Two Types of "Incorporation" in Mi'gmaq

by

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ABSTRACT

This paper explores the structure of complex verb stems in Mi'gmaq (Eastern Algonquian) by investigating noun incorporation (NI). In Mi'gmaq, there are at least two different synchronically productive constructions that can both be superficially called "incorporation". The first type, shown in (1-a), is what Algonquianists refer to as MEDIAL or STEM-INTERNAL INCORPORATION. The second type, shown in (1-b) is a DENOMINAL VERB (DNV) construction, where *-e'ge* is a light verb meaning something like 'get' or 'procure'.

(1) a. Medial incorporation

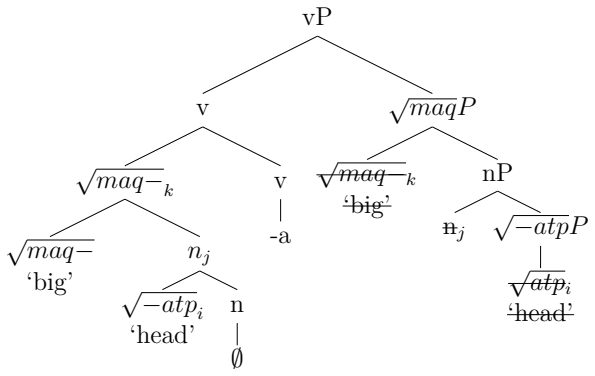
Maq **-atp** -a -t
big -head -VAI -3
'S/he is big-headed.'

b. Denominal verb

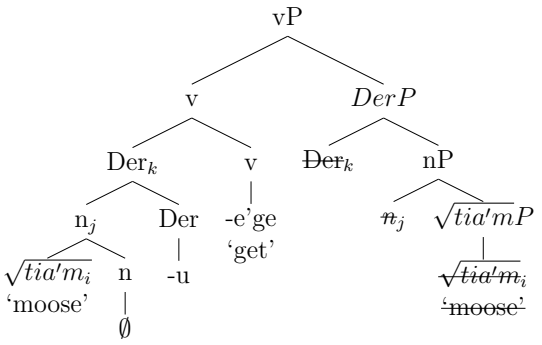
Tia'm -u -e'ge -t
moose -DER -get.VAI -3
'S/he hunts moose.'
(lit. 'S/he moose-Vs')

In this paper I compare the two constructions in (1) and show that they differ structurally. The structural position of the first linear element, the INITIAL in Algonquianist terms, is analyzed based on the construction. Despite occupying the same surface position, the initial in modifier-medial incorporation, *maq-* 'big', is not the lowest head in the structure, while in DNVs the initial *tia'm* 'moose' is. However, the two constructions are similar in that the incorporated element in both is categorized (i.e. a noun), which occupies the lowest head in the structure.

(2) Medial Incorporation



(3) DNV



The proposed analysis provides an in-depth look into morphology in Mi'gmaq, situated within the generative syntactic framework of Distributed Morphology (DM) (Halle and Marantz 1993; Marantz 1997). More broadly, this study advances our understanding of how words are built up in polysynthetic languages by supporting a case-by-case approach: two given constructions may be called "NI", but they may also have different syntaxes.

Ultimately, this study shows that when all word formation is done in the syntax the difference between noun incorporation and compounding becomes not so clear.

Acknowledgements

In the last year of my undergrad I decided to take **formal** methods at McGill, which I thought would change my life forever and make me understand set theory and semantics and math. (Un)fortunately, it was cancelled due to a lack of students. Since I was already set on a 'methods' course, my gut told me that **field** methods could be something I might like. I guess it wasn't too far off...

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that we shared, but I think that would take many pages. You are the best.

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In some sense, my heart never left Concordia. It remains a special place, where I discovered and pursued my love of linguistics. I thank Alan Bale, Dana Isac and Charles Reiss—the original team of mentors that inspired and guided me through the last six years. Thank you for always listening and providing support, in all sorts of situations.

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All flaws and errors in this thesis are mine.

List of Abbreviations

ALIEN	alienable
AN	animate
DER	derivational morpheme (*-u*/*-w*)
DIM	diminutive
EPEN	epenthetic
INAN	inanimate
LOC	locative
NZLR	nominalizer
OBJ	object (e.g. 3.OBJ = third person object)
OBV	obviative
PL	plural
POSS	possessive (e.g. 1.POSS = first person possessive)
PST	past
REFL	reflexive
VAI	animate intransitive verb
VII	inanimate intransitive verb
VTA	transitive animate verb
VTI	transitive inanimate verb
0	third person inanimate
1	first person
3	third person
4	third person obviative
3>4	subject>object
?	unknown

As is customary in linguistics, I use these symbols before an example to indicate:

*	ungrammaticality
?	relative unacceptability (questionable)
#	infelicitous (with respect to a context)

Ugjit ms't wen Listugujg.

Contents

Chapter 1| Overview

1.1 Introduction

This thesis investigates noun incorporation (NI) in Mi'gmaq (Eastern Algonquian), with the broader goal of shedding light on word formation in polysynthetic languages. Understanding the role of nominal material within the verb stem contributes to our knowledge of the structure of complex verb stems. In Mi'gmaq, there are at least two different synchronically productive constructions that can both be superficially called "incorporation". These are shown in (4) below.[1]

(4) a. Medial incorporation

Maq **-atp** -a -t
big -head -VAI -3
'S/he is big-headed.'

b. Denominal verb

Tia'm -u -e'ge -t
moose -DER -get.VAI -3
'S/he hunts moose.'
(lit. 'S/he moose-Vs')

The question I set out to address in this thesis concerns the distinction between noun incorporation and compounding. Early work on noun incorporation fought for a distinction between NI and noun-verb compounding (e.g. Baker 1988), with the argument that NI was syntactic while compounding was formed in the lexicon. However, with newer theoretic frameworks such as Distributed Morphology, all word formation takes place in the syntax (Halle and Marantz 1993; Marantz 1997). Given this, the question is what is the difference, if any, between noun incorporation and compounding? By investigating the two constructions in (4) I demonstrate that the distinction between NI and compounding is not so clear, especially in polysynthetic languages. Instead, the constructions examined here provide support for a non-homogenous treatment of noun incorporation phenomena (Mithun 1984). I describe each of these constructions in turn.

[1] As the data in this paper comes from Listuguj, I use the standard Listuguj orthography. Apostrophes are used to mark vowel length after a vowel, or a schwa between consonants.

1.1.1 Medial Incorporation

The construction shown in (4-a) above, is what Algonquianists refer to as MEDIAL or STEM-INTERNAL INCORPORATION.[2] In this construction a bound nominal element, either a body-part or classifier, appears in the middle of the verb stem. This type of incorporation is derived directly by material affixed to the Root—what Algonquianists call PRIMARY DERIVATION. I use the term ROOT to refer to an uncategorized, "language-specific combinations of sound and meaning" (Embick and Noyer 2007: 295).

In (5-a) below, the Root *maq-* 'big' is followed by a body-part medial while in (5-b) the Root *ep-* 'hot' is followed by a classifier medial.

(5) Stem-internal (Medial) Incorporation—Primary Derivation

a. Maq **-isqon** -a -t
big **-nose** -VAI -3
'S/he is big-nosed.' (Body-part medial)

b. Ep **-p** -a' -q
hot **-liquid** -VII -3
'It (inan., liquid) is warm.' (Classifier medial)

While the body-part suffixes used in medial constructions like (5-a) may not stand alone, they may appear with a possessor, shown in (6) below. In Mi'gmaq body-parts belong to a class of INALIENABLE nominals, so they are obligatorily possessed (see McClay 2012 for a recent account for Mi'gmaq).[3]

(6) Bound nominal *-isqon* 'nose' from (5-a)

N **-sisqon**
1.POSS -nose
'My nose'

Note that in its incorporated form in (5-a), the body-part noun is phonologically reduced, which has been noted to happen cross-linguistically for these types of "lexical suffixes" (Barrie

[2] I will refer to this construction as MEDIAL INCORPORATION. As we will see in Chapter 5, there are different types of stem-internal incorporation, which may include closed-class nouns (MEDIALS) or open-class nouns. I use the term MEDIAL to refer to a very specific closed class of nouns (i.e. body-parts and classifiers), which I discuss in Chapter 3. By extension, MEDIAL INCORPORATION refers to constructions which only use this closed class of nominals.

[3] There are some body-parts which do not require possessors, e.g. *lamiptn* 'palm (of hand)', *puguluan* 'kidney'.

and Mathieu to appear; Wiltschko 2009).

Medial incorporation with body-parts can be further divided into two types: OBJECT MEDIAL INCORPORATION and MODIFIER-MEDIAL INCORPORATION. The examples in (5) are of the latter type, in which the body-part medial is semantically modified by the element preceding it.[4] The former, object medial incorporation, is shown below. As suggested by the name, in this subtype of medial incorporation the incorporated body-part corresponds to the notional object of the verb stem.

(7) Gas -i **-ptn** -a' -si -t
wash -EPEN? -hand -VAI -REFL -3
'S/he washes his/her hands.' (Object Medial Incorporation)

The productivity of these constructions varies depending on the relationship of the medial with its preceding element. Compared to the modifier-medial type, object medial incorporation in Mi'gmaq is less productive.[5] For instance, it is not the case that any body-part medial can appear instead of 'hand' in example (7) to mean 'S/he washes his/her X'.[6] Compare this to example (5-a), which does allow other body-part medials to appear instead of 'nose' (e.g. head, tongue, ears, etc.).

To sum up, in medial incorporation bound nouns which belong to a closed-class of elements, either body-parts or classifiers, follow the main contentful unit in Algonquian verbs.

1.1.2 Denominal Verbs

The second synchronically productive type of incorporation in Mi'gmaq, shown in (8) below, is a denominal verb (DNV) or light verb construction, where *-e'ge* is a light verb meaning 'get' or 'procure' and *-i* is a light verb meaning 'be'. This is formed via SECONDARY DERIVATION, which involves category-changing and valence-changing operations (Goddard 1990). The light verb *-i* 'have' has also been grouped with the verbs above (e.g. O'Meara 1990 for Delaware; Mathieu 2013 and Barrie and Mathieu to appear for Ojibwe). Additionally, in

[4]Examples with body-parts like (5-a) have also been called POSSESSIVE or POSSESSED NOUN INCORPORATION (Wolfart 1971; Rhodes 1976; Slavin 2012).

[5]This was found to be the case for Innu, a central Algonquian language (Baraby et al. 2002). The authors found that productivity of body-part incorporation varied according to the type of verb used. Specifically, Baraby et al. (2002) found that incorporation with descriptive verb Roots (e.g. 'red', 'dirty', 'small', 'large', etc.) was very productive, while incorporation with verb Roots like 'wash' were not productive. Although incorporation was possible, only certain body-part nouns could appear and speakers generally preferred to use the analytic option (Baraby et al. 2002: 5). Rhodes (1976) also claims there are significant limitations on object medial incorporation in Ojibwe (Rhodes 1976: 265).

[6]The only other body-part medial which my consultant has accepted was one for 'face'.

Chapter 4 I introduce a new verb, *-e'g-si* 'get (for oneself)', which is closely related to the light verb *-e'ge* 'get' and can also be grouped with the light verbs above.

(8) a. **Tia'm** -u -e'ge -t
moose -DER -get.VAI -3
'S/he hunts moose.'
(lit. 'S/he moose-Vs')

b. **Lpa'tuj** -u -i -t
boy -DER -be.VAI -3
'He is a boy.'

In the examples in (8) a noun which can stand alone precedes the verbal element. This is shown in (9) below:

(9) Nemi' -g **tia'm** / **lpa'tuj**
see.VTA -3 moose / boy
'I see a moose / a boy.'

This construction differs from the ones in (5)-(7) in that it is much more productive. For instance, any nominal, including borrowed nouns, can take the position of 'moose' in (8-a) to form a new verb meaning 'S/he gets X' or the position of 'boy' in (8-b) to form a verb meaning 'S/he is X'. In the discussion below I primarily focus on the final *-e'ge* 'get', as it offers a set of facts that are more complex than the copular DNV *-i* 'be'.

Semantically, the verb *-e'ge* 'get' receives much of its meaning from the preceding nominal, as illustrated by the following examples:

(10) a. Peju -e'ge -t
cod -get.VAI -3
'S/he **fishes** for cod.'

b. E's -e'ge -t
clam -get.VAI -3
'S/he **digs** for clams.'

Although *-e'ge* does contribute some general lexical meaning to the construction, the examples in (10) suggest it is very much like a light verb.[7] At the outset, we can see that modifier-medial incorporation and DNVs with *-e'ge* differ in that the former is more stative while the latter is more eventive. Constructions with *-e'ge* seem to be activities in the sense of Vendler (1957): they are processes which involve no culmination. Much like with English compounds 'berry-picking' and 'moose-hunting', there is no guarantee of procurement with the use of *-e'ge*. In fact, it would be infelicitous for a speaker to use this verb in a context where s/he was *guaranteed* to get some cod or clams (e.g. going to the store). In this case, a form using the morpheme *-si* would be used, shown below:

[7]Goddard (1990) notes that the light verbs that participate in this construction have "a minimal nuance of added meaning (such as diminutive), most of them merely change the category of the stem (such as, noun to verb or the reverse; intransitive to transitive or the reverse)" (Goddard 1990: 471).

(11) E's -e'g **-si** -∅
clam -get.VAI -SI -1
'I'm getting clams.' (lit. 'I'm getting clams for myself')

In this sense, *-e'g-si* is like an accomplishment light verb. I will come back to this morpheme and describe its status in Chapter 4.

To sum up, in DNVs, open-class nominals which can be freestanding precede the verbal element. The incorporated nouns are the main contributors of lexical meaning in these light verb constructions.

1.1.3 The Puzzle

Neither medial incorporation (ex.(5)) nor DNVs (ex.(8)) quite fit the "classic" case of noun incorporation. Such an example is given in (12), in which the incorporated noun is the direct object of the verb and, thus, receives a thematic role from the verb (Baker 1988):

(12) Ñi chao kintu -waka -le -y.
my father seek -cow -PROG -IND.3sS
'My father is looking for the cows.' (Baker 2009: 149)

The original question with noun incorporation, as Baker (2009) pointed out, was whether constructions like (12) were formed in the syntax or in the lexicon via compounding (Baker 2009: 149). The two types of constructions investigated in this thesis are subject to the same question. For instance, there has been a long-standing debate about whether DNVs should be considered noun incorporation (Mithun 1986 & Sadock 1986 for Greenlandic Eskimo; Haugen 2007 for Uto-Aztecan, among others). Could we say that, even in English, denominal verbs such as 'fishing' and 'shelve' are instances of NI? Similarly, the type of "lexical suffixes" used in medial incorporation are often taken to be bare Roots, with the implication that they are formed as Root-Root compounds in the lexicon (Barrie and Mathieu to appear).

However, it is often not clear what is meant by "incorporation" in the first place. It has been suggested that incorporation phenomena are non-homogenous, rather than a single, unvarying process (Mithun 1984, 2010). Thus, although we can say that, fundamentally, all NI constructions add a nominal stem to a verbal stem to produce a larger verb stem, cross-linguistically this process can have differences (e.g. productivity, referentiality of the incorporated N, etc.). Furthermore, these differences may be linked to distinctive stages of diachronic development, both within a language and across languages (Mithun 1984, 2010).

The question that comes up naturally is whether we can consider constructions like (4), repeated below as (13), in Mi'gmaq "incorporation".

(13) a. Maq **-atp** -a -t
big -head -VAI -3
'S/he is big-headed.'

b. **Tia'm** -u -e'ge -t
moose -DER -get.VAI -3
'S/he hunts moose.'
(lit. 'S/he moose-Vs')

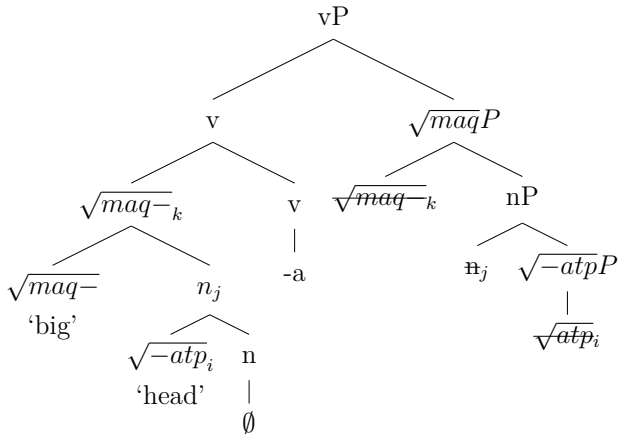
Perhaps a more relevant set of questions is the following:

1. Are the incorporated elements categorized?
2. If there are uncategorized elements (Roots) in these constructions, are there restrictions on how many can appear? Is a combination of multiple Roots possible?
3. What qualities do these constructions have, and how do we represent them syntactically?
4. How, if at all, are these constructions related synchronically or diachronically?

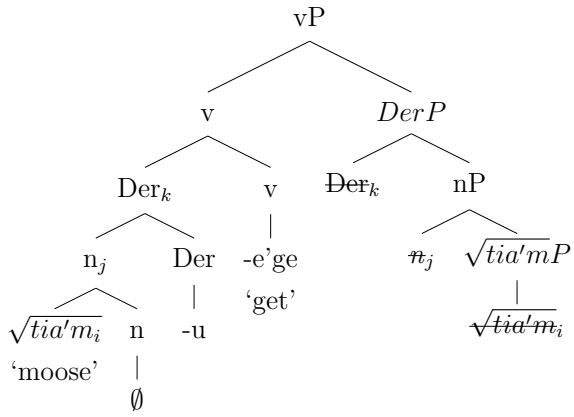
A bigger issue, relating to Baker's (1988; 2009) original question is: assuming that all word formation is done in the syntax, what is the difference between compounding and noun incorporation, if any? These questions are at the core of this thesis.

I compare modifier-medial incorporation, focusing on body-parts (ex. (13-a)) and DNVs (ex. (13-b)) in Mi'gmaq. The structures for these examples are shown below:

(14) Modifier-Medial Incorporation



(15) Denominal Verbs



I analyze body-part medial incorporation constructions as syntactic compounds using Harley's (2009) analysis of syntactic compounds in English. I propose that in Mi'gmaq

the Root (modifier) selects for an nominal complement (the medial).[8] Via head movement (Travis 1984; Baker 1988) the medial, a categorized Root, adjoins to the modifier on the right, and then whole Root+n complex moves to be categorized as an animate intransitive verb. For comparison, I show my analysis is the opposite of Nevins & Myler's (2014) analysis of English compounds like 'brown-eyed', in which the categorized modifier incorporates into an uncategorized body-part.

I show that DNVs can be an instance of "incorporation", building on the analysis of Barrie and Mathieu (to appear) for Ojibwe. However, unlike Barrie and Mathieu (to appear), who argue that DNVs in Ojibwe involve phrasal movement, I demonstrate that in Mi'gmaq this construction can be captured by head movement of the noun into the little v head *-e'ge* 'get'.

Thus, I argue that the two constructions are syntactically different. From the structures above we can see that the INITIAL—the first linear element—in each construction is treated very differently. In the case of DNVs, this element is the lowest head in the structure, while in modifier-medial incorporation (with body-parts) it is not. However, the two constructions are similar in that the incorporated element—the noun—is categorized and occupies the lowest head.[9] The two constructions also differ in linear order of adjunction. The syntactic units in DNVs always adjoin to the left, picking up suffixes by head movement up the tree. Contrast this to modifier-medial incorporation with body-parts, in which the medial requires a prefix and must adjoin to the right to satisfy this requirement and attain the correct linear order. These observations contribute to our larger understanding of the Algonquian template on one hand and the nature of noun incorporation on the other.

In my quest to address the questions above, I closely examine the relationship between morphemes and morpheme boundaries. In polysynthetic languages, such as Mi'gmaq, this crucially plays into the notion of categorization and the status of the morphemes involved. Thus, the present paper addresses the complexity of word formation and provides an in-depth look into the morphology of Mi'gmaq within the generative syntactic framework of Distributed Morphology (DM) (Halle and Marantz 1993; Marantz 1997).

The issues explored here are not, by any means, new to the Algonquian tradition. The types of incorporation in this thesis have been explored in a variety of Algonquian languages, including Arapaho (Kroeber 1917), Cree and Fox (Bloomfield 1946), Delaware (O'Meara

[8]In Chapter 3 we will see that the modifier, linearly the first element, does not necessarily have to be a Root; it may also be categorized.

[9]In Chapter 3 we will see that the noun in modifier-medial incorporation is maximally a categorized Root and may not be anything larger. On the other hand, it will be shown in Chapter 4 that the noun in DNVs is minimally a categorized Root which can be more complex (e.g. can include diminutive marking).

1990), Penobscot and Maliseet-Passamaquoddy (Quinn 2009a; 2009b), Menomini (Bloomfield 1962), Mi'gmaq (Inglis 1986), Ojibwe (Bloomfield 1958; Rhodes 1976, 2003; Valentine 2001; Mathieu 2013), Oji-Cree (Slavin 2012), Plains Cree (Wolfart 1971, 1973) and others (Hewson 1974; Denny 1978a; Goddard 1990). Furthermore, more recent literature on polysynthetic languages has investigated these issues from a generative syntactic perspective, rather than a lexicalist one (e.g. Barrie and Mathieu to appear; Brittain 2003; Compton and Pittman 2010; Slavin 2012; Piggott and Newell 2006; Newell and Piggott 2014 among others). Nevertheless, my hope is that this study will add to the rich tradition of Algonquian linguistics. Even more so, I hope that this paper can be useful for the community that helped me produce it.

1.2 Outline of the Thesis

This thesis is organized as follows. In Chapter 2 I familiarize the reader with the Mi'gmaq language. I begin the chapter by providing information about the speakers (§2.1) and some central grammatical properties of verbs and nouns relevant to my analysis (§2.2). In doing this, my goal is to highlight and demystify Algonquian terminology for the non-Algonquianist reader. I conclude by outlining some theoretical assumptions necessary for this work (§2.3). Other crucial properties or background information will be addressed where relevant.

I devote Chapter 3 to an in-depth discussion of the modifier-medial incorporation construction. After introducing the construction (§3.1), I briefly summarize the type of work that has been done in Algonquian literature on these constructions (§3.2). I show that medials are categorized elements (§3.3) and provide a syntactic account based on Harley's (2009) proposal for English compounds (§3.5). In addition, I compare modifier-medial incorporation to compounds like 'brown-eyed' in English, and show that the two constructions share similarities (§3.6). Despite this, the proposed account for Mi'gmaq is different from the one proposed for English (Nevins and Myler 2014).

In Chapter 4 I turn to the denominal verb (DNV) construction, focusing on the light verb *-e'ge* 'get' (§4.1). I show that DNVs in Mi'gmaq have NI-like properties, building on the analysis of Barrie and Mathieu (to appear) for DNVs in Ojibwe (summarized in §4.2). I demonstrate that the nouns in DNVs are categorized elements (§4.3). Unlike Barrie and Mathieu (to appear), who argue that DNVs in Ojibwe involve phrasal movement, I show that in Mi'gmaq this construction can be accounted by head movement (§4.4 - 4.5).

In Chapter 5 I outline other types of stem-internal incorporation that have been de-

scribed previously in Algonquian literature (§5.1). I show that one of the most productive constructions in Ojibwe and Oji-Cree, using the verb final -*e*, is fossilized in Mi'gmaq (§5.2). I speculate that this difference in productivity may be connected to stages of diachronic development in noun incorporation across the Algonquian language family, as advocated for other languages by Mithun (1984; 2010) (§5.3).

Chapter 6 concludes the thesis, summarizing the central ideas and suggesting directions for future research.

Chapter 2| Background

This chapter provides background information on Mi'gmaq, with the goal of familiarizing the reader with the Mi'gmaq language and Algonquianist terminology. Section 2.1 gives a brief linguistic introduction. The rest of this chapter elaborates on derivational and inflectional morphology involved in word formation (§2.2) and establishes necessary theoretical assumptions for the analyses presented in this thesis (§2.3). Other crucial background information, including existing research on medials and denominal verbs, will be addressed in the following chapters.

2.1 Mi'gmaq Language and Speakers

Mi'gmaq (also Micmac, Mi'kmaq or *Mi'gmawei tli'suti*) is an Eastern Algonquian language spoken in the Northeastern United States and Canadian Maritimes.

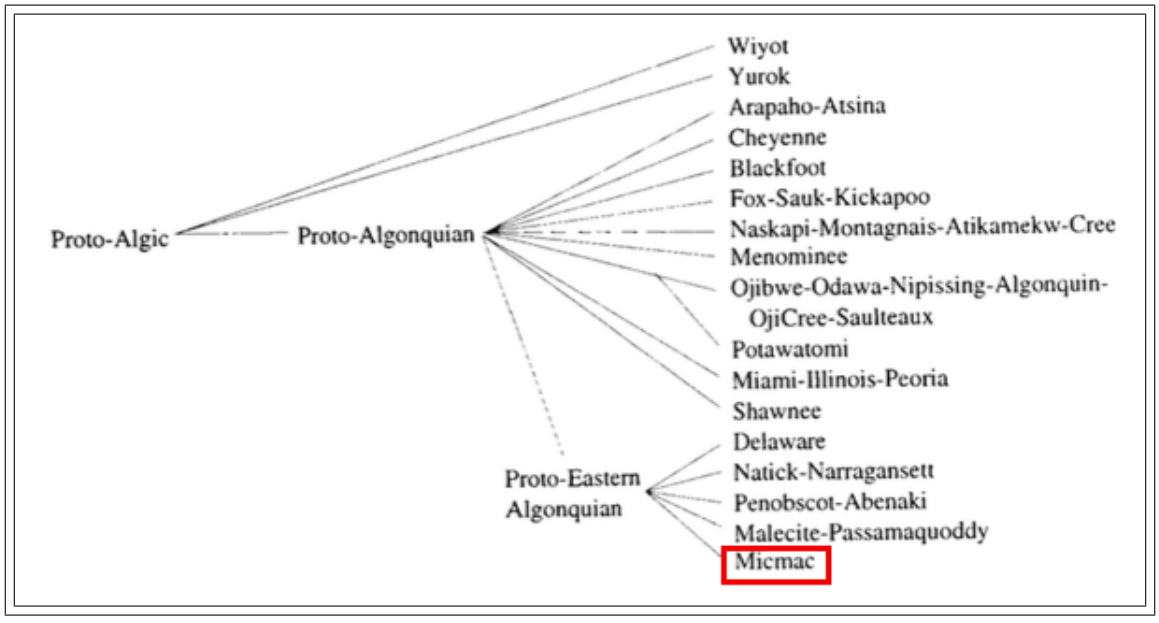


Figure 2.1: Algic Languages, the Algonquian Language Family (Valentine 2001)

The language is on the decline in many communities and is dormant in 5 (Ethnologue 2015). Socio-political factors in the past, particularly residential schools, have had long-term impacts on the vitality of Mi'gmaq. Despite this, Mi'gmaq has the largest base of native speakers out of any Eastern Algonquian language (Ethnologue estimates). Furthermore, many speakers across communities are part of an ongoing effort to preserve their language and increase its use in daily life (Sarkar and Metallic 2009; Little et al. to appear).

The data in this paper was collected in Montréal, Québec (QC) with primary consultant Janine Metallic, as well as in Listuguj, QC in collaboration with speakers Mary Ann Metallic, Janice Vicaire and Joe Wilmot. Other data was taken from previous literature on Mi'gmaq, and is cited as such by each example. Most of the data below has been confirmed with more than one speaker.

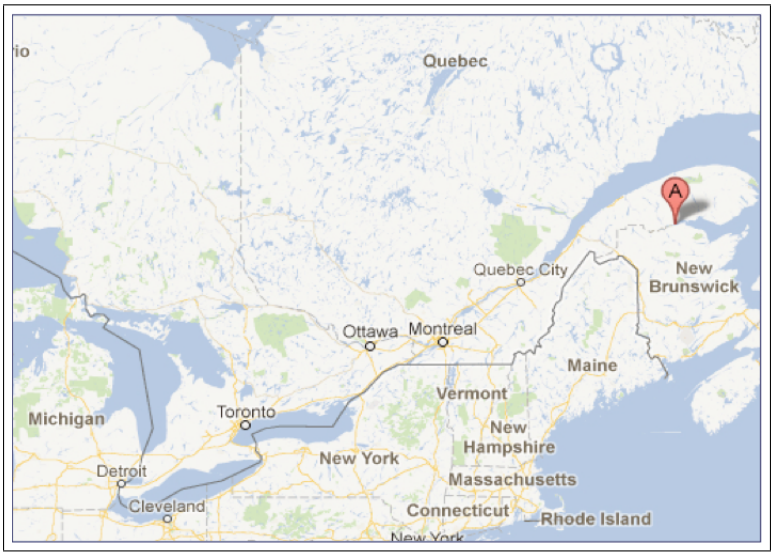


Figure 2.2: Location of Listuguj Mi'gmaq First Nation

Listuguj is a Mi'gmaq community located on the border of Québec and New Brunswick. According to the 2014 census, the community has a population of around 3,768, 40% of which lives off reserve (Listuguj Mi'gmaq Government 2015). Less than 20% of the population that is on reserve are speakers of Mi'gmaq; most of these speakers are over 65 years old (Sarkar and Metallic 2009; Little et al. to appear).

Although Mi'gmaq has received attention in descriptive Algonquianist literature, it is not widely studied outside of this circle. Even within Algonquianist literature, it has not received as much attention as other Algonquian languages (e.g. Cree, Ojibwe). Thus, this paper is an effort to contribute to the growing body of primary sources on Mi'gmaq.

2.2 Basics of Mi'gmaq Verbal and Nominal Morphology

In this section I provide an overview of the essential facts about Mi'gmaq morphology. As this thesis investigates phenomena that are part of the nominal and verbal domain, I give a brief background on both. The discussion here is concise; for a more detailed discussion on Mi'gmaq word formation consult Proulx (1978), Inglis (1986), Hewson and Bernie Francis (1990). For distinctive dialectal features of Listuguj Mi'gmaq see Quinn (2012).

2.2.1 Nouns

Nouns in Mi'gmaq are classified according to animacy—animate or inanimate. Although it is safe to assume that all humans and animals are animate, not all other objects are inanimate (Bloomfield 1927 for Fox; Grafstein 1984 for Ojibwe, among others).

All nominals receive number marking (singular or plural), and animate singular nouns are marked for obviation.[1] Obviation is a type of third person marking found across the Algonquian language family; it is a way to distinguish one animate third person for another within a clause (Bloomfield 1946; Goddard 1984 for Fox; Grafstein 1984, 1989 for Ojibwe; Quinn 2006 for Penobscot; Manyakina 2012 for Mi'gmaq). Typically, one animate third person is the most prominent and is *proximate* within a stretch of discourse. Proximates are not morphologically marked in Mi'gmaq. Any other animate third persons within the same stretch of discourse are backgrounded and marked as *obviative*. The following example illustrates the Proximate-Obviative contrast:

(16) Mali ges -al -a -t -**l** Piel -**al**.
Mary love -AN -3.OBJ -3 -**OBV** Peter -**OBV**
'Mary loves Peter.'

In this example, 'Mary' is the topical third person; 'Peter', on the other hand, is a peripheral third person and is marked as such with the obviative suffix *-al*.[2] Note that the verb also carries obviative marking in agreement with the object. Verbal agreement is discussed in more detail in the following section.

Morphologically, nouns may be simple (mono-morphemic), consisting of a single stem with no overt nominalizers. I take STEMS to be units that can *directly* take inflectional

[1] In Mi'gmaq there is no dedicated morpheme that marks singular. Animate plural nouns are often marked with *-g* or *-aq* while inanimate plural nouns are marked with *-l* or *-n* (Inglis 1986: 5).

[2] The obviative suffix *-l* has variations based on the preceding segment. With a preceding nasal, there is assimilation and *-l* surfaces as *-n*. Otherwise *-al*, *-ul* and *-'l* are also possible (Manyakina 2012: 5).

morphology (i.e. number or person marking). Nouns may also be complex, consisting of a Root and a category-defining suffix called a FINAL in Algonquian literature. As we will see in the following section, finals are not reserved only for nouns. Under the view of the theoretical framework assumed in this paper, discussed in detail in Section 2.3, I will consider all instances of nouns consisting of a Root and a category-defining nominalizer (overt or null).

In addition, nominals are classified and marked according to two grammatically distinct categories—alienable or inalienable (McClay 2012 for Mi'gmaq). This distinction will play a prominent role in the two types of incorporation investigated in this thesis. Nouns that can change ownership or nouns that are not inherently possessed, such as 'book' or 'car', are considered ALIENABLE (also called *independent* nouns, as they stand on their own) (Proulx 1978; Inglis 1986; McClay 2012). Kinship relations and body parts, on the other hand, fall into the INALIENABLE category, as they always require a possessor (also referred to as *dependent* nouns). As mentioned above, the types of nouns that participate in medial incorporation often belong to this category. It is also useful to point out that there are some nouns which cannot be possessed due to semantic restrictions (e.g. animals) (McClay 2012). For a detailed account of possession in Mi'gmaq consult McClay (2012).

2.2.2 Verbs

Algonquian verbs consist of a verb stem and person marking. Unlike nouns, verb stems are never mono-morphemic; since Bloomfield's (1927; 1946 et seq.) characterization of Algonquian word stems, Algonquianist literature has adopted the view that verb stem structure is complex. Maximally, Algonquian verb stems have three components: the main contentful unit of meaning, called an INITIAL, a nominal-like element referred to as a MEDIAL, and a category-forming suffix called a FINAL.[3] In Section 2.2.2.1 we will see that these three components may be complex themselves, and can be recycled to serve as a base for further derivation.[4] Minimally, a stem can consist of an initial and a final, without the medial. Note that these terms are positionally defined—the initial is leftmost or the "first" linear element of the stem, while the final is the rightmost or "last" linear element. As the name suggests, medials appear in the middle, between the initial and the final. I will describe Mi'gmaq medials in detail in Chapter 3. The minimal pair examples in (17) illustrate this templatic

[3]In Algonquianist literature INITIALS are often referred to as the 'root'—the primary lexical unit of the word. I depart from using this terminology, as it may be unnecessarily confusing given my adoption of Distributed Morphology and the notion of the Root (discussed in §2.3).

[4]Thus, the "maximal" tripartite structure only applies to what Algonquianists call PRIMARY DERIVATION. This is discussed in the next section.

structure; the stem has been underlined for ease of reference:[5]

(17) a. **Egwij** -**a'l** -a -t -l
submerge -VTA -3.OBJ -3 -OBV
'S/he immerses him/her into the water.' (Minimal: INITIAL-FINAL)

b. **Egwij** -**atp** -**a'l** -a -t -l
submerge -head -VTA -3.OBJ -3 -OBV
'S/he dips his/her head into the water.' (Maximal: INITIAL-MEDIAL-FINAL)

The simple combination of affixed material to the Root *egwij* 'submerge' in the examples above is called PRIMARY DERIVATION (Goddard 1990). Note, the transitivity of the verbs in (17) is determined by the final *-a'l*, which carries no lexical meaning but does reflect the animacy of the verb's absolutive argument (i.e. object of a transitive or subject of intransitive). We can think of this final as a type of little *v* (see §2.2.2.2 for further discussion).[6] In traditional Algonquian literature, verb finals create four categories of verbs: 1.) ANIMATE INTRANSITIVE VERBS (VAI): intransitive verbs with animate subjects; 2.) INANIMATE INTRANSITIVE VERBS (VII): intransitive verbs with inanimate subjects; 3.) TRANSITIVE ANIMATE VERBS (VTA): transitive verbs with animate objects; and 4.) TRANSITIVE INANIMATE VERBS (VTI): transitive verbs with inanimate objects. These categories are illustrated with the Root *tep-* 'on, onto' below (taken from McCulloch (2013))):

(18) ROOT: *tep-* 'on, onto'

	Animate	*Inanimate*
Intransitive	tep-**pi**-t on-**VAI**-3 's/he is aboard'	tep-**te**-g on-**VII**-0 'it is aboard'
Transitive	tep-**a'l**-at-l on-**VTA**-3>4-OBV 's/he puts it.AN on top'	tep-**a't**-oq on-**VTI**-3 's/he puts it.IN on top'

[5]For the remainder of this paper I underline the stems [initial-(medial)-final] of both nouns and verbs, excluding all other marking. Morphemes under discussion will be bolded.

[6]As we can see from the examples in (17), verbs are also inflected for person, number, animacy and obviation. However, except for animacy, which is tied to the little-*v*-like final, these are not considered to be part of the verb stem.

2.2.2.1 Primary vs. Secondary Derivation

In the section above, the examples in (17) were instances of PRIMARY DERIVATION. Verb stems in this type of derivation can maximally have three parts: an initial, a medial, and a categorizing final. Although verb stem structure is tripartite, fully-formed verb stems are free to participate in further derivation. For instance, a fully-formed verb stem may serve as an initial for a new noun or verb stem. This is shown in (19) below for derivation of a noun stem; the bolded part corresponds to the verb stem that is serving as the base of the new noun.[7] This is called SECONDARY DERIVATION (Goddard 1990).

(19) a. **Matnag** -e -t
fight -VAI -3
'S/he fights.'

b. **Matnag** -e -w -inu
fight -VAI -DER -NZLR
'Fighter' (as a profession)

Likewise, as we saw in Chapter 1, fully-formed noun stems may serve as initials for deriving verbs, repeated here for ease of reference:[8]

(20) a. **Tia'm**
moose
'Moose'

b. **Tia'm** -u -e'ge -t
moose -DER -get.VAI -3
'S/he hunts moose.'

Secondary derivation differs from primary in a few crucial ways. Unlike primary derivation, secondary derivation has a *binary* template, consisting of only an initial—which may itself be complex—and a final (Goddard 1990; Valentine 2001). Medials do not participate in secondary derivation unless they are already part of a fully-formed stem that serves as the base (i.e. the initial) for further derivation. In other words, we can find medials in forms such as (21) below, where the classificatory medial 'sticklike' is part of the stem which serves as the initial (inside brackets) for the derived noun. However, we could never find a medial in such a form linearly *between* the bracketed initial and the final (in this case the nominalizer *-aqan*). Thus, the form in (21) is considered to have only an initial, which is complex, and a final:

(21) [[Nas -**oqw** -a't] -aqan]
put -sticklike -VTI -NZLR
'Ring' (lit. thing that you put on a sticklike object)

[7] The whole noun is underlined, as it is the stem—composed of an initial *matnag-e-*, a derivational morpheme *-w* and an animate noun final/nominalizer *-inu* 'person'.

[8] The example in (20) uses a mono-morphemic noun stem. However, complex noun stems (with overt nominalizers) may also appear in this position. We will see this in Chapter 4.

Both types of derivation involve finals, which affect category—depending on whether the final is a noun or verb final—and valence in the case of verbs. Crucially, although freestanding stems (e.g. a noun) may serve as an initial in both primary and secondary derivation, primary derivation differs from secondary in that *uncategorized* Roots (i.e. elements without overt or null finals) may participate.[9] Thus, a simple stem composed of a Root and categorizing final is always primary derivation; any derivation following this is secondary. Finally, secondary derivation is more productive than primary and, semantically, produces meanings that are more compositional, rather than idiosyncratic (Valentine 2001: 334). In Section 2.3 I come back to the primary vs. secondary derivation contrast and connect it to first vs. second-phase derivation within words (e.g. Arad 2003; Marantz 2007).

2.2.2.2 A Note on Finals

Thus far we have seen that finals can contribute information about animacy, valence, and category in Algonquian word formation. However, in some cases they may also contribute lexical meaning. Compare the two examples in (22). In (22-a), the final does not contribute any lexical meaning, but categorizes the verb as an animate intransitive verb. The final in (22-b), however, contributes a lexical meaning—'speak'—in addition to information about animacy and transitivity.

(22) a. Nep -**a** -t
sleep -VAI -3
'S/he sleeps.'

b. 'Nnu -**i'si** -t
native -speak.VAI -3
'S/he speaks the/a native language.'

Based on the amount of meaning a final contributes, Algonquian literature splits the class of finals into two subclasses. ABSTRACT FINALS contribute little to no lexical meaning, and may be thought of as heads used purely for categorization (Brittain 2003; Slavin 2012; Oxford 2014). CONCRETE FINALS, on the other hand, have additional meaning that can be clearly defined (e.g. Goddard 1990; O'Meara 1990. It is widely argued in Algonquian literature that concrete finals may actually be bipartite, consisting of a Root called a PRE-FINAL, which contributes lexical meaning, and an abstract final (Bloomfield 1946, 1962; Goddard 1990; Valentine 2001; Piggott and Newell 2006; Slavin 2012).[10]

[9] In other words, the initial in secondary derivation, whether mono-morphemic or complex, is always a word stem, while it need not be in primary derivation (Valentine 2001: 327).

[10] Quinn (2009b) argues for triparticity.

Importantly, the distinction between ABSTRACT and CONCRETE finals is not always clear; some Algonquianists use these terms relative to each other (e.g. Wolfart 1973).[11] Finally, it is worth noting that there is not only one dedicated final per verb class (VAI, VII, VTA, VTI). Rather, there is a set of different finals per class, some of which are shown in the table in (23) below (taken from McCulloch (2013)):[12]

(23) Partial list of Mi'gmaq abstract verb finals:

	ANIMATE	INANIMATE
INTRANSITIVE	*-i, -a, -e, -e', -ie, -in, -asi, -a'si*	*-i, -a, -e, -ia, -as', -a's', -∅*
TRANSITIVE	*-al, -a'l, -i, -∅*	*-at+m, -a't+u, (i)t+u*

For a more detailed discussion of finals in Mi'gmaq I refer the reader to McCulloch (2013). For a list of finals, both concrete and abstract consult Inglis (2002).

2.2.3 Verbs vs. Adjectives

Verbs and adjectives are not generally distinguished in Algonquian literature. As in many Algonquian languages, adjectives pattern closer to verbs than to nouns in Mi'gmaq. Especially in predicative position, adjectives undeniably look like verbs, as they use similar finals and have the same agreement morphology as verbs do. An example is shown in (24):

(24) a. Verb:

Nep -**a** -**t**
sleep-VAI-3
'S/he sleeps.'

b. Predicative Adjective:

Melgign -**a** -**t**
strong -VAI -3
'S/he is strong.'

Predicative adjectives can be substituted with intransitive verbs and, like verbs, even display a plural-dual person distinction.[13] Due to this, for purposes of this study I treat

[11] "It is convenient to distinguish between ABSTRACT and CONCRETE finals, even though they do not constitute fully discrete classes." (Wolfart 1973: 68)

[12] McCulloch (2013) notes that this raises the following question: if there are multiple finals per verb class, how do we know which final will combine with a given Root? She notes that for some finals, this appears to be determined by idiosyncratic factors of the preceding morpheme. For others, cases, the choice of final may depend on semantic factors. We will see in Chapter 3 that this is the case with body-part medial constructions, which tend to use the final *-a* in Mi'gmaq.

[13] Alan Bale (p.c.) suggests that there is good evidence that the behavior of attributive adjectives differs. They are not interchangeable with intransitive verbs and do not show a plural-dual distinction. Additionally, among speakers, attributive adjectives have a preferred *prenominal* syntactic position despite the fact that

adjectives as verbs and refer to their finals as instances of little *v*, although they could just as well be instances of little *a*.

2.2.4 Preverbs

Finally, verbs in Mi'gmaq may be modified by an element preceding the initial. These elements, called PREVERBS are often adverbial and do not count as part of the verb stem:

(25) (**preverbs**) | INITIAL - (MEDIAL) - FINAL | agreement

An example is given in (26) below; compare this to the example in (24-a) above in which the verb 'sleep' is not modified:[14]

(26) **Wel-** mp -a -t
well- sleep -VAI -3
'S/he sleeps well.' **preverb-** [initial - final]

A verb may have multiple preverbal modifiers, but they are subject to ordering effects (see McCulloch 2013 for Mi'gmaq). An example with multiple preverbs is shown below:

Context: Said of an enthusiastic student learning Mi'gmaq

(27) **Getu- poqju- espi-** nnu -i'si -t
want- start- high- native -speak.VAI -3
'S/he wants to start speaking the native language at a very high level.'
(McCulloch 2013: 42)

For a detailed description of preverbs in Mi'gmaq see McCulloch (2013) and references therein for other Algonquian languages (e.g. Wolfart 1973 for Plains Cree; Valentine 2001 for Ojibwe; Slavin 2012 for Oji-Cree).

2.3 Theoretical Assumptions

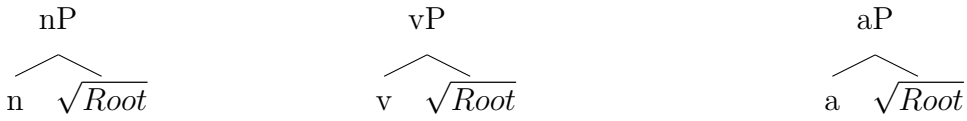
The analyses proposed in this thesis are situated in a Minimalist approach to syntax (Chomsky 1995, 2000). More specifically, the theoretical framework adopted in this thesis is that

Mi'gmaq is a flexible word-order language. These facts suggest that syntax treats adjectives differently from intransitive verbs in that, despite the similar agreement morphology, only adjectives can appear as nominal modifiers.

[14]Compared to (24-a), in (26) the initial loses its vowel and the nasal consonant assimilates in place to the following stop. The loss of the vowel in the Root *nep-* 'sleep' is called INITIAL CHANGE, and occurs when a Root is preceded by another Root (McCulloch 2013: 37). Thus, the loss of the vowel is indicative of the presence of the preverb.

of Distributed Morphology (DM) (Halle and Marantz 1993; Marantz 1997; Harley and Rolf Noyer 1999) and the concept of the phase (Chomsky 1995 et seq). A central claim of DM is that Roots are underspecified units that are devoid of category marking. These units are placeholders in syntax for phonetic insertion later in the derivation. The categorial status of Roots is determined by functional heads, which may be overt or not (zero derivational morphology). Thus, when Roots are selected by a nominal functional head (e.g. n) they are "nominalized"; when they are selected by a verbal functional head (v) they are "verbalized", and so on.

(28)



In the spirit of DM, I assume that all word formation takes place in the syntax. All Roots are merged with a category-defining head, such as n, v or a, even when there is no overt categorizer. Following previous generative accounts in Algonquian literature, I take finals to be instances of these category-defining heads (Brittain 2003 for Plains Cree; Quinn 2006; Ritter and Rosen 2010 for Blackfoot; Slavin 2012 for Oji-Cree; McCulloch 2013 for Mi'gmaq; Oxford 2014). I assume that stems without an overt final contain a null final (Bloomfield 1946; Wolfart 1973; cf. Goddard 1990).

The notion of the phase also plays a role in my analysis (Chomsky 2001). Under Phase Theory structure created in syntax is sent piecemeal for semantic (LF) and phonological (PF) interpretation, rather than in one big chunk at the end of the derivation. Thus, a phase is a relevant syontactic domain which is sent to Spell-Out, after which no operations can access the information inside (Phase-Impenetrability Condition, Chomsky 2001). Relevant to the discussion below, especially in the context of polysynthetic languages, is my assumption that phases exist at the word level as well as in phrasal syntax (Marantz 2000, 2007; Arad 2003; Newell 2008; Compton and Pittman 2010; Newell and Piggott 2014). Moreover, I assume that the first phase is different from the following phases in that it is the domain where a Root combines with a category-determining head, which may result in unexpected meaning (Marantz 2007; Ramchand 2008).

Under these assumptions, in my analysis it follows that finals which combine directly with Roots via primary derivation are within the same cyclic interpretive domain (phase). Due to this, idiosyncrasy of meaning and limited productivity are expected in primary derivation. All subsequent derivation, or so-called secondary derivation, produces predictable meaning which is tied to the meaning of the element from which it is derived.

Finally, my analysis employs a model of light verb structures based on Hale & Keyser's (1993) influential work on denominal verb formation.

2.4 Summary

This chapter presented an overview of the Mi'gmaq language, including its geographical status (§2.1) and the main facts about word formation (§2.2). I introduced the traditional Algonquianist template for verb stems, consisting of three components: an initial—the main contentful unit of meaning; a medial—an optional nominal element; and a final—a category-defining head which may also add some meaning. This template is shown below:

(29) | INITIAL - MEDIAL - FINAL | agreement

In Section 2.2.2.1 and Section 2.2.2.2 we saw that the initial and the final could either be mono-morphemic or complex; the complexity of the medial element will be discussed in the following chapter. Moreover, Section 2.2.2.1 showed that fully-formed verb stems could serve as initials for further derivation. The distinction introduced in this section—primary vs. secondary derivation—will be relevant for the contrast between modifier-medial incorporation and denominal verbs below. More detailed information regarding word formation in Mi'gmaq can be found in Proulx (1978), Inglis (1986) and Hewson and Bernie Francis (1990).

In addition, I stated theoretical assumptions (§2.3) necessary for my analysis of modifier-medial incorporation and denominal verbs in Chapters 3 and Chapter 4, respectively. The analyses proposed below are analyzed in the theoretical framework of Distributed Morphology (Halle and Marantz 1993; Marantz 1997). Given this, I depart from traditional Algonquianist terminology in referring to the initial as the 'root' (i.e. the primary lexical unit of the word). I take Roots to be uncategorized, "language-specific combinations of sound and meaning" (Embick and Noyer 2007: 295).

Chapter 3| Modifier-Medial Incorporation

MEDIALS are optionally incorporated elements found between initials (main contentful units) and finals (category-defining heads) in the Algonquian verb template. The status of medials has been widely debated in the literature, a prominent question being whether they can be classified as nouns (i.e. categorized) or Roots (i.e. uncategorized). An example of a predicate without a medial is given in (30-a) below; (30-b) shows that the same predicate may incorporate a body-part, in this case *-gat* 'foot'. In this sense, it has been argued that medials are "optional", as they are never required to make a well-formed verb stem.

(30) a. Pit -a' -q
long -VII -3
'It (inan.) is long.'[1]

b. Pij -i **-gat** -a -t
long -EPEN? -foot -VAI -3
'S/he is long-legged.'

The examples above can be parsed using the Algonquian template in (31), where the initial is *pit-* 'long', the medial is *-gat* 'foot' and the predicate-forming final is *-a(')*.[2]

(31) a. [Initial - (**Medial**) - Final $_{stem}$] (Slavin 2012)
b. [Root - (?) - *v* $_{stem}$]

Medials have a nominal "feel", insofar as they refer to concrete entities. They are members of a closed class of elements which includes clearly nominal elements such as body-parts and classifier-like elements (e.g. sticklike, round, water, hole)(O'Meara 1990; Valentine 2001; Quinn 2009a among others). I use the term MEDIAL to refer to the specific set of closed-class elements described in the current chapter.[3]

In this chapter I focus on one kind of medial incorporation—MODIFIER-MEDIAL INCORPORATION. In particular, I look at instances of this type of incorporation in which the incorporated element is a body-part. I leave the issue of classificatory medials for further

[1]Note that this example is not minimally different from (30-b), as it uses the inanimate intransitive final *-a'* instead of an animate intransitive final. I explain the reason for this in Section 3.2.

[2]The Root *pit-* becomes *pij-* before /i/ (affrication).

[3]As a reminder, alienable nominals may also appear in medial position. These are discussed in Chapter 5.

research. With respect to the claims made here, they behave differently than body-part medials.[4]

I closely examine the properties of the incorporated element (i.e. body-part) in modifier-medial incorporation. In addition, I discuss the properties of the preceding element, the initial, which semantically modifies the body-part. I show that the incorporated element is a categorized Root (a noun) on the basis of tests found in recent generative literature on noun and Root incorporation (Wiltschko 2009; Slavin 2012). I propose a head-movement analysis in which the Root predicate/modifier selects for a nominal complement (the body-part medial). The medial then right-adjoins to the initial via head movement (Travis 1984; Baker 1988), and then the whole complex continues to undergo head movement to be categorized as an animate intransitive verb.

The goal of this chapter is to understand body-part modifier-medial incorporation by exploring the structural relationship between the initial, the medial and the final. We will see that there is a tension between the initial and the medial, which both have head-like properties in this construction. In the analysis below the medial (incorporated element) is the lowest head head in the structure, making it a semantic head while the initial is the syntactic head.

This chapter is laid out as follows. I begin by introducing the construction in Section 3.1, outlining some prominent characteristics. In Section 3.2 I summarize previous research that has described the behavior or medials and medial-like suffixes cross-linguistically. In Section 3.3 I show that the incorporated element is a categorized Root and consider a variety of syntactic tests in Section 3.4. I propose a structure for the construction in Section 3.5. Section 3.6 provides a discussion of the analysis and points out remaining issues. The findings of this chapter are summarized in Section 3.7.

3.1 Introducing the Construction

The kind of construction discussed in this chapter, body-part MODIFIER-MEDIAL INCORPORATION, is shown in (32) below. In this set of examples a body-part (bolded) is modified by the element preceding it (italicized), which can be an adjective like 'white' in (32-a) or a numeral like 'one' in (32-b). The body-part is a medial, while the element preceding is an initial:

[4]Despite this, classificatory medials make an appearance in parts of this paper for comparative purposes.

(32) a. *Wap* **-gw** -a -t
white -hair -VAI -3
'S/he is white-haired.'

b. *Newt* -i **-ptn** -a -t
one -EPEN? -hand -VAI -3
'S/he is one-handed.'

The size of the initial in this construction varies. Most often the initial is a Root as in (32-a), which requires at least a final to make a well-formed verb stem:

(33) $\underline{\sqrt{Wap}}$ -e' -g
white -VAI -3
'It (an.) is white.'

The initial may also be an element which can stand alone, such as the cardinal numeral *newt* 'one' in (32-b), and it may also host a diminutive, as in (34) below.[5] A majority of the examples for modifier-medial incorporation in this paper use Roots like *wap* 'white' in (32-a) above.[6]

(34) Nigoq **-ji'j** -u -i -gat -a -t
spear -DIM -DER -EPEN? -foot -VAI -3
'S/he is bow-legged.'

The incorporated body-part element is usually followed by the abstract final *-a* in Mi'gmaq, which classifies the verb as an intransitive verb with an animate subject. Modifier-medial incorporation with body-parts consistently uses this final, which generally appears on stative predicates (see Denny 1978b; Rhodes to appear).[7]

These constructions are often translated as 'S/he has X noun' or 'S/he is X-noun-ed' similar to English 'brown-eyed' constructions (Nevins and Myler 2014):[8]

(35) a. Sarah is brown-eyed.
b. John is one-handed.

Despite the fact that the initial modifies the medial semantically, it does *not* behave as

[5]The Mi'gmaq diminutive *-ji'j*, which attaches to categorized elements, is discussed in Section 3.3.2.

[6]Roots in initial position present the biggest challenge for modifier-medial incorporation structurally. However, the analysis proposed in §3.5 may just as well be applied to elements bigger than Roots in initial position.

[7]The other possible final with body-part incorporates is *-a'* which seems to be related to *-a*.

[8]J. Metallic (p.c.) preferred the 'She has brown eyes' translation over the 'She is brown-eyed' translation. However, given the characteristics of this construction (described below), the 'S/he is X-noun-ed' translation seems more appropriate. I will use this translation throughout the paper when possible. I come back to this issue when discussing the relationship between the initial and the medial (§3.6.1.1).

an adjunct. The construction is ungrammatical without something at the left edge of the incorporated element, as shown in (36):

(36) * Ptn -a -t
hand -VAI -3
'S/he is handed.' (intended)[9]

Again, this is reminiscent of English 'brown-eyed' constructions: the modifier in these constructions is obligatory (Nevins and Myler 2014):

(37) *John is eyed.

In Algonquian literature, this requirement has been referred to as the LEFT EDGE REQUIREMENT (LER) (Brittain 2003; Slavin 2012). Whether this is a phonological, syntactic or semantic requirement, this is an important property of medial incorporation constructions. Brittain (2003) and Slavin (2012) slightly differ in their approaches to the LER. Brittain (2003) claims that the left edge position is a "syntactic free-for-all", which just requires that the position be filled by an overt phonological string by Spell-Out (Brittain 2003: 26). Slavin, however, proposes that medials are weak Roots and are semantically deficient; they need something at the left edge to build a full-fledged verb stem (Slavin 2012: 4).[10] Whichever the case, it is clear that by themselves, the medial and the categorizing verbal head are not enough to satisfy the minimal verb stem template as described by Bloomfield.

The body-part suffixes (medials) used in the construction fall into the class of INALIENABLE nominals—nouns which require a possessor. Thus, the kind of nouns that can appear in this construction are restricted and belong to a *closed class* of nominals. The examples in (38) below illustrate some body-part medials with their possessed counterparts; I have separated the third person possessive morpheme *ug-* 'his/her' in the righthand column for ease of reference:[11]

(38) a.

Medial			
-ptn	'hand'	-isqon	'nose'
-gat	'foot'	-tun	'mouth'

[9]To make this grammatical, a light verb construction using final *-i* 'have' would be used. With this construction, the third person possessor is required, even if the possessor is first person. This is briefly discussed in Chapter 4.

[10]Quinn (p.c.) has suggested that we may be able to get the LER simply by saying that as suffixal nouns, medials require something to attach to, corroborating evidence from inalienable possession.

[11]This morpheme may be replaced with any other possessive person marker (see McClay 2012). I use the third person as it is the default form listed in the dictionary.

b.	**Possessed Noun**			
	ug-pitn	'his/her hand'	ug-sisqon	'his/her nose'
	ug-gwat	'his/her foot'	ug-tun	'his/her mouth'

A notable difference between the medial and its possessed counterpart nominal in (38) above is that in medial position the incorporated element is phonologically reduced (Valentine 2002 for Ojibwe). For instance, the medials for 'face' or 'nose' are missing the first few segments. Nevertheless, from these examples we can see that the medial element is clearly related to the possessed nouns, although this is not always the case.[12] For example, the possessed noun for head is *u-nji* 'his/her head'. However, the medials for 'head' used in the construction investigated here are *-atp* or even *-gw*, which we saw above is also used for 'face'. In cases where multiple medials are available, the choice of the medial is fairly unpredictable; some medials are remnants from Proto-Algonquian and are thus fossilized in a particular construction.[13]

Despite the fact that medials that have descended from Proto-Algonquian are fossilized, the construction overall is productive. That is, the combination of a modifying element and a body-part can create new forms and is used by speakers today. Although the meaning of the morphemes in the construction is often transparent, they may also combine to produce forms with unpredictable meanings. Two examples are given in (39) below. In (39-a) the classificatory medial 'hole' combines with the body-part medial 'face' to form the complex medial meaning 'eye' (lit. holes in face).[14] In (39-b), the classificatory medial meaning 'sticklike' combines with the medial for 'hand' to form the complex medial meaning 'arm'.[15]

(39) a. Maq **-alq** -i **-gw** -a -t
big -hole -EPEN? -face -VAI -3
'S/he is big-eyed.'

[12]Valentine (2001) noted that some medials are lexicalized and do not correspond to "presently used independent nouns" (Valentine 2001: 411).

[13]Presumably these forms would be stored in speakers' memory. I thank Richard Rhodes and Conor Quinn for the following discussion. Rhodes (p.c.) pointed out that the medials used for 'head', 'face' and 'hair' are often used together as they generally have to do with the same area of the body. This suggests a sort of *metaphoric* use of these elements. However, although the medial for 'face' and 'hair' (ex. (32-a)) are both *-gw*, they actually come from different Proto-Algonquian sources (Conor Quinn, p.c.). Thus, they are not the same morpheme. The medials for 'foot' and 'leg' are also often used interchangeably. Valentine (2002) notes the same overlap in Ojibwe.

[14]Note, the possessed nominal form for 'his/her eye' is *ug-pugugw*. This is another case where the medial is not completely related to the possessed nominal form.

[15]The possessed nominal form for 'his/her arm' is *ug-pitno'guom*.

b. Maq **-o'** -i **-ptn** -a -t
big -sticklike -EPEN? -hand -VAI -3
'S/he is big-armed.'

It seems that this construction does have an analytic counterpart. That is, it is possible to express the predicate and possessed nominal separately, without incorporating the body-part.[16] An example is given in (40) below, with (40-a) showing the incorporated version while (40-b) shows the analytic counterpart. It is worth noting that in the incorporated version, the categorizing head (final) agrees with the animate subject (the possessor of the hands). In the analytic option, however, the categorizing head of the predicate agrees with the plural inanimate noun 'hands'. In other words, both verb forms are intransitive, but have different subjects which they agree with.

(40) a. Maq -i **-ptn** -a -t Mali
big -EPEN? -hand -VAI -3 Mary
'Mary is big-handed.' (incorporated)

b. Mali **ug** **-pitn** **-n** maqisg -e' -g -l
Mary 3.POSS -hand -PL big -VII -3 -PL
'Mary's hands are big.' (analytic)

Note that that in example (40-a) above the freestanding proper noun 'Mary' is interpreted as the possessor of the incorporated body-part and the subject of the predicate. This gives rise to a "possessor raising" or "possessor stranding" effect. The effect can be easily explained: given that body-parts are inalienable nouns, they require a possessor to be interpreted (Mühlbauer 2005 for Nehiyawewin; Wiltschko 2009 for Halkomelem). I touch on this issue again in Section 3.4.2 and Section 3.6.

Finally, note the vowel *-i* which appears between initial and the medial in examples (32-b), the pair in (39), and in (40-a). This vowel makes a frequent appearance in body-

[16]However, J. Metallic notes that speakers prefer to use the incorporated version in speech. In fact, she reported that the analytic option for *maqatpat* 'S/he is big-headed.' was marginal:

i. ?U -nji maqisg -e' -g
3.POSS -head big -VII -3
'His/her head is big.'

Moreover, Quinn (2009a) noted that the status of medials as incorporated nouns has been controversial, "[...] precisely because they are so deeply lexicalized, and do not participate in the easy and productive alternations between freestanding stem and incorporant reported for N." (Quinn 2009a: 5).

part modifier-medial incorporation, albeit not consistently. For instance, this vowel does not appear in example (32-a), repeated here for convenience:

(41) Wap -gw -a -t
white -hair -VAI -3
'S/he is white-haired.'

The vowel *-i* in Mi'gmaq is often epenthesized to break up consonant clusters. However, its status in these constructions is not uncontroversial. Slavin (2012) notes for Oji-Cree that it is not clear whether the vowel *-i* is epenthetic or morphemic. She argues that in medial incorporation constructions the vowel *-i* marks a morpho-syntactic boundary between the left-edge element (modifier) and the noun (Slavin 2012: 241).[17] Slavin (2012) takes this vowel to be the adjectival head that categorizes the left-edge modifier (Slavin 2012: 241).[18] For now, I gloss this vowel as 'EPEN?' in Mi'gmaq, as I do not have enough evidence to confirm the vowel's status in either direction. This issue is open for further investigation, and may shed light on the syntax-phonology interface.

Before turning to some tests that will reveal the nominal nature of medials in this construction, in the next section I summarize relevant work that has been done on medials.

3.2 Previous Literature

The topic of medials and medial-like suffixes has been widely discussed in Algonquian literature and general literature on understudied languages (Hinkson 1999 for Salishan languages generally; Gerdts 2003 and Wiltschko 2009 for Halkomelem).

Medials have been described as "optional" or "not obligatory" in the Algonquian verbal complex (Inglis 1986; Hirose 2003; Valentine 2001 among others). In other words, a well-formed verb stem never *requires* a medial, as, minimaly, it can be formed with an initial and a final (Bloomfield's observation, see §2.2.2). In some languages, such as Plains Cree, it is possible to remove the medial from a verbal complex and the leftover material forms a grammatical verb stem. This is shown with a classificatory medial in the pair of examples in (42) below, taken from Hirose (2003). The verb stem (underlined) is the same whether the medial (bolded & underlined in (42-a)) is present or not (Hirose 2003: 160).

[17] Note: Slavin does not show any examples involving body-parts.

[18] In brief, Slavin (2012) shows that when the vowel *-i* is epenthetic, it does not trigger palatalizaton of a preceding consonant [*t*]. Contrastively, the morpheme *-i* which appears between the initial and the medial in these constructions *does* trigger palatalization in the preceding consonant [*t*], and does so consistently (Slavin 2012: 61).

(42) a. Mihkw -**âpisk** -â -w
red -mineral -S.STAT -0
'It (metal) is red (e.g. rusty).'

b. Mihkw -â -w
red -S.STAT -0
'It is red'.[19]

However, the story with body-parts seems more complex. In Mi'gmaq, taking out a body-part medial from an incorporated form often results in an ungrammatical string. For instance, removing the medial *-atp* 'head' from the form in (43-a), results in the ungrammatical form **maqat* in (43-b) instead of the grammatical *maqa'q* 'It is big' in (43-c).

(43) a. Maq -**atp** -a -t
big -head -VAI -3
'S/he is big-headed.'

b. *Maq -a -t
big -VAI -3
'S/he is big.' (intended)

c. Maq -a' -q
big -VII -3
'It is big.'

These facts suggest a selectional relationship between the medial and the final. In other words, the categorizing head used with these predicates depends on the presence or absence of the body-part incorporant. This will be relevant in the analysis I propose in Section 3.5.

Note that (43-c) is the intransitive inanimate (VII) form of this predicate. The animate intransitive (VAI) form *obligatorily* uses a classificatory medial, as shown below. There is no other way to form a VAI predicate meaning 'S/he is big'. To my knowledge, there is no discussion in the literature as to why this should be. I leave this issue for further research.

(44) a. Maq -**oqs** -i -t
big -cylindrical -VAI -3
'S/he is big.'

b. *Maq -i -t
big -VAI -3
'S/he is big.'
(intended)

Interestingly, predicates with incorporated classificatory medials in Mi'gmaq parallel the behavior of Plains Cree (example (42) above). That is, the classificatory medial may be removed and we are left with a grammatical verb form, shown below with examples taken

[19] I use Hirose's (2003) original gloss here. Abbreviation: S.STAT = static (spatial)

from Inglis (1986) (Inglis 1986: 69). Removing the medial *-ap* 'water' from *was**ap**a'q* 'It is crystal clear water' from (45-a), produces the predicate *wasa'q* 'it is clear' in (45-b). This difference between predicates with body-part and classificatory medials has not been noted in the literature.[20] I leave this issue for further investigation.

(45) a. Was **-ap** -a' -q
clear -water -VII -3
'It is crystal clear water.'

b. Was -a' -q
clear -VII -3
'It (inan.) is clear.'

Of particular interest is the relationship between these nominal-like incorporees and the element preceding them—the modifier, in the cases that I am investigating. The relevant questions here are: 1) which element in this construction is the head?; 2) what is the status of the medial—is it a Root or a categorized Root (i.e. a noun)?; and 3) how can we tell?

Most Algonquian literature has assumed that the incorporated element is indeed a noun stem (Denny 1978a; Inglis 1986; O'Meara 1990; Valentine 2002). Kroeber (1917) for Arapaho (Plains Algonquian) suggested that the medial and the preceding initial element be treated as a "compound binary verb" (Kroeber 1917, as reported by Denny 1978a). Thus, in his view both morphemes have equal status.

Inglis (1986), on the other hand, noted that medials in Mi'gmaq seem to be *dependent* on Roots which precede them and "modify these in various ways" (Inglis 1986: 68). In a similar fashion, Denny (1978a) proposed that in Algonquian verbs medials serve an adverbial function, like *baby* in *baby-sit* (Denny 1978a: 154).[21] Moreover, contra Kroeber (1917) Denny argued that the initial and the medial are not equal members of a compound. Rather, medials must be modifying the preceding element, since the same verbs can exist without the medials (Denny 1978a: 155). Further support for medials acting as "modifiers" comes from Hirose (2003) for Plains Cree. Hirose observes that medials modify either 1) the preceding initial element "adverbially", as (Denny 1978a) pointed out (ex.(46-a)); 2) the specified manner of the transitive suffix *-ah* 'by tool' in Plains Cree (ex.(46-b)); or 3) the internal argument (ex.(46-c)).

(46) a. Sak **-icihcê** -n -ê -w
attach -hand -by.hand -A.TH -3

[20] Although, for Ojibwe, Valentine (2002) notes that the final in body-part incorporating verbs seems to be tightly linked with the medial. Classificatory medials, on the other hand, appear to be in a closer relationship with initials (Valentine 2002: 98).

[21] Specifically, he proposed that medials serve to classify participants in the events expressed by the verb (Denny 1978a: 154). However, if no such participant exists, then the medial acts as an adverb to narrow the scope of the initial (Denny 1978a: 154).

'S/he take him/her *by* the hand. (i.e. *x* hand-takes *y*)'. (Hirose 2003: 162)

b. Kask -**âpsik** -*ah* -am (-w)
close -mineral -by.tool -I.TH -3
'S/he closes it with metal (i.e. S/he cans it).'

c. Kinw -**âsko** -si -w
long -wood -STAT -3
'S/he (i.e. tree) is long.'[22] (Hirose 2003: 163)

Note that example (46-c) is comparable to example (45-a) above in Mi'gmaq, where the medial 'water' narrows the set of individuals that are 'clear' to those that are clear and watery.

From these previous analyses, it is evident that there is a consensus: despite being nominal in character, medials play a "modificational" role. This, and the fact that the construction is ungrammatical without the initial suggests that the initial could be a good candidate for the head of the construction. I will return to the idea of medials as modifiers in Section 3.5.

More recent generative analyses of medials and medial-like suffixes have put forth specific tests for whether the incorporated element is a Root or something larger. Wiltschko (2009) provides tests for lexical suffixes in Halkomelem, which seem to share many similarities with Algonquian medials. Wiltschko argues that in Halkomelem these suffixes behave as Roots, based on the fact that they 1) cannot bear possessive morphology; 2) do not take plural marking; 3) cannot be preceded by a determiner; 4) cannot be nominalized; and 5) do not saturate the verbal argument.[23] Wiltschko (2009) also shows that lexical suffixes in Halkomelem are related to freestanding nominals, shown in (47) below (Wiltschko 2009: 200). Just like medials in Mi'gmaq, lexical suffixes in Halkomelem are morphologically reduced (missing segments). She proposes that "these consonants fill the nominalizing position n and as such create 'regular' nouns" (Wiltschko 2009: 209).

[22] I have kept Hirose's original glosses here. Abbreviations: A.TH = animate theme sign; I.TH = inanimate theme sign; STAT = static

[23] Wiltschko also argues that the incorporee does not function as a categorizing head; if it did, we would expect the forms that they are part of to be of the same category (Wiltschko 2009: 208). She takes this to be evidence in favor of Halkomelem lexical suffixes being uncategorized Roots. However, I did not find this argument convincing, as many languages have incorporated nominals that are categorized but the construction they are part of is still verbal overall. Thus, the fact that these lexical suffixes are not heads is consistent with two analyses: uncategorized Roots and categorized elements (nouns).

(47) a. "nominal suffixes"

-épsəm	*neck, nape*
-éləx^{w}θəɬ	*tongue*
-məx^{w}	*land, people*
-énəs	*tooth*

b. "regular" nouns

t-əpsəm	*neck, nape*
t-éx^{w}θəɬ	*tongue*
t-éməx^{w}	*land, earth*
y-énəs	*tooth*

Slavin (2012) provides tests for the noun in medial incorporation in Oji-Cree. She argues that the incorporated nominal is a phrase based on the fact that the IN can be complex as it can include nominalizing morphology (ex. (48-a)), diminutive morphology (ex. (48-b)) and modifiers (ex. (48-c)).

(48) a. Ni- nihso -ishinishahi -**kan** -e
1- three -parcel -NZLR -VAI
'I have three parcels.' (Slavin 2012: 231)

b. Ni- nanaantawi -tehsapiwin -**enhs** -ow -e
1- look.for -chair -DIM -EPEN? -VAI
'I am looking for a small chair.'[24] (Slavin 2012: 232)

c. Ni- niishoo- **manki** -htikwaan -e
1- two- big -head -VAI
'I have two big heads.' (Slavin 2012: 233)

Note, that Slavin does not differentiate between body-parts in medial position from other nouns as I do. Some of Slavin's examples are from a subset of data which uses nouns other than body-parts (e.g. (48-a) or (48-b)). Thus, although I adopt her tests in Section 3.3, any comparisons made between Mi'gmaq and Oji-Cree should be handled with care. I will discuss the issue of other incorporating nouns in Chapter 5.

In addition, Slavin demonstrates that the this incorporation is syntactic, not lexical, by showing that the IN can be referential (ex. (49-a)), may be modified by external (stranded) modifiers such as the numeral 'one' (ex. (49-b)), and allows doubling by a hyponymous freestanding nominal (ex. (49-c)).

[24]Slavin assumes that the DIM suffix is added to a phrase and not a Root (Slavin 2012: 232). I discuss why this may be problematic in Section 3.3.2 below. The author also notes that the DIM suffix in these constructions shows up with the additional "epenthetic element *-ow/-iw*" without which incorporation is ungrammatical (Slavin 2012: 232, fn. 72). Slavin suggests that this may be a more general constraint for nouns that end in fricatives.

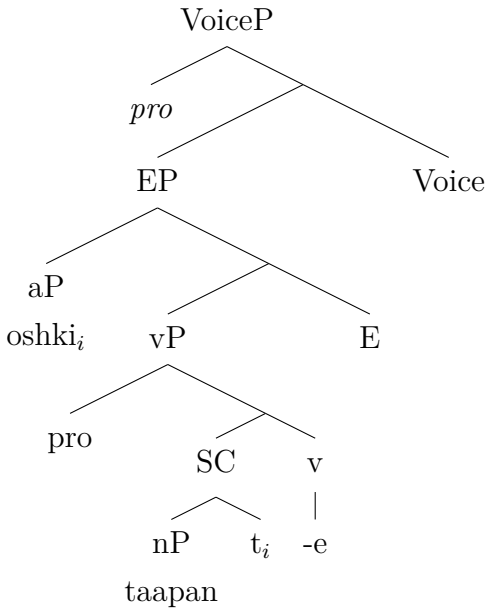
(49) a. Niishoo -htikwaan$_i$ -e koohkoosh. Peshik$_i$ akaahsini ekwa peshik$_i$
two -head -VAI monster one be.small.VII and one
mihshaani.
be.big.VII
'The monster has two heads. One is big and one is small.' (Slavin 2012: 234)

b. Niishoo -htikwaan -e koohkoosh. **Peshik** akaahsi -**htikwan** -e, ekwa
two -head -VAI monster one small -head -VAI and
miinaa **peshik** manki -**htikwan** -e.
again one big -head -VAI
'The monster has two heads. One is big and one is small.' (Slavin 2012: 236)

c. Ni- tewi -sit -e ni- namanci -sit -aan / ni- namanci -sit
1- pain -feet -VAI 1- left -foot -PL? 1- left -foot
'My left foot is hurting.' (Slavin 2012: 238)

Based on the evidence above, Slavin (2012) proposes the structure in (50) for incorporative stems in Oji-Cree.

(50) Oshki- taapaan -e
new- car -VAI
'S/he has a new car.' (Slavin 2012: 266)



In this structure, the VAI final *-e* introduces an internal argument and takes a small clause complement (SC). The incorporated nominal phrase 'car' and the adjectival modifier 'new'

originate in the SC. However, recall that these constructions were ungrammatical without something at the left-edge of the nominal (discussed in §3.1). Slavin argues that the IN is a weak Root and, thus, semantically requires something at its left-edge. The modifier satisfies this requirement and appears in a focus position (Slavin 2012: 265).[25] In Slavin's structure this means that the modifier must move up to the specifier of the whole verb stem—what she calls an Event Phrase.[26] This way, the noun 'car' has a closer semantic and structural relationship with the suffix *-e*, while the left-edge element takes scope over the noun + final constituent. The noun is the subject of the SC and is presupposed/old information while the left-edge element is new/focused information.

In the next section I take a combination of tests from Wiltschko (2009) and Slavin (2012) to show that the medial in modifier-medial constructions in Mi'gmaq is a categorized Root.

3.3 The Status of Medials—are they Roots or nouns?

In this section I show that the incorporated element in body-part medial incorporation is not an uncategorized Root, but rather a categorized Root (a noun). The tests discussed here are taken from Wiltschko (2009) and Slavin (2012) for Roots and nPs, respectively.

3.3.1 Nominalizing Morphology

The strongest piece of evidence that body-part medials are not Roots, is that they can bear nominalizing morphology. Example (51-a) below shows the Root *-s't* 'hear' when it is categorized as a verb with the transitive inanimate final *-m*. Example (51-b) shows that this Root may also be nominalized with the productive noun final *-aqan* which creates inanimate nouns and is often used to create tools. Thus, the combination of the Root *-s't* with the nominalizer *-aqan* creates the noun for 'ear' (lit. the thing that you hear with). As a body part, this noun must be possessed, so the third person possessor appears to the left of the Root 'hear'. Finally, example (51-c) shows that the nominal 'ear' is allowed to appear in the medial position; crucially, the nominalizer appears inside this construction as well.

(51) a. Tel **-s't** -m -∅
thus -hear -VTI -1
'I hear it thus.' (Root *-s't* 'hear' verbalized)

[25] Slavin has independent motivations for this, which I do not discuss here (see Slavin 2012, §5.4.3).

[26] "As in the case of complex stems, the motivation for this movement is not clear at the moment, but might be similar to the motivation for predicate fronting in verb-initial languages" (Slavin 2012: 267).

b. Ug -s'tu **-aqan**
3.POSS -hear -NZLR
'His/her ear' (Root *-s't* 'hear' nominalized)

c. Maq -i -st **-aqan** -a -t
big -EPEN? -hear -NZLR -VAI -3
'S/he is big-eared.'[27] (Incorporated in medial position)

Thus, body-part medials are nouns. This is further corroborated by the independent fact that body-parts may appear in final position in the form of CONCRETE NOUN FINALS (e.g. Inglis 1986 for Mi'gmaq; O'Meara 1990 for Delaware).[28] Two examples are given below:

(52) a. Jijuejg -w **-atp**
bell -DER -head
'Steeple'
(same element that is used as medial in *maq-**atp**-a-t* 'S/he is big-headed.')

b. Lam -i **-ptn**
under -EPEN? -hand
'Palm'
(same element that is used as medial in *maq-i-**ptn**-a-t* 'S/he is big-handed.')

In Section 2.2.2.2 I mentioned the difference between abstract finals and concrete finals for verbs. Abstract finals serve a purely categorizing purpose while concrete finals have a discernible lexical meaning. Due to this, many Algonquianists have argued that concrete finals are actually complex and consist of a Root called a PRE-FINAL and a categorizing ABSTRACT FINAL (see §2.2.2.2 for references). In line with the literature, I suspect that the body-parts in (52) are actually the Root of the concrete final (i.e. the pre-final) and are followed by a null categorizing head (i.e. the abstract final). In (52-a) two elements which are both categorized—one with a null categorizing head—are joined to form a compound; note that *jijuejg* 'bell' is a noun which can stand alone. In (52-b), the Root *lam-* 'under' combines with the Root *-ptn* 'hand', which is followed by a null final, to form the compound

[27]Note the change in the Root 'hear' from example (51-a) *-s't*, to example (51-b) *-s'tu*, to example (51-c) *-st*. Furthermore, the "epenethetic" segment *-i* makes an appearance in (51-c). These phonological changes require further investigation.

[28]"The same lexeme may function as a medial, a possessed stem of a dependent noun, or as a final (usually a noun final)" (Inglis 1986: 66).

noun 'palm'.[29]

I suspect that the two examples in (52) would have similar structures:

(53) a. [[jijuejg] -w [$\sqrt{-atp}$ -∅]]
bell -DER -head -NZLR
'steeple'

b. [$\sqrt{lam}$ -i [$\sqrt{-ptn}$ -∅]]
under -EPEN -hand -NZLR
'palm'

These structures would support the necessity of body-part nouns to have something at the left edge—either a possessor, a modifier, or a noun.[30] The structures would also suggest that the body-part is the syntactic head of the construction.

In addition, we can find minimal pairs such as the one in (54)—a noun in (54-a) and a verb in (54-b). Assuming that in both examples the body-part medial is followed by a null nominalizer, these data suggest that the initial element and the body-part may form a compound within the modifier-medial incorporation construction as in (54-b).

(54) a. Saw -i **-ptn**
droop -EPEN? -hand
'A crippled hand'

b. Saw -i **-ptn** -a -t
droop -EPEN? -hand -VAI -3
'S/he has a crippled hand.'[31]

The main point here is that body-part medials may appear with overt nominalizing morphology, as was shown in example (51). Now that we know that medials are categorized elements, we can investigate the higher nominal structure in this construction.

3.3.2 Diminutive Morphology

Slavin (2012) shows that the incorporated nominal in Oji-Cree may bear diminutive morphology.[32] Assuming that the DIM morpheme is added to a phrase, not a Root, Slavin argues that the presence of the diminutive on the IN shows that the nominal may be complex. However, I believe a more cautious approach is in order. Wiltschko and Steriopolo (2007) propose a typology for augmentatives and diminutives; they argue that the syntax of

[29]As many body-parts are monomorphemic, they do not take an overt nominalizer. Moreover, Valentine (2001) noted that certain medials seem to select for particular forms of finals; for example, body part medials that end in *-n* often have a zero-final (Valentine 2001: 334).

[30]This suggests that Brittain's (2003) characterization of the left-edge position as a "syntactic free-for-all" is not far off.

[31]The Root *saw-*, which I have glossed as 'droop', is used in other forms such as *sawepit* 'S/he is hunched over' or 'S/he is drooped over'.

[32]A reminder: Slavin did not use a body-part with the diminutive test.

these morphemes varies at least across two dimensions—how they are merged (head or modifier), and where they are merged (Root or category). Without knowing how the diminutive behaves in Oji-Cree, it is difficult to tell what the diminutive is actually showing.

In Mi'gmaq, for instance, the synchronically productive diminutive *-ji'j* may appear on verbs/adjectives, numerals, as well nouns.[33] This present-day diminutive attaches to elements that are already categorized. As shown in the examples in (55), the diminutive morpheme appears after the noun final *-oqon* (before number marking), or after the verb final *-a* as in (55-d).

(55) a. Mp -oqon
sleep -NZLR
'Bed'

b. Mp -oqon **-ji'j** -l
sleep -NZLR -DIM -PL
'Small beds'[34]

c. Nep -a -t
sleep -VAI -3
'S/he sleeps.'

d. Nep -a **-ji'j** -i -t
sleep -VAI -DIM -EPEN? -3
'S/he takes a nap.'
(lit. small sleep)[35]

The incorporated element in Mi'gmaq modifier-medial constructions cannot host diminutive morphology. The diminutive may appear in the construction after the final, as shown in example (56). Note, that the diminutive morpheme *-ji'j* in this example is modifying the predicate 'small' *aps-*, thus producing the meaning 'tiny'.[36]

(56) Aps -alq -i -gw -a' **-ji'j** -i -t
small -hole -EPEN? -face -VAI -DIM -EPEN? -3
'S/he is tiny-eyed.'

If medials are categorized elements, as shown in the previous section, then the fact that the diminutive marker appears on the whole predicate suggests that the medial itself is banned

[33]Conor Quinn (p.c.) suggests that historically *-ji'j* is a collocation of two different elements: 1) the morpheme *-j* and 2) vowel length + *-j*. It looks like *-j* may have been used to derive nouns, such as the noun for 'dog' *lmu-**j***, which is ungrammatical without the *-j*.

[34]This is also pronounced as *mpoqonji'[**t**]l*.

[35]Like in Oji-Cree, the diminutive morpheme in Mi'gmaq is often followed by another element: *-i*. This morpheme can either be an epenthetic vowel or an abstract final. In the case that the vowel is epenthetic, we could say that the diminutive in Mi'gmaq behaves as a modifier. However, if the vowel is an abstract final, then that would be evidence for the diminutive acting as a head, as it would be projecting its features (deriving a noun) and the construction would have to be re-categorized as a verb. I am not aware of tests to confirm this either way. Thus, I will not make claims about whether the DIM in Mi'gmaq is a head or modifier.

[36]I did not check whether the form in (51-c) could host diminutive morphology. This needs to be checked in order to confirm that the presence of the overt nominalizer *-aqan* does not make a difference.

from hosting diminutive marking.[37]

3.3.3 Number

Wiltschko (2009) uses number marking as a test to show that the incorporated element in Halkomelem is a Root, as it cannot bear number marking. However, here too, I believe caution is necessary. For example, the the incorporated medial in Mi'gmaq cannot bear plural marking. This is shown in (57-b).

(57) a. Istui **-gat** -a' -t
crooked -foot -VAI -3
'S/he is club-footed.'[38]

b. *Istui -gat **-l** -a' -t
crooked -foot -PL -VAI -3
'S/he is club-footed.' (intended)

The presence of number marking would clearly identify the incorporated element larger than a Root. However, if number marking cannot appear in the construction, this does not provide conclusive evidence for medials either as Roots or categorized elements. Thus, this test only shows that the medial—an element we already know is categorized—cannot bear number marking.

Despite the fact that plural marking cannot appear, the default interpretation for (57-a) is plural. Number is interpreted contextually or from general knowledge. For example, the default numeric interpretation for a construction that uses the medial 'head' is that someone has one head. Compare this to a construction that uses the medial for 'foot' or 'arm'; with general knowledge, this is interpreted plural, unless context suggests otherwise.[39] English 'brown-eyed' construction exhibit a similar property, whereby the noun in these constructions cannot bear plural marking (Nevins and Myler 2014):

(58) *The brown-eye-**s**-ed girls

This characteristic is not surprising for an incorporation construction; incorporated nominals often cannot host number marking and exhibit number neutrality (e.g. Dayal 2011 for Hindi).

[37]This is another crucial difference between body-part medials and classificatory medials. Diminutive marking may appear directly on classificatory medials:

ii. Apj -oq **-ji'j** -i -t
small -round -DIM -VII -3
'It (inan.) is small and round.'

[38]The meaning of *istuigatat* is something like 'S/he is club-footed', 'S/he has crooked feet' or 'S/he has misaligned feet'.

[39]See note about translations in Section 3.1.

3.3.4 Possessive Marking

Wiltschko (2009) suggests possessive marking as a test for nominality. Incorporated medials in this construction in Mi'gmaq cannot bear possessive marking (ex. (59)).

(59) a. Maq **-isqon** -a -t
big **-nose** -VAI -3
'S/he is big-nosed.'

b. *Maq **-ug-sisqon** -a -t
big **-3.POSS-nose** -VAI -3
'S/he is big-nosed.' (intended)

In the freestanding form, however, we know that the body-part *necessarily* has a possessor:

(60) *(Ug) -sisqon
3.POSS -nose
'His/her nose'

As with the number marking test, the presence of a possessor would provide evidence for a categorized element. However, the fact that possessors are not allowed is inconclusive with respect to the status of medials, albeit consistent with what we know about incorporated nominals. INs often cannot bear any marking found in the higher nominal domain (e.g. Compton and Pittman 2010 for Inuktitut). Thus, this test shows that the medial—a categorized element—cannot bear possessive marking.

3.3.5 Modifiers

Unlike incorporated nouns in Oji-Cree, body-part nouns in Mi'gmaq may not incorporate with a modifier.

(61) *Maq -istui -gat -a' -t
big -crooked -foot -VAI -3
'S/he is big club-footed.' (intended: big modifies foot)

The only modifier available is the element immediately preceding the medial. Otherwise, the whole construction is modified, as in (62).[40]

[40]Note, that a body-part medial *can* be preceded by a classificatory medial, which may form a complex body part such as 'arm':

iii. Maq -oq -i -ptn -a -t
big -sticklike -EPEN? -hand -VAI -3
'S/he is big-armed.'

(62) **Wesam**- istui -gat -a' -t
excess- crooked -foot -VAI -3
'S/he is too club-footed.'

English 'brown-eyed' constructions also share this property. The noun in these constructions cannot be modified by itself, but the construction as a whole may be modified by *too* or *very*:

(63) a. *Sarah is *big* brown eyed. (bad if big modifies eye) (Nevins and Myler 2014: 3)
b. John is *very* foul-mouthed (Nevins and Myler 2014: 1)

3.3.6 Summary

In this section I have shown that body-part medials in Mi'gmaq are categorized as nouns. I do not have conclusive evidence that the incorporated element is a phrase (cf. Slavin 2012 for Oji-Cree; Barrie and Mathieu to appear for Ojibwe). The appearance of modifiers and possessors would provide strong evidence for a phrasal analysis. Even stronger evidence would be if nouns could be coordinated or conjoined, or if relative clauses could incorporate (Massam 2001 for Niuean). However, I have shown that morphology which appears in the higher nominal structure cannot appear on the incorporated noun in Mi'gmaq.

3.4 Is Modifier-Medial Incorporation Syntactic?

The tests discussed in this section were originally outlined in Baker (1988) as evidence that noun incorporation was a syntactic process. Although the evidence I have for Mi'gmaq is inconclusive, I assume that modifier-medial incorporation is, nevertheless, syntactic. Given that such an analysis has been supported in other languages, and is consistent with Mi'gmaq, I propose that the simplest story for this construction is that it is formed in the syntax via head movement (Travis 1984; Baker 1988). Contra Barrie and Mathieu (to appear), I assume that all word formation must be done in the syntax (à la DM); there is no lexical component to fall back on.

The question is whether we can consider the classificatory medial in these cases as a modifier for the incorporated body-part.

3.4.1 Referentiality

Discourse referentiality has been used as a test to demonstrate syntactic independence of the incorporated nominal (Di Sciullo and Williams 1987; Baker 1988).[41] Medials are not referential. In (64-a) below, the medial 'eye' cannot be interpreted as the subject of the predicate in the second sentence. In order to make this string grammatical, the body-part needs to be repeated as a possessed noun (ex. (64-b)):

(64) a. *Maq -alq -i -gw -a -t. Ewn -e -'g -l
big -hole -EPEN? -head -VAI -3 blue -VII -3 -PL
'S/he is big-eyed$_i$. They$_i$ are blue.' (intended)

b. Maq -alq -i -gw -a -t. Ewn -e -'g -l **ug** **-pugugu** **-l**
big -hole -EPEN? -head -VAI -3 blue -VII -3 -PL 3.POSS -eye -PL
'S/he is big-eyed. His/her eyes are blue'

Just as with the tests above, the fact that medials are not referential is not conclusive evidence that they are not syntactically independent. The structure of nominals and the locus of referentiality are closely tied together. In particular, the structure depends on whether we believe that in languages like Mi'gmaq—languages without overt determiners—bare nouns can inherently refer or not. Although this is a question that I will largely remain agnostic about, I offer a discussion of potential hypotheses in Section 3.6.4 below.

3.4.2 Stranded Modifiers

Stranding of modifiers has also been used to show that NI is syntactic. Specifically, if a modifier and a noun form a phrase in an argument position, and the modifier is stranded, then the noun must have moved out and created a "discontinuous dependency" (Baker 1988: 92). Medials cannot be modified by stranded modifiers. This is shown with the numeral 'three' in example (65). The only modifier available is the element immediately preceding the incorporated medial. Otherwise, the whole construction is modified, as we saw in (62) above.

Context: There is a dog that only has 3 feet/legs and they are all crooked.

(65) * Istui -gat -a' -t ne'sis -gl
crooked -foot -VAI -3 three -INAN.PL

[41] Baker (1988) defined an element "syntactically independent" if it was generated as a separate "lexical item in the underlying syntactic structure" and then moved to combine with the verb (Baker 1988: 19).

'S/he is three club-footed.' (intended: three modifies foot)

Slavin (2012) argues that incorporated nominals in Oji-Cree may be modified by a stranded modifier (example (49-b) repeated here for convenience):

(66) Niishoo -htikwaan -e koohkoosh. **Peshik** akaahsi -**htikwan** -e, ekwa miinaa
two -head -VAI monster one small -head -VAI and again
peshik manki -**htikwan** -e.
one big -head -VAI
'The monster has two heads. One is big and one is small.' (Slavin 2012: 236)

There are, however, some issues with this test, especially for Algonquian languages. First, Algonquian languages permit discontinuous constituents. For instance, in Mi'gmaq modifiers can be separated from the nominals they modify as in the following example:

(67) Newt -e'j -i -t nem -i '-g lmu'j.
one -AN -VAI -3 see -VTA -1>3 dog
'I see one dog.'

Moreover, morphologically rich languages tend to permit null arguments. Thus, the example above in Mi'gmaq can be reduced to:

(68) Newt -e'j -i -t nem -i '-g.
one -AN -VAI -3 see -VTA -1>3
'I see one (animate).'

It may be the case that the numeral 'one' in Slavin's example looks like it is modifying an incorporant, though in fact it could just be modifying a zero/elided argument which happens to be relevantly close to coreferent with the incorporant (Conor Quinn, p.c.).

Although modifier stranding in Mi'gmaq is not allowed, something similar to "possessor stranding" or "possessor raising" is allowed.[42] We briefly saw in Section 3.1 that a proper noun (e.g. 'Mary') can and must be interpreted as the possessor of the incorporated element. Similarly, in the following example the noun 'child' is interpreted as the possessor of the incorporated body-part 'head':

(69) Maq -**atp** -a -t (na) **mijua'ji'j**.
big -head -VAI -3 NA child

[42]Rhodes (1976) notes this for Ojibwe: "[...] the incorporation may be launched from a noun phrase containing a possessor, leaving the possessee behind bearing the grammatical relation of the original noun phrase [...]" (Rhodes 1976: 263).

'The child is big-headed.'[43]

As the body-part *-atp* 'head' in this construction belongs to a class of inalienable nouns, the predicate *maqatpat* 'S/he is big-headed' is always interpreted with a possessor, either implicit or overt.

3.4.3 Noun Doubling

Finally, Baker (1988) argued that incorporated nouns do not saturate an argument of a transitive verb and do not receive case from the verb. Due to this, the verb is free to assign case to another noun, which results in noun doubling (Baker 1988: 110). Body-part medials in Mi'gmaq do not allow true noun doubling, shown below:

(70) *Istui -gat -a' -t **ug** -**gwat** -(**l**)
crooked -foot -VAI -3 3.POSS -foot -(PL)
'S/he is club-footed.' (intended)

I have also not seen any hyponymous noun doubling with body-parts in Mi'gmaq, although more fieldwork is needed to confirm this.[44]

Whatever the case, it seems that this test is not relevant for body-part medials in this construction, as they do not behave like arguments of the preceding modifying element to begin with. The relationship between the initial and the medial in this construction is discussed further in Section 3.6.1.1 below.

3.4.4 Summary of Tests

The following table summarizes the tests discussed above. For comparison, I have included Slavin's (2012) results for these tests in Oji-Cree, although these tests may not be *directly* comparable (see note in §3.2 about Slavin's data). In the next section I offer an analysis based on the properties discussed above.

[43]The particle *na* often acts as discourse particle (something akin to 'that') and a copula. This particle is optional in example (69) above.

[44]Here, we find another difference between body-part and classificatory medials. Noun doubling is allowed in the case of classificatory medials:

iv. Ep -**p** -a' -q samqwan
hot -liquid -VII -3 water
'The water is warm.'

I do not know whether the classifier itself can be doubled. I leave this issue for further research.

(71)

Test	**nP (Oji-Cree)**	**Medial (Mi'gmaq)**
Referentiality	✓	✗
Stranded Modifier	✓	✗
Noun Doubling	✓	✗

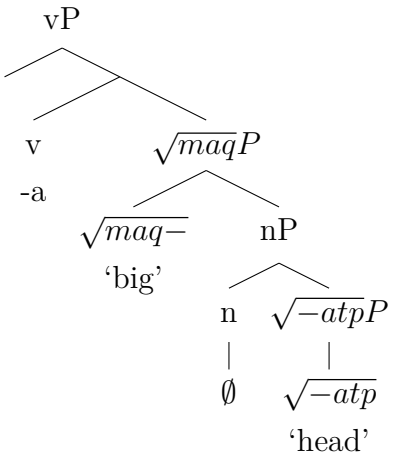
Table 3.1: Summary of results for incorporated element in modifier-medial incorporation

3.5 Analysis

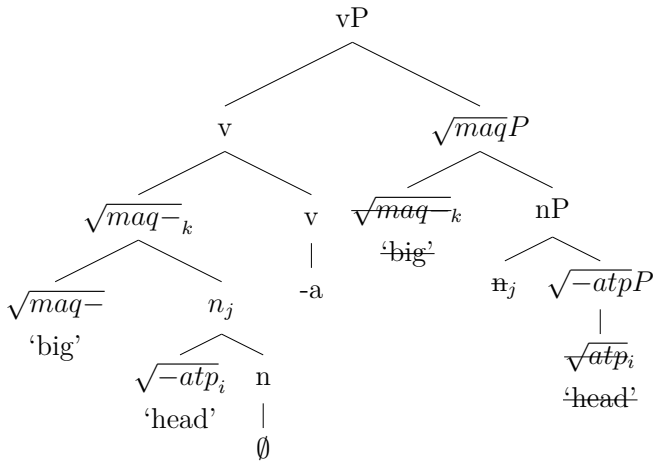
In this section I present an analysis for modifier-medial incorporation involving body-parts. For an example like (72), I propose the following structure (excluding person marking):

(72) Maq -atp -a -t
big -head -VAI -3
'S/he is big-headed.'

(73) Prior to movement



(74) Post movement



The Root $\sqrt{maq\text{-}}$ 'big' takes the medial, a categorized Root, as a complement (see Harley 2009 for analysis of syntactic compounds in English).[45] The complement of the Root $\sqrt{maq\text{-}}$

[45]As a reminder, note that elements bigger than Roots may appear in the position of the initial. See Section 3.1 for examples.

is first created by merging $\sqrt{\text{-}atp}$ 'head' and a nominalizing head.[46] In this case, this head is null. Via head movement, the complex Root-n head right-adjoins to the Root $\sqrt{maq\text{-}}$ 'big'. The whole complex then moves up to the categorizing head -a to be categorized as an animate intransitive "verb".

This analysis captures the tension for headedness that we see between the predicate and the incorporated medial. There were good reasons to believe that the Root 'big' was the head. For instance, the whole construction is a verbal predicate which may also exist without the incorporated medial. Moreover, the construction is ungrammatical without the left-edge Root, suggesting that it is the main element in the construction. However, there was also a good argument for the medial behaving as the head. Namely, there were some selectional restrictions between the medial and the final. Although medials have often been considered as "optional" elements in Algonquian verbs, the choice of the verb final -a in Mi'gmaq seemed to depend on the presence or absence of the body-part medial (see §3.2).

Similarly in English, when we talk about a person being 'brown-eyed', it is difficult to tell which element is the head. Although the assertion is about the brown-ness of the eyes, it is clear that we are talking about eyes. This equality in headedness is why Slavin (2012) proposed a Small Clause structure for incorporation constructions in Oji-Cree.[47] I come back to this issue in the next section. In the structure I proposed above it is the predicate Root 'big' that is the syntactic head of the construction; the medial is the semantic head.

3.6 Discussion

3.6.1 Selectional Relationships & Issues with Interpretations

Despite the fact that the proposed structure captures the tension between the initial and the medial, there are some issues with the current analysis. One such issue is regarding selectional relationships, both between the initial and the medial and the medial and the final.

[46] Although I posit a RootP projection, this is not crucial for my analysis. I leave open the question whether there is a need for Roots to project to a phrase. A structure in which the Root head does not project up to a RootP is still compatible with the analysis proposed here.

[47] Small Clauses are also not completely symmetrical; there is still a subject and a predicate, and the predicate is the head.

3.6.1.1 Initial & Medial

The first question that deserves further attention is what it means for the Root *maq-* 'big' to "select" the nominal or take it as a complement. As mentioned in §3.4.3, the incorporated body-part in modifier-medial incorporation does not behave as an argument of the predicate. Thus, the selectional relationship is not one of predicate and argument. Recall also that in previous literature medials are often described as having a "modificational" role in relation to the initial or in relation to the internal argument of the predicate (see §3.2). Hirose (2003), for instance, provided the following example for medials modifying the internal argument of the predicate in Plains Cree (ex.(46-c) repeated below):

(75) Kinw **-âsko** -si -w
long -wood -STAT -3
'S/he (i.e. tree) is long.' (Hirose 2003: 163)

The medial 'wood' restricts the set of individuals that are long to those that are long and are woody (Hirose 2003: 163). Similarly, we may think that the body-part 'head' in (72) above restricts the set of individuals that are big to those that are big and are heads. However, this still does not get us the desired interpretation, as the interpretation involves a possessor—an individual x who is big in a headed way.[48]

Wiltschko (2009) argues that incorporated Roots in Halkomelem function as predicate modifiers. Quinn (2009a) demonstrates that we can analyze Algonquian medials in a similar way. As such, they are base-generated in their surface position and the relation between the incorporated element and its host can be interpreted in different ways; the Root may either be a location or an instrument or it can "place a selectional restriction on the THEME argument" (Wiltschko 2009: 217).

One thing that is clear, is that the incorporated body-part in Mi'gmaq—an inalienable noun which is part of a whole—denotes a relation. This affects the interpretation of modifier-medial constructions (see Barker 1995 for possessive relations). Hale (1981) notes for Warlpiri that nouns may function either as predicates or arguments. As predicates, they have their

[48]Valentine (2002) points out this interpretation for a datum in Ojibwe (emphasis mine): "Wilson (1874:160) lists *nabane-ginoonike* 'have one arm longer than the other/' (/nabane-/ 'on one side'; /ginoo-/ 'long'; /-nik-/ 'arm'), with two descriptors, one a preverb and the other an initial [...] Note, however, that the semantics of *nabane-ginoonike* suggest that the structure of this word is /nabane-ginoo+nik+e/, that is, one in which *nabane* 'on one side' and *ginoo-* 'long' form a unit in compound with the medial and final, since the preverb cannot have scope over the whole verb, i.e., this cannot mean 'have a long arm on one side (of the body)'. **Rather the semantics suggest an interpretation 'be long(er) on one side (of the body) with respect to arms'**. (Valentine 2002: 93)

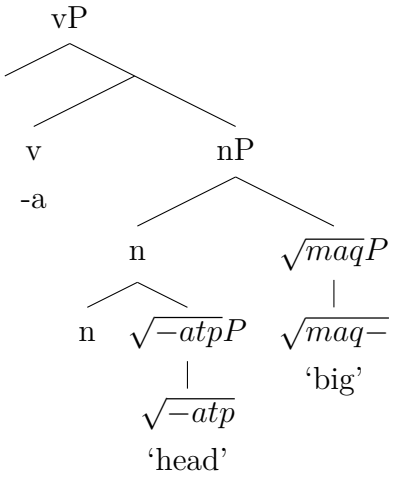
own argument structure, similar to verbs. Hale assumes that the relation between a part and a whole is one of predication, in that the whole functions as an argument while the part is predicated of it (Hale 1981: 7).

Although a full-fledged semantic analysis is still required, the facts above explain where the possessor/argument in these body-part constructions in Mi'gmaq come from. Moreover, the issue discussed here shows the importance of investigating language-specific properties of this construction and brings up the danger of relying on translations.

3.6.1.2 Medial & Final

The other issue is regarding the choice of the final, which seems to depend on the presence of the medial. In an alternative reversed structure, as in (76) below, the problem of the choice of final is solved. The *nP* is now closer to the categorizing verbal head and takes the Root 'big' as a complement.[49]

(76)



However, now we run into a different issue. In addition to the Root *maq-* 'big', the *nP* would have to take the Root *-atp* 'head' as a complement. This creates a structure which is less elegant than the one proposed above.

3.6.2 Left vs. Right Adjunction

A second issue with my proposed structure in (73)-(74) is that the categorized medial has to right-adjoin to the Root 'big' in order to attain the correct morpheme order. Under the view of Kayne's (1994) Antisymmetry, where head-adjunction is always to the left, the predicted

[49]Slavin (2012) noted that the incorporated nominal has a closer semantic and structural relationship with the final *-e* in Oji-Cree.

morpheme order would be **-atp-maq-a-t*. However, if morphemes can be specified as prefixes or suffixes—left or right in linear order—then the correct morpheme order can be attained (Affix-specific Linearization, Harley (to appear)). Note, that the structure in (76) would also eliminate this issue, as via head movement the Root *maq* 'big' would adjoin to the left and derive the correct morpheme order. However, this is not the structure that I have chosen to account for this construction.

In the following sections I compare modifier-medial incorporation to Nevins and Myler's (2014) analysis of 'brown-eyed' constructions in English and briefly discuss the issue of referentiality as relating to the structure of nominals.

3.6.3 Comparison to 'brown-eyed' Constructions (Nevins and Myler 2014)

Nevins and Myler (2014) outline the main characteristics of expressions like 'brown-eyed' in English. In my discussion of modifier-medial incorporation in Section 3.1 above, I noted that 'brown-eyed' constructions in English are similar to the construction investigated in this chapter. In this section I discuss the characteristics of 'brown-eyed' expressions as outlined by Nevins and Myler (2014) and summarize their proposal. I hope to show that comparing English and Mi'gmaq can provide insight into how predicates are formed in different languages.

Nevins and Myler (2014) note that expressions like 'brown-eyed' are adjectival in nature; they pass the *seem* test:

(77) John seems blue-eyed (in this light)

Second, the authors note that these expressions are reminiscent of synthetic compounds since they always require a modifier:[50]

(78) a. John is a late-arriver
b. *John is an arriver

Likewise, similar to syntactic compounds, the noun inside this construction cannot bear plural marking:

(79) *The brown-eye-**s**-ed girls

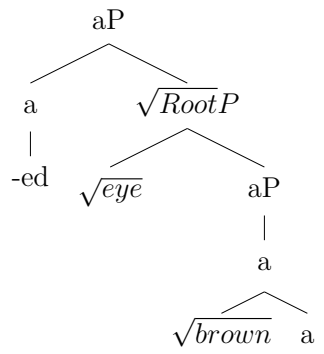
Finally, the authors note that these expressions do not have an active verbal form:

[50]Nevins and Myler (2014) note that there are some exceptions, e.g. *the moneyed class*, *a bearded lady*, *horned animals*.

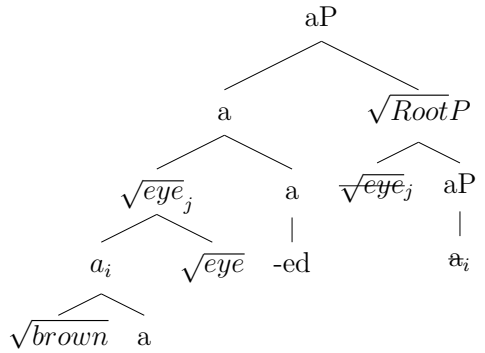
(80) *to brown-eye

Based on these observations, the authors argue that expressions like 'brown-eyed' in English are syntactic compounds (see Harley 2009 for an analysis). They are formed when a categorized Root 'brown' (little *a*) incorporates into an uncategorized Root 'eye'. This whole complex is then categorized as an adjective by the morpheme *-ed*, which is a derivational little *a* head that selects only for Roots. This structure is shown in (81) and (82) below.

(81) Prior to movement



(82) Post movement



Despite the similarities between expressions like 'brown-eyed' and modifier-medial incorporation, the Nevins & Myler structure does not capture the Mi'gmaq data. The analysis I proposed in 3.5 above is the opposite of Nevins and Myler's (2014); I argued that in Mi'gmaq the predicate 'big' (paralleling Nevins & Myler's 'brown') is uncategorized while the incorporated element 'head' is a categorized Root (little *n*). Thus, the body-part medial could not be an uncategorized Root as per Nevins and Myler's (2014) analysis.

3.6.4 Referentiality and the Structure of Nominals

In Section 3.4.1 above I showed that the incorporated body-part medial was not referential. Referentiality is at the heart of the issue of nominal structure. A prominent view in linguistic literature has been that all bare nominals are semantically predicates, and only become referential through derivation by combining with a Determiner Phrase (DP) (Longobardi 1994 and references therein). This approach often subsumes the view that the DP projection is universal to all languages. That is, if nouns are not referential inherently, but they *can* be referential in a language, then there must be something higher (usually DP) that is the locus of referentiality. Proponents of this view have to say that languages without overt determiners have a DP projection with a null D head (Longobardi 1994).

However, there has been much debate about the universality of the DP projection in the field, especially in languages which lack overt determiners (e.g. Boškovic 2008; Despić 2011 and references therein). More recently, linguists have argued that it is possible for bare nouns to be inherently referential (Chierchia 1998; Baker 2003; see also Compton 2004 and Johns 2007 for Inuktitut; Wiltschko 2009 for Halkomelem; Barrie and Mathieu to appear for Ojibwe). Even within this view there is disagreement. For instance, Chierchia (1998) proposes that only languages without overt determiners have nouns which are referential, while Baker (2003) takes this one step further by proposing that nouns in all languages are referential. Contra this, Barrie and Mathieu (to appear) hypothesize that the presence of the nominal head n is not sufficient for referentiality. Instead, they follow Wiltschko (2009) in assuming that n introduces an abstract referential argument in its specifier. Thus, it is the maximal projection of the noun (nP) that is referential (Wiltschko 2009; Barrie and Mathieu to appear).

So, what does this mean for Mi'gmaq? Mi'gmaq is a language which has demonstratives, but no determiners. Bare nouns may be interpreted as definite or not, based on context. A bare noun in subject position *can* be definite, as in the following example:

Context: I see a man (over there). The man is laughing.

(83) Ji'nm etl -enm -i -t.
man PROG -laugh -VAI -3
'The man is laughing.'

Under the view that there are no null Ds, this is independent evidence that nouns can be referential in Mi'gmaq.[51] Thus, we would expect that, as a noun, the body-part medial in modifier-medial incorporation could also be referential. However, recall that body-parts belong to a class of inalienable nominals. Perhaps due to this, body-parts cannot inherently refer, as they always require a possessor.[52]

Nevins and Myler (2014) claim that the 'brown-eyed' construction in English is restricted to inalienable possession relations. Specifically, they argue that because semantically, inalienable nouns inherently denote a relation (Barker 1995), morphosyntactically this suggests that the nominal Root can directly introduce a possessor in its specifier. They compare this to alienable nominals, which require the addition of a Poss head to introduce a relation as these nouns are not *inherently* relational. I tentatively propose that these two issues—referentiality and (in)alienability—are linked. However, further investigation is necessary to confirm this.

[51]Note that this doesn't show that the n can be referential; it could be the nP.

[52]In any case, we do not necessarily expect nominals to be referential in incorporated constructions.

Related to this issue is another question which was hinted at in Section 3.6.1.1 above: where does the subject in modifier-medial incorporation get its θ-role? It is unlikely that the Root *maq* 'big' is itself assigning a θ-role. We are left with two options, either: 1) The categorizing verbal head *-a*, as an intransitive animate final, can introduce an argument in its specifier;[53] or 2) The adjoined Root *-atp* 'head', as an inalienable nominal, needs a possessor and thus assigns an argument. Given the discussion above, I lean towards the second option.

3.7 Summary

In this chapter I investigated modifier-medial incorporation, specifically focusing on body-part medials. In Section 3.1 I introduced the construction and pointed out some important properties, including the fact that the construction was ungrammatical without the initial element, despite the fact that it is a modifier. In Section 3.2 I discussed previous literature, emphasizing that although medials have been described as "optional", the choice of the final in Mi'gmaq seems to depend on the presence or absence of these incorporated body-parts. In the following section I showed that medials were categorized elements and thus nouns, not Roots. Based on some tests I proposed a head-movement analysis in which the Root predicate/modifier selected for an *nP* complement (the medial). I discussed the analysis and its issues in Section 3.6. This analysis has implications compared to constructions like 'brown-eyed' in English. On the one hand, these two constructions in Mi'gmaq and English share many properties, including the tension in headedness between the two elements and the adjectival feel of the constructions. On the other hand, the two structures differ, in that in Mi'gmaq the incorporated body-part is categorized, while in English it is not (Nevins and Myler 2014).

In addition to the issues I have left open in my discussion above, I leave the following questions for further research. With body-part medials, individual-level predication (e.g. big, long, etc.) is more common than stage-level predication (e.g. dirty, cold). This asymmetry of usage needs to be further investigated. Moreover, I have left open the question of allomorphy which medials exhibit when they are incorporated, as compared to their possessed forms. Finally, I have provided some leads for a fruitful comparison of medial incorporation involving classificatory medials.

[53]It is difficult to tell whether the argument comes from the final/categorizing head *-a* or whether this head simply reflects the fact that there needs to be an animate argument.

Chapter 4| Denominal Verbs

In this chapter I explore what has been called a DENOMINAL VERB (DNV) or a LIGHT VERB construction in recent generative Algonquian literature (Mathieu 2013; Barrie and Mathieu to appear for Ojibwe). An example using the light verb *-e'ge* 'get' is given in (84) below:

(84) Gmu'j -e'ge -t
wood -get.VAI -3
'S/he cuts lumber.'

As with the previous type of incorporation, I investigate the incorporated element in this construction—an open class nominal. Unlike medial incorporation, the IN in this construction appears in the initial position. I argue that the incorporated element is not a Root, as this element can bear nominalizing morphology, diminutive morphology and, outside of this construction, may stand alone as is. In addition, I show that the noun in this construction 1) cannot bear plural marking; 2) does not appear to be modified by stranded modifiers; and 3) does not allow NP doubling (hyponymous objects). These facts are different from the behavior of DNVs in Ojibwe, as described by Barrie and Mathieu (to appear). Based on this I propose a head-movement analysis in which the noun obligatorily incorporates into the little v head, the light verb, in this construction.

In my discussion I focus on the final *-e'ge* 'get', which shows some interesting effects with respect to referentiality of the incorporated noun. Namely, we will see the referentiality of the noun depends on the type of final used in this construction (*-e'ge* 'get' vs. *-e'g-si* 'get for oneself').

The goal of this chapter is to describe the denominal verb construction in Mi'gmaq and demonstrate how it differs from modifier-medial incorporation. Unlike modifier-medial incorporation, the incorporated noun in this construction is in the position of the initial. However, like modifier-medial incorporation the noun occupies the lowest head in the structure. This construction also differs from modifier-medial incorporation in that there is one Root present

in the structure—that of the categorized nominal.[1]

This chapter is laid out in the following way. Section 4.1 introduces the construction and its essential characteristics. Section 4.2 follows with a summary of previous literature, specifically focusing on Mathieu (2013) and Barrie and Mathieu's (to appear) accounts for DNVs in Ojibwe. In Section 4.3 I investigate the size of the incorporated element, showing that it is categorized. This is followed by additional syntactic tests in Section 4.4, including tests for referentiality, stranded modifiers and noun doubling. In Section 4.5 I propose that the noun in this construction obligatorily incorporates into the verb via head movement (Travis 1984; Baker 1988). The analysis is followed by a discussion of issues in Section 4.6 and a summary of the chapter in Section 4.7.

4.1 Introducing the Construction

The type of construction investigated in this chapter is shown in (85) below. In this construction an open-class nominal (bolded) appears in the position of the initial—the main contentful unit of Algonquian verbs. This element is followed by a derivational morpheme *-u*, which allows the noun stem to serve as a base for further derivation.[2] What happens next is called SECONDARY DERIVATION in Algonquian literature, which involves category- and valence-changing operations (Goddard 1990). A final—either concrete as in (85-a) or abstract as in (85-b)—is added to the derivational morpheme to produce a verb stem (underlined).

(85) a. **Jagej** -u -e'ge -t
lobster -DER -get.VAI -3
'S/he traps lobster.'
(lit. 'S/he lobster-Vs')

b. **Ji'nm** -u -i -t
man -DER -be.VAI -3
'He is a man.'

Recently, this construction has been dubbed as a DENOMINAL VERB or LIGHT VERB construction, due to the following characteristics. First, the incorporated nominal element can be freestanding; both of the nouns used in (85) may stand grammatically on their own, as shown in (86):

[1]It remains to be seen whether the concrete final *-e'ge* 'get' can be broken down into a pre-final (Root) and a final (categorizing head). See discussion in §4.6.2

[2]This element can be thought of as an initializer—it packages the noun into an initial, so it can serve as the base for further derivation (Goddard 1990). In Mi'gmaq, this morpheme has also been previously analyzed as a marker indicating a change in category (Inglis 1988)

(86) Nemi' -g **jagej** / **ji'nm**.
see.VTA -3 lobster / man
'I see a lobster / a man.'

This is unlike the medial in medial incorporation constructions, which always needs a possessor in its freestanding form.[3] The nouns that appear in the DNV construction belong to the class of ALIENABLE nominals—nouns which can change ownership and are not inherently possessed (McClay 2012 for Mi'gmaq).

Second, the kind of verbs used in this construction are light verbs like 'get' and 'be' in (85) above. In fact, Goddard (1990) points to only these two verb finals that consistently form verbs from nouns in secondary derivation.[4] However, literature on these denominal verb constructions has also included another final which means 'have' (O'Meara 1990; Mathieu 2013; Barrie and Mathieu to appear).[5] In Mi'gmaq this final is *-i*; an example with an alienable (ex. (87-a)) and inalienable (ex. (87-b)) noun is given below:[6]

(87) a. Atla'i -m **-i** -t
shirt -ALIEN -have.VAI -3
'S/he has a shirt.'

b. U.nji **-i** -t
3.POSS.head -have.VAI-3
'S/he has a head.'

I do not discuss this final here, as I do not have enough evidence to say whether it patterns with the finals in (85) in Mi'gmaq. However, this final makes another appearance in Chapter 5. Future investigations should confirm whether this final behaves similarly to the finals used in light verb constructions.

The finals used in DNV constructions, such as *-e'ge* 'get' and *-i* 'be', never appear without an incorporated nominal. In other words, incorporation in this construction is obligatory. In this chapter I will only focus on examples involving the concrete verb final *-e'ge* 'get',

[3] I have not checked whether inalienable nominals may appear in this position. More work needs to be done to determine whether the initial position in DNVs is restricted to alienable nominals or not.

[4] "From nouns are formed intransitive verbs of being [...] or of making or obtaining" (Goddard 1990: 471).

[5] For many linguists, 'have' is 'be' with an incorporated preposition (e.g. Freeze 1992; Kayne 1993). The two have a difference in case assignment—since 'have' is 'be' plus a preposition, it is able to assign case.

[6] I have not separated the third person possessive marker in (87-b), as the incorporation appears to *always* incorporate with third person marking, even when the form is first person

i. U.nji -i -∅
3.POSS.head -have.VAI -1
'I have a head.'

Thus, it does not appear that the third person marking preceding the inalienable noun 'head' is actually indicative of a third person possessor (see Valentine 2001 for a nice explanation for Ojibwe).

although the analysis discussed here may be easily applied to examples involving the final *-i* 'be'.[7]

Finally, this construction is reminiscent of zero-derived verbs in English (e.g. *fish*, *whale*, *tape*, etc.), as the meaning of the verb heavily depends on the meaning of the nominal which appears in initial position (see Arad 2003 for further examples in English).[8] For instance, in example (85-a) above, the general final 'get' is interpreted as 'trap', because lobsters are usually trapped. Thus, we can think of this final meaning something similar to 'procure X in X's natural environment', with X being the incorporated element. Below are a few more examples demonstrating this characteristic:

(88) a. Tia'm -u -e'ge -t
moose -DER -get.VAI -3
'S/he **hunts** moose.'
(lit. 'S/he moose-Vs')

b. Msigu -e'ge -t
grass -get.VAI -3
'S/he **collects** (sweet)grass.'
(lit. 'S/he grass-Vs')

This construction is frequently used in speech. It is extremely productive; any alienable noun may appear in the initial position, including borrowed nouns such as the noun 'grocery' in (89) below:

(89) **Grocery** -u -e'ge -t
grocery -DER -get.VAI -3
'S/he is getting groceries.'[9]

Notably, the use of the final *-e'ge* implies that procurement is not guaranteed. In fact, in a context where procurement is guaranteed (e.g. going to a store), the use of *-e'ge* would be infelicitous.[10] Instead, a form using the morpheme *-si* would be used. The two constructions are compared in (90) below:

> *Context*: Your husband has gone to the store to get some clams for dinner. Your friend asks you, "Where is your husband?" You reply...

[7] I focus on *-e'ge* 'get', as it presents an interesting case regarding referentiality. See §4.4.1 for more.

[8] "[...]this final can be said to standardly derive verbs of constructive social activity as applied to whatever the initial represents." (Valentine 2001: 418, for Ojibwe)

[9] The incorporated noun is not specified for number, so the interpretation is allowed to be plural. I discuss this in detail in §4.3 below.

[10] This appears to exclude example (89) above, since the natural environment to get groceries is in a grocery store.

(90) a. # E's **-e'ge** -t
clam -get.VAI -3
'He is digging for clams.'

b. E's -e'g **-si** -t
clam -get -SI -3
'He is getting some clams (for himself).'[11]

Constructions with *-e'ge* seem to be activities in the sense of Vendler (1957): they are processes which involve no culmination. We can compare *-e'ge* constructions to English compounds like 'berry-picking' or 'moose-hunting'—what Mithun (1984) calls lexical compounding.[12] On the other hand, *-e'g-si* behaves like an accomplishment light verb. I will come back to the morpheme *-si* and describe its status in Section 4.6.2.

Now that I have outlined the basics of this construction, I turn to a review of literature on DNVs in Algonquian. Further characteristics of this construction are discussed in Section 4.3.

4.2 Previous Literature

The denominal verb or light verb construction has been described most extensively for Ojibwe, a neighboring Algonquian language (Valentine 2001; Rhodes 1976, 2003; Mathieu 2013; Barrie and Mathieu to appear, among others). The counterpart of the Mi'gmaq *-e'ge* 'get' in Ojibwe is the morpheme *-ke*, described as a general final used to mean 'make', 'build', 'hunt', 'pick' and 'do' (Mathieu 2013).

Barrie and Mathieu (to appear) argue that Ojibwe light verb NI applies to DPs and is formed via phrasal movement due to the complexity of the incorporated noun.[13] They demonstrate that the IN can be complex as it can include nominalizers (ex.(91-a)), diminutive and pejorative morphology (ex.(91-b)) and retains number marking (ex.(91-c)).

(91) a. Bakwezhig **-an** -ke -w
bread -NZLR -make.VAI -3
'S/he makes bread.'

[11] I gloss this morpheme as 'SI' for now. However, I suspect that this morpheme may be the reflexive in Mi'gmaq. I discuss this further in §4.6.2.

[12] These compounds do not guarantee procurement in English either. In Section 4.3 we will see other ways in which *-e'ge* constructions are similar to these compounds.

[13] "The motivation behind our proposal that NI is phrasal movement is that, cross-linguistically, nominals larger than bare roots undergo incorporation in such a way that head movement could not be involved." (Barrie and Mathieu to appear: 7)

b. Gii- ikwe -**zhenzh** -**ish** -wi -w
PST- girl -DIM -PEJ -be.VAI -3
'She was a naughty little girl.'

c. Makw -**a** -ke -w
bear -NUM/GEN -make.VAI -3
'S/he is hunting bears.'[14] (Barrie and Mathieu to appear: 16)

Furthermore, Barrie and Mathieu (to appear) show that Ojibwe INs may incorporate with a preceding modifier (ex.(92-a)) and may bear possessive and person marking (ex.(92-b)).

(92) a. **Gichi**- sabii -ke -w
big- net -make.VAI -3
'S/he is making big nets.'

b. **O**- d- aki -**im** -i -w
3- EPEN- land -POSS -have.VAI -3
'S/he has land.'[15] (Barrie and Mathieu to appear: 17)

Although nominalizing morphology, diminutive morphology and number marking may all be done via head movement, possessive marking and incorporation of modifiers are good arguments for a phrasal movement analysis.

Mathieu (2013) provides syntactic tests showing that Ojibwe denominalization is not compounding. This is based on the fact that the noun in DNVs is referential (ex.(93-a)), may be modified by external (stranded) modifiers (ex.(93-b)), but does not allow noun doubling (ex.(93-c)).

(93) a. Gii- naboob -ke -w. Apiiji gii- mino -waagame
PST- soup -make.VAI -3 very PST- good -taste.liquid.VII
'S/he was making soup$_i$. It$_i$ tasted very good.' (Mathieu 2013: 19)

b. **Kino** memengwaan -ke -w
all butterfly -get.VAI -3

[14]"Number in Ojibwe is inflectional: it is obligatory; it triggers agreement; it is not possible inside compounds or derivational morphology (Mathieu 2013). Since number marking is fused with gender marking, it is clear that Ojibwe nominals do not lose their gender marking either when they merge with verbal suffixes" (Barrie and Mathieu to appear: 16)

[15]Barrie and Mathieu's (to appear) example would provide stronger evidence if the possessor was the first or second person. See footnote 5 for the issue and comparison to Mi'gmaq.

'S/he is catching all butterflies.'[16] (Mathieu 2013: 22)

c. *Gigoon -ke -w **okaasa -n**
fish -get.VAI -3 walleye -PL
'S/he is fish-looking for walleyes.' (Mathieu 2013: 24)

Building on these tests, in Section 4.3 I show that the incorporated element in denominal/light verb constructions in Mi'gmaq is a categorized Root. In general, we will see that DNVs in Mi'gmaq behave differently from DNVs in Ojibwe.

4.3 The Status of the Incorporated Element in DNVs—is it a Root or a noun?

In this section, I show that the incorporated element in DNV constructions in Mi'gmaq is a categorized Root (n+Root). In this sense, the noun in this construction is similar to the noun in medial incorporation. However, there are differences. I demonstrate that the noun in DNVs is never morphologically reduced, can stand alone outside of this construction, and may host diminutive morphology. So, while the noun in medial incorporation is maximally a categorized Root, the noun in DNV constructions is minimally a categorized Root that can be something more complex.

4.3.1 Nominalizing Morphology

Nominalizing morphology may appear on the incorporated element in this construction. This is shown in (91) below with the complex noun *pipnaqan* 'bread', which is made of the Root *pipn-* 'bake' and the noun final *-aqan* which creates inanimate nouns:

(94) Pipn **-aqan** -e'ge -t
bake -NZLR -get.VAI -3
'S/he is searching for bread'[17]

[16]This is the only form Mathieu (2013) offers with the final *-ke*. He gives an additional example using the numeral 'two' with the possessive final *-i* 'have'. Nevertheless, using the quantifier *all* may not be the best way to test for stranded modifiers. *kino* 'all' in Ojibwe works just like *ms't* 'all' in Mi'gmaq: it can take scope over or modify any argument of the verb, or the event itself. Thus, it would be easy to get a reading where it effectively quantifies over the incorporated noun. This is similar to the quantifier *dou* in Mandarin—"universal quantifier over nouns denoting individuals and over verbs denoting events" (Li 1993). I thank Conor Quinn for pointing this out.

[17]Although J. Metallic (p.c.) pointed out that speakers do not use this form and would prefer to use a sentence, this form is nonetheless grammatical.

The appearance of the productive nominalizing head *-aqan* suggests that the incorporated element cannot be a Root. Additionally, as noted in the section above, the noun in this position is not reduced morphologically and may appear in freestanding environments as is:

(95) Malqu -t -m pipn -aqan.
eat -VTI -1 bake -NZLR
'I eat bread.'

Now that I have shown that the incorporated element is categorized, we can see what other nominal morphology may appear inside this construction.

4.3.2 Diminutive Morphology

The incorporated noun in this construction may also bear diminutivizing morphology, as shown in (96) below.

(96) Nme'j **-i'j** -u -e'ge -t
fish **-DIM** -DER -get.VAI -3
'S/he fishes for small fish.'

Since the diminutive in Mi'gmaq can appear on nouns, verbs and adjectives, the presence of the diminutive doesn't tell us anything about the category of the incorporated element. However, it does show that the IN may be more complex, as the diminutive attaches to elements that are already categorized. Refer to Section 3.3.2 for a discussion of the diminutive in Mi'gmaq.

4.3.3 Number

The IN in this construction cannot bear plural marking.[18]

(97) * Jagej **-g** -u -e'ge -t
lobster -PL -DER -get.VAI -3
'S/he traps lobsters.' (intended)

However, without plural marking the interpretation of the nominal can either be singular or plural (number neutrality). That is, the agent could be trying to trap one or many lobsters.[19]

[18]Note that this test is unidirectional. For a discussion see §3.3.3.

[19]This has also been noted for Ojibwe: "The IN is unspecified for number [...] INs are vague between singular and plural reference; in other words, both singular and plural interpretations are possible" (Rosen 2011). Again, this suggests that perhaps there are more suitable translations, such as 'S/he lobster-traps' or 'S/he tries to get lobster', where the lobster can be singular or plural.

Incorporated nouns often refer to a generic or unspecific class and thus do not bear plural marking (Baker 1988).

This also parallels the behavior of 'berry-picking' compounds in English. Mithun (1984) notes that because the noun in these constructions does not refer to a particular entity, it is not marked for definiteness or number:

(98) *Bob went (**the**) berrie**s**-picking. (Mithun 1984: 849)

I discuss the issue of referentiality in Section 4.4.1 below.

4.3.4 Modifiers

Unlike incorporated nouns in DNV constructions in Ojibwe, INs in Mi'gmaq may not incorporate with a preceding modifier. The only way to modify the construction is to use a preverb, shown in (99). Note that in this case the whole activity of moose-hunting is modified.

(99) **Poqji**- tia'm -u -e'ge -t
begin- moose -DER -get.VAI -3
'S/he is beginning to hunt moose.'

This is also the case with 'berry-picking' compounds in English. It is impossible to modify the noun in these constructions; Mithun (1984) observes that the noun cannot co-occur with demonstratives or numerals either:

(100) *I am {those, some, three} baby-sitting. (Mithun 1984: 849)

4.3.5 Summary

In this section I have shown that the incorporated element in Mi'gmaq denominal verbs is a categorized noun which can appear in freestanding environments. The IN may also host diminutive morphology, but unlike Ojibwe, does not allow incorporation of modifiers. Furthermore, Barrie and Mathieu (to appear) argue that incorporated nouns in Ojibwe *retain* their number marking. However, if this were the case, then we might expect that plural nouns would also retain their number. Barrie and Mathieu (to appear) do not provide such an example. I have shown above that nouns in Mi'gmaq DNVs cannot bear plural marking. Instead, they appear to be unspecified for number. Note that I have no data for whether possessive marking can appear on the nominal in this construction; more data needs

to be gathered to confirm this. The table below summarizes the findings in this section and compares them to Ojibwe:

(101)

Test	**Ojibwe**	**Mi'gmaq**
Nominalizers	✓	✓
DIM morphology	✓	✓
Number	✓(?)	neutral
Modifiers	✓	✗
Poss. morphology	✓	?

Table 4.1: Summary of characteristics for incorporated element in DNV constructions

4.4 Additional Syntactic Tests

4.4.1 Referentiality

In Section 4.1 I pointed out that the use of *-e'ge* never guarantees procurement. This final indicates an activity in the sense of Vendler (1957): a process which involves no culmination.[20] I noted that in a context where procurement is guaranteed, a form using the morpheme *-si* is used.[21] Example (90) showing this, is repeated below as (102) for convenience:

> *Context*: Your husband has gone to the store to get some clams for dinner. Your friend asks you, "Where is your husband?" You reply...

(102) a. # E's **-e'ge** -t
clam -get.VAI -3
'He is digging for clams.'

b. E's -e'g **-si** -t
clam -get -SI -3
'He is getting some clams (for himself).'

This characteristic of *-e'ge* and *-e'g-si* appears to be intimately tied to referentiality. With *-e'ge* it is impossible to refer back to the incorporated noun in Mi'gmaq DNVs. This

[20]Note that this assumes a view in which finals contribute aspectual information that distinguishes states from processes from events (see Denny 1984 for Algonquian; Rhodes to appear for Ojibwe) See Gordon (2014) for diagnosing telicity in Mi'gmaq.

[21]I gloss this morpheme as 'SI' for now. However, I suspect that this morpheme may be the reflexive in Mi'gmaq. I discuss this further in Section 4.6.2 below.

is shown in example (103), where the object of the verb 'see' in the subordinative clause cannot be the incorporated element 'moose' in the main clause.

(103) * Tia'm$_i$ -u -e'ge -t ta'n nem -i -a -pn -n$_i$ ulagu.
moose -DER -get.VAI -3 COMP see -VTA -3.OBJ -PST -OBV yesterday
'S/he is hunting the moose that s/he saw yesterday.' (intended)

Another example is shown in (104). In this example the incorporated noun 'moose' cannot be interpreted as the subject of the adjective/verb in the second sentence.[22]

(104) * Tia'm$_i$ -u -e'ge -∅ -p. Mesgil -g$_i$ -'p.
moose -DER -get.VAI -3 -PST big.VAI -3 -PST
'S/he hunted moose$_i$. It$_i$ (an.) was big.'[23]

At first blush, it may seem that the noun in this construction is just not referential. However, given my discussion of referentiality is Section 3.6.4, this is not likely the case in Mi'gmaq. In fact, using *-e'g-si* allows the noun to support discourse anaphora. In other words, the noun becomes referential. This is shown in (105), where the incorporated noun 'cod' may be interpreted as the referent of the pronoun 'they' in the second sentence:

> *Context*: John and I always eat lunch together during my lunch break when I come home from work. One day I come home and John isn't there. I wonder where he is. Later, when I am home, I ask John where he was during lunch. He says "I went to get cod. They (the fish) are in the fridge."

(105) Peju$_i$ -e'g -si -a -p. Ep -ijig$_i$ fridge -igtug.
cod -get -SI -1 -PST be.VAI -3.PL fridge -LOC
'I got cod$_i$ (for myself). They$_i$ are in the fridge.'[24]

This suggests that there is specifically something about *-e'ge* which does not allow the incorporated noun to be referential. It is not a property of the noun itself; if this were the case, we might expect that the noun also would not be referential with *-e'g-si*. Instead, it seems that the referentiality of the noun is always the same—it is referential.[25] However,

[22] J.Metallic (p.c.) noted that example (104) sounds like the hunter is big.

[23] Constructions like 'She went moose-hunting' in English notoriously do not support pronominal discourse anaphora as well, e.g. *She went moose$_i$-hunting. It$_i$ was big. (Mithun 1984 for other examples).

[24] I am unsure if *-e'g-si* is only felicitous in a context where the agent is going to the store, or if it is used more generally in contexts where the activity (e.g. fishing) was done successfully. I leave this question for future research.

[25] Another way to test referentiality of the noun, instead of using *-e'g-si*, may be to use *-e'ge* with a preverb which means 'successfully' or which implies success. If using such a preverb would allow the noun to be referential, this would be further evidence for referentiality depending on the verb.

depending on the form of the verb final used in the construction (*-e'ge* or *-e'g-si*), the noun either does or doesn't support discourse anaphora. This difference between *-e'ge* and *-e'g-si* constructions is in line with Johns' (2007) claim for Inuktitut: "The main distinction among incorporating verbs relates to whether or not the incorporated noun has independent reference. [...] I will argue that the verb establishes the contrast, not the nominal [...]" (Johns 2007: 547).

Similar examples are found in English, where verbs establish the contrast in referentiality. For instance, in the examples below 'book' is indefinite. However, in (106-a) the book is referential, while in (106-b) it is not.[26]

(106) a. I was reading a book last night. (Referential)
b. I was looking for a book last night. (Not referential)

I will come back to the morpheme *-si* in Section 4.6.2 below; I speculate that the role and status of this morpheme may be compared to that of the Spanish reflexive clitic *se*.

4.4.2 Stranded Modifiers

The incorporated element in DNV constructions in Mi'gmaq cannot be modified by a stranded modifier. This is shown in (107-a) below where the noun 'moose' cannot be modified by the numeral 'three'.[27] As mentioned above, the only way to modify the construction is by using a preverb, in which case the whole action of moose-hunting is modified as in (107-b).

(107) a. *Tia'm -u -e'ge -∅ -p ne'sis -ijig.
moose -DER -get.VAI -3 -PST three -AN.PL
'S/he hunted three moose.' (intended)

b. **Gaq-** tia'm -u -e'ge -t
finish- moose -DER -get.VAI -3
'S/he is finishing moose-hunting.'

4.4.3 Noun Doubling

The incorporated noun in this construction may not be doubled by a freestanding noun, hyponymous or otherwise. An example with the freestanding noun 'cod' that is in a hyponym relation to the incorporated noun 'fish' is shown below.

[26]Thanks to Lisa Travis for pointing this example out.
[27]Note that the numeral bears agreement marking for the animacy of the nominal.

(108) * Nme'j -u -e'ge -∅ -p **peju**.
fish -DER -get.VAI -3 -PST cod
'S/he fished cod.' (intended)[28]

For possessive and incorporative stems in Oji-Cree, Slavin (2012) points out a very specific requirement for the doubled noun: it cannot simply denote a subset of entities denoted by the incorporated nominal. Instead, it must be an exact copy of the incorporated nominal plus a modifier (Slavin 2012: 240). The English equivalent is something like 'I *laughed* a **hearty laugh**' where 'hearty laugh' is a copy of the zero-derived verb with a modifier. Further investigations should confirm whether this requirement holds in Mi'gmaq.[29]

4.4.4 Summary of Tests

In this section I discussed tests for syntactic independence of the incorporated noun in DNVs. I demonstrated that in Mi'gmaq, the issue of referentiality is complex and remains a fruitful area for further research. I also showed that the IN in this construction cannot be modified by a stranded modifier and does not allow for noun doubling. However, more data should be gathered to confirm these observations. The following table summarizes the tests discussed in this section. For comparison I have included results for the incorporated element in DNVs in Ojibwe (Mathieu 2013). In the next section I present a syntactic analysis of denominal verbs in Mi'gmaq.

Test	**Ojibwe**	**Mi'gmaq**
Referentiality	✓	✓if verb allows
Stranded Modifier	✓	✗
Noun Doubling	✗	✗

Table 4.2: Summary of results for incorporated noun in DNVs

[28] J.Metallic (p.c.) noted that this sounds like 'the cod went fishing'.

[29] One way to test this may be to try using the diminutive, e.g.

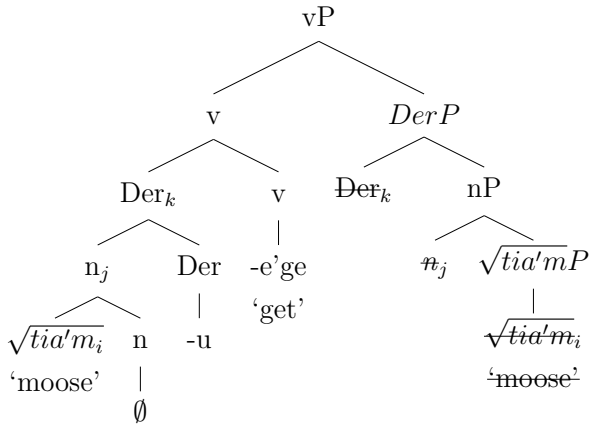
ii. ?Nme'j -u -e'ge -p -∅ **nme'j -i'j**.
fish -DER -get.VAI -PST -3 fish -DIM
'S/he fished for small fish.'

4.5 An Analysis

In this section I propose an analysis for the denominal verb construction in Mi'gmaq. I have shown that the incorporated element in this construction is, at the minimum, categorized as a noun. This element may also host other morphology such as diminutives. Unlike Barrie and Mathieu (to appear) for Ojibwe, I propose that this construction in Mi'gmaq can be captured with head movement, especially given that incorporated nouns in Mi'gmaq cannot appear with modifiers. The structure for an example like (109) is shown in (110).

(109) **Tia'm** -u -e'ge -t
moose -DER -get.VAI -3
'S/he hunts moose.'
(lit. 'S/he moose-Vs')

(110) Tree for *tia'm-u-e'ge-t* 'S/he moose-Vs'



As mentioned in the previous section, I leave open the question of how *-e'ge* is analyzed. Specifically, whether synchronically it should be treated as an abstract final (categorizing head) or a concrete final (Root + categorizing head). For now, I follow Branigan et al. (2005) in assuming that all finals originate in little *v*.[30] Although I leave the structure of *-e'ge* open, it is clear that this final is both categorizing the construction as well as selecting for an argument.

In the structure in (110), the Root $\sqrt{tia'm}$ is categorized as a noun with a null nominalizing head which projects to an *nP*. This *nP* is selected for by the derivational morpheme *-u*. For now, I simply call this a "Derivation Phrase"; this allows the noun to be re-categorized

[30]Mathieu (2013) and Barrie and Mathieu (to appear) take concrete finals to be light verbs in the sense of Johns (2007); these are functional elements that exclude lexical or root material. The set of light verbs involved in Inuktitut noun incorporation also obligatorily incorporate their complements (Johns 2007).

as a verb with the little *v* head *-e'ge*. However, since *-e'ge* obligatorily incorporates its complement, the complex Root-n head *tia'm* 'moose' must move up, via head movement to incorporate into *-e'ge*.

4.6 Discussion

This analysis leaves some open questions. One such question is regarding the referentiality of the noun. In Section 4.4.1, through the distinction of *-e'ge* vs. *-e'g-si*, we saw that referentiality of the noun may come from the larger syntactic context. It is unclear at this point what differentiates *-e'ge* and *-e'g-si* structurally. However, the difference, if any, may explain why the noun cannot be referential with *-e'ge*.

Another important point is that if *-e'ge* 'get' assigns an internal θ-role, this θ-role is saturated by the incorporated noun. This explains why in Section 4.4.3 we could not get noun doubling with *-e'ge*. Further work is necessary to determine whether noun doubling is allowed with *-e'g-si*.

4.6.1 What is *-u*?

One of the questions brought up by the analysis is regarding the derivational morpheme *-u*.[31] What is it and what does it do? O'Meara (1990) pointed out for Delaware that the "connective *-w-*" is most commonly used to derive nouns or verbs from verb stems; he claimed that there were no cases of this morpheme being added to "roots" (O'Meara 1990: 41). I noted above that for Mi'gmaq, this morpheme has been previously analyzed as a marker indicating a change in category (see footnote 1; Inglis 1988). For instance, it appears in the following form (shown in (19) above), in which a verb stem serves as the base for a noun in (111-b):

(111) a. Matnag -e -t
fight -VAI -3
'S/he fights.'

b. Matnag -e **-w** -inu
fight -VAI -DER -NZLR
'Fighter' (as a profession)[32]

Importantly, the initial in (111-b) is a verb STEM, which includes a categorizing verbal

[31]There is a phonological variant of this morpheme: *-(e)w*

[32]The verb stem *matnagge-* 'fight' actually consists of a Root *mat-* 'beat, strike', the morpheme *-'n-* 'by hand', and a final *-agge-* the meaning of which I do not know. For purposes of presentation I have only separated out what I take to be the verbalizing head *-e*.

head. Thus, the presence of *-u/-w* is necessary to convert the verb stem to a noun.[33] Due to this, I speculate that this morpheme marks the edge of a phase (*nP*, *vP*).

For instance in DNV constructions, the first category head which merges with the Root *tia'm* 'moose' defines a closed domain for interpretation—a phase (Chomsky 2001; Marantz 2000, 2007; Arad 2003 for Hebrew denominals). The morpheme *-u* marks the *nP* phase edge and allows the nominal to merge with the next categorizing head *-e'ge*, which has no access to the Root *tia'm*.[34]

This analysis makes the following prediction. It predicts that once the Root *tia'm* 'moose' merges with the little *n* head which projects to an *nP*, we should not expect to get idiosyncratic meaning with the next element that combines with this noun. In other words, the verbal categorizing head *-e'ge* 'get' is merging with an element whose interpretation has already been fixed. In fact, this is precisely what we see with these constructions. In Section 4.1 I showed that the meaning of the general final *-e'ge* changed depending on the incorporated noun which appeared in the initial position. The relevant examples are repeated in (112) below for reference.

(112) a. Peju -e'ge -t
cod -get.VAI -3
'S/he **fishes** for cod.'

b. E's -e'ge -t
clam -get.VAI -3
'S/he **digs** for clams.'

This is consistent with the theory that the nominal in the initial position is in a closed domain. That is, the combination of *-e'ge* with a given noun is completely predictable if we think of *-e'ge* as a final which means something like 'get X from X's natural environment'. Thus, the *way* in which one procures X (e.g. digging, fishing, hunting) follows from what X is. Moreover, this analysis is also supported by the fact that the incorporated nominals in this construction never exhibit phonological or morphological allomorphy. This is expected if the noun is "locked off" and inaccessible to any further changes.

However, *-u* does not appear in all forms. For instance, it appears in forms like *tia'm**u**e'get* 's/he hunts moose' but not in the forms in (112). So, what governs when *-u* appears? It would not be impossible for forms like *tia'm**u**e'get* 's/he hunts moose' to have *-u* as part of the stem (e.g. *tia'mu-*). This is because although the singular form of 'moose' is *tia'm*, the form for the plural is *tia'm-**ug***. Thus, one may think that the stem is already associated

[33]One way to think about *-u* closer to the Algonquianist tradition, is that no matter how complex the initial is, with *-u* it becomes a Root-like element which can then be (re)categorized.

[34]This is supported in other languages as well. Marantz (2007) shows that denominal verbs in Malayalam merge little *v* with a phase head (e.g. little *n*) (Marantz 2007: 12).

with *-u*. However, we have other forms which clearly show *-u* where the plural is not *-ug*. For example, the singular form of 'lobster' is *jagej* and the plural is *jagej-**g***. Despite this, the morpheme *-u* makes an appearance in the DNV construction: *jagej-**u**-e'ge-t* 's/he traps lobsters'. Is the disappearance of *-u* a phonological issue in cases like (112)? I leave these questions for further research.

4.6.2 What is *-si*?

The data in Section 4.4.1 brings up some questions regarding referentiality and the morpheme *-si*. Namely, what is this morpheme? Why does the addition of this morpheme allow the noun to be referential? There are a few morphemes that have similar shape, most notably the reflexive *-a'si*. I do not have definitive evidence that the *-si* in *-e'g-si* is the reflexive. However, the behavior of Mi'gmaq *-si* is similar to the reflexive clitic *se* in Spanish (Nishida 1994; Sanz 1999 and references therein).

Nishida (1994) points out that in Spanish, sentences such as (113) below are well-formed without *se*.

(113) Juan (se) tomó una copa de vino anoche antes de acostarse
John CL.refl drank a glass of wine last night before going.to.bed
'John drank a glass of wine last night before going to bed.' (Nishida 1994: 425)

However, sentences with *se* require that the direct object of the verb is not a bare NP (Nishida 1994: 428). Thus, ungrammaticality of (114) is attributed to the fact that 'wine' is a bare noun:

(114) *Juan se tomó **vino** anoche antes de acostarse
John CL.refl drank wine last night before going.to.bed
'John drank wine last night before going to bed.' (intended)

In addition, using *se* with nominal expressions that are ambiguous between a specific or a collective interpretation forces a specific interpretation:

(115) Juan se conoce bien la poesía española.
John CL.refl knows well the poetry spanish
'John knows the Spanish poem'; '*John knows Spanish poetry well'
(Nishida 1994: 431)

Nishida (1994) suggests that the types of expressions compatible with *se* are nominal expressions which have been quantized in the sense of Krifka (1989; 1992). In other words,

expressions which have a clear upper bound are compatible with *se*. However, Nishida (1994) notes that quantized expressions are not necessarily referential. For instance, in (116), the noun 'book' is quantitatively delimited by the wh-word but it is not referential (Nishida 1994: 433):

(116) Which book did John say that he already read?

Despite this, it is also well-known that the aspectual property of the verb is correlated with the direct object:

(117) a. John drew a circle (telic: accomplishment; spatially delimited entity)
b. John drew circles (atelic: activity; spatially nondelimited entity)
(Nishida 1994: 435)

It is striking how similar *se* is to Mi'gmaq *-si*. What would this mean? One possible hypothesis may be that in Mi'gmaq, *-e'ge* constructions are activities (Vendler 1957).[35] The addition of the reflexive *-si* would make *-e'g-si* an accomplishment or a "quantized verb predicate" in Krifka's terms. This would make certain predictions with respect to *for an hour/in an hour tests*, which would need to be investigated in future research. However, this is just one possible hypothesis.[36]

There are many open questions with respect to referentiality in this construction. This also brings up the issue of the complexity of *-e'ge* and if, as a concrete final, it can *synchronically* be broken down into a Root *-e'g* (pre-final) and an abstract final *-e* (Slavin 2012 for concrete finals Oji-Cree; cf. Johnson and Rosen to appear for a different view).[37] This is beyond the scope of the current paper. I leave the issue of complexity of finals to future research.

[35]This explains the parallel to 'berry-picking' compounds, which Mithun (1984) describes as "[...] verbal compounds, which are coined as names of recognizable activities" (Mithun 1984: 848).

[36]A few questions for future research: 1) Are verbs with *-si* in Mi'gmaq also consistent with the lack of a true object? Is it possible to say "I went to get clams for myself, but I came up empty handed"; 2) Are there constructions that can express "I went moose-hunting for John" and "I went to get clams for Mary"? Do these types of constructions support pronouns and reference in the same way that verbs with *-si* do? 3) It may be the case that telicity is **not** affected by *-si* in the first place, so it may not be similar to Spanish *se* after all. This remains to be checked. I thank Alan Bale for these extremely helpful suggestions.

[37]Johnson and Rosen (to appear) argue that concrete finals are not synchronically decomposable based on 1) an asymmetry in productivity between pre-final (Root) + abstract final (little v) combinations and initial (Root) + abstract final (little v) combinations; and 2) placement of medials.

4.7 Summary

In this chapter I examined denominal verb constructions in Mi'gmaq using the general verb final *-e'ge* 'get'. I have argued that this construction differs from modifier-medial incorporation in a few ways. First, unlike the incorporated elements in medial incorporation, the nominal in this construction appears in the initial position. Second, the IN in this construction can appear in freestanding environments and belongs to a class of alienable nominals.

I showed that the incorporated element can bear overt nominalizing morphology and may retain diminutive marking. Other syntactic tests demonstrated that the noun could not be modified by a stranded modifier and did not allow for noun doubling. However, the issue of referentiality appears to be more complex; I showed that the noun is referential with the verb final *-e'g-si*, but not with the verb final *-e'ge*. This suggested that it wasn't the nominal itself, but the verb which established the contrast in referentiality (see Johns 2007 for Inuktitut).

I proposed that in Mi'gmaq, the DNV construction can be captured via head movement of the nominal into the little *v* head *-e'ge* 'get'. Finally, I speculated that the "initializer" or derivational morpheme *-u* in this construction was a marker of a phase edge. The analysis here leaves many questions open for future research, including the complexity of *-e'ge* as a verb final and the behavior of the *-e'g-si* construction with respect to other tests (e.g. stranded modifiers; noun doubling).

What is the difference between medial incorporation and DNVs in Mi'gmaq? It seems that medials are *only* categorized Roots and may not be anything larger. The noun in DNVs on the other hand, are *minimally* categorized Roots, but can be something larger. Further fieldwork is necessary to support these findings. What is interesting, is that both medial incorporation and DNVs seem to share properties seen in English syntactic compounds. While the medial construction appears to be more copular, like English 'blue-eyed', the DNV construction is more eventive, akin to English 'truck-driving'.

This comparison brings up a question which is at the core of this thesis. If all word formation is done in the syntax, what is the difference between compounding or denominal verbs and noun incorporation? What I hope to have shown here is that these phenomena seem to be closely related, especially in polysynthetic languages. It would not be far-fetched to think that compounding is epiphenomenal and noun incorporation is just a special type of compounding.

Chapter 5| Other Stem-Internal Incorporation

In this chapter I discuss another type of stem-internal incorporation in Mi'gmaq. I focus on the stem-internal incorporation in which ALIENABLE nominals incorporate into the medial position.[1] This construction has been well-documented in literature on Ojibwe and Oji-Cree (Rhodes 1976, 2003; Slavin 2012). However, it has generally been grouped with medial incorporation, for two main reasons: 1) the nominal incorporates into the medial position, and 2) the construction uses the final *-e* in Ojibwe and Oji-Cree, which is the same final that is used in medial incorporation constructions (body-part and classifiers) in these languages.

I show that this construction, which is one of the most productive constructions in Ojibwe and Oji-Cree, seems to be fossilized in Mi'gmaq. I point out that this construction uses a different final (*-e*) from the one used in body-part medial incorporation (*-a*). Thus, I advocate for a more cautious approach to noun incorporation, one in which we may have to differentiate between "true" medials, such as inalienable body-part nouns and classificatory elements, versus incorporating nouns which are alienable.[2] I am not the first to propose this distinction; Hirose (2003) notes for Plains Cree that incorporated nouns and medials behave differently. Thus, I support his approach.

I speculate that the difference in productivity for the construction discussed in this chapter may be connected to stages of diachronic development in noun incorporation across the Algonquian language family (Mithun 1984, 2010).

The goal of this chapter is to shed light on new data from Mi'gmaq, which supports a more prudent approach to analyzing noun incorporation in the Algonquian language family. This maintains the approach I have taken in my overall study of noun incorporation in Mi'gmaq. Namely, that constructions should be analyzed on a case by case basis.

[1] I do not discuss OBJECT MEDIAL INCORPORATION in this chapter. An example is given below, in which the body-part medial is the notional object of the preceding element. I leave this open for further research.

i. Gas -i -ptn -a' -si -t
wash -EPEN? -hand -VAI -REFL -3
'S/he washes his/her hands.'

[2] This distinction seems less arbitrary, as both classificatory elements and body-parts are bound nouns.

5.1 Introducing the Construction

The focus of this chapter is the construction in (118) below. In this construction, a noun which belongs to the class of ALIENABLE nominals incorporates into the medial position.

(118) a. Wel **-g'sn** -e -t
well -shoe -VAI -3
'S/he is well-shoed.
(e.g. for the weather)'

b. Natq **-a'pi** -e -t
exit.water -net -VAI -3
'S/he removes a net from
the water.'

As in medial incorporation, the examples above show that the incorporated nominal may either be modified by the preceding element (ex. (118-a)) or may serve as the notional object of the preceding element (ex. (118-b)). An important difference between the construction here and modifier-medial incorporation (discussed in Chapter 3) is that in Mi'gmaq the construction in (118) consistently uses the abstract animate intransitive final *-e* (not *-a*).[3] This will be important for comparison in the next section, when I discuss previous research on this construction in Ojibwe and Oji-Cree.

As mentioned above, the nominals in this construction are alienable, so they do not require a possessor to stand alone. When incorporated, these nouns can be phonologically or morphologically reduced. We saw this with body-part nominals in Chapter 3 above. Below are the two nominals from (118), shown in their incorporated and freestanding forms:

(119) a. **Incorporated Noun**
-g'sn 'shoe'
-a'pi 'net'

b. **Freestanding Noun**
mg'sn
a'pi

Additionally, as in modifier-medial incorporation with body-parts, the example (118-a) is ungrammatical without a modifier:[4]

[3]Note, there is also an inanimate intransitive final *-e*, which is used with classificatory medials. I focus on the animate intransitive final, as it presents an interesting link to the discussion about modifier-medial incorporation discussed above.

[4]A different final must be used to say 'S/he is wearing shoes'. The noun, which appears in initial position, must also be in its full freestanding form:

ii. Mg'sn **-a'** -q
shoe -VAI -3
'S/he is wearing shoes.'

(120) *Gs'n -e -t
shoe -VAI -3
'S/he is shoed' or 'S/he is wearing shoes' (intended)

I suspect that this construction is fossilized in Mi'gmaq for the following reasons. First, examples of the kind above are difficult to find in current day speech.[5] In other words, the construction is not used frequently synchronically.[6]

Second, the forms like those in example (118) appear to be very frozen. It is not the case, for instance, that any alienable noun may appear in place of 'shoe' in (118-a).[7] This is unlike what was saw with body-part modifier-medial incorporation, in which modifying elements could appear with any body-part. Thus, the construction discussed in this chapter seems less productive.[8]

5.2 Previous Literature

In this section I summarize the previous literature on stem-internal incorporation with nouns which are not body-parts or classificatory elements. As mentioned above, this construction has been investigated the most thoroughly in Ojibwe and Oji-Cree (e.g. Rhodes 1976, 2003; Valentine 2001; Slavin 2012; Mathieu 2013; Barrie and Mathieu to appear), although it has also been described in Plains Cree (Wolfart 1971; Hirose 2003). This type of incorporation has often been grouped with medial incorporation involving body-parts and classifiers, as well as possessive incorporation.[9] This is due to the fact that 1) as in medial incorporation, the noun in this construction incorporates into the medial position, and 2) in Ojibwe and Oji-Cree this construction uses the same final as medial incorporation—the categorizing verbal suffix *-e*. In fact, this suffix is used for modifier-medial incorporation involving body-parts (ex. (121-a)), possessive incorporation (ex.(121-b)) as well as stem-internal incorporation

[5]Note, this is based on the speakers I work with in the Listuguj Mi'gmaq community.

[6]When I asked J. Metallic (p.c.) about the example in (118-a), she reported that she was not familiar with the form and asked her mother. Her mother reported also being unsure about the meaning, so she asked her mother, J. Metallic's grandmother. Only the grandmother was familiar with this form and reported that it meant 'S/he is wearing proper footwear'.

[7]The construction in (118-b) may be less productive for other reasons, just as was the case with body-part medials in object medial incorporation.

[8]Conor Quinn (p.c.) has pointed out to me that this construction also seems to be unproductive in Maliseet-Passasmaquoddy, a closely related language to Mi'gmaq.

[9]I have not discussed possessive incorporation in this paper. In a footnote in §4.1, I briefly mentioned that literature on denominal verbs has included the final 'have', which Goddard (1990) did not originally mention (cf. O'Meara 1990; Mathieu 2013; Barrie and Mathieu to appear). This final is the final used in 'possessive incorporation'.

involving other nominals (ex. (121-c)-(121-d)).

(121) Types of Incorporation in Oji-Cree (adopted from Slavin 2012: 216)

a. Tahki -sit -e
cold -foot -VAI
'S/he has cold feet.'/'His/her feet are cold.' Modifier-Medial NI

b. Nit- oshki -taapaan -e
1- new -car -VAI
'I have a new car.'/'My car is new' Possessive NI

c. Kaahsi -naakan -e
wash -dish -VAI
'S/he is washing the dishes.' Object NI

d. Naat -ahsapy -e
fetch -net -VAI
'S/he is fetching a net.' Object NI

Note, in the examples above I have labeled the types of incorporation as I refer to them; I distinguish between modifier-medial incorporation involving body-parts and possessive incorporation involving other nouns. Many Algonquianists have not made a distinction between these. For instance, Wolfart (1971) called the examples in (121-a) and (121-b) possessive *-e* stems in Plains Cree.[10] Slavin (2012) also groups these together.[11]

Valentine (2001; 2002) suggests the final *-e* in Ojibwe means 'have a <bodypart> that is...'. However, he notes that this final is also used in verbs which incorporate a "free" noun as their goal (Valentine 2001: 409). He observes that this construction seems to be very productive in Ojibwe. Thus, Valentine does not appear to distinguish between verbs which incorporate an alienable nominal into the medial position from those which incorporate a body-part into this position.

Rhodes (1976; 2003) also does not make a distinction between incorporation of body-parts and classifiers from other nouns in Ojibwe.[12] He takes a construction to be 'medial

[10]In possessive *e*-verbs. "[...].the initial semantically modifies the final, and the meaning of the resulting verb is 'possessing an object of such and such quality'." (Wolfart 1971: 515)

[11]For Slavin (2012) these constructions are: ex.(121-a) and (121-b) = possessive; ex.(121-c) and (121-d) = incorporative.

[12]He does, however, note that classificatory medials seem to be different from other medials (Rhodes 2003: 8). In Rhodes (1976) he distinguishes between "entire nouns which incorporate" (includes body-parts and

incorporation' if any incorporated nominal appears in the medial position, following an initial. In some cases, he takes the vowel *-e* to be a verbalizing suffix, while in others he takes it to be part of the nominal, so the overall construction lacks a final (Rhodes 2003: 4).[13]

Slavin (2012) also argues for a unified structural analysis of what she calls 'possessive stems' and 'incorporative stems', which both use the final *-e* in Oji-Cree. For a summary of her proposal, refer to Section 3.2.

Mathieu (2013) considers the final *-e* to be a detransitivizer in Ojibwe. As previous authors, Mathieu (2013) and Barrie and Mathieu (to appear) group all types of stem-internal incorporation together; they call these constructions in Ojibwe 'lexical verb NI'.

Thus, many Algonquianists have not distinguished modifier-medial incorporation involving body-parts from modifier incorporation involving alienable nouns. However, Hirose (2003) shows that in Plains Cree, medials occupy a different position than other types of incorporated nouns. While the medial *precedes* the verb final, as it does in Mi'gmaq, Ojibwe and Oji-Cree, other incorporated nouns in Plains Cree *follow* the verb final (Hirose 2003: 132):

(122) a. Kip **-âpisk** -ah -am (-w).
close- mineral -by.tool -I.TH -3
'S/he closed it with/as stone/metal.'[14] (Medial)

b. Ni -nip -ih **-âwas** -o -n.
1 -sleep -TRAN -child -INTR -LCAL
'I put a/the child/children to sleep.'[15] (Other noun; Hirose 2003: 133)

Thus suggests a difference in syntactic structure. Hirose (2003) also notes that incorporated nouns and medials differ in optionality; while incorporated nouns are obligatory, medials are optional. However, as discussed in Section 3.2, Hirose (2003) points out this optionality using only an example with a classificatory medial. This is problematic, as classificatory medials seem to behave differently from body-part medials. Despite this, I agree with Hirose

other nouns like 'dish' and 'shoe'), and "copies of nouns" which are remnants of a "near defunct classifier system", i.e. classificatory medials (Rhodes 1976: 262).

[13]Rhodes (1976) takes the suffix *-e* to be a 'medializer', which allows the noun to be incorporated (Rhodes 1976: 263).

[14]In these examples I have kept Hirose's original glosses. Abbreviations: I.TH = inanimate theme sign; INTR = intransitive; LCAL = local (1 or 2 person suffix); TRAN = transitive

[15]This may be what Rhodes (2003) calls 'non-medial incorporation', which crucially only uses **transitive** verb finals before the incorporated noun. Thus, it is not clear that Hirose is making a fair comparison.

in that body-part medials seem to be different from other incorporated nouns. We see this difference in Mi'gmaq not only in the final, but also in the productivity of the construction. While *-e* verbs appear to be extremely productive in Ojibwe and Oji-Cree, in Mi'gmaq these verbs are not. In the next section I offer possible hypotheses about why this may be the case.

5.3 Hypotheses & Discussion

In the previous section I pointed out that stem-internal incorporation constructions in Ojibwe and Oji-Cree all use the same animate intransitive final: *-e*. However, this is not the case in Mi'gmaq; depending on the construction, a different final is used. The set of examples in (123) demonstrates this (compare to examples from Oji-Cree in (121)). Note, that examples (121-c) and (121-d) in Oji-Cree are very similar. Instead, below I have included two different types of object incorporation for Mi'gmaq:

(123) Types of Incorporation in Mi'gmaq

a. Pij -isqon **-a** -t
long -nose -VAI -3
'S/he is long-nosed.' Modifier-Medial NI

b. Maq -ig -tul **-i** -t
big -? -boat -VAI -3
'S/he has a big boat.' Possessive NI

c. Gas -i -ptn **-a'** -si -t
wash -EPEN? -hand -VAI -REFL -3
'S/he washes his/her hands.' Object Medial NI

d. Natq -a'pi **-e** -t
exit.water -net -VAI -3
'S/he removes a net from the water' Object NI

The question is, why should each construction use a different final, and what does this tell us? One hypothesis is that Mi'gmaq has developed some innovations, especially with respect to modifier-medial incorporation with body-parts.[16] Given that most medials in

[16]Conor Quinn (p.c.) has pointed out to me that this does not seem like a Mi'gmaq-specific innovation. In fact, it's closely related languages Maliseet-Passamaquoddy, Penobscot and Western Abenaki also share

Ojibwe and Oji-Cree occur with the final *-e*, *-i* or a zero-final (?Rhodes 2003), it is likely that Mi'gmaq also used these finals at some point. It is interesting that the only construction which *does* use the final *-e* in Mi'gmaq is the construction where nouns other than body-parts or classificatory elements can incorporate. Furthermore, this construction appears to be synchronically unproductive. All of this suggests that Mi'gmaq has shifted all body-part incorporation to a new final. Nevertheless, it is unclear where the Mi'gmaq final *-a* comes from.

This hypothesis brings up another question: why should the body-parts be used with a new final and not the other nouns? In this chapter I suggested that maybe this is a difference between body-parts and classifiers versus other nouns. Or, perhaps this is a distinction between alienable and inalienable nouns. This is a question that I leave for future research. Whichever the case, it seems that *within* Mi'gmaq, we can differentiate stages of development of noun incorporation, which we cannot see in languages like Ojibwe and Oji-Cree (see Mithun 1984 for evolution of NI).

A second, less likely, hypothesis is that all of these constructions are different to begin with. That is, perhaps the finals in Ojibwe and Oji-Cree are simply homophonous. Wolfart (1973) takes note of this for Plains Cree:

> "The post-medial element *-e* is homonymous with the animate intransitive final *-e-*, and this homonymy often leads to indeterminacies as to the primary or secondary status of a stem. The two *-e-*'s may well be related historically (cf. Bloomfield, 1927: p. 399) but no attempt is made to untangle this complicated situation." (Wolfart 1973: 68)

This may call for a re-inspection of the claims made about Ojibwe and Oji-Cree. With this hypothesis, a big question for future research would be how to test for a difference between the two different *-e*-s pointed out by Wolfart (1973).

Finally, a third possible hypothesis falls between the first and the second. Perhaps all of the constructions in Ojibwe and Oji-Cree are different but they use the same final. That is, the relationship between the initial and the following incorporated element could vary, but there is one final that can select for all of these constructions.

Whichever the case, it is possible that there are different underlying representations for the types of incorporations shown in (123).[17] Careful research may uncover these differences.

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the equivalent of the *-a* vs. *-e* distinction (also see Quinn 2009b for Penobscot). Thus, these appear to be regional innovations.

[17]This statement also applies to constructions with incorporated classificatory elements.

5.4 Summary

In this chapter I have discussed another type of stem-internal incorporation in Mi'gmaq. This type of incorporation allows nouns other than body-parts and classifiers to appear in the medial position. Like in Ojibwe and Oji-Cree, this construction in Mi'gmaq uses the final -*e*. However, unlike Ojibwe and Oji-Cree, there is good evidence that this construction is fossilized in Mi'gmaq; it is not frequently used in speech and the elements may not be freely combined to make new forms. In addition, unlike Ojibwe and Oji-Cree, this construction in Mi'gmaq uses a different final from constructions such as body-part modifier-medial incorporation (VAI -*a*), possessive incorporation (VAI -*i*) and other types of incorporation.

Although I do not have an analysis for this construction, I hope to have shown that these constructions should be investigated on a case by case basis before they are grouped together as 'medial incorporation' or '*e*-verbs' as in Ojibwe and Oji-Cree. While a unified structure for different types of incorporation may have been possible diachronically, this does not necessarily mean that a unified account is appropriate synchronically. This suggests not only the need for an in-depth study for Mi'gmaq, but the need for a comparative study across the Algonquian language family.

Chapter 6| Conclusion

This thesis examined two types of noun incorporation constructions in Mi'gmaq—modifier-medial incorporation and denominal verbs. The following sections summarize the thesis (§6.1), discuss its contributions (§6.2), and consider the issues that remain to be addressed in future research (§6.3).

6.1 Summary

The big puzzle this thesis set out to address was the following: what is the difference between noun incorporation and compounding in a framework where all word formation is done in the syntax? How do we represent this contrast if word formation in the lexicon is not an option? Consequently, the goal of this thesis was to advance understanding of complex verb stems in Mi'gmaq by investigating two different types of noun incorporation. To accomplish this, I set out to answer the following questions with respect to two NI constructions:

1. Are the incorporated elements categorized?
2. If there are uncategorized elements (Roots) in these constructions, are there restrictions on how many can appear? Is a combination of multiple Roots possible?
3. What qualities do these constructions have, and how do we represent them syntactically?
4. How, if at all, are these constructions related synchronically or diachronically?

After the background material provided in Chapters 1 and 2, Chapter 3 investigated modifier-medial constructions like (124) in Mi'gmaq. In this construction, we saw that the incorporated element, a body-part in medial position, was modified by the preceding element, the initial.

(124) Teg -i **-ptn** -a -t
cold -EPEN? -hand -VAI -3
'S/he is cold-handed.'

I showed that the initial is often an uncategorized Root, although it could also be a stem and could host diminutives, such as the initial in (34) repeated here:

(125) Nigoq **-ji'j** -u -i -gat -a -t
spear -DIM -DER -EPEN? -foot -VAI -3
'S/he is bow-legged.'

I argued that the incorporated medial is categorized as a noun. Despite the fact that medials have been described as "optional" elements, I pointed out that the final used in this construction depended on the presence of the body-part incorporant. Thus, there was a tension between which element was the head of the construction—the initial or the medial. I proposed a structure in which the initial, a(n) (un)categorized Root, selected for the medial, an *nP* complement. Via head-movement, the medial right-adjoined to the initial, which was necessary to derive the correct morpheme order. Finally, the whole complex moved up to be categorized as a verb. In this analysis, the medial was the lowest structurally. I pointed out the presence of two Roots in this construction (one for the categorized medial and one for the (un)categorized initial).

Chapter 4 examined the denominal verb construction in Mi'gmaq, focusing on the light verb *-e'ge* 'get':

(126) **Stoqon** -e'ge -t
evergreen -get.VAI -3
'S/he searches for fir trees.'

I showed that the incorporated element, which appears in the initial position, is categorized as a noun. I proposed that the little *v* head *-e'ge* 'get' selected for an *nP* complement. As noun incorporation in this construction was obligatory, via head movement the nominal moved to adjoin to the little *v* head. In this analysis, the initial was the lowest structurally. Compared to modifier-medial incorporation, this construction only had one Root (the categorized initial).

Chapter 5 discussed another type of stem-internal incorporation in Mi'gmaq, which was aimed to address the fourth question in the list of questions above. In this construction, nouns other than body-parts and classifiers incorporrate into the verb stem:

(127) Natq **-a'pi** -e -t
exit.water -net -VAI -3
'S/he removes a net from the water.'

In Mi'gmaq this construction appears to be no longer productive. It uses the animate intransitive final *-e*, which is different form the final used in body-part modifier-medial incorporation: *-a*. Compared to Ojibwe and Oji-Cree, Eastern Algonquian languages like Mi'gmaq, Maliseet-Passamaquoddy and Penobscot have diverged from using the final *-e* for body-part incorporation constructions. I suggested that this may show the evolution of noun incorporation constructions in Algonquian languages. This issue remains to be investigated in future research.

6.2 Contributions

Coming back to the question of structure, this thesis has made the following contributions. Comparing the two noun incorporation constructions in Mi'gmaq, I proposed different structures for the relationship between initials and the following elements. In other words, the structural position of initials varied depending on the construction, despite occupying the same surface position in the Algonquian verbal complex. In modifier-medial incorporation, the initial was not the lowest head in the structure, while in DNVs it was. Moreover, in both constructions the incorporated element, a categorized Root (i.e. a noun), occupied the lowest head.

The two constructions also differed in linear order of adjunction. In modifier-medial incorporation with body-parts, the medial (a suffix) required a prefix and had to adjoin to the right to satisfy this requirement and attain the correct linear order. The morphemes in DNVs, on the other hand, always adjoined to the left, picking up suffixes by head movement up the tree.

Thus, I have shown that constituency may need to be demonstrated on a case by case or class by class basis. It is not necessarily the case that initials and medials or initials and finals will have the same structural relationship.[1] Instead, I have shown that this relationship may vary. However, on the surface, different stems may look the same. Since the elements

[1]Note that the framework used in this study—Distributed Morphology—does not allow for different relationships between Roots and categorizing heads. As Roots are generally devoid of features, they cannot "select" for certain categorizing heads. However, this is often what we find in Algonquian languages—certain combinations of Roots and categorizing heads are more productive than others. O'Meara (1990) noted for Delaware that initials do not combine as freely with abstract finals as they do with concrete finals (O'Meara 1990: 124). On the other hand, Johnson and Rosen (to appear) argue that in Menominee initials may productively combine with many abstract and concrete finals. However, they also point out that in Menominee pre-finals (Roots) may only combine with certain finals (little v head) to form a concrete final. (Johnson and Rosen use this to argue that concrete finals are not synchronically decomposable into a Root and categorizing head.) These facts suggest that our theory is not strong enough to capture the patterns we see in language.

involved are affixal, they have to come together in a similar fashion, even though their syntaxes may be different.

Theoretically, this paper has demonstrated that once we assume that word formation is all done in the syntax, there does not seem to be a clear difference between compounding and incorporation. This especially applies to polysynthetic languages like Mi'gmaq. Rather, these phenomena may be thought as part of a "continuum"—a non-homogenous process which involves the combination of nominal and verbal elements. Due to this, properties of the "incorporation" construction may vary (e.g. size of noun, referentiality of noun, whether modifier stranding and noun doubling are allowed, the selectional relationship between noun and verb).

6.3 Issues for Future Research

I have left many interesting issues open for future research. In Chapter 3 I sketched the beginning stages of a project focusing on classificatory medial incorporation. This type of incorporation has not been investigated in Mi'gmaq, but would serve a great point of comparison to body-part medial incorporation. There were other questions left unanswered, including why incorporated nouns in medial position were morphologically reduced. What is special about the medial position? What are the effects of this reduction? Moreover, the issue of the "epenthetic" segment *i* remains unsolved as well. Investigating these questions further may shed light on the syntax-phonology interface.

In Chapter 4 I focused on the light verb *-e'ge* 'get', which presented a set of intriguing facts regarding referentiality of the incorporated noun. The issue of referentiality is a fruitful area of research in these denominal verb constructions. However, I have not discussed the light verbs *-i* 'be' or *-i* 'have' in detail. Future work should examine these finals as in depth as I have examined the final *-e'ge* 'here'. The final *-i* 'have' may be what diachronically connects both types of incorporation—medial and DNVs—as it can appear in both types of constructions (ex. (128)).[2]

(128) a. Maq -i -w -ilnu -i -t
big -EPEN? -? -tongue -have.VAI -3
'S/he is big-tongued.' (Medial; Inglis 2002: 228)

[2]This final is not used productively synchronically with body-part incorporants.

b. A'pi -m -i -t
net -ALIEN -have.VAI -3
'S/he has a net.' (DNV; Inglis 2002: 171)

Finally, in Chapter 5 I suggested some ideas for a comparative study of noun incorporation across the Algonquian language family. Although the analysis for Mi'gmaq presented here would benefit from further supporting evidence, it nevertheless provides a solid base for comparative work.

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