Matching Relative Clauses with Numerals and Quantifiers in Mi'gmaq

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Abstract

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Matthew Schuurman

This thesis explores the syntactic structure of Mi'gmaq (Algonquian) restricted relative clauses. Mi'gmaq relative clauses have a unique construction where numerals and quantifiers (N/Qs) modifying the relative head may be displaced from the relative head. There are three distributional patterns where a N/Q may appear: (i) with the head noun; (ii) in a phrase-final position; (iii) one N/Q with the head noun and one N/Q in a phrase-final position, however, the two N/Qs must be identical. Evidence from semantic identity and quantifier scope ambiguities demonstrates that the displaced NAQs are internal to the relative clause.

I argue that the raising structures (Kayne 1994, Bianchi 2000, Bhatt 2002) are unable to account for the Mi'gmaq data. Therefore, a movement-alone based account is rejected as a viable structure for Mi'gmaq relative clauses. To that end I adopt the matching structures as proposed in Sauerland (1998), Hulsey and Sauerland (2006). However, the matching structure, where the external and internal head must match in semantic identity, makes the wrong predictions. I propose a matching structure that require the lexical matching analysis, where the external and internal head must match in lexical identity in structurally identical chunks, rather then in semantic identity. The lexical matching analysis is extended to Mi'gmaq under several assumptions on the syntax of the Mi'gmaq nominal domain.

Acknowledgments

I started my academic career in the non-academic world of nursing and then, on a whim moved to Québec in an attempt to learn French, forever altering my life. The pursuit of trying to learn the grammar rules of French ultimately led me down a road ending at the linguistics department at Concordia University. The results of this long, arduous journey are this thesis and passable French.

First off, I must thank the Mi'gmaq community of Listuguj, without whom this thesis would not exist. I owe a great thanks to Janine Metallic, MaryAnn Metallic, and Janice Vicaire for sharing their time and knowledge and language with me. They were incredibly supportive and generous throughout all my questions regarding Mi'gmaq, especially Janine, who spent hours upon hours answering my countless (at times convoluted) questions. I am grateful for all the time Janine, Janice, and MaryAnn have put in over the past two years. I could not have done this without all of your help and invaluable input. *Wela'lioq*.

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Any errors or flaws in this thesis are, of course, my own.

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Contents

List of Abbreviations

1	first person
2	second person
3	third person
3′	fourth person
AN	animate
COMP	complementizer
CONJ	conjunction
DEM	demonstrative
DFLT	default
DIM	diminutive
DU	dual
IN	inanimate
INTV	intransitive
INV	inverse
OBJ	object
OBV	obviative
PL	plural
POSS	possessive
PRES	present
PROG	progressive
PROX	proximate
PST	past
SG	singular

Chapter 1

Introduction

The central question investigated in this thesis is what is the syntactic structure of restricted relative clauses in Mi'gmaq (Algonquian), that is, whether they require a raising structure, or a matching structure. The raising structure involves a single noun originating within a relative clause that is moved to a relative-clause initial position. In contrast, the matching structure involves an external noun and an elided internal noun, where the two nouns must be similar enough for matching. The main claim made is that Mi'gmaq relative clauses require a matching structure. However, current theories of matching that depend on semantic identity cannot fully account for the Mi'gmaq data. Rather, a theory of lexical matching is needed.

Relative clauses in Mi'gmaq have a unique construction where numerals, adjectives, and quantifiers (NAQs) may be displaced from the relative head that they modify. This displacement results in a linear word order where the NAQs appear phrase-final, as seen in (1), where the quantifier *ms't* (all) is dislocated from the head noun *wenji'guoml* (houses).

(1) nemituapnn wenji'guoml ta'n nitap nemitoqopnn **ms't**
see.1>3.PL.PST.IN house.PL.IN COMP friend.1.POSS see.3>3′.PST.PL.IN all
'I saw the houses that my friend saw all (of).'

Evidence from semantic identity and quantifier scope ambiguities demonstrates that the displaced NAQs are internal to the relative clause and are therefore stranded in this internal position. The following three generalizations characterize the distribution of NAQs with respect to the head noun of a relative clause: (i) a NAQ may appear with the head noun; or (ii) in a stranded phrase-final position; or, (iii) two identical NAQs may appear, one the head noun and one in the stranded position. When two non-identical NAQs of the same type appear, one next to the head noun and one in the stranded position, the utterance is ungrammatical.

These generalizations are analyzed in the context of two families of relatives clauses, the raising structure (Kayne 1994) and the matching structure (Sauerland 1998). I argue that the raising structure, as proposed in Kayne (1994), Bianchi (2000) and Bhatt (2002) are unable to account for the Mi'gmaq data and therefore such an account is rejected as a viable structure for Mi'gmaq relative clauses. To that end I adopt the matching structure. However, the matching structure as is proposed in Sauerland (1998), Hulsey and Sauerland (2006) and Koster-Moeller (2012), where the external and internal head must match in semantic identity, makes incorrect predictions for the Mi'gmaq data.

Instead of a semantically based matching analysis, I propose that Mi'gmaq relatives instead require the lexical matching analysis. The lexical matching analysis assumes the basic tenets of the matching structure, where the internal head moves from its base position to spec-CP. The relative clause is then late merged into the matrix clause (Fox & Nissenbaum 1999, Hulsey & Sauerland 2006), resulting in a single structure. However, in order to account for for the Mi'gmaq data, there are two obligatory requirements. First, the structural size of the antecedent and the matched internal head must be larger than an NP. Second, in order for PF-deletion of the internal head to occur, all lexical material in the internal head must match the lexical material in the antecedent head. Furthermore, only lexical material that is within a structurally identical chunk in both the internal head and antecedent head may be considered for matching and subsequent PF-deletion. In order to extend this proposal to Mi'gmaq relative clauses, several assumptions about the syntax of the Mi'gmaq nominal domain are made.

The objectives of this thesis are twofold. From an empirical standpoint, this thesis presents previously undocumented data on relative clauses and the distribution of numerals, adjectives, and quantifiers, thus contributing to existing literature on Mi'gmaq, particularly in syntax and semantics. On a more theoretical level, this thesis provides insight into various issues centred around the structure of relative clauses, specifically the matching analysis of relative clauses.

1.1 Background of Mi'gmaq syntax

Mi'gmaq is an Eastern Algonquian language spoken in Maritime Canada and Eastern Québec. The data in this thesis originates from elicitations with speakers of the Listuguj dialect of Mi'gmaq, spoken in the Listuguj Mi'gmaq First Nation, located at the border between Québec and New Brunswick, Canada. As with many other Indigenous languages in Canada, Mi'gmaq is an endangered language (Statistics Canada,

2011), as well as being understudied. The majority of fluent speakers of Mi'gmaq in the Listuguj community are over the age of 50 and there are few new first-language speakers. Within the theoretical literature on Mi'gmaq (Inglis 1986, 1988, 2002; Father Pacifique, in Hewson & Francis 1990; Loughran 2012; McClay 2012; Quinn 2012; Little 2013; McCulloch 2013; Coon & Bale 2014; Bale & Coon 2014; Gordon 2014; Manyakina 2012, 2015; Hamilton 2015, among others), to the best of my knowledge, there has been no formal linguistic study of relative clauses or of NAQ distribution, specifically NAQ stranding. In this section, I outline several aspects of Mi'gmaq syntax relevant to this thesis: gender marking, word order and the absence of articles.

In order to talk about numerals, adjectives, and quantifiers, it is necessary to know the gender distinction of nouns. In Mi'gmaq, nouns are classified as either animate or inanimate. However, there is no distinct animate/inanimate marking, it is only through combination with plural or singular marking, that the animacy of a noun can be determined. In addition, there is no overt singular morphology, only plural nouns have an overt animate/inanimate noun morphology. Plural animate nouns are marked with *-(i)g*, while plural inanimate nouns are marked with either *-n* or *-l*. [1] This is illustrated in table 1.1.

	inanimate	animate	
		grammatical	real-world
singular	*pguman* 'blueberry'	*gmu'jmin* 'raspberry'	*e'pit* 'woman'
plural	*pguman-n* 'blueberry-PL'	*gmu'jmin-g* 'raspberry-PL'	*e'pit-ig* 'women-pl'
obviative	n/a	*gmu'jmin-n* 'raspberry-OBV'	*e'pit-itl* 'women-OBV'

Table 1.1

A crucial fact in the discussion of NAQ distribution in Mi'gmaq is that word order in sentences is

[1] As with many other Algonquian languages, Mi'gmaq makes a distinction between multiple third-person arguments in a clause. In an utterance with two third-person arguments, one argument is selected as 'proximate', while the other must be 'obviative'. The argument selected as 'proximate' tends to be more salient to the discourse, either in the particular utterance or in the larger, more general discourse. Obviative arguments are marked with a suffix morpheme, while proximate arguments are unmarked in Mi'gmaq. For example, in (i), *Mali* is the dominant argument in the discourse and is thus the unmarked proximate argument. *Sa'n* is less salient to the discourse and is marked with an obviative maker *-al*. However, if the obviative noun is plural, then it is unmarked.

(i) Mali ges-al-a-t-l Sa'n-**al**
Mary love-AN-3-OBJ-3-OBV John-OBV
'Mary loves John' (Hamilton 2015:ch1:2)

Only animate nouns may be marked for obviation, inanimate nouns do not receive obviative marking. For a further discussion on the proximate-obviative distinction in Mi'gmaq, see Manyakina (2012) and Hamilton (2015).

extremely free, with evidence of two types of scrambling.[2] Phrasal elements can be scrambled within a clause, as in (2), where the subject, object and verb are freely ordered.

(2) a. 'lpa'tuj maqutq gegs (SOV)
boy.AN eat3>3′SG.PRES.AN cake.AN
'(the) boy eats (the) cake.'

b. 'lpa'tuj gegs maqutq (SOV)

c. gegs 'lpa'tuj maqutq (OSV)

d. maqutq lpa'tuj gegs (VSO)

Mi'gmaq also has long-distance scrambling seen in (3), where *mui'naq* (bears) moves from a position within the finite clause, in (3a), to a phrase initial position within the matrix clause, seen in (3b).

(3) a. welta'si **mui'naq** maquma'tipni nme'jijg
be.happy.1>3PL.PRES.AN bear.PL.AN eat.3>3′PL.PST.AN fish.DIM.PL.AN
'I am happy that (the) bears ate (the) small fish.'

b. **mui'naq** welta'si maquma'tipni nme'jijg
bear.PL be.happy.1>3PL.PRES.AN eat.3>3′PL.PST.AN fish.DIM.PL.AN
'I am happy that (the) bears ate (the) small fish.' (Schuurman 2016:4)

Finally, Mi'gmaq does not have overt definite or indefinite articles. The utterances in (4) are ambiguous as to whether they have a definite or indefinite interpretation, when uttered without contextual cues.

(4) a. mui'n maqumapn nme'j
bear.AN eat.3>3′SG.PST.AN fish.AN
'(a/the) bear ate (a/the) fish.'

b. 'lpa'tuj nemiapn e'pite'jij
boy.AN see.3>3′SG.PST.AN girl.DIM.AN
'(a/the) boy saw (a/the) young girl.' (Schuurman 2016:1)

This property is particularly relevant to the analysis of relative clauses with bare plurals.

1.2 Previous theories

Relative clauses have traditionally been classed as either restrictive or non-restrictive (appositive), depending on the semantic relation between the relative head and the relative clause itself. In restrictive relatives, the

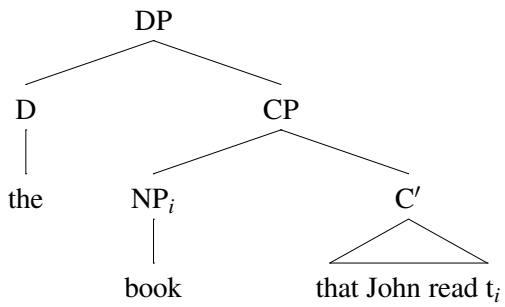
[2] I use the term *scrambling* to refer this type of movement where arguments can be displaced with no apparent change to meaning or without an obvious motivation i.e. focus driven movement.

relative clause modifies the nominal head and contributes to the the restriction of the determiner. On the other hand, non-restrictive relatives do not contribute to the restriction of the determiner, but simply modify the whole noun phrase head. The focus of this thesis is exclusively on restrictive relatives in Mi'gmaq and leaves non-restrictive relatives for future research.[3]

Within the literature on restrictive relatives, there are two main families of structures that have been proposed for relative clauses, the raising structure (e.g. Brame 1968; Vergnaud 1974; Åfarli 1994; Kayne 1994; Bianchi 1999, 2000; Bhatt 2002, and many more) and the matching structure (e.g. Lees 1960, 1961; Chomsky 1965; Sauerland 1998, 2000, 2003; Hulsey & Sauerland 2006, among others). It has been argued extensively that both of these structures are necessary to account for the empirical landscape of English relative clauses.[4]

In the raising structure proposed by Kayne (1994), the head noun is an NP originating inside the relative clause CP. For example, in (5) the NP 'book' originates within the relative clause and moves to a position in spec-CP. The result of this movement creates a movement chain between the trace in the relative clause and the head NP 'book'. At LF, the head NP obligatorily reconstructs to its base position and this is the location of interpretation.

(5)



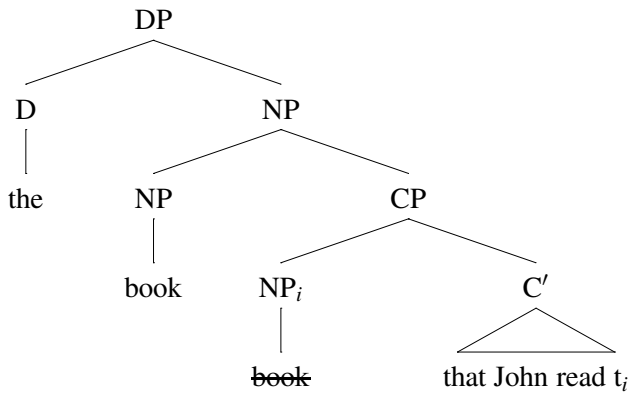
The matching structure as outlined in Sauerland (1998) involves two distinct NPs, seen in example (6). There is a head NP, which is base generated in a position external to the relative clause CP, and an internal NP, generated inside the relative clause. The internal NP undergoes movement and moves into spec-CP. After the internal NP moves, it enters into a matching relationship with the external NP. For matching to

[3]From here on in, unless otherwise specified, any mention of relative clauses refers only to restrictive relative clauses.

[4]There is a third structure that has been claimed for relative clauses, the head external analysis, as assumed in Partee (1975) and Chomsky (1977). This structure involves the base generation of a single head NP external to the relative clause. There are further details, but crucially, the head NP does not originate from within the relative clause and so cannot be reconstructed to an internal position. It is interpreted only in an external position at LF. There have been various arguments proposed showing that both the raising analysis and the matching analysis are superior to the head external analysis in accounting for relative clause data in English (see Safir 1999, Sauerland 1998 and Bhatt 2002 for detailed arguments against the external head analysis.) As such, no further discussion involving the head external analysis will occur.

occur, the semantic material of the NPs must be identical (Hulsey & Sauerland 2006). After matching occurs, the internal NP is then phonologically deleted/elided. As the external relative NP head does not originate in an internal relative clause position, there is no movement chain between it and the internal NP. At LF, the external NP is interpreted in its base position, while the internal NP, as part of a movement chain, undergoes reconstruction and is then interpreted only in its base position.

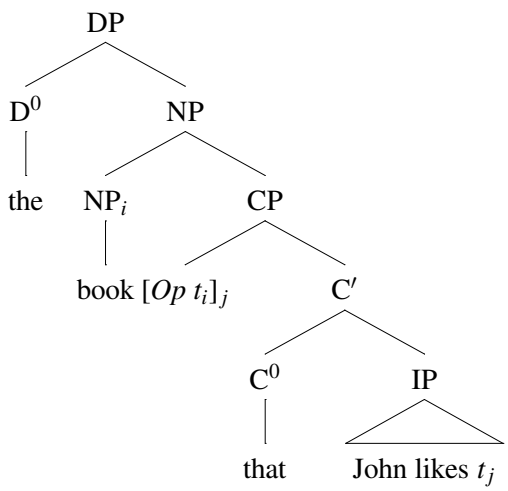
(6)



There have been multiple variations for both the raising structure and the matching structure. Relevant to this thesis are several variations of the raising and matching structure proposed in Bhatt (2002), Bianchi (2000), and Koster-Moeller (2012), which vary in the structural size of the relative head in its base position. The basic differences between these structures is presented, but a detailed exploration is beyond the scope of this thesis.

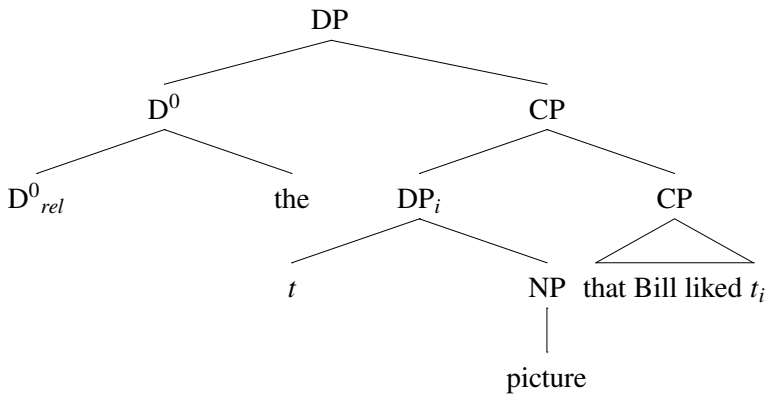
Bhatt (2002) proposes a raising structure where the raised relative head is only an NP (together with associated modifiers) and never a DP. Bhatt (2002) argues for a version of the Kaynian raising structure with a null relative determiner *Op* that moves with an NP into spec-CP. The NP then projects and merges with the CP, forming the relative clause. After the formation of a relative clause, the D^0 is merged externally to the relative clause NP. This is schematized in (7).

(7)



Bianchi (2000) argues for a raising structure where the relative head is a DP with an null D^0, as in (8). Bianchi proposes the following steps in the formation of a relative clause: first, the head of relative clause is always generated as a DP with a relative D^0 that is empty and devoid of semantic content. The relative head undergoes movement to spec-CP. The relative D^0 is PF deleted through abstract incorporation, provided the internal and external DP share the same Arg features of the NP head. Finally, the features of the internal D^0 and the external D^0 are spelled out as a regular determiner on the external D^0. Crucially, in this structure, the relative D^0 is empty and devoid of semantic content.

(8)

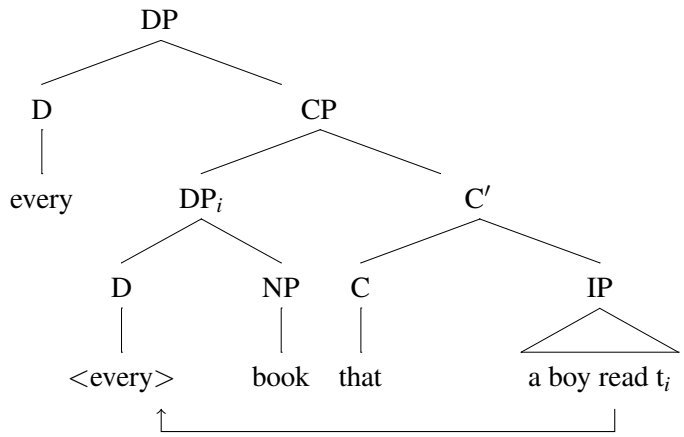


Koster-Moeller (2012) proposes two potential relative clause structures, the *amended-raising structure* and the *amended-matching structure* with a full DP generated in the relative clause. Unlike Bianchi (2000), Koster-Moeller (2012) argues for an internal DP with full syntactic and semantic status.

The *amended-raising structure*, seen in (9), is a variation of the raising structured proposed in Kayne (1994). Here, there is an internal DP moving from the trace position to spec-CP, with the determiner raising and projecting as the head of the DP (following Donati 2006). All copies of the full DP form a movement

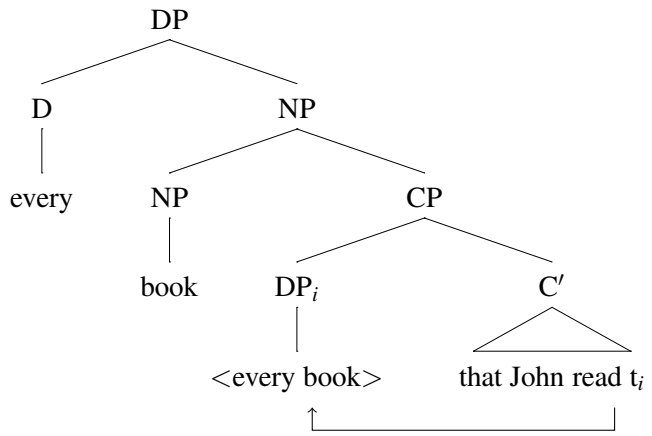
chain where the external DP is capable of reconstruction in the trace position.

(9)



The *amended-matching structure*, seen in (10), is a variation of the matching structure proposed in Sauerland (1998). This structure has two full DP copies, an internal DP and a external DP. The internal DP moves from its trace position to spec-CP, while the external DP is base generated in its position. As with the matching structure proposed in Sauerland (1998), in the *amended-matching structure* the external DP and the internal DP must match in identity in order for deletion to occur. In the *amended matching structure*, while not explicitly stated in Koster-Moeller, it must be the case that what is matching are the NPs, not the quantifiers. Given that these are restricted relative clauses the external D^0 cannot be the antecedent, and furthermore, under this structure only the NPs should match. The internal quantifier in spec-CP must be excluded from the matched semantic identity. As a result, this structure is required to posit that all PF material in spec-CP must be deleted, even though only the NPs are being matched.

(10)



Chapter 2

Empirical Landscape: Mi'gmaq Relative Clauses and NAQs

This chapter presents novel empirical data on relative clauses, numerals, adjectives, and quantifiers in Mi'gmaq. Within this chapter, the way in which the data is described should not be interpreted as a presumption of a specific syntactic structure. Section 2.1 outlines various syntactic properties of relative clauses. Section 2.2 provides an overview of the distribution of numerals, adjectives, and quantifiers, (hereon NAQs), with a focus on stranding constructions. Section 2.3 outlines several syntactic effects that arise when numerals, adjectives, and quantifiers appear within relative clauses.

2.1 Relative clauses

Relative clauses in Mi'gmaq are head external and post-nominal. Consider the constructions in (11). The sentence in (11a) is acceptable whereas the one in (11b) is not. The critical difference between the two constructions is that the head noun, *gajuewjig* (cats), appears to the left of the relative clause complementizer, *ta'n*, and outside of the relative clause in (11a), whereas it appears to the right of *ta'n* and inside the relative clause in (11b).

(11) a. nemi'g'pnig **gajuewjig** [ta'n Mark nemi'apni]
see.1>3PL.PST.AN cat.PL.AN COMP Mark see.3>3′PL.PST.AN
'I saw the cats that Mark saw.'

b. * nemi'g'pnig [ta'n **gajuewjig** Mark nemi'apni]
see.1>3PL.PST.AN COMP cat-PL.AN Mark see.3>3′PL.PST.AN

Mi'gmaq relative clauses take the form of full relatives. There are no reduced relatives, and as a result, if there is no complementizer, as in example (12b), the utterance is considered to be either two separate phrases, or, if a relative clause interpretation is forced, the sentence is considered highly awkward or ungrammatical.

(12) a. Nmisge'n apita'taqan ta'n piteg eptaqano'guomigtug
go.get.IMP baking.powder-IN COMP be.inside.of.3>3.IN cupboard.IN
'Get the baking powder that is in the cupboard.'

b. Nmisge'n apita'taqan ∅ piteg eptaqano'guomigtug
go.get.IMP baking.powder-IN be.in.3.IN cupboard.IN
'Get (the) baking powder. It is in (a/the) cupboard.';

Cannot mean: 'Get the baking powder that is in (a/the) cupboard.'

It is possible to have relative clauses without an overt head noun, as in (13). However, this does not necessarily mean that Mi'gmaq has so-called headless relatives as in Quechua (Cole et al 1982, Hastings 2004), St'àt'imcets (Davis 2003). Instead, given the high frequency of dropping subjects and objects in discourse, it seems more likely that such constructions are instances of regular relative clauses but with a phonologically null head noun. This phenomena requires further investigation beyond the scope of this thesis.

(13) we'jituap ∅ ta'n ji'nmug ewmi'tp
found.1>3.PST.IN COMP man.PL use.3>3′.PST
No context: 'I found the thing which (the) men used.'

Context: The men used a rock to open a clam: 'I found the rock which (the) men used.'

In Mi'gmaq relative clauses, the relative noun can be either the subject or object of the main clause, as in (14a) and (14b) respectively, or, the subject or object of the embedded clause, as in (14c) and (14d) respectively.

(14) a. e'pitesg [ta'n etlesng'pnig] nisiepnig
girl.PL.AN COMP dance.3PL.PST.AN fall.on.ground.3PL.PST.AN
'The girls who danced fell on the ground.'

b. we'jituap guntew [ta'n ji'nmug ewmi'tp]
found.1>3.PST.IN rock.SG.IN COMP man-PL use.3>3′.PST
'I found the rock which (the) men used.'

c. apoqonmuapni 'nmujig [ta'n Mali nemi'apni __]
help.3>3′PL.PST.AN dog.PL.AN COMP Mali see.3>3′PL.PST.AN
'He helped the dogs that Mary saw.'

d. Pie'l mes'napn gajuewjl [ta'n __ wejpisgwa'nipn tauop'ti'gtug]
Peter catch.3>3′.PST cat.OBV COMP towards-enter.3.PST from.window
'Peter caught the cat that came in through (the) window.'

Scrambling can also occur with relative clauses in one of two ways. First, elements within the relative clause can be scrambled, seen in example (15), where the object *nme'jijg* (small fish) can appear post or pre-verbally with no apparent change in interpretation.

(15) a. nemi'g'pnig mui'naq [ta'n nemi'atipni **nme'jijg**]
see.1>3PL.PST bear.PL.AN COMP see.3>3′PL.PST **fish.**DIM.PL.AN
'I saw the bears that saw the small fish.'

b. nemi'g'pnig mui'naq [ta'n **nme'jijg** nemi'atipni]
see.1>3PL.PST bear.PL.AN COMP **fish.**DIM.PL.AN see.3>3′PL.PST
'I saw the bears that saw the small fish.'

Second, the relative head can also be scrambled to a phrase-initial position. This is illustrated in (16), where *gajuewji'jg* (kittens) can appear before or after the matrix verb.

(16) a. nemi'g'pnig **gajuewji'jg** [ta'n Mark nemi'apni]
see.1>3PL.PST.AN cat.DIM-PL.AN COMP Mark see.3>3PL.PST.AN
'I saw the kittens that Mark saw'

b. **gajuewji'jg** nemi'g'pnig [ta'n Mark nemi'apni]
cat.DIM.PL.AN see.1>3PL.PST.AN COMP Mark see.3>3PL.PST.AN
'I saw the kittens that Mark saw'

However, the head noun cannot appear after the relative clause. For example, in (17a), the head noun *e'pitesg* (girls) precedes the relative clause, and the phrase is acceptable. When *e'pitesg* is scrambled to a post-relative clause position, as in (17b), the phrase is considered unacceptable.

(17) a. **e'pitesg** [ta'n etlesng'pnig] nisiepnig
girl.PL.AN COMP dance.3PL.PST.AN fall.on.ground.3PL.PST.AN
'The girls who danced fell on the ground.'

b. * [ta'n etlesng'pnig] **e'pitesg** nisiepnig
COMP dance.3PL.PST.AN girl.PL.AN fall.on.ground.3PL.PST.AN
'The girls who danced fell on the ground.'

Finally, relative clauses in Mi'gmaq may be stacked, with relative clauses embedded within relative clauses. For example, (18), the head noun *gajuewjig* (cats) is the object of both relative clauses as well as the matrix clause.

(18) nemi'g'pnig gajuewjig ta'n Mark nemi'apni ta'n Sa'n
see.1>3.PST.PL.AN cat-PL.AN COMP Mark see.3>3′PL.PST.AN COMP John
etlmila'sualaji
PROG.play.3>3′.PL.PST.AN
'I saw (the) cats that Mark saw that John played with.'

In summary, relative clauses in Mi'gmaq are head external, appear only as full relatives, require the complementizer *ta'n*, and both the head noun and phrasal elements within the relative clause may be scrambled.

2.2 Numerals, adjectives, and quantifiers

Numerals, adjectives, and quantifiers (NAQs) in Mi'gmaq can precede or follow the noun they are modifying or scoping over, with no apparent change in meaning, as in (19) – (21).

(19) a. **ms't** mui'naq
all bear.PL.AN

b. mui'naq **ms't**
bear.PL.AN all
' All (the) bears.'

(20) a. **wape'gig** mui'naq
white.PL.AN bear.PL.AN

b. mui'naq **wape'gig**
bear.PL.AN white.PL.AN
'(the) white bears.'

(21) a. **ne's'sijig** mui'naq
three bear.PL

b. mui'naq **ne's'sijig**
bear.PL three
'(the) three bears.'

Numerals must agree with the animacy of the noun. For instance, the numeral *na'n-ijig* (five) modifies an animate noun, while with an inanimate noun, it takes the form *nan-gl*. Similar to numerals, adjectives also agree in animacy with the noun they modify. For example, *sipge'g-ig* (slow) and *wape'g-ig* (white) modify an animate plural noun, while their inanimate form is *sipge'-gl* and *wape'-gl* respectively. Finally, most quantifiers in Mi'gmaq must agree with the animacy of the noun they scope over. For instance, 'some'

has two forms, *ta's-ijig* for animates and *ta's'-gl* for inanimates. The quantifiers, *ms't* (all) and *te's* (every), do not agree with the animacy of the noun they scope over, but they must agree with plurality of the noun. The quantifier *ms't* only appears with plural marked nouns and *te's* only appears with singular marked nouns (Hamilton 2015).

In Mi'gmaq, in addition to preceding or following the noun, NAQs can also appear stranded from the noun. In (22a), the quantifier *ms't* (all) appears with the noun *nme'jijg* (small fish).[1] In (22b) *ms't* is stranded from the noun *nme'jijg* which appears in a pre-verbal position. The same type of stranding can occur with numerals and adjectives, seen in examples (23) – (24). This type of stranding does not change the phrase's meaning, the NAQ still appears to modify or scope over only the object *nme'jijg* in all of the examples. The NAQ cannot refer to the subject *mui'naq*.

(22) a. mui'naq nme'jijg **ms't** nemi'atipni
bear.PL.AN fish.DIM.PL.AN all see.3>3′PL.PST.AN
'(the) bears saw all (the) small fish.'

b. mui'naq nme'jijg nemi'atipni **ms't**
bear-PL.AN fish.DIM.PL.AN see.3>3′PL.PST.AN all
'(the) bears saw all (the) small fish.'

(23) a. mui'naq nme'jijg **ne's'sijig** nemi'atipni
bear.PL.AN fish.DIM.PL.AN three.AN see.3>3′PL.PST.AN
'(the) bears saw all (the) small fish.'

b. mui'naq nme'jijg nemi'atipni **ne's'sijig**
bear.PL.AN fish.DIM.PL.AN see.3>3′PL.PST.AN three.AN
'(the) bears saw (the) three small fish.'

(24) a. mui'naq nme'jijg **wape'gig** nemi'atipni
bear.PL.AN fish.DIM.PL.AN white.AN see.3>3′PL.PST.AN
'(the) bears saw all (the) small fish.'

b. mui'naq nme'jijg nemi'atipni **wape'gig**
bear.PL.AN fish.DIM.PL.AN see.3>3′PL.PST.AN white.AN
'(the) bears saw (the) white small fish.'

In (22b), (23b), and (24b), the NAQs appear after the noun *nmejijg* (small fish). When the NAQs precede the noun as in example (25), the utterance is then ambiguous, where the NAQ refers to either the object, *nme'jijg*, or the subject, *mui'naq*.

[1] I adopt a notation in this paper where the noun that the NAQ refers to is underlined, while the NAQ itself appears in bold.

(25) mui'naq **ms't** nme'jijg nemi'atipni
bear.PL.AN all fish.DIM.PL.AN see.3>3′PL.PST.AN
'(the) bear saw all (the) small fish' or 'all (the) bears saw (the) small fish'

NAQs can also be 'stacked', with multiple NAQs appearing with the same noun. When this NAQ 'stacking' occurs, there are three distributional patterns that arise: (i) all NAQs appear with the noun, as in (26a); (ii) all NAQs are stranded from the noun, as in (26b); and (iii) the noun and a NAQ appear together in one position, while another NAQ appears separately, as in (26c) and (26d). These three distributional patterns demonstrate that NAQ stranding is quite robust in Mi'gmaq.

(26) a. mui'naq nme'jijg **ms't wape'gig** nemi'atipni
bear.PL.AN fish.DIM.PL.AN all white.AN see.3>3′PL.PST
'(the) bears saw all (the) small white fish.'

b. mui'naq nme'jijg nemi'atipni **ms't wape'gig**
bear.PL fish.DIM.PL.AN see.3>3′PL.PST all white-AN
'(the) bears saw all (the) small white fish.'

c. mui'naq nme'jijg **wape'ig** nemi'atipni **ms't**
bear.PL fish.DIM.PL.AN white.AN see.3>3′PL.PST all
'(the) bears saw all (the) small white fish.'

d. mui'naq nme'jijg **ms't** nemi'atipni **wape'gig**
bear.PL fish.DIM.PL.AN all see.3>3′PL.PST white.AN
'(the) bears saw all (the) small white fish.'

In summary, NAQs can appear either pre- or post-nominal; they may be stranded from the noun; and several NAQs 'stacked' on the same noun may be split either to a position in direct proximity with the noun or in a stranded position.

2.3 Relative clauses with NAQs

The type of NAQ stranding presented in the previous section can also occur in relative clauses, with a similar distributional pattern. In relative clauses where the head noun appears to originate as the internal object, NAQs can appear in the following syntactic positions: (i) in direct proximity to the head noun as in (27a); (ii) in a position where the NAQs are stranded from the head noun as in (27b); or (iii) in a position where the NAQs are split between the head noun and a stranded position, as in (27c), where *wape'gl* (white) appears with the head noun, while *nangl* (five) is stranded.

(27) a. nemituapnn **nangl** **wape'gl** wenji'guoml ta'n nitap
see.1>3.PL.PST.IN five.IN white-IN house.PL.IN COMP friend.1.POSS
nemitoqopnn
see.3>3′.POSS.PST.PL-IN
'I saw the five white houses that my friend saw.'

b. nemituapnn wenji'guoml ta'n nitap nemitoqopnn **nangl**
see.1>3.PL.PST.IN house.PL.IN COMP friend.1.POSS see.3>3′.POSS.PST.PL.IN five.IN
wape'gl
white.IN
'I saw houses that my friend saw the five white ones.'

c. nemituapnn **wape'gl** wenji'guoml ta'n nitap nemitoqopnn
see.1>3.PL.PST.IN white.IN house.PL.IN COMP friend.1.POSS see.3>3′.POSS.PST.PL.IN
nangl
five.IN
'I saw white houses that my friend saw five of.'

d. nemituapnn **nangl** wenji'guoml ta'n nitap nemitoqopnn
see.1>3.PL.PST.IN five.IN house.PL.IN COMP friend.1.POSS see.1>3′.POSS.PST.PL.IN
wape'gl
white.IN
'I saw five houses that my friend saw the white ones.'

In all of the examples given in (27), regardless of whether a NAQ appears in direct proximity with the head noun or is stranded, the NAQs can only refer to the head noun of the relative clause, *wenji'guoml* (houses). It is impossible to have a reading where the noun being referred to by the NAQs is the subject of the embedded clause, even in a primed situation where all of the subjects and objects are plural, as in (28). One could imagine given how free Mi'gmaq is in terms of word order, that it should be possible for the quantifier *ms't* (all) to have scope over *mui'naq* (bears), meaning 'all the bears'. However this reading is impossible in these constructions.

(28) 'lpa'tujg nemia'tipni nme'jijg ta'n mui'naq maquma'tiji **ms't**
boy.PL.AN saw.3>3′PL.PST.AN fish.DIM.OBV COMP bear.PL.AN eat.3>3′PL.PRES.AN all
'(the) boys saw the small fish that (the) bears ate all of (them).' ;

Cannot mean: '(the) boys saw the small fish that all (the) bears ate.'

However, there are relative clauses with NAQs where the stranded NAQ can refer to a noun other than the head noun. This occurs in relative clauses where the head noun is the subject of the internal clause and not the object. In the 'subject head' relatives, there is an ambiguity in interpretation, unlike 'object head' relatives. In (29), the relative head *mui'naq* (bears) originates as the subject of the relative clause.

When the NAQ *ms't* (all) is stranded in the internal subject position, the utterance is ambiguous, with two interpretations, one where the quantifier scopes over the relative head and one where the quantifier scopes over the embedded object.

(29) nemi'g'pnig mui'naq ta'n **ms't** maquma'tiji nme'jijg
saw.1>3PL.PST.AN bear.PL.AN COMP all eat.3>3′PL.PRES.AN fish.DIM.OBV
'I saw the bears that all ate (the) small fish.' or ' I saw the bears that ate all (the) small fish.'

Finally, in relative clauses where the head noun is the object of the relative clause, there cannot be two NAQs of the same type. Consider the sentences in (30).

(30) a. */? Sa'n nemiapni **na'nijig** glitaq ta'n Mali nemiapni **nes's'ijig**
John see.3>3′PL.PST.AN 5.AN berries.AN COMP Mary see.3>3′PL.PST.AN 3.AN
Intended meaning: 'John saw the five berries that Mary saw three of.'

b. */? Sa'n nemiapni **ms't** glitaq ta'n Mali nemiapni **ta'sijig**
John see.3>3′PL.PST.AN all berries.AN COMP Mary see.3>3′PL.PST.AN some.AN
Intended meaning: 'John saw all the berries that Mary saw some of.'

c. */? Sa'n nemiapni **wape'gig** glitaq ta'n Mali nemiapni
John see.3>3′PL.PST.AN white.AN berriesPL.AN COMP Mary see.3>3′PL.PST.AN
wisawe'gig
brown.AN
Intended meaning: 'John saw the white berries that Mary saw (the) brown (ones).'

In (30a), the numeral *na'nijig* (five) is in direct proximity to the head noun, while another numeral *nes's'ijig* (three) is in the stranded position. The same pattern occurs in (30b) with the quantifiers *ms't* (all) and *ta'sijig* (some), as well as in (30c) with the adjectives *wape'gig* (white) and *wisawe'gig* (brown). In all three sentences, the ungrammaticality arises due to the presence of two non-identical NAQs. The same grammaticality judgement holds when the NAQs are in the reverse order. For example, in (30a) the phrase is deemed unacceptable whether the word order of the numerals is *na'nijig...nes's'ijig* or *nes's'ijig....na'nijig*. The same is true for (30b) and (30c).[2]

There is an exception to this type-restriction: If the NAQ in the main clause and the relative clause are identical, then the sentence is grammatical. For example, consider the sentences in (31).

[2]All the utterances in (i) are grammatical when the conjunction *aq* 'and' is used, but all restrictive meaning is lost.

(i) Sa'n nemiapni ms't glitaq **aq** Mali nemiapni ta'sijig
John see.3>3′PL.PST.AN all berries.AN and Mary see.3>3′PL.PST.AN some
'John saw all (the) berries and Mary saw some ((of the) berries).'

(31) a. Sa'n nemiapni **na'nijig** glitaq ta'n Mali nemiapni **na'nijig**
John see.3>3′PL.PST.AN 5.AN berries.AN COMP Mary see.3>3′PL.PST.AN 5.AN
'John saw the five berries that Mary saw five of.'

b. Sa'n nemiapni **ms't** glitaq ta'n Mali nemiapni **ms't**
John see.3>3′PL.PST.AN all berries.AN COMP Mary see.3>3′PL.PST.AN all
'John saw all the berries that Mary saw all of.'

c. Sa'n nemiapni **wape'gig** glitaq ta'n Mali nemiapni **wape'gig**
John see.3>3′PL.PST.AN white.AN berriesPL.AN COMP Mary see.3>3′PL.PST.AN white.AN
'John saw the white berries that Mary saw (the) white (ones).'

In (31a), the numeral modifier *na'nijig* appears both to the left of the noun glitaq and in the stranded phrase-final position. A similar pattern holds for the quantifier *ms't* in (31b) and the adjective *wape'gig* in (31c).

In summary, NAQs modifying or restricting the head noun in relative clauses can be stranded phrase-finally. In this position, they can only ever refer to the head noun. Finally, there can only be one NAQ 'type' that refers to the head noun, or two identical NAQs. Throughout this section the discontinuity between the head noun and a non-proximal NAQ has been referred to as 'stranding'. One question that arises then, is whether or not these are instances of true stranding. This is explored in the following chapter.

Chapter 3

Are Numerals and Quantifiers Internal or External?

This chapter explores the syntactic position of the 'stranded' numerals and quantifiers (N/Q). From here on in, I analyze only numerals and quantifiers and leave adjectives for future research. I argue that the phrase-final N/Qs syntactically belong to the relative clause and are not dislocated elements from the matrix clause. Consider the utterances in (32) where the N/Q appears phrase-final. Example (32a) demonstrates a potential syntactic structure where the N/Q is not a part of the relative clause, but is in an external position as part of the matrix clause. The other potential structure is in (32b), where the N/Q is within the relative clause.

(32) a. Sa'n nemiapni glitaq [ta'n Mali nemiapni] **ne's'sijig/ms't**
John see.3>3′PL.PST.AN berries.AN COMP Mary see.3>3′POSS.PL.PST.AN 3.AN/ALL
Intended: 'John saw three/all (of) the berries that Mary saw.'

b. Sa'n nemiapni glitaq [ta'n Mali nemiapni **ne's'sijig/ms't]**
John see.3>3′PL.PST.AN berries.AN COMP Mary see.3>3′POSS.PL.PST.AN 3.AN/ALL
Intended: 'John saw the berries that Mary saw three/all (of).'

In the following two sections, I claim that (32b) and not (32a) is the proper syntactic structure for these relative clauses with phrase-final N/Qs.

3.1 Semantic identity

The first argument that a stranded N/Q is internal to the relative clause relies on the *semantic identity* of the head noun, and its relation to the subject of the matrix and the relative clause. The set-up for this argument

is as follows: first, I assume a hypothesis where the stranded N/Q is syntactically part of the matrix clause. A consequence of this assumption is that stranding should not affect meaning. However, I will show that sentences with a stranded N/Q have different truth conditions than those without a stranded N/Q.

To begin, consider the sentences in (33). The sentence in (33a) has a stranded numeral whereas the one in (33b) does not.

(33) a. nemituapnn wenji'guoml ta'n nitap nemitoqopnn **nangl**
see.1>3.PL.PST.IN house.PL.IN COMP friend.1.POSS see.3>3′.POSS.PST.PL.IN five.IN
'I saw the houses that my friend saw 5 of.'

b. nemituapnn **nangl** wenji'guoml ta'n nitap nemitoqopnn
see.1>3.PLPST.IN five.IN house.PL.IN COMP friend.1.POSS see.3>3′.POSS.PST.PL.IN
'I saw the 5 houses that my friend saw.'

If the modifier *nangl* (five) were part of the main clause in (33a), then (33a) and (33b) should have the same interpretation. They would both have a numeral modifying a matrix clause noun.

However, consider the following context. Suppose your friend saw five houses and you saw five houses. In English, the following utterance then accurately describes this context, '*I saw 5 houses that my friend saw*'. When scenarios of this type are tested in Mi'gmaq, the end result is that the Mi'gmaq utterances in (33a) and (33b) do not have equivalent interpretations.

When the numeral *nangl* (five) appears with the relative noun in (33b), the interpretation is such that the subject of the matrix clause, 'I', as well as the subject of the relative clause, *nitap* (my friend), must have seen at least five houses, but no less than five. This is demonstrated in table 3.1.

(33b) nemituapnn **nangl** wenji'guoml ta'n nitap nemitoqopnn 'I saw the 5 houses that my friend saw.'				
Context:	I saw __ houses	My friend saw __ houses	True	False
(1)	5	5	X	
(2)	3	5		X
(3)	5	3		X
(4)	7	5	X	
(5)	5	7	X	

Table 3.1

In table 3.1, (33b) is considered in five contexts, each row of the table being a context, where the speaker saw X number of houses and the friend saw X number of houses. For instance, in context (1), the speaker saw five houses and the relative clause subject saw five houses. Example (33b) is felicitous in this context,

but is infelicitous in context (2), where the speaker saw three houses and the relative clause subject saw five houses.

When the numeral appears stranded from the relative noun in (33a), the interpretations are such that the subject of the relative clause, *nitap* (my friend) has to have seen five and only five houses. However, unlike (33b), the subject of the main clause, 'I' could have seen **more** than five or **less** than five houses, but they have to have seen at least two houses, not one.[1]

(33a) nemituapnn wenji'guoml ta'n nitap nemitoqopnn **nangl** 'I saw the houses that my friend saw 5 of.'				
Context:	I saw __ houses	My friend saw __ houses	True	False
(1)	5	5	X	
(2)	3	5	X	
(3)	5	3		X
(4)	7	5	X	
(5)	5	7		X

Table 3.2

The result of this diagnostic illustrates that the Mi'gmaq sentence with the numeral proximate to the head noun, *nemituapnn **nangl** wenji'guoml ta'n nitap nemitoqopnn*, does not have the same truth conditions as the Mi'gmaq sentence with a stranded numeral, *nemituapnn wenji'guoml ta'n nitap nemitoqopnn **nangl***. The fact that the sentence in (33b) does not have the same type of interpretation as (33a) demonstrates that they are not underlyingly derived from the same structure. This provides initial evidence that the numeral is likely in an internal position in the relative clause.

When the quantifier *ms't* (all) is tested, the results are the similar to the results for numerals. For the utterance in (34a), there are two possible scenarios, either the quantifier, *ms't* belongs to the matrix clause, or it is in a relative clause internal position.

(34) a. nemituapnn wenji'guoml ta'n nitap nemitoqopnn **ms't**
see.1>3.PL.PST-IN house.PL.IN COMP friend.1.POSS see.3>3′.PST.PL.IN all
'I saw the houses that my friend saw all (of)'

b. nemituapnn **ms't** wenji'guoml ta'n nitap nemitoqopnn
see.1>3.PL.PST.IN all house.PL.IN COMP friend.1.POSS see.3>3′.PST.PL.IN
'I saw all (of) the houses that my friend saw.'

As before, if the quantifier in (34a) were part of the matrix clause, as in (34b), then these two sentences

[1]This unavailability of a singular relative head noun is due the plural marking on the head noun and verb.

should have the same truth conditions. Again, this is not the case. Imagine a context where you and your friend have both gone on a walk through a subdivision which has five houses {a, b, c, d, e}.

When the quantifier is with the noun, as in (34b), the utterance is true if and only if the subject of the matrix clause, 'I', saw all of the houses that the subject of the relative clause saw. This is illustrated in table 3.3.

(34b) nemituapnn **ms't** wenji'guoml ta'n nitap nemitoqopnn				
Context	I saw houses__	My friend saw houses __	True	False
(1)	{a, b, c, d, e}	{a, b, c}	X	
(2)	{a, b, c, d, e}	{a, b, c, d}	X	
(3)	{a, b, c, d, e}	{a, b, c, d, e}	X	
(4)	{a, b, c, d}	{a, b, c, d, e}		X
(5)	{a, b, c, d}	{a, b, c, d	X	

Table 3.3

In table 3.3 each row represents a different context. For example, in context (1), the relative clause subject saw houses *a, b, c*, and the matrix subject saw the same set of houses *a, b, c* but also saw houses d and *e* as well. In context (4), the matrix subject saw fewer houses than the relative subject, and the utterances is unacceptable. Note that here that neither subject is required to have seen all of the 5 houses, as seen in context (5).

In contrast, when the quantifier is stranded phrase-final in (34a), the interpretations are the complete opposite as those in (34b). This is illustrated in table 3.4.

(34a) nemituapnn wenji'guoml ta'n nitap nemitoqopnn **ms't**				
Context	I saw houses __	My friend saw houses __	True	False
(1)	{a, b, c}	{a, b, c, d, e}	X	
(2)	{a, b, c, d}	{a, b, c, d, e}	X	
(3)	{a, b, c, d, e}	{a, b, c, d, e}	X	
(4)	{a, b, c, d}	{a, b, c, d}		X

Table 3.4

Table 3.4 demonstrates that (34a) is true if and only if the subject of relative clause saw all of the houses, {a, b, c, d, e}, while the subject of the matrix clause has to have seen at least two of the houses.

There are two conclusions that can be drawn from this section. The first is that the lack of equivalent interpretations between relative clauses with stranded N/Qs and those with head-noun proximate N/Qs is evidence for relative clause internal N/Qs. If the stranded N/Qs are embedded inside the relative clause

and are not part of the matrix clause, then the attested difference in interpretation is expected. The second conclusion is that there are two instances of partitive quantification. Recall that in both the raising and the matching structures, there is movement of the internal noun from its base position to a position in spec-CP. The data from this section illustrates that both of these noun positions may receive a partitive interpretation, depending on the presence of a N/Q. The overt presence of N/Qs denotes individuals from the set of the noun. Additionally, even when there is no overt N/Q on the head noun or the base position, there is also a partitive reading.

3.2 Quantifier scope ambiguity

Quantifier scope ambiguities show further evidence that phrase-final N/Qs in relative clauses are internal to the relative clause and do not belong to the matrix clause. Consider the utterance in (35), where the universal quantifier *te's* (every) is in the subject position of the relative clause and the numeral *tapugl* (two) appears with the head noun *wenji'guoml* (houses).

(35) nemituapnn **tapugl** wenji'guoml ta'n **te's** lpatu'j welaptig'pn
see.1>3.PL.PST.IN two.IN house.PL.IN COMP every boy like.3>3′.PL.PST.IN
'I saw the 2 houses that every boy liked.' $\exists > \forall$; *$\forall > \exists$

For this utterance, there are two potential readings: (i) a surface reading where *tapugl* scopes over *te's*; and (ii), an inverse reading where *te's* scopes over *tapugl*. This is demonstrated in the following two scenarios respectively. In these scenarios there are three boys, {A, B, C}, and six houses, {1, 2, 3, 4, 5, 6}.

> *Scenario 1:* There are two houses out of the six that are liked by every boy and what the speaker saw was those two houses. So, Boy A likes houses 1, 2, and 3, Boy B likes houses 1, 2, and 4, Boy C likes houses 1, 2, 5, and 6, and the speaker saw houses 1 and 2.
>
> *Scenario 2:* Every boy likes two houses (but each house is only liked by one boy) and the speaker saw the houses that they saw. So, Boy A likes houses 1 and 2, Boy B likes houses 3 and 4, Boy C likes houses 5 and 6, and the speaker saw the 6 houses that the boys saw.

When tested, (35) is only felicitous under scenario 1 and not under scenario 2. The scope of *tapugl* is frozen up high in the matrix clause and the embedded quantifier *te's* is not able to scope over *tapugl*. The surface reading is available, but not the inverse reading.

When the numeral *tapugl* is phrase-final, as in (36), the prediction is that if *tapugl* were in a matrix clause position, then the utterance should have the same semantic readings as (35).

(36) nemituapnn wenji'guoml ta'n **te's** lpatu'j welaptig'pn **tapugl**
see.1>3.PL.PST.IN house.PL.IN COMP every boy like.3>3′.PL.PST.IN two.IN
'I saw the houses that every boy liked 2 of.' $\exists > \forall; \forall > \exists$

In other words, the utterance in (36) should only be felicitous under scenario 1, where *tapugl* scopes over *te's*, while the inverse reading where *te's* scopes over *tapugl* should be infelicitous. This however is not the case. (36) is felicitous in scenario 1 and in scenario 2. Both scope readings are available, *tapugl* can scope over *te's* and *te's* can scope over *tapugl*. The important fact here is that an inverse reading is available. Thus, quantifier scope ambiguities provides further evidence that the phrase-final N/Qs are internal to the relative clause.

In summary, differences in the semantic interpretations between phrase-final N/Qs and relative head N/Qs illustrate that the phrase-final N/Qs are internal to the relative clause. Additionally, there are partitive readings of the N/Qs in both the matrix clause and in the relative clause. Now that we have the syntactic position of the phrase-final N/Qs, the question then turns to which syntactic structure Mi'gmaq relatives require, the raising structure or the matching structure. This question is explored in the following chapter, focusing specifically on relative clauses with N/Qs.

Chapter 4

Mi'gmaq: Raising or Matching?

In this chapter, the raising and matching structures are evaluated in the context of the Mi'gmaq relative clause data. Neither structure is able to account for all of the Mi'gmaq data. I propose a modification of the matching structure, whereby it is not the semantic identity of the matching constituents that must be identical, but rather the lexical identity. The lexical matching analysis requires both identity of lexical content, as well as identity of structural chunks.

4.1 Matching, not raising

In this section I outline eight potential structures for Mi'gmaq relative clauses, four raising structures and four matching structures. The structures are evaluated against the Mi'gmaq data from chapter 2. The four raising structures cannot account for the Mi'gmaq data and as a result, a movement-only account of relative clauses is rejected as a potential structure for Mi'gmaq relative clauses. A matching structure is then assumed, however as will be shown, the four matching structures are equally unable to account for all of the data.

One key aspect connected to the question of whether Mi'gmaq relative clauses require matching or raising structure, is determining the structural size of the moved head. In the introduction, relative clauses with varying structural sizes of the internal relative head were presented: the 'NP only' head (Kayne 1994, Sauerland 1998, Bhatt 2002), the 'DP with semantically null D^0 ' head (Bianchi 2000), and the 'content-full DP' head (Koster-Moeller 2012). Mi'gmaq relative clauses allow for N/Q stranding inside the relative clause, which leads to the question of whether the structure of the internal moved noun requires a syntactic

structure larger than an NP. That is, does the presence of a stranded N/Q force a DP structure (*à la* Bianchi 2000, Koster-Moeller 2012) over an NP structure (*à la* Kayne 1994, Sauerland 1998, and Bhatt 2002).

The answer is that this is not necessarily the case. Recall from the introduction that Mi'gmaq does not have definite or indefinite articles. Bošković (2008, 2012) proposes a syntactic difference between languages that have overt articles and those without overt articles based on a multitude of cross-linguistic generalizations. According to this NP/DP parameter, languages without overt articles do not project a DP, but instead project an NP. Schuurman (2016) evaluates Mi'gmaq with respect to the generalizations outlined in Bošković (2008, 2012) and demonstrates that Mi'gmaq follows a number of these generalizations and therefore, if the NP/DP parameter is a real parameter, Mi'gmaq nominals should project an NP. We are left with two potential nominal structures. If this NP/DP parameter is realized, then Mi'gmaq nominals have an NP structure, while if the parameter is not realized, then there is a DP with a non-overt D^0.

For both potential nominal structures, there is an additional question of the syntactic status of the N/Qs. Under the so-called Adverbial Analysis, (Belletti 1982, Dowty & Brodie 1984), N/Qs in Mi'gmaq would be adjuncts. In contrast, under the Stranding Analysis (Sportiche 1988, Shlonsky 1991), the numerals/quantifiers would form a constituent with the NP, projecting their own phrase.

The final factor in determining the syntactic structure of the relative head, is the target for movement. We have evidence that the N/Qs can be stranded inside the relative clause. Depending on the syntactic status of the N/Qs, there are two potential targets for movement to spec-CP. The first potential target is the NP containing the noun, while the second target is the larger NP/DP containing the N/Q. If the latter is the target for movement, then an explanation as to why the N/Q is pronounced low inside the relative clause despite having undergone movement to spec-CP, must be provided.

In summary, there are eight potential structures, four each for the raising and matching structures. The target for movement is either the nominal-containing NP or the entire NP, under either an NP or a DP relative head, for either the raising or the matching structure.

Raising Structures:	RS.1	Internal NP with noun movement
	RS.2	Internal NP with noun and quantifier movement
	RS.3	Internal DP with noun movement
	RS.4	Internal DP with noun and quantifier movement
Matching structures:	MS.5	Internal NP with noun movement
	MS.6	Internal NP with noun and quantifier movement
	MS.7	Internal DP with noun movement
	MS.8	Internal DP with noun and quantifier movement

Each of these eight structures will be examined against four key pieces of data from chapter 2. First the raising structures are evaluated, and then the matching structures.

4.1.1 Against raising

In this section the four raising structures are analyzed in the context of the data from chapter 2. None of the four structures are able to account for all of the data. I first outline data that the structures are able to account for, and then present the problematic data that ultimately rules out the raising structure as a viable option for Mi'gmaq relatives. In this section, only quantifiers are used, however the exact same predictions occur with numerals i.e: *nes'gl....nangl* (3....5). Finally, all quantifiers pronounced at PF are in bold, while the bottom of a movement chain is ~~scratched out~~.

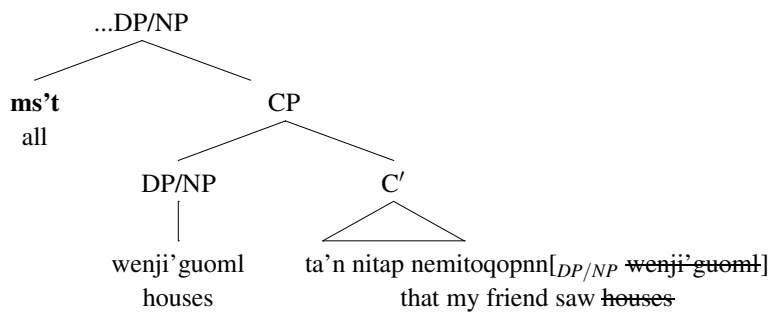
4.1.1.1 Accurate predictions

All four raising structures are able to account for utterances where there is an external quantifier, as in (37).

(37) nemituapnn **m'st** wenji'guoml ta'n nitap nemitoqopnn
see.1>3.PL.PST.IN all house.PL.IN COMP friend.1.POSS see.3>3′.POSS.PST.PL.IN
'I saw all (of the) houses that my friend saw.'

In this utterance, there is no internal quantifier and the raised constituent is either an NP as in RS.1 and RS.3, or a DP as in RS.2 and RS.4. In the tree in (38), the raised constituent moves from its base position to spec-CP.

(38)



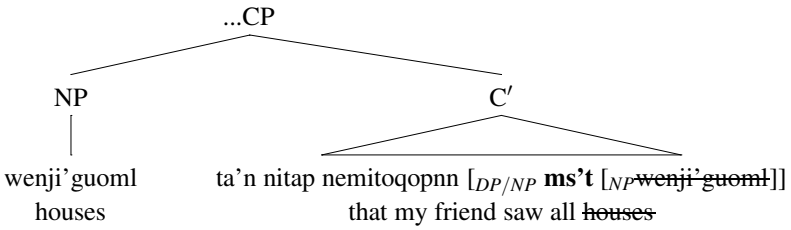
The quantifier *ms't* is then adjoined.[1] While there are theory specific differences that arise if there is an internal DP instead of an NP, Bianchi (2000) and Koster-Moeller (2012), both an NP and DP internal head correctly predict the acceptability of (37).

The four raising structures are able to predict the acceptability of utterances with only an internal quantifier, as in (39).

(39) nemituapnn wenji'guoml ta'n nitap nemitoqopnn **ms't**
see.1>3.PL.PST.IN house.PL.IN COMP friend.1.POSS see.3>3′.POSS.PST.PL.IN all
'I saw houses that my friend saw all (of).'

Under the four raising structures proposed, there are two targets for movement. In RS.1 and RS.3 the target is the noun, where it moves up to spec-CP, leaving the quantifier behind to be pronounced down low. For example, consider the structure in (40).

(40)



In RS.2 and RS.4 the target is the noun and the quantifier, which move up to spec-CP. However, the quantifier is not pronounced in the higher position but in the lower position. An additional stipulation for pronunciation of the lower position is required. While RS.2 and RS.4 require a further PF stipulation, in principle, the raising structures can predict the acceptability of (39).

[1]Here, I adopt a raising structure as argued for in Kayne (1994), however the same predictions arise for various other structures such as Bhatt (2002). The main difference is that under Bhatt (2002), the NP additionally moves from spec-CP to a CP adjoining position. The quantifier then adjoins to the matrix NP.

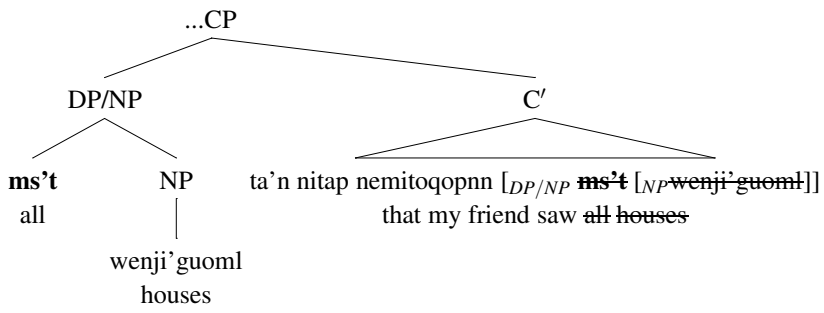
4.1.1.2 Inaccurate predictions

There are two main issues with the raising structures in accounting for the Mi'gmaq data. The first issue arises with utterances with two identical quantifiers, as in (41).

(41) nemituapnn **ms't** wenji'guoml ta'n nitap nemitoqopnn **ms't**
see.1>3.PL.PST.IN all house.PL.IN COMP friend.1.POSS see.3>3′.POSS.PST.PL.IN all
'I saw all (of the) houses that my friend saw all (of).'

Here, there is a higher and a lower quantifier that are both pronounced and interpreted. This data is problematic for RS.2 and RS.4 which involve movement of both the noun and the quantifier, as illustrated in the tree in (42).

(42)



Under these structures, raising the quantifier and noun creates two copies, a higher and a lower one. Both of these copies form a movement chain and therefore only one instance of the copies can be PF pronounced and LF interpreted (Bobaljik 1994a, 1995b; Brody 1995; Groat and O'Neil 1996; Pesetsky 1998). These two raising structures are unable to account for two distinct instances of the external and internal quantifier in (41).[2] Under RS.1 and RS.3, it naturally follows that an additional quantifier can be added to the clause, as only the noun moves to spec-CP, leaving the internal quantifier in the base position.

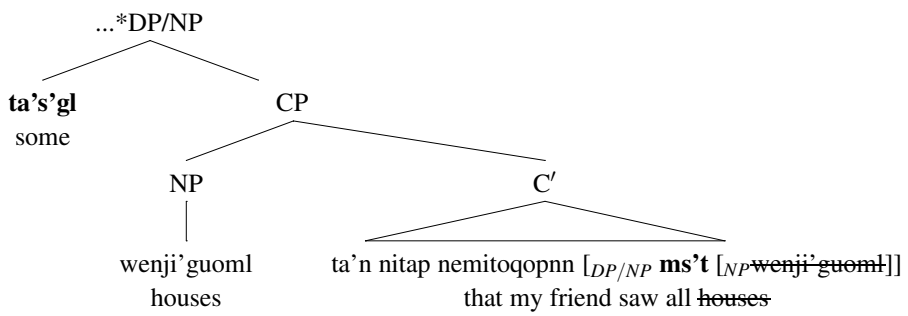
The second issue arises with ungrammatical utterances with two non-identical quantifiers, as in (43).

(43) * nemituapnn **ta's'gl** wenji'guoml ta'n nitap nemitoqopnn **ms't**
see.1>3.PL.PST.IN some.AN house.PL.IN COMP friend.1.POSS see.3>3′.POSS.PST.PL.IN all
Intended meaning: 'I saw some (of the) houses that my friend saw all (of).'

This data is problematic for only RS.1 and RS.3, where the noun moves to spec-CP. Under these structures, seen in (44), the possibility of adding a new quantifier to the clause is not excluded.

[2]The same issue arises in the raising structure proposed in Koster-Moeller (2012), where multiple copies of the same quantifier must be pronounced and interpreted.

(44)



In principle, any quantifier can be adjoined to the clause and is predicted to be an acceptable utterance. However, this is not the case in Mi'gmaq. These utterances are ungrammatical. For RS.2 and RS.4, the unacceptability of a non-identical quantifier is ruled out as both the noun and the quantifier raise to spec-CP, which in principle disallows adding another quantifier to the clause.

In summary, none of the proposed raising structures are able to account for the acceptability and unacceptability of the Mi'gmaq data, illustrated in table 4.1.

	(37) External Q	(39) Internal Q	(41) Identical Qs	(43) Non-identical Qs
RS.1	✓	✓	✓	x
RS.2	✓	✓/?	x	✓
RS.3	✓	✓	✓	x
RS.4	✓	✓/?	x	✓

Table 4.1

In particular, theories RS.1 and RS.2 cannot rule out the possibility of having two non-identical quantifiers, as demonstrated by the unacceptability of (43). Furthermore, the more restrictive theories that rule out the possibility of have two quantifiers, namely, theories RS.2 and RS.4, cannot account for sentences that have a repetition of the same quantifier, one within the relative clause and one outside of it (as shown in 41).[3]

[3]In Erlewine & Gould (2016) a raising analysis of Japanese relative clauses is proposed. Japanese has similar N/Q stranding in relative clauses. Erlewine & Gould propose a DP head-raising derivation for relative clauses that takes advantage of the Copy Theory of movement and the late-merger of relative clauses. However, their analysis can not be extended to Mi'gmaq. Japanese crucially differs in the grammaticality of utterances with two non-identical quantifiers

(45) Junya-wa [$_{HERC}$ Ayaka-ga mit-tsu mui-ta ringo]-o zenbu tabe-ta.
Junya-top Ayaka-nom three-cl peel-past apple-acc all eat-past
'Junya ate all of [the apples that Ayaka peeled three of].'

Under Erlewine & Gould's proposal, the external quantifier is not involved in the derivation of a relative clause, and is therefore unable to account for the ungrammaticality of such constructions in Mi'gmaq.

4.1.2 Matching issues

In this section, the four potential matching structures are evaluated against the Mi'gmaq data. The previous section demonstrated that a movement based account is unable to account for the Mi'gmaq data. Therefore, the matching structure is adopted for Mi'gmaq relative clauses. However, this evaluation demonstrates that the matching structure as is *standardly assumed* is also unable to account for the Mi'gmaq data. For this section it is important to recall two important aspects of the matching structure, the matching 'mechanism' and the structural size of the matched constituents. Throughout the literature as developed in Sauerland (1998, 2000, 2003) and further expanded with Hulsey and Sauerland (2006), the nature of the identity involved in the matching mechanism has evolved. In Sauerland (1998) the semantic identity of the matching NP's must be the same, while the lexical content can be identical, or similar enough. This notion of lexical content being identical or similar enough was eliminated in Husley and Sauerland (2006), with the semantic identity of the noun being the necessary criterion between the matched NPs. After being matched, the internal material in spec-CP is then phonologically deleted but remains present for LF. Crucially, it is the external noun and the internal noun that must match in semantic identity. In this section <...> indicates material that has undergone PF-deletion due to matching.

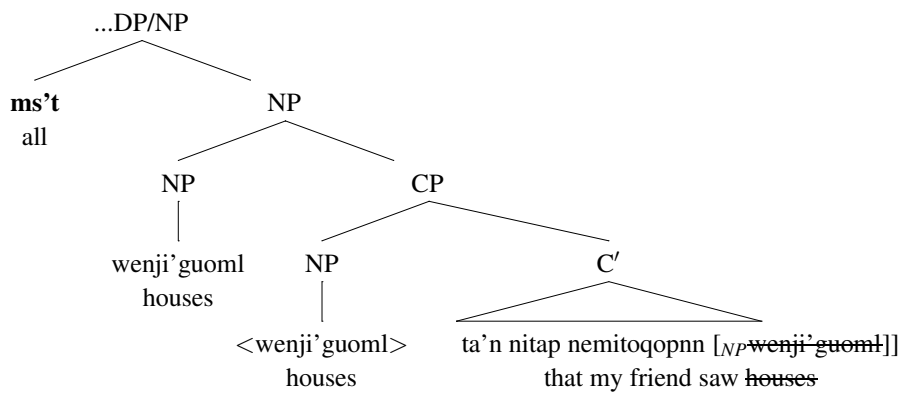
4.1.2.1 Accurate predictions

All of the four matching structures correctly predict the acceptability of utterances where there is an external quantifier, as in (37), repeated in (46).

(46) nemituapnn **m'st** wenji'guoml ta'n nitap nemitoqopnn
see.1>3.PL.PST.IN all house.PL.IN COMP friend.1.POSS see.3>3′.POSS.PST.PL.IN
'I saw the all (of the) houses that my friend saw.'

Under the matching structures, seen in (47), the internal noun moves to spec-CP, and since the internal and external noun match in terms of semantic identity, the internal noun is PF-deleted.

(47)

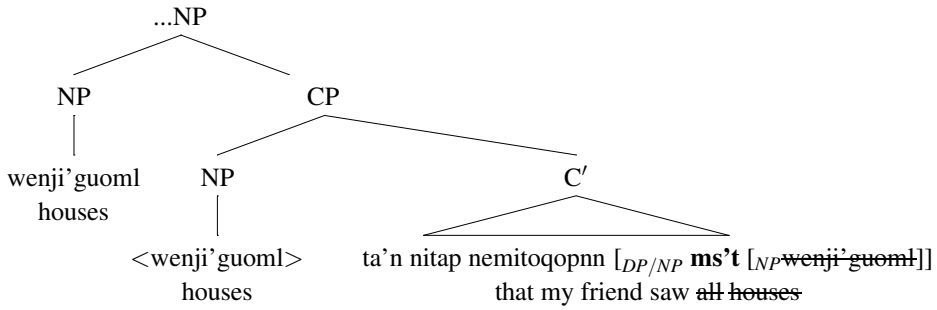


All four matching structures are also able to predict the acceptability of (39), repeated in (48).

(48) nemituapnn wenji'guoml ta'n nitap nemitoqopnn **ms't**
see.1>3.PL.PST.IN house.PL.IN COMP friend.1.POSS see.3>3′.POSS.PST.PL.IN all
'I saw houses that my friend saw all (of).'

However, there are certain caveats. In (49) the internal noun moves up to spec-CP, leaving behind the quantifier.

(49)



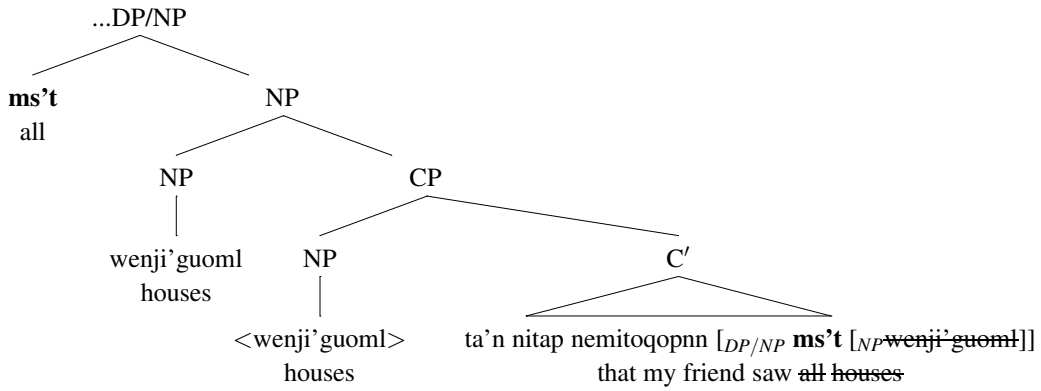
As the internal and external noun match in semantic identity, the internal noun is PF-deleted. This process follows from MS.1 and MS.3, where only the noun moves. In contrast, under MS.2 and MS.4 both the noun and the quantifier must move to spec-CP. However, under the matching structure from Hulsey and Sauerland (2012) only the nouns match in semantic identity. As a result, MS.2 and MS.4 seem to require an added stipulation that all material in spec-CP must be PF-deleted after the nouns match. However, the quantifier is pronounced down low inside the relative clause. It must then not be the case that the quantifier is PF-deleted, but only the lower copy is pronounced, requiring another stipulation. In summary, while all four matching structures are able to predict the acceptability of (48), MS.2 and MS.4 require additional stipulations to account for the quantifier being pronounced down low.

The same issues that arise for (48), arise with (41), repeated in (50).

(50) nemituapnn **ms't** wenji'guoml ta'n nitap nemitoqopnn **ms't**
see.1>3.PL.PST.IN all house.PL.IN COMP friend.1.POSS see.3>3′.POSS.PST.PL.IN all
'I saw all (of the) houses that my friend saw all (of).'

Here, there are two identical quantifiers, an external quantifier and an internal quantifier. Under MS.1 and MS.3, the internal noun moves up to spec-CP, matches with the external noun, and an external quantifier is adjoined to the matrix NP while the internal quantifier is pronounced in its base position down low, as in (51). In contrast, MS.2 and MS.4 require the same additional stipulations as for (48) to account for why the internal quantifier is pronounced low.

(51)



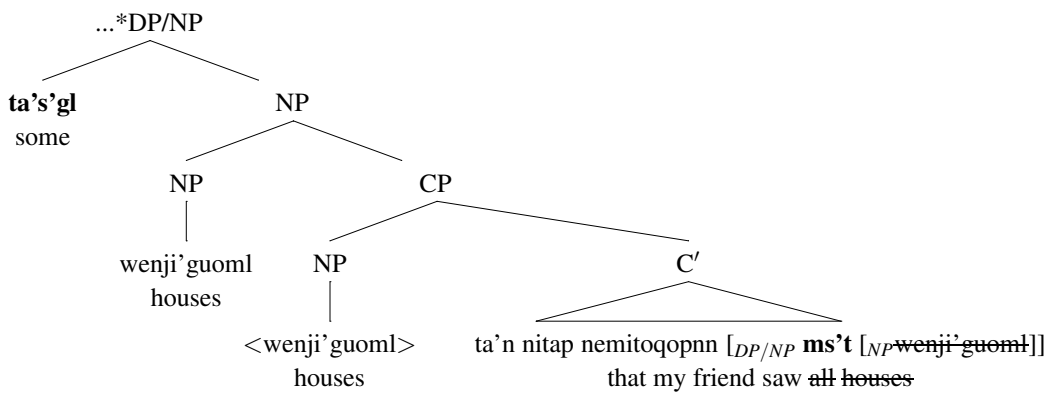
4.1.2.2 Inaccurate predictions

None of the four structures are able to account for the unacceptability of non-identical quantifiers, as in (43), repeated in (52).

(52) * nemituapnn **ta's'gl** wenji'guoml ta'n nitap nemitoqopnn **ms't**
see.1>3.PL.PST.IN some.AN house.PL.IN COMP friend.1.POSS see.3>3′.POSS.PST.PL.IN all
Intended meaning: 'I saw some (of the) houses that my friend saw all (of).'

The main issue here is that under these matching structures, there is no way to rule out the unacceptability of the external quantifier *ta's'gl* 'some'. For all of the four structures, only the internal and external nouns match, not the quantifiers, as demonstrated in (53). This 'noun-only' matching results in all four structures incorrectly predicting the acceptability of (52).

(53)



The results of the analysis from this section, demonstrates that the potential matching structures are not able to account for the Mi'gmaq data, illustrated in table 4.2. As with the raising structures, the issues of the matching structures come about with utterances with two quantifiers. While the matching structures are able to account for two identical quantifiers, albeit with some caveats, they are unable to rule out two non-identical NAQs of the same type.

	(37) External Q	(39) Internal Q	(41) Identical Qs	(43) Non-identical Qs
MS.1	✓	✓	✓	x
MS.2	✓	✓/?	✓/?	x
MS.3	✓	✓	✓	x
MS.4	✓	✓/?	✓/?	x

Table 4.2

4.1.3 Summary

In this section, I have shown that the raising structure cannot be the correct structure for Mi'gmaq relative clauses. As a result, we are left to assume the matching structure. However, the matching structure as is standardly assumed doesn't work, it is unable to predict the unacceptable Mi'gmaq utterances. To that end, I propose that the matching structure must be modified in order to account for the Mi'gmaq data. This is explored in the following section.

4.2 The problem of semantic identity

In this section the problem of semantic identity is explored and a new requirement of lexical identity is proposed. The main issue with the matching structure so far is that in all the versions we have been using meaning as a way of determining matching. In Hulsey and Sauerland (2006), the matching mechanism requires semantic identity between the internal NP and external NP to license deletion not lexical identity. For the purposes of this thesis, it is not necessary to go over this proposal in detail as it is evident that a matching structure that relies on semantic identity cannot account for relative clauses with quantifier stranding. The problem is not that the semantic matching can't predict the acceptability, but that it can't predict the unacceptable utterances. Consider again the data we have been relying upon, specifically (39) and (43) repeated below in (54a) and (54b).

(54) a. nemituapnn wenji'guoml ta'n nitap nemitoqopnn **ms't**
'I saw houses that my friend saw **all** (of).'

b. * nemituapnn **ta's'gl** wenji'guoml ta'n nitap nemitoqopnn **'ms't**
Intended meaning: 'I saw **some** (of the) houses that my friend saw **all** (of).'

In both of these utterances, the semantic identity of the noun *wenji'guoml* (houses) is identical. The difference between the two utterances is the presence or absence of the quantifier *ta's'gl* (some). Furthermore, the intended meaning of the unacceptable utterance is identical to the actual meaning of the acceptable utterance. Under semantic matching where only noun-containing NPs are matched, both of these structure should be acceptable, but this is clearly not the case.

For the sake of argument, assume that the structure of the internal and external noun is larger than NP and encompasses the noun and the quantifier. As a result, the matching mechanism now requires the semantic identity of the NP and the quantifier. In (54a) the constituents matching are $[_{XP}$ (∃x) (wenji'guoml (x))] and $[_{XP}$ (∀x) (wenji'guoml (x))], neither of which are semantically identical. The matching mechanism incorrectly predicts (54a) to be unacceptable. On the other hand, in (54b), the matching constituents are $[_{XP}$ (∃x) (wenji'guoml (x))] and $[_{XP}$ (∀x) (wenji'guoml (x))]. Here, the constituents do not match in semantic identity and are therefore correctly predicted to be unacceptable. By requiring semantic identity between the internal and external XPs containing their respective noun and quantifier, we are left with a matching structure that predicts the unacceptability of (54b) but is unable to account for the acceptability of (54a).

Notice that even if there is an added stipulation stating that the matching analysis occurs before the existential closure of the bare NP in (54a), there is nothing to be gained. What matches now is a bare nominal in the antecedent and a quantifier and a nominal in the internal XP, which should be predicted (incorrectly) to be unacceptable.

What we are left with is the following: first, if only the semantic identity of the nouns must be identical, then there is no way of accounting for the unacceptability of (54b). Second, if we adopt an analysis where the semantic identity of the noun and the quantifier must be identical, there is no way of accounting for the acceptability of (54a). What both of these two statements have in common is that it is the *semantic* identity of the matching constituents that must be identical. To that end, I propose a matching mechanism which matches the lexical content instead of semantic content. In addition, the constituents being matched are those containing the N/Q and the noun. The specifics surrounding the lexical matching structure are explored in the following section.

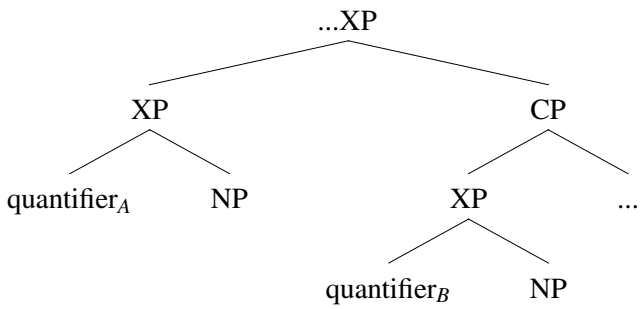
4.3 Lexical matching analysis

In this section I outline a proposal of matching relatives that relies upon the lexical content of the matched constituents. It should be noted that this proposal differs from that of Sauerland (1998, 2000, 2002). Sauerland proposes lexical identity between the two matched constituents as it was necessary to demonstrate that there must be a fully realized lexical instantiation of the head noun inside the relative clause. However, the licensing of deletion of the internal constituent is dependent on only the semantic content of the elided constituent and its antecedent: it requires identity of meaning. This is further illustrated by the fact that Sauerland does not require strict lexical identity, the lexical content only has to be *similar enough*. The claim in this section however, is that the licensing of the elided internal constituent is in part dependent on the lexical content and not the semantic content.

The lexical matching analysis assumes the basic tenets of the matching structure, where the internal constituent moves from its base position to spec-CP. The relative clause is then late merged into the matrix clause (Fox & Nissenbaum 1999, Hulsey & Sauerland 2006), resulting in a single structure. Additionally, the external head is the antecedent licensing deletion. However, in order to account for for the Mi'gmaq data, there are two obligatory requirements. The first requirement focuses on the syntactic structure of the antecedent. To rule out utterances like [*some houses that John saw all*], the external Q and N and the internal

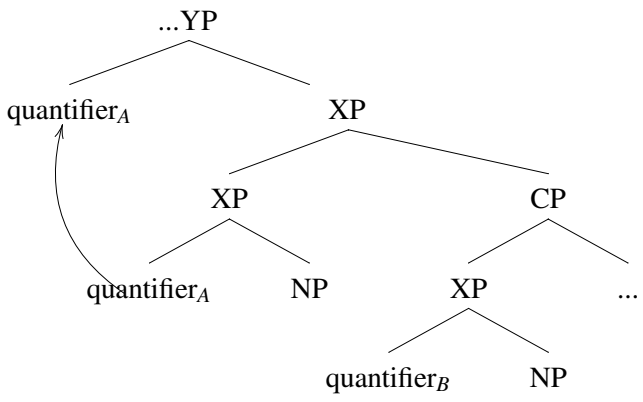
Q and N must all be involved in the matching mechanism. Therefore, the structural size of the antecedent and the matched internal constituent must be larger than a bare NP. The basic structure is outlined in (55).

(55)



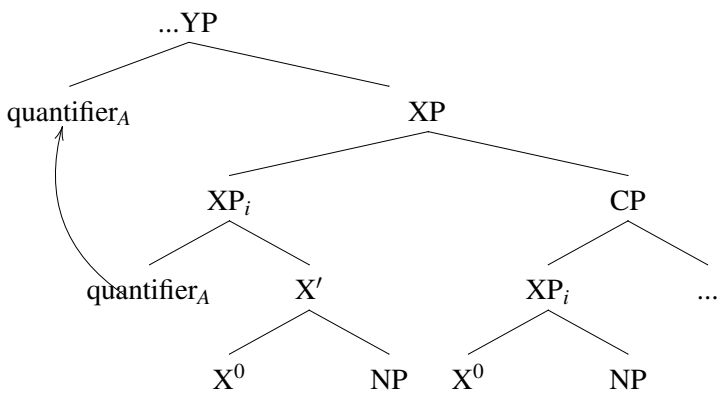
There is an immediate problem with this structure; the higher quantifier$_A$ does not c-command the relative clause. Given that the all the examples so far are restrictive relatives, the external quantifier must c-command over the external noun and the relative clause. Therefore, the quantifier must move to a higher position in the XP, as in (56). The specifics of this movement are detailed in section 4.4. This movement allows for the higher copy of the external quantifier $_A$ to c-command the relative clause, while ensuring that a copy of the quantifier is involved in the matching mechanism, assuming a Copy-Theory of movement (Chomsky 1993, 1995).

(56)



The second requirement focuses on the mechanism of deletion/ellipsis of the internal moved constituent in spec-CP. In (57), there is an external quantifier, but not an internal quantifier i.e. *all houses that John saw*.

(57)



An anaphoric relation is established between the external XP and the internal XP, as only identical types of constituents can be considered for ellipsis. Here, I tentatively posit that it is the highest identical phrases within the external constituent and the internal constituent that are anaphorically bound. Once an anaphoric relation is established, deletion/ellipsis of the internal XP must apply. As with the standard matching structure, this deletion is only PF deletion, the elided material is obligatorily reconstructed to its base position at LF. This PF deletion only targets the part inside the anaphorically related internal XP that is **structurally identical** and **lexically identical** to the antecedent XP. Once two lexical items match, then the matched material in the internal XP is deleted. For example, in the structure above, as the antecedent XP contains a quantifier in its specifier, but the co-indexed internal XP does not, then deletion only targets that which is structurally identical; the X^0 and the NP. If the lexical content is identical in the matching X^0 and the NP, then PF deletion applies. We can define lexical matching as follows:

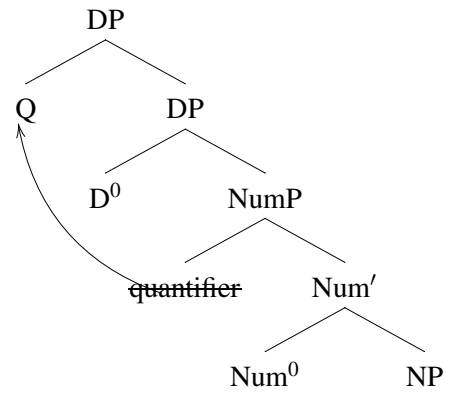
(58) *Lexical Matching:* All lexical material in the internal XP, where the internal XP has a c-commanding antecedent XP, must be PF deleted upon matching, where, in order to match, the lexical material of the internal XP is within a chunk that is structurally identical and lexically identical to the antecedent XP.

In this analysis, it is the notion of structural identity of *elements within* the anaphoric internal constituent and the antecedent that is crucial. The entire structure as a whole does not have to be identical in order for matching to occur. Now that the basic proposal has been sketched, we move towards the application of this proposal to the Mi'gmaq data.

4.4 Lexical matching in Mi'gmaq

In order to apply the lexical matching analysis to Mi'gmaq, there are first several assumptions that need to be made about the structure of Mi'gmaq DPs. Up to this point, I have been agnostic as to the exact structure in the nominal domain.[4] Like Borer (2005) and many others, I will assume that quantifiers are associated with two semantic properties that relate to two different syntactic phrases. One property involves measuring the denotation of a noun and is associated with a measurement phrase, often called a NumP or Number Phrase. The other property involves quantification over the measurement and is often associated with a determiner phrase. Authors such as Borer (2005), Matthewson (1996), and Matthewson and Reinholtz (1996) have argued that for many different languages, lexical quantifiers originate within the DP domain (specifically the NumP for Borer 2005) and then move to a position immediately dominated by a DP. The basic structure is given in (59).

(59)



If we adopt this structure for Mi'gmaq and assume that quantifiers such as *ms't*, *ta'sijig*, as well as the numeral modifiers originate within a lower NumP but eventually move to a higher position immediately dominated by a DP, then the matching data falls out naturally from the definition of Lexical Matching.

With this assumption in place, let's consider the relative clause structures in more detail. In the lexical matching structure, there are two separate DPs. An external DP in the matrix clause, and an internal DP in the relative clause. As with the other variations of a matching structure, the internal DP moves from its base position to spec-CP. The relative clause is then late merged into the external DP deriving a structure with two DP copies. These copies undergo matching and ellipsis/deletion must occur. Given the proposed structure of the Mi'gmaq DP, the antecedent must be either a DP, a NumP, or an NP. Due to the fact that these are

[4]Here I am assuming a structure that fits the requirements of the lexical matching analysis, but further research is required to independently provide evidence for this proposed nominal structure.

restrictive relative clauses, the antecedent cannot be a DP. Furthermore, since the N/Qs are critically involved in the matching process I assume the antecedent is NumP.

The final aspect for this analysis is to determine the structural size of the relative clause internal head that moves to spec-CP prior to late-merger. Considering that the internal N/Qs are pronounced in a low position, this leads to two possibilities, either the whole QP/DP moves, or a part of the DP moves. To this end, I adopt the *phonological theory of QR*, as suggested by Bobaljik (1995), Pesetsky (1999), Groat and O'Neil (1994) and adopted by Fox (2002) for antecedent-contained relative clauses. Under the phonological theory of QR, movement is a copying operation with phonology targeting one copy in a chain for pronunciation. When phonology targets the head of the chain, the movement is 'overt', while if the tail of the chain is the target, then the movement is 'covert'. The phonological theory of QR allows us to explain why the internal quantifiers/numerals are pronounced low.[5] The order of operations is then as follows:

(i) The internal DP undergoes QR to spec-CP.

(ii) Late-merger of the relative clause to the matrix NumP and matching occurs.

(iii) All lexical content targeted for deleted via the matching mechanism is PF deleted

(iv) As the movement to spec-CP appears to be covert, the moved DP is tagged by phonology to be pronounced at the tail of movement chain.

(v) Only the remaining material not PF deleted by the matching mechanism is pronounced in the tail of the movement chain.

The following sections apply the lexical matching analysis to the four key pieces of data from section 4.1. While the utterances all have quantifiers, the same results appear if the quantifier(s) are replaced with a numeral.

[5]Note that the phonological theory of QR is not crucial for this analysis. Other possibilities include DP movement leaving a QP remnant behind, or overt movement of the QP/DP to spec-CP, however the latter requires a stipulation that all non-deleted lexical items be pronounced in their base position due to contiguity.

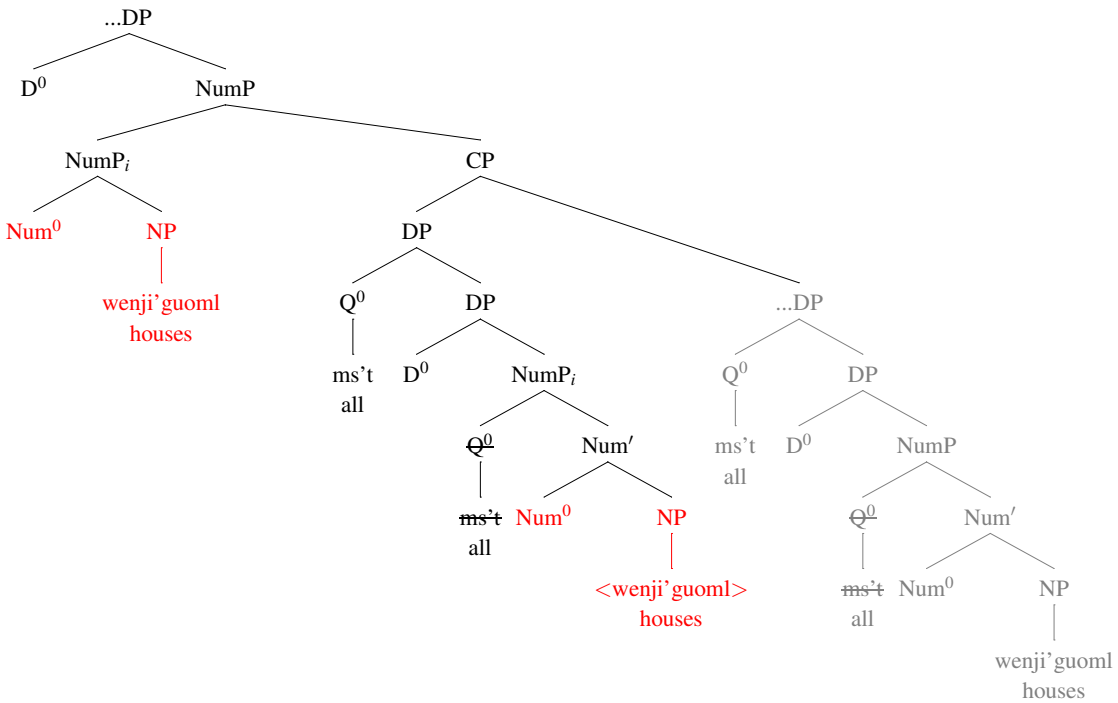
4.4.1 RC internal quantifier

In this section, (39), repeated in (60) is analyzed under the lexical matching analysis. Here, there is an internal quantifier *ms't* (all) stranded in the relative clause.

(60) nemituapnn wenji'guoml ta'n nitap nemitoqopnn **ms't**
see.1>3.PL.PST.IN house.PL.IN COMP friend.1.POSS see.3>3′.POSS.PST.PL.IN all
'I saw houses that my friend saw all (of).'

The analysis is as follows, demonstrated in (61). First, the internal DP moves to the relative clause spec-CP. Second, an anaphoric relation is established between the external NumP and the internal NumP. Once this anaphoric relationship is established, lexical matching occurs and then deletion/ellipsis of elements inside the internal NumP must apply. PF deletion only targets the part inside the anaphorically related internal NumP that is structurally identical to the antecedent NumP. In this structure, only the internal NumP contains a copy of the quantifier in the specifier of NumP, while the antecedent NumP does not. The quantifier is then excluded from matching/deletion as it is not in a structurally identical chunk. Within the two structurally identical chunks, the lexical material in both is *wenji'guoml* (houses). As they match in lexical identity, the lexical material of the internal NP is deleted.

(61)



Under the lexical matching analysis (60), with an internal quantifier, is correctly predicted to be acceptable.

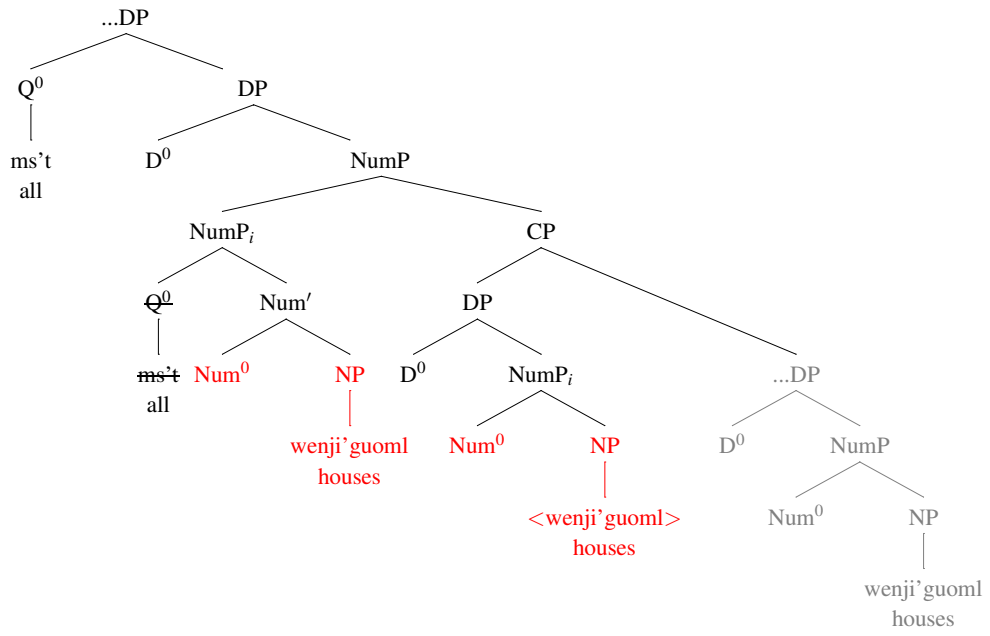
4.4.2 RC external quantifier

In this section, (37), repeated in (62) is analyzed under the lexical matching analysis. Here, there is an external quantifier *ms't* (all).

(62) nemituapnn **m'st** wenji'guoml ta'n nitap nemitoqopnn
see.1>3.PL.PST-IN all house.PL.IN COMP friend.1.POSS see.3>3′.POSS.PST.PL.IN
'I saw the all (of the) houses that my friend saw.'

The analysis is as follows, demonstrated in (63). First, the internal DP moves to the relative clause spec-CP. Second, an anaphoric relation is established between the external NumP and the internal NumP. Once this anaphoric relationship is established, lexical matching occurs and then deletion/ellipsis of elements inside the internal NumP must apply. PF deletion only targets the part inside the anaphorically related internal NumP that is structurally identical to the antecedent NumP. In this structure, the antecedent NumP contains a quantifier in its specifier, but the co-indexed internal NumP does not. The quantifier is then excluded from matching/deletion as it is not in a structurally identical chunk. Within the two structurally identical chunks, the lexical material in both is *wenji'guoml*. As they match in lexical identity, the lexical material of the internal NP is deleted.

(63)



Under the lexical matching analysis (62) with an external quantifier, is correctly predicted to be acceptable.

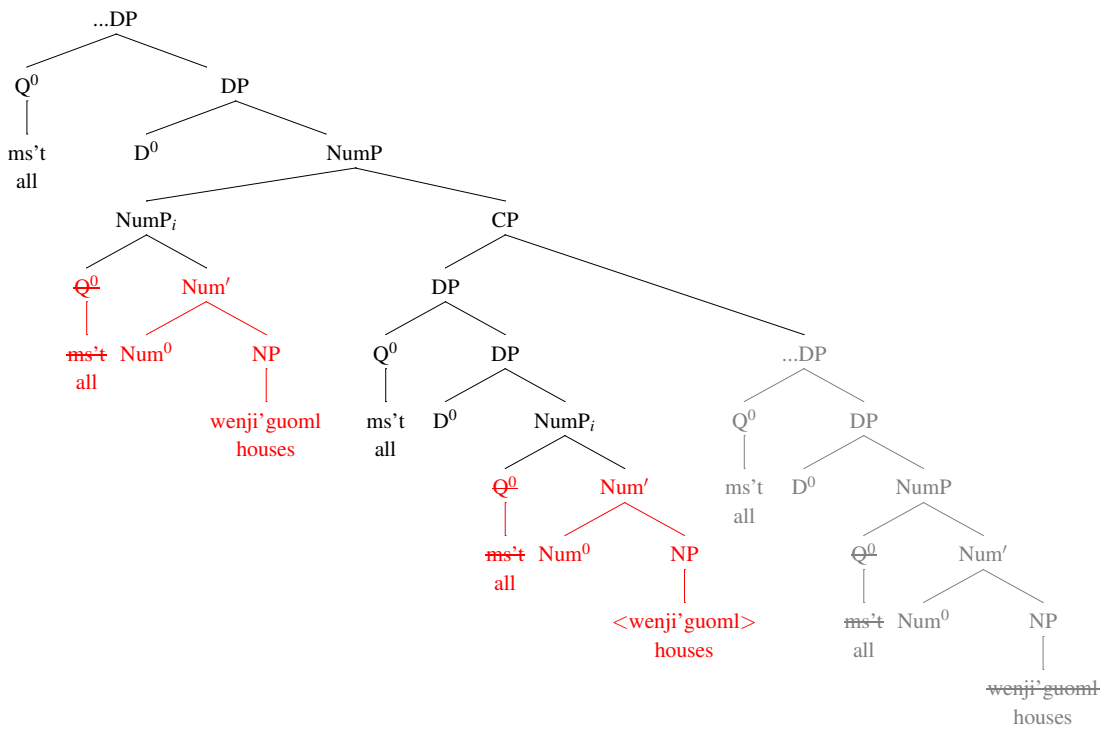
4.4.3 Identical internal and external RC quantifiers

In this section, (41), repeated in (64) is analyzed under the lexical matching analysis. Here, there are two instances of the quantifier *ms't* (all), one external and one internal.

(64) nemituapnn **ms't** wenji'guoml ta'n nitap nemitoqopnn **ms't**
see.1>3.PL.PST.IN all house.PL.IN COMP friend.1.POSS see.3>3′.POSS.PST.PL.IN all
'I saw all (of the) houses that my friend saw all (of).'

The analysis is as follows, demonstrated in (65). First, the internal DP moves to the relative clause spec-CP. The quantifier of the external DP has raised to form a generalized quantifier. Second, an anaphoric relation is established between the external NumP and the internal NumP. Once this anaphoric relationship is established, lexical matching occurs and then deletion of elements inside the internal NumP must apply. PF deletion only targets the part inside the anaphorically related internal NumP that is structurally identical to the antecedent NumP. In this structure, both the antecedent NumP and the internal NumP contain a quantifier in their specifiers. The quantifiers are then included in matching/deletion as they are in a structurally identical chunk. Within the two structurally identical chunks, the lexical material in both is *ms't wenji'guoml*. As they match in lexical identity, the lexical material of the internal NP is deleted.

(65)



Under the lexical matching analysis (64), with two identical quantifiers, is correctly predicted acceptable.

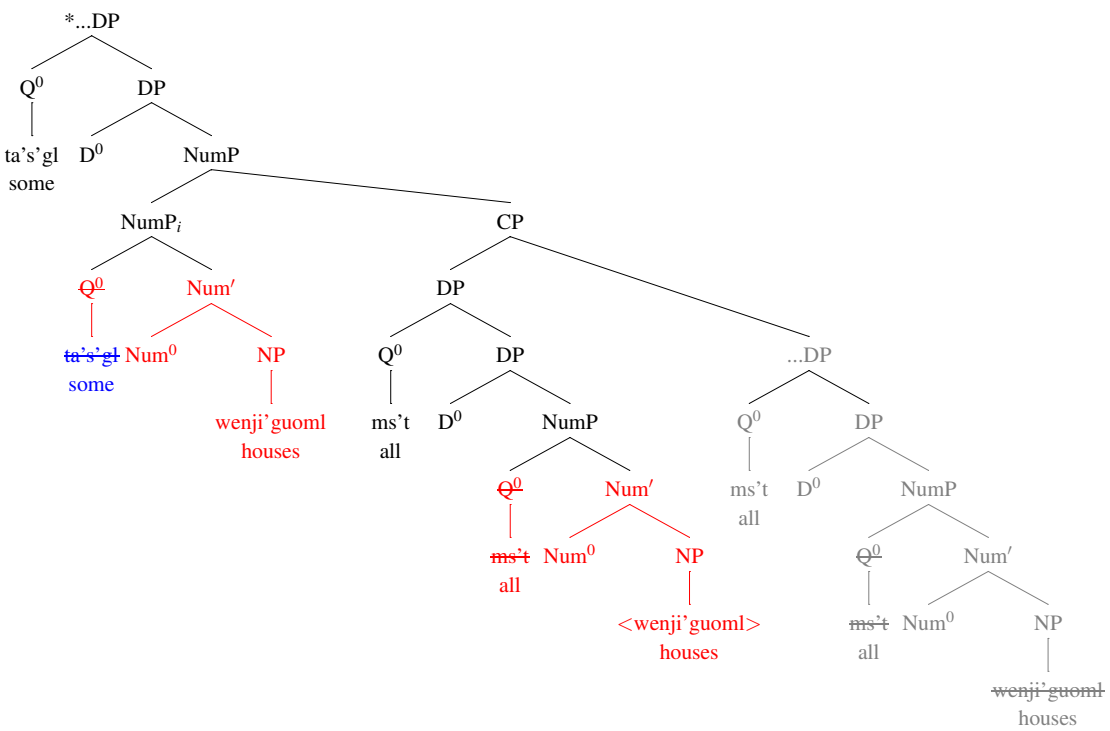
4.4.4 Non-identical internal and external RC quantifiers

In this section, (43), repeated in (66) is analyzed under the lexical matching analysis. Here, there are two non-identical quantifiers, *ta's'gl* (some) in the external position and *ms't* (all) in the internal position.

(66) * nemituapnn **ta's'gl** wenji'guoml ta'n nitap nemitoqopnn **ms't**
see.1>3.PL.PST.IN some.AN house.PL.IN COMP friend.1.POSS see.3>3′.PST.PL.IN all
Intended meaning: 'I saw some (of the) houses that my friend saw all (of).'

The analysis is as follows, demonstrated in (67). First, the internal DP moves to the relative clause spec-CP. Note that the quantifier of the external DP has raised to form a generalized quantifier. Second, an anaphoric relation is established between the external NumP and the internal NumP. Once this anaphoric relationship is established, lexical matching occurs and then deletion/ellipsis of elements inside the internal NumP must apply. PF deletion only targets the part inside the anaphorically related internal NumP that is structurally identical to the antecedent NumP. In this structure, both the antecedent NumP and the internal NumP contains a quantifier in their specifiers. The quantifiers are then included in matching/deletion as they are in a structurally identical chunk. Here, the two quantifiers do not match in lexical identity and therefore deletion cannot occur, resulting in an ungrammatical utterance.

(67)



Under the lexical matching analysis, (66) with two non-identical quantifiers, is correctly predicted to be unacceptable.

Summarizing the results so far, we have seen that the lexical matching analysis is able to predict the acceptable and unacceptable Mi'gmaq data.

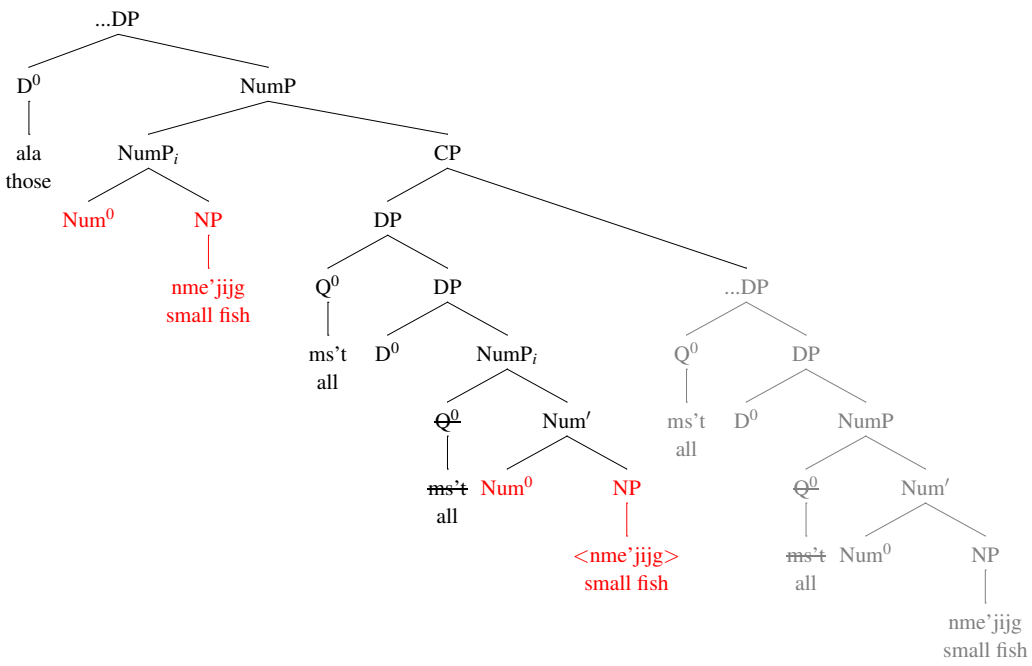
4.5 Further prediction

The major prediction made from lexical matching is that elements other than N/Qs should be able to appear either in the antecedent DP or the internal D^0, provided the elements are in a non-identical structural position. In particular, determiner elements that do not involve some form of measurement and therefore do not occupy a syntactic position within the NumP should not cause any violations in terms of matching. One type of element that fits this description are demonstrative determiners. Consider the acceptable sentence in (68) where there is a demonstrative in the matrix clause, but a quantifier in the relative clause.

(68) nemi'gig **ala** nme'jijg ta'n lpatu'jg nemiatipni **nan'ijig**
see.1>3.PL.PRES.AN those fish.DIM.PL.AN COMP boy.PL.AN see.3>3′.PST.PL.AN five.AN
'I see those small fish that my friend saw 5 (of).'

In (68), the demonstrative is outside of the antecedent NumP, as demonstrated in (69).

(69)



As neither the demonstrative or the numeral are part of a structurally identical chunk, they are not involved in matching. The matching then occurs between the identical syntactic chunk in the antecedent and internal DP containing the NP. The utterance is then correctly predicted to be grammatical.

Chapter 5

Conclusion/Outlook

I have shown that Mi'gmaq relative clauses require a matching structure and not a raising structure. Furthermore, the matching structure requires lexical identity between the antecedent and the internal head and cannot rely upon semantic identity. In chapter 2, I presented the empirical data of Mi'gmaq relative clauses, showing how relative clauses with NAQs allow for three grammatical distributional patterns, (i) an NAQ may appear with the head noun; or (ii) in a stranded phrase-final position; or, (iii) two identical NAQs may appear, one modifying the head noun and one in the stranded position. Also, relative clauses with NAQs disallowed two NAQs of the same type, one modifying the head noun and one in the stranded position. Chapter 3 argued that the stranded N/Qs occupied a position inside the relative clause and were not dislocated from the matrix clause. The evidence for this came from the fact that sentences with a stranded N/Q had different truth conditions than sentences where the N/Q directly modified the matrix noun. In particular, stranded N/Qs seemed to take scope within the relative clause.

In chapter 4, I claimed that Mi'gmaq relative clauses require a matching structure and not a raising structure. Eight potential structures, four raising and four matching, were proposed and compared with four key pieces of data. The four raising theories were discarded as viable structures: they were unable to predict the acceptability judgements with two N/Qs. The four matching structures were unable to account for the Mi'gmaq data with two non-identical N/Qs. I proposed that the problems for the matching analysis arose due to both the requirement of semantic identity and the requirement that matching occurred only between nouns. I then proposed a lexical matching analysis, which requires lexical identity, but only with structural chunks that are identical between the antecedent and the internal head. The lexical matching analysis correctly accounted for the Mi'gmaq data and made a further attested prediction with respect to the

distribution of demonstratives.

There are two remarks to be made concerning the proposal put forth in this thesis. The first concerns the patterns arising with the lexical matching analysis and the second remark concerns the specific analysis of the Mi'gmaq nominal domain.

As has been stated, the lexical matching analysis does not require complete structural or lexical identity between the antecedent and internal head. It is only necessary that there is a structurally identical chunk with identical lexical material within both in order for deletion to occur. There are two patterns that can arise from this 'chunk' requirement. The first pattern is that the entire antecedent, or the internal head are not fully identical, but are partially identical. Either the antecedent or the internal head can contain different material that may not be involved in matching and subsequent PF-deletion. This can results in a mismatch in the syntactic identity, the semantic identity, and lexical identity between the entire antecedent and internal head. The second pattern is that the entire antecedent and the internal head contain the same material that is then matched and the lower copy is deleted. There is only complete identity between the antecedent and the internal head. This results in complete structural, semantic, and lexical identity. That there are these two patterns is somewhat surprising, given the ellipsis literature.

Within the 'standard' ellipsis literature on VP-ellipsis, NP-ellipsis, sluicing etc, it is is proposed that there must be complete identity between the antecedent and the deleted element, licensed either via semantic identity (Sag and Hankamer 1984, Merchant 2001, van Craenenbroeck 2010, etc) or syntactic identity (Sag 1976, Williams 1977, Chung et al. 1995, etc.). In the proposal put forth in this thesis, there is partial or complete identity which contradicts the identity requirement. One wonders how to reconcile the partial identity that arises from this proposal with the theories of ellipsis.

It has been noted by Hulsey and Sauerland (2006) that there is something different regarding the ellipsis in relative clauses and the ellipsis between other constituents i.e. VP-ellipsis, NP-ellipsis. Hulsey and Sauerland (2006: 17-18) state:

> We follow Sauerland (1998, 2000, 2002) in assuming that deletion of the lower head in matching relative clauses is different from VP-ellipsis in two regards: deletion is obligatory and the antecedent licensing ellipsis must be the external head. VP-ellipsis, on the other hand, is not obligatory and the antecedent of deletion licensing isn't unequivocally determined by the position of the deleted VP.

This difference between the conditions on the deletion in matching relatives and that of VP-ellipsis (or NP-ellipsis) can clearly be seen in Mi'gmaq. Consider the contrast in the examples in (70), taken from chapter 2.

(70) a. * Sa'n nemiapni ta's-ijig glitaq **ta'n** Mali nemiapni ms't
John see.3>3′PL.PST.AN some-AN berries.AN COMP Mary see.3>3′PL.PST.AN all
'John saw some (of the) berries that Mary saw all (of).'

b. Sa'n nemiapni ta's-ijig glitaq **aq** Mali nemiapni ms't
John see.3>3′PL.PST.AN some-AN berries.AN CONJ Mary see.3>3′PL.PST.AN all
<glitaq>
<berries.AN>
'John saw some (of the) berries and Mary saw all (of them)'

Here, the utterance in (70a) is unacceptable while (70b) is an acceptable utterance. The only difference between these two utterances is that (70a) is a relative clause while (70b) is a conjunction. In (70b), under the general conditions of ellipsis, either syntactic or semantic, the antecedent noun *glitaq* is semantically and syntactical identical to the elided noun. The differences in the type of quantifier scoping over the nouns does not have an impact on ellipsis, the elided nouns are syntactically, semantically, and lexically identical. However, as has been shown in great detail in chapter 4, the quantifiers must be involved in the matching deletion in (70b). According to Hulsey and Sauerland (2006), the matching structure involves the exact same licensing condition motivated from VP-ellipsis and other deletion phenomena in the deletion of the internal head in matching relatives. But if the same licensing conditions should apply for both (70b) and (70a) where there is identity between the antecedent and the elided noun, why is there a difference in the acceptability judgements, where (70a) is unacceptable while (70b) is acceptable?

The motivation for Hulsey and Sauerland (2006), and Sauerland (1998), (2000), (2003) to adopt the conditions of VP-ellipsis and apply it to matching, was because there was no reason to assume otherwise. For them, the conditions of VP-ellipsis were able to capture the facts of English matching relatives and so there was no reason to assume that the deletion in matching relatives was not the same type of ellipsis seen in other deletion environments. However, it is just as equally possible that the type of deletion seen in the matching relatives is not the same as ellipsis. While this deletion has the appearance of being ellipsis, in that there is an antecedent licensing deletion, it is not ellipsis *per se*, at least not dependent on the same conditions as in 'standard' ellipsis. If we take the position that the deletion in matching relatives is not under the same identity conditions as 'standard' ellipsis then we can explain the patterns seen in Mi'gmaq where

there may, but does not have to be, complete identity between the antecedent and the internal head.

The main point of this discussion is to demonstrate that there are two options for matching relatives: (i) they follow the same licensing conditions as ellipsis, or (ii) they do not. The approach by Hulsey and Sauerland (2006) adopts the first option, but this leads to the wrong predictions for Mi'gmaq. But, if we take the other approach, that the same conditions do not have to apply, then we can get the correct predictions.

The final remark to be made is on the analysis of the Mi'gmaq data. In positing the lexical matching analysis, I made several non-trivial assumptions about the syntactic structure of the nominal domain in Mi'gmaq. These assumptions were needed to provide an avenue where the matching structure could be adapted to account for the Mi'gmaq data. It is highly possible that the Mi'gmaq nominal system requires a different syntactic structure then I have assumed. In which case, the lexical matching structure would potentially require further amendments. But crucially, regardless of the the viability of the lexical matching analysis, what has been made clear is that: first, the raising structures proposed in Kayne (1994), Bianchi (2000) and Bhatt (2002) are unable to account for the Mi'gmaq data, and it seems evident that a movement based account is not the correct approach, as it would never be able predict the acceptability judgements with two N/Qs. Second, the matching structures as proposed in Sauerland (1998, 2000, 2003), Hulsey and Sauerland (2006), Koster-Moeller (2012), where semantic identity licenses deletion, also cannot correctly account for the Mi'gmaq data. These two issues are the basis for a lexical matching approach.

Bibliography

Afarli, T. A. (1994). A promotion analysis of restrictive relative clauses. *Linguistic Review*, 11(2):81–100.

Bale, A. and Coon, J. (2014). Classifiers are for numerals, not for nouns: Consequences for the mass/count distinction. *Linguistic Inquiry*.

Belletti, A. (1982). On the anaphoric status of the reciprocal construction in Italian. *The Linguistic Review*, 2(2):101–137.

Bhatt, R. (2000). Adjectival modifiers and the raising analysis of relative clauses. In *Proceedings-NELS*, volume 30, pages 55–68.

Bhatt, R. (2002). The raising analysis of relative clauses: Evidence from adjectival modification. *Natural language semantics*, 10(1):43–90.

Bianchi, V. (2000). The raising analysis of relative clauses: A reply to Borsley. *Linguistic Inquiry*, 31(1):123–140.

Bobaljik, J. D. (1994). 'Predicates and Phrase Structure: May Day Musings from Kamchatka'. unpublished manuscript, Kamchatka Institute of Ecology and Natural Resources, Petropavlovsk-Kamchatskij, Russia.

Bobaljik, J. D. (1995). *The syntax of verbal inflection*. PhD thesis, MIT.

Borer, H. (2005). Structuring Sense. Volume I: In Name Only/Volume II: The Normal Course of Events.

Borsley, R. D. (1997). Relative clauses and the theory of phrase structure. *Linguistic Inquiry*, pages 629–647.

Bošković, Ž. (2008). What will you have, DP or NP? In *Proceedings-NELS*, volume 37, page 101.

Bošković, Ž. (2012). On NPs and clauses. *Discourse and grammar: From sentence types to lexical categories*, pages 179–242.

Brame, M. (1968). A new analysis of the relative clause: evidence for an interpretive theory. *Unpublished manuscript, MIT*.

Brody, M. (1995). *Lexico-Logical Form: A radically minimalist theory*. MIT press.

Chomsky, N. (1965). Aspects of a theory of syntax. *Cambridge, Massachusetts: MIT Press*, 53:334–341.

Chomsky, N. (1977). *On wh-movement*. Cambridge, Massachusetts: MIT Press.

Chomsky, N. (1993). A minimalist program for linguistic inquiry. *The view from Building 20*, pages 1–52.

Chomsky, N. (1995). *The minimalist program*. MA: MIT Press.

Chung, S., Ladusaw, W. A., and McCloskey, J. (1995). Sluicing and logical form. *Natural language semantics*, 3(3):239–282.

Cole, P., Harbert, W., and Hermon, G. (1982). Headless relative clauses in quechua. *International Journal of American Linguistics*, 48(2):113–124.

Coon, J. and Bale, A. (2014). The interaction of person and number in Mi'gmaq. *Nordlyd*, 41(1):85–101.

Davis, H. (2003). Mind the gap: plural agreement and a'-extraction in st'át'imcets (lillooet salish). In *38th International Conference on Salish and Neighbouring Languages*, pages 23–46.

Dowty, D. and Brodie, B. (1984). The semantics of "floated" quantifiers in a transformationless grammar. In *Proceedings of the West Coast Conference on formal linguistics*, volume 3, pages 75–90.

Fox, D. (2002). Antecedent-contained deletion and the copy theory of movement. *Linguistic Inquiry*, 33(1):63–96.

Fox, D. and Nissenbaum, J. (1999). Extraposition and scope: A case for overt QR. In *Proceedings of the 18th West Coast Conference on formal linguistics*, volume 18, pages 132–144.

Gordon, D. (2014). The Distribution of gi's in Mi'gmaq. *Presented at the 46th Algonquian Conference*.

Groat, E. and O'Neil, J. (1996). Spell-Out at the LF interface. In *Minimal Ideas: Syntactic studies in the minimalist framework*, pages 113–139. Amsterdam: John Benjamins.

Hamilton, M. D. (2015). *The syntax of Mi'gmaq: A configurational account*. PhD thesis, McGill University.

Hastings, R. E. (2004). *The syntax and semantics of relativization and quantification: The case of Quechua*. PhD thesis, Cornell University.

Hewson, J. and Francis, B. (1990). *The Mi'kmaw Grammar of Father Pacifique*, volume 7. Cape Breton University Press.

Hulsey, S. and Sauerland, U. (2006). Sorting out relative clauses. *Natural language semantics*, 14(2):111.

Inglis, S. (1986). The Fundamentals of Micmac Word Formation. Master's thesis, Memorial University of Newfoundland, St John's.

Inglis, S. (1988). The Micmac morpheme -ew-. *Papers of the 19th Algonquian Conference*, pages 99–102.

Inglis, S. (2002). *Mi'kmaw Word Part Dictionary.* University College of Cape Breton.

Kayne, R. S. (1994). *The antisymmetry of syntax*. Number 25. MIT Press.

Koster-Moeller, J. (2012). Internal DP heads in restrictive relative clauses. *Proceedings of ConSOLE XVII*, 209:230.

Lees, R. B. (1960). A multiply ambiguous adjectival construction in English. *Language*, 36(2):207–221.

Lees, R. B. (1961). The constituent structure of noun phrases. *American Speech*, 36(3):159–168.

Little, C. R. (2013). Evidentiality in Mi'gmaq. In *45th Algonquian Conference, University of Ottawa*.

Loughran, J. (2012). The fusion of tense and evidentiality in Mi'gmaq. Master's thesis, McGill University.

Manyakina, Y. (2012). An analysis of obviation in Mi'gmaq. *BA Honours thesis, Concordia University*.

Manyakina, Y. (2015). Two Types of "Incorporation" in Mi'gmaq. Master's thesis, McGill University.

Matthewson, L. (1996). *Determiner systems and quantificational strategies: Evidence from Salish*. PhD thesis, University of British Columbia.

Matthewson, L. (2001). Quantification and the nature of crosslinguistic variation. *Natural Language Semantics*, 9(2):145–189.

Matthewson, L. and Reinholtz, C. (1996). The syntax and semantics of determiners: A comparison of Salish and Cree. In *31st International Conference on Salish and Neighbouring Languages*, pages 211–238.

McClay, E. (2012). Possession in Mi'gmaq. *BA Honours thesis, Montréal: McGill University*.

McCulloch, G. (2013). Verb stem composition in Mi'gmaq. Master's thesis, McGill University.

Merchant, J. (2001). *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford University Press.

Partee, B. (1975). Montague grammar and transformational grammar. *Linguistic Inquiry*, pages 203–300.

Pesetsky, D. (1998). Some optimality principles of sentence pronunciation. *Is the best good enough*, pages 337–383.

Quinn, C. M. (2012). Listuguj Mi'gmaq: variation and distinctive dialectal features. *Ms*.

Safir, K. (1999). Vehicle change and reconstruction in $\bar{A}$-chains. *Linguistic Inquiry*, 30(4):587–620.

Sag, I. A. (1976). *Deletion and logical form.* PhD thesis, Massachusetts Institute of Technology.

Sag, I. A. and Hankamer, J. (1984). Toward a theory of anaphoric processing. *Linguistics and Philosophy*, 7(3):325–345.

Sauerland, U. (1998). *The meaning of chains*. PhD thesis, Massachusetts Institute of Technology.

Sauerland, U. (2003). Unpronounced heads in relative clauses. *The interfaces: Deriving and interpreting omitted structures*, 61:205–226.

Sauerland, U. et al. (2000). Two structures for English restrictive relative clauses. In *Proceedings of the Nanzan GLOW*, pages 351–366. Nanzan University Nagoya.

Schuurman, M. (2016). Deriving Superiority Effects in Multiple WH-Fronting without Determiners. *Western Papers in Linguistics/Cahiers linguistiques de Western*, 3(1):7.

Shlonsky, U. (1991). Quantifiers as functional heads: A study of quantifier float in Hebrew. *Lingua*, 84(2-3):159–180.

Sportiche, D. (1988). A theory of floating quantifiers and its corollaries for constituent structure. *Linguistic Inquiry*, 19(3):425–449.

StatisticsCanada (2011). Aboriginal languages in Canada. In *Census of population 98-314-X2011003*. Canadian government.

van Craenenbroeck, J. (2010). *The syntax of ellipsis: Evidence from Dutch dialects*. Oxford University Press.

Vergnaud, J.-R. (1974). *French relative clauses.* PhD thesis, Massachusetts Institute of Technology.

Williams, E. S. (1977). Discourse and logical form. *Linguistic inquiry*, pages 101–139.