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RAISED POSSESSORS AND NOUN INCORPORATION IN WEST GREENLANDIC*

ABSTRACT. This paper addresses the question of whether noun incorporation is a syntactically base-generated or a syntactically derived construction. Focusing on so-called 'raised possessors' in West Greenlandic noun incorporating constructions and presenting some new data, I discuss some problems that arise if we use the derivational framework of Bittner and Hale (1996) to analyze them. I show that if we make the predication relations in noun incorporating constructions overt in their syntax and if we adopt a dynamic approach to semantics, a base-generated syntactic input enriched with a coindexation system is all that we need to arrive at an adequate semantic interpretation of these constructions.

1. INTRODUCTION

Much of the literature on noun incorporation (NI) focuses on whether it is a syntactic or a lexical phenomenon. Well-known proponents of the syntactic view are Sadock (1980, 1991), Baker (1988, 1996), Bittner (1994), and Bittner and Hale (1996). In line with its opponents (Mithun 1984, Di Sciullo and Williams 1987), Rosen (1989) argues that NI derives from word formation rules applying in the lexicon, that is, NI is regarded as a pre-syntactic construction. However, it has been convincingly shown

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in the work of Sadock that NI in West Greenlandic – the language also studied in this paper – is a productive and therefore a syntactic, rather than a lexicalized, phenomenon.[1] I will therefore address a related but nevertheless distinct question, namely, whether the semantic properties of NI in West Greenlandic point to its being a syntactically base-generated or a syntactically-derived construction. That is, I will ask whether morphological productivity in this polysynthetic language should be captured by generating morphologically complex word structures in the syntax directly, or by deriving morphologically complex words from underlying phrasal structures. My answer will be that if we adopt a dynamic approach to meaning, a base-generated analysis of NI provides an input that is adequate for the semantic interpretation of West Greenlandic NI constructions. Moreover, I will argue that the only surface syntactic relationship that exists between a NI verb, the incorporated noun, and its potential instrumental modifiers is a predication relation as proposed in Williams (1980). In other words, by means of an independently needed syntactic coindexation mechanism we can correctly capture the semantic relation between the introducer of a referent, that is, the verb, and the predicative restrictions on this referent, that is, the incorporated noun and its external modifiers. An S-structure that is enriched in this way then delivers an adequate input to the semantic component defined in terms of dynamic Montague semantics as developed in Groenendijk and Stokhof (1990) and Dekker (1993).

1.1. *Two Syntactic Analyses of Raised Possessors*

To illustrate the interaction between the syntax and the semantics of NI in West Greenlandic, I will focus on a construction in which, according to Baker (1988) and Bittner (1994), the incorporated noun must be analyzed as the possessum of an external raised possessor (RP) argument. Following Michelson (1991), I will show that RPs in West Greenlandic NI constructions are not possessor arguments of the noun, but full-fledged arguments of the incorporating verb. The two syntactic approaches to RPs in NI constructions that we find in the literature are thus based upon two distinct interpretations of the RP data involved.

[1] West Greenlandic also has lexicalized cases of NI. Sadock (1991) points out that these items have "all the expected properties of syntactically inert derivational morphology" and concludes that exactly because lexicalized cases exist we must recognize "the syntactic reality of the productive cases" (Sadock 1991, p. 100).

Let us first look at some transitive realizations of this construction in West Greenlandic, as given in (1), (2), (3), and (4):[2]

(1) Nukap puisi ameerpaa.
Nuka-p puisi ami-ir-p-a-a
N.-ERG seal.ABS skin-remove-IND-[+tr]-3sg.3SG
i. Nuka removed the seal's skin.
ii. Nuka removed the skin from the seal.

(2) Piitap Kaali cykeleer uppaa.
Piita-p Kaali cykili-irut-p-a-a
P.-ERG K.ABS bike-take.by.force-IND-[+tr]-3SG.3SG
i. Peter took Kaali's bike by force.
ii. Peter took a/the bike from Kaali by force.

(3) Aggup Una illuliuuppaa.
Aggu-p Una illu-liuut-p-a-a
A.-ERG U.ABS house-make-IND-[+tr]-3SG.3SG
i. Aggu build Una's house.
ii. Aggu built a house for Una.

(4) Juunap biili assakaasuiarpaa.
Juuna-p biili assakaasu-iar-p-a-a
J.-ERG car.ABS wheel-take.from-IND-[+tr]-3SG.3SG
i. Juuna removed the car's wheels.
ii. Juuna removed the wheels from the car.

The above sentences represent cases in which the external absolutive constituents are either interpreted as the possessor arguments of the respective incorporated nouns, as made overt in the (i) readings, or as third arguments

[2] Most of the West Greenlandic examples I collected for this study are based upon NI verbs listed in Lennert Olsen and Hertling (1988). They were all checked with native speakers. The examples are glossed as in Bittner (1994). The abbreviation ABL stands for ablative, ABS for absolutive, ACC for accusative, AP for antipassive, DAT for dative, ERG for ergative, HAB for habitual aspect, IND for indicative mood, INF for infinitive, IND for instrumental, INTER for interrogative mood, LOC for locative, NEG for negation, PASS for passive, PL for plural, PRF for perfective aspect, REL for relativizer, SF for singular, [+tr] for transitive, and [−tr] for intransitive. Each example comes with its source except for those that I collected myself.

of the verb, as made overt in the (ii) readings. A similar NI construction also occurs in Mohawk and in Oneida, as shown in (5) and (6), respectively:

(5) Kvtsyu v-kuwa-nya't-ó:'ase.
fish *FUT-they/her-throat-slit*
(Mohawk, Mithun 1984, p. 868)

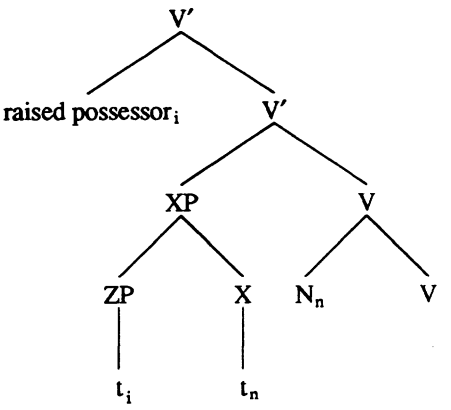
i. They will slit the fish's throat.
ii. They will slit the fish through the throat.

(6) Wa-hi-nuhs-ahni:nú: John.
MODE-1SG/3MSG-house-buy.from.ASPECT J.
(Oneida, Michelson 1991, p. 757)

i. I bought John's house.
ii. I bought a/the house from John.

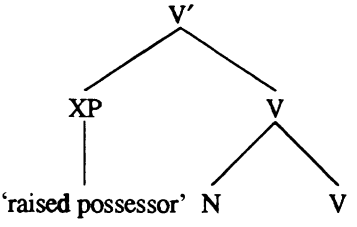
According to Baker (1988) – and to those who adopt his derivational approach to NI like Bittner (1994) and Bittner and Hale (1996) – the appropriate interpretations of (1)–(6) are the respective (i)-interpretations, in which the external constituents *puisi* 'seal' in (1), *Kaali* in (2), *Una* in (3), *biili* 'car' in (4), *kvtsyu* 'fish' in (5), and *John* in (6) are possessor arguments of the incorporated noun. Syntactically, they build a constituent with the respective incorporated nouns after which the latter undergo head movement and adjoin to the verb. As a result of this syntactic process, the possessors are left behind as stranded material. These stranded possessors then raise and become full-fledged syntactic arguments of the verb. For West Greenlandic, this view seems to be supported by the fact that *puisi* in (1), *Kaali* in (2), *Una* in (3), and *biili* in (4) each bear absolutive case and trigger object agreement on the respective verbs. On Baker's account, the syntactic structure of the sentences in (1)–(6) contains the following V′:

(7)



According to Michelson (1991), who discusses RP constructions in Oneida like (6), the constituent *John* and the incorporated noun *nuhs* 'house' form at no level of the syntactic representation of (6) a constituent. In other words, *John* is not regarded as a possessor argument of *house* at all but as a full-fledged source argument of the verb *buy*. If we extend Michelson's view to the examples (1)–(5), this means that we adopt the (ii) readings of these sentences and the terms 'raised' and 'possessor' lose their literal sense. Furthermore, it means that the syntactic structure of the sentences in (1)–(6) contain the V′ sketched in (8):

(8)



The issue I will address in this paper is whether for the construction of the semantic representations of the West Greenlandic constructions in (1–4), and of related data that I present below, we need a syntactic input based upon a V′-structure like (7). In other words, I will raise the question of whether the trace of the incorporated noun in (7) is indispensable for the semantic interpretation of this NI construction, or whether the semantic interpretation process can be based on a trace-less V′ like (8). My answer will be that it can, and I will support my answer in three ways. First, I will show that none of the semantic properties of incorporated nouns that has been discussed in the literature so far provides supporting evidence for the view that NI is a syntactic construction that is derived by means

of head movement. Second, I will address some shortcomings of a head movement approach by discussing some novel RP facts in West Greenlandic. In particular, I will show that the above (i) interpretations, on which the head movement approach is based, are on the wrong track. Third, I will show that if particular predication relations are made visible in the syntax in the sense of Williams (1980), a base-generated approach to NI constructions can deliver an adequately equipped syntactic input to their dynamic semantic interpretation.

The paper is organized as follows. In the remainder of this section, I discuss the syntactic impact of three semantic properties of incorporated nouns, namely, their discourse transparency, their agreement with external modifiers, and their role in the uniqueness of thematic role assignment. In section 2, I focus on one of the most recently articulated versions of the Bakerian approach, namely, that presented in Bittner and Hale (1996). I show that Bittner and Hale do not address the fact that the Case arrays found in the RP data also occur in constructions that cannot be understood as cases of possessor raising. Moreover, their account cannot deal straightforwardly with RPs in antipassivized NI constructions. In section 3, I provide a base-generated analysis of RPs, incorporated nouns, external modifiers, and the antipassive. In section 4, I present the dynamic semantic framework that I adopt and that is based on Dekker (1993). I discuss how it can straightforwardly interpret syntactic structures in which incorporated nouns appear in their V-adjoined position without being derivationally related to their external modifiers. In section 5, I show how this dynamic framework also successfully covers the semantic interpretation of RPs in NI constructions. Section 6 is a short conclusion.

1.2. *Semantic Issues Surrounding NI*

Three semantic properties of incorporated nouns have been regarded as supporting evidence for the view that NI is a syntactic construction and, in particular, that it is derived by means of syntactic head movement as suggested in Baker (1988). These facts are the discourse transparency of incorporated nouns (i.e., their ability to antecede a pronoun), number agreement between the external modifier and the incorporated noun, and Chomsky's (1981) requirement of uniqueness of thematic role assignment. However, even though these semantic facts may convince us that incorporated nouns and incorporating verbs are independently visible syntactic elements, I argue that none of them provides a reason to conclude that in order to meet the requirement of syntactic visibility, the incorporated nouns involved must be heads of underlying phrases. In other words, I adopt Sadock's and Baker's view that the semantic properties of incorporated

nouns support the view that NI in West Greenlandic is a syntactic rather than a pre-syntactic or lexical construction. But I refute their conclusion that incorporated nouns must be analyzed as the head of a phrase or that NI is derived by means of head movement.

First, Sadock (1980) points out that an incorporated noun in West Greenlandic seems to be able to antecede a pronoun. This fact is illustrated in his example (9):

(9)a. Suulut biililiorsimavoq. (Sadock 1980, p. 311)
Suulut biili-liur-sima-v-u-q
S.ABS car-make-PRF-IND-[−tr]-3sg
Søren made a car.

(9)b. Sikaat karsikuannik sanasimavaa.
sikaa-t karsiku-an-nik sana-sima-v-a-a
cigar-ERG.PL box.old-3PL.PL-INS made-PRF-IND-[+tr]-3SG.3SG
He made it with old cigar boxes.

When we look at this example, it seems to be the case that the referent of the incorporated noun *biili-* 'car' in (9a) can antecede a pronominal element (i.e., an empty pronoun that corresponds to the 3SG object agreement marker on *sanasimavaa*) in the way an indefinite NP in English can. For example, *a car* in the English translation of (9a) can antecede the pronoun *it* in the English translation of (9b). From this parallel, Sadock (1980) and Baker (1988) conclude that the incorporated noun must originate as the head of an underlying phrasal structure because its English counterpart, namely, the indefinite *a car*, is a phrase as well. However, for a referent to antecede a pronoun it need not be introduced by an indefinite NP. Dekker (1993) points out that from a dynamic semantic perspective those expressions that bring along implicit arguments (e.g., the object argument of relational nouns, the event argument of verbs) are the introducers of these arguments.[3] In a similar sense, I proposed in Van Geenhoven (1998a) that in a case like (9a) it is the incorporating verb *-liur-* 'make' and not the incorporated noun *biili-* 'car' that introduces the discourse referent that stands for the verb's theme argument and that antecedes the empty pronoun in (9b). The incorporated noun *biili-* 'car' simply gives a further specification of this discourse referent. Hence, to account for the anaphoric relationship between (9a) and (9b), there is no need to assign the incorporated noun *biili-* 'car' an underlying phrasal status. It suffices to interpret

[3] Below, I return to Dekker's (1993) view in more detail.

the verb as a 'referent-introducer' or, as I called it, as a semantically incorporating verb. The only requirement that the semantic interpretation process poses on the syntactic representation of a NI construction is that the incorporated noun and the verb be syntactically visible, that is, that the noun-verb combination be generated in the syntax and not in the lexicon (or pre-syntactically as Rosen 1989 puts it). This requirement follows from the simple idea that the semantic interpretation component takes only those elements of a particular construction into account which are syntactically visible.

The second semantic characteristic of NI that has led to Sadock's and Baker's belief that NI must have an underlying phrasal structure is the fact that an external modifier agrees in number with an incorporated noun. This seems particularly clear when the incorporated noun belongs to the class of inherent plurals, as for example *qamuti-* 'sled' in (10):[4]

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[4] In West Greenlandic, external modifiers of incorporated nouns usually bear instrumental case. The following examples illustrate that these modifiers can be adjectives, numerals, relative clauses, or *wh*-words:

(i) Suluut qisummik timmisartuliorpoq.
suluut qisuk-mik timmisartu-liur-p-u-q
S.ABS wooden-INS.SG airplane-make-IND-[−tr]-3SG
Søren made a wooden airplane.

(ii) Suulut marlunnik timmisartuliorpoq.
Suulut marluk-nik timmisartu-liur-p-u-q
S.ABS two-INS.PL airplane-make-IND-[−tr]-3SG
Suulut made two airplanes.

(iii) Arne qatannguteqarpoq Canadami najugalimmik.
Arne qatannguti-qar-p-u-q Canada-mi
A.ABS sister-have-IND-[−tr]-3SG C.-LOC
najuga-lik-mik
dwelling.place-have.REL.[−tr]-INS.SG
Arne has a sister who lives in Canada.

(iv) Qassinik qimmeqarpit?
qassi-nik qimmi-qar-p-i-t
how.many-INS.PL dog-have-INTER-[−tr]-2SG
How many dogs do you have?

(10) Angisuunik qamuteqarpoq. (Sadock 1980, p. 309)
angisuu-nik qamuti-qar-p-u-q
big-INS.PL sled.PL-have-IND-[−tr]-3SG
He has a big sled

(11) *Angisuumik qamuteqarpoq. (Sadock 1980, p. 309)
angisuu-mik qamuti-qar-p-u-q
big-INS.SG sled-have-IND-[−tr]-3SG

Sadock points out that (11) is not well-formed because – unlike in (10) – the external modifier *angisuumik* 'big' does not agree in number with the incorporated *qamuti-* 'sled', which is an inherently plural noun. Even when singularity is expressed semantically by the numeral modifier *ataasiq* 'one', this numeral must bear plural agreement, as is illustrated in (12):

(12) Ataatsinik qamuteqarpoq. (Sadock 1980, p. 309)
ataasi-nik qamuti-qar-p-u-q
one-INS.PL sled-have-IND-[−tr]-3SG
He has one sled.

From this fact Sadock concludes the following:

> The grammatical rule that spreads the features of plurality from a head noun to its modifiers will have to be reduplicated UNLESS sentences with incorporated object nouns are derived from structures in which these nouns are not part of the verb, but rather are in constituency with their modifiers (Sadock 1980, p. 309).

However, I want to point out that constituency is not the mechanism that solves the above number agreement problem. If we assume that an incorporated noun is in syntactic constituency with the instrumental modifier, this in itself does not make the noun's inherent plurality visible for the semantic interpretation process. Similarly, if we adopt Baker's view and assume that *ataatsinik* 'one' and *qamuti-* 'sled' in (12) build a phrase at some underlying syntactic level after which the noun is head moved to the verb, we have not yet identified in the syntax the extra bit that

In (i)–(iv) the instrumental constituents are all direct modifiers of the incorporated noun, more specifically, of the internal theme argument variable of the verb. The instrumental modifiers are thus understood as intersective modifiers. In section 4, I will also address the interpretation of nonintersective modifiers in NI constructions. Note that in West Greenlandic an instrumental can also modify the verb's event variable by expressing a manner adverbial. *Sikaat karsikuannik* in (9b) is a case in point. In the examples used in the remainder of this paper, the instrumental modifiers are not interpretable as event modifiers.

triggers plural agreement on the external modifier. In fact, in natural language we find other cases in which an agreement relation between two linguistic expressions exists without their being elements of the same syntactic phrase. A well-known example in English is the number agreement between pronouns and their antecedents, as illustrated in (13) and (14):

(13) Where is *my purse*? I must have left *it/*them* in the car.

(14) Where are *my glasses*? I must have left **it/them* in the car.

Part of capturing the referential identity between a pronominal element and its antecedent consists in capturing the grammatical mechanism governing number agreement. The grammatical number of the phrases *my purse* in (13) and *my glasses* in (14) must somehow percolate up the syntactic tree to which these NPs belong, so that this number information can be taken into consideration when they stand in an anaphoric relation to an element that belongs to another clause. If we adopt this kind of percolation mechanism to deal with the number agreement between the incorporated nouns and their instrumental modifiers in (10) and (12), we do not need to assume with Sadock and Baker that they are elements of the same constituent. It suffices that the noun-verb combinations in (10) and (12) are base-generated in the syntax so that the incorporated nouns are independently visible syntactic elements whose number can percolate up the syntactic tree and be set equal to the number of the external modifiers, which are independently visible syntactic elements as well.

A third semantic issue that seems to support a syntactic head movement analysis of NI is related to the Theta Criterion:

(15) Theta Criterion (Chomsky 1981, p. 36)
Every argument bears one and only one theta role;
and each theta role is assigned to one and only one argument.

Chomsky's definition of argument structure in terms of thematic structure and his related view that a thematic role can be assigned only to one phrase seems to support automatically the view that incorporated nouns cannot be syntactically base-generated. If this were the case, we would be left with a situation in which the same thematic role would have to be assigned to two distinct syntactic constituents. For example, in (10) the role PATIENT would have to be assigned to the incorporated noun *qamuti-* 'sled' and to the external modifier *angisuunik* 'big'. Chomsky's view that a thematic role can be assigned only once basically captures the rule of logical syntax that a variable can be bound only once. On the (standard) perspective that the

argument positions of a verb are filled by referential or bound by quantificational expressions, Chomsky's view captures that either the incorporated noun or the external modifier is the filler or binder of the thematic argument variable. However, in my above discussion of the discourse transparency of incorporated nouns I mentioned that we should regard the NI verbal affixes as 'discourse referent introducers' and not the incorporated nouns. Technically – and I will turn to this in detail in section 4 – this means that the incorporating verb binds its theme argument variable and that the incorporated nouns and their instrumental modifiers contribute only additional specifications, or properties, of this variable. It follows that the verb meets Chomsky's Theta Criterion and, most importantly, that this Criterion does not have any impact on the syntactic analysis of an incorporated noun and its external modifier. Hence, there is no reason to conclude from the Theta Criterion that incorporated nouns and their external modifiers cannot be independently syntactically base-generated (see Van Geenhoven 1998b). This follows because neither the incorporated noun nor the external modifier contributes a semantic argument in the strict sense, that is, a referential or a quantificational expression. Rather, they each contribute a property of an already bound variable.[5]

In sum, I have presented three semantic arguments in favor of Sadock's and Baker's syntactic analysis of NI and I have shown that they are unconvincing in this respect. None of the three semantic properties (discourse transparency, agreement, and uniqueness of thematic role assignment) leads to a phrasal or to a head movement analysis of NI.

2. A Head-Movement Approach to RPs and Some Novel Data

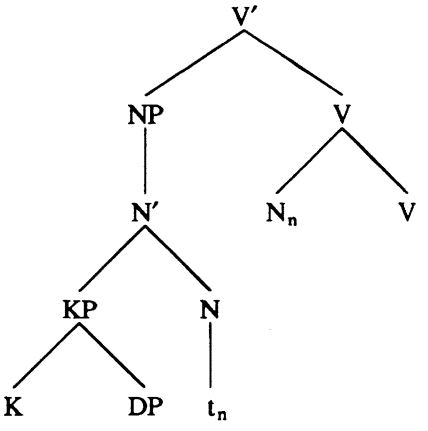
In this section, I discuss the head movement analysis of RPs in NI constructions. This analysis is based upon Bittner and Hale (1996), who adopt Baker's derivational perspective on NI. The data that I present belong to two NI configurations. One is a transitive NI configuration that displays an ERG-ABS-INS Case array and where the RP bears absolutive case. The other is an intransitive NI configuration that displays an ABS-INS-INS array and where the RP bears instrumental case. For each configuration, I discuss how it would be analyzed in a Bittner and Hale (1996) framework and I point out some shortcomings of a Bittner and Hale analysis.

[5] For related views on the idea that verbs take property arguments, see McNally (1992, 1998), Zimmermann (1993), and Ladusaw (1994).

2.1. *Absolutive RPs à la Bittner and Hale (1996)*

In the Case theory developed in Bittner and Hale (1996), the ability of a head X to assign case is determined by the configuration of the government domain of X. Nominal constituents in morphologically marked Cases are regarded as KPs (i.e., Case Phrases), while nominal constituents in the nominative (or absolutive) case are treated as K-less DPs. In order to enable a K-less DP to obey the Case Filter, it must be c-commanded and governed by a K-equivalent. This captures the fact that nominative case is morphologically unmarked and explains why K-less nominals raise from their VP-adjoined position into [Spec, IP], a position that is governed by the K-equivalent C, as we will see in many examples below. Marked structural Cases (i.e., accusative, ergative, and oblique) are K's that are generated empty and must be antecedent-governed at S-structure to satisfy the Empty Category Principle (see Chomsky 1981).[6] Their antecedent governor acts as a Case assigner and determines the overt realization of the empty K's. The V′ constituent in a NI structure receives the following S-structure in which the maximal projection NP of the incorporated head N is transparent to government from the host head V:

(16)



According to Bittner and Hale, constituents become transparent by syntactic processes that derive discontinuity, such as the head movement of N in (16). Moreover, if α is a lexical head that delimits a small clause, and β an argument, then α Case-binds β iff α locally c-commands β and α governs a so-called 'Case-competitor' for β. For instance, in (16), V will Case-bind the empty, structurally marked K of KP if V c-commands this

[6] α antecedent-governs β iff α governs and either binds or Case-binds β. Inherent Cases, on the other hand, are K's that are generated filled. They are selected by governing lexical heads at D-structure.

KP – which is the case – and if V governs a Case-competitor for KP. This is the case as well since V governs the incorporated N, a category that satisfies the requirement that a Case-competitor be a K-less nominal.[7]

Let us now examine how the RP data that I am concerned with in this paper fit into Bittner and Hale's framework. In section 1.1, I pointed out that the head movement approach is based upon the view that an external constituent is a possessor argument of the incorporated noun (see examples (1–4)). Here, I give some additional examples to illustrate that the 'possessed' incorporated noun can be further modified with a modifier in instrumental case. In line with the derivational approach, I translate the absolutive RPs as possessors:[8]

(17) Piitap Kaali qanoq annertutigisumik aaverpaa?
Piita-p Kaali qanuq annirtutigisu-mik
P.-ERG K.ABS how.ABS much-INS
aa-ir-p-a-a
blood-take.from-INTER-[+tr]-3SG.3SG
How much of Kaali's blood did Peter take?

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[7] "A Case-competitor for an argument is a K-less nominal (i.e., a N, NP, D, or DP) that is both close enough and yet independent" (Bittner and Hale 1996, p. 539).

[8] In West Greenlandic, we find another NI construction in which an ergative constituent seems to act like an external possessor of the incorporated noun, as is illustrated in (i) and (ii):

(i) Kaali tuttup neqitorpoq. (Bittner 1994, p. 70)
Kaali tuttu-p niqi-tur-p-u-q
K.ABS reindeer-ERG meat-eat-IND-[−tr]-3SG
Kaali was eating reindeer meat.

(ii) Kunngip panippassuaqarpoq. (Sadock 1991, p. 96)
kunngi-p panik-passua-qar-p-u-q
king-ERG daughter-many-have-IND-[−tr]-3SG
There were many princesses (lit. king's daughters).

Given that in West Greenlandic, external modifiers of incorporated nouns usually bear the instrumental case (see fn. 4), the literature is rather puzzled about the grammatical status of the ergative modifiers in (i) and (ii). For a discussion of this NI construction see Van Geenhoven (2001).

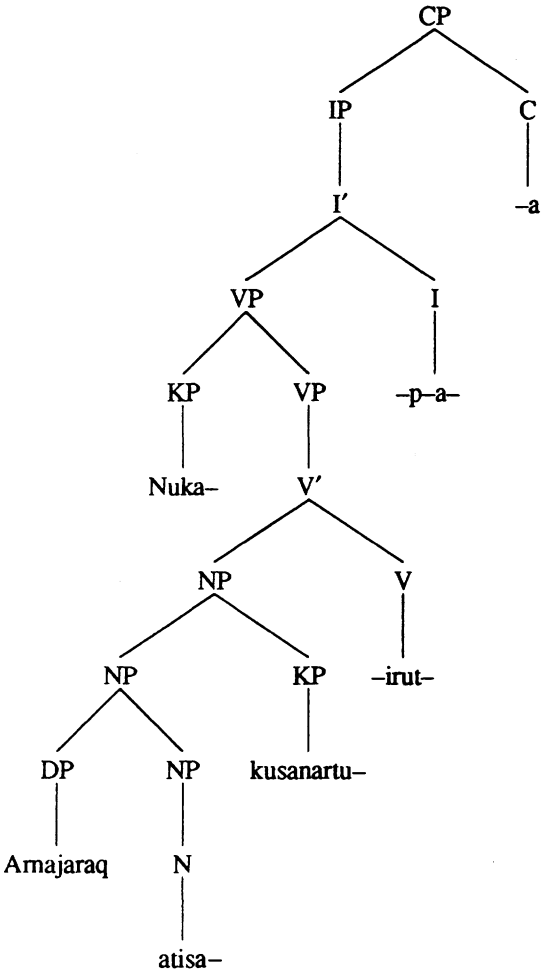
(18) Nukap Arnajaraq kusanartunik atisaaruppaa.
Nuka-p Arnajaraq kusanartu-nik
N.-ERG A.ABS fine-INS.PL
atisa-irut-p-a-a
clothes-remove.by.force-IND-[+tr]-3SG.3SG
Nuka took Arnajaraq's fine clothes by force.

(19) Aggup Una qisummik illuliuuppaa.
Aggu-p Una qisuk-mik illu-liuut-p-a-a
A.-ERG U.ABS wooden-INS house-make-IND-[+tr]-3SG.3SG
Aggu built Una's wooden house.

(20) Juunap puisi qanoq annertutigisumik neqaajarpaa?
Juuna-p puisi qanuq annirtutigisu-mik
J.-ERG seal.ABS how.ABS much-INS
niqi-iar-p-a-a
meat-remove-INTER-[+tr]-3SG.3SG
How much seal meat did Juuna cut off?

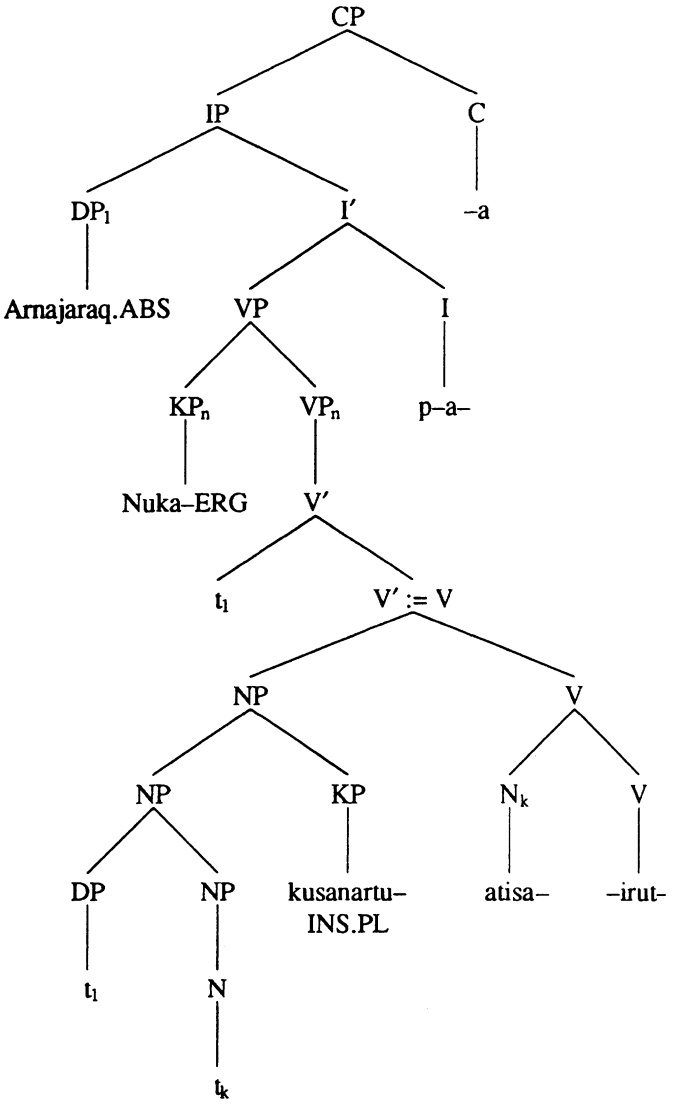
(21) represents the D-structure that Bittner and Hale would assign to (18), in accordance with Baker's (1988) view that the absolutive constitutent in such examples originates in constituency with the incorporated noun. This then captures their idea that *Arnajaraq* is the possessor of *atisa-* 'clothes':

(21)



To realize the oblique instrumental case on the external modifier *kusanartu-* 'fine, beautiful', the noun *atisa-* 'clothes' head-moves into the V-adjoined position and functions as the Case-competitor, thereby enabling the verb to assign instrumental case to *kusanartu-*. The result of this procedure is illustrated in (22), the S-structure of (18):

(22)



(22) illustrates that after the noun *atisa-* 'clothes' has been adjoined to V, the lower segment of V′ is restructured as V, which is indicated as 'V′ := V'. According to Bittner and Hale, this reanalysis is needed for the embedded DP *Arnajaraq* to be analyzed as a derived object so that it can move into the not-Case-bound position [Comp, VP]. From there, *Arnajaraq* is further raised to [Spec, IP], the position that licences its absolutive case, since C is the K-equivalent that c-commands and governs this K-less constituent. Note that in (22) the VP-adjoined subject position is occupied

by the KP *Nuka*-ERG which, following Williams (1980), Bittner and Hale coindex with its predicate, namely, the VP.

2.2. *Some Shortcomings in the Bittner and Hale Approach*

I have a number of criticisms to offer of the Bittner-Hale analysis. First, I mentioned before that it is based on the view that an external constituent is a possessor argument of the incorporated noun. However, I pointed out in section 1.1 that we could interpret the RPs as full-fledged third arguments of the respective verbs (see (1i–4i) versus (1ii–4ii)). On this interpretation, the absolutive constituents in (17–20) are understood as source or benefactive arguments of the respective verbs:

(17) Piitap Kaali qanoq annertutigisumik aaverpaa?
Piita-p Kaali qanuq annirtutigisu-mik
P.-ERG K.ABS how.ABS much-INS
aa-ir-p-a-a
blood-take.from-INTER-[+tr]-3SG.3SG
How much of Kaali's blood did Peter take from Kaali?

(18) Nukap Arnajaraq kusanartunik atisaaruppaa.
Nuka-p Arnajaraq kusanartu-nik
N.-ERG A.ABS fine-INS.PL
atisa-irut-p-a-a
clothes-remove.by.force-IND-[+tr]-3SG.3SG
Nuka took some/the fine clothes by force from Arnajaraq.

(19) Aggup Una qisummik illuliuuppaa.
Aggu-p Una qisuk-mik illu-liuut-p-a-a
A.-ERG U.ABS wooden-INS house-make-IND-[+tr]-3SG.3SG
Aggu built Una's wooden house for Una.

(20) Juunap puisi qanoq annertutigisumik neqaajarpaa?
Juuna-p puisi qanuq annirtutigisu-mi
J.-ERG seal.ABS how.ABS much-INS
niqi-iar-p-a-a
meat-remove-INTER-[+tr]-3SG.3SG
How much meat did Juuna cut off the seal?

At first sight, there seems to be no evidence that either interpretation is on the right track. However, consider the case in which the absolutive constituent in a NI construction cannot receive a possessor interpretation at all. In (23), for example, the external constituent *nerrivit* 'tables' cannot be understood as the possessor argument of the incorporated noun *mingu-* 'dirt' because a table cannot possess something. Note that in (23) we use the same verbal affix *-iar-* 'remove' as is used in (4) and in (20):

(23) Piitap nerrivit minguiartarpai.
Piita-p nerrivi-t mingu-iar-sar-p-a-i
P.-ERG table.ABS.PL dirt-remove-HAB-IND-[+tr]-3sg.3PL
i. # Peter usually removes the tables' dirt.
ii. Peter usually removes dirt from the tables.

We can only interpret *nerrivit* as the third argument of the verb *-iar-*, namely, the argument that expresses the location from which something is being removed. Hence, semantically (23) lacks evidence for assigning it a D-structure like (21), in which the absolutive constituent is primarily regarded as an argument of the incorporated noun. Unfortunately, Bittner and Hale do not discuss examples like (23).

Second, *-iar-* 'remove, take away from' patterns morphosyntactically with other verbal affixes whose absolutive argument is never understood as a possessor of the incorporated noun. Examples of such affixes are *-lir-* 'provide with, put on' in (24), *-lirsur-* 'provide with' in (25), *-liut-* 'use as' in (26), and *-tir-* 'put on' in (27):

(24)a. Anaanap Nuka kusanartunik kamilerpaa.
anaana-p Nuka kusanartu-nik
mother-ERG N.ABS beautiful-INS.PL
kamik-lir-p-a-a
boot-provide.with-IND-[+tr]-3SG.3SG
Mother dressed Nuka with beautiful boots.

b. Anaanap tujuuloq aappallorinik attaserpaa.
anaana-p tujuuluq aappalluri-nik
mother-ERG sweater.ABS red-INS.PL
atta-lir-p-a-a
button-provide.with-IND-[+tr]-3SG.3SG
Mother put red buttons on the sweater.

(25)a. Aggup Piitaq aningaasalersorpaa.
Aggu-p Piitaq aningaasa-lirsur-p-a-a
A.-ERG P.ABS money-provide.with-IND-[+tr]-3SG.3SG
Aggu provided Peter with money.

b. Aggup illoq nutaanik matulersorpaa.
Aggu-p illuq nutaa-nik
A.-ERG house.ABS new-INS.PL
matu-lirsur-p-a-a
door-provide.with-IND-[+tr]-3SG.3SG
Aggu provided the house with new doors.

(26)a. Piitap inersuaq igaffiliuppaa.
Piita-p inirsuaq igaffi-liut-p-a-a
P.-ERG kitchen.ABS living.room-use.as-IND-[+tr]-3SG.3SG
Peter used the kitchen as a living room.

b. Unap tungit qaliliuppai.
Una-p tungi-t qali-liut-p-a-i
U.-ERG sheet.ABS.PL table.cloth-use.as-IND-[+tr]-3SG.3PL
Una used the sheets as table cloths.

(27)a. Naasut nillertumik imerterpai.
naasu-t nillirtu-mik imi-tir-p-a-i
flower-ABS.PL cold-INS water-put.on-IND-[+tr]-3SG.3PL
She put cold water on the flowers.

b. Kaagit qaqortunik sukkulaaserpai.[9]
kaagi-t qaqurtu-nik sukkulaa-tir-p-a-i
cake-ABS.PL white-INS.PL chocolate.PL-put.on-IND-[+tr]-3SG.3PL
She put white chocolate on the cakes.

Interestingly, these sentences present the same Case array as the one found in the above RP constructions, namely ERG-ABS-INS or ERG-ABS, depending

[9] Note that in West Greenlandic *sukkulaat* 'chocolate' is an inherently plural noun and therefore the instrumental modifier *qaqurtunik* 'white' agrees with it in number.

on whether an external modifier of the incorporated noun is present or not. Another NI verb which gives rise to the same Case array is the affix *-ssip-* 'give', a three-place verb par excellence:

(28)a. Angutip arnaq inissippaa.
anguti-p arnaq ini-ssip-p-a-a
man-ERG woman.ABS room-give-IND-[+tr]-3SG.3SG
The man gave the women a room/a place to stay.

b. Piitap qimmini panertumik nerisassippaa.
Piita-p qimmi-ni panirtu-mik
P.-ERG dog-3SGPROX.SG.ABS dry-INS
nirisa-ssip-p-a-a
food-give-IND-[+tr]-3SG.3SG
Peter gave his dog dry food.

If we adopt a Bittner and Hale account of the data in (17–20), we would be forced to assign a different syntactic analysis to the 'nonpossessor' NI constructions in (24–28) even though they all display exactly the same Case array. I believe that the identity of Case array is a clear indication of the fact that we are dealing with identical syntactic structures. Therefore, in line with what Michelson (1991) proposed for the Oneida NI case in (6), I propose that the verbal affixes *-ir-* in (1) and (17), *-irut-* in (2) and (18), *-liuut-* in (3) and (19), and *-iar-* in (4) and (20) belong to a larger class of three-place NI verbal affixes. This class also contains the affixes *-lir-* in (24), *-lirsur-* in (25), *-liut-* in (26), *-tir-* in (27), and *-ssip-* in (28), where the respective absolutive constituents cannot be understood as possessors at all. In other words, the RPs under discussion must be regarded as full-fledged source, goal or benefactive arguments of these verbs rather than as possessor arguments of the incorporated nouns, as in the perspective taken originally in Baker (1988) and adopted in the Bittner and Hale D-structure (21).

The interpretation of the RPs as arguments of the verb accords with Michelson's (1991) discussion of transfer-of-possession verbs in Oneida. She points out that examples such as (6), repeated here as (29), "are frequently glossed as expressing a possessor for pragmatic reasons: if

one buys a car from someone, the car generally belongs to that person" (Michelson 1991, p. 757):

(29) Wa-hi-'sleht-ahni:nú: John. (Michelson 1991, p. 757)
MODE-1SG/3MSG-car-buy.ASPECT J.
i. I bought John's car.
ii. I bought a car from John.

However, she continues that

if the real world situation is such that only a possessive interpretation is possible (say, John has passed away, ...) a different construction is required, as shown by [(30)] and [(31)]. Crucially, there is no agreement with the possessor (for example with the deceased John in [(30)] (Michelson 1991, pp. 757–758).

(30) Wa-k-hni:nú: John lao'slétk∧h.
MODE-1SG.AGENT-buy.ASPECT J. his.car.DECESSIVE
(Michelson 1991, p. 757)
I bought the late John's car.

(31) *Wa-hi-hni:nú: John lao'slétk∧h.
MODE-1SG.3MSG-buy.ASPECT J. his.car.DECESSIVE
(Michelson 1991, p. 757)

In West Greenlandic, a similar case can be construed for an example like (1), repeated here as (32):[10]

(32) Nukap puisi ameerpaa.
Nuka-p puisi ami-ir-p-a-a
N.-ERG seal.ABS skin-remove-IND-[+tr]-3SG.3SG
Nuka removed the skin from the seal.

For (32) to be uttered felicitously, it is required that during the removal there be a seal from which the skin is removed. However, a real possessor construction corresponding to (32), namely (33), can describe a situation in which no seal is present at all but has already been sold and eaten:

(33) Nukap puisip amia peerpaa.
Nuka-p puisi-p ami-a piir-p-a-a
N.-ERG seal-ERG skin-3SG.SG.ABS remove-IND-[+tr]-3SG.3SG
Nuka removed the seal('s) skin.

[10] Interestingly, Baker revised his original (1988) proposal for Mohawk examples like (5) in favor of Michelson's view. See Baker (1996, pp. 340–342).

The seal skin mentioned in (33) could be removed from any location, for instance from a table as illustrated in (34). Note that the constituent that expresses the location from which the skin is removed bears ablative case:

(34) Nukap nerrivimit puisip amia peerpaa.
Nuka-p nerrivi-mit puisi-p ami-a
N.-ERG table-ABL seal-ERG skin-3SG.SG.ABS
piir-p-a-a
remove-IND-[+tr]-3SG.3SG
Nuka removed the seal('s) skin from the table.

My third criticism of Bittner and Hale's (1996) analysis of the RP data relates to the claim in Bittner (1994) that restructuring at S-structure is an indication that the construction is marginal. However, the RP sentences do not belong to a rare pattern. None of my consultants judged any of (1)–(4), (17)–(20) as either rare or unusual.

Finally, if we follow Bittner and Hale's proposal we are, for reasons of Case assignment, at some point in the derivation forced to regard the embedded DP *Arnajaraq* in the D-structure (21) as an independent argument in the S-structure (22). To me it seems that it would make more sense to generate this DP at D-structure as an independent argument of the verb. We have seen that semantically this is an obvious thing to do.

2.3. *Intransitive RP Data Analyzed in a Head Movement Approach*

So far, I have discussed RPs only in transitive NI constructions. In West Greenlandic, transitive constructions usually have intransitive counterparts, as is illustrated in the (a) and (b) pairs in (35–37):[11]

[11] Another construction with intransitive inflection is the passive, as illlustrated in (i) and (ii):

(i) Angutimit arnaq takuneqarpoq. (Sadock 1980, p. 305)
anguti-mit arnaq taku-ni-qar-p-u-q
man-ABL woman.ABS see-PASS-have-IND-[−tr]-3SG
The woman was seen by the man.

(ii) Meeqqat Juunamit paarineqarput. (Bittner and Hale 1996, p. 548)
miiqqa-t Juuna-mit paari-ni-qar-p-u-t
child-ABS.PL J.-ABL look.after-PASS-have-IND-[−tr]-3PL
The children are looked after by Juuna.

(35)a. Nukap tuttu nerivaa.
Nuka-p tuttu niri-v-a-a
N.-ERG reindeer.ABS eat-IND-[+tr]-3SG.3SG
Nuka ate the reindeer.

b. Nuka tuttumik nerivoq.
Nuka tuttu-mik niri-v-u-q
N.ABS reindeer.INS eat-IND-[−tr]-3SG
Nuka ate reindeer.

(36)a. Jaakup arnaq toquppaa. (Bittner 1988, p. 5)
Jaaku-p arnaq tuqut-p-a-a
J.-ERG woman.ABS kill-IND-[+tr]-3SG.3SG
Jacob killed the woman.

b. Jaakup arnamik toqutsivoq.
Jaaku arna-mik tuqut-si-v-u-q.
J.ABS woman-INS kill-AP-IND-[+tr]-3SG
Jacob killed a woman.

(37)a. Suulup Kaali aallaavaa. (Bittner 1994, p. 82)
Suulu-p Kaali aallaa-v-a-a
S.-ERG K.ABS shoot-IND-[+tr]-3SG.3SG
Suulut shot Kaali.

b. Suulut imminut aallaavoq.
Suulut immi-nut aallaa-v-u-q
S.ABS self-DAT shoot-IND-[−tr]-3SG
Suulut shot himself.

Intransitivization can be realized by adding intransitive inflection to the verb, as in (35b), by antipassivizing the verb and adding intransitive inflection to it, as in (36b), or by creating a reflexive construction, as in (37b).

Intransitivization as a consequence of antipassivization also applies to RP constructions, as shown in (38) through (40):[12]

(38) Uninngasunik qanoq annertutigisumik aaviiva?
uninngasu-nik qanuq annirtutigisu-mik
patient-INST.PL how.ABS much-INS
aa-ir-i-v-a
blood-remove.from-AP-INTER.[−tr]-3SG
i. How much of the blood of some patients did he take?
ii. How much blood did he take from some patients?

(39) Illumik pisoqqanik igalaaverussivoq.
illu-mik pisuqa-nik igalaa-irut-si-v-u-q
house-INST old-INS.PL window-remove.by.force-AP-IND-[−tr]-3SG
i. He took out a house's old windows.
ii. He took out the/some old windows from a/the house.

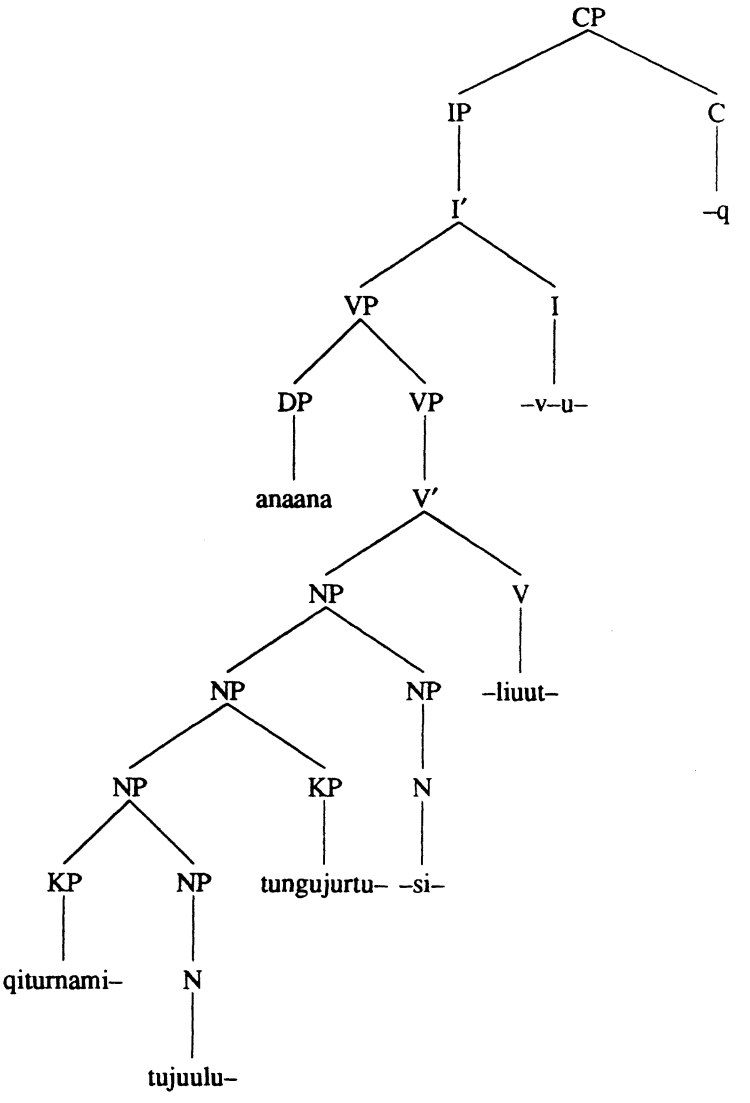
(40) Anaana qitornaminik tungujortunik tujuululiussivoq.
anaana qiturna-mi-nik tungujurtu-nik
mother.ABS child-3SGPROX.PL-INS.PL blue-INST.PL
tujuulu-liuut-si-v-u-q
sweater-make.for-AP-IND-[−tr]-3SG
i. Mother made her children's blue sweaters.
ii. Mother made blue sweaters for her children.

Again, I give the two potential interpretations for each sentence, the (i) interpretations, that the head movement approach adopts, and the (ii) interpretations, that, following Michelson, I regard as the appropriate ones. In these intransitive constructions, the RPs bear instrumental case, namely, *uninngasunik* 'patients' in (38), *illumik* 'house' in (39), and *qiturnaminik* 'her children' in (40). Note that also the modifiers of the respective incorporated nouns, namely, *qanuq annirtutigisumik* 'how much' in (38), *pisuqanik* 'old' in (39), and *tungujurtunik* 'blue' in (40) bear instrumental case.

[12] This fact was noted in Kleinschmidt (1851). Note that (38–40) are intransitive counterparts of the transitive RP constructions discussed in sections 2.1 and 2.2, but they are not the direct intransitive correspondents of (17–20).

As for the transitive data discussed in section 2.1, Bittner and Hale (1996), it would seem, would adopt the (i) interpretations of the above intransitive RP data. On the basis of this, they would assign D-structure (41) to (40):

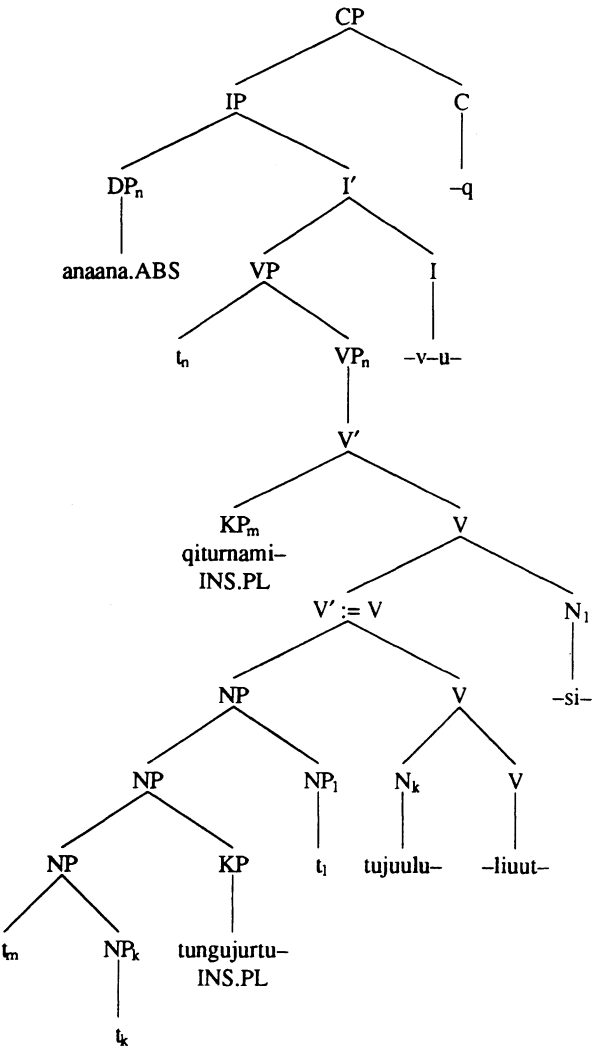
(41)



In this underlying syntactic structure, the RP *qiturnami-* 'her children' and the incorporated noun *tujuulu-* 'sweater' are branches of the same NP. We also see that this latter NP is dominated by yet another NP that is headed by the antipassive morpheme *-si-*. According to Bittner and Hale, both the

nominal head *tujuulu-* and this antipassive morpheme *-si-* would undergo head movement and be adjoined to the verb *-liuut-* 'make for'. Assuming that the noun *tujuulu-* 'sweater' adjoins to the verb, as in S-structure (42), *tujuulu-* serves as a Case-competitor and enables the verb to assign instrumental case on the upper remnant material of the external constituent from which the noun *tujuulu-* has been moved. That is, the verb Case-binds *tungujurtu-* 'blue':

(42)



In (42), the V′ has been reanalyzed as V to allow the antipassive morpheme *-si-* to be adjoined to it and the RP *qiturnami-* 'her children' to raise to the COMP position of this reanalyzed V′. Since this position is locally governed by the reanalyzed V′ and since the V-adjoined antipassive noun acts as a Case competitor, the verb can assign the instrumental case to the RP. Note that the subject *anaana* 'mother' receives absolutive case from being raised into [Spec, IP]. Note also that a predication relation exists between the VP and the subject *anaana*.

2.4. *Some More Shortcomings of the Bittner and Hale Approach*

In this section, I will address some problems that arise if we analyze instrumental RPs in intransitive NI constructions in line with Bittner and Hale.

The first problem is a technical one. In (42) the noun *tujuulu-* 'sweater' is incorporated before reanalysis takes place, though such an ordering is not logically necessary. (41) leaves open a second option. Instead of first applying incorporation to the noun and then to the antipassive morpheme, incorporation of the antipassive morpheme might apply first. Then reanalysis of the V′ as V would allow the latter to Case-bind the RP *qiturnami-* 'her children' and assign instrumental case to it. A result of this reanalysis, however, would be that the noun *tujuulu-* could not adjoin to the verb stem, with the consequence that the modifier *tungujurtu-* 'blue' could not be Case-bound. As a result, it would not receive instrumental case. Bittner and Hale's framework does not block this second option of deriving an ill-formed S-structure from (41), thus presenting a major disadvantage of their derivational account.

As I said, the head movement analysis of the intransitive RP data presented in section 2.3 is based upon the view that the external instrumentals are possessor arguments of the incorporated noun. However, we can show that in many cases the external instrumental is not a possessor at all. (43) is a case in point:

(43) Ulloq tamaat nersussuanik immuiaavoq.
ulluq tamaat nirsussua-nik
day.ABS all.ABS cow-INS.PL
immu-iar-i-v-u-q
milk-remove.from-AP-IND-[−tr]-3SG
i. # The whole day he was removing cow milk.
ii. The whole day he was milking cows (lit. milk-removing from cows).

(43) means that someone was milking cows (lit. 'milk-removing from cows') and not that he was removing cow milk from some place. That is, for (43) to be uttered felicitously there must be cows around that are being milked.

Third, those three-place verbal affixes whose absolutive arguments can never be understood as possessors of the incorporated noun (see (24–28)) also allow for intransitivization, as illustrated in the following examples:

(44) Anaana meeqaminik qaqortunik kamilersuivoq.
anaana miiqa-mi-nik qaqurtu-nik
mother.ABS child-3SGPROX.PL-INS.PL white-INS.PL
kamik-lirsur-i-v-u-q
boot-put.on-AP-IND-[−tr]-3SG
Mother dressed her children with white kamiks.

(45) Angut amernik matuliussivoq.
angut amir-nik matu-liut-si-v-u-q
man.ABS skin-INS.PL door-use.as-AP-IND-[−tr]-3SG
The man used skins as doors.

(46) Kistaara kaaginik sukkulaaterisarpoq qaqortunik.
Kistaara kaagi-nik sukkulaa-tir-i-sar-p-u-q
K.ABS cookie-INS.PL chocolate-put.on-AP-HAB-IND-[−tr]-3SG
qaqurtu-nik
white-INS.PL
Kistaara usually puts white chocolate on cookies.

(47) Ilinniartitsisoq una iliniartunik nalunartunik ilinniagassiisarpoq.
ilinniartitsisuq una iliniartu-nik nalunartu-nik
teacher.ABS this.ABS student-INS.PL difficult-INS.PL
ilinniaga-ssip-i-sar-p-u-q
homework-give-AP-HAB-IND-[−tr]-3SG
This teacher usually gives the students difficult homework.

(44) through (47) display the same Case array as the intransitive NI examples in (38) through (40), namely ABS-INS-INS and ABS-INS, depending on whether there is an instrumental modifier of the incorporated noun or

not. Since the Bittner and Hale derivational analysis of instrumental RPs cannot capture this identity of Case array, they must assign yet another syntactic analysis to 'nonpossessor' cases like (44) through (47).

Fourth, one case of intransitivization mentioned at the beginning of this section is the one that leads to reflexive readings (see (37b)). A reflexive reading as the result of intransitivization must result from the internal argument of a transitive verb being identified with the verb's external argument. Interestingly, this process also applies to the verbal affixes that we find in the RP constructions, as shown in (48) and (49):

(48)a. Juunap Nuka atallaaverpaa.
Juuna-p Nuka atallaa-ir-p-a-a
J.-ERG N.ABS overall-remove-IND-[+tr]-3SG.3SG
Juuna took away an overall from Nuka.

b. Nuka atallaaverpoq.
Nuka atallaa-ir-p-u-q
N.ABS overall-remove-IND-[−tr]-3SG
Nuka removed an overall from himself (≈ took off his overall).

(49)a. Kaalip Vittu atallaaveruppaa.
Kaali-p vittu atallaa-(v)irut-p-a-a
K.-ERG V.ABS overall-remove.by.force-IND-[+tr]-3SG.3SG
Kaali took an overall from Vittus by force.

b. Vittu atallaaveruppoq.
Vittu atallaa-(v)irut-p-u-q
V.ABS overall-remove-IND-[−tr]-3SG
Vittus removed an overall from himself (≈ lost his overall).

In (48a), we have a transitive RP construction. In its intransitive counterpart (48b), the RP argument is 'absorbed' and identified with the absolutive subject *Nuka*. This yields a reflexive interpretation which can be glossed by using a possessive pronoun for pragmatic reasons: If someone removes an overall from himself it is likely to be his overall. A similar process we find in (49a) and (49b). If we follow Bittner and Hale and regard the absolutive constituents in the transitive (a) examples as possessor arguments of the incorporated noun, rather than as arguments of the verb, it is not obvious how the reflexive interpretations could be obtained in the intransitive

(b) examples. This is not obvious because on their view the absolutive constituents in the transitive examples are not regarded as arguments of the respective verbs and hence they cannot be identified with the external argument of these verbs in the case of reflexivization.[13]

A last question that arises with respect to the derivational analysis proposed in (41)–(42) is that if we need reanalysis to assign the embedded possessor argument in (41) the status of an independent argument in (42) to which Case is assigned, then why not simply base-generate it as an independent argument? In the following section, this is exactly what I will propose.

3. A Base-Generated Analysis of RPs and NI in West Greenlandic

In this section, I present a syntactic analysis of transitive and intransitive NI constructions containing RPs that treats the latter as well as the incorporated nouns as independently generated syntactically visible elements. In this analysis, all relevant predication relations are made visible at S-structure by means of coindexation.

3.1. *Absolutive RPs in Base-Generated Transitive NI Constructions*

As an alternative to Bittner and Hale's analysis, I propose that NI is a syntactically base-generated construction, a perspective within which we assign example (18), repeated as (50), D-structure (51):

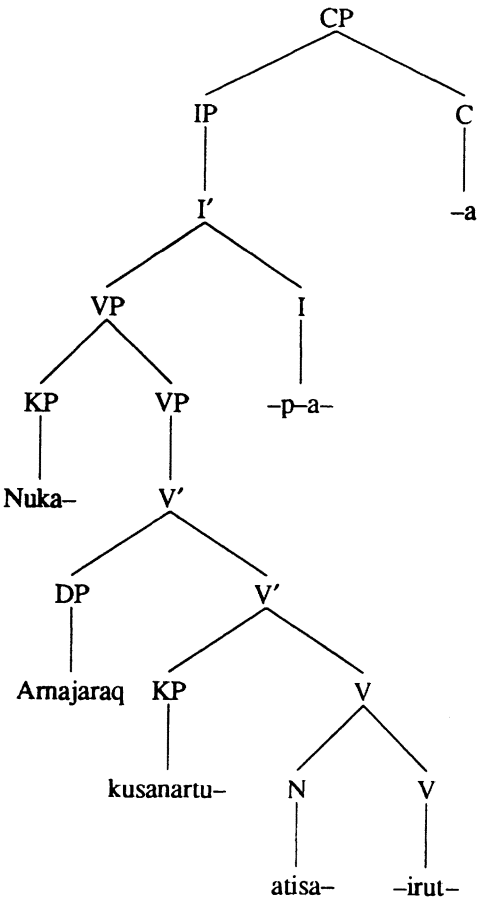
[13] Winnie Lechner pointed out to me that a similar problem arises in the analysis of English reflexive constructions, as illustrated in (i):

(i) John saw a picture of himself.

For the semantic interpretation of the reflexive possessor argument of *himself* in (i) the reflexive pronoun *himself* must be coindexed with the verb's external argument *John*, even though the PP of *himself* is not an argument of the verb *saw* but of the noun *picture*. Proponents of a derivational analysis of the reflexive RP data in (48b) and (49b) could argue that a similar coindexation system is active in the analysis of the reflexive RP data in that the possessor argument of the incorporated noun is identified with the external argument of the verb. Note that such an analysis is again based upon the assumption that RPs are arguments of the incorporated noun, an assumption which – following Michelson (1991) – I reject.

(50) Nukap Arnajaraq kusanartunik atisaaruppaa.
Nuka-p Arnajaraq kusanartu-nik
N.-ERG A.ABS fine-INS.PL
atisa-irut-p-a-a
clothes-remove.by.force-IND-[+tr]-3SG.3SG
Nuka took some/the fine clothes by force from Arnajaraq.

(51)

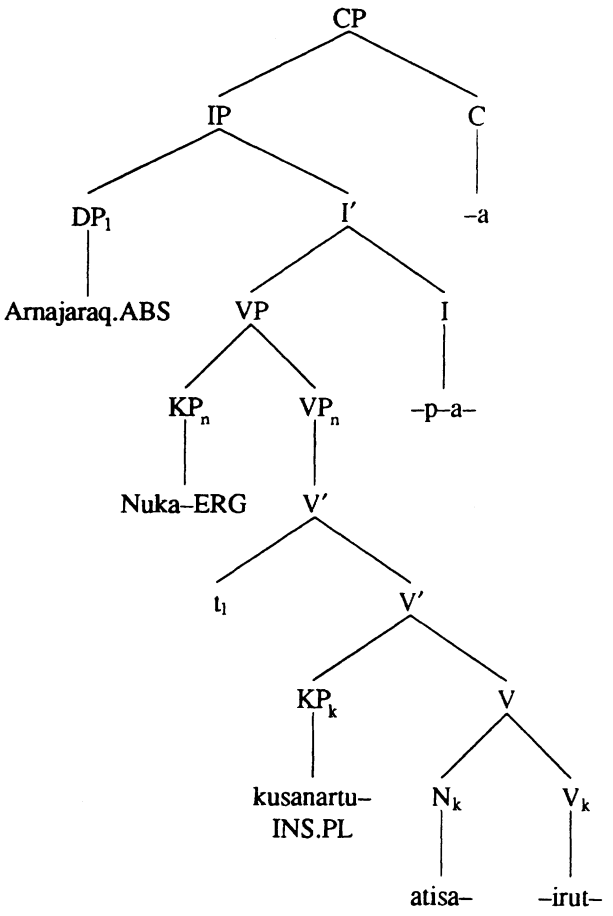


In (51), the noun *atisa-* 'clothes, dress' is base-generated in its incorporated V-adjoined position. In other words, in this analysis words can be built up in the syntax without being derived from phrases.[14] In turn, it requires

[14] This proposal is in line with Dowty's (1979) view, in which syntax is regarded as the component which contains all productive phrase- and word-level operations. See Dowty (1979, chapter 6). Note that I adopt Bittner and Hale's treatment of agreement even though

that the V-adjoined position be available at D-structure as well as at S-structure. Also note that the external modifier *kusanartu-* 'fine, beautiful' is generated as a constituent that is syntactically independent from the incorporated noun, namely, in [Comp, VP], as is also the case for the DP *Arnajaraq*. D-structure (51) is mapped onto S-structure (52):

(52)



(52) accords with Bittner and Hale's analysis in that *Arnajaraq* moves from its [Comp, VP] position to [Spec, IP] to satisfy the Case filter. Unlike in Bittner and Hale's analysis, however, there is no need to reanalyze V′ to V in order to move *Arnajaraq* into a position from which it can reach [Spec, IP]. It is already located in this position, namely, [Comp, VP]. As in Bittner and Hale's analysis, the incorporating V assigns instrumental case to the

another possibility would be to treat object and subject agreement as base-generated on the verb. Exploring the latter idea is beyond the scope of this paper.

external modifier *kusanartunik* 'fine, beautiful', and the incorporated noun *atisa-* 'clothes' acts as its Case-competitor. Differently, however, the Case-binding relation between the verb and the external modifier does not arise by means of head-movement of the noun. Rather, the Case-binding relation already exists at D-structure. Moreover, since *Arnajaraq* is not treated as a possessor argument of the incorporated noun *atisa-* 'clothes' and since therefore they do not build a syntactic unit at D-structure, *Arnajaraq* and *atisa-* are not derivationally related to each other at S-structure. Similarly, (52) does not display a derivational relation between the incorporated noun *atisa-* 'clothes' and the external modifier *kusanartunik* 'fine, beautiful' either. As an alternative to the derivational view, the only syntactic relation in (52) between the incorporating verb, the incorporated noun, and the instrumental modifier parallels the relation that Bittner and Hale realize on the subject and the VP, namely a predication relation in the sense of Williams (1980), where such relations are made syntactically overt by means of coindexation.[15] For instance, in (52), the syntactic predication relation between the subject *Arnajaraq* and the VP captures the semantic fact that the VP is a predicate (or, a property) of the subject, that is, the verb's external argument. Similarly, in (52) a syntactic predication relation exists between the verb and the incorporated noun and between the verb and the instrumental modifier. These predication relations capture the idea that semantically the incorporated noun and the instrumental modifier are predicates (or properties) of the verb's internal theme argument. This idea is based upon Van Geenhoven's (1998a, b) view that semantically a large number of West Greenlandic NI verbs introduce the existential interpretation of their internal argument and that they can nevertheless still combine with an unrestricted number of constituents that express restrictions of these verbs' bound theme arguments. In the syntax, an incorporating verb is therefore coindexed with every element that contributes a predicative restriction of its theme. This is why in (52) the verb *-irut-* 'remove by force' is coindexed with the incorporated noun *atisa-* 'clothes' and with the instrumental modifier *kusanartunik* 'fine, beautiful'.

3.2. *Interesting Side-Effects and Advantages of a Base-Generated Approach*

Making overt the predication relations between an incorporating verb and the predicative restrictions of this verb's internal argument in the syntax,

[15] In William's proposal, the predication relation between a predicate and its antecedent is made overt at an independent level of syntactic representation, namely, Predicate Structure, which is derived from S-structure by means of rules of predication. Following Bittner and Hale, I assume predication relations to be overt at S-structure.

as proposed in (52), has two interesting side effects. The first one is that we get for free an account of the well-known fact that verbs incorporate objects but never subjects. According to Baker (1988, 1996), the fact that subjects never incorporate follows because incorporation of the head noun of a subject phrase into a verb prevents the latter from governing the trace of this incorporated noun. In the present account, the subject/object asymmetry can be related to Williams' (1980) distinction between two kinds of environments of predication. According to Williams, we find grammatically governed predication relations and thematically governed predication relations. For example, in (52), the relation between the predicate expressed by the VP and its antecedent, i.e., the ergative subject *Nukap*, is a grammatically governed predication relation. In contrast, "thematically governed cases all involve predicates in the VP and the predication is of the theme of the verb of the VP" (Williams 1980, p. 207). The example Williams uses to illustrate a thematically governed case of predication is the following:

(53) John gave Bill the dog dead.

In the VP gave *Bill the dog dead*, the predicate *dead* can modify only the object *the dog* but not the indirect object *Bill*. This follows since in this VP *dead* can stand in a predication relation only to the theme of the verb *give*. I suggest that NI in West Greenlandic is also a case of thematically governed predication that occurs in the VP. This means that the incorporated noun – and its instrumental modifiers as well – always stands in a predication relation to the theme, or the internal argument, of the incorporating verb. Since I adopt the view that in the case of NI the theme argument is bound by the incorporating verb, it follows that the incorporated noun and its instrumental modifiers stand in a predication relation to the verb directly.

Another effect of making the predication relations in a NI construction syntactically visible in the way proposed here is that, unlike a head movement account of NI, the present account can deal with the fact that in West Greenlandic some verbal affixes can incorporate a numeral and thereby 'strand' an instrumental nominal. This is possible since numerals can easily be interpreted as predicates of verbally bound arguments. (54) and (55) are two cases in point:

(54) Marloraarpoq affarmillu. (Sadock 1991, p. 20)
marlu-raar-p-u-q affar-mik-lu
two-catch-IND-[−tr]-3SG half-INS-and
He caught two and a half.

(55) Natsernik sisamaraarpoq. (Fortescue 1984, p. 308)
natsir-nik sisama-raar-p-u-q
ringed.seal-INS.PL four-catch-IND-[−tr]-3SG
He caught four ringed seals.

Before I turn to the question of how RPs in intransitive NI constructions can be analyzed in the present proposal, I want to point out two more advantages of a base-generated approach to NI and RPs. First, one and the same syntactic structure can be adopted for all the data that display the ERG-ABS-INS array, that is, for the ones with RPs (see (17–20)) – which of course in the present proposal are not regarded as possessors at all – and for those whose absolutive constituents can never be understood as a possessor (see (24–28)). Second, the view that in sentences like (50) the incorporated noun and the absolutive source argument do not build a constituent at any level of syntactic representation also finds support in a nonincorporating language like German. Consider the following examples:

(56) Peter hat einem Seehund die Haut entfernt.
P. has a.DAT seal the.ACC skin removed
Peter removed the skin from a seal.

(57) Paul hat einem Auto eine Scheibe eingeschlagen.
P. has a.DAT car a.ACC window smashed
Paul smashed a car's window.

The dative NPs in these German examples are syntactically independent from the accusative ones, and vice versa, just like the absolutive constituents are syntactically independent from the incorporated nouns in the West Greenlandic examples. What is furthermore interesting about the above German examples is that one can show that in this nonincorporating language the accusative NPs and the verb build a unit in a way that is very similar to the noun-verb combinations in the West Greenlandic data under discussion. For example, it is not possible to scramble the accusative NPs, as shown in (58) and (59):

(58) *Peter hat die Haut einem Seehund entfernt.

(59) *Paul hat eine Scheibe einem Auto eingeschlagen.

In accordance with this syntactic observation, we can also make a semantic observation. If the dative object is a quantificational expression, the accusative object can never receive wide scope with respect to the former:

(60) Paul hat jedem Auto eine Scheibe eingeschlagen.
*P. has every.*DAT *car a.*ACC *window smashed*
i. For every car it is such that Paul smashed a window of it.
ii. # There is a window and for every car it is such that Paul smashed it.

Again, I take this to be an indication that the accusative *eine Scheibe* 'a window' builds a semantic unit with the verb *einschlagen* 'smash' in the way an incorporated noun builds a semantic unit with an incorporating verb. The exact nature of this semantic unity will be discussed in sections 4 and 5, where it will become clear how the inherent narrow scope of incorporated nouns and of semantically related nominal expressions in nonincorporating languages can be derived automatically.

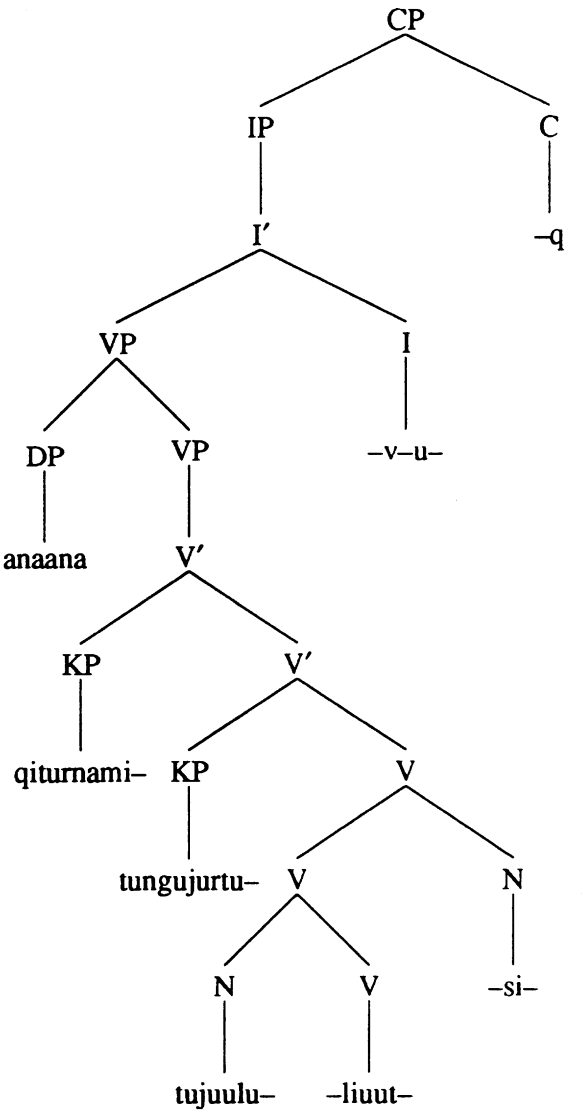
Summarizing, I discussed in this section some positive effects and advantages of a base-generated analysis of NI constructions with absolutive RPs. I will now extend this base-generated approach towards instrumental RPs.

3.3. *Instrumental RPs in Base-generated Intransitive NI Constructions*

Turning now to intransitive RP constructions, I propose that (40), repeated here as (61), receives (62) as its D-structure:

(61) Anaana qitornaminik tungujortunik tujuululiuussivoq.
anaana qiturna-mi-nik tungujurtu-nik
*mother.*ABS *child-3*SGPROX.PL-INS.PL *blue-*INS.PL
tujuulu-liuut-si-v-u-q
*sweater-make.for-*AP-IND-*[−tr]-3*SG
Mother made blue sweaters for her children.

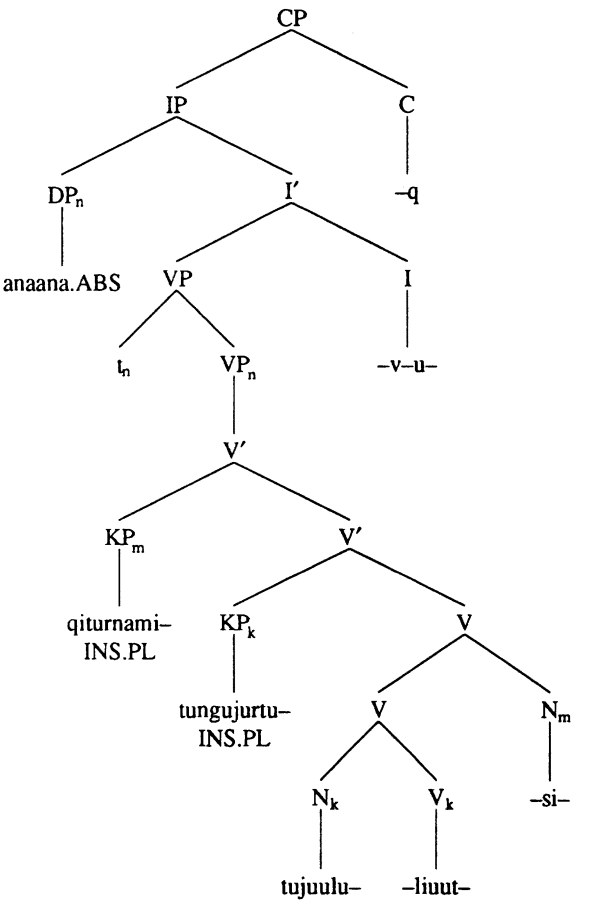
(62)



In this D-structure, the RP *qiturnami-* 'her children', the external modifier *tungujurtu-* 'blue', the incorporated noun *tujuulu-* 'sweater', and the antipassive morpheme *-si-* are all base-generated independently of each other.[16] In (63), the S-structure derived from (62), the Case assignments and the predication structure of (61) are made explicit:

[16] According to Bittner and Hale (1996), base-generation of the antipassive noun in the V-adjoined position would not yield the Case-array of a so-called 'long distance antipassive' like the one illustrated in (i):

(63)



(i) Anna meeqqanik Juunamut paarisorinnippoq. (Bittner and Hale 1996, p. 551)
Anna miiqqa-nik Juuna-mut paari-suri-nnip-p-u-q
A.ABS child-INS.PL J.-DAT look.after-believe-AP-IND-[−tr]-3SG
Anna believes that Juuna is looking after the children.

On their view, dative case is assigned to *Juunamut*, which is the subject of the embedded verb *paari-*, before restructuring takes place and before the antipassive *-nnip-* is adjoined to the restructured attitude verb *-suri-*. As they see it, the adjunction of the antipassive is needed to create a binding relation between the verb *-suri-* and the instrumental *miiqqanik*. At this point, I do not have an alternative analysis of the interaction of the antipassive with propositional attitude verbs based upon my view that the antipassive is base-generated in its V-adjoined position.

In (63), the external modifier *tungujurtu-* receives instrumental case because the incorporated noun serves as the Case-competitor and enables the verb *-liuut-* 'make for' to Case-bind this external modifier. The RP *qiturnami-* receives instrumental case from the verb because the antipassive morpheme serves as the Case-competitor and enables the verb to Case-bind it. Since the noun and the antipassive morpheme are both base-generated in their V-adjoined positions, we are not faced with Bittner and Hale's conflict of deciding which nominal head-moves into V first.

Furthermore, (63) makes explicit the predication relation between the verb *-liuut-* 'make for' and the incorporated noun *tujuulu-* 'sweater', and the one between the same verb and the instrumental modifier *tungujurtu-* 'blue'. This is achieved via coindexing these elements with the index k, which stands for the verb's theme argument. In addition, the antipassive morpheme *-si-* contributes the existential interpretation of the benefactive argument of the verb *-liuut-*, and the instrumental constituent *qiturnaminik* 'her children' contributes a predicate of this existentially bound benefactive argument. Hence, whereas in Baker (1988) the argumenthood of the antipassive morpheme is captured in such a way that the antipassive is regarded as the head of a stipulated external NP argument (see (41)), I capture the argumenthood of *-si-* directly in its semantics. As a consequence, *qiturnaminik* stands in a predication relation to the antipassive morpheme, which is made overt in (63) by coindexing *qiturnaminik* and *-si-*.

Because in (63) the benefactive argument of the verb stands in a predication relation to the antipassive morpheme, we must adjust Williams's rule that only the theme argument can be the antecedent of a predication relation in the VP. Williams's rule, which deals with thematically governed predication, was defined for cases in which a constituent in the VP predicates something of an argument in the VP (see example (53)). I suggest that an element in the VP can stand in a predication relation to any implicit argument, that is, to any argument that is contributed by the verb or by the antipassive affix. In accordance with Williams's rule, I propose that if an argument is existentially bound by the verb, it will be its theme argument. Hence, the verb itself can only be the predication relation antecedent of those constituents that predicate something of its theme. Hence, a noun incorporated by a verb will always be a predicate of the verb's theme. If an argument is existentially bound by some other morphosyntactic element in the VP (e.g., the antipassive morpheme), this binding element will also act as the antecedent of those constituents in the VP that are predicates

of the argument that it binds.[17] As a result, an instrumental constituent in the antipassivized NI constructions discussed in this section can be either the predicate of the theme (which is bound by the incorporating verb) or of the benefactive/source/goal (which is bound by the antipassive affix). In fact, there is sometimes an ambiguity in the sense that an instrumental constituent can be understood either as a predicate of the theme or as a predicate of another VP-internal argument (e.g., source, goal, benefactive). This ambiguity is illustrated in (64):

(64) Kistaara kaaginik qaqortunik sukkulaaterisarpoq.
Kistaara kaagi-nik qaqurtu-nik
K.ABS cookie-INS.PL white-INS.PL
sukkulaa-tir-i-sar-p-u-q
chocolate-put.on-AP-HAB-IND-[−tr]-3SG
i. Kistaara usually puts white chocolate on cookies.
ii. Kistaara usually puts chocolate on white cookies.

In (64), the instrumental modifier *qaqurtunik* 'white' can be interpreted as a predicate of the theme, as in (64i), or as a predicate of the goal argument, as in (64ii). If *qaqurtunik* is postposed, as in (65), the sentence is disambiguated and receives only the reading under (64i):

(65) Kistaara kaaginik sukkulaaterisarpoq qaqortunik.
Kistaara kaagi-nik sukkulaa-tir-i-sar-p-u-q
K.ABS cookie-INS.PL chocolate-put.on-AP-HAB-IND-[−tr]-3SG
qaqurtu-nik
white-INS.PL
Kistaara usually puts white chocolate on cookies.

[17] Note that the antipassive can also bind the theme argument of a verb. In a standard antipassive example like (36b), repeated here as (i), the antipassive morpheme existentially binds the theme argument of *tuqut* – 'kill'.

(i) Jaaku arnamik toqutsivoq.
Jaaku arna-mik tuqut-si-v-u-q
J.ABS woman-INS kill-AP-IND-[−tr]-3SG
Jacob killed a woman.

Syntactically, the antipassive in (i) stands in a predication relation to the instrumental constituent *arnamik* 'woman', since the latter contributes a predicate of the theme argument bound by this antipassive.

Summarizing, the S-structures presented in this section will serve as the input to the semantic interpretation. In the next section, I present the framework to accomplish this step.

4. The Dynamic Semantic Background

In Van Geenhoven (1998a), I presented a static version of a semantic mechanism that deals with the semantic interpretation of West Greenlandic NI constructions and that I called 'semantic incorporation'. In this paper, I elaborate a dynamic version of semantic incorporation phrased in terms of Dekker's (1993) Dynamic Montague Grammar framework (DMG), which in turn is based upon Groenendijk and Stokhof (1990).

4.1. *Why Dynamic Semantics?*

The leading idea of Van Geenhoven (1998a) is that many West Greenlandic NI verbs contribute the existential interpretation of their theme arguments. Incorporated nouns and their instrumental modifiers are then interpreted as predicative restrictions of the theme argument, while the verb 'semantically incorporates' these predicates. The idea that a verb can introduce the existential interpretation of one of its arguments goes back to Carlson's (1977) interpretation of so-called 'stage-level' verbs, which take care of the existential interpretation of their bare plural arguments. This idea is related to Dekker's (1993) proposal that those expressions that are able to contribute the existential interpretation of one of their arguments are those which carry an implicit argument. According to Dekker, "expressions which carry implicit arguments can be taken to introduce objects into the context which are available for optional ... specifications" (Dekker 1993, p. 562), and are also available for possible anaphoric relations.[18]

Carlson's idea that a verb can bind one of its arguments provides a straightforward account of why West Greenlandic incorporated nouns and their instrumental modifiers always receive narrowest scope readings, a

[18] Dekker's approach is broader than classical discourse semantic approaches, in which only indefinites introduce novel discourse referents (see Kamp 1981; Heim 1982). According to Dekker, other expressions that can introduce a novel referent are, for instance, verbs, which implicitly introduce the event referent of the event they describe, and relational nouns, which implicitly introduce the referent standing for their internal argument. Note, however, that with respect to the interpretation of indefinites, Dekker adopts the standard Kamp-Heim view. In Van Geenhoven (1998a), I interpret indefinites as ambiguous between predicates of implicit arguments (type $\langle s, \langle e, t\rangle\rangle$) and open propositions (type $\langle s, t\rangle$).

characteristic that was first observed in Bittner (1994) and is exemplified in (66):

(66) Juuna Kaalimit amerlasuunik allagarsinngilaq.
(Bittner 1994, p. 118)
Juuna Kaali-mit amirlasuu-nik allagar-si-nngit-l-a-q
J.ABS K.-ABL many-INS.PL letter-get-NEG-IND-[−tr]-3SG
i. It is not the case that Juuna got many letters from Kaali.
ii. # There were many letters from Kaali such that it is not the case that Juuna got them.

If the verb is the element that contributes the existential interpretation of an incorporated noun, it follows that whenever this verb is in the scope of some operator (e.g., the negation operator which is realized as the morpheme *-nngit-* in (66)), the verb's existentially-bound argument will automatically be in the scope of this operator as well. An incorporated noun and its instrumental modifiers contribute only predicates of this bound variable.

The advantage of integrating semantic incorporation into a dynamic perspective on semantics is that in this latter approach the meaning of a sentence is regarded as its potential to change the discourse context by adding novel discourse participants. Such an approach provides a straightforward way to account for Sadock's observation that incorporated nouns appear to be able to antecede pronouns. Example (9), repeated here as (67), illustrates this observation:

(67)a. Suulut biililiorsimavoq. (Sadock 1980, p. 311)
Suulut biili-liur-sima-v-u-q
S.ABS car-make-PRF-IND-[−tr]-3SG
Søren made a car.

b. Sikaat karsikuannik sanasimavaa.
sikaa-t karsiku-an-nik sana-sima-v-a-a
cigar-ERG.-PL box.old-3PL.PL-INS made-PRF-IND-[+tr]-3SG.3SG
He made it with old cigar boxes.

Note that the English pronouns *he* and *it* in the translations of (67b) correspond to the 3SG subject and 3SG object agreement markers on the verb *sanasimavaa*, respectively.

Moreover, Dekker's dynamic approach to implicit arguments provides a way of accounting for the fact that West Greenlandic NI constructions

can contain an unrestricted number of external instrumental modifiers. In (68), no instrumental modifier is present, in (69) one modifier, and in (70) two:

(68) Suulut timmisartuliorpoq.
Suulut timmisartu-liur-p-u-q
S.ABS airplane-make-IND-[−tr]-3SG
Suulut made an airplane/airplanes.

(69) Suulut marlunnik timmisartuliorpoq.
Suulut marluk-nik timmisartu-liur-p-u-q
S.ABS two-INS.PL airplane-make-IND-[−tr]-3SG
Suulut made two airplanes.

(70) Suulut qisummik ataatsimik timmisartuliorpoq.
Suulut qisuk-mik ataasi-mik timmisartu-liur-p-u-q
S.ABS wooden-INS.SG one-INS.SG airplane-make-IND-[−tr]-3SG
Suulut made one wooden airplane.

We will see that the optionality of the instrumental constituents follows from the way in which their semantics is defined. In sections 4.2 and 4.3, I present a sketch of a dynamic treatment of West Greenlandic NI verbs and their instrumental modifiers, which provides the basis for the semantic interpretation of RPs in NI constructions in section 5.

4.2. *A DMG Fragment of West Greenlandic NI*

In DMG, a dynamic version of Montague Grammar, the basic types are ϵ and τ and from these the functional types are derived. Technically speaking, the two basic types correspond to the types $\langle s, e\rangle$ and $\langle s, \langle\langle s, t\rangle, t\rangle\rangle$, respectively, known from intensional logic. A sentence is an expression of type τ, that is, a function from states and propositions to truth values. In line with standard MG, natural language expressions are translated into expressions of a logical language that has a well-defined interpretation. This language consists of variables (x, y, z) and so-called lifts of constants c, written as $\uparrow c$. The lift operator obtains the 'dynamic' types from their 'static' counterparts. In this respect, a discourse marker d is regarded as a lifted constant of type ϵ. Note that the static content of dynamic expressions is yielded by the closure operation $\downarrow$. Other operations used in the DMG language are λ-abstraction, λ-application, dynamic identity ($\widehat{=}$), dynamic negation ($\sim$), dynamic existential quantification ($\mathscr{E}$), and dynamic

conjunction (;). For further details I refer the reader to Groenendijk and Stokhof (1990) and Dekker (1993).

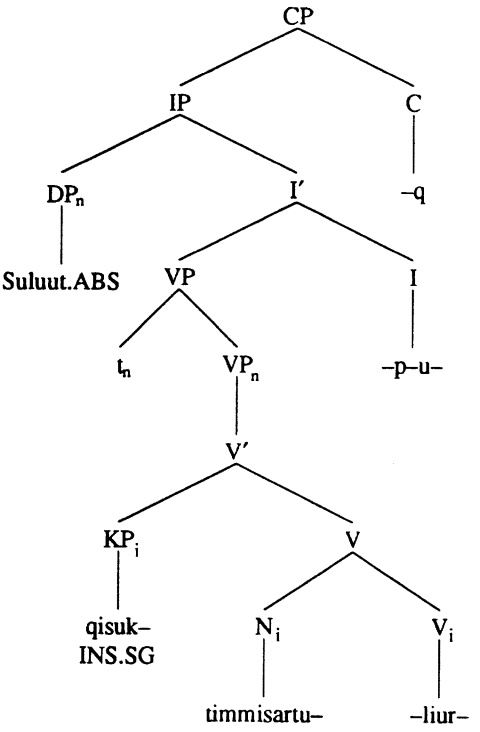
Our goal is to give the dynamic semantic interpretation of the following piece of discourse:[19]

(71) Suluut qisummik timmisartuliorpoq.
suluut qisuk-mik timmisartu-liur-p-u-q
S.ABS wooden-INS.SG airplane-make-IND-[−tr]-3SG
Søren made a wooden airplane.

(72) Marlunnik suluusaqarpoq.
marluk-nik suluusa-qar-p-u-q
two-INS.PL wing-have-IND-[−tr]-3SG
It has two wings.

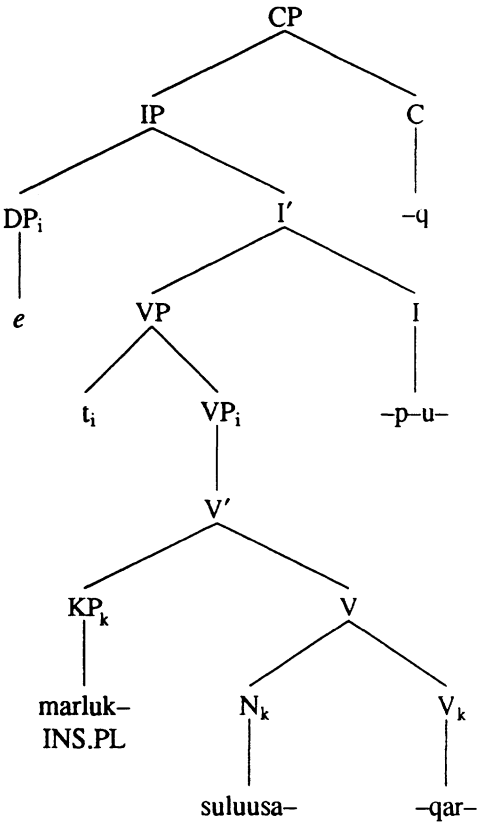
Based on our previous conclusions, (71) and (72) receive (73) and (74) as their respective S-structures, which are also the input for their semantic interpretation:

(73)



[19] These examples are modified versions of Sadock's (1980) examples (37) and (38).

(74)



In each S-structure, the predication relation between the incorporating verb, the incorporated noun, and the instrumental modifier, on the one hand, and between the subject and the VP, on the other, are made overt by means of coindexation. Note also that the empty pronominal subject *e* in (74) is coindexed in the syntax with the verb *-liur-* 'make' in (73).

The first step in the semantic interpretation of (71) and (72) is to provide the translations of the terminal nodes in (73) and (74). The interpretation of mood and agreement are ignored since these components are not important for our present purposes:

(75) $[_V\text{-liur}_i\text{-}] \Rightarrow \mathscr{E}d_i[\uparrow\textbf{make}(\uparrow d_i)(x)]/x$

(76) $[_V\text{-qar}_k\text{-}] \Rightarrow \mathscr{E}d_k[\uparrow\textbf{have}(\uparrow d_k)(x)]/x$

(77) $[_N\ \text{timmisartu}_i\text{-}] \Rightarrow \uparrow\textbf{airplane/s}(\uparrow d_i)$

(78) $[_N\ \text{suluusa}_k\text{-}] \Rightarrow \uparrow\textbf{wing/s}(\uparrow d_k)$

(79) $[_{KP}$ qisuk-INS.SG$_i] \Rightarrow \uparrow$**wooden**$(\uparrow d_i)$

(80) $[_{KP}$ marluk-INS.PL$_k] \Rightarrow \uparrow$**two**$(\uparrow d_k)$

(81) $[_{DP}$ suluut.ABS$_n] \Rightarrow \lambda P\ P(\uparrow$**s**$)$

(82) $[_{DP}\ e_i] \Rightarrow \lambda P\ P(\uparrow d_i)$

(83) $t_n \Rightarrow x_n$

(84) $t_i \Rightarrow x_i$

In (75) and (76), the incorporating verbal affixes *-liur$_i$-* and *-qar$_k$-* are translated as dynamic propositions which contain an implicit theme argument, namely, $\uparrow d_i$ and $\uparrow d_k$, respectively. Their external argument x is stored, which I indicate by means of '/x'.[20] These affixal verbs are thus regarded as expressions of type τ. In (77) and (78), the incorporated nouns *timmisartu$_i$-* and *suluusa$_k$-* are translated as dynamic propositions as well (type τ): They each contribute a predicate that holds of the discourse marker corresponding to their index. Note that the incorporated nouns contribute a property that can hold both of singularities and pluralities, which is indicated in their translations by means of '**N/s**'. The indexed instrumental modifiers in (79) and (80) are translated as dynamic propositions (type τ), which also deliver predicates that hold of the discourse markers corresponding to the index they carry. The semantic contribution of singular and plural morphology is ignored. In (81) and (82) the proper name *Suluut* and the empty pronoun e_i are each translated as dynamic generalized quantifiers, that is, they are interpreted as expressions of type $\langle\langle\epsilon, \tau\rangle, \tau\rangle$. Finally, in (83) and (84) the traces t_n and t_i are translated as the free variables x_n and x_i, respectively, that is, as expressions of type ϵ.

The translations in (75) through (84) together with the S-structures in (73) and (74) are then the input for the derivation of the semantic representation of (71) and (72). Starting with (73), the incorporated noun *timmisartu$_i$-* combines with the incorporating verb *-liur$_i$-*. In the semantics, this combination is performed by means of the dynamic conjunction of the verb's translation in (75) and the noun's translation in (77). As a result, the

[20] For completeness' sake, every expression should come with a store. For the sake of transparency, however, I decided that if the store of an expression is empty it does not appear in the translation of that expression.

noun's descriptive content contributes a restriction of the verb's implicit argument, as is illustrated in (85):

(85) $[_V\ [_N\ \text{timmisartu}_i\text{-}][_V\text{-liur}_i]] \Rightarrow$
$\mathcal{C}d_i[\uparrow\textbf{make}(\uparrow d_i)(x)]/x;\ \uparrow\textbf{airplane/s}(\uparrow d_i) \Leftrightarrow$
$\mathcal{C}d_i[\uparrow\textbf{make}(\uparrow d_i)(x);\ \uparrow\textbf{airplane/s}(\uparrow d_i)]/x$

The coindexed predication relation between the verb and its incorporated noun plays a crucial role for the semantic interpretation. The syntactic coindexation directs the noun to restrict the appropriate implicit verbal argument, namely, $\uparrow d_i$. The following associativity equivalence allows the existential quantifier in (85) to extend its scope:

(86) $[\mathcal{C}d\ \phi;\ \Psi] \Leftrightarrow \mathcal{C}d[\phi;\ \Psi]$

This equivalence also holds if d occurs free in Ψ.

The instrumental modifier *qisummik*$_i$ addresses the same implicit verbal argument as the incorporated noun. Again, this predication relation is made overt in the syntax by the coindexing of this instrumental constituent with the verb. The instrumental modifier, which has been translated as a dynamic proposition in (79), combines with the N-V combination in (85) via dynamic conjunction:

(87) $[_{V'}\ [_{KP}\ \text{qisuk-INS.SG}_i]\ [_V\ \text{timmisartu}_i\text{-liur}_i\text{-}]] \Rightarrow$
$\mathcal{C}d_i[\uparrow\textbf{make}(\uparrow d_i)(x);\ \uparrow\textbf{airplane/s}(\uparrow d_i)]/x;\ \uparrow\textbf{wooden}(\uparrow d_i) \Leftrightarrow$
$\mathcal{C}d_i[\uparrow\textbf{make}(\uparrow d_i)(x);\ \uparrow\textbf{airplane/s}(\uparrow d_i);\ \uparrow\textbf{wooden}(\uparrow d_i)]/x$

The trace t_n is translated as the free variable x_n and serves as a placeholder for the referent that will fill the external argument position of the NI verb. At this point, the type mismatch between the translation of the VP and the translation of the trace requires that the variable x in the store of the VP be taken from that store by λ-abstraction. Note that the predication relation between the subject's trace t_n and the VP is the syntactic mirror of the semantic interpretation of this VP as a predicate of t_n:

(88) $[_{VP}\ [_{DP}\ t_n]\ [_{VP_n}\ \text{qisuk-INS.SG}_i\ \text{timmisartu}_i]] \Rightarrow$
$\lambda x\ \ \mathcal{C}d_i[\uparrow\textbf{make}(\uparrow d_i)(x);\ \ \uparrow\textbf{airplane/s}(\uparrow d_i);\ \ \uparrow\textbf{wooden}(\uparrow d_i)]$
$(x_n) \Leftrightarrow$
$\mathcal{C}d_i[\uparrow\textbf{make}(\uparrow d_i)(x_n);\ \uparrow\textbf{airplane/s}(\uparrow d_i);\ \uparrow\textbf{wooden}(\uparrow d_i)]$

Finally, in order to apply the meaning of *Suulut* to (88) the free variable x_n is bound by means of λ-abstraction. I assume that this step is licensed by

the fact that *Suulut* and its trace are coindexed. As a result, (89) represents the complete translation of S-structure (73):[21]

(89) $[_{CP}\ [_{IP}\ [_{DP}\ \text{Suluut}_n]\ [_{VP}\ t_n\ \text{qisuk-INS.SG}_i\ \text{timmisartu}_i\text{-liur}_i\text{-}pu\text{-}]]\ \text{-}q] \Rightarrow$
$\lambda P\ P(\uparrow\mathbf{s})(\lambda x_n\ \mathcal{C}d_i\ [\uparrow\mathbf{make}(\uparrow d_i)(x_n);\ \uparrow\mathbf{airplane/s}(\uparrow d_i);$
$\uparrow\mathbf{wooden}(\uparrow d_i)]) \Leftrightarrow$
$\mathcal{C}d_i[\uparrow\mathbf{make}(\uparrow d_i)(\uparrow\mathbf{s});\ \uparrow\mathbf{airplane/s}(\uparrow d_i);\ \uparrow\mathbf{wooden}(\uparrow d_i)]$

The second S-structure of our piece of discourse under analysis, namely (74), also instantiates NI, namely $suluusa_k\text{-}qar_k\text{-}$. In (74), the instrumental modifier $marlunnik_k$ applies to the N-V combination. As above, these components are successively translated as follows:

(90) $[_V\ \text{suluusa}_k\text{-qar}_k\text{-}] \Rightarrow$
$\mathcal{C}d_k[\uparrow\mathbf{have}(\uparrow d_k)(x)]/x;\ \uparrow\mathbf{wing/s}(\uparrow d_k) \Leftrightarrow$
$\mathcal{C}d_k[\uparrow\mathbf{have}(\uparrow d_k)(x);\ \uparrow\mathbf{wing/s}(\uparrow d_k)]/x$

(91) $[_{V'}\ [_{KP}\ \text{marluk-INS.PL}_k]\ [_V\ \text{suluusa}_k\text{-qar}_k\text{-}]] \Rightarrow$
$\mathcal{C}d_k[\uparrow\mathbf{have}(\uparrow d_k)(x);\ \uparrow\mathbf{wing/s}(\uparrow d_k)]/x;\ \uparrow\mathbf{two}(\uparrow d_k) \Leftrightarrow$
$\mathcal{C}d_k[\uparrow\mathbf{have}(\uparrow d_k)(x);\ \uparrow\mathbf{wing/s}(\uparrow d_k);\ \uparrow\mathbf{two}(\uparrow d_k)]/x$

After having processed the interpretation of the trace t_i in (74) as before, the empty pronominal subject e_i, which I take to be licensed by the presence of subject agreement on the verb, $\text{-}q$, is interpreted as a pronoun that is coindexed with the discourse referent of the previously introduced wooden airplane, i.e., $\uparrow d_i$. This is shown in (92), the complete translation of (74):

(92) $[_{CP}\ e_i\ t_i\ \text{marluk-INS.PL}_k\ \text{suluusa}_k\text{-}puq] \Rightarrow$
$\lambda P\ P(\uparrow d_i)(\lambda x_i\ \mathcal{C}d_k[\uparrow\mathbf{have}(\uparrow d_k)(x_i)\ \uparrow\mathbf{wing/s}(\uparrow d_k);$
$\uparrow\mathbf{two}(\uparrow d_k)]) \Leftrightarrow$
$\mathcal{C}d_k[\uparrow\mathbf{have}(\uparrow d_k)(\uparrow d_i);\ \uparrow\mathbf{wing/s}(\uparrow d_k);\ \uparrow\mathbf{two}(\uparrow d_k)]$

[21] The CP translation in (89) and the ones to follow can be further reduced by means of $\uparrow$-export and $\downarrow$-import so that one arrives at their static counterparts. I will not do these reductions in this paper but see Dekker (1993).

Finally, the translation of the sequence of the two S-structures (73) and (74) consists of their dynamic conjunction, which is represented as follows:

(93) $[_{CP}$ Suluut$_n$ t$_n$ qisuk-INS.SG$_i$ timmisartu$_i$-liur$_i$-*puq*], $[_{CP}$ e_i t$_i$ marluk-INS.PL$_k$ suluusa$_k$-qar$_k$-*puq*] $\Rightarrow$
$\mathcal{C}d_i[\uparrow$**make**$(\uparrow d_i)(\uparrow$**s**$)$; $\uparrow$**airplane/s**$(\uparrow d_i)$; $\uparrow$**wooden**$(\uparrow d_i)]$;
$\mathcal{C}d_k[\uparrow$**have**$(\uparrow d_k)(\uparrow d_i)$; $\uparrow$**wing/s**$(\uparrow d_k)$; $\uparrow$**two**$(\uparrow d_k)] \Leftrightarrow$
$\mathcal{C}d_i[\uparrow$**make**$(\uparrow d_i)(\uparrow$**s**$)$; $\uparrow$**airplane/s**$(\uparrow d_i)$; $\uparrow$**wooden**$(\uparrow d_i)$;
$\mathcal{C}d_k[\uparrow$**have**$(\uparrow d_k)(\uparrow d_i)$; $\uparrow$**wing/s**$(\uparrow d_k)$; $\uparrow$**two**$(\uparrow d_k)]]$

Since the dynamic existential quantifier introduced by *-liur$_i$-* widens its scope beyond the sentence border, the antecedent-pronoun relation between this verb's implicit argument and the pronominal e_i can be treated as a semantic relation. This captures Sadock's observation that incorporated nouns in West Greenlandic appear to be discourse transparent. But of course, strictly speaking, it is the verbal affixes that are discourse transparent.

4.3. *Incorporated Nouns and Their Instrumental Modifiers as Dynamic Propositions*

Before moving on to the dynamic interpretation of the RP data, it is necessary to address four issues with respect to the interpretation of incorporated nouns and instrumental modifiers as dynamic propositions. First, the interpretation of the indexed instrumental modifiers as dynamic propositions corresponds to the semantic fact that these modifiers are optional. In the syntax, this semantic optionality is mirrored in the fact that in West Greenlandic NI constructions these instrumentals are optional constituents (see (68) *versus* (69) and (70)). Moreover, the fact that in the syntax it is possible to have an unrestricted number of them corresponds to the idea that they each pick out the same implicit argument.

Second, interpreting indexed incorporated nouns as dynamic propositions predicts that semantically the descriptive content of these nouns may be redundant as well. Indeed, we find instances of NI where the verb combines with a stem *pi-* which contributes no descriptive content by itself. Sadock (1980) glosses *pi-* as 'thing', as shown in the following two examples:

(94) Peqarpoq.
pi-qar-p-u-q
thing-have-IND-[−tr]-3SG
He has something.

(95) Pisivoq.
pi-si-v-u-q
thing-buy-IND-[−tr]-3SG
He bought something.

These examples also make clear that in the case of NI the semantic optionality of incorporated nouns does not correspond to structural optionality.[22] For purely morphological reasons, an affixal verb requires a nominal stem. This illustrates that semantic optionality and syntactic optionality are two phenomena that may or may not correlate with each other.

Third, it may seem that if we interpret instrumental modifiers as dynamic propositions that pick out an appropriate discourse referent, the existential quantifier binding this referent cannot extend its scope if the verb, by which this quantifier is introduced, is itself embedded under negation. In other words, the current proposal seems to predict that (96) receives the weird reading (96i) rather than the correct reading (96ii):[23]

[22] Note that in example (34), repeated here as (i), the verb *piirpaa* is a combination of *pi-* and *-ir-* 'remove from'. The latter is the same verbal affix *-ir-* that we found in (32), repeated here as (ii):

(i) Nukap nerrivimit puisip amia peerpaa.
Nuka-p nerrivi-mit puisi-p ami-a piir-p-a-a
N.-ERG table-ABL seal-ERG skin-3SG.SG.ABS remove-IND-[+tr]-3SG.3SG
Nuka removed the seal's skin from the table.

(ii) Nukap puisi ameerpaa.
Nuka-p puisi ami-ir-p-a-a
N.-ERG seal.ABS skin-remove.from-IND-[+tr]-3SG.3SG
Nuka removed the skin from the seal.

It seems to me that in modern West Greenlandic, *piir-* is a case of lexicalized NI. This view is supported by the fact that unlike in (ii) the theme argument of the verb (rather than the source argument) bears absolutive case (i.e., *puisip amia*) and agrees with the verb. In addition, the source argument bears ablative case (i.e., *nerrivimit*). Whereas *-ir-* in (ii) is a three-place verb, *piir-* in (i) is a two-place verb that can combine with an optional ablative source constituent.

[23] I thank an anonymous reviewer for pointing out to me this potential problem.

(96) Suluut qisummik timmisartuliunngilaq.
Suluut qisuk-mik$_i$ timmisartu$_i$-liur$_i$-nngit-l-a-q
S.ABS wooden-INS.SG airplane-make-NEG-IND-[−tr]-3SG
i. It is not the case that Søren made an airplane$_i$. It$_i$ is wooden.
ii. It is not the case that Søren made a wooden airplane.

This prediction seems to follow from the idea that if the negation morpheme *-nngit-* in the verb *timmisartu-liur-nngit-l-a-q* is interpreted directly as a negation operator, it would not be possible to let the external instrumental *qisummik$_i$* address the implicit argument of the verb *-liur$_i$-*, since the existential quantifier that binds this argument will be embedded under negation. In this case, the semantic component would seem to incorrectly deliver (96i) as the interpretation of (96). However, this problem can be solved by regarding the negation morpheme as a marker of the fact that the VP is embedded in an abstract NegP. This means that the negation morpheme *-nngit-* is not itself interpreted as a negation operator, but simply as an indication that there is an abstract negation operator higher up in the syntactic tree.[24] As a result it is guaranteed that the discourse referent introduced by the verb is accessible to be restricted by the instrumental modifier because this instrumental is in the scope of the higher NegP.

Finally, in the NI examples given so far all instrumental modifiers are intersective. As Kamp (1975) points out, adjectives can also be understood in a nonintersective or intensional way, that is, as modifiers of a noun rather than of the referent of which this noun is a predicate. The following examples illustrate the intersective vs. nonintersective ambiguity for the English adjectives *big* and *new*:

(97) John has a big knife.
i. John has a knife that is also a big object.
ii. John has a knife that is big for a knife.

(98) Mary bought a new car.
i. Mary bought a car that is new.
ii. Mary bought a car that is new for her.

To deal with cases of nonintersective or intensional modification in NI constructions, I proposed in Van Geenhoven (1998a) that we create a predicate modifier slot (*P*-slot) in the semantic representation of the noun into which

[24] For a similar proposal, see Jacobs's (1983) semantic treatment of the German negative determiner *kein*, and Dowty's (1994) and Ladusaw's (1992) treatment of negative concord.

at a later stage the meaning of a nonintersective modifier can be integrated. The need for this proposal follows from sentences like (99), where the external instrumental *piqqusirluutinik* 'counterfeit' is a direct modifier of the incorporated noun *aningaasa-* 'money' and not of the referent of which this noun holds: Counterfeit money is not money.[25]

(99) Kaali peqquserluutinik aningaasaliorpoq.
Kaali piqqusirluuti-nik aningaasa-liur-p-u-q.
*K.*ABS *counterfeit-*INS.PL *money-make-*IND*-[−tr]-3*SG
Kaali made counterfeit money.

It is this proposal that I adopt here, too. Whereas intersective instrumental modifiers are interpreted as predicates that pick out the discourse referent introduced by a NI verb, nonintersective modifiers are predicates that lack the ability to pick out a referent. In the syntax, no predication relation exists between them and the verb. Hence, nonintersective instrumentals will be translated as dynamic properties (type $\langle\langle\epsilon, \tau\rangle\langle\epsilon, \tau\rangle\rangle$) and not as dynamic propositions. This is illustrated in (100) for *piqqusirluutinik* 'counterfeit':

(100) $[_{KP}$ piqqusirluuti-INS.PL$] \Rightarrow \uparrow$**counterfeit**

At the point at which this nonintersective modifier must combine with the complex verb *aningaasaliurpuq* (type τ), dynamic conjunction cannot apply because of type mismatch. Therefore, the verb activates the embedded P-slot that applies to the noun *aningaasa-* by λ-abstracting over P:

(101) $[_V\ [_N$ aningaasa$_i$-$][_V$-liur$_i]] \Rightarrow$
$\mathcal{C}d_i[\uparrow$**make**$(\uparrow d_i)(x);\ P(\uparrow$**money**$)(\uparrow d_k)]/x,\ P \Leftrightarrow$
$\lambda P\ \mathcal{C}d_i[\uparrow$**make**$(\uparrow d_i)(x);\ P(\uparrow$**money**$)(\uparrow d_i)]/x$

In this way, the nonintersective instrumental can be 'absorbed' by the complex verb in (101). It receives the interpretation that it needs by applying directly to the predicate contributed by the incorporated noun. This is shown in (102):

(102) $[_{V'}\ [_{KP}$ piqqusirluuti-INS.PL$]\ [_V$ aningaasa$_i$-liur$_i$-$]] \Rightarrow$
$\lambda P\ \mathcal{C}d_i[\uparrow$**make**$(\uparrow d_i)(x);$
$P(\uparrow$**money**$)(\uparrow d_i)]/x(\uparrow$**counterfeit**$) \Leftrightarrow$
$\mathcal{C}d_i[\uparrow$**make**$(\uparrow d_i)(x);\ (\uparrow$**counterfeit**$(\uparrow$**money**$))(\uparrow d_i)]/x$

[25] This observation was first made in Sadock (1986). Note that in West Greenlandic *aningaasa* – 'money' is an inherently plural noun and therefore the instrumental modifier *peqquserluutinik* 'counterfeit' agrees with it in number.

Although this way of dealing with nonintersective modifiers may appear as *ad hoc*, it should be pointed out that the presence of *P*-slots in the translations of NI constructions finds evidence in West Greenlandic. This language has a large set of adjectival morphemes that directly attach to a noun stem. Some of them are illustrated in (103):

(103)a. illutaaq vs. illoq nutaaq
illu-taaq illuq nutaaq
house-new.ABS *house.ABS* *new.ABS*
a new house

b. illutoqaq vs. illoq pisoqaq
illu-tuqaq illuq pisuqaq
house-old.ABS *house.ABS* *old.ABS*
an old house

c. inersuaq vs. ini angisoq
ini-(r)suaq ini angisuq
room-big.ABS *room.ABS* *big.ABS*
a big room

d. ineeraq vs. ini mikisoq
ini-araq ini mikisuq
room-small.ABS *room.ABS* *small.ABS*
a small room

To the extent that I could verify this, the adjective morphemes all seem to receive only a nonintersective interpretation, while the full adjectives can receive both interpretations. In incorporating constructions these adjectival morphemes can be morphologically incorporated together with the noun they modify, as is shown in (104):

(104) Juuna illutaasivoq.
Juuna illu-taa-si-v-u-q
J.ABS *house-new-buy-IND-[−tr]-3SG*
Juuna bought a new house.

This concludes my discussion of the dynamic semantic interpretation of NI verbs, incorporated nouns, and instrumental modifiers in West Greenlandic.

5. The Dynamic Interpretation of RP Constructions

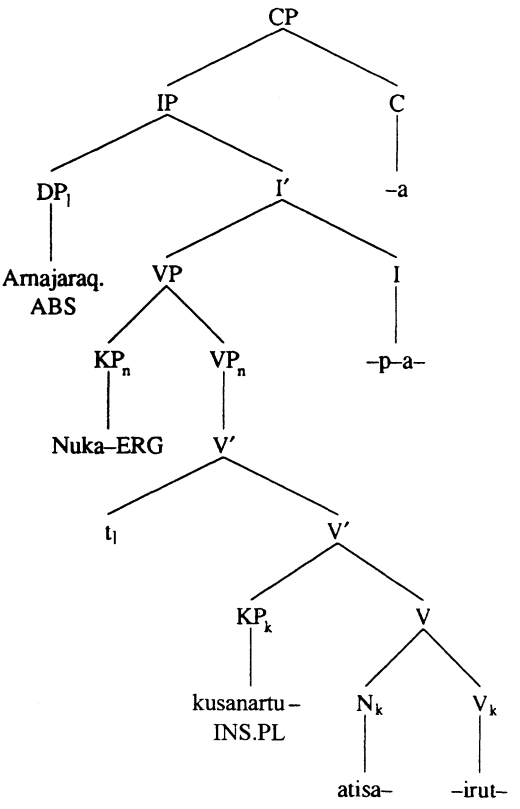
In this section, I will apply the dynamic interpretation machinery to the RP constructions discussed in detail in sections 2 and 3. I will show that their syntactic S-structures as proposed in section 3 deliver an adequate and complete input for their dynamic interpretation.

5.1. *Absolutive RPs as Full-Fledged Arguments of the Verb*

I first present the interpretation of the transitive construction in (105), for which we take S-structure (106) as our input:

(105) Nukap Arnajaraq kusanartunik atisaaruppaa.
Nuka-p Arnajaraq kusanartu-nik
N.-ERG A.ABS fine-INS.PL
atisa-irut-p-a-a
clothes-remove.by.force-IND-[+tr]-3SG.3SG
Nuka took the fine clothes from Arnajaraq by force.

(106)



I propose that the verbal affix *-irut$_k$-* in (106) is translated as follows:

(107) $[_V\text{-irut}_k\text{-}] \Rightarrow \mathcal{C}d_k[\uparrow\textbf{take.from.by.force}(\uparrow d_k)(z)(x)]/x, z$

In (107), *-irut$_k$-* is translated as an expression with three argument slots: Its theme argument $\uparrow d_k$ is existentially bound, while its agent x and benefactive z are stored. What remains semantically is an expression of a type τ, i.e., a dynamic proposition. Moreover, we see that in (106) the incorporated noun *atisa$_k$-* and the instrumental modifier *kusanartunik$_k$* are both coindexed with *-irut$_k$-*. This indicates that the descriptive content of both *atisa$_k$-* and *kusanartunik$_k$* are predicates of the implicit argument of *-irut$_k$-*, namely, $\uparrow d_k$:[26]

(108) $[_N\ \text{atisa}_k\text{-}] \Rightarrow \uparrow\textbf{clothes}(\uparrow d_k)$

(109) $[_{KP}\ \text{kusanartu-INS.PL}_k] \Rightarrow \uparrow\textbf{fine}(\uparrow d_k)$

In the semantic derivation based upon S-structure (106), the noun *atisa$_k$-* 'clothes' is first conjoined with the verbal affix *-irut$_k$-* 'take from by force' yielding the translation in (110):

(110) $[_V\ \text{atisa}_k\text{-irut}_k\text{-}] \Rightarrow$
$\mathcal{C}d_k[\uparrow\textbf{take.from.by.force}(\uparrow d_k)(z)(x)]/x, z; \uparrow\textbf{clothes}(\uparrow d_k) \Leftrightarrow$
$\mathcal{C}d_k[\uparrow\textbf{take.from.by.force}(\uparrow d_k)(z)(x); \uparrow\textbf{clothes}(\uparrow d_k)]/x, z$

In a further step, the indexed instrumental modifier *kusanartunik$_k$* is conjoined with the N-V combination in (110) as follows:

(111) $[_{V'}\ [_{KP}\ \text{kusanartu-INS.PL}_k]\ [_V\ \text{atisa}_k\text{-irut}_k\text{-}]] \Rightarrow$
$\mathcal{C}d_k[\uparrow\textbf{take.from.by.force}(\uparrow d_k)(z)(x); \uparrow\textbf{clothes}(\uparrow d_k)]/x, z;$
$\uparrow\textbf{fine}(\uparrow d_k) \Leftrightarrow$
$\mathcal{C}d_k[\uparrow\textbf{take.from.by.force}(\uparrow d_k)(z)(x); \uparrow\textbf{clothes}(\uparrow d_k);$
$\uparrow\textbf{fine}(\uparrow d_k)]/x, z$

[26] My approach could be extended towards cases in which the incorporated noun is relational and an external constituent stands in a possessor relation to this noun. In such a case, we would have to assume an additional predication relation between the incorporated noun and the external possessor. With respect to the semantic interpretation of incorporated relational nouns, we could implement Dekker's (1993) idea that relational nouns carry implicit arguments.

The trace of the absolutive object *Arnajaraq*, namely t_l, is interpreted as the free variable z_l, which fills provisionally the second argument slot of the verb. For this purpose, z is taken out of the store, as is shown in (112):

(112) $[_{VP}\ t_1$ kusanartu-INS.PL$_k$ atisa$_k$-irut$_k$-$] \Rightarrow$
$\lambda z\ \mathscr{C}d_k[\uparrow$**take.from.by.force**$(\uparrow d_k)(z)(x);\ \uparrow$**clothes**$(\uparrow d_k);$
$\uparrow$**fine**$(\uparrow d_k)]/x(z_l) \Leftrightarrow$
$\mathscr{C}d_k[\uparrow$**take.from.by.force**$(\uparrow d_k)(z_l)(x);\ \uparrow$**clothes**$(\uparrow d_k);$
$\uparrow$**fine**$(\uparrow d_k)]/x$

Then, the meaning of the ergative subject *Nukap* applies to the meaning of the VP. For reasons of type mismatch, the variable x is taken from the store by λ-abstracting over it:

(113) $[_{IP}$ Nuka-ERG$_n$ t_1 kusanartu-INS.PL$_k$ atisa$_k$-irut$_k$-$] \Rightarrow$
$\lambda P\ P(\uparrow$**n**$)\ (\lambda x\mathscr{C}d_k[\uparrow$**take.from.by.force**$(\uparrow d_k)(z_l)(x);$
$\uparrow$**clothes**$(\uparrow d_k);\ \uparrow$**fine**$(\uparrow d_k)]) \Leftrightarrow$
$\mathscr{C}d_k[\uparrow$**take.from.by.force**$(\uparrow d_k)(z_l)(\uparrow$**n**$);\ \uparrow$**clothes**$(\uparrow d_k);$
$\uparrow$**fine**$(\uparrow d_k)]$

Finally, the absolutive *Arnajaraq* applies to the meaning of the IP and fills the position that was provisionally occupied by its trace t_l. This results in (114), the complete translation of the CP in (106):

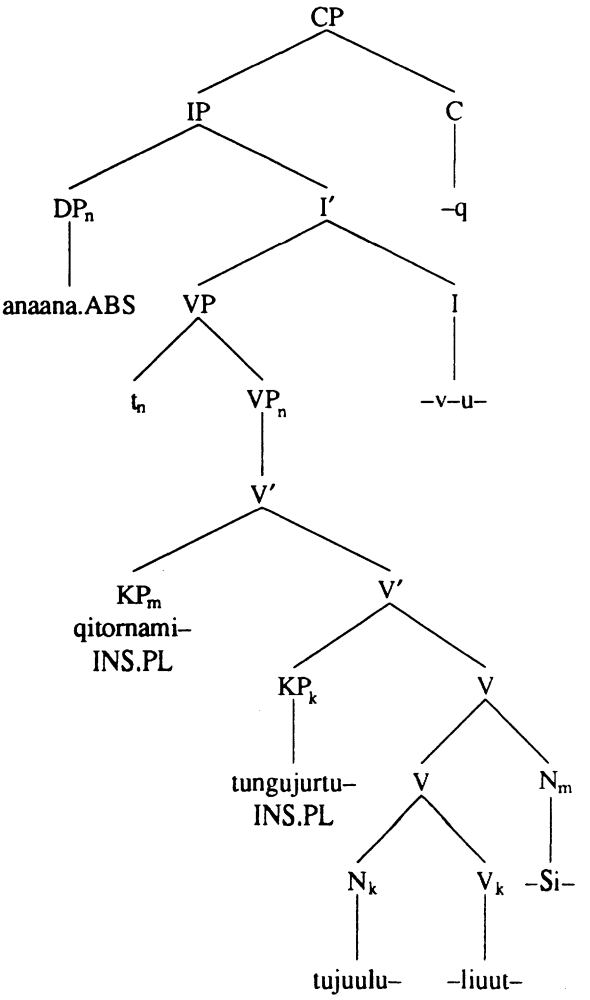
(114) $[_{CP}$ Arnajaraq.ABS$_l$ Nuka-ERG$_n$ kusanartu-INS.PL$_k$
atisa$_k$-irut$_k$-*paa*$] \Rightarrow$
$\lambda P\ P(\uparrow$**a**$)\ (\lambda z_l\mathscr{C}d_k[\uparrow$**take.from.by.force**$(\uparrow d_k)(z_l)(\uparrow$**n**$);$
$\uparrow$**clothes**$(\uparrow d_k);\ \uparrow$**fine**$(\uparrow d_k)]) \Leftrightarrow$
$\mathscr{C}d_k[\uparrow$**take.from.by.force**$(\uparrow d_k)(\uparrow$**a**$)(\uparrow$**n**$);\ \uparrow$**clothes**$(\uparrow d_k);$
$\uparrow$**fine**$(\uparrow d_k)]$

5.2. *Instrumental RPs as Property Arguments*

In this section, we extend our dynamic approach towards verbal affixes in intransitive NI constructions with instrumental RPs. Our goal is to arrive at the semantic interpretation of (116), the S-structure of (115):

(115) Anaana qitornaminik tungujortunik tujuululiuussivoq.
anaana qiturna-mi-nik tungujurtu-nik
mother.ABS child-3SGPROX.PL-INS.PL blue-INS.PL
tumuulu-liuut-si-v-u-q
sweater-make.for-AP-IND-[−tr]-3SG
Mother made blue sweaters for her children.

(116)



The verb stem *-liuut$_k$-* in (116) receives the translation of a dynamic proposition in (117), that is, the translation of an expression of type τ. Its benefactive argument z and its agent argument x are both stored, whereas its theme argument, namely $\uparrow d_k$, is existentially bound:

(117) $[_{V}\text{-liuut}_k\text{-}] \Rightarrow \mathscr{C}d_k[\uparrow\textbf{make.for}(\uparrow d_k)(z)(x)]/x, z$

Being coindexed with the verb, the incorporated noun *tujuulu$_k$-* contributes a predicate of the verb's implicit theme argument:

(118) $[_{N}\text{ tujuulu}_k\text{-}] \Rightarrow \uparrow\textbf{sweater/s}(\uparrow d_k)$

The noun combines with the verb by means of dynamic conjunction, as is illustrated in (119):

(119) $[_V$ tujuulu$_k$-liuut$_k$-$] \Rightarrow$
$\mathcal{C}d_k[\uparrow$**make.for**$(\uparrow d_k)(z)(x)]/x, z; \uparrow$**sweater/s**$(\uparrow d_k) \Leftrightarrow$
$\mathcal{C}d_k[\uparrow$**make.for**$(\uparrow d_k)(z)(x); \uparrow$**sweater/s**$(\uparrow d_k)]/x, z$

The next step in the semantic interpretation of (116) must make explicit the semantic contribution of the antipassive morpheme *-si-*, which is syntactically regarded as an N adjoined to the NI verb. I suggest here that the antipassive morpheme implicitly contributes the existential interpretation of an internal argument of the verb to which it applies. This is captured in its translation as a dynamic quantifier (type $\langle\langle\epsilon, \tau\rangle, \tau\rangle$) in (120):

(120) $[_N$-si$_m$-$] \Rightarrow \lambda P\, \mathcal{C}d_m[P(\uparrow d_m)]$

My interpretation of the antipassive morpheme is in fact a version of Baker's (1988) view that the antipassive is a nominal which somehow satisfies a verbal argument position.[27] As a result of the application of the antipassive morpheme to the complex V in (119) the benefactive argument of *-liuut$_k$-*, namely z, will be implicitly introduced. To make this application possible, the verb's benefactive argument z is taken from the store by λ-abstraction:[28]

(121) $[_V$ tujuulu$_k$-liuut$_k$-si$_m$-$] \Rightarrow$
$\lambda P\, \mathcal{C}d_m[P(\uparrow d_m)](\lambda z\, \mathcal{C}d_k[\uparrow$**make.for**$(\uparrow d_k)(z)(x);$
$\uparrow$**sweater/s**$(\uparrow d_k)]/x) \Leftrightarrow$
$\mathcal{C}d_m\mathcal{C}d_k[\uparrow$**make.for**$(\uparrow d_k)(\uparrow d_m)(x); \uparrow$**sweater/s**$(\uparrow d_k)]/x$

Next, the descriptive content of the instrumental modifier *tungujurtunik$_k$* is interpreted as a predicate of the verb's theme argument, which is the same argument that was already picked out by the incorporated noun *tujuulu$_k$-*, i.e., $\uparrow d_k$:

(122) $[_K$ tungujurtu-INS.PL$_k$$] \Rightarrow \uparrow$**blue**$(\uparrow d_k)$

[27] It is not clear to me whether this is the only semantic contribution made by an antipassive morpheme. As Bittner (1987) observes, the antipassive can also have an aspectual meaning.

[28] Again, we can guarantee that the interaction of negation and antipassivization is adequately dealt with only if we assume that negation is not interpreted locally, but higher up in the tree as an abstract operator (see the discussion of the interaction of negation with implicit arguments in section 4.3).

This instrumental is then dynamically conjoined with the antipassivized NI verb in (121) as follows:

(123) $[_{V'}\ [_{KP}$ tungujurtu-INS.PL$_k]\ [_V$ tujuulu$_k$-liuut$_k$-si$_m$-$]] \Rightarrow$
$\mathcal{C}d_m\mathcal{C}d_k[\uparrow$**make.for**$(\uparrow d_k)(\uparrow d_m)(x);\ \uparrow$**sweater/s**$(\uparrow d_k)]/x;$
$\uparrow$**blue**$(\uparrow d_k) \Leftrightarrow$
$\mathcal{C}d_m\mathcal{C}d_k[\uparrow$**make.for**$(\uparrow d_k)(\uparrow d_m)(x);\ \uparrow$**sweater/s**$(\uparrow d_k);$
$\uparrow$**blue**$(\uparrow d_k)]/x$

The next constituent to be interpreted, namely, the instrumental *qiturnaminik*$_m$ 'her children', is understood as a predicate of an implicit argument as well, but the index *m* on this instrumental tells us that it is a predicate of the benefactive argument that was introduced by the antipassive morpheme. This is made clear in the following translation:[29]

(124) $[_{KP}$ qiturnami-INS.PL$_m] \Rightarrow \uparrow$**her.children**$(\uparrow d_m)$

Again, the meaning of this instrumental is conjoined with the meaning of the lower V′ so that it can address the right discourse referent in the argument structure of the verb, namely, the benefactive $\uparrow d_m$:

(125) $[_{V'}\ [_{KP}$ qiturnami-INS.PL$_m]\ [_{V'}$ tungujurtu-INS.PL$_k$
tujuulu$_k$-liuut$_k$-si$_m$-$]] \Rightarrow$
$\mathcal{C}d_m\mathcal{C}d_k[\uparrow$**make.for**$(\uparrow d_k)(\uparrow d_m)(x);\ \uparrow$**sweater/s**$(\uparrow d_k);$
$\uparrow$**blue**$(\uparrow d_k)]/x;\ \uparrow$**her.children**$(\uparrow d_m) \Leftrightarrow$
$\mathcal{C}d_m\mathcal{C}d_k[\uparrow$**make.for**$(\uparrow d_k)(\uparrow d_m)(x);\ \uparrow$**sweater/s**$(\uparrow d_k);$
$\uparrow$**blue**$(\uparrow d_k);\ \uparrow$**her.children**$(\uparrow d_m)]/x$

Note that the present proposal accounts for the optionality of the antipassive object by the fact that this instrumental is interpreted as a conjoined dynamic proposition, that is, as a semantically optional expression.

Finally, taking into account the meaning contribution of the trace t_n and its antecedent, which is the absolutive subject *anaana*$_n$, we arrive at the following complete translation of (116):

(126) $[_{CP}$ anaana.ABS$_n$ t$_n$ qiturnami-INS.PL$_m$ tungujurtu-INS.PL$_k$
tujuulu$_k$-liuut$_k$-si$_m$-*vuq*$] \Rightarrow$
$\mathcal{C}d_m\mathcal{C}d_k[\uparrow$**make.for**$(\uparrow d_k)(\uparrow d_m)(\uparrow$**a**$);\ \uparrow$**sweater/s**$(\uparrow d_k);$
$\uparrow$**blue**$(\uparrow d_k);\ \uparrow$**her.children**$(\uparrow d_m)]$

[29] I ignore the binding of the pronominal element *her* to the subject's referent.

This concludes my discussion of the semantic interpretation of RPs in West Greenlandic NI configurations.

6. Some Concluding Remarks

In this paper, I discussed how base-generated syntactic structures of West Greenlandic NI constructions can be straightforwardly semantically interpreted. In particular, I showed that for the semantic interpretation of RPs in NI constructions we need neither assume that a derivational link exists between the RP and the incorporated noun, nor that such a link exists between the incorporated noun and its potential external instrumental modifiers. My analysis of the structure of NI in West Greenlandic extends the coverage of a syntactic coindexation mechanism that is already available in the syntactic component for independent purposes, namely, the predication relation. For the interpretation of a NI verb, its incorporated noun, and its instrumental modifiers, it suffices that at S-structure the verb stands overtly in a predication relation to the incorporated noun and the instrumental modifiers. Similarly, the antipassive morpheme and the instrumental antipassive object are linked by means of a syntactic predication relation.

An inevitable question is to what extent the dynamic semantic analysis of NI presented here for West Greenlandic can be extended towards other NI languages. For instance, one of the major goals of Baker's derivational theory of NI is to explain cross-linguistic parallels by deriving these parallels from syntactic constraints on head movement (e.g., the ECP). It should be pointed out, however, that Baker's goals and mine are rather different. Baker's goal is to further develop the (syntactic) theory of Universal Grammar. My goals are semantic in nature. Hence, whether the semantic analysis of NI I present for West Greenlandic can be extended towards other NI languages depends on whether in these languages NI configurations have the same semantic characteristics as those we find in West Greenlandic. These include inherent narrow scope of the incorporated noun and its modifiers and discourse transparency triggered by the affixal verb. Since we know that semantic variation exists accross NI languages (see Mithun 1984; Baker 1988, 1996; Rosen 1989; Bende-Farkas 1999; Dayal 1999; Chung and Ladusaw 2001; de Swart and Farkas 2001), the present proposal cannot be regarded as the one and only semantic theory of NI. It would be a serious mistake to attempt to develop a uniform semantics for a particular syntactic configuration (see Van Geenhoven 2001). Such a theory cannot succeed since structural uniformity does not necessarily go hand in hand with semantic uniformity.

Nevertheless, the present proposal does have important cross-linguistic semantic implications. In Van Geenhoven (1998a), I showed that the semantic characteristics of incorporated nouns in West Greenlandic are very similar to, if not identical with, the semantic characteristics of English bare plurals. For instance, the same narrow scope behaviour that was observed for West Greenlandic incorporated nouns has also been observed for English bare plurals (see Carlson 1977). Similarly, I pointed out that from a semantic perspective NI configurations with external modifiers have a great deal in common with German split topics. For this and other reasons, I argued that even though morphosyntactically West Greenlandic incorporated nouns, English bare plurals, and German split topics may not have much in common, their semantic interpretation makes use of the same mechanism, namely semantic incorporation, a mechanism that can be seen as the basis of a cross-linguistic property-based approach to semantically weak nominals. Thus, while West Greenlandic NI need not lead to a uniform semantic interpretation of NI across languages, its semantic analysis can give us useful insights into the semantic uniformity among nominal expressions in typologically unrelated languages and morphosyntactically distinct constructions.

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