kenneth Hale and S. Jay Keyser, 111–176. Cambridge, MA: MIT Press.
- Harper, K. 1979. *Suffixes of the Eskimo dialects of Cumberland Peninsula and North Baffin Island*. Ottawa: National Museums of Canada.
- Johns, A. 2006. Agreement and Noun Incorporation. Presented at the NIK Conference, Université d'Ottawa.
- 2005. Restricting Noun Incorporation: Root Movement. ms.

- 2001. An Inclination towards Accusative. *Linguistica Atlantica* 23.127–144.
- 1999. On the lexical semantics of affixal ‘want’ in Inuktitut. *IJAL* 65.176–200.
- Kayne, R. 1994. *The Antisymmetry of Syntax*. Cambridge, MA: MIT Press.
- Larson, R.K. & F. Marušič. 2004. On Indefinite Pronoun Structures with APs: Reply to Kishimoto. *Linguistic Inquiry* 35.268–287.
- Lowe, R. 1985. *Siglit Inuvialuit Ilisarviksait* – Basic Siglit Inuvialuit Eskimo Grammar. Inuvik, NWT: Committee for Original Peoples Entitlement.
- 1984. *Siglit Inuvialuit Uqausiita Kipuktirutait* – Basic Siglit Inuvialuit Eskimo Dictionary. Inuvik, NWT: Committee for Original Peoples Entitlement.
- Marantz, A. 1997. No Escape From Syntax: Don’t Try Morphological Analysis in the Privacy of Your Own Lexicon. *University of Pennsylvania Working Papers in Linguistics*, 4.201–225.
- Mithun, M. 1999. *The Languages of North America*. UK: Cambridge University Press.
- Munn, A. 1993. *Topics in the syntax and semantics of coordinate structures*. Ph.D. dissertation, University of Maryland
- Pittman, C. to appear. Restructuring the Clause in Inuktitut. *WSCLA 11 Conference Proceedings*.
- Rice, K. 2000. *Morpheme Order and Semantic Scope*. New York: Cambridge University Press.
- Rizzi, L. 1997. The Fine Structure of the Left Periphery. In *Elements of Grammar*, ed. by Liliane Haegeman, 281–337. Dordrecht: Kluwer.
- Sadock, J. M. 2002. A Survey of Denominal Verbs in Eskimo-Aleut. Presented at SSILA Meeting, San Francisco.
- 2003. *A Grammar of Kalaallisut*. Muenchen, Germany: LINCOM Europa,
- 1991. *Autolexical Syntax*. Chicago: University of Chicago Press
- 1980. Noun Incorporation in Greenlandic: A Case of Syntactic Word Formation. *Language* 56.300–319.
- Sherkina-Lieber, M. 2004. Focus fronting in wh-questions in Inuktitut. *TWPL* 23.119–132.
- Spalding, A. 1998. *A Multi-Dialectal Outline Dictionary (with an Aivilingmiutaaq Base)*. Iqaluit, Nunavut: Nunavut Arctic College.
- Svenonius, P. 2003. On the Edge. In *Peripheries: Syntactic Edges and their Effects*, ed. by David Adger, Cécile de Cat, and George Tsoulas, 259–287. Dordrecht: Kluwer.
- Teyssier, J. 1968. Notes on the Syntax of the Adjective in Modern English. *Lingua* 20.225–249.
- Woodbury, A.C. & J. Sadock 1986. Affixal Verbs in Syntax: A Reply to Grimshaw and Mester. *NLLT* 4.229–244.