Noun Incorporation in Eskimo: Postpositions and Case Marking*

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Abstract

This paper analyzes the phenomenon of noun incorporation (NI) in Eskimo under two prevalent theories of morphology: the Lexicalist Hypothesis (DiSciullo & Williams 1987) and the Syntactic Hypothesis (Baker 1988a). Data showing incorporation of nominal elements marked with allative, locative and ablative endings, and genitive agreement markers, serve as the primary focus of discussion. These nominal endings could be analyzed as either postpositions or Case markers; the paper explores an analysis of NI involving each of these possibilities in turn under the two conflicting theories of morphology. A postposition analysis can be explained by compounding in the lexicon under the Lexicalist Hypothesis and by cyclic Incorporation under the Syntactic Hypothesis, but is seen to be intuitively inferior. A Case marking analysis can be explained by differential Case assignment based on level ordering restrictions under the Syntactic Hypothesis and is intuitively preferable, but it cannot be explained under the Lexical Hypothesis.

0. Introduction

Noun Incorporation (NI) is a phenomenon which has received much attention throughout the history of linguistics, and has been portrayed descriptively in many languages of a wide variety of geographical and typological origins. More recent work has attempted to account for NI within certain theoretical frameworks, focusing on structural and semantic patterns exhibited by NI. Predictably, some controversy surrounds this attempt, and even within specific frameworks consensus has yet to be reached on various aspects of the discussion.

This paper focusses on one current debate within the Government-Binding framework concerning the level of representation of grammar at which NI, and in fact morphology in general, takes place. The more traditional analysis still accepted by many GB linguists views NI as a process occurring at a lexical level, subsumed under compounding (Di Sciullo & Williams (henceforth DS & W) 1987). Work by Baker (1988a) and others, however, proposes that NI is actually an application of Move-α to the heads of phrases, a process which takes place in the syntax. These two analyses make some rather different claims about the important regularities associated with NI and the ramifications of these for a structural account.

As one contribution towards examining the explanatory adequacy of the two analyses, this paper will explore the possibility of incorporation of case-marked nouns. The discussion will take as its starting point data from Inuktitut and West Greenlandic, two very similar languages from the Eskimo family. These data show incorporation of nouns marked for allative, locative, and ablative case, and for agreement with genitive NPs. While it has been suggested that these case markings may in fact be analyzed as postpositions (Baker

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1988a: 486), this paper will take the stance that it is at least as plausible that they are indeed Case markings, and will proceed to substantiate such an approach. In addition, a Case analysis offers one criterion by which to differentiate between a Syntactic and a Lexicalist approach to morphology since a Syntactic but not a Lexicalist approach can explain incorporation of some case markings but not others.

This paper, then, is intended as an exploration of the possibilities and limitations of the incorporation of nouns which are not bare heads, given certain data pointing in that direction, in the light of two prevailing approaches to morphology. Along the way a variety of issues are raised to which the answers are not necessarily readily forthcoming. Present assumptions concerning these issues for the purposes of this paper have been indicated, as well as problems with those assumptions and likely avenues for further exploration of them. It is also noted that much of the latter part of the paper is somewhat biased towards the particular grammatical idiosyncrasies of Eskimo, without much consideration for concrete data from other languages. It is expected, however, that the conclusions here will apply equally well to languages with similar idiosyncrasies.

The organization of the paper will proceed as follows. Section 1 will present a brief outline of the grammar of Eskimo. Section 2 will present overviews of the two theoretical positions to be discussed, while section 3 will outline the phenomenon of NI and its analysis under the two theories. Data from Eskimo involving incorporation of N + case; N + modifier; nominalized adjectivals; adverbials of manner, location and time; and wh-elements will be presented in section 4. A contrastive analysis under the two theories of morphology cited will be undertaken in terms of a postposition interpretation in section 5, and a Case interpretation in section 6. Section 7 will draw conclusions and present directions for further research.

1. Eskimo

Inuktut (IKT) is an Eskimo language encompassing several mutually intelligible dialects in Northern Canada. West Greenlandic (WG) is by far the most widespread of three major dialects of Eskimo spoken in Greenland. Though Inuktut and West Greenlandic differ somewhat in terms of phonology and vocabulary items, they are essentially identical in morphological and syntactic structure. As such, they will be considered basically equivalent for our purposes and will be referred to jointly under the family name “Eskimo”.

1.1 Polysynthesis

Typologically, Eskimo is noted for its highly polysynthetic nature and morphophonological complexity. In fact, it is quite usual to express what would constitute an entire phrase or sentence in English as just one word in Eskimo. Nominal elements may include a variety of modifiers suffixed to the root:

(1) illukutaaraalukkut
    illu-kutaaq-raaluk-kkut
    house-long-big-TRANSsg
    ‘through the big long house’

This word begins with the root noun, followed by two adjectival modifiers and completed by a singular translative inflection. Verbal elements typically show a greater degree of polysynthesis. As shown in (2), such a word typically consists of a stem followed optionally by up to eight morphemes (more or less), corresponding to English independent
verbs, auxiliaries, deverbals, denominals, adverbials, adjectivals, etc.; then an obligatory inflectional suffix; and finally, optional enclitics.

(2) Illujuaraalumuulaurmsimanginamalittauq.
    illu-juac-raaluk-mut-ur-lauq-sima-nngit-nama-littauq
    house-big-very-ALL-go-PAST-PERF-NEG-1sgS.PERF-but.also
    ‘but also, because I never went to the really big house.’
    (IKT; Dorais 1986)

A nominal root modified by two adjectival morphemes and completed by a case ending begins the word, followed by nominal, tense, aspect, and negation markers, then verbal inflection containing modality and agreement information, and finally an enclitic.

1.2 Nominal Inflection

Nominals are obligatorily marked for Case and number, and for person and number of possessor if applicable. There are two structural cases: ergative (ERG) and absolutive (ABS), and six cases which have both grammatical and “semantic” uses: secondary (SEC), allative (ALL), ablative (ABL), locative (LOC), transitive (TRANS), and simulative (SIM). Nominals may be marked for three numbers (singular, dual, plural) in Inuktitut and two numbers in West Greenlandic, the dual form having died out by the early 1900s. Possessor marking can occur in four persons (including third person coreferential to an NP in a higher clause) and three numbers (two for WG). As is typical for ergative languages, subjects of transitive verbs take ergative case while transitive objects and intransitive subjects take absolutive case. Direct objects of antipassivized verbs take secondary case. Possessor nominals take ergative case which seems to double as a genitive case in Eskimo. Adjectival and other modifiers of the nominal which constitute separate words (i.e. not bound morphemes) are treated as nominals in Eskimo and take the same person and number inflections as those on the nominal which they modify; however, they do not match for possessor marking.

1.3 Verbal Inflection

Verbal elements are marked for eight “modalities”, two polarities, four persons (including third person coreferential), and three numbers (two in WG). Inflections may be either transitive, reflecting both ergative and absolutive arguments, or intransitive, reflecting only the absolutive argument when there is no ergative argument. Nominals which fill the role of direct object but are marked with secondary rather than absolutive case are not reflected in verbal inflection.

1.4 Syntax/Word Order

Since so much information is already encoded in the verbal inflections, it is quite common in Eskimo to have sentences in which lexical pronouns are omitted. Sentences, then, tend to consist of one or more verbal clauses with adverbial information. Such a situation makes it somewhat difficult to talk of word order since it is relatively rare to encounter a sentence containing all of subject, object, verb, and other modifiers. It is generally accepted, however, that Eskimo word order is basically SOV (Fortescue 1984:

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1 These terms are taken from Dorais (1986). Some other grammars use relative for ergative; comitative, accusative or instrumental for secondary; dative for allative; perative, prosecutive, or vialis for transitive; and equative for simulative.
93, and others). Word order variation is fairly common, however: any of the elements that usually precede the verb may be either fronted within the clause or postposed.

Within a noun phrase, word order is much more rigid: possessors precede the head noun, and modifiers follow it:

(3) Kaalip illuanik ajortumik.
    Kaali-p illu-a-nik ajortoq-mik
    Karl-ERGsg house-3Ssg-SECsg bad-SECsg
    ‘with Karl’s bad house’ (WG; Sadock 1984)

Having completed a brief overview of the grammar of Eskimo, let us now turn to an overview of the two approaches to morphology which will be dealt with in this paper.

2. Two Approaches to Morphology

The details of the application of morphology have been entrenched in somewhat heated debate in recent years. Especially germane to the topic at hand, GB linguists disagree on whether morphology is confined to the lexicon so that all X’s will be inserted intact in their final form at D-structure, or whether some processes of word-formation can extend beyond that boundary and, if so, which ones or under what circumstances. In this paper we will be concerned with two specific points of view as outlined briefly below.

2.1 The Lexicalist Hypothesis

The Lexicalist view of morphology has its roots in Chomsky’s (1970) article concerning nominalization in English. A strong interpretation of the claims put forth therein might be expressed as in (4) (from Anderson 1982):

(4) Syntactic rules cannot make reference to any aspects of word-internal structure.

Thus the syntax has no access to any structure or hierarchy within a word; a word is impenetrable once it reaches this level.

Though not entirely unreasonable, this claim seems too strong to deal with several facts of natural language. Anderson (1982), among others, notes that words usually must be dependent for their various properties on both their position within larger structures and on the properties of other words in that structure. Nouns receive Case depending on their relation to the verb and verb phrase, and verbs in some languages possess distinctive forms if appearing in a relative clause (e.g. Irish, Fula) or a subordinate clause. Additionally, adjectives that agree for Case, gender, number, etc. with the head of the NP in which they appear, and verbs which agree for similar properties with their subjects or objects, require access to the appropriate information in the words with which they agree.

This difficulty is addressed by the now widely accepted mechanism of feature percolation proposed by Lieber (1980), whereby in a hierarchical tree structure, features of roots and affixes each percolate to the node immediately dominating them. Where two sets of features are dominated by the same node, features of the affix win out. This percolation process continues until the top of the ‘word-structure tree’, with features at the top of the tree considered as belonging to the resultant X° and visible to the syntax.

A similar effect is derived from Williams’ (1978) Right Hand Head Head Rule, in combination with the notion ‘relativized head’ (DS & W 1987). The rightmost element in a word is considered the head of that word, and its features take precedence over others
when conflict occurs. To facilitate appropriate percolation of all relevant features, the rightmost affix containing a value for a specific feature is considered the head of the word with respect to that feature. In such a way, all necessary features and properties percolate to the top of the word and are available for viewing by syntax. However, syntax cannot see how the word came to possess those certain features and properties, and such intermediate information cannot be relevant to syntax.

The common element of various versions of the Lexicalist Hypothesis is that all morphological processes, including both inflection and derivation, are performed in the lexicon prior to insertion at D-structure. In such a way, inflected forms are able to feed into derivational processes, just as derived forms feed into inflectional processes (if there is even a distinction between inflection and derivation), and differential level ordering is eliminated as an interfering factor (Jensen & Stong-Jensen 1984: 496). From this point on we will be based in the specific view of the Lexicalist Hypothesis outlined in DS & W (1987).

2.2 The Syntactic Hypothesis

Alternate views to the Lexicalist Hypothesis do not banish morphology to the lexicon forever, but rather allow it freedom to roam throughout the levels of representation, particularly into the syntax, respecting the appropriate restrictions at each level at which it operates. Various authors make various proposals as to how free morphology is in either levels or application (cf. Anderson 1982; Baker 1988a,b; Marantz 1982; and Sadock 1980, 1985, among others, for varying opinions). The syntactic analysis presented in this paper will be based on the system outlined in Baker (1988a,b).

Baker (1988a: 68) characterizes morphology theory as "the theory of what happens when a complex structure of the form [X Y] is created." As such, morphology theory is parallel to government theory or binding theory rather than to syntax or phonology, and the relevant structures are not restricted to applying at a certain level. The responsibilities of morphology theory include determining whether or not a structure dominated by X is grammatical, and if so, assigning it a phonological shape. It also contains principles which determine level ordering effects, morphological subcategorization, feature percolation, respecting of a strict (phonological) cycle, and other relevant items. These may be specified to apply at only one level (like the ECP) or at all levels (like government restrictions).

3. Noun Incorporation

Noun incorporation is a structure which appears in many genetically and typologically diverse languages, from Mohawk to Southern Tiwa and from Chukchee to Gunwinggu (see Mithun 1984 and Baker 1985, 1988a for a more detailed overview). In NI, a particular noun root from the sentence (see restrictions below) appears inside the verb form rather than as an independent lexical item. Examples are shown below:

   man-SUF 1sgS/AO-see-PAST
   'I saw the/a man.'

b. Ti-seuan-mu-ban.
   1sgS/AO-man-see-PAST
   'I saw the/a man.' (Southern Tiwa; Allen, Gardiner & Frantz 1984)
   minister-ERGsg meat-ABSsg eat-3sgS/3sgO.INDIC
   ‘The minister eats/ate the meat.’

   b. Palasi-Ø niqi-tur-puq.
   minister-ABSsg meat-eat-3sgS.INDIC
   ‘The minister eats/ate meat.’  (WG; Rischel 1971)

In the (a) examples above, the structural object N root appears as an independent lexical item with its own case marking, agreeing with the verb where necessary. In the (b) examples, the N root appears inside the verbal complex, and its case inflection has been dropped. (In Eskimo, the inflection indicating object agreement on the verb is also dropped, as shown in (6b)).

The following subsections will describe first a Lexical and then a Syntactic account of how NI structures are formed.

3.1 A “Lexicalist” Approach to NI

In terms of the Lexicalist Hypothesis, noun incorporation is seen as falling into the domain of compounding. No syntactic relation is posited between parallel sentences such as the (a) and (b) sentences in (5) to (6); rather, the effect is attributed to argument structure. DS & W (1987: 30), assuming that a compound is formed from a head and a non-head, both with their own argument structures in the lexicon, note the following facts concerning the argument structure effects in compounding:

(7) a. A non-head may but need not satisfy one of the arguments of the head.
    b. It cannot satisfy the external argument.
    c. The arguments of the non-head are not part of the argument structure of
the compound.
    d. Only the external argument of the head is part of the argument structure
of the compound.

NI, then, is like compounding in items (7 b–d), but differs with respect to (7a) since “the incorporated noun must be an argument of the incorporating verb” (DS & W 1987: 67) [emphasis mine — SA]. In other words, NI results in a structure in which the verb is the head, the IN is the non-head and an internal argument of the verb, and the argument structure of the NI compound consists only of the external argument of the verb (the internal argument is represented but already “bound”). Example (9) below illustrates this process in relation to the sentences in (8):

(8) a. Iʔi ye-k-hreks ne yeokar.
    I t1-1sg-push prefix prefix-bark
    ‘I push the bark.’

   b. Iʔi ye-k-kar-hreks-s.
    I t1-1sg-bark-push
    ‘I bark push.’


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2 Languages vary in whether or not they require object agreement to be dropped upon Incorporation. It is obligatorily dropped in Eskimo, optionally dropped in Niuean, and never dropped in Southern Tiwa. This correlates with the possibility of incorporating unaccusative subjects, and Baker (1988a: 124-129) attributes both phenomena to a language-specific stipulation that INs in some languages require that Case be abstractly assigned to them, thus removing the overt Case-assigning properties of the verb complex (but see note 23 below).
(9) \[ \text{kar + hreks} \rightarrow \text{kar-hreks} \]
\[ (\Delta, \text{Th}) \quad (\Delta, \text{Th}) \]
\[ \text{kar} \]

(DS & W 1987: 64)

In the incorporated form, \( \text{kar} \) is added as a qualifier on the Theme argument of \( \text{hreks} \): it sets a condition on the reference of the \( \theta \)-role of the verb (but does not satisfy the argument structure in the view of DS & W).³

The compounding analysis of incorporation is consistent with the thesis of syntactic atomicity put forth as the guiding principle of DS & W (1987). It allows for conjoining of noun and verb without reference to the surrounding syntactic environment, and allows for the verb's arguments to relate to its argument structure without reference to the internal structure of the verbal complex.

3.2 A Syntactic Approach to NI

Facts concerning the obvious differences between NI and compounding, the surprising syntactic relevance of the occurrence restrictions of NI, and the productivity of NI structures, indicates that they may well be formed in the syntax rather than in the lexicon. Baker (1985, 1988a) has devised an explanatory and plausible analysis of the underlying structure and subsequent derivation of NI structures, in keeping with principles of Chomsky's (1981, 1986) Government-Binding framework.

It is true that NI structures appear similar to N-V compounding structures in English. However, they are different in several important ways:⁴ they are always verbal, they are not backformations from N-V nominal compounds, and they may be referential to a specific object.⁵ The latter point is most important to the discussion at hand since in Eskimo NI is often the most idiomatic way to represent a noun newly introduced into discourse. Perhaps the most striking fact about NI structures, however, is that the IN may bear only a limited number of thematic roles in relation to the incorporating verb. Mithun (1984: 875) notes the following restrictions, based on extensive research in a wide variety of incorporating languages:


[Incorporated nouns] bear a limited number of possible semantic relationships to their host [verbs], ... If a language incorporates N's of only one semantic Case, they will be patients of transitive V's — whether the language is basically of the ergative, accusative, or agent/patient type .... If a language incorporates only two types of arguments, they will be patients of transitive and intransitive V's — again regardless of the basic Case structure of the language .... Many languages additionally incorporate instruments and/or locations ....

In each of these cases, whether bearing the standard patient \( \theta \)-role or a location, path, or other \( \theta \)-role, the IN in question is a structural object. Even patients of intransitive verbs, which appear as subjects at S-structure, can be included in this description under the

³ In Mithun's (1984) type I to III languages, the IN is assumed to satisfy the argument structure.
⁴ See Baker (1988a: 78ff) and Mithun (1984: 847) for more detail on this point.
⁵ This latter claim is somewhat controversial. Though Mithun (1984, 1986) claims that INs may never be referential, both Sadock (1986) and Baker (1988a) present good evidence to support the claim that they may indeed be referential.
Unaccusative Hypothesis in which an S-structure subject NP of an unaccusative verb originates as a D-structure object. Such objects may incorporate in at least some languages (Iroquoian, Southern Tiwa: see Baker 1988a: 87-91; 124-129), though never in Eskimo. It is also significant that an IN can never have as an unincorporated counterpart an N in the subject NP of a transitive or unergative verb, an N which is the head of the NP in a PP, or an N in an NP adjunct. The above observations yield the interesting result that the realm of possibilities for NI seem to be related to the D-structure position of the unincorporated counterpart. Indeed, these restrictions bear a striking resemblance to those applicable to wh-movement, where movement of wh-elements in direct object position is significantly freer than that of wh-elements in subject, adjunct, and object of preposition positions.

This pattern, in addition to the possible referentiality of the IN, has led Baker (1988a) to characterize NI as a movement process, like Move wh and Move NP (Chomsky 1981), but one in which a noun head (rather than phrase) undergoes the process of Move-α from its position at D-structure to Chomsky-adjoin to the head into which it incorporates. In such a way, the referentiality of the IN does not violate the Lexicalist constraint that words must be anaphoric islands, and both the difference between two seemingly similar structures (N-V compounding in English; NI in polysynthetic languages) and the similarity between two other structures (unincorporated and incorporated counterparts of parallel sentences as in (5) and (6)) are explained. The mechanism is detailed below.

An example tree from Eskimo representing the data shown in (6) above, repeated here as (10), will serve as a starting point for an outline of the theory:

(10) a. Palasi-p niqi-Ø niri-vaa. minister-ERGsg meat-ABSsg eat-3sgS/3sgO INDIC 'The minister eats/ate the meat.'

b. Palasi-Ø niqi-tur-puq. minister-ABSsg meat-eat-3sgS.INDIC 'The minister eats/ate meat.' (WG; Rischel 1971)

(11) D-Structure:

a. 
```
    S
   / | \
  NP VP
   /   |
  N    N
   |     |
 palasi niri
   |       |
   niqi   
```

b. 
```
    S
   / | \
  NP VP
   /   |
  N    N
   |     |
 palasi niri
   |       |
   niqi   tur
```

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6 This is because it is the trace of the IN which refers, not the IN itself in its position internal to the word (see Baker 1988a).

7 Irrelevant details omitted here and in all subsequent trees.
Note that in (11) the N and V appear as separate lexical items under their own respective XPs, regardless of the fact that *niri* is a free morpheme while *tuq* is bound. This is expected and stipulated by the Uniformity of θ Assignment Hypothesis (UTAH; Baker 1988a: 46):

(12) Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure.

From the UTAH, Baker (1988a: 49) generalizes that:

... whenever a part of a word shows syntactic signs of assigning or receiving a thematic role in the same way that morphologically independent constituents do, the UTAH will imply that that part of the word appears in an independent structural position at D-structure, so that the thematic relationship can be represented in the canonical way.

By the Projection Principle (Chomsky 1981), this same structural relationship must be preserved at both S-structure and Logical Form (LF), necessitating the leaving of traces to transmit required information. This is shown in (13), clearly illustrating the difference between the two sentences in (10):\(^8\)

(13) S-Structure

a. \[ \text{S} \]
   \[ \text{NP} \quad \text{VP} \]
   \[ \text{N} \quad \text{NP} \quad \text{V} \]
   \[ \text{palasi-p} \quad \text{niri-vaa} \]
   \[ \text{niqi-Ø} \]

b. \[ \text{S} \]
   \[ \text{NP} \quad \text{VP} \]
   \[ \text{N} \quad \text{NP} \quad \text{V} \]
   \[ \text{palasi-Ø} \quad \text{N} \quad \text{N} \quad \text{V} \]
   \[ \text{ti} \quad \text{niqi}_i \quad \text{tur-puq} \]

(13a) remains the same in its S-structure representation. But in (13b) the N moves from its D-structure position to adjoin to the V, leaving a trace to record its movement.

These traces are subject, at LF, to the Empty Category Principle (ECP) which stipulates:

(14) a. Traces must be properly governed.
    b. A properly governs B iff A governs B, and A and B are either:
       i. θ-coindexed (i.e. lexical government)
       ii. chain-coindexed (i.e. antecedent government).

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\(^8\) It is assumed that inflections do not actually appear until PF, though relevant indices are assigned at the point of S-structure. The actual inflections have been included here for clarity.
X°-level categories can never be θ-marked by an argument taker since only XP's may be sisters of lexical heads (the condition for θ-assignment). Therefore, a lexical head can never properly govern the trace of an X° because that X° can never bear a θ-index. Thus, traces of Xs must always be antecedent-governed by the moved X°: X° must govern its trace. The ECP, then, begins to define the positions to which the X° may move since it may only move to a position which governs its trace.

At this point, c-command and barrierhood become important notions since they encompass the two conditions which must be met for any X° to govern its trace. First, the X° must c-command its trace; second, there must be no barrier that intervenes between the X° and its trace. We will assume the definition of c-command given by Aoun & Sportiche (1983), which essentially states that α c-commands β if and only if the first maximal projection dominating α dominates β. Barrierhood, a notion developed in Chomsky (1986b), serves the theory of Incorporation in a slightly adapted form (Baker 1988a: 56) as follows:

\[
\text{(15)} \begin{align*}
&\text{Let } D \text{ be the smallest maximal projection containing } A. \text{ Then } C \text{ is a } \\
&B\text{ARRIER between } A \text{ and } B \text{ if and only if } C \text{ is a maximal projection} \\
&\text{that contains } B \text{ and excludes } A, \text{ and either:} \\
&\quad \text{i. } C \text{ is not selected, or} \\
&\quad \text{ii. the head of } C \text{ is distinct from the head of } D \text{ and selects some} \\
&\quad \text{WP equal to or containing } B.
\end{align*}
\]

where selection is defined as:

\[
\text{(16)} \begin{align*}
A &\text{ selects } B \text{ if and only if:} \\
&\quad \text{i. } A \text{ assigns a } \theta\text{-role to } B, \text{ or} \\
&\quad \text{ii. } A \text{ is of category } C \text{ and } B \text{ is its IP, or} \\
&\quad \text{iii. } A \text{ is of category } I \text{ and } B \text{ is its VP.} \quad \text{(Baker 1988a: 57)}
\end{align*}
\]

For the purposes of NI, these two conditions can be restated informally as:

\[
\text{(17)} \begin{align*}
&\text{i. An } N° \text{ must incorporate into a } V° \text{ which c-commands its trace.} \\
&\text{ii. An } N° \text{ must incorporate into a } V° \text{ which assigns a } \theta\text{-role} \\
&\text{to the NP of which the } N° \text{ is head.} \\
&\text{iii. There cannot be another lexical head } X, \text{ head of an XP, between} \\
&\text{the } V° \text{ and the NP of which the } N° \text{ is head, which assigns a } \theta\text{-role} \\
&\text{to that NP or to a ZP containing that NP.}
\end{align*}
\]

This relationship can be represented visually as in (18), adapted from Baker (1988a: 56), where arrows indicate selection.

\[
\text{(18) Possibilities for NI according to barriers:} \\
\begin{align*}
a. &\quad [VP N_i + V [NP \tilde{t}_i ZP]] \\
b. &\quad *[VP N_i + V [NP \tilde{t}_i ZP]]
\end{align*}
\]
c. \[ *[VP N_i + V [XP X [NP t_j ZP]]] \]

All of the above discussion of ECP, c-command and barriers may be summarized in the form of Travis' (1984: 131) Head Movement Constraint (HMC):

(19) An \(X^o\) may only move into the \(Y^o\) which properly governs it.

where the relevant definition of proper government for NI is what we have just outlined in the above discussion of c-command and barrierhood. One final step is necessary, in the form of a statement of the government properties of the complex element (Baker 1988a: 64):

(20) The Government Transparency Corollary (GTC)
A lexical category which has an item incorporated into it governs everything which the incorporated item governed in its original structural position.

This series of conditions and definitions suffices to explain NI under a movement analysis, and to account for several otherwise idiosyncratic properties of NI structures.

Looking back at (13), note that the \(V\) into which the \(N\) root moves governs it at D-structure and so is a valid landing site by the HMC and the GTC. Thus it fulfils the pattern and requirements of Incorporation.

3.2.1 Stranding

Support for the syntactic nature of NI is strengthened by the phenomenon of stranding. It is characterized by the trait that lexical items which are included in the NP in unincorporated structures still exist and carry the same semantic relationships in incorporated structures, even though the noun which they modify is incorporated into the verb complex and the modifier maintains its position outside the verb complex and not adjacent to the \(N\) root.

In Eskimo languages, adjectival modifiers are one element that may appear in such a construction, where the adjective is interpreted with the \(IN\), as illustrated in the following paradigm:

(21) a. Qimmeqarpooq.
    qimmeq-qar-pooq
dog-have-3sgS.INDIC
    'He has a dog/dogs.'

b. Angisuumik qimmeqarpooq.
    angisuu-mik qimmeq-qar-pooq
    big-SECsg dog-have-3sgS.INDIC
    'He has a big dog.'

c. Angisuumik qimmeqarpooq.
    angisuu-nilq qimmeq-qar-pooq
    big-SECpl dog-have-3sgS.INDIC
    'He has big dogs.'

(WG; Jenkins 1984: 109; data from Sadock 1980, personal communication)
The simple incorporated form (21a) is ambiguous for singular or plural, but the adjective overtly represents number information encoded in the NP as noted in the contrast between (21b) and (21c). Numeral phrases may also be stranded:

(22) Suulut-Ø ataasi-mik ammassat-tor-poq.
      suulut-ABSsg one-SECsg sardine-eat-3sgS.INDIC
   ‘Suulut ate one sardine.’

(WG; Woodbury & Sadock 1986)

Slightly more complex are the structures in which possessors of the N root in question are stranded outside the verbal complex:

(23) Sisimiut sissa-p naalaga-qar-put.
      Holsteinborg shore-ERGsg chief-have-3plS.INDIC
   ‘(The inhabitants of) Holsteinborg used to have a supervisor of the shore.’

(WG; Rischel 1971)

A movement analysis of NI can adequately account for these discontinuous dependencies.

---

9 It is not quite clear how such a mechanism might work, but number information is obviously available in some way for viewing by the adjective.

10 Support for a movement analysis may be derived from the similarity between this movement associated with NI and overt syntactic movement in languages like Hungarian, as pointed out to me by José Bonneau (personal communication). Such movement also results in discontinuous dependencies between the noun and its related adjective, numeral, etc., and in each instance the two related elements bear identical Case-marking:

i. Olvasnivalót hoztám, sokat, vidámát, Jánosnak.
   ‘I have brought a lot of funny reading material for John.’

ii. János vendégeket hivott, angolul beszélőket.
    John guests-acc. called English speaking-pl.-acc.
   ‘John called English-speaking guests.’

In each example the noun is separated from its modifiers by the verb, yet the NP is still identified as a unit.
(24) Possessor stranding

a. D-Structure

```
S
  NP  VP
    N  NP  V
      sisimiut  N  qar
        N  naalaga
          sissa
```

b. S-structure

```
S
  NP  VP
    N  NP  V
      sisimiut-Ø  N  N  V
        N  t₁ naalaga  qar-put
          sissa-p
```

The IN simply moves out of the D-structure NP by Move-α to adjoin to the verb at S-structure, leaving behind the other elements under their own nodes within the NP. The N still governs elements such as the stranded possessor by virtue of the GTC which allows the verb complex to act as governor over everything which the IN governed at its D-structure position.

4. The Data

Eskimo exhibits a range of examples which point toward a possible point of difference between Lexicalist and Syntactic analyses of NI, and arise in the form of the incorporation of a variety of seemingly case- and agreement-marked incorporating elements. There are at least three groups of data which seem to be relevant to this issue and which need to be accounted for in any framework of NI. These will be dealt with in each of the following subsections.

4.1 Case- and Agreement-marked Noun Root Incorporation

Nouns with various case and agreement markings appear in IN positions. Sentences (25) and (26) show possessum agreement marking on the IN; sentences (27) through (29) show semantic Case marking on the IN; sentences (30) and (31) show both genitive agreement and semantic Case inflections on the IN.

(25) Kalaallit nunaaliarpq.
    kalaall-it nuna-a-liar-poq
Greenlander-ERGP1 country-3Psg -go-3sgS.INDIC
‘He went to Greenland.’ (lit. ‘to the country of the Greenlanders’)
(WG; Sadock 1980: 314)

(26) ina-a-lip-pa-a
    place-3Ssg- put-INDIC-3sgS/3sgO
‘He puts it at rest in its proper place.’
(WG; Rischel 1971: 233)
(27) qaqqa-nu-kar-put
muntains-MALPl-go-3pIS.INDIC
'They went to the mountains.' 
(WG; Fortescue 1984: 227)

(28) Atuarvimmiapugut.
atuarvik-mi-it-pugut
school-LOCsg-be-1pIS.INDIC
'We are in school.'
(WG; Fortescue 1984: 226)

(29) Maniitsurmiullunga qanuq?
Maniitsqoq-mit-u-llunga
Maniitsqoq-ABL-be-1sgS.IMAPP how
'Being from Maniitsqoq, how could I?'
(WG; Fortescue 1984: 12)

(30) Palasip illuanukarpoq.
palasi-p illu-a-nu-kar-poq
priest-ERGsg house-3Ssg-ALL-go-3sgS.INDIC
'He went to the priest's house.'
(WG; Sadock 1980: 315)

(31) Qimminguaq inna katattuq, itiganganitituq.
quimmiq-ngaquaq inna katat-juq itiga-nga-ni-it-juq
dog-toy there drop-3sgS.PART foot-3Ssg-LOC-be-3sgS.PART
'He dropped a toy dog there, and it's at his foot.'

4.2 Case- and Agreement-marked Adjectival Incorporation

There is also a group of structures in which some kind of adjectival is incorporated, stranding the NP which it modifies. Nominal adjectivals bear case marking as shown in (32) and (33); quantifiers can bear genitive agreement marking as in (34).

(32) illu-mut angisuu-mut-kar-poq
house-MANsg big-ALLs-go-3sgS.INDIC
'He went to the big house.'
(WG; Sadock 1985: 423)

11 Fortescue actually represents this and other similar examples as:

qaqqa-nukar-put
mountains-go.to-3pIS.INDIC

I believe, following many Eskimo linguists, that it is more accurate and explanatory to segment the example as I have done in the text for two reasons: (i) Fortescue notes that the incorporating verb (IV) element changes shape according to the plurality of the IN: nukar for singular INs and nukar for plural INs. This seems unlikely, especially because (ii) the first part of the IV is identical to the allative Case inflections which do change according to number. The same phenomenon occurs with another allative (singular muur, plural nuur), locative (singular miit, plural niit) and ablative (singular miir, plural niir) INs (cf. Fortescue 1984: 226-227; 300-301).

12 The syntactic analysis of these structures is not yet clearly defined. However, it is possible that the adjectival might be the argument of the verb while the noun is its modifier (M. Baker, personal communication). Thus example (32) could be translated alternately as 'He went to the house-like big one.'

13 Note that it seems to be the quantifier itself which assigns genitive Case to the noun root; it is not modifying a noun root which assigns genitive. Thus it appears that quantifiers may pattern with adjectives in terms of the discussion in note 12. This is an important distinction since my analysis assumes that only the assigner of a Case can bear the related agreement; it is not transferrable to modifiers.
(33) nunaqarvin-nit assiinngitsu-nilc-suit miqq-a-t 14-it missa-at
settlement-ABL-pl numerous-ABL-pl COP-INTR-pl.part child-pl 14-pl about
‘fourteen-year-old children from various settlements’
= ‘those from various settlements who are fourteen-year-old children’
(WG; Fortescue 1984: 109)

(34) ukuu-t tama-asa-a-ningik-kaluar-tut umiarsuar-siu-
year-ERG-pl all-3P-pl COP-NEG-but...-3pS.PART ship-go.about.on-
raa-ngamik nalju-junnaa-simli-riir-paat
every.time-4pS.PERF not.know-no.longer-PERF-begin-already-
3pS/3pO.INDIC

‘They had got familiar with them (from) going aboard the ships, though

4.3 Case- and Agreement-marked Wh-Root Incorporation

The same patterns of incorporating case-marked and genitive-agreement-marked
elements are demonstrated by wh-incorporation. Sentences (35) through (37) show
incorporation of a bare wh-root; sentences (38) through (40) show incorporation of a case-
marked wh-root; and sentence (41) shows incorporation of a wh-root marked for both
genitive agreement and Case.

(35) a. Sümik nérivit?
su-mik neri-vit
what-SECsg eat-2sgS.INTER
‘What did you eat?’

b. Sutorpit?
su-tor-pit
what-eat-2sgS.INTER
‘What did you eat?’
(WG; Sadock 1980: 312)

(36) utuqqasaaq su-liiri-sur-mitaava
old.person what-be.concerned.with-3sgS.PART-I.wonder
‘What’s the old fellow up to, I wonder?’
(WG; Fortescue 1984: 13)

(37) su-qar-mat pisiniar-pat
what-have-3sgS.PERF go.shopping-3pS.INTER
‘Because they have what (in the shops) are they out shopping?’
(WG; Fortescue (1984: 15))

(38) su-mit-nngar-luni
what-ABLsg-motion.from-4sgS.IMAPP
‘Coming from where?’
(WG; Fortescue 1984: 14)

14 It is noted by some Eskimologists that the wh + Case seems to be considered as one unit by
native speakers. This should prove no problem for the lexicalist hypothesis since it assumes all
morphological processes occur at once and that there is no difference between inflectional and derivational
morphology. For a syntactic hypothesis, however, this claim introduces the possibility that the elements in
question are formed in the lexicon using the same inflections which are used to mark Case at D-structure,
thus making them invalid as examples of Case marked elements for purposes of this paper. If true, this
(39) Muususi naniittu?
   Muususi na-ni-it-juq
Moses where-LOCsg-COP-3sgS.PART
   ‘Where’s Moses at?’

(40) Namunnganiaraviit?
    na-mut-ngau-niaq-gaivi
where-ALLsgr-motion.toward-FUT-2sgS.PERF
   ‘Where are you going?’

(41) Upirnawiup suaniippa?
   Upirnavig-up su-a-ni-it-pa
   Upirnavig-ERGsg what-3Ssg-LOCsg-COP-3sgS.INTER
   ‘What part of Upirnavig is it in?’
   (WG; Fortescue 1984: 12)

4.3.1 A Short Aside Concerning Incorporation of XPs

It is important to note that wh-elements are usually considered to represent XPs in
other languages. This raises the issue of incorporation of XPs which seems to be apparent
in the “wh-” data above, as well as in data concerning incorporation of modified nouns (42)
and (43), and of “bare-NP adverbs”15 (of time: (44); direction: (45); location: (46) and
(47); and manner: (48) and (49)).

(42) Kunngip panippassuaqarpooq.
   kunngi-p panik-passuaq-qar-poq
   king-ERGsg daughter-many-have-3sgS.INDIC
   ‘There are many king’s daughters.’
   (WG; Sadock 1986: 26)

would not, in fact, be a bad result since it could begin to offer an answer to the question concerning
incorporation of XPs raised in section 4.3.1. For the moment, however, I will continue to assume that they
are Case marked Ns and not lexical units, for three reasons: (i) the range of combinations seems to be quite
productive; (ii) such a combination would not be derivational in the sense of changing a syntactic category,
as are other syntactic-looking combinations which I do claim are formed in the lexicon (cf. kusanartuq (N)
from kusanar (A) + tuq (N)); and (iii) such an analysis would still not explain the example of possessor
stranding in (41), in which the genitive agreement on the wh-IN occurs inside the Case marking — an
ordering that would not occur if the LOC ending were attached first in the lexicon. This issue would best be
dealt with by consulting a native speaker as to the possibility of other elements intervening between the
wh-head and the Case inflection.

A similar claim has been made for bare-NP adverbs ((44) through (49)), but there it has been stated
that no intervening item is possible (Dorais 1986: 98). In addition, the endings on adverbials of location
and direction, while they appear similar to Case markings, are noticeably different in form. Thus, I claim
that bare-NP adverbs are indeed to be considered as one unit formed in the lexicon. They do appear in
incorporation structures, but never with overt Case marking (see note 15), so they are not considered as
primary data for this paper.

15 Bare-NP adverbs are elements analyzed in English as NPs which may appear in adjunct position
without the Case-assigning preposition necessary for other NPs appearing in that position. Two major
analyses of BNPAs prevail. Larson (1985) assumes that they are intrinsically Case-marked by a feature
assigned to them in the lexicon and so do not require a preposition to assign Case. Bresnan & Grimshaw
(1978) propose that the preposition assigning Case to BNPAs is deleted since there are identical semantic
features on the noun and the preposition. Regardless of the analysis, they appear in incorporation structures
in the same position as bare noun roots.
NOUN INCORPORATION IN ESKIMO

(43) Illujuaraalummuulaurismannginamalittauq.  
               illu-juaq-raaluk-mut-ur-lauq-sima-nngit-nama-littauq  
               house-big-very-ALL-go-PAST-PERF-NEG-1sgS.PERF-but.also  
‘but also, because I never went to the really big house.’  
             (IKT; Dorais 1986)

(44) aqaguummat . . .  
        aqagu-u-mmat  
       next.day-COP-3sgS.PERF  
‘(when it was) next day . . . ’  
             (WG; Fortescue 1984: 301)

(45) Avunngaliarannuk!  
            avunga- liaq-gannuk  
           there.ALL-motion.toward-1dS.PERF  
‘We’re heading there!’  

(46) puigur-piuk tamaani-it-tariaqa-nngin-navit  
        forget-2sgS/3sgO.INTER here-COP-must-NEG-2sgS.PERF  
‘Have you forgotten that you shouldn’t be here?’  
             (WG; Fortescue 1984: 36)

(47) pikani-ip-puq uqaluvvi-tuqaq  
             up.there-COP-3sgS.INDIC.church-old  
‘Up there is the old church.’  
             (WG; Fortescue 1984: 96)

(48) Imailuugajanngimaat, Aanaa?  
            imai-luu-najaq-nngit-mmat aanaa  
          this.way-do-would-NEG-3sgS.PERF Anna  
‘Would it do it this way, Anna?’  

(49) Taimaangunngituq.  
            taimaak-ngu-nngit-juq  
           thus-COP-NEG-3sgS.PART  
‘It is not thus (that one should do, behave, etc.).’  
             (IKT; Schneider 1985: 386)

All of these examples seem to show incorporation of XPs rather than Xs. This is quite problematic for a Syntactic framework, since Baker (1988a: 72) predicts that due to concerns of landing site restriction and Visibility, “‘phrase incorporation’ will not generally be found in natural language”. He specifically refers to the morphological well-formedness condition in (50).

(50) * X^n  
       |  
   X^n , where n is greater than 0.

This condition blocks formation of impossible compounds in the lexicon, and should do the same in the syntax.

At this point, one would want to investigate whether each of the above examples (35) through (49) is in fact an instance of XP incorporation, or whether it may in some way be considered as an instance of a bare N for reasons unique to Eskimo. Since each of the items indicated patterns identically to bare N roots in terms of incorporation and Case
assignment, I shall leave this issue for further research and assume for the moment that they are somehow treated as bare Ns.

4.4 Summary of Data

While the majority of incorporated nouns in Eskimo are bare heads, the data in this section have illustrated that there are a substantial number of nouns which appear to be marked for both Case and agreement, and sometimes both, inside the verb complex. Case markings found include only ALL, ABL, and LOC; agreement marking is in the form of the genitive (GEN) found on possessed nouns. Crucially, neither absolutive nor secondary case markings are found on INs.

The following two sections will present analyses of these data in light of the two approaches to morphology outlined above.

5. A Postposition Analysis

This section will briefly outline an analysis based on the idea from Baker (1988a: 486) that what appear to be case markings in the data in section 4 are in fact postpositions. Thus the allative mut would be equivalent to ‘to’; the locative mi, equivalent to ‘at’ or ‘in’, and the ablative mit equivalent to ‘from’. The section will begin by giving some indication of the argument structure of the incorporating verb in relation to their PP complements. It will then show first a Syntactic and second a Lexical analysis of the data. Finally, an intuitive problem will be raised, leading into the Case analysis which follows in section 6.

5.1 Argument Structure

Before discussing incorporation in terms of postpositions, we must first establish that the relevant PPs are indeed arguments of the verb. An argument may be loosely defined as a complement which the verb must have in order to form a grammatical sentence. A typical paradigm appears in (51):

(51) a. i. John put [the book] [on the table].
ii. * John put the book.
iii. * John put on the table.

b. i. Mary watered [the plants] [on Tuesday].
ii. Mary watered the plants.
iii. * Mary watered on Tuesday.

c. i. Susan stepped [onto the train].
ii. * Susan stepped.

d. i. Bill arrived [at 3 o’clock].
ii. Bill arrived.

In the (a) sentences, both NP and PP complements are obligatory; in (b) only the NP is obligatory while the PP is not; in (c) a PP complement is obligatory; and in (d) no complements are required. In each instance the obligatory complement is classified as an argument of the verb, and appears inside its subcategorization frame. Since we assume that
subcategorization implies \( \theta \)-role assignment (see Baker 1988a: 241), we assume that the verb will assign a \( \theta \)-role to its obligatory PP complements.16

Defining argument structure in Eskimo, then, becomes an easy matter, at least for incorporating verbs. Since they are obligatorily bound morphemes, they may never appear without a complement. These complements also tend to be somewhat more restricted than for some English counterparts. By way of example, let us take the verb ‘be’. This verb has many different senses in English, including attributive (e.g. *John is happy today*), equative (e.g. *John is a pilot*), and locative (e.g. *John is in the strawberry patch, John is here*). Eskimo separates these into at least two incorporating verbs: -\( u \)- for attributive and equative and -\( it \)- for locative. Whether -\( it \)- occurs with adjectives, nouns, or adverbs, its complement always has a locative sense. Thus I will assume its subcategorization frame is: -\( it \)-: \( V \), + [PP\_location — ] (or \( V \), + [NP\_LOC — ] in a Case analysis). The facts are similar for the verb *go*. In English this can occur both without a complement (*Bill is sure that John will go*), and with several types of prepositional complements (*John goes out on Tuesdays, John goes to the store, John goes into the coffeeshop every day at midnight, John goes over that hill every day, John goes scuba diving in Australia twice a year, John goes into debt on each trip to Las Vegas*). In Eskimo, however, incorporating verbs meaning ‘to go’ seem to have only the sense of going toward a location. Thus the subcategorization frame would be: kar-: \( V \), + [PP\_goal — ] (or \( V \), + [NP\_ALL — ] in a Case analysis). As such, at least those complements appear within their subcategorization frames and are assigned \( \theta \)-roles, and no problems are initially apparent for either Lexical or Syntactic analyses.

5.2 A Syntactic Approach

In the framework of Baker (1988a), the data given in most of section 4 can be explained by a cyclic incorporation combination of first NI and then PI. Example (30), repeated here as (52), would be represented as shown in (53).

(52) Palasip illuanukarpoq.
    palasi-p illu-a-nu-kar-poq
    priest-ERGs house-3sgS-ALL-go-3sgS.INDIC
    'He went to the priest’s house.'

(WG; Sadock 1980: 315)

---

16 Though there are numerous other tests of argument status, and a variety of murky issues surrounding this topic, this brief explanation will suffice for our purposes. The interested reader is directed to Baker (1988a: 233-245) for a discussion of PPs as arguments, and to Rizzi (1986) and Chomsky (1981, 1986) for a discussion of “optimal” arguments.
(53) Syntactic Incorporation in a Postposition Analysis

a. D-Structure

```
S
  NP △ VP
    pro PP V
      NP P kar
        NP N nu ‘go’
          NP Nilli ‘to’
            N palasi ‘priest’
```

b. S-Structure

```
S
  NP △ VP
    pro PP V
      NP P Pkar
        NP N t_k N_i P_k ‘go’
          NP N ti illu nu ‘house’ ‘to’
            NP N palasi
```

In this structure, all the relevant ECP requirements are met. P both selects NP and governs N, allowing N to incorporate into P across no barriers. V selects PP and governs P, allowing the P-N complex in P to incorporate into V. The genitive agreement marker is assumed to appear at DS when genitive Case is assigned by the possessum N to its possessor NP. Thus the Syntactic approach provides a clear analysis if the post-N marking is considered a postposition.

5.3 A Lexicalist Approach

The Lexicalist framework of DS & W (1987) can also explain the data in section 4 under a postposition analysis, as illustrated in the representation of (52) in (54).

(54) illu-a-mut + kar → illu-a-mut-kar
    (A, Th)          (A, Th)
                   ↓
    illu-a-mut

The verb kar is head of the compound; the incorporating PP is an internal argument which is not a head of the compound; and the argument structure of the compound consists only of the external argument of the head since the internal argument is already bound or qualified by the PP. All the individual items originate in the lexicon and could plausibly be combined there before entry into the syntax as a syntactic atom.

A potential problem arises here in that the possessor palasi appears to be unaccounted for in the analysis. It is an argument of the IN illu, yet illu is not the head of the compound and under DS & W’s rules detailed in (7), only arguments of the compound must be arguments of the head. However, Baker (personal communication) has pointed out that if we view the verb kar as a functor, the argument structure of illu is allowed to percolate to the top of the word-formation tree and thus be part of the argument structure of
the word as a whole. A problem still may exist, however, in that we still cannot explain the genitive agreement inflectional morpheme on the possessum, nor can we account for why it occurs immediately suffixed to the noun root rather than to the verb.

5.4 An Intuitive Difficulty

Both Syntactic and Lexical approaches are quite able to adequately explain most of the data in section 4 under a PP interpretation. One intuitive difficulty arises for this interpretation, however, in terms of data given in section 4.2, repeated here as (55) and (56), concerning incorporation of adjectivals rather than nouns.

(55) illu-mut angisuu-mut-kar-poq
house-ALLs big-ALLsg-go-3sgS.INDIC
‘He went to the big house.’ (WG; Sadock 1985: 423)

(56) nunaqarvin-nit assigiinngitsu-ni-ir-sut miiqqa-t 14-it missaat
settlement-ABLpl various-ABLpl-COP-INTR.pl.part child-pl 14-pl about
‘fourteen-year-old children from various settlements’
= ‘those from various settlements who are fourteen-year-old children’
(WG; Fortescue 1984: 109)

It would seem somewhat odd that a postposition would be marked on an adjectival complement in addition to being marked on the noun itself. Such a situation would result in something like (57) as a translation of (55), having the structure in (58).

(57) He went [pp to the big] [pp to the house].

(58) Postposition Marking on Adjectival:

```
   S
     |   
 N   VP
     |   
 N   PP   V
     |     
 PP   PP
     |     
 NP   P   NP   P
     |     
 N     N (ADJ)
```

However, one does not get the sense that there are actually meant to be two prepositional phrases in sentence (55). While it is not impossible to conceive of such a situation, it seems much neater instead to assume that the overt marking is in fact a Case marking. The next section will explore this possibility and suggest that a Syntactic account is to be preferred over a Lexicalist one.
6. A Case Marking Analysis

In this section we will assume that all overt markings which were taken for postpositions in section 5 will now be analyzed as case markers. To recapitulate, we noted that allative, locative, and ablative case markers, as well as genitive agreement markers, appear on INs. In contrast, neither absolutive nor secondary case markings appear on INs, and the majority of INs appear as bare heads. This section will begin by showing that INs can be assumed to be candidates for secondary case underlyingly. It then proceeds with a Syntactic analysis involving the interaction between Case assignment and levels of representation. Finally, it concludes by showing that the Lexicalist Hypothesis cannot explain the difference between bare and marked INs under a Case analysis.

6.1 INs Without Case: Candidates for Secondary Case

If we are to continue with an analysis which focusses on the differences of INs based on Case, we must first establish which Case the seemingly Caseless INs would take. Since, as we have seen in sentence (6) above (repeated here as (59), the unincorporated counterpart of the IN is in absolute case, we might initially assume that the IN would also be in absolutive case.

    minister-ERGsg meat-ABSsg eat-3sgS/3sgO.INDIC
    'The minister eats/ate the meat.'

b. Palasi-Ø niqi-tur-puq.
    minister-ABSsg meat-eat-3sgS.INDIC
    'The minister eats/ate meat.'

(WG; Rischel 1971)

This is unlikely if we hold to the assumption that the verb has only one absolutive case to assign, which has already been assigned to the external argument in incorporated structures and is thus unavailable for the IN. An alternative option, then, is that the IN is in secondary case.17 This claim is supported by two types of data. First, minimal pairs are shown in (60), (61), and (62).

(60) a. Tuttup neqaanik nerivunga.
    tuttu-p neqa-a-nik neri-vu-nga
    reindeer-ERGs meat-3Ss-SEC eat-INDIC-1sS
    'I ate reindeer meat.'

b. Tuttup neqitorpunga.
    tuttu-p neqi-tor-pu-nga
    reindeer-ERGs meat-eat-INDIC-1sS
    'I ate reindeer meat.'

(WG; Sadock 1980: 309)

---

17 This claim is hinted at but not overtly stated by Sadock (1980: 307). Kalmar (1979: 32 ff.) claims that this is in fact accusative Case, and that notionally transitive sentences where object agreement is not marked on the verb display nominative-accusative rather than ergative-absolutive characteristics, including Case marking. Kalmar's claim will not be considered here.
(61) a. Sumik nerivit.
    su-mik ner-i-vit
    what-SEC eat-2sS.INTER

b. Sutorpit?
    su-tor-pit
    what-eat-2sS.INTER
    ‘What did you eat?’ (WG; Sadock 1980: 312)

(62) a. Piqarpoq.
    pi-qar-poq
    thing-have-3sS.INDIC
    ‘He has something.’

b. Qimmeqarpoq.
    qimmeq-qar-poq
    dog-have-3sS.INDIC

c. Qimmimik peqarpoq.
    qimmeq-mik pi-qar-poq
    dog-SEC thing-have-3sS.INDIC
    ‘He has a dog.’ (WG; Sadock 1980: 306-307)

In each of these examples, it is the secondary case which is used on the unincorporated noun. Examples (60) and (61) show this when different verb roots are used; (62) shows association of the secondary unincorporated noun with an expletive in place of the IN, where all three sentences use the same verb root.

Second, the INs are modified by stranded elements which bear secondary case marking.

(63) Suulut-Ø ataasi-mik ammassat-tor-poq
    Suulut-ABSs one-SECS sardine-eat-3sS.INDIC
    ‘Suulut ate one sardine.’ (WG; Woodbury & Sadock 1986: 237)

(64) Luutiviup assut qusanutumik qaanniorpaa
    Luutivik-p assut qusanutsq-qaqqal-paa
    Luutivik-ERGs very beautiful(NOM)-SECS kayak-make.for-
    ‘Luutivik made him a very beautiful kayak.’ (WG; Sadock 1986: 23)

The IN is modified by a number in (63); and by an adjectival in (64); both are in secondary case.

The claim is made stronger when these two sets of evidence are brought together as in the following example.

(65) a. Sapanngamik kusanartumik pisivoq.
    sapangaq-mik kusanar-tuq-mik pi-si-voq
    bead-SEC beautiful-NOM-SEC thing-get-3sgS.INDIC

b. Kusanartumik sapangarivoq.
    kusanar-tuq-mik sapangar-si-voq
    beautiful-NOM-SEC bead-get-3sgS.INDIC
    ‘He bought a beautiful bead.’ (WG; Sadock 1980: 307)
It is evident here that the case marking given to the NP is identical whether the head noun is incorporated or not since the marking on its modifier, which is always the same as that on the head noun in unincorporated examples, remains identical across the pair. Thus we conclude that the bare INs in every instance of NI are underlyingly candidates for secondary case.

6.2 A Syntactic Explanation

We now turn to the Syntactic hypothesis in hopes of finding an explanation there. By establishing three types of Case assigned at two different levels, we seek to explain the split between marked and unmarked INs.

6.2.1 Three Types of Case

In observing Case from a Syntactic viewpoint, there is a clear distinction made between three types of Case: semantic, inherent, and structural (e.g. Chomsky 1986: 193 ff.; Baker 1988a: 113-114). The most restrictive is semantic Case, which is assigned under government at D-structure and is closely related to θ-marking. It requires that the NP which receives a certain Case from the Case-assigner must also receive an identical θ-marking from that same Case-assigner. Allative, locative, ablative, transitive, and simulative Cases, among others, all fall into this class. Second is inherent Case, also associated with θ-marking but in a somewhat looser fashion. It “is assigned by α to NP if and only if α θ-marks the NP” (Chomsky 1986a: 193), but does not require that the Case and θ-marking be identical. Assigned under government at D-structure, it includes at least genitive Case assigned by NP. The loosest relationship is evidenced by structural Case, which includes nominative and accusative as well as ergative and absolutive. It is assigned under government at S-structure with only the requirement that the NP bear some θ-role, not necessarily assigned by the Case-assigner. These similarities and differences may be captured visually in the following matrix:

(66) Case-θ Relationship Matrix

<table>
<thead>
<tr>
<th>Case/θ-role assigned:</th>
<th>same</th>
<th>possibly different</th>
</tr>
</thead>
<tbody>
<tr>
<td>same</td>
<td>semantic</td>
<td></td>
</tr>
<tr>
<td>possibly different</td>
<td>inherent</td>
<td>structural</td>
</tr>
</tbody>
</table>

Additionally, we will assume following Baker (1988a: 117) that Cases are only indexed at their respective levels and that the actual overt marking is left until PF. Finally, all NPs are subject at LF to the Visibility Condition (made explicit in Baker 1988a: 117) which states:

---

18 Some authors hold that the ergative Case is in fact genitive Case and therefore classify it as an inherent Case. This position will not be considered here.
(67) B receives a \( \theta \)-role only if it is Case-indexed.

and at PF to the Principle of PF Interpretation (Baker 1988a: 116):

(68) Every Case indexing relationship at S-structure must be interpreted by the rules of PF.

This sequence of events and restrictions is illustrated in the following diagram:

(69) Levels of Representation

\[
\begin{array}{c}
\text{Lexicon} \\ \text{D-structure} \\ \text{S-Structure}
\end{array} \leftarrow \begin{array}{c}
\text{roots} \\ \text{UTAH} \\ \text{structural Case indexing}
\end{array}
\]

\[
\text{Phonetic Form} \quad \uparrow \quad \text{Logical Form} \quad \uparrow
\]

Principle of PF Interpretation \quad Visibility Condition

In observing the data once again, an obvious generalization can be seen in the light of this information concerning Case assignment. Specifically, the Cases which incorporate with the INs fit into the classifications of inherent and semantic Case, and both inherent and semantic Cases are assigned at D-structure. Structural Case, in contrast, is assigned at S-structure. Thus, it seems to make sense that the level at which a particular Case is assigned might be related to whether or not it may be incorporated. This argument, however, requires that secondary Case be a structural Case assigned at S-structure. The following section will show that such an assumption is indeed plausible.

6.2.2 Secondary Case is Like Structural Case

The key factors in Case and \( \theta \)-assignment are the assigner and the assigned, as shown in the matrix (66) above. In assessing the position of secondary Case within the matrix, then, we must consider both these factors.

First, we will tackle the relationship between the assigned elements. Since the Case assigned is always secondary Case, the important point here will be the requirements on the
θ-role. From observation of the data, it is apparent that the secondary Case in Eskimo always seems to carry the θ-role Theme.¹⁹ Johnson (1980: 16-17) gives the following paradigm to illustrate that the secondary is "a Case that is semantically appropriate to patient NP's but not to goal NP's":

(70)

a. Anguti-up titiraut-mik nutarar-mut tuni-vaa
   man-ERG pencil-ABS child-ALL give-3sgS/3sgO.INDIC
   'A / The man gives (/gave) the pencil to a / the child.'

b. angut-mik nutarar-mut tuni-si-vuq
   man-ABS pencil-SEC child-ALL give-ANTP-3sgS.INDIC
   'The man gave a / the pencil to a / the child.'

(71)

a. anguti-up titirauti-mik nutararq-Ø tuni-vaa
   man-ERG pencil-SEC child-ABS give-3sgS/3sgO.INDIC
   'A / The man give (/gave) the child a / the pencil.'

b. * angut-Ø titirauti-mik nutarar-mik tuni-(si)-vuq
   man-ABS pencil-SEC child-SEC give-(ANTP-)-3sgS.INDIC
   (IKT; Johnson 1980: 16-17)

These examples indicate that dative shift — shifting the relation of the goal from indirect to direct object — can occur with canonical ergative sentences in which the goal would take absolutive Case (as in the (a) examples), but not with antipassivized sentences in which the goal would be forced to take secondary Case (as in the (b) examples).²⁰ The conclusion that elements marked with secondary Case must always carry Theme θ-role would seem to place secondary Case in the class of semantic Cases since Case and θ-role are so closely tied together. Such a conclusion is intuitively unacceptable, however, since the use of this Case seems much more closely tied to a particular construction (e.g. antipassive (ANTP; (72b), 2nd object in dative shift (71a)) than to a particular semantic role in the sentence.

To show that the secondary is not in fact a semantic Case in Eskimo will therefore require demonstrating that the element which assigns Case to the NP with secondary Case

¹⁹ This is true for dialects of Eskimo spoken in Canada (Johns 1987: 13; Kalmar 1979: 61; Dorais 1986: 28). In West Greenlandic, however, the secondary Case also is used to convey the Theta role Instrument:

i. nanuq savim-mi-nik kapi-vaa
   polar.bear knife-his.refl-SEC stab-3sS/3sO.INDIC
   'He stabbed the polar bear with his knife.' (WG; Fortescue 1984: 214)

²⁰ It seems to me that this could easily derive from the fact that the verb has only one (grammatical) secondary Case available to assign, but would be forced to assign two (grammatical) secondary Cases under dative shift of an antipassive. Nevertheless, I have not been able to find any examples of grammatical secondary Case being assigned to NPs representing any Theta role other than Theme, so I accept this as evidence that secondary Case is tied to Theme. The prepositional secondary Case is of course tied to Instrument.
can be different from the element which assigns it its \( \theta \)-role. The burden of this proof falls on the antipassive use of secondary Case, since in other constructions where secondary Case appears, such as dative shift, the verb is assigner of both Case and \( \theta \)-role. The seeds of this argument are found in the fact that, as shown in 6.1 above, NI in Inuktut always involves INs which would take secondary Case in the unincorporated form of the same sentence. Note that secondary Case only occurs on a direct object NP when the absolutive Case is already used up, either by an indirect object becoming the direct object NP and thus taking the absolutive Case as in the dative shift construction, or by the subject taking it as in the antipassive construction. In all the examples of sentences involving NI given in the data so far, there is only one direct object per sentence. Therefore we must assume that the antipassive morpheme is integrally involved in NI in Inuktut. Even in sentences in which both dative shift and NI have taken place, as in (72):

(72) inissar-siur-paa
place-look.for-3sgS/3sgO.INDIC
‘He looked for a place for him.’

(WG; Fortescue 1984: 214)

it is possible to assert that the incorporation of the IN (from a position where it would have been in secondary Case) is due to the antipassive construction rather than to the dative shift process.\(^{21}\) If the antipassive morpheme is always present in NI sentences, this may well have the effect of designating different Case and \( \theta \)-assigners for secondary Case.

Crucial to this argument is Baker’s (1988a: 129-146) analysis of the antipassive as a special Case of NI. He first notes that traditional analyses of antipassive fail to take into account the fact that the oblique complement of a verb occurring due to the antipassive is optional and may be deleted while still producing a sentence which has an assumed theme or patient of the action. As Baker notes, this is indicated in various languages including Eskimo:

(73) a. In li’i’i gima-miyu.
1p.EX-see the house-your
‘We saw your house.’

b. Man-li’i’ hâm guma’.
ANGP-see we(ABS) house
‘We saw a house.’

c. Man-man-li’i’i lalali.
p-ANGP-see the males
‘The boys saw something.’

(Chamorro; Gibson 1980; cited in Baker 1988a: 129-131)

\(^{21}\) The point here is that if the NP came to be assigned secondary Case as a result of the dative shift, then there would be no antipassive morpheme in the sentence. However, if the NP were already destined to take secondary Case due to being in an antipassive construction before dative shift occurred, then the antipassive morpheme would be in the sentence. This predicts that NI cannot occur with an NP in secondary Case in the unincorporated form which it received as a result of dative shift (rather than antipassive). At the moment it is somewhat unclear how to distinguish between these two alternatives when presented with an actual sentence.
Since the verbs which are involved in this type of construction have dyadic argument structures, and are not "object-deletion" verbs, their thematic object argument must appear by the Projection Principle. If one assumes, following Marantz (1984), that the NP with secondary Case fulfils this Theme argument, then it should always be obligatory; optional deletion being a possibility afforded only to adjuncts. However, if one assumes that the NP with secondary Case is an adjunct in order to allow it to delete optionally, the Theme argument is left unfulfilled in all cases of antipassive construction. In order to solve this apparent dilemma, Baker proposes that the Theme θ-role is in fact assigned to the antipassive morphe morpheme itself, and therefore is always satisfied in every antipassive construction whether the NP with secondary Case appears or not. Since it receives a θ-role, the antipassive morphe morpheme is forced by the UTAH to appear as a separate element at D-structure and undergo incorporation at S-structure, allowing it to appear inside the verb complex and making it a special form of NI:

(75) Antipassive as a Process of NI

Sentences which overtly represent the NP with secondary Case "will have exactly the same structure, with the patient phrase as an adjunct 'doubling' the θ-role of the antipassive morpheme" (Baker 1988a: 133) (arrows indicate θ-role assignment):
(76) θ-role "doubling" between antipassive and NP taking secondary Case

(a.)

\[
\begin{array}{c}
S \\
\downarrow \\
NP \\
\downarrow \\
NP \\
\downarrow \\
V \\
\downarrow \\
N \\
\downarrow \\
arqaq \\
\uparrow \\
\theta\text{-role}
\end{array}
\begin{array}{c}
\text{a (ANTP)} \\
unata
\end{array}
\]

(b.)

\[
\begin{array}{c}
S \\
\downarrow \\
NP \\
\downarrow \\
NP \\
\downarrow \\
V \\
\downarrow \\
N \\
\downarrow \\
arqaq \\
\uparrow \\
\theta\text{-role}
\end{array}
\begin{array}{c}
t_i \\
unata \\
\uparrow \\
\text{a (ANTP)_i}
\end{array}
\]

In this manner, we have finally established that the NP with secondary Case does in fact "receive" θ-role from a different source (θ-role linking to antipassive) than that from which it receives Case (Verb). Returning to the Case-θ Relationship Matrix in (66) above, we can now see that the secondary Case will fill in the missing box since the assigned elements are always matching, but the assigner may differ.

(77) Revised Case-θ Relationship Matrix

\[
\begin{array}{|c|c|}
\hline
\text{Case/θ-Assigner:} & \text{same} & \text{possibly different} \\
\hline
\text{same} & \text{semantic} & \text{semi-structural} \\
\text{possibly different} & \text{inherent} & \text{structural} \\
\hline
\end{array}
\]

Thus we reach the insight that the relevant factor for level of Case assignment is the predictability of the identity of both Case and θ-role assigners. If both assigners are always the same, the Case assigner feels confident to assign its Case at D-structure because it "knows" that the NP will also receive a θ-role and will thus be able to meet the Visibility Condition. However, since the θ-role linked to an adjunct does not need to be linked at D-structure since the θ-Criterion (applied at all levels) only applies to arguments, and since the Case assigner of the absolutive argument is only determined after all movement has
taken place at S-structure, both structural and semi-structural Cases are assigned at S-structure after the respective assigners are assured that the NP will receive both a Case and a θ-role in order to fulfil the Visibility Condition at LF.

Independent support for this revised matrix derives from an observation that grouping along the horizontal rows corresponds to Agreement marking on Case assigners in Eskimo. One may observe that assigners of both structural and inherent Case not only cause Case to be indexed and eventually marked on the NPs to which they assign Case, but also retain an agreement marking themselves in the form of verbal inflection agreeing with ergative and absolutive arguments and nominal inflection on possessum NPs agreeing with their possessor. In contrast, there is no verbal agreement with either semantic or semi-structural Case. At this point it is uncertain why such a pattern should hold. Perhaps since the Case and θ-role assigned may be different for NPs in both Cases, the Case assigner wants to ensure that one indexing is not mistaken for the other and so provides an overt check on itself in the form of agreement to indicate the relationship. This is unnecessary for the NPs in semantic Case since information either way would be identical, and it is unnecessary for NPs in semi-structural Case since the θ-marking is of a different type (indirect transmission) than the Case marking. This reasoning remains somewhat unclear and would benefit from further research. However, the fact that the matrix brings to light a recognizable pattern in both vertical and horizontal groupings is rather interesting.

Returning to the relationship between antipassive and NI, then, one additional problem remains. If we assume that antipassive constructions are a special case of NI, and also that they are in effect in conjunction with incorporation of a real noun, then we have two instances of NI occurring within the same sentence. This situation has been ruled out across an extensive survey of languages throughout the world by Mithun (1984). Such an observation is not surprising since only one noun root should be in the proper relationship with the verb to be able to incorporate. A double NI would be expected to take the form of (78a), in which a noun root from an NP not selected by the verb is attempting to incorporate. This structure is ungrammatical since the N° would have to antecedent govern its trace across a barrier. Baker (1988a: 138-139), however, provides a way out, as visually depicted in (78b):

(78) Dual NI

a. \* [VP \( N_k + [N_i + V] [NP t_i] [NP t_k] \) ]

b. [VP \( N_k + [N_i + V] [NP t_i] [NP t_k] \) ]

In a normal antipassive construction, the ANTP morpheme receives a θ-role from the verb. The patient noun root is generated as an adjunct which is thematically related to the ANTP. Once the ANTP has incorporated, the noun root is related thematically to the verb in a sense because the ANTP is inside the verb complex. Therefore, "the theme root is both a structural sister of the complex verb and is θ-coindexed with it.... [and so] the theme root may incorporate into the verb without violating the ECP" (Baker 1988a: 138):
(79) Dual Incorporation of Antipassive and Adjunct

\[
\begin{array}{c}
\text{S} \\
\text{NP} \quad \text{VP} \\
\text{angut} \\
\text{NP} \quad \text{NP} \quad \text{V} \\
\text{N} \quad \text{N} \quad \text{V} \\
\text{tk} \quad \text{ti} \quad \text{N} \\
\text{ar} \quad \text{a} \\
\text{unata a (ANTP)}_i
\end{array}
\]

The antipassive morpheme serves as a link between the verb and the noun root in that it provides the \( \theta \)-role link necessary for NI of the adjunct NP with secondary case to take place under a proper government relationship.

6.2.3 Back to the Syntactic Explanation...

Having shown that the secondary case indeed patterns with structural Case in the relevant way, we return now to the original topic of discussion — namely, how a Syntactic theory of morphology can explain why some INs retain their case markings in incorporated structures and others apparently do not. The argument, as noted earlier, centres on levels of representation, as portrayed through Case indexing at different levels of structure.

Semantic and inherent Case are assigned with indexing at D-structure as in (80),\(^22\) where “S” and “I” indicate semantic and inherent Case respectively, and A indicates agreement on the nominal Case assigner.

---

\(^{22}\) Ideally, one might want the trees in (80) to be parallel, as they both include a possessed NP. I have not done this for the simple reason that I am not exactly sure, based on the data available, just how the genitive agreement marking on the incorporated noun works. Note that in at least two sentences presented in this paper, (23) and (60b), there is a possessed NP in the sentence yet the IN is not marked for agreement. In other sentences such as (25) and (26), however, genitive agreement is marked on the IN. Two solutions are intuitively possible: (i) genitive agreement must be "protected" by Case-indexing in order to appear inside the IN; and (ii) it appears regardless but only with a certain class of verbs. The data are also somewhat confused by the fact that genitive agreement is often only marked by a one-vowel morpheme, and in the data presented here that vowel is usually the same as the last vowel in the noun root. Further data would undoubtedly shed light on this dilemma. For the moment, however, I have chosen to leave it unresolved as it is not particularly crucial to my analysis when placed in the view outlined in this footnote.
Then incorporation takes place between D-structure and S-structure. When it is time for structural and semi-structural Case to be assigned at S-structure, the NP which the incorporated element heads is already indexed through co-indexation associated with movement. Since this co-indexation appears the same as Case indexation in terms of the LF Visibility Condition (Baker 1988a: 118), no further indexing is necessary and so a special Case index is not assigned. Baker also notes that the NP is PF interpreted by virtue of its co-indexed head actually appearing inside the verb complex. Thus, all the conditions are met without semi-structural Case needing to be assigned to the NP whose head is incorporated. 23 On the other hand, since semantic and inherent Case indices have already been assigned to NPs at D-structure, this will be seen first at PF and so the actual case marking will appear for these elements.

23 This explains why object agreement never occurs with NI in Eskimo, though it does occur in languages such as Iroquoian and Southern Tiwa. (see note 2). Since Case is never actually assigned to NPs which would take secondary Case, agreement will never be triggered.
(81) S-structure Representation

a. Semi-structural

```
S
  NP
    pro
    NP_i
      N
      t_i
      qimmeq_k
    NP_k
      N
      t_k
```

b. Semantic + Inherent

```
S
  NP
    pro
    NP-S_i
      N
      N-A
        N
        illu_i
        kar
      V
```

A possible difficulty for this analysis becomes apparent in that there is some question concerning whether Case is assigned to NPs or to their heads (see e.g. Chomsky 1981). If we assume that Case is assigned to the head N, the analysis can stand. If we assume, as is most commonly done, however, that Case is assigned to NPs, and if the semantic Case-indexation is assigned to the NP dominating the head which incorporates, how can the manifestation of that Case appear on the head N after it has moved out of the NP? We answer this question in the following section by invoking a KP analysis of tree structure.

6.2.4 A KP Analysis

Lamontagne & Travis (1986, 1987) propose that Case is represented in its own separate node related to the NP but external to it. Analogous to the three-level verbal system: [CP [IP [VP ]]], they put forth a three-level nominal system: [KP [DP [NP ]]], in which the new category in the outer layer, KP, is a functional category containing the Case information relevant to the NP which it most immediately dominates.\(^{24}\)

The governing verb assigns Case features to KP (at either D-structure or S-structure depending on the type of Case involved; see section 6.2.3) which then percolate down to

---

\(^{24}\) The functional category D in English contains the Determiner among other things (Abney 1986). Since there are no Determiners in Eskimo, the DP is free to be used for something else. One possibility is that it contains the genitive agreement morpheme feature (M. Baker, personal communication).
the head, K. K is base-generated empty at D-structure and must be properly governed as stipulated in the ECP ((14)), with the additional restriction that the contents of the empty node K must also be identified through feature recoverability.

Noun incorporation under such an analysis would necessarily involve cyclic incorporation of N° into K°, and then the complex K° into V°. Since the projections of both N and K are selected by the heads into which they incorporate, and since the heads will properly govern their respective traces, this system would meet the requirements of the ECP. Tree structures as in (82) would thus be created. (82a) represents incorporation of both antipassive and "secondary" noun roots, 25 while (82b) represents incorporation of a "semantic" noun root.

(82) S-structure Representations in a KP Analysis

a. Semi-structural

```
S
|-----------||-----------|
|    KP     ||    VP     |
|-----------||-----------|
| NP (ANTP) ||   N       |
|-----------||-----------|
|   NP      ||   K       |
|-----------||-----------|
|     N     ||   Kkm     |
|-----------||-----------|
|   tkm     ||  ti       |
|-----------||-----------|
|   2       ||   3       |
```

b. Semantic

```
S
|-----------||-----------|
|    KP     ||    VP     |
|-----------||-----------|
| NP        ||   K       |
|-----------||-----------|
|   N       ||   Kkm     |
|-----------||-----------|
|   Nk      ||   Km      |
|-----------||-----------|
|   N       ||   Ni      |
|-----------||-----------|
|   V       ||   V       |
|-----------||-----------|
|   2       ||   1       |
```

A KP analysis would be based on the same premise as delineated in section 6.2.3, namely, that co-indexing due to movement counts for the both the Visibility Condition at LF and the Principle of PF Interpretation as Case indexing. However, since Case is assigned to the K node rather than the NP node, incorporation through the K and of the K would legitimately take the Case index into the verb complex. In this way, Case could be represented overtly on those INs whose K nodes had been filled before incorporation took place.

An interesting improvement on the above analysis would be made if one were able to show that N roots which have empty K nodes could incorporate directly into V without first having to incorporate into K. This situation is represented in (83).

---

25 I assume here, for primarily intuitive reasons, that bound NPs are not dominated by KPs; in the interest of keeping structure consistent, one might wish to represent them nevertheless. However, there may also be independent motivation to predict that verbs somehow have different requirements for bound morphemes that for free ones. At any rate, this assumption is of no consequence to the relevant points of the general discussion which ensues in this section.
(83) NI which Skips Empty Nodes

\[
\begin{array}{c}
\text{VP} \\
\text{KP} & \text{NP} & \text{V} \\
\text{NP} & \text{K} & \text{N} & \text{N}_k & \text{V} \\
\text{N} & \text{e} & \text{t}_i & \text{N}_i & \text{V} \\
\text{t}_k \\
\end{array}
\]

Since semi-structural Case is assigned at S-structure, the K node of the related NP would be empty at D-structure. If empty nodes and their projections were somehow overlooked in barrier-type criteria for licit NI, then N could incorporate directly into V, leaving the K node in its D-structure position. The N-trace would still be antecedent-governed and so fulfill the ECP. The K node would also satisfy the ECP since it would be properly governed by the V and its features would be recoverable from the V under sisterhood between KP and V. The impossibility of secondary case appearing on the IN could then be explained by the fact that the K node does not incorporate, or serve as a valid landing site for incorporation, when it is void of features at the opportune moment (D-structure). Working out of the proof and independent motivation for such a claim would no doubt be quite involved, and certainly outside the scope of this paper. I therefore leave this idea as an interesting question to be pursued in future research.

Note finally that a KP analysis seems intuitively more reasonable than a PP analysis, particularly in terms of adjectival incorporation. Recall that the difference between KP and PP is that KP is a functional category while PP is a lexical category. Since KP contains only features and their lexical representations, and since it receives its features by percolation from the governing verb, it is possible for these features to be transmitted to each K node under a given KP once the verb has transmitted the features to that KP, as in (84):
(84) Adjectival Incorporation under Case Analysis

```
S
  /   \\  
KP   VP
  /   \\  
NP   KP
  /   \\  
K    V
  /   \\  
N    KP
  /   \\  
NP    KP
  /   \\  
K     K
  /   \\  
N    N (ADJ)
```

Then each of the relevant elements under the KP would bear the same case marking. It is in fact quite usual in many languages of the world for an element which modifies an NP to bear the same case marking as that NP. A PP analysis could not function nearly so neatly. PPs are filled by actual lexical items rather than by features and their representations, so a PP analysis would require there to be two separate lexical items, both with semantic content, rather than only one feature appearing wherever necessary.

6.2.5 Summary of Syntactic Analysis

In conclusion, we have shown that it is certainly plausible, and even insightful, to analyze the incorporation of seemingly case-marked elements as just that: case-marked elements. From the assumption that semantic and inherent Cases are assigned at D-structure while semi-structural and structural Cases are assigned at S-structure, and in the light of a KP analysis of tree structure, it follows clearly that Case would be marked on some INs and not others in Eskimo.

6.3 A Lexicalist Explanation

Under the Lexicalist Hypothesis, it is somewhat more difficult to explain why it is only GEN, ALL, LOC, and ABL which are marked on INs, and never SEC. In fact, assuming that all of these are case markings creates a situation which seems strange indeed for the Lexicalist Hypothesis. As we saw in sections 2.1 and 3.1, the Lexicalist Hypothesis assumes that all inflection and incorporation occurs in the lexicon so that the X' is fully formed prior to its insertion into D-structure. Thus we would expect all instances of case and agreement marking to be parallel. Either all case and agreement marking would occur first and then all incorporation, resulting in a situation in which all INs, not just some, were marked for case and agreement in incorporated structures, or all incorporation would occur first and then case and agreement marking, resulting in a situation in which no INs would be marked for case or agreement. Neither of these scenarios, however, is consistent with the split in case marking shown by the data. Thus the Lexicalist Hypothesis appears to be insufficient to explain the data at hand.
7. Conclusion

This paper began by outlining two theories of morphology — the Lexicalist Hypothesis and the Syntactic Hypothesis — with particular attention to the analysis put forth by these hypotheses concerning noun incorporation. Then, based on data from Eskimo, it explored an analysis of marked incorporated nouns — first as postpositions and subsequently as case markings — under the two hypotheses. The study concluded that while both hypotheses can adequately explain incorporation of postpositional phrases, only the Syntactic Hypothesis provides an adequate explanation of incorporation of case-marked INs. Further research could thus be profitably pointed in the direction of finding an independent motivation for treating markings on INs as either Case or postposition. In addition, a variety of questions are posed throughout the text which merit further study, and elicitation of a greater amount of data would be most beneficial to all these pursuits.

References


**Résumé**

Cet article présente une analyse de l'incorporation des noms en esquimau selon deux théories dominantes de la morphologie: l'Hypothèse Lexicaliste (DiSciullo & Williams 1987) et l'Hypothèse Syntaxique (Baker 1988a). Nous amorçons la discussion en étudiant l'incorporation d'éléments nominaux portant des terminaisons allative, locative et ablative, de même que des marqueurs d'accord génitif. Ces terminaisons nominales peuvent être analysées soit comme des postpositions soit comme des marqueurs de Cas. Cet article offre une analyse de l'incorporation des noms qui implique tour à tour chacune de ces possibilités par rapport à deux théories conflictuelles en morphologie. L'analyse postpositionnelle peut s'expliquer par composition dans le lexique selon l'Hypothèse Lexicaliste et par incorporation cyclique selon l'Hypothèse Syntaxique, cette dernière approche étant perçue comme intuitivement inférieure. Selon l'Hypothèse Syntaxique, une analyse en termes de marquage de Cas peut également être proposée en invoquant l'assignation de Cas distinctifs basé sur des restrictions d'ordonnance de niveaux, une approche intuitivement préférable dont l'Hypothèse Lexicaliste ne peut cependant pas rendre compte.