# The syntax of Mi'gmaq: A configurational account

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# Contents

RÉSUMÉ

Cette thèse présente une approche configurationnelle du micmac, une langue algonquienne orientale. Le titre de " langue non-configurationnelle " a été accolé aux langues partageant certaines caractéristiques, dont (a) un ordre de mot libre, (b) l'omission d'arguments et (c) des DP discontinus (Hale 1983). Ces caractéristiques ne sont typiquement pas partagées par les langues configurationnelles comme le français et l'anglais. Quoique la structure du Micmac est non-configurationnelle en surface, je propose que la structure syntaxique sous-jacente de cette langue est configurationnelle, donc qu'elle se caractérise par (1) des DPs générés dans des positions argumentales (positions A) et (2) des positions A organisées de manière hiérarchique faisant que les sujets c-commandent asymétriquement les objets et les buts c-commandent asymétriquement les thèmes. Cette proposition est supportée par deux types de données : (i) des données morphosyntaxiques concernant l'accord et la localité, et (ii) des données syntaxiques concernant les relations hiérarchiques entre les arguments et les dépendances inter-propositionnelles. D'abord, je développe une analyse syntaxique de la flexion verbale complexe du micmac qui associe la morphologie verbale à des projections fonctionnelles dans la structure de la phrase. J'identifie plusieurs affixes servant à indexer des traits de personne et de genre (θ) et je propose qu'ils sont des marques d'accord sur la base (a) des contraintes de localité sur les arguments que le marqueur peut indexer et (b) de la manière avec laquelle ils indexent leurs arguments. Ensuite, j'identifie un ensemble d'asymétries entre les arguments qui démontre que ceux-ci se trouvent dans une relation configurationnelle constante. Je démontre que les buts c-commandent asymétriquement les thèmes puisque lorsque les deux sont présents, seul le but peut (a) être indexé par plusieurs affixes-θ et (b) participer aux passifs et aux réflexifs. Je démontre aussi que les sujets c-commandent les objets puisqu'ils présentent des effets de supériorité dans les interrogatives multiples (Chomsky 1973; Richards 1997), des effets de la condition C de la théorie du liage à l'intérieur d'une proposition (Chomsky 1986) et des restrictions sur les Accords à Longue Distance (ALD). De plus, je propose que dans les langues avec des contraintes sur les ALD, ceux-ci peuvent servir d'outil pour déceler la structure argumentale des arguments des propositions enchâssées. Cela nous fournit un diagnostic pour les systèmes inverses et démontre que ceux-ci se divisent en ceux

qui permettent le mouvement visible (Bruening 2001, 2009) et ceux qui ne le permettent pas. Après avoir proposé une analyse configurationnelle du micmac, j'aborde la question des facteurs qui régissent l'émergence de l'ordre de mots " libre ". Je propose que des effets de discours dans la dérivation syntaxique sont responsables des propriétés attribuées au caractère non-configurationnel de cette langue. Cette hypothèse et supportée par une expérience de production visant à mesurer l'effet de l'accent sur les énoncés. Je démontre que l'accent interagit avec l'ordre de mots et la prosodie, ce qui supporte l'hypothèse que le discours affecte la structure de surface du micmac. L'existence d'effets prosodiques reliés à l'accent est la première découverte de la sorte concernant la prosodie propositionnelle dans une langue algonquienne. Ce résultat met en lumière l'importance d'étudier la prosodie dans les langues algonquiennes et soulève de nouvelles questions au sujet de l'interaction typologique entre la prosodie, l'ordre de mot et les traits de discours.

ABSTRACT

This thesis presents a configurational account of the Eastern Algonquian language, Mi'gmaq. The label "non-configurational" has been applied to languages with a set of characteristics that include: (a) free word order, (b) omission of arguments, and (c) discontinuous DPs (Hale, 1983). These characteristics are typically not possible in configurational languages, such as English and French. Although it appears non-configurational on the surface, I propose that underlying syntactic structure of Mi'gmaq is configurational, thus is characterized by: (1) DPs base-generated in argument positions (A-positions), and (2) A-positions arranged hierarchically, such that subjects asymmetrically c-command objects, and goals asymmetrically c-command themes. This proposal is based on two kinds of evidence: (i) morphosyntactic evidence, from agreement and locality, and (ii) syntactic evidence, from hierarchical relations between arguments and cross-clausal dependencies.

First, I develop a syntactic analysis of Mi'gmaq complex verbal inflection which maps verbal morphology to functional projections on the clausal spine. I identify several person/number- ($\phi$) indexing affixes and propose that they are agreement affixes based on (a) locality constraints on which arguments they can index, and (b) the manner in which they index arguments. Second, I identify a series of asymmetries between arguments which shows that they stand in a consistent structural relation with respect to each other. I show that goals asymmetrically c-command themes since when both are present, only the goal can (a) be indexed by several $\phi$-indexing affixes, and (b) participate in passives and reflexives. I also show that subjects asymmetrically c-command objects based on the presence of Superiority effects (Chomsky, 1973; Richards, 1997) in multiple interrogatives, Binding Condition C effects (Chomsky, 1986) within a clause, and a restricted pattern of Long-Distance Agreement (LDA). Moreover, I propose that in languages with restrictive LDA patterns, LDA may be used as a diagnostic for the relative structural of arguments in embedded clauses. This provides us with a diagnostic for inverse systems and shows us that they vary in whether they involve overt movement (Bruening, 2001, 2009) or not.

Having argued for an underlying configurational account of the syntax of Mi'gmaq, I then turn to the question of the factors that govern the appearance of "free" word order. I

propose that discourse effects in the syntactic derivation cause the properties attributed to non-configurationality. I motivate this hypothesis with a production experiment designed to test the effect of focus on utterances. I show that focus interacts with both word order and prosody, which supports the hypothesis that discourse effects the surface appearance of Mi'gmaq. The presence of prosodic effects related to focus is the first finding of its kind on sentence-level prosody in an Algonquian language. This finding suggests the usefulness of studying prosody in Algonquian languages, and raises questions about the interaction of prosody, word order and discourse factors typologically.

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## PREFACE

This thesis represents three and a half years of original field work by the author. Each chapter has benefited from feedback from presentations at conferences, and reviewers at several journals, as noted below. All chapters are independent work unless noted.

Chapter 2 builds on Hamilton (to appear b), which was presented at the 45th Algonquian Conference and received valuable feedback there.

Chapter 3 extends Hamilton (to appear d), which was presented at the 44th Algonquian Conference, 2013 SSILA, and WSCLA 19.

Chapter 4 builds on joint equal authorship work with Brandon J. Fry in Hamilton & Fry (to appear), and was presented at the 45th Algonquian Conference, CLS 50, and 2015 LSA.

Chapter 5 builds on a collaborative project with Michael Wagner, Janine Metallic, Mary Ann Metallic, Janice Vicaire, and Elise McClay. This has been presented at the 46th Algonquian Conference, ETI3, and WSCLA 19.

## LIST OF ABBREVIATIONS

| | |
|---|---|
| 1 | first person |
| 2 | second person |
| 3 | third person |
| AI | Animate Intransitive verb |
| AI+O | Animate Intransitive verb with object |
| AN | animate |
| APPL | applicative |
| COOR | coordination |
| CONJ | conjnct |
| DFLT | default |
| DIR | direct |
| DK | direct knowledge |
| DU | dual |
| II | Intransitive inanimate verb |
| IK | indirect knowledge |
| IN | inanimate |
| INV | inverse |
| NEG | negative/negation |
| OBJ | object |
| OBV | obviative |
| PASS | passive |
| PL | plural |
| POSS | possessive |
| PROX | proximate |
| PST | past |
| REFL | reflexive |
| SAP | Speech Act Participant |
| TA | Transitive Animate verb |
| TA+O | Transitive Animate verb with goal (ditransitive) |
| TI | Transitive Inanimate verb |
| X>Y | X subject and Y object |

# Chapter 1

# Introduction

## 1.1 Introduction

Like other Algonquian languages, Mi'gmaq has several of the properties ascribed to "non-configurational" languages by Hale (1983). These are given in (1).

(1) CHARACTERISTICS OF NON-CONFIGURATIONALITY, (Hale, 1983)
   a. Null anaphora
   b. DPs are freely ordered
   c. Discontinuous DPs are allowed

Mi'gmaq is a radical *pro*-drop language: both the subject and the object can be omitted from an utterance.[1] Overt Determiner Phrases (DPs), when present, appear to be freely ordered and speakers generally accept a wide variety of word orders.[2] As well, elements within a single DP appear with non-DP elements intervening between them. The characteristics in (1) are not possible in prototypical configurational languages, such as English and French. This raises the question of where the locus of variation between non-configurational and configurational languages arises.

[1] 'Subject' is used in place of external argument and 'object' is used in place of internal argument throughout this thesis.

[2] I use the term DP to refer to arguments throughout this thesis for consistency. In fact, there may be finer grained variation between arguments, such that some are DPs and others are PersonPs (or ϕPs) (Déchaine & Wiltschko, 2002). However, this is not crucial to the analysis in any part of this thesis.

Since Hale (1983), there has been a variety of accounts that seek to explain the source of the properties in (1). One set of accounts posits that differences reside in the underlying syntactic structure. Examples of these accounts are the Pronominal Argument Hypothesis (PAH; Jelinek, 1984) and what I call the "Hybrid Account" (Baker, 1996). The PAH proposes that overt DPs are not in argument positions, but are adjuncts. This accounts for their ability to be optional and freely ordered. Instead, the verbal agreement markers are taken to be the phonological realization of pronouns and reside in argument positions (A-positions). A similar account is given by Baker (1996). Like the PAH, overt arguments (apart from *wh*-phrases) are adjuncts, however unlike the PAH implicit, null pronouns serve as the true arguments of the verb.

Another set of accounts posits that variation arises from other sources and that the underlying syntactic structure is identical between configurational and non-configurational languages. This is what I call the "Configurational Account" (e.g. Saito 1985, Bruening 2001, and Legate 2002). I consider Configurational Accounts to be those which posit that: (1) DPs are base-generated in A-positions, and (2) A-positions are arranged hierarchically, such that subjects asymmetrically c-command objects, and goals asymmetrically c-command themes.

In this thesis, I argue for a Configurational Account by presenting evidence from verbal inflection (Chapter 2), evidence for structural asymmetries among arguments (Chapter 3), and cross-clausal dependencies (Chapter 4). Moreover, I propose that the variation between Mi'gmaq and a surface-configurational language is the effect of discourse in syntactic derivations (e.g. Kiss 1987 and Miyagawa 2010). I present experimental evidence from the production of focus constructions (Chapter 5) to support this proposal.

There are a variety of different reasons why this finding is important. First, it supports the strong hypothesis that all languages share a common underlying syntactic structure. This is important because on the surface Mi'gmaq appears to differ radically from configurational languages. Showing that Mi'gmaq shares the same underlying structure is not trivial and moves us a step towards understanding where the commonalities and true instances of variation among languages lie. This thesis proposes that the effect of discourse plays a significant role in this variation. Thus, the locus of surface variation between configurational and non-configurational

languages does not reside in the underlying structure, but in the role that discourse factors play in the syntactic derivation. Throughout this thesis I provide a variety of diagnostics that can be applied to a language to test for underlying structure. In addition, I provide diagnostics for identifying the effect of discourse within a given language.

Second, the underlying structure of Algonquian languages is still a topic of much debate. PAH and Hybrid Accounts (Dahlstrom, 1991, 1995; Russell & Reinholtz, 1995, 1996, 1997; Blain, 1997; Kathol & Rhodes, 1999; Junker, 2004; Wolvengrey, 2011; Dahlstrom, 2012; Bliss, 2013) are as common as Configurational Accounts (Branigan & MacKenzie, 1999; Bruening, 2001; Brittain, 2001a,b; Branigan & MacKenzie, 2002; LeSourd, 2006; Lochbihler & Mathieu, 2008; Bruening, 2009; Lochbihler, 2012; Lochbihler & Mathieu, to appear). Algonquian languages have certain characteristics (i.e. proximate-obviative marking and direct-inverse system, described below in this chapter) which complicate the investigation of underlying syntactic structure. I am careful in this thesis to present diagnostics for underlying structure which consider the effect of these characteristics. Thus, the Configurational Account is motivated by a set of arguments which can be applied to other Algonquian languages for comparison. Although there is variation among Algonquian languages, as shown in the analysis of Long-Distance Agreement (Chapter 4), this thesis is a step towards discovering the source of this variation. While this thesis suggests that the variation is not due to differences in the underlying syntactic structure, there is a great deal of previous work on Algonquian languages which challenges this hypothesis. In addition, since Algonquian languages are understudied, there is still much work left to do.

Third, the investigation in this thesis allows us to arrive at a greater understanding of the grammar of Mi'gmaq. Apart from a few descriptive sketches by Rand (1888), Pacifique (1939) (via Hewson & Francis 1990), Fidelholtz (1968), and Inglis (2002), there has not been a systematic investigation of the syntax of Mi'gmaq. However, time is running out to document the spoken language. Although there are reported to be approximately 2000 speakers of Mi'gmaq in Quebec alone (Canada, 2011), the situation is becoming serious in the Listuguj community. There are very few fluent speakers under 50 years of age and the community is no longer producing new first-language speakers.

The remainder of this chapter is organized as follows. In section 1.2, I introduce several important aspects of the grammar Mi'gmaq which will aid in understanding the investigation that follows. After this, I present a detailed outline for each chapter in 1.3.

## 1.2 Mi'gmaq background

In this section I outline relevant aspects of Mi'gmaq, and Algonquian languages generally, that are important background for the arguments presented in Chapters 2 through 5. In particular, this section discusses animacy with respect to nouns and verbs, the proximate-obviative distinction, the direct-inverse system, and the ways researchers have analyzed the properties associated with non-configurationality in Algonquian languages.

### 1.2.1 Animacy

In Mi'gmaq, as with other Algonquian languages, nouns are classified into two main categories: animate and inanimate, see Table 1.1.

Table 1.1: NOUNS: ANIMACY

| | 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'pij-ig* 'women-pl' |
| obviative | n/a | *gmu'jmin-n* 'raspberry-OBV' | *e'pil-itl* 'women-OBV' |

Inanimate and animate nouns are distinguished based on plural morphology. The inanimate plural marker is *-n/-l* and the animate plural marker is *-(i)g* (depending on whether the stem ends in a vowel or consonant). Another way to distinguish inanimate from animate is that only animate nominals can be marked with obviation, which is discussed below.

I consider person-features (ϕ-features) to include person and number in Mi'gmaq. Following Lochbihler (2012) and Oxford (2014), I assume that inanimate DPs lack person features, discussed below.

All nouns that are marked as grammatically inanimate are inanimate in the real world. Nouns marked as animate fall into two groups: grammatically animate nouns (which are inanimate in the real world), and real-world animate nouns. The distinction between real-world and grammatical animacy has at least two reflexes in the grammar: (i) the ability to be a subject of a transitive clause, and (ii) theme of an inverse form, both of which are limited to real world animate DPs (see e.g. Ritter & Rosen 2014 on Blackfoot).

Animacy plays an important role in verb classification, as verbs appear with different inflectional affixes depending on the number and animacy of their arguments, as shown in Table 1.2.[3] Intransitive verbs inflect differently depending on whether the subject is animate (AI) or inanimate (II). Likewise, transitive verbs differ depending on whether the primary internal argument is animate (TA) or inanimate (TI).

Table 1.2: VERBS: ANIMACY AND TRANSITIVITY (Bloomfield, 1946)

| | inanimate | animate |
|---|---|---|
| intransitive | II<br>*gispateg*<br>'It(in) dries' | AI<br>*gispasit*<br>'S/he/it(an) dries' |
| transitive | TI<br>*gispasg*<br>'S/he dries it(in)' | TA<br>*gispasatl*<br>'S/he dries her/him/it(an)' |

There are two additional verb classes which will be addressed throughout this thesis which involve secondary objects (Dryer, 1986; Rhodes, 1990). The first is what is known as TA+O: a TA verb with both a goal (primary object) and theme (secondary object) argument, but only the goal DP can be indexed on the verb and can participate in syntactic operations. These forms will become important in Chapters 3, when the primary-secondary distinction leads to a structural asymmetry between goals and themes.

[3]See Chapter 2 for a detailed discussion of verbal morphology in transitives.

The second form with a secondary object are AI+O verbs, which morphologically pattern with intransitive verbs despite the presence of a theme DP (Rhodes, 1990; Dahlstrom et al., 2009). This theme DP is also not indexed on the verb and cannot participate in syntactic operations, which makes it parallel to the secondary object (theme DP) in TA+O forms. AI+O verbs will be discussed further in Chapter 5, as they are included in the experimental items.

Animacy plays a central role throughout this thesis. I focus primarily on TA and TA+O verbs throughout and use ϕ-feature indexing of animate objects as a diagnostic for the structural position of probes on the clausal spine in Chapter 2. I consider ϕ-features to include person, number, and animacy features in Mi'gmaq. In Chapters 3 and 4, I employ ϕ-feature indexing in TA verbs to determine the relative structural position of animate DPs. In Chapter 5, I present experimental evidence to show that the animacy of the object affects focus marking. I turn to TI verbs to determine the structural relationship between arguments when the proximate-obviative marking (introduced below) in TA forms obscure diagnostics in Chapter 3.

### 1.2.2 The proximate-obviative distinction

Algonquian languages are known for their systems of obviation (see e.g. Goddard 1984, 1990 and Thomason 2003). Within a given span of discourse, one third person argument is selected as the "proximate" while all others must be "obviative". There is some debate regarding the discourse status of proximate and obviative arguments. It is unclear if the source of this distinction is the topicality of proximate arguments (Wolvengrey, 2011), or the anti-topicality of obviative arguments (Russell, 1996; Junker, 2003). For our purposes, it is enough to note that proximate arguments tend to be more discourse salient, while obviative arguments tend to be backgrounded.[4]

Morphologically, obviative arguments are marked with a suffix and proximate arguments are unmarked in Mi'gmaq. For example, the utterance in (2) is interpreted as being a statement about *Mali* 'Mary', which is morphologically unmarked. *Sa'nal* 'John (obv)' is less topical and marked

[4]Note that this could mean being foregrounded in a particular utterance or in a larger discourse in general (Goddard, 1984, 1990). See Thomason (2003) for a thorough discussion of the impact of discourse on proximate-obviative marking in Meskwaki.

with the obviative suffix (*-al*).[5]

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

Similar to binding, obviation operates within a specific domain in the grammar, such that if there are two third person arguments within a given domain, one must be marked with obviation (e.g. Aissen 1997 and Goddard 1984, 1990). One domain is the clause. For example, the sentence in (2) would be ungrammatical if both DPs were proximate.[6]

In a multi-clause utterance, it is possible to have a proximate argument in each clause, such that there are two proximate arguments in the discourse (Aissen, 1997). This is exemplified in bi-clausal forms with a proximate subject in the main clause in (3).

(3) a. Mali geit-oq **Sa'n** welm't-oq
Mary know.TI-3 John kind.AI-3
'Mary knows that John is kind'
b. Mali geit-oq **Sa'n-al** welm'tu-nitl
Mary know.TI-3 **John-OBV** kind.AI-OBV
'Mary knows that John is kind'

The third person embedded subject can either be proximate (*Sa'n* 'John') as in (3a) or obviative (*Sa'nal* 'John(obv)') as in (3b).

Another domain for obviation is the DP. Animate third person possessums within a DP are obligatorily marked with obviation when the possessor is also third person (Dryer, 1992). For example, the animate possessum DP in (4) (*uggwijl* 'her/his mother(obv)') is obligatorily marked with obviation since the possessor DP (*Mali*) is a 3rd person animate argument.

(4) ges-al-g Mali ug-gwij-*(**l**)
love-AN-3 Mary 3POSS-mother-**OBV**
'I love Mary's mother'

[5]Note that in Mi'gmaq the only time that an obviative DP is not morphologically marked is when it is plural. Then it is morphologically indistinguishable from a plural proximate DP.

[6]Brittain (2001b) has formalized this as the "One Proximate *pro* per Derivation Condition".

An important aspect of obviative-marked DPs is that they are interpreted as having obligatory disjoint reference from proximate DPs (Grafstein, 1989; Déchaine & Wiltschko, 2002). Thus in (5), the obviative-marked embedded object *negmal* is it obligatorily disjoint from the matrix proximate subject *Mali* and the embedded proximate subject *Sa'n*.[7]

(5) Mali teltasi-t Sa'n ges-al-a-t-**l** negm-**al**
Mary think.AI-3 John love-AN-3OBJ/DIR-3-**OBV** 3-**OBV**
'Mary$_i$ thinks that John$_j$ loves her/him$_{*i/*j/k}$'

In Chapter 3, I discuss how proximate-obviative marking complicates diagnostics for structural relations between arguments, which typically involve relations between third person arguments. In Chapter 5, I present experimental evidence to show that there is a preference to order proximate before obviative DPs. This supports Junker (2003) in finding ordering restrictions between proximate and obviative DPs, although the exact ordering differs from East Cree.

### 1.2.3 Direct-inverse system

Many Algonquian languages have a robust direct-inverse system (see Zúñiga 2006 for a general overview of direct-inverse, and references cited therein on Algonquian). In this section I discuss the nature of the direct-inverse system in Mi'gmaq. Before addressing Mi'gmaq, let me first review some of the general characteristics of direct-inverse systems.

Ojibwe presents a representative example of a typical Algonquian direct-inverse system. Note the pairs of Ojibwe forms in (6).

(6) OJIBWE (Valentine, 2001, 270)

a. n-waabm-**aa**
1-see-**DIR**
'I see her/him(PROX)'

b. n-waabm-**ig**
1-see-**INV**
'S/he(PROX) sees me'

c. w-waabm-**aa**-n
3-see-**DIR**-n
'S/he(PROX) sees her/him(OBV)'

d. w-waabm-**igoo**-n
3-see-**INV**-n
'S/he(OBV) sees her/him(PROX)'

[7]Note that the 3rd person pronoun *negm* is frequently dropped, but when pronounced it indicates emphasis.

The forms in (6a) and (6b) are identical in having a first person prefix (*n*) and the same verb stem (*wabm* 'see'). They only differ in a single morpheme, the "theme sign", which is in bold. This suffix is the only piece of information which indicates the order of arguments in these forms. The theme sign *-aa* indicates that the subject is first person and the object third person in (6a), while *-igo* indicates that the subject is third person and the object is first person.

The pair of forms in (6c) and (6d) are similar, in that the theme sign is the only indication of the grammatical relations of the arguments. Both appear with a third person prefix, (*w*), the same verb stem (*wabm* 'see', and the *-n* suffix). In these forms, *-aa* indicates that the subject is third person proximate and the object third person obviative, while *-igo* indicates the reverse argument structure.

To explain why the forms in (6a) and (6c), as well as those in (6b) and (6d), have the same theme sign, it has been proposed that theme signs mark the alignment of subjects and objects with respect to a Person Hierarchy (i.e. Silverstein 1986). A Person Hierarchy is a ranking of arguments in terms of their person features. The forms in (6) have been used to support the existence of a Person Hierarchy in Algonquian languages, such as the one in (7).[8]

(7) Person Hierarchy (Valentine, 2001, 268)

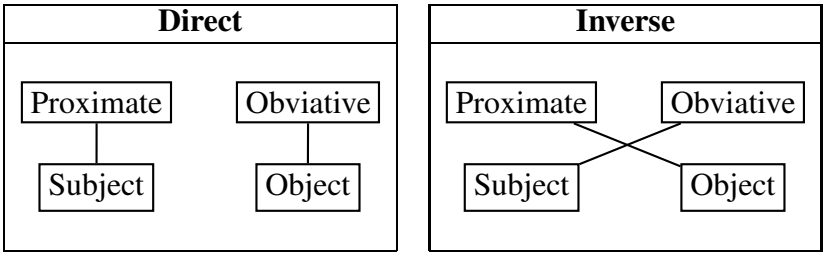
2, 1 > 3 (proximate) > 3' (obviative) > Inanimate

From this perspective, the direct morpheme (*-aa*) is used when the subject is higher on the Person hierarchy than the object, and the inverse morpheme (*-ig(oo)*) is used in the reverse cases, when the subject is lower on the Person Hierarchy than the object. This is schematized in Figure 1.1.

Although differing from the Ojibwe system, Mi'gmaq also has a direct-inverse distinction, but it is limited to forms with third person arguments. Third person Mi'gmaq forms are shown in (8).

[8]The use of the > symbol in this hierarchy is means 'ranked higher than'. I also use this symbol between two numbers in TA forms to represent grammatical relations, e.g. 2>1 means the subject is second person and the object is first person.

Figure 1.1: ALIGNMENT: *adapted from Aissen (1997) and Junker (2003)*




Note that Mi'gmaq differs from Ojibwe in not having person prefixes.[9]

(8) a. ges-al-**a**-t-l
love-AN-**DIR**-3-OBV
'S/he(prox) loves her/him(obv)'

b. ges-al-t-l
love-AN-3-OBV
'S/he(obv) loves her/him(prox)'

Similar to Ojibwe, this pair in Mi'gmaq differ minimally. Both forms have the same verb root (*ges-* 'love'), and animate object (*al*), third person (*-t*) and obviative (*-l*) suffixes. However, the form in (8a) has an *-a* suffix, which is superficially similar to the direct suffix in Ojibwe, while the form in (8b) lacks a comparable morpheme altogether. The relationship between direct and indirect forms is slightly obscured by phonological operations in (8). However the picture becomes clearer when the negative suffix *-u*/*-w* is included (Coon & Bale, 2014). Negative third person forms are shown in (9).

(9) a. mu ges-al-**a**-g-u-l
NEG love-AN-**DIR**-3-NEG-OBV
'S/he(prox) doesn't love her/him(obv)'

b. mu ges-al-**gu**-g-u-l
NEG love-AN-**INV**-3-NEG-OBV
'S/he(obv) doesn't love her/him(prox)'

These forms are completely identical, except for the theme signs in bold. As in Ojibwe, these suffixes encode the argument structure of the verb. The *-a* theme sign occurs when the subject is proximate and the object is obviative, while the *-gu* theme sign occurs when the subject is obviative and the object is proximate.

[9]Typically, Algonquian languages have different inflection in matrix clauses (Independent Order) and embedded clauses (Conjunct Order). One difference is the presence of person suffixes in the Independent but not the Conjunct. Historically, the inflection in the Independent in Mi'gmaq derives from the Proto-Algonquian Conjunct (Hewson, 1980). Thus, Mi'gmaq lacks person prefixes in matrix clauses and the typical distinction in inflection between matrix and embedded clauses.

Unlike Ojibwe, it is not the case that both of these theme signs appear in forms with one Speech Act Participant (SAP), i.e. first or second person, and one third person argument. This is exemplified in (10).

(10) a. mu ges-al-**a**-u-t
NEG love-AN-**3OBJ/DIR**-NEG-3
'You do not love her/him'

b. mu ges-al-**uln**-u-g
NEG love-AN-**1OBJ**-NEG-3
'S/he does not love you'

When the subject is a SAP and the object is third person, the *-a* theme sign appears. But when the subject is third person and the object is a SAP, the *-gu* theme sign does not appear. Instead the ϕ-features of the object are indexed, i.e. the second person object marker *-uln* appears in (10b).[10] Since the *-gu* theme sign does not appear, there is no evidence that the direct-inverse system applies in these forms.

Support for the presence of a direct-inverse distinction in third person forms comes from Long-Distance Agreement (LDA) forms in Chapter 4. LDA patterns differently in third person direct and inverse forms. I argue that inverse forms in Mi'gmaq involve movement (of the object DP over the subject DP), which is supported by quantifier scope data. I also argue that LDA shows that other Algonquian languages lack inverse movement. This is important as there has been ongoing debate in the literature regarding whether inverse forms actually involve syntactic movement or are purely morphological.

### 1.2.4 Non-configurationality

As noted at the outset of this chapter, one of the initial, and striking, characteristics of Algonquian languages is that they are descriptively non-configurational. The term non-configurational refers to languages which display the characteristics in (11), repeated from (1) above.

(11) CHARACTERISTICS OF NON-CONFIGURATIONALITY Hale (1983)
a. Null anaphora
b. DPs are freely ordered
c. Discontinuous DPs are allowed

[10] See 2.2.2 for the distribution and analysis of theme signs in Mi'gmaq.

In this section, I will discuss these properties in more detail and provide Mi'gmaq examples. The first of these properties concerns null anaphora. In Mi'gmaq, DPs can be freely omitted, i.e. verbs can appear as a complete utterance without overt arguments. Consider the sentence in (12), where the transitive verb *nemitoq* 's/he sees it' is understood as having a third person animate subject (*-oq*) and an inanimate object (*-it*). Information about the arguments is indicated by the verbal affixes. There are no overt pronouns or other types of DP arguments.

(12) nem-*it*-**oq**
see-TI-**3**
'**S/he** sees *it*'

When DPs are overt, word order seems to be unrestricted. Consider the sentences in (13). As shown, every possible ordering of the subject, verb, and object results in a grammatical sentence.[11]

(13) a. **ji'nm** nem-it-oq ptauti (SVO)
**man** see-TI-3 table
'**The man** sees the table'
b. **ji'nm** ptauti nemitoq (SOV)
c. ptauti nemitoq **ji'nm** (OVS)
d. ptauti **ji'nm** nemitoq (OSV)
e. nemitoq **ji'nm** ptauti (VSO)
f. nemitoq ptauti **ji'nm** (VOS)

In addition, Mi'gmaq allows certain classes of nominal modifiers to be separated from the nouns they modify. While *ala* 'that' and *ji'nm* 'man' can appear linearly adjacent as in (14a) and (14b), they can also be separated by the verb as in (14c).[12]

[11]Investigation is underway into whether there is a basic word order in Mi'gmaq. See Chapter 5 for evidence that there is a general tendency for SVO word order. Bruening (2001) argues that SVO is the default word order in Passamaquoddy. Many other analyses argue that word order variation is due to discourse factors (Tomlin & Rhodes, 1992; Dahlstrom, 1995, 2003; Junker, 2004; Wolvengrey, 2011; Dahlstrom, 2012). Chapter 4 also presents evidence that speakers prefer to order proximate DPs before obviative DPs.

[12]One piece of evidence that has been presented against a non-configurational account in Algonquian languages is that only functional material can precede lexical material in discontinuous DPs in Meskwaki (Dahlstrom, 1987), Swampy Cree (Russell & Reinholtz, 1995), Ojibwe (Kathol & Rhodes, 1999), and Passamaquoddy (LeSourd, 2006) (although see Reinholtz (1999) for a PAH account of this restriction). Though not discussed in detail here, this restriction also applies in Mi'gmaq. The word orders in (14) where *ji'nm* precedes *ala* are ungrammatical.

(i) a. *__ji'nm ala__ etl-enm-it
**man** **that** PROG-laugh.VAI-3
intended: '**That man** is laughing.'
b. *etlenmit **ji'nm ala**
c. *__ji'nm__ etlenmit **ala**

(14) a. **ala ji'nm** etl-enm-it
**that man** PROG-laugh.VAI-3
'**That man** is laughing.'

b. etlenmit **ala ji'nm**

c. **ala** etlenmit **ji'nm**

To determine the most appropriate analysis of the underlying structure of Mi'gmaq, I investigate verbal morphology in Chapter 2, and the position and relation between DPs in Chapter 3. Traditionally, analyses of non-configurational languages follow one of the accounts in (15). I address each in turn below.[13]

(15) ACCOUNTS OF NON-CONFIGURATIONAL LANGUAGES

a. Pronominal Argument Hypothesis (PAH; Jelinek 1984)
b. Hybrid Account (i.e. Baker 1996)
c. Configurational Account (i.e. Saito 1985; Bruening 2001; Legate 2002)

#### 1.2.4.1 The Pronominal Argument Hypothesis

As briefly introduced above, the Pronominal Argument Hypothesis (PAH) proposes that DPs are adjuncts. This accounts for null anaphora and free ordering of arguments. A-positions are posited to be filled with ϕ-feature indexing affixes themselves, called pronominal arguments. Overt DPs are co-indexed with pronominal arguments, which allows for multiple DPs to be co-indexed with the same pronominal argument. This accounts for the possibility of discontinuous DPs. For declarative clauses with SVO word order in which both the subject and object are overt, the PAH predicts both of the structures in (16) to be possible. By design, there is no consistent structural relation between the overt subject and overt object in (16) since, without additional constraints, nothing restrains the order in which DP adjuncts attach.[14] As well, the verbal domain is posited to be flat and there is

[13] I do not address "true" non-configurational accounts such as Hale (1983); Simpson (1991); Austin & Bresnan (1996); Bresnan (2001) which all posit a complete lack of hierarchical syntactic structure. However, my arguments against the PAH also apply to these accounts.

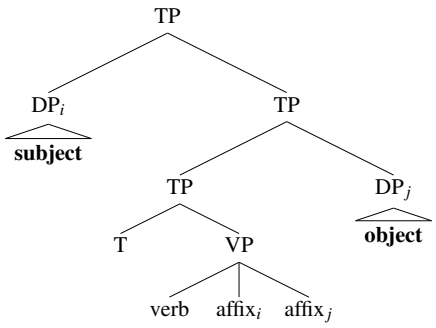
[14] Throughout this thesis I adopt the definition of c-command in (i).

(i) C-COMMAND (Reinhart, 1976)
Node *A* c-commands node *B* if neither *A* nor *B* dominate the other and the first branching node which dominates *A* dominates *B*.

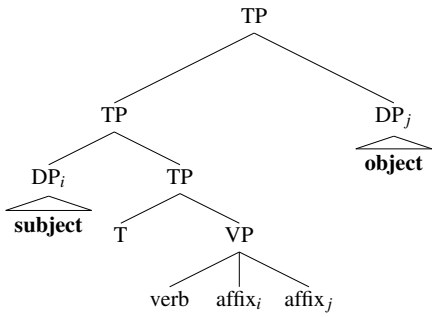
an absence of asymmetry in the structural relationship between A-positions.[15]

(16) PAH

a.




b.




#### 1.2.4.2 Hybrid Account

The second account I entertain is what I refer to as the "Hybrid Account" which is a slight but significant revision of the PAH based on Mohawk in Baker (1996). The Hybrid account introduces hierarchical A-positions within the verbal domain such that the subject position asymmetrically c-commands the object position. Instead of pronominal arguments, null pronominals (*pro*s) are posited to be base-generated in A-positions and co-indexed with overt adjunct DPs. In addition to *pro*, only *wh*-phrases and complement clauses are posited to be base-generated in A-positions. This was proposed in Baker (1996) to account for evidence showing that Mohawk has both *wh*-movement and binding into complement clauses.

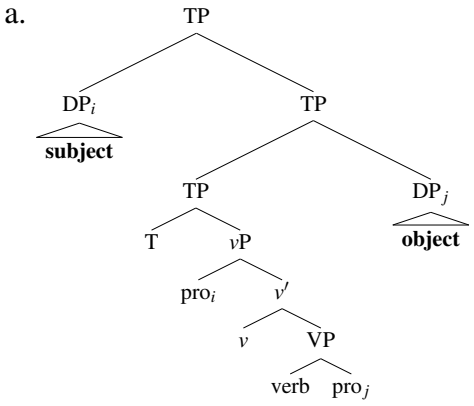
For declarative clauses with SVO word order where both the subject and object are overt, the Hybrid Account predicts both of the structures in (17) to be possible. The explanations for null anaphora, free word order and discontinuous elements stay the same as with the PAH, however a limited set of subject-object asymmetries are possible. Since the subject A-position asymmetrically c-commands the object A-position, subject-object asymmetries are only expected to arise between constituents that are base-generated in A-positions, such as between *wh*-phrases in multiple *wh*-

[15]The ambiguity between representations shown in (16) is predicted in word orders where the verb is ordered between the subject and object, e.g. SVO and OVS. When overt arguments adjoin on different sides, one left and one right, either argument could be structurally higher. Only a single representation is possible to generate word orders where the verb is either final, e.g. SOV and OSV, or initial, e.g. VSO and VOS. As when both overt arguments adjoin to the same side, either both right or both left, the argument which is structurally higher will linearly precede the lower one if they are both left-adjoined and linearly follow the lower one if they are both right-adjoined.

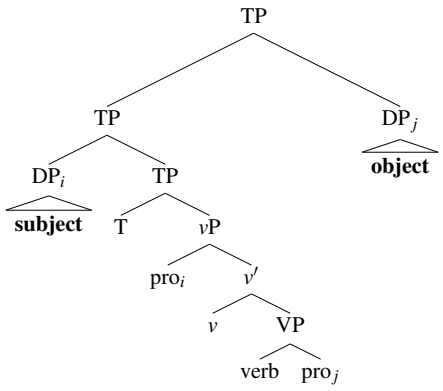
interrogatives and binding of the subject into complement clauses.

(17) HYBRID ACCOUNT

a.



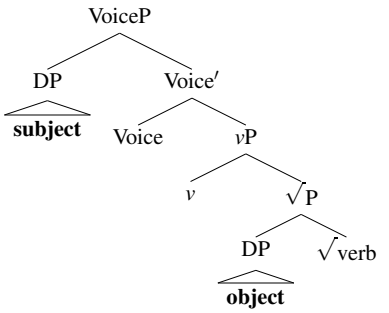

b.




#### 1.2.4.3 Configurational Account

The third potential account, and the one I propose for Mi'gmaq, is a Configurational Account. The underlying syntactic structure I adopt is shown in (18) and is identical to a configurational language. Arguments are base-generated in canonical A-positions and the subject A-position asymmetrically c-commands the object A-position (Hirose, 2003; Oxford, 2014).[16] Under this account the characteristics of non-configurationality are superficial, thus due to sources other than the underlying syntactic structure, e.g. discourse factors (Saito, 1985; Kiss, 1987; Legate, 2002; Miyagawa, 2010).

(18) CONFIGURATIONAL ACCOUNT




[16] I adopt a tripartite verb structure in (Pylkkänen, 2002, 2008; Harley, 2013a; Oxford, 2013, 2014) and argued for Mi'gmaq in Chapter 2.

While a Configurational Account predicts systematic subject-object asymmetries, these should be limited in the Hybrid Account and theoretically non-existent in the PAH. Thus the Hybrid account and PAH must put forward separate explanations for asymmetries that arise. The ability to account for subject-object asymmetries forms the basis for the evaluation of the three accounts in Chapter 3.

### 1.2.5 On the structure of Algonquian languages

Since Algonquian languages are understudied, the syntax of only a handful have been examined in depth. But it is clear from what has been studied that there is variation between languages in the appearance of subject-object asymmetries. As such, determining the underlying structure of an Algonquian language is not a trivial task, and a variety of different proposals have been advanced.

Hybrid analyses are common and have been forwarded or assumed for Plains Cree (Dahlstrom, 1991; Blain, 1997; Wolvengrey, 2011), Meskwaki (Dahlstrom, 1995, 2012), Swampy Cree (Russell & Reinholtz, 1995, 1996, 1997), Ojibwe (Kathol & Rhodes, 1999), East Cree (Junker, 2004), and Blackfoot (Bliss, 2013).

In contrast, Configurational analyses have been advanced or assumed for Innu-aimûn (Branigan & MacKenzie, 1999, 2002) Western Naskapi (Brittain, 2001a,b), Passamaquoddy (Bruening, 2001; LeSourd, 2006; Bruening, 2009), and Kitigan Zibi Algonquin (Lochbihler & Mathieu, 2008; Lochbihler, 2012; Lochbihler & Mathieu, to appear). One source of variation that clearly separates these two groups is *wh*-movement, as the languages in the Hybrid group all lack evidence for *wh*-movement, while those in the Configurational group all have supporting evidence, including Western Naskapi (Brittain, 2001a,b) which displays Superiority effects (Chomsky, 1973; Richards, 1997).

There are also similarities that run through all studied Algonquian languages. In TA+O (ditransitive) constructions, all studied languages appear to display the same asymmetry between goal and theme DPs. Traditional descriptions referring to goal DPs as primary objects and theme DPs as secondary objects (Dryer, 1986; Rhodes, 1990). A variety of Algonquian languages have been shown to have this asymmetry, such as varieties of Ojibwe (Rhodes, 1990; Lochbihler, 2012),

Innu-aimûn (Brittain, 1993; Branigan & MacKenzie, 1999), Passamaquoddy (Bruening, 2001), East Cree (Junker, 2003), Penobscot (Quinn, 2006), and Blackfoot (Bliss, 2009, 2013). TA+O forms are frequently analyzed with the goal DP introduced in the specifier of an Applicative Phrase (Marantz, 1993; Pylkkänen, 2002, 2008) and the goal DP asymmetrically c-commanding the theme DP (see Brittain 1993, Bruening 2001, Junker 2003, Quinn 2006, Bliss 2009, and Lochbihler 2012). In addition, Lochbihler (2012) uses this asymmetry as a basis for an account of Person Case Constraint (Bonet, 1994) effects which limit the theme DP to 3rd person arguments.

The presence of variation makes language specific diagnostics vital to understanding the underlying structure. However, interpreting the result of traditional diagnostics for argument asymmetries is complicated by proximate-obviative marking on 3rd persons (section 2.2) and the direct-inverse system (section 2.3). For example, both Bruening (2001) and Bliss (2013) find that variable binding data shows that subjects asymmetrically c-command objects in the direct, but objects asymmetrically c-command subjects in the inverse. While Bruening (2001) contends that this variabke binding data reflects the underlying relationship between grammatical roles and argues for a Configurational analysis for Passamaquoddy, Bliss (2013) contends that it reflects the relationship between proximate and obviative arguments, and argues for a Hybrid analysis for Blackfoot. Similarly, negative results—such as the lack of Weak Crossover (WCO) and Binding Condition C effects within a clause in Algonquian languages (although see Branigan & MacKenzie 1999)—are used to exemplify either: (a) the lack of structural asymmetry between arguments thus counter-evidence against a Configurational Account; or (b) the interference of proximate-obviative marking or the direct-inverse system thus not counter-evidence against a Configurational Account. As a result of these complications, traditional c-command diagnostics may be uninformative or misleading.[17]

[17]Cross-clausal Binding Condition C effects have been found in multiple languages (e.g. Passamaquoddy in Bruening 2001 and Blackfoot in Bliss 2013). However, since these effects can be accounted for by the Hybrid and Configurational Accounts, it is not an argument in support of either.

## 1.3 Outline

In this thesis I motivate a Configurational Account of the syntax of Mi'gmaq using evidence from: verbal inflection (Chapter 2); the position of and structural relationship between argument DPs (Chapter 3); cross-clausal dependencies (Chapter 4); and the effect of discourse on surface constituency and prosody (Chapter 5).

Chapter 2 investigates each ϕ-indexing verbal affix in the transitive animate (TA) paradigm in order to determine whether it is an instance of agreement, a morphophonological clitic, or pronominal argument clitic. I show that three (verb final, theme sign, and inner suffix) are instances of agreement and posit a formal account of each. I follow Oxford's (2013, 2014) argument for Proto-Algonquian, in positing that since two of these affixes occur in the verbal domain (verb final and theme sign) that they are true instances of object agreement in the clausal spine, contra Woolford (2010) and Nevins (2011). I posit that a fourth affix (outer suffix) is a morphophonological clitic, but leave a formal account for future work. I show that none is a possible pronominal argument clitic, thus making a PAH analysis unlikely.

Chapter 3 turns from the verb stem to the DP arguments. Here I investigate the relative structural relationship between DPs in order to determine whether there is a consistent asymmetric relation between them, thus implicating a stable base-generated position for each. There are two pieces of evidence for a structural asymmetry between subjects and objects (Superiority and binding) and one piece of evidence for a structural asymmetry between goals and themes (Asymmetric applicatives). Superiority effects (Chomsky, 1973; Richards, 1997) are present in multiple *wh*-questions, since subject *wh*-phrases must precede object *wh*-phrases and both must be utterance initial. Binding Condition C effects arise between a subject pronoun and full DP possessor in a possessive construction which is (to my knowledge) not found in other Algonquian languages. In addition, asymmetries in agreement (on the theme sign and inner suffix) and movement (in passives and reflexives) arise in TA+O applicatives, such that goal DPs but not theme DPs can participate in both. I conclude that all three of these facts support a Configurational Account, in which argument DPs are in A-positions and stand in an asymmetric relation to each

other. I exclude the PAH based on all three pieces of evidence and the Hybrid Account based on the binding evidence alone.

Chapter 4 investigates the different types of Long-Distance Agreement (LDA) patterns in Algonquian languages. I show that Mi'gmaq displays a discourse-driven form of LDA in embedded interrogatives and a more grammatically-driven form of LDA in embedded declaratives. This supports a Configurational Account by presenting an additional subject-object asymmetry, and it also suggests that discourse factors influence the syntactic derivation, a topic I pick up in the next chapter. In addition, the analysis of LDA presented accounts for the variation in LDA via feature variation in $C^0$ as well as in the inverse system between Algonquian languages. I also present evidence that LDA-targets in Mi'gmaq actually move into the matrix clause.

Chapter 5 turns to the question of what affects the surface order of arguments if it is not due to the underlying syntactic structure. Here I present an experimental investigation of the surface constituency and prosody of focus constructions in Mi'gmaq. Focus is shown to affect the surface constituency via word order, DP deletion, and prosody. There is a tension between fronting focused constituents and ordering preferences for SVO word order and proximate DPs to precede obviative DPs, which causes variation in focus marking techniques.

In Chapter 6, I summarize the previous chapters and I conclude by discussing the prospect of configurationality being a more general property of Algonquian languages.

# Chapter 2

# The verb in Mi'gmaq

## 2.1 Introduction

The verb in Algonquian languages is complex and includes information about tense, mood, and clause type; adverbial material (i.e.
preverbs); as well as multiple ϕ-indexing affixes. This is why positing the verb to be the locus of non-configurational properties has intuitive appeal: under proposals like the Pronominal Argument Hypothesis, true arguments are located inside the verbal complex. In this chapter I analyze the TA (transitive verb with two animate arguments) and TA+O (ditransitive) verbs in Mi'gmaq. This is important both in order to understand the components of the verb as well as to understand how to map these to clause structure. I focus on ϕ-indexing affixes and argue that they are instances of agreement, and not pronominal arguments. I show that by identifying the arguments that the verbal morphemes index, we can get a picture of where arguments are base-generated, which will be the focus of the next chapter.

I associate different verbal affix positions with different functional heads, and demonstrate that the probes on these functional heads act independently from one another. This is important because there is no one-to-one mapping between arguments and agreement affixes. Agreement affixes can index the same argument, and arguments can be unindexed in the verb. I suggest that this makes the PAH untenable for Mi'gmaq, and Algonquian languages in general, insofar as they resemble

the Mi'gmaq data.

In the chapter that follows, I give a general outline of TA verbs in section 2.2, and present an analysis of three of the four ϕ-indexing affixes in section 2.3. In section 2.4, I address the implications of this analysis.

## 2.2 The parts of the verb stem

In this section I introduce some background information in 2.2.1, before introducing each component of verbal inflection in 2.2.2. In 2.2.3, I propose a clausal structure for Mi'gmaq based on these suffixes.

### 2.2.1 Background

Transitive verbs in Algonquian languages are notoriously complex. Verbs in Mi'gmaq contain multiple suffixes with encode information about the ϕ-features of multiple arguments, negation, and a suffix which can encode tense, mood, and evidentiality (which I refer to as tense throughout for convenience).

Following the Mirror Principle (Baker, 1985), the order in which inflectional suffixes attach to the verb reflects the order of the functional projections along the clausal spine. Under the assumption that the verb is base-generated low in the structure (as a verb root, which I represent as $\sqrt{}$) and tense is generated high in the structure (as the head of a Tense Phrase, or TP), then we can assume that the verb undergoes successive cyclic head movement up the tree, to at least the tense head ($T^0$). This allows us to account for why tense and lower heads appear as suffixes to the verb root in Mi'gmaq.

Following the Head Movement Constraint (Travis, 1984), head movement cannot skip heads, thus must stop at each head on the way up the tree. In addition, head movement involves involves left-adjunction (Baker, 1988; Kayne, 1994), thus the verb will precede heads to which it adjoins. With this in mind, let's take a look at a complex verb in Mi'gmaq, explore the components, and

map them to the clausal spine.[1]

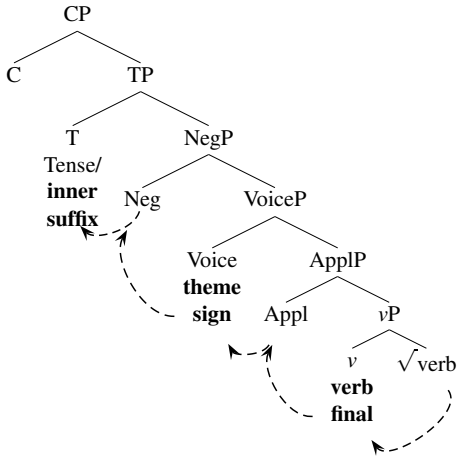
The form in Table 2.1 is a TA+O (ditransitive) verb. This represents the full complexity of the Mi'gmaq verb in terms of inflectional morphology, and each of the bold-faced components will be discussed in greater detail below. This form includes negation, tense, and an applicative head (which introduces a goal DP). This form has been chosen since it aids us in fully segmenting the various ϕ-indexing affixes.

Table 2.1: VERB TEMPLATE

| | √root | **verb final** | Appl$^0$ | **theme sign** | Neg$^0$ | **inner suffix** | T$^0$ | **outer suffix** |
|---|---|---|---|---|---|---|---|---|
| mu | elug | -**atm** | -u | -**i** | -w | -**g** | -pn | -**ig** |
| NEG | fix | **DFLT** | APPL | **1OBJ** | NEG | **3** | PST.DK | **3PL** |
| | | | | 'They didn't fix it for me' | | | | |

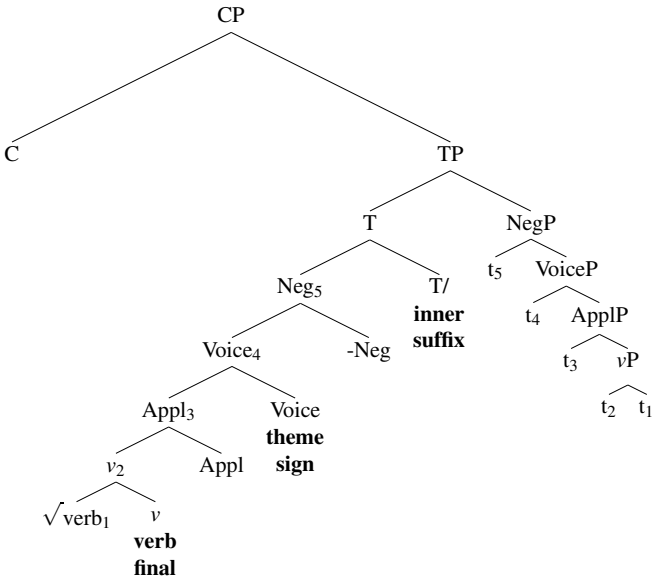
I propose that verb maps to the clausal spine and involves verb movement as in (1). This would generate the structure in (2). Note that left out of this tree from Table 2.1 are: (a) *mu* a negative particle that precedes negative verbs in Mi'gmaq, and (b) the outer suffix *-ig*, which I do not analyze in this thesis.

(1) CLAUSE STRUCTURE AND VERB MOVEMENT




[1]See Harley (2013b) for alternatives to a head movement and left-adjunction for deriving the Mirror Principle effect.

(2) AFTER VERB MOVEMENT




In the following subsection I briefly introduce each component of the verb phrase, before turning to a more detailed discussion of the ϕ-indexing morphemes below.

### 2.2.2 A preview of the verbal complex

The first morpheme in the verb stems we examine here is the verb root itself (i.e. *elug* 'fix/work' in Table 2.1).[2]

After the verb stem comes the verb final (i.e. *-atm* in Table 2.1). This morpheme varies depending on the transitivity of the verb and the animacy of the DPs, as introduced in 1.2.1 above.

This morpheme only appears on transitive verbs and it typically co-varies with the animacy of the theme DP.[3] The form in (3) shows the verb final in a TA (i.e. *-al*) and TI (i.e. *-at(m)*) verb.

(3) a. elugw-**al**-a-t-l
fix-**AN**-3OBJ/DIR-3-OBV
'S/he fixes it(an)'

b. elugw-**at**-g
fix-**DFLT**-3
'S/he fixes it(in)

Following Brittain (2003), Hirose (2003), and Mathieu (2008), I propose that the verb final is

[2]The verb stem may contain other elements such as preverbs, "middles", and incorporated elements, not analyzed here. For information on the composition of verb roots in Mi'gmaq, see McCulloch (2013) and Manyakina (2015).

[3]The exception to this generalization is in TA+O (ditransitives) and possessor raising forms in which the animacy of the theme DP is not indexed. This exception is found across Algonquian languages. See Hamilton (to appear a) and Hamilton (to appear c) for a theoretical account of this exception.

the overt instantiation of $v^0$. Supporting evidence comes from its link with transitivity (Marantz, 1997), and because it can only index the theme DP, which is the only local DP at the relevant stage in the derivation.

After the verb final, an applicative morpheme can appear (i.e. *-w* in Table 2.1). This introduces goal DPs in TA+O (ditransitives) and in TA forms derived from AI (intransitive with animate subject) verbs.[4] This is shown below in (4). An applicative morpheme is added to the TI form in (4a), results in the TA+O form in (4b) with the goal DP receiving a benefactive interpretation.

(4) a. elugw-at-g
fix-DFLT-3
'S/he fixes it(in)'

b. elugw-atm-**u**-i-t
fix-DFLT-**APPL**-1OBJ-3
'S/he fixes it(in) for me'

After the applicative morpheme is the theme sign (i.e. *-i* in Table 2.1). Theme signs are present only in TA verbs. They index the ϕ-features of either the object alone or both the subject and object (discussed with respect to the direct-inverse system in 1.2.3 above). Following Oxford (2014), I propose that theme signs are located in Voice$^0$. This allows it to index the ϕ-features of both the subject (introduced in Spec-VoiceP, see Kratzer 1996) and the structurally highest object (Harley, 2013a). In addition, theme signs are in complementary distribution with other Voice$^0$ morphemes, including the reflexive (*-(i')si*). The contrast between a TA form and reflexive is shown in (5). Note that both appear between the verb final (*-al*) and the inner suffix (*-t*).

(5) a. ges-al-**a**-t-l
love-AN-**3OBJ/DIR**-3-OBV
'S/he loves her/him(obv)'

b. ges-al-**si**-t
love-AN-**REFL**-3
'S/he loves her/himself'

The negative suffix (i.e. *-w* in Table 2.1) typically appears after the theme sign when present. This will be included in forms throughout this thesis when it aids in making the theme sign and inner suffix visible and easily segmentable. This is shown in (6), where the inverse them sign is visible in the negative form in (6b), but not the affirmative form in (6a). The form in (6b) also displays that the negative morpheme can exceptionally appear outside of the inner suffix.[5]

[4]See Hamilton (to appear a) and Hamilton (to appear c) for arguments that this is a "high" applicative Pylkkänen (2008).

[5]I assume that the reversal of morphemes is phonologically-motivated metathesis.

(6) a. ges-al-**∅**-t-l
love-AN-**INV**-3-OBV
'S/he(obv) loves her/him'

b. ges-al-**gu**-g-u-l
love-AN-**INV**-3-NEG-OBV
'S/he(obv) doesn't love her/him'

The inner suffix (i.e. *-g* in Table 2.1) typically appears outside of negation. The inner suffix indexes either ϕ-features of the subject or object depending on the person and number specifications of both, discussed below. Following Nevins (2011), I propose that the presence of allomorphy related to the tense/mood of the clause is a diagnostic for agreement on $T^0$. Thus, I assume that the inner suffix appears in $T^0$. An example of mood-conditioned allomorphy is shown in (7). Here the phonological form of the second person plural inner suffix varies depending on the mood of the cause. It appears as *-eg* in the realis mood in (7a) and *-nen* in the irrealis mood in (7b).

(7) a. ges-al-i-**eg**
love-AN-1OBJ-**2PL**
'You-all love us'

b. 'gs-al-i-tis-**nen**
love-AN-1OBJ-FUT-**2PL**
'You-all will love us'

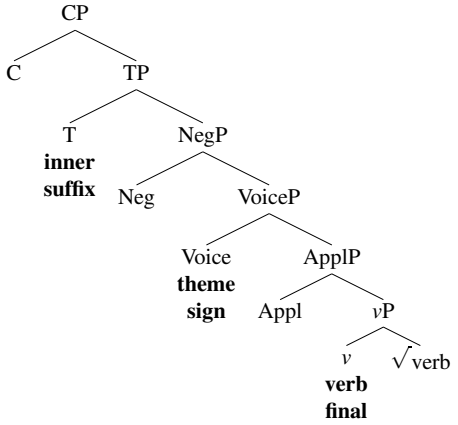
After the inner suffix in the realis mood (and before it in the irrealis future) is the mood/tense/evidential morpheme (i.e. *-pn* in Table 2.1). Following the diagnostic for agreement with $T^0$, I propose that this morpheme also appears in $T^0$, which explains the ability for contextual allomorphy with the inner suffix. We saw examples of the mood distinction above in (7a).

Appearing last in the verb is the outer suffix (i.e. *-ig* in Table 2.1). The outer suffix may index plurality of either subject or object arguments (see Nevins 2011 on "omnivorous number"). Although I present an analysis of the other three ϕ-indexing affixes in 2.1, I do not for the outer suffix. One reason for this is that it is unclear where in the clause it is located because it is not subject to the same locality restrictions as the other three. This, combined with its position in the stem, may suggest that it is a morphophonological clitic. In addition, it only indexes a limited set of persons. I leave an analysis of the outer suffix for future research and do not address it in any detail throughout this thesis.

### 2.2.3 Clausal structure

Putting all of these morphemes together with the assumptions about their location gives us the clausal spine in (8), repeated from (31) above.

(8) CLAUSE STRUCTURE: TA+O

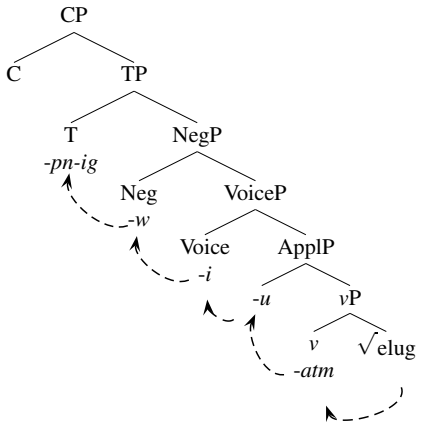



The form in Table 2.1, shown below as Table 2.2, maps directly to the clausal spine as in (9). I assume that the verb undergoes successive cyclic movement up the clause, and left-adjoins to each functional head. This derives the morpheme order of the verb.

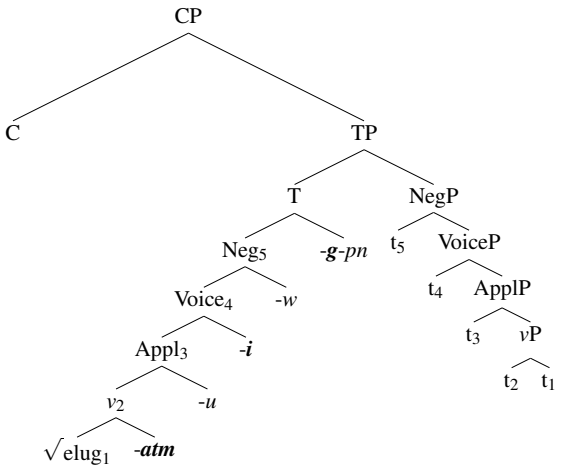
Table 2.2: VERB TEMPLATE

| | root | **verb final** | Appl$^0$ | **theme sign** | Neg$^0$ | **inner suffix** | T$^0$ | **outer suffix** |
|---|---|---|---|---|---|---|---|---|
| mu | elug | -**atm** | -u | -**i** | -w | -**g** | -pn | -**ig** |
| NEG | fix | **DFLT** | APPL | **1OBJ** | NEG | **3** | PST.DK | **3PL** |
| | | | | ‘They didn’t fix it for me’ | | | | |

(9) MAPPING TABLE 2.2 TO CLAUSAL SPINE




(10) VERB MOVEMENT




In the next section I propose an analysis for each ϕ-indexing affix.

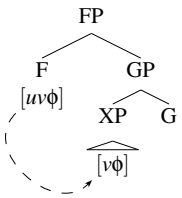
## 2.3 ϕ-indexing affixes

In this section I present an analysis of three ϕ-indexing affixes: verb finals, theme signs, and inner suffixes. I propose that the appearance of a ϕ-indexing affix in Mi'gmaq is the result of an AGREE relation between a functional head and a DP (Chomsky, 2000). A functional head with an unvalued ϕ-feature probes its search space (its c-command domain) for a DP with ϕ-features, enters into an AGREE relationship with an appropriate goal DP, and as a result the ϕ-features on the functional head are valued correspondingly. I propose that the search space includes the c-command domain

of the probe, as well as any DP in the probe's specifier (Béjar & Rezac, 2009).[6] This is important in the account of the ability for Voice$^0$ to AGREE with both the subject DP in Spec-VoiceP and structurally highest object DP it c-commands.

The representation in (11) illustrates AGREE as probe-goal relation. Here the unvalued ϕ-feature on $v^0$ probes for a goal with valued ϕ-features (probing is represented throughout this thesis with dashed lines). The ϕ-probe finds the valued ϕ-feature in Spec-GP, AGREEs with it and the ϕ-features of the XP value the ϕ-features of F$^0$.[7]

(11)




I address each ϕ-indexing affix below in turn.

### 2.3.1 Verb final

As discussed in 2.2 above, the verb final in Algonquian languages follows the root and varies depending on the animacy of arguments. Here we restrict our attention to transitive verbs. Different finals appear with TA and TI verbs. These sets are paired such that if a verb has a particular TA verb final it will have the corresponding TI verb final. Table 2.3 shows three sets of verb finals in Mi'gmaq.[8]

[6]This was formerly called m-command (Aoun & Sportiche, 1981; Chomsky, 1986).

[7]There are a variety of different ways a probe can search its domain, which may be important in cases where multiple arguments are probed (i.e. for theme signs and inner suffixes). However, the data from Mi'gmaq presented here does not discern between different accounts. Either simultaneous probing (Hiraiwa, 2005) or ordered probing (Béjar & Rezac, 2009; Lochbihler, 2012) accounts are possible.

[8]It is unclear on a verb such as *ignmuatl* 's/he loves her/him' if the *-u* morpheme is a verb final or an applicative head. I assume the latter for simplicity.

Table 2.3: VERB FINALS (NON-EXHAUSTIVE)

| *set* | *TA* | *TI* |
|---|---|---|
| 1 | *-al* | *-atm* |
| 2 | *-i* | *-itu* |
| 3 | *-∅* | *-∅* |

Examples of one pair is shown in (12). Here the verb root *elugw-* 'fix' has the *-al* TA final and *-at(m)* TI final.

(12) a. elugw-**al**-a-t-l
fix-**AN**-3OBJ/DIR-3-OBV
'S/he fixes it(AN)'

b. elugw-**at**-g
fix-**DFLT**-3
'S/he fixes it(IN)

Interestingly, TI finals appear not only when there is an inanimate DP internal argument, but also when there is a CP complement. This exemplified in (13). The TI form in (13a) has an inanimate DP (*Mi'gmawei tli'suti* 'Mi'gmaq language') as the theme DP, while TI form in (13b) has a complement clause (*Sa'n welmatoq* 'John is kind').

(13) a. Mali gei-**t**-oq [$_{DP}$ **Mi'gma-wei tli'suti** ]
Mary know-**DFLT**-3 [ **Mi'gmaq-POSS language** ]
'Mary knows **the Mi'gmaq language(IN)**'

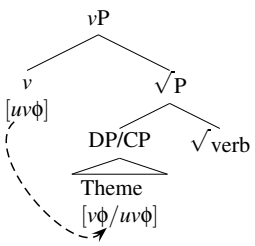
b. Mali gei-**t**-oq [$_{CP}$ **Sa'n welmat-oq** ]
Mary know-**DFLT**-3 [ **Mary kind-3** ]
'Mary knows **John is kind**'

I propose, following Piggott (1989), Bruening (2001), and Quinn (2006), that the TI verb final is a default morpheme, appearing whenever there is a theme that lacks person features. This means that inanimate DPs, like CPs, lack person features (Lochbihler 2012 and Oxford 2014). I gloss the TA final as animate (AN) and the TI final as default (DFLT) throughout.

To account for these facts, $v^0$ is base-generated with unvalued ϕ-features and probes for a goal, as shown in (14). The verb final is limited to indexing the theme DP, since it is the structurally

closest DP in its c-command domain.[9]

(14)




If the theme DP has person features, the ϕ-probe AGREEs with and is valued by the ϕ-features of the theme DP. The head $v^0$ will be spelled-out as the animate verb final. If the theme DP (or CP) lacks person features, the ϕ-probe is not valued and spells-out as the default verb final. I follow Preminger (2014) in using the appearance of default morphology as a diagnostic to identify an agreement morpheme.

### 2.3.2 Theme sign

As discussed in 1.2.3 and 2.1, TA theme signs behave differently depending on the ϕ-features of the arguments. In some cases they index the ϕ-features of only the object, while in others they are sensitive to ϕ-features of both the object and the subject. Analyses that characterize theme signs as only object markers (e.g. McGinnis 1999 and Brittain 1999) or only direction markers (e.g. Wolfart 1973, Dahlstrom 1991, Béjar & Rezac 2009, Lochbihler 2012) are not flexible enough to account for the full distribution of data in Mi'gmaq.

Table 2.4 shows the full distribution of the five theme signs in Mi'gmaq.[10] Note that the cells of theme signs that mark only the object are in white. The cells of theme signs which make reference to features of both the subject and the object are in grey.

[9]For arguments that the object (theme DP) is merged as sister to selecting verb ($\sqrt{}$) see Kratzer (1996), Marantz (1997), Bobaljik & Harley (2012), and Harley (2014).

[10]The black cells represent impossible combinations of arguments in TA forms. Some are reflexives (e.g. 1>1, 1pl(excl)>1pl(excl), etc) while others involve "feature overlap", i.e. 1>1pl(excl), 1<1pl(incl), etc). See Lochbihler (2012) for a discussion the impossibility forms with of overlapping reference.

Table 2.4: THEME SIGN DISTRIBUTION

| obj.→ | 1 | | | 2 | | 3(PROX) | | 3(OBV) | |
|---|---|---|---|---|---|---|---|---|---|
| ↓subj. | SG | PL(EXCL) | PL(INCL) | SG | PL | SG | PL | SG | PL |
| 1 | | | | *-ul(n)* | | *-a* | | | |
| 1pl(excl) | | | | | | | | | |
| 1pl(incl) | | | | | | | | | |
| 2 | *-i('li)* | | | | | | | | |
| 2pl | | | | | | | | | |
| 3(PROX) | | *-ugsi* | | *-ul(n)* | *-ugsi* | | | | |
| 3pl(PROX) | | | | | | | | | |
| 3(OBV) | | | | | | *-gw/gu* | | | |
| 3pl(OBV) | | | | | | | | | |

The morphemes with white cells index only the ϕ-features of the object: *-i* first person, *-uln* second person, and *-a* third person. The *-ugsi* theme sign only appears when the subject is third person and the object is a plural Speech Act Participant (i.e. first or second person). The *-gw/gu* theme sign only appears in inverse forms with a third person obviative subject and third person proximate object.

Note that the grey cells are all typical inverse environments: obviative>proximate and 3>SAP, as discussed in 1.2.3. Note however that not all inverse environments are encoded in this way in Mi'gmaq, since, for example, a TA form with a third person singular subject and a second person singular object shows only object agreement. Note, as well, that the *-a* theme sign covers both third person object (SAP>3) environments as well as direct (proximate>obviative) environments. I gloss *-a* as indexing both third person object and direct.

Table 2.5 presents my gloss for each theme sign. Corresponding examples are shown after in (15).

Table 2.5: THEME SIGN ENVIRONMENTS

| *theme sign* | *gloss* | *environments* |
|---|---|---|
| *-(i'l)i* | 1OBJ | 1st person object |
| *-ul* | 2OBJ | 2nd person object |
| *-a* | 3OBJ/DIR | 3rd person object and direct |
| *-ugsi* | 3>SAPPL | 3rd person subject and Speech Act Participant plural object |
| *-gw* | INV | inverse |

(15) a. mu ges-al-**i**-w-g
NEG love-AN-**1OBJ**-NEG-3
'S/he doesn't love me'

b. mu ges-al-**uln**-u-g
NEG love-AN-**2OBJ**-NEG-3
'S/he doesn't love you'

c. mu ges-al-**a**-u/w-t
NEG love-AN-**3OBJ/DIR**-NEG-3
'You don't love her/him'

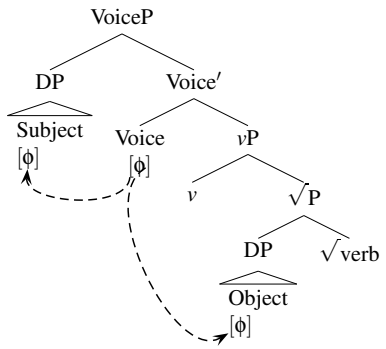
d. mu ges-al-**ugsi**-w-oq
NEG love-AN-**3>SAPPL**-NEG-2PL
'S/he doesn't love you-all'

e. mu ges-al-**a**-g-u-l
NEG love-AN-**3OBJ/DIR**-3-NEG-OBV
'S/he doesn't love her/him(obv)'

f. mu ges-al-**gu**-g-u-l
NEG love-AN-**INV**-3-NEG-OBV
'S/he(obv) doesn't love her/him'

Assuming that the theme sign reflects the spell-out of a single head, the probe on this head must have access to both the subject and the object. Following Oxford (2014), I take Voice$^0$ to be a natural location for this probe. As noted above, I assume, following Béjar & Rezac (2009), that Voice$^0$ has access both to the object in its c-command domain, as well as the subject in its specifier. This is shown in (16).

(16)




Support for an AGREE analysis comes from the fact that the indexing of the theme sign is subject to a locality constraint. The theme sign is limited to indexing, at most, the subject and structurally highest object. In TA verbs (transitive verbs with two animate arguments) the theme sign displays agreement with the subject and theme DP, or just the theme DP, as shown in (17a) and (17b), respectively. In TA+O verbs (ditransitives), the theme sign displays agreement with the subject and goal DP, or just the goal DP, as shown in (18a) and (18b), respectively.

(17) a. genn-**ugsi**-eg
hold-**3>SAP**$_{\textbf{PL}}$-1PL
'S/he holds us(excl)'

b. genn-**i**-t
hold-**1**$_{\textbf{OBJ}}$-3
'S/he holds me'

(18) a. gennm-**ugsi**-eg
wash.APPL-**3>SAP**$_{\textbf{PL}}$-1PL
'S/he holds it(in) for us(excl)'

b. gennm-u-**i**-t
wash-APPL-**1**$_{\textbf{OBJ}}$-3-OBV
'S/he holds it(in) for me'

We can understand the constraint on only indexing the highest object DP as a locality condition if the goal DP is structurally higher than the theme DP, as suggested above by the verb final being limited to indexing the theme DP.[11]

### 2.3.3 Inner suffix

The theme sign discussed in the previous section indexes either just the object, or in the case of the inverse forms in grey above, is sensitive to features of both the subject and the object. The inner

[11]This rests on the assumption that the goal DP is structurally higher than the theme DP in ditransitives. This is consistent with the analysis in Hamilton (to appear a) and discussed with respect to asymmetric applicatives in Chapter 3.

suffix indexes features of only a single argument, but this may be the subject or object, as discussed here.

The inner suffix displays a hierarchy effect, previously discussed in Coon & Bale (2014), such that first and second person plural arguments (SAPpl) arguments are privileged over all others. This pattern is shown in Table 2.6. Cells corresponding to SAP plural inner suffixes are white. Lightly shaded cells represent singular inner suffixes, while darkly shaded ones represent 3rd person plural inner suffixes; the relevance of this distinction will be explained below.

Table 2.6: INNER SUFFIX DISTRIBUTION

<table>
<tr><td>obj.→</td><td colspan="3">1</td><td colspan="2">2</td><td colspan="2">3</td><td colspan="2">4</td></tr>
<tr><td>↓subj.</td><td>SG</td><td>PL(EXCL)</td><td>PL(INCL)</td><td>SG</td><td>PL</td><td>SG</td><td>PL</td><td>SG</td><td>PL</td></tr>
<tr><td>1</td><td colspan="3" rowspan="3"></td><td>-n</td><td>-oq</td><td colspan="3">-t/g</td></tr>
<tr><td>1PL(EXCL)</td><td colspan="5">-eg</td></tr>
<tr><td>1PL(INCL)</td><td colspan="4"></td><td colspan="3">-gw</td></tr>
<tr><td>2</td><td>-n</td><td rowspan="5">-eg</td><td rowspan="4"></td><td colspan="2" rowspan="3"></td><td colspan="3">-t/g</td></tr>
<tr><td>2PL</td><td>-oq</td><td colspan="3">-oq</td></tr>
<tr><td>3</td><td rowspan="4">-t/g</td><td rowspan="4">-gw</td><td rowspan="4">-t/g</td><td rowspan="4">-oq</td><td colspan="2" rowspan="2"></td><td>-t/g</td></tr>
<tr><td>3PL</td><td>-tit</td></tr>
<tr><td>4</td><td>-t/g</td><td rowspan="2"></td></tr>
<tr><td>4PL</td><td>-tit</td></tr>
</table>

The overriding generalization from this table is that SAP plural arguments are preferentially indexed if present, regardless of whether they are the subject or object. The preferential indexing of second person plural over third person singular, regardless of grammatical role is shown in (19).

(19) a. ges-al-**oq**
love-AN-**2PL**
'We(excl) love her/him

b. ges-al-ugsi-**oq**
love-AN-3>SAPPL-**2PL**
'S/he loves us(excl)'

There is a preference to index first person exclusive over second person plural.[12] The preference for first person plural exclusive over second person plural is shown in (20). The resulting interpretation of each is ambiguous for number of the second person argument, thus either refers to 'you' or 'you-all', since it is not indexed by the inner suffix.

[12]The relative ranking of first person inclusive with respect to either second person plural or first person exclusive cannot be determined since this combination of arguments is impossible. See footnote 8.

(20) a. ges-al-uln-**eg**
love-AN-2OBJ-**1PL**
'**We(excl)** love you(-all)'

b. ges-al-i-**eg**
love-AN-1OBJ-**1PL**
'You(-all) love **us(excl)**'

Within singular arguments, when there is a combination of a third person and SAP argument, the third person singular inner suffix will be indexed. This is shown in (21).

(21) a. mu ges-al-uln-u-**g**
NEG love-AN-2OBJ-NEG-**3**
'**S/he** doesn't love you'

b. mu ges-al-a-u/w-**t**
NEG love-AN-3OBJ-NEG-**3**
'You don't love **her/him**'

Third person singular is indexed regardless of grammatical role. The first and second person singular inner suffix (*-n*) only appears when both arguments are SAP singular (i.e. 1>2 or 2>1)

Interestingly, the pattern is different for the third person plural inner suffix (*-'tit*). The generalization here is that this inner suffix only appears when both arguments are third person, and then only if the subject is third person plural. This is shown in (22). The third person plural suffix appears only when it is the subject in (22a), and not when it is the object in (22b).[13]

(22) a. ges-al-a-**'tit**-l
love-AN-3OBJ/DIR-**3PL**-OBV
'**They** love her/him'

b. ges-al-a-**j**-i
love-AN-**3**-3PL
'S/he loves **them**'

Table 2.7 summarizes the form and gloss for each inner suffix.[14]

Table 2.7: INNER SUFFIX PROPOSAL

| person/number | form (realis) |
|---|---|
| 1PL | *-eg* |
| 21PL | *-gw* |
| 2PL | *-oq* |
| 3PL | *-'tit* |
| 3 | *-t/-g* |
| 2 | *-n* |
| 1 | *-n* |

[13]In fact *'tit* may be a complex morpheme with *-'ti* being plural and *-t* the third person suffix. This is a topic for further research.

[14]Note that these are the realis forms. Irrealis allomorphs exist as discussed in 2.1, but are not included in this table.

Descriptively, we may say there is a hierarchy involved in which argument the inner suffix indexes.[15] This is shown in (23).

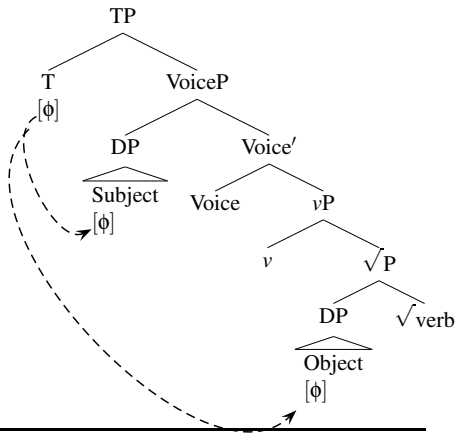
(23) Inner suffix hierarchy

$1\text{PL} > 2\text{PL} > 3\text{PL},3\text{SG} > 1\text{SG},2\text{SG}$

There is a general preference for plural arguments over singular arguments, since the plural argument is always indexed over a singular argument.[16] Within plural arguments, there is a hierarchy in which first persons are indexed over second persons and both are indexed over third person. However, with singular arguments, third person is indexed over first and second persons. It is beyond the scope of this thesis to provide the mechanism which derives the hierarchy in (23) and I save this as a topic for future work

In order to account for inner suffixes, I propose that $T^0$ has an unvalued ϕ-feature that must be able probe multiple arguments. The only potential instance in which it only probes one argument is when the subject is first person plural, since this is the highest-ranked argument on the hierarchy. Otherwise, both arguments must be probed in order to derive the complicated preferences of the ϕ-probe. This is shown in (24).

(24)




[15]Note that this hierarchy differs from the one reported in Coon & Bale (2014), since they focus on SAPpl and do not report that third person singular is indexed above other singulars.

[16]Although third person plural arguments are always indexed when they appear with an SAP singular argument, the third person singular inner suffix (*-t*/*-g*) appears instead of the third person plural one (*-'tit*).

Support for an AGREE analysis comes from the fact that the inner suffix can also only index the subject and the closest object DP. The inner suffix indexes the first person plural theme DP in the TA form in (25a), but the first person goal DP in the TA+O form in (25c). The example in (25b) shows the third person inner suffix form.

(25) a. genn-i-**n**
hold.AN-1OBJ-**SAP**
'You hold me'

b. genn-**'t**
hold.AN-**3**
'You hold her/him'

c. gennm-u-i-**n**
wash.DFLT-APPL-1OBJ-**SAP**
'You hold it(in) for me'

If the third person theme DP was probed by the ϕ-probe on $T^0$ in (25c), then it would be marked by the theme sign since it is preferred to SAPs when both are singular. Thus, it cannot be the case that theme DP is probed in (25c). This shows that similar to the theme sign, the inner suffix is restricted to indexing the structurally highest DP. Therefore, it is subject to the same kind of locality condition which is a characteristic of an AGREE relation. It also supports the proposal that the goal DP is structurally higher than the theme DP in TA+O forms, as argued for in more detail in the following chapter.

In this section, I outlined the distribution of three ϕ-indexing affixes, and proposed and motivated an AGREE account for each. In the next section, I present the implications of this analysis for the Configurational Account developed in this thesis, as well as issues that Mi'gmaq raises for alternate accounts.

## 2.4 Implications

In this section I discuss two implications of the analysis of the verb stem suffixes presented above. The first is that the PAH is less appealing for Mi'gmaq, given that the verb has agreement morphemes rather than pronominal arguments. The second is that there are a few analyses of agreement which involve re-ordering subjects and objects (Coon & Bale, 2014) or making them equidistant from higher probes (Oxford, 2014). While these can account for the Mi'gmaq data

presented in this chapter, they face challenges in accounting for some subject-object asymmetries presented in following chapters. I discuss each implication in turn below.[17]

### 2.4.1 Pronominal Argument Hypothesis (PAH)

Recall from 1.4.1 that the PAH proposes that the locus of non-configurationality is the fact that the ϕ-indexing morphemes on the verb are in fact the true arguments, i.e. pronominal arguments. All else being equal, we might thus expect that ϕ-indexing morphemes on the verb and arguments stand in a one-to-one relationship. The strong version of this mapping hypothesis is that each pronominal argument will index one and only one argument. The weaker version of this mapping is that each argument is simply indexed on the verb.

Based on the analysis of ϕ-indexing suffixes outlined above, the strong version of the mapping hypothesis does not apply for Mi'gmaq. The inner suffix indexes the ϕ-features of either the subject or object. This is shown with the second person plural inner suffix *-oq* in (26), since it is indexed when it is the subject or object, as in (26a) and (26b), respectively.

(26) a. ges-al-**oq**
love-AN-**2PL**
'We(excl) love her/him

b. ges-al-ugsi-**oq**
love-AN-3>SAPPL-**2PL**
'S/he loves us(excl)'

In addition, the theme sign can index both arguments. This is shown with *-ugsi* in (26b). Thus, neither the inner suffix or theme sign can be pronominal arguments in the strong sense.

With the theme sign and inner suffix excluded, we are left with only the verb final and the outer suffix as possible pronominal arguments. The verb final indexes the ϕ-features (if present) of the theme and it only appears when a theme DP is present. Thus it is possible to analyze the verb final as a pronominal argument which signals the presence of a DP (although, is somewhat unusual given the fact that nothing more than the presence of person features is indexed).

[17] A third implication not discussed here is the fact that there are two instances of ϕ-feature indexing in the verbal domain: verb finals and theme signs. Following Oxford (2013), I take both of these to be true instances of agreement rather than morphophonological clitics. This is important since it presents evidence against a recent hypothesis that the only true instance of agreement in the clause occurs as subject agreement in $T^0$ (Nevins, 2011; Woolford, 2010). See Hamilton (to appear b) for a thorough discussion.

However, the outer suffix is an unlikely pronominal argument, since it is limited to indexing third person arguments, and can index either the subject or object. This is shown in (27). The outer suffix (*-l*) can index either an obviative subject (27a) or object (27b).

(27) a. ges-al-∅-t-**l**
love-AN-INV-3-**OBV**
'S/he(*obv*) loves her/him'

b. ges-al-a-t-**l**
love-AN-3OBJ/DIR-3-**OBV**
'S/he loves her/him(*obv*)'

Thus, the strong affix-to-argument mapping hypothesis is untennable for Mi'gmaq, since ϕ-indexing arguments are not limited to marking a specific argument, aside from the verb final. The weaker hypothesis, that all arguments are indexed on the verb, is a more likely possibility given the number of ϕ-indexing affixes in Mi'gmaq.

However, even this weaker hypothesis is too strong, as there are at least two environments in which there is an argument that is not indexed on the verb. The first environment occurs when both arguments are SAP and the object is plural. This is exemplified in (28).

(28) a. ges-**al-i-eg**
love-**AN-1OBJ-1PL**
'You(-all) love **us(excl)**'

b. ges-**al-uln-oq**
love-**AN-2OBJ-2PL**
'I love you-all'

In (28a), the first person plural theme DP is indexed by all ϕ-indexing affixes: the animate verb final (*-al*), 1st person object theme sign -(*i*), and first person plural outer suffix (*-eg*). The second person subject is not indexed, and we have no information if it is plural or not. In fact, the verb is also ambiguous if the subject is third person singular or plural, as the theme sign appears as *-ugsi* and the inner suffix is still *-eg*.

Similarly in (28b), now the the second person plural theme DP is indexed by all ϕ-indexing affixes: the animate verb final (*-al*), 2nd person object theme sign -(*uln*), and second person plural outer suffix (*-oq*). The first person singular subject is not indexed in the verb at all.

The second environment is when there is a secondary object, such as in intransitive forms with an overt object that is not indexed (AI+O verbs). The verb *elege-* 'throw' is an intransitive verb but can appear with a secondary object such as *tu'aqan* 'ball' in (29). This object is only indexed

on the verb by an outer suffix, thus is only marked if obviative (29a), or plural. Otherwise it is not indexed, such as in (29b) where it is proximate.

(29) a. elege-pn-**n** tu'aqan-**n**
throw.AI-3.PST-**OBV** ball-**OBV**
'S/he threw the ball'

b. elege-i-ap tu'aqan
throw.AI-1-PST ball
'I threw the ball'

Thus in addition to the fact that no single suffix maps to a particular argument, it is clear that multiple suffixes do not work in tandem to mark all arguments. This means that some arguments are not indexed on the verb. Thus both present evidence against applying the PAH to Mi'gmaq. The next chapter presents additional arguments against a PAH, since I show that overt DPs are not adjuncts.

### 2.4.2 Alternate analyses

There are accounts of the inner suffix which rely on movement to either reorder DPs (Coon & Bale, 2014) or order DPs equidistant from higher probes (Oxford, 2014). While both of these options successfully derive the distribution of the inner suffix in Mi'gmaq, they make predictions related to subject-object asymmetries that are shown to be incorrect in later chapters.

In an account of inner suffixes in Mi'gmaq, Coon & Bale (2014) propose that a functional head ($F^0$) below the TP and above the base position of the subject, probes and attracts the DP with the most articulated person features (i.e. SAP plurals). From Spec-FP, this attracted argument is the structurally closest DP to $T^0$. Under their account, $T^0$ thus has a simple $\phi$-probe which attracts either the raised SAPpl argument in Spec,FP, or the subject. However, movement to Spec-FP can cause the object to be in a structurally higher derived position relative to the subject. This makes the prediction that the argument attracted to Spec-FP will feed higher $\phi$-probes $T^0$, and possibly $C^0$.

In Chapter 4, I show that Mi'gmaq has a Long-Distance Agreement (LDA) pattern in which LDA is limited to the structurally highest embedded argument. This account predicts that in environments in which the object moves over the subject to Spec-FP, LDA should be possible with the object as opposed to the subject. However, this is not the case, since LDA is limited to subjects

in embedded direct clauses regardless of which argument is indexed as the inner suffix. While Coon & Bale (2014)'s analysis offers an explanation of the complex hierarchy effects discussed above, I take the LDA facts to provide evidence against this account. I claim that the hierarchy effects must be the result of $T^0$'s ability to probe multiple arguments, though again, I leave the details of how to derive the hierarchy as a topic for future research.

In an account of inner suffixes in Proto-Algonquian, Oxford (2014) assumes that the object moves to Spec-VoiceP (in a movement akin to object shift). This places both the subject and object in Spec-VoiceP. Oxford (2014) assumes that this makes them both equidistant from the $\phi$-probe on $T^0$, thus derives the ability of either to be indexed as the inner suffix. This can account for all distributions of inner suffixes without additional stipulations, except for the third person plural.

Recall that the third person plural inner suffix only appears when both forms are third person and the subject is third person plural. Under this account, we would need an additional index on DPs in order to distinguish subjects from objects if we are to account for this inner suffix. If not, the same problem with LDA distribution that faces Coon & Bale (2014)'s account is also a problem for Oxford (2014)'s account since equidistance form higher probes erases these subject-object asymmetries.

As we will see in Chapter 3, Mi'gmaq has Superiority effects (Chomsky, 1973; Richards, 1997), in multiple *wh*-questions. Oxford (2014)'s account makes the prediction that when the subject and object are equidistant from $C^0$, either could be ordered before the other. However, this is not the case, since subject *wh*-phases always precede object *wh*-phrases.

One solution to this issue, employed sparingly in Oxford (2014), is to assume that the Activation Condition (Chomsky, 2001) applies to DPs, such that after entering into an AGREE relation, a DP is inactive to subsequent AGREE relations. However, a single DP is able to enter into multiple AGREE relations with different probes on different verbs (as we will see in LDA in Chapter 4). The possibility of multiple instances of AGREE presents clear evidence against such an approach.

Thus, in addition to not reordering DPs, there is reason to doubt that DPs are equidistant from $T^0$ in order to derive the distribution of the inner suffix.

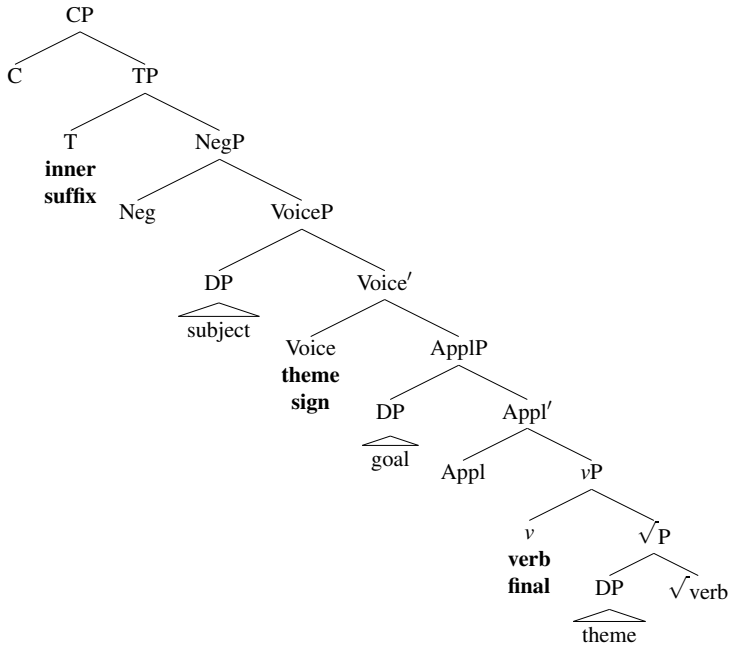
## 2.5 Conclusion

In this chapter I decomposed the complex verb in Mi'gmaq into component parts (Table 2.8), described each part, and mapped it to the clause structure in (30). We also saw evidence for the goal DP being structurally higher than the theme DP, which is also represented here.

Table 2.8: VERB TEMPLATE

| | root | **verb final** | Appl$^0$ | **theme sign** | Neg$^0$ | **inner suffix** | T$^0$ | **outer suffix** |
|---|---|---|---|---|---|---|---|---|
| mu | elug | **-atm** | -u | **-i** | -w | **-g** | -pn | **-ig** |
| NEG | fix | **DFLT** | APPL | **1OBJ** | NEG | **3** | PST.DK | **3PL** |
| | | | | 'They didn't fix it for me' | | | | |

(30) CLAUSE STRUCTURE: TA+O




Then I presented an account of three of the ϕ-indexing affixes: verb finals, theme signs, and inner suffixes. I proposed an AGREE account for each and assumed simultaneity of multiple instances of probing by the same ϕ-probe for the theme sign and the inner suffix.

This analysis has implications for configurationality, as we concluded that Mi'gmaq lacks pronominal argument and does not even have a restriction on indexing each argument in the verb.

This is problematic in attempting to apply a PAH account to Mi'gmaq. These issues will only increase as we investigate overt arguments in the next chapter.

In addition, we saw that while a variety of other accounts could derive the inner suffix distribution in a principled manner, it raised complications for subject-object asymmetries presented in later chapters. Specifically, both Coon & Bale (2014) and Oxford (2014) account for verbal morphology by creating environments in which subject-object asymmetries are reversed or neutralized, respectively. However, Chapter 4 presents subject-object asymmetries in LDA that can't be accounted for under either account. Chapter 3 presents Superiority effects which will be difficult to derive under Oxford (2014)'s account. Thus it is a bad idea to manipulate the relative base-generated hierarchical positions between DPs in order to derive the distribution of the inner suffix. In my account, since $T^0$ probes multiple arguments, there is no need to either reverse or neutralize subject-object asymmetries. Therefore it is necessary to allow probes to find more distant goals in order to maintain subject-object asymmetries.

In Chapter 3, I turn to an investigation of overt arguments in order to see if there are consistent subject-object asymmetries between them. I show that there are asymmetries, which supports a Configurational Account and casts doubt on the applicability of the PAH and Hybrid Account to Mi'gmaq.

# Chapter 3

# Asymmetries among arguments

## 3.1 Introduction

In this chapter, I present three asymmetries between arguments which support a Configurational Account of the syntactic structure of Mi'gmaq. These asymmetries show that two characteristics are crucial to the syntax of Mi'gmaq: (1) DPs are base-generated in A-positions, and (2) A-positions are arranged hierarchically, such that subjects asymmetrically c-command objects, and goals asymmetrically c-command themes. Both of these characteristics are important aspects of a Configurational Account and one or both are absent from alternate accounts.[1]

I consider the two alternate accounts I introduced in the 1.4: the Pronominal Argument Hypothesis (PAH; Jelinek 1984) and the Hybrid account (Baker, 1996). In the PAH, neither (1) nor (2) hold, as pronominal arguments are base-generated in A-positions, and these A-positions are not hierarchically organized. Under this account, DPs are adjuncts which do not stand in a consistent hierarchical relation with each other. In the Hybrid account (1) only holds for certain constituents, as *wh*-phrases but not overt argument DPs are base-generated in A-positions. (2) always holds as null pronominals (*pro*s) are base-generated in A-positions which are hierarchical organized. I show that asymmetries between overt DPs are problematic for the PAH, while a subset of these are also problematic for the Hybrid Account.

[1] I leave "true" non-configurational accounts aside as they would be necessarily ruled out if the PAH is ruled out, given that the PAH also posits a lack of hierarchical structure in the verbal domain.

In section 3.2, I present the predictions of each account in detail and discuss the previous literature on asymmetries in Algonquian languages. I then present the three asymmetries in succession: Superiority effects in section 3.3, Binding Condition C in section 3.4, and asymmetric applicatives in section 3.5. I conclude in section 3.6 that the Configurational Account is the most appropriate for Mi'gmaq.

## 3.2 Possible Analyses

Recall from 1.4 that Mi'gmaq can be classified as a non-configurational language, because it has the surface characteristics in (1).

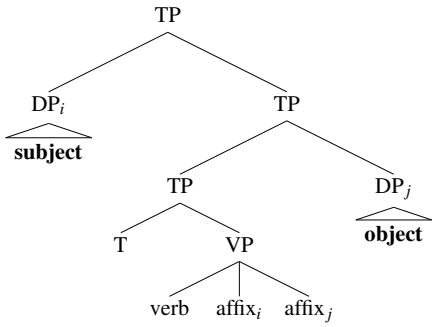
(1) CHARACTERISTICS OF NON-CONFIGURATIONALITY, (Hale, 1983)
   a. Null anaphora
   b. DPs are freely ordered
   c. Discontinuous DPs are allowed

We will entertain the following three accounts: the Pronominal Argument Hypothesis, the Hybrid Account, and the Configurational Account. I discuss each in turn below.

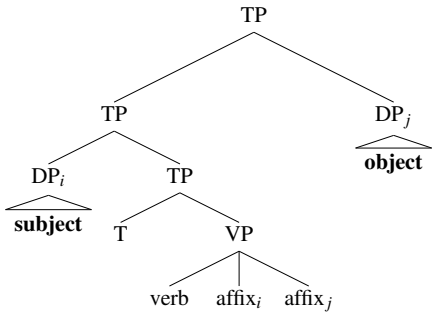
As introduced in 1.4, the PAH proposes that DPs are adjuncts, thus optional and freely ordered when present. This is proposed to account for null anaphora and the free ordering of arguments in non-configurational languages. A-positions are posited to be filled with pronominal arguments. Overt DPs are co-indexed with pronominal arguments, which allows for multiple DPs to be co-indexed with the same pronominal argument. This accounts for the possibility of discontinuous DPs. For declarative clauses with SVO word order in which both the subject and object are overt, the PAH predicts both of the structures in (2) to be possible. By design, there is no consistent structural relation between the overt subject and overt object in (2), since without additional constraints, nothing restrains the order in which DP adjuncts attach. As well, the verbal domain is posited to be flat, thus there is an absence of asymmetries in structural relationships between A-positions.

(2) PAH

a.




b.

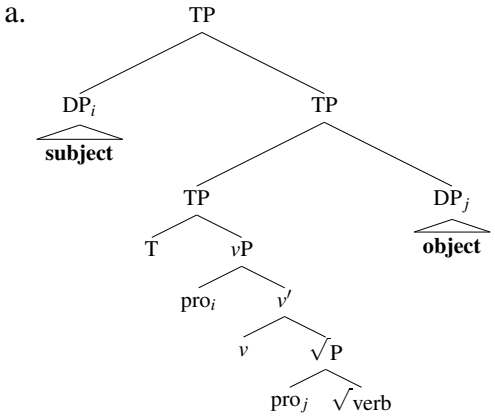



The second possibility I entertain, which I call the Hybrid Account, is a slight but significant revision of the PAH based on Mohawk in Baker (1996). The Hybrid account introduces hierarchical A-positions in the verbal domain, absent in the PAH, such that the subject A-position asymmetrically c-commands the object A-position. However, instead of the pronominal arguments posited by the PAH, null pronominals (*pro*s) are hypothesized to be base-generated in A-positions and co-indexed with overt adjunct DPs. In addition to *pro*, only *wh*-phrases and complement clauses are posited to be base-generated in A-positions.[2] For declarative clauses with SVO word order where both the subject and object are overt, the Hybrid account predicts both of the structures in (3) to be possible. The explanations for null anaphora, free word order and discontinuous elements stay the same as with the PAH, however a limited set of subject-object asymmetries are possible. Since the subject A-position asymmetrically c-commands the object A-position, subject-object asymmetries are expected to arise between constituents that are base-generated in A-positions, such as between *wh*-phrases in multiple *wh*-interrogatives and binding of the subject into complement clauses.

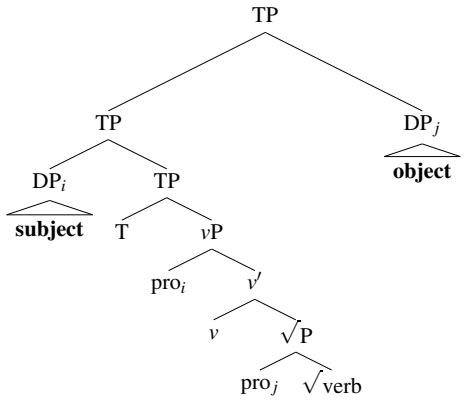
[2]This was proposed in Baker (1996) to account for evidence showing that Mohawk has both *wh*-movement and binding into complement clauses.

(3) HYBRID ACCOUNT

a.

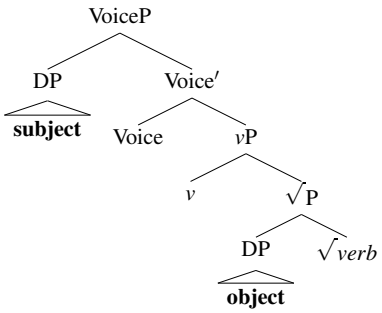



b.




The third possibility, and the one I propose for Mi'gmaq, is a Configurational Account. The underlying syntactic structure I adopt is shown in (4), where arguments are base-generated in canonical argument positions: the subject in the specifier of the Voice Phrase (VoiceP), and the object in the specifier of the root Phrase ($\sqrt{}$P).[3] Subjects and objects are base generated in A-positions in which the subject asymmetrically c-commands the object A-position. Under this account the characteristics of non-configurationality are posited to be superficial, thus due to sources other than the underlying syntactic structure (e.g. discourse factors as discussed in Saito 1985, Kiss 1987, Legate 2002, and Miyagawa 2010, and explored in Chapter 5 of this thesis).

(4) CONFIGURATIONAL ACCOUNT




Importantly for our purposes, a Configurational Account predicts systematic subject-object asymmetries, while these should be quite limited in the Hybrid Account and non-existent in the PAH. Thus the Hybrid account and PAH must put forward additional explanations for asymmetries

[3]I adopt the tripartite verb structure in Pylkkänen 2002, 2008; Harley 2013a; Oxford 2013, 2014 and argued for Mi'gmaq in the previous chapter and Hamilton (to appear b).

that arise. The ability to account for subject-object asymmetries forms the basis for the evaluation of which account is more appropriate for Mi'gmaq. Table 3.1 summarizes the differences between the three accounts.[4]

Table 3.1: COMPARISON OF ACCOUNTS

| account | Posit DP arguments base-generated in A-positions | Predict asymmetric relationship between A-positions |
|---|---|---|
| PAH | ✖ | ✖ |
| Hybrid | ✖/✔ | ✔ |
| Configurational | ✔ | ✔ |

Mi'gmaq has three asymmetries between arguments which present clear evidence for a Configurational Account and complicate the application of the PAH and the Hybrid Account. In section 3.3, I show that Mi'gmaq has *wh*-movement and subject *wh*-phrases obligatorily precede object *wh*-phrases in multiple *wh*-questions. I argue that this is a Superiority effect (Chomsky, 1973; Richards, 1997), which can only be captured under the Configurational or Hybrid Accounts. In section 3.4, I present disjoint reference effects in utterances involving a possessive DP construction which is (as far as I know) unique to Mi'gmaq and lacks typical obviative marking on the possessor. I argue that this is a Binding Condition C effect which can only be captured under a Configurational Account. In section 3.5, I present TA+O (ditransitive) forms in which the goal but not the theme is the primary object for inflection and can participate in passives and reflexives. While the Configurational and Hybrid Accounts can account for this, it is unclear how the PAH can explain the data in a principled manner.

## 3.3 Superiority

In languages which allow fronting of multiple *wh*-questions, two patterns are attested: one in which a specific ordering must hold between *wh*-phrases, and another in which no particular ordering is necessary (Rudin, 1988; Richards, 1997). In patterns in which a strict ordering must hold, subject

[4]Note that since some but not all DPs are base-generated in A-positions in the Hybrid Account has both symbols.

*wh*-phrases must precede object *wh*-phrases. This pattern can be accounted for by the Hybrid and Configurational Accounts as a Superiority effect (Chomsky, 1973; Richards, 1997), in which the underlying c-command relationship between subject and object *wh*-phrases is maintained after all instances of *wh*-movement have applied. This analysis is possible since both approaches base-generate *wh*-phrases in A-positions, and the subject A-position asymmetrically c-commands the object A-position. A similar account is not possible for the PAH if *wh*-phrases are adjuncts, since there is no consistent structural relationship between *wh*-phrases, and thus no reason that word order should be constrained in this manner.

A summary of these accounts is shown in Table 3.2. In 3.3.1 through 3.3.4, I show that Mi'gmaq has *wh*-movement. In 3.3.5, I show that Mi'gmaq displays a strict subject before object order in multiple *wh*-questions, and that both Configurational and Hybrid accounts can derive this asymmetry as a Superiority effect. In 3.3.6, I show that the PAH cannot derive this asymmetry in a principled manner.

Table 3.2: SUMMARY OF ACCOUNTS

| account | *wh*-phrases | Subject≫Object |
|---|---|---|
| PAH | **adjunct** | ✖ |
| Hybrid | **argument** | ✔ |
| Configurational | **argument** | ✔ |

### 3.3.1 *Wh*-movement

Algonquian languages have been argued to either form *wh*-questions via *wh*-clefts (e.g. Plains Cree, see Wolfart 1973 and Blain 1997; Rainy River Ojibwe, see Johns 1982; Swampy Cree, see Russell & Reinholtz 1995), or *wh*-movement (e.g. Passamaquoddy, see Bruening 2001; Western Naskapi, see Brittain 2001a; and Kitigan Zibi Algonquin, see Lochbihler & Mathieu 2008, Lochbihler 2012, and Lochbihler & Mathieu to appear). Although Mi'gmaq lacks Weak Crossover (WCO) effects, it is clear that it has *wh*-movement. Below, I present evidence for the presence of typical island constraints and successive cyclic movement. The presence of multiple

*wh*-questions, discussed in 3.3.5, also provides evidence in favour of a *wh*-movement approach and, more importantly, the foundation for a Superiority analysis.

In Mi'gmaq, *wh*-questions only receive a *wh*-phrase interpretation when pre-verbal. Consider the examples in (5) and (6) with the potential *wh*-word *wen*. If *wen* appears before the verb, it is interpreted as 'who'.[5] If *wen* appears after the verb, it is interpreted as an indefinite, similar to 'anyone'. The same generalization holds for other *wh*-words, such as *goqwei* 'what/anything'.

(5) *Wh*-QUESTION

a. **wen** pegwatel-g wenju'su'n?
**who** buy.DFLT-3 apple
'Who is buying the/an apple?'

b. wen wenju'su'n pegwatelg?

(6) YES-NO QUESTION

a. wenju'su'n pegwatel-g **wen**?
apple buy.DFLT-3 **one**
'Is anyone buying the/an apple?'

b. pegwatelg wenju'su'n **wen**?

c. pegwatelg **wen** wenju'su'n?

In accordance with standard Minimalist assumptions about *wh*-movement Chomsky (2000), I assume that the *wh*-phrase interpretation is the result of a WH-feature on $C^0$ which probes, AGREEs, and attracts a *wh*-word with a corresponding WH-feature to Spec-CP. Movement to satisfy the WH-feature on $C^0$ results in the *wh*-phrase appearing preverbal and receiving an interrogative interpretation. *Wh*-words that are post-verbal do not undergo *wh*-movement and do not receive an interrogative interpretation.

### 3.3.2 Constraints on *wh*-movement

Support for a *wh*-movement analysis comes from island constraints (Ross, 1967), such as the Coordinate Structure Constraint, Left-branch Condition, and Adjunct island.[6] These constraints

[5]Note that I have excluded the OSV word order in (i) since its acceptability is subject to speaker variation. Generally, there is a strong prosodic break between *wenju'su'n* and *wen*, thus *wenju'su'n* may be a topic and restricted to specific contexts.

(i) %wenju'su'n **wen** pegwatel-g?
apple **who** buy.DFLT-3
'Who is buying the/an apple?'

[6]Although the Coordinate Structures Constraint and Left-branch condition are also predicted under a *wh*-cleft analysis, this data has been included to provide more detail, as the other diagnostics rule out a *wh*-cleft analysis.

restrict the extraction of wh-phrases in languages with prototypical *wh*-movement such as English, French, German, etc. Let's briefly consider each of these constraints with respect to Mi'gmaq.[7]

The Mi'gmaq sentence in (7a) contains a the coordinate DP *wenju'su'n aq pipnaqan* 'apple and bread' and only a single coordinate cannot undergo *wh*-movement alone. As with English and other languages, *wh*-extraction from argument positions occupied by either *wenju'su'n* in (7b) or *pipnaqan* in (7c) is not possible.

(7) COORDINATE STRUCTURE CONSTRAINT

a. maqu-tm-u'tp [wenju'su'n aq pipnaqan ]
eat-DFLT-2.PST [apple COOR bread ]
'You ate an/the apple and bread.'

b. *__goqwei__ maqu-tm-u'sp [aq pipnaqan ]?
__what__ eat-DFLT-2.IK.PST [COOR bread ]
intended: 'What did you eat and bread?'

c. *__goqwei__ maqu-tm-u'sp [wenju'su'n aq ]?
__what__ eat-DFLT-2.IK.PST [apple COOR ]
intended: 'What did you eat apple and ?'

According to the Left-Branch Condition, modifiers that appear to the left of the constituents they modify cannot be extracted. For example, it is not acceptable in English to ask "whose did Mary buy books?", where "whose" is a modifier of "books" (as in, "Mary bought whose books"). The same constraint holds for Mi'gmaq. Consider the sentences in (8). The form in (8a) contains the possessive DP *Sa'n-ewei wi'gatign* 'John's book'. *Wh*-extraction from the argument position occupied by the possessor is not possible. Hence the ungrammaticality of (8b).

[7]Note that other island constraints, such as Complex NP islands, have not been included since their ungrammaticality has thus far been difficult to attribute to this island effect alone.

(8) LEFT-BRANCH CONDITION

a. Mali pegwatel-g-p [Sa'n-ewei wi'gatign ]
Mary buy.DFLT-3-DK.PST [John-POSS book ]
'Mary bought John's book'

b. ***Wen(-ewei)** Mali pegwatel-g-'s [wi'gatign ]?
**who(-POSS)** Mary buy.DFLT-3-IK.PST [book ]
intended: 'Whose book did Mary buy?'

Another common constraint on *wh*-movement involves Adjunct Islands. As observed by Ross (1967), it is impossible to move a *wh*-phrase out of subordinative adjunct. For example, it is not acceptable in English to ask "Who did Mary leave before she met?", where the underlying adjunct would be "before she met who". The same constraint holds for Mi'gmaq. For example, the form in (9a) contains an adjunct clause *ge's mu weltesguagupn Sa'nal* 'before s/he met John'. Extraction of an argument from this clause, such as from the position occupied by *Sa'nal* 'John', is not possible, as shown by the ungrammaticality of (9b).

(9) ADJUNCT ISLAND

a. Mali maja'si-p [ge's mu weltesgu-a-g-u-pn-n Sa'n-al ]
Mary leave.AI-3.PST [while NEG meet.AN-3.OBJ-3-NEG-PST-OBV John-OBV ]
'Mary left before s/he met John'

b. ***wen-n** Mali maja'si-p [ge's mu weltesgu-a-g-u-pn-n ]
**who-OBV** Mary leave.AI-3.PST [while NEG meet.AN-3.OBJ-3-NEG-PST-OBV ]
intended: 'Who did Mary leave before s/he met?'

It is clear that *wh*-fronting in Mi'gmaq obeys all the same constrains as *wh*-movement in other languages such as English, French, German, etc. These similarities suggest that the same underlying grammatical mechanism are at play.

### 3.3.3 Successive Cyclic Wh-Movement

Mi'gmaq also displays successive cyclic *wh*-movement. The best example of this is in Long-Distance Agreement (LDA) forms, where the matrix and embedded verb both show ϕ-feature agreement with an embedded DP (see Chapter 4 for an in-depth discussion). In the LDA form in

(10a), both the embedded (*gesalgi(g)* 'I love them') and matrix verbs (*geji'lit* 'She knows X about me') display first person agreement, with the same DP.

However, LDA in embedded declaratives is limited to the subject (except when the embedded verb is inverse). This is shown by the ungrammaticality of (10b) when matrix verb displays agreement with the embedded object (*Gatlinal aq Susanal* 'Katherine(obv) and Susan(obv)').

(10) a. Mali gej-i'li-t [ges-al-g-i(g) Gatlin-al aq Susan-al ]
Mary know.AN-**1OBJ**-3 [love-AN-3-3PL Katherine-OBV coor Susan-OBV]
' Mary knows **I** love Katherine and Susan'

b. *Mali gej-i-**a**-**j**-**i(g)** [ges-al-g-**i(g)** Gatlin-al aq Susan-al ]
Mary know.AN-**3OBJ**-**3**-**3PL** [love-AN-3-3PL Katherine-OBV coor Susan-OBV]
intended: 'Mary knows I love **Katherine and Susan**'

In embedded interrogative, however, LDA can target the *wh*-phrase regardless of its grammatical role. The form in (11a) shows that the matrix verb can LDA with the embedded object *wh*-phrase (*wenig* 'who(pl)') when it is in the left-edge of the embedded clause. In addition, the form in (11b) shows that even when the *wh*-phrase moves to the left-edge of the matrix clause, the matrix verb displays the same object agreement it did in (11a).

(11) a. Mali gej-i-**a**-**j**-**i(g)** [ta'n **wen-ig** ges-al-g-**i(g)** ]
Mary know.AN-**3OBJ**-**3**-**3PL** [COMP **who-PL** love-AN-3-3PL ]
'Mary knows who(pl) I love.'

b. **wen-ig** Mali gej-i-**a**-**j**-**i(g)** [ges-al-g-**i(g)** ]?
**who-PL** Mary know.AN-**3OBJ**-**3**-**3PL** [love-AN-3OBJ-3-3PL ]
'Who(pl) does Mary know I love?'

This shows that even when the *wh*-phrase is fronted to the left-edge of the matrix clause, LDA still occurs between the matrix verb and this fronted *wh*-phrase. This shows evidence that the embedded *wh*-phrase passes through the left-edge of the embedded clause on the way to matrix CP.

### 3.3.4 Weak Crossover

WCO effects are a typical diagnostic for *wh*-movement. In Algonquian languages they have been argued to be either absent altogether (Dahlstrom, 1991) or only present in a subset of forms (Bruening, 2001; Brittain, 2001a,b). Recall from 1.2.2 above, that in Algonquian languages there is a proximate-obviative system of marking third persons in the discourse, and that obviative and proximate DPs must be interpreted as non-coreferential. In WCO contexts in English, such as (12), we expect that the *wh*-phrase ('who') cannot co-refer with the possessor ('her/his' of 'her/his mother'). However, in (12), both the *wh*-phrase and possessor are interpreted as being proximate. Since the theme is also proximate the possessor must co-refer to the theme since there can only be a single proximate argument.[8]

(12) wen ges-al-t-l ug-gwij-l?
who love-AN-3-OBV 3.POSS-mother-OBV
'Who$_1$ does her/his$_{1/*2}$ mother love?'

Even though WCO effects are absent, I do not take this as evidence against *wh*-movement.[9] Other languages with *wh*-movement have been shown to lack WCO, e.g. Hungarian (Kiss, 1987).[10] Furthermore, it is not clear that WCO has anything to do with c-command or hierarchical structure at all.[11]

[8]WCO effects might appear in the direct, in forms where both the *wh*-phrase and subject possessor are obviative. In this specific case, since nothing forces two obviative arguments to co-refer, we might expect that WCO effects could arise, as they do in Passamaquoddy (Bruening, 2001) and Western Naskapi (Brittain, 2001a,b). Unfortunately, this test does not work for Mi'gmaq, since speakers tend to reject forms in which the possessor is obviative. In all cases, as in (i), the possessor can only be proximate, thus the disjoint reference effect here cannot be attributed to WCO.

(i) wen-n ges-al-a-t-l ug-gwij-l?
who-OBV love-AN-3.OBJ-3-OBV 3.POSS-mother-OBV
'Who$_1$ does her/his$_{*1/2}$ mother love?'

[9]I have been unable to determine if the unacceptability of cross-clausal WCO forms is a WCO effect or due to other factors. This is a topic for further research.

[10]Thanks to Èric Mathieu for pointing out the fact that WCO can be absent in languages which clearly exhibit *wh*-movement.

[11]What is clear is that it does involve leftward movement and linearity, see the Leftness Condition (Chomsky, 1976). Mi'gmaq and other descriptively "non-configurational" languages clearly show us that word order does not necessarily relate to configurationality.

The evidence presented above from island constraints and successive cyclicity, combined with the presence of multiple *wh*-questions below, provides ample evidence for a *wh*-movement analysis of interrogatives in Mi'gmaq.

### 3.3.5 Multiple *wh*-questions

Of the Algonquian languages which show *wh*-movement, only one, Western Naskapi (Brittain, 2001a), has been shown to display multiple *wh*-movement. Western Naskapi differs from Mi'gmaq in that it is possible to have *wh*-phrases in-situ. Brittain (2001a) finds that an ordering effect holds between two *wh*-phrases regardless of whether only one or both *wh*-phrases undergo *wh*-movement. When two *wh*-phrases are fronted, Western Naskapi displays ordering effects between *wh*-phrases (Brittain, 2001a).

Mi'gmaq requires multiple instances of *wh*-movement when more than one wh-phrase is present. It also has the additional restriction that subject *wh*-phrases must appear linearly before object *wh*-phrases. I analyze this strict ordering as a Superiority effect (Chomsky, 1973; Richards, 1997), or a Relativized Minimality effect (Rizzi, 1990), since the base-generated c-command relationship of *wh*-phrases must be maintained after *wh*-movement. I use this as an argument against the PAH and in favour of a Hybrid or Configurational Account.

The forms in (13) have TI verbs that show agreement with an animate subject (*wen* 'who') and an inanimate object (*goqwei* 'what').[12] The only acceptable word order for a multiple *wh*-question interpretation involves the subject *wh*-phrase being ordered before the object *wh*-phrase, as in (13a).[13] Forms in which the object precedes the subject, such as in (13b), are ungrammatical, and a multiple *wh*-interpretation is not possible if a *wh*-phrase appears post-verbal, as in (13c).

[12] I illustrate here with TI verbs, though the same data points and generalizations hold for TA verbs with both animate subjects and objects, although the judgements weaker since they involve the repetition of the same *wh*-phrase *wen* 'who.'

[13] This question triggers a multiple pair-list response, which shows that it does not involve focus, an echo question or REF question, all of which would elicit a single pair-list response, see Dayal (2005).

(13) *Context: I tell you that I went to a pot-luck yesterday. You ask me:*

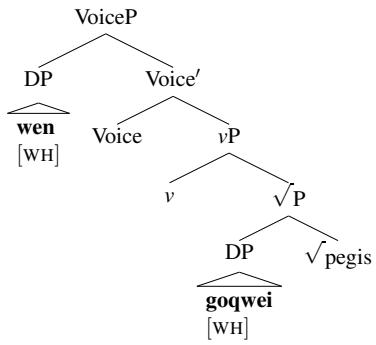
a. **wen goqwei** pegis-it-oq-s'p?
**who what** bring-DFLT-3-PST
'Who brought what?' [triggers a pair-list response]

b. ***goqwei wen** pegis-it-oq-s'p?
**what who** bring-DFLT-3-PST
intended: 'Who brought what?' or 'What did who buy?'

c. **wen** pegis-it-oq-s'p **goqwei**?
**who** bring-DFLT-3-PST **what**
'Who brought anything?'; *'Who brought what?'

Strict ordering of subjects before objects after *wh*-movement is predicted to be possible under the Configurational and Hybrid Accounts. In both accounts the subject A-position c-commands the object A-position and *wh*-phrases are base-generated in their respective A-positions, as in (14).

(14) HYBRID AND CONFIGURATIONAL VERBAL STRUCTURE FOR (13a)




This Mi'gmaq data can be explained by assuming a standard account of multiple *wh*-movement in languages with Superiority effects (e.g. Richards 1997 for Bulgarian). Such an account involves the following two mechanism for *wh*-movement: (i) it is triggered by a WH-feature, which is shared by *wh*-phrases, and (ii) it involves a probe-goal AGREE relationship (Chomsky, 2000, 2001), such that (a) feature probing is limited to its c-command domain, (b) a probe can only enter into a single AGREE relation with (and raise) one DP at a time, and (c) that a probe will AGREE with (and raise) the most local, structurally closest DP if there are multiple potential goals. In each step, both principles are active. In fact, they are all active in every step of the derivation. the first involving the principle ATTRACT CLOSEST and the second involving the principle SHORTEST MOVE

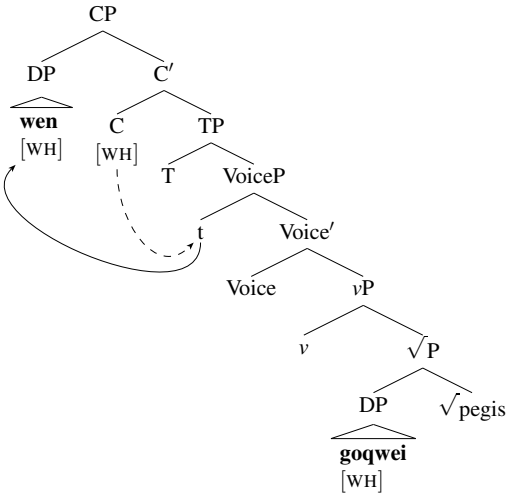
(Richards, 1997). Both are defined in (15) and (16).

(15) ATTRACT CLOSEST (Richards, 1997)
A probe agrees with the closest goal.

(16) SHORTEST MOVE (Richards, 1997)
A constituent that moves to a probe moves as close as possible to that probe.

The movement of the wh-phrases happens in two steps. In step one, $C^0$ has a WH-feature and probes, AGREEs with, and raises the subject *wh*-phrase (*wen*) to Spec-CP. Although both *wh*-phrases have the relevant WH-feature, since the subject *wh*-phrase (*wen*) is structurally higher than the object *wh*-phrase (*goqwei*), the subject will be the closest relevant goal for the WH-probe on $C^0$. The resulting representation is given in (17).

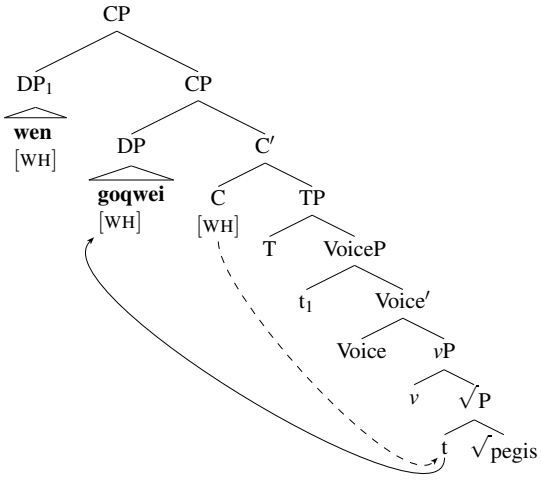
(17) HYBRID AND CONFIGURATIONAL ACCOUNTS FOR (13a), ATTRACT CLOSEST




In step two, $C^0$ probes a second time and AGREEs with the object *wh*-phrase (*goqwei*) and attracts it to an inner specifier of CP. This movement is called "tucking-in" and is motivated by the principle SHORTEST MOVE, since an inner specifier is closer than an outer specifier for movement considerations (Richards, 1997). The copy of the the subject *wh*-phrase in Spec-TP does not intervene if we assume the Activity Condition (Chomsky, 2001) applies. This results in the representation in (18). Thus, rigid subject before object ordering with *wh*-phrases in Mi'gmaq

receives a structural analysis under the Configurational and Hybrid Accounts.

(18) HYBRID AND CONFIGURATIONAL ACCOUNT FOR (13a), SHORTEST MOVE

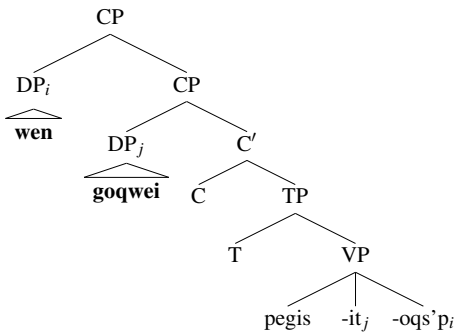



### 3.3.6 PAH account

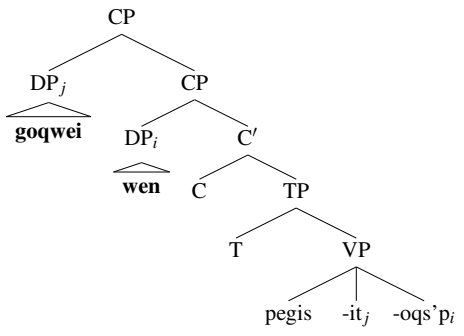
While the Configurational Account can explain this data, the PAH cannot, since A-positions are filled with pronominal arguments and *wh*-phrases are adjuncts. There is no underlying structural relationship between the subject and the object, so surface asymmetries are unexpected. In fact, there is no principled way to exclude any word order, which is problematic considering the basic generalization that *wh*-phrases must precede the verb in Mi'gmaq. If we add a stipulation that *wh*-phrases must be left-adjoined, then two possible representations where *wh*-phrases precede the verb are predicted, as in (19). In (15a), *wen* is structurally higher than *goqwei* and both are left-adjoined to CP, which correctly predicts the grammatical word order in (13a). However, in (15b), *goqwei* is structurally higher than *wen* and both are left-adjoined to the CP, which incorrectly predicts the possibility of the word order in (13b). Since there is no principled way to exclude either representation, both word orders are expected.

(19) PAH ANALYSIS OF (13a)

a.




b.




One possible way to save the PAH would be to stipulate that animate arguments must precede inanimate ones by using an articulated left-periphery, as presented in Rizzi (1997) and adopted for Swampy Cree in Russell & Reinholtz (1996, 1997).[14] However, even if this could be motivated, it is unclear how to limit this animate DP before inanimate DP ordering to just interrogative contexts, since a similar restriction does not hold in declaratives; all of the six word orders in (20) are attested, including ones in which the inanimate object precedes the animate subject, e.g. (20c), (20d), and (20f).[15]

(20) a. **ji'nm** nem-it-oq ptauti (SVO)
**man** see-DFLT-3 table
'The man sees the table'

b. **ji'nm** ptauti nemitoq (SOV)

c. ptauti nemitoq **ji'nm** (OVS)

d. ptauti **ji'nm** nemitoq (OSV)

e. nemitoq **ji'nm** ptauti (VSO)

f. nemitoq ptauti **ji'nm** (VOS)

Even if the PAH were revised to allow *wh*-phrases into A-positions (leaving the position of pronominal arguments unclear), the flat structure of the VP ensures a lack of asymmetries between subjects and objects. Thus, strict ordering in *wh*-phrases is still unexpected. It is clear that a *wh*-cleft analysis is not possible given the incompatibility of this account with multiple *wh*-questions (Blain, 1997). Therefore, in order to provide an account of strict subject *wh*-phrase before object

[14]In the case of multiple *wh*-questions involving an animate subject and object in the direct Voice, the subject would be proximate and the object would be marked as obviative. Some analyses argue that proximate arguments are topics and obviative arguments are not topics (Junker, 2004). Although more research is needed in order to support this claim, if it is on the right track, an articulated left periphery would aid in explaining the strict ordering of subject (proximate) before object (obviative) *wh*-phrases.

[15]Thanks to Heidi Harley for pointing out this potential solution.

*wh*-phrase ordering, both base-generation in A-positions and an asymmetric relationship between the subject and object A-positions are necessary.

## 3.4 Binding Condition C

In this section, I present an asymmetry involving disjoint reference between the subject and the possessor of an object possessive DP. The Configurational Account differs from both the PAH and Hybrid account in that only in the former are disjoint reference effects predicted to occur. I show that the Mi'gmaq data supports a Configurational analysis. In 3.4.1, I discuss binding in general and the predictions of each account. In 3.4.2, I discuss binding within a clause in Mi'gmaq and present the Configurational Account. In 3.4.3, I present the PAH and Hybrid account and outline their weaknesses.

### 3.4.1 Binding

There are certain syntactic requirements (i.e. c-command) typically needed in order for binding to occur. If an argument *A* binds another argument *B*, then it must be the case that *A* c-commands *B*.

There is an interesting generalization about the circumstances under which a full DP can be co-referent or overlap in reference with another expression in a sentence. Essentially, it can do so exactly in those syntactic configurations in which the intended meaning cannot be conveyed by a semantically bound pronoun or other anaphor like a reflexive. In other words, a full DP can be co-referent with another referring expression in the same sentence if it is not c-commanded by it. Much of the data we will talk about in this section relies on the lack of co-reference between a pronoun (whether implicit or explicit) and a proper name. Such data has traditionally been accounted for using Condition C of the Binding Theory, given in (21). This relies on the definition of binding in (22).

(21) Condition C (Chomsky, 1981)
R-expression must not be (syntactically) bound.

(22) Binding (Chomsky, 1981)
A syntactic object X binds another syntactic object Y if and only if X c-commands Y and X has the same index as Y.

With respect to Condition C, binding is purely syntactic. More nuanced versions of the binding theory have gotten rid of Condition C as a separate condition and instead derives the effects of Condition C through competition between bound and unbound syntactic structures (Reinhart, 1983). For example, Grodzinsky & Reinhart (1993) propose Rule I. A slightly modified version of Rule I is given in (23).

(23) Rule I (Intra-Sentential Co-reference) (Grodzinsky & Reinhart, 1993)
In a sentence Z, a DP X cannot co-refer to a DP Y, if there is a structure Z' identical to Z (in structure and interpretation) except that X is replace by a variable that is semantically bound by an operator associated with Y.

Generally, for a DP Y to be associated with an operator that semantically binds a variable that replaces X, Y must c-command X.

Let's consider an example in English to understand how Rule-I ends up doing the same work as Condition C. Consider the sentences in (24).

(24) a. He likes the woman that insulted John.
b. He likes the woman that insulted him.
c. He λ x. x likes the woman that insulted x.

In (24a), the DP *he* cannot refer to the same person as *John*. According to Condition C, this is due to the fact that *he* cannot be co-indexed with *John*, i.e. *John* must be unbound and co-indexation with *he* would result in *John* being syntactically bound by *he*. Rule I accounts for this data in a more subtle way. In (24a), *John* cannot have the same referent as *he* because there is an alternative sentence that would be identical in structure and meaning, where *John* is replaced by a variable (i.e, *he*) semantically bound by an operator associated with *he*. The alternative sentence is given in (24b) with the explicit variable binding representation given in (24c).

Whether one employs something like Rule I to account for the lack of co-reference,

or something more akin to the syntactic restriction in Condition C, is not important here. Proper names generally cannot have the same reference as other DPs (including pronouns) that c-command them. It is this point that I critically rely on in assessing the phrase structure of Mi'gmaq.

In clause-internal binding, we can manipulate the position of a DP in order to understand the c-command relationship between A-positions.[16] In English, the subject can bind into the object, but not vice versa. This is used to support a configurational analysis of English, in which the subject A-position asymmetrically c-commands the object A-position. This is the explanation given for why *Mary* can optionally co-refer with the possessive pronoun *her* in the object DP *her book* in (25a). This is also why disjoint reference is obligatory between the subject pronoun *she* and the possessor DP *Mary* in the object DP *Mary's book* in (25b). A Configurational Account predicts disjoint reference effects when a DP is c-commanded by a co-indexed pronoun.

(25) a. **Mary**$_1$ loves **her**$_{1/2}$ book.
b. **She**$_7$ loves **Mary**$_{*7/8}$'s book.

Let's consider the Mi'gmaq equivalents of the sentences in (25). If one were to analyze these sentences with PAH or the Hybrid account the DPs would be adjuncts and pronouns (or pronominal arguments) co-indexed with each DP would reside in corresponding A-positions. Baker (1996) assumes that since the object DP would be adjoined higher in the clause, it would be outside of

[16]Note that cross-clausal binding is also another way to track c-command, although both the Hybrid account and the Configurational Account predict Binding Condition C effects in cross-clausal binding. Binding Condition C effects do occur in Mi'gmaq, as seen in the contrast between (ia) and (ib). In (ia), when the full NP *Lance* is the matrix subject and the pronoun *negm* is the embedded subject, coreference is possible. However in (ib), when *negm* is the matrix subject and *Sa'n* 'John' is the embedded subject, they are unable to refer to the same person. These judgements are consistent regardless of whether the pronoun is overt or covert.

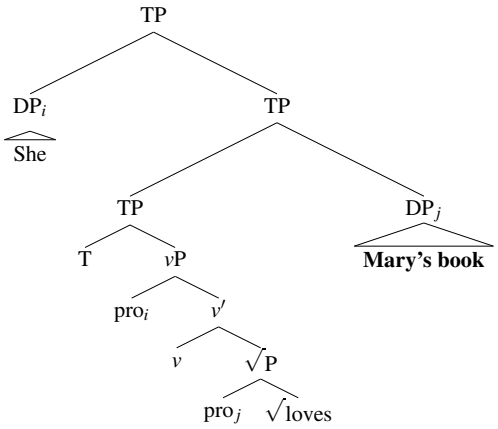
(i) *Context: Lance told me about the book he bought. Later I tell you:*

a. **Lance**$_1$ teltasi-t [(**negm**$_{1/2}$) gesat-g wi'gatign ]
**Lance** think.(AI)-3 [(**3**) like(DFLT)-3 book ]
'Lance$_1$ thinks he$_{1/2}$ likes the book.' (='Lance$_1$ thinks Lance$_1$ likes the book')

b. (**negm**$_7$) teltasi-t [**Sa'n**$_{*7/8}$ gesat-g wi'gatign ]
(**3**) think.(AI)-3 [**John** like(DFLT)-3 book ]
'He$_7$ thinks John$_{*7/8}$ likes the book.' ($\neq$ 'John$_7$ thinks John$_7$ likes the book')

the c-command domain of the pronoun in the subject A-position. Thus no Condition C effects are expected to arise in examples such as (25b), and shown in the tree in (26). In fact, Baker (1996) points to the lack of Condition C effects in these constructions in Mohawk as support for the analysis of full DPs as adjuncts.

(26) HYBRID ACCOUNT




Following this assumption, no contrast between (25a) and (25b) is predicted under the Hybrid Account, or the PAH.

Note, however, that the assumption that having a pronoun in the object A-position and adjoining a full NP would avoid Condition C violations is not unproblematic. Consider the examples in (27) in English.

(27) a. **She**$_1$ likes it (a lot), **Mary**$_{*1/2}$'s book.
b. **She**$_7$ likes it (a lot), the book that **Mary**$_{*7/8}$ read.

In these examples, the DPs *Mary's book* and *the book that Mary read* are both adjoined and yet *Mary* is interpreted as being disjoint from *she* in both. These Condition C effects could be accounted for if we assumed that all pronouns are reduced definite descriptions. In the case of the English example here, this would mean that the pronoun *it* in fact contains the entire NP including the proper name, and a Condition C violation ensues (following Elbourne 2010 and references therein). However, under such an analysis of pronouns, it is unclear how to explain Baker (1996)'s

observations about Mohawk.

Regardless, I follow Baker (1996)'s assumption to see if the same support can be found for full DPs as adjuncts in Mi'gmaq. And following this assumption, no contrast between (25a) and (25b) is predicted under the Hybrid Account, or the PAH.

The Configurational Account predicts a contrast between (25a) and (25b) because the DPs themselves reside in A-positions. Table 3.3 summarizes the expectations for each account. In 3.4.2, I show that similar data in Mi'gmaq displays the contrast predicted by the Configurational Account.

Table 3.3: CO-REFERENCE EFFECTS

| **account** | DPs | in A-positions | Contrast between (25a) & (25b) |
|---|---|---|---|
| **PAH** | adjuncts | affixes | ✖ |
| **Hybrid** | adjuncts | *pro* | ✖ |
| **Configurational** | arguments | arguments | ✔ |

### 3.4.2 Binding in Mi'gmaq

Although variable binding and cross-clausal disjoint reference effects have been found in Passamaquoddy (Bruening, 2001, 2009) and Blackfoot (Bliss, 2013), neither have been found to have Condition C effects. In fact, only Innu-aimûn (Branigan & MacKenzie, 1999) has been argued to have such effects. A potential explanation for the lack of these effects is due to proximate-obviative marking on third person arguments (Brittain, 2001a,b).

In typical Condition C examples with possession the presence or absence of obviation on the possessor indicates co-reference possibilities. This is exemplified in (28).

(28) a. ges-at-g **Mali**$_1$ **ugt**-wi'gatign
like-DFLT-3 **Mali** **3.POSS**-book
'Mary$_1$ likes her$_{1/*2}$ book.'; 'S/he$_1$ likes Mary$_{1/*2}$'s book'

b. ges-at-g **Mali-al**$_{*1/2}$ **ugt**-wi'gatign
like-DFLT-3 **Mali-OBV** **3.POSS**-book
'S/he$_1$ likes Mary$_{*1/2}$'s book'

The two sentences in (28) contain a verb followed by a possessive construction, in which a proper name is the possessor and the possessum (the nominal that is possessed) is marked with a third person possessive prefix *ugt-*.[17] They differ in the marking on the possessum, with *Mali* 'Mary' unmarked, thus proximate, in (28a) and marked as obviative (*Mali-al*) in (28b). The verb in both examples is in the direct, where the subject is proximate and the object is obviative.[18] The default interpretation when *Mali* is proximate is that the subject and the possessor are co-referential. When *Mali* is marked as obviative, the default interpretation is that the subject and possessor cannot co-refer; thus, *Malial* is only interpreted as the possessor in (28b). However, an addition complication is that it is difficult to tell if the overt DP is the subject or possessor given the tendency for freer word order and ability to drop DPs (see Bliss 2013 for similar discussion in Blackfoot).

Forms like this illustrate that the presence of proximate-obviative marking clarifies the reference of third persons. Thus, we need constructions where proximate-obviative marking does not apply, so we can probe for structural relations between subjects and objects.[19]

Mi'gmaq has a unique possessive construction in which the possessor is marked with the possessive suffix *-ewei* and cannot be marked for obviation, as described in McClay (2012). To my knowledge this construction has not been documented for any other Algonquian language. This provides us a rare glimpse into the structural relationship between subjects and objects via binding. This particular possessive construction only applies in limited contexts, as it is only possible with an alienable possessum (McClay, 2012).[20] In forms where the subject is a proper name (*Mali*)

[17]Note that the subject pronoun is dropped in both examples in (28). Pronouns are often omitted, as discusses in Chapter 1, and can take on an emphatic interpretation when used.

[18]In inverse forms, the 4th person is the subject and the third person is the object. See Bruening (2001) for a discussion of the role of the direct-inverse system in binding and WCO.

[19]It is possible that obviation might override the application of Rule I. This is a topic for further study.

[20]The other possessive construction in (28) can be used with either an alienable or inalienable possessum.

and the object possessor is a pronoun (*negm*), co-reference is possible (29a). In forms where the subject is a pronoun (*negm*) and the object possessor is a proper name (*Mali*), co-reference is not possible (29b). In (29b), disjoint reference is triggered whether the subject pronoun is overt or not.

(29) a. **Mali**$_1$ ges-at-g [**negm**$_{1/2}$-ewei wi'gatign ]
**Mary** like-DFLT-3 [**3**-POSS book ]
'Mary$_1$ likes her$_{1/2}$ book.'

b. (**negm**$_7$) ges-at-g [**Mali**$_{*7/8}$-ewei wi'gatign ]
(**3**) like-DFLT-3 [**Mary**-POSS book ]
'She$_7$ likes Mary$_{*7/8}$'s book.'

Evidence that this asymmetry is not a product of this particular possessive construction but is structural, comes from similar effects when the relevant pronoun or DP is embedded in a relative clause that modifies the matrix object (30).

(30) a. **Mali**$_1$ ges-at-g wi'gatign [ta'n (**negm**$_{1/2}$) egit-g-'p ]
**Mary** like-DFLT-3 book [COMP (**3**) read.DFLT-3-PST.DK ]
'Mary$_1$ likes the book that she$_{1/2}$ read.'

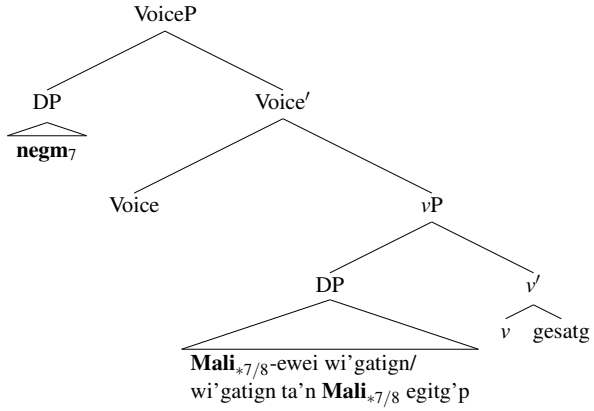
b. (**negm**$_7$) ges-at-g wi'gatign [ta'n **Mali**$_{*7/8}$ egit-g-'p ]
(**3**) like-DFLT-3 book [COMP **Mary** read.DFLT-3-PST.DK ]
'She$_7$ likes the book that Mary$_{*7/8}$ read.'

In (30a), the matrix subject is a proper name (*Mali*) and the embedded subject that modifies the matrix object is an optional third person singular pronoun (*negm*). Similar to the possessive construction, the pronoun can optionally co-refer with the matrix subject. In (30b), in which their positions are switched and the matrix subject is the optional third person pronoun and the embedded subject is the proper name, co-reference is not possible. Note that the embedded subjects in these examples are not marked with obviation since it is optional, as it does not violate the restriction on having only one proximate argument per clause (Brittain, 2001a,b). The lack of obviation is important because marking the embedded subject with obviation will obligatorily trigger disjoint reference, thus obscuring the structural co-reference possibilities.

Under the Configurational Account, the potential for subjects to bind into objects is a direct

result of both arguments being base-generated in A-positions, with the subject asymmetrically c-commanding the object. Since the object contains a proper name (*Mali*) in both (29b) and (30b), the obligatory disjoint reference with the subject pronoun (*negm*) is analyzed as a Condition C effect. This is because in their base-generated positions *negm* c-commands and thus can bind, *Mali* in both (29b) and (30b), as collapsed together and shown in (31).

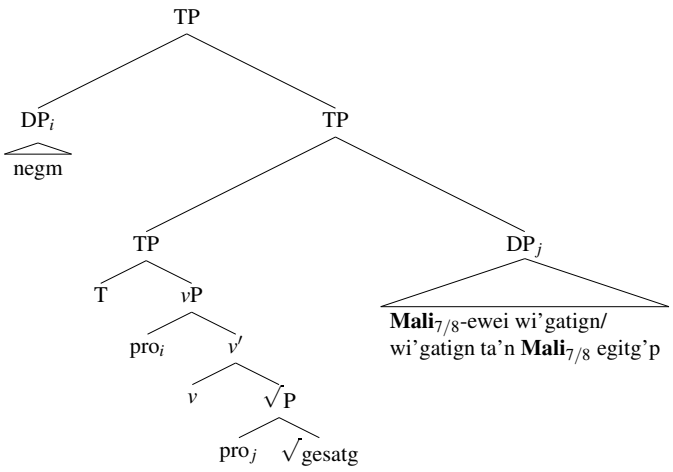
(31) CONFIGURATIONAL ANALYSIS OF (29b) and (30b)




### 3.4.3 PAH and Hybrid account

Under the PAH and the Hybrid account it is unclear how to explain the source of the disjoint reference effect in (29b) and (30b). Consider the representation in (32). The PAH would trivially differ from the representation of Hybrid Account for our purposes.

(32) HYBRID ACCOUNT




Since the object DPs in (29b) and (30b) are adjuncts, they are outside of the c-command domain of the subject pronoun. Thus following Baker (1996)'s assumption, no Condition C effects are predicted. In fact, there should not be a contrast between (29a) and (29b), or (30a) and (30b). This is at odds with the Mi'gmaq data in which there is a contrast and Condition C effects are observed in (29b) and (30b).

Thus, the Hybrid Account and PAH cannot derive the relevant subject-object contrasts in this section in a principled manner. The appearance of disjoint reference effects was most easily incorporated under a Configurational Account. The next section provides additional support for a Configurational analysis from a goal-theme asymmetry in TA+O (ditransitives).

## 3.5 Asymmetric applicatives

In Chapter 2, TA+O (ditransitives) were discussed with respect to default agreement effects on the verb final and locality effects with the theme sign. One of the common traits of Algonquian languages is that goal DPs and not theme DPs act as primary object in ditransitives (see 1.2.1 for the discussion of distinction between primary and secondary obejcts.) In 3.5.1, I present data from verbal agreement and passives which support the preference of goal DPs over theme DPs. In 3.5.2, I outline a Configurational Account which relies on a structural asymmetry between goal DPs and theme DPs to account for the ditransitive data. In 3.5.3, I show that the Hybrid account and not the PAH can account for the ditransitive data.

### 3.5.1 Ditransitives: Goal-theme asymmetry

The first indication of an asymmetry between the goal and theme is in locality effects with verbal agreement. In Chapter 2 we saw that the theme DP can be indexed on all inflectional suffixes in transitive verbs. This is exemplified in (33a), where the verb final (*-al* animate object), theme sign (*-i* 1st person object), and inner suffix (*-eg* 1st person plural) all track the presence and features of the 1st person plural theme DP. However, in ditransitives, the goal DP is indexed and not the theme DP. This is shown in (33b), as the theme sign (*-i* 1st person object), and inner suffix (*-eg* 1st person plural) index the 1st person plural goal DP, while the third person theme DP is not indexed.

(33) a. mu ges-**al**-**i**-w-**eg**
NEG love-**AN**-**1OBJ**-NEG-**1PL**
'You/you-all don't love us'

b. mu elugw-atm-u-**i**-w-**eg**
NEG love-DFLT-APPL-**1OBJ**-NEG-**1PL**
'You/you-all are not fixing it(IN/AN) for us'

c. mu elugw-atm-u-i-w-eg-**l** tepaqan-n
NEG love-DFLT-APPL-1OBJ-NEG-1PL-**IN.PL** car-PL
'You/you-all are not fixing the cars(IN) for us'

Thus goals appear to be more local than themes for verbal agreement. Note that the verb in (33b) is ditransitive as it appears with the applicative morpheme (*-w*). Also note that the only affix that can index the theme DP is the outer suffix. The outer suffix can index the plurality of any core argument. A detailed analysis of the outer suffix is a topic for future work. The theme DP is indexed by the outer suffix when it is plural (e.g. in (33c) *-l* indexes *tepaqan-n* 'cars').

The second indication of an asymmetry between the goal and theme involves how the two arguments interact with other syntactic operations, such as with passives/unspecified actor constructions and reflexives.[21] Ditransitives in Mi'gmaq are asymmetric applicatives (McGinnis, 2001) in that the goal DP and not the theme DP can feed the passive/unspecified actor construction and reflexives.

[21]The forms I call passive are similar to forms in other Algonquian languages that are either considered to be true passives or unspecified actor instructions.

The forms in (34) includes active and passive/unspecified actor TA pairs. These constructions in (34b) and (34d) are common across Algonquian languages and have been argued to be either: (a) a passive construction that lacks a subject, or (b) an unspecified actor construction with a null subject pronoun that lacks ϕ-features. I will refer to this construction as the passive for convenience throughout and leave an analysis for future work.

(34) a. ges-al-**i**-p
love-AN-**1OBJ**-3.PST
'S/he loved me'

b. ges-al-**im'g**-'p
love-AN-**1OBJ.PASS**-PST
'I was loved'

c. ges-al-**a**-pn-n
love-AN-**3OBJ/DIR**-PST-OBV
'S/he loved her/him(obv)'

d. ges-al-**u't**-'p
love-AN-**PASS.3**-PST
'S/he was loved'

The pair in (34a) and (34b) are contrasting active and passive forms with a first person object, while the pair in (34c) and (34d) make the same contrast with a third person object. Note that in (34b) and (34d) there is a passive suffix that appears in the typical position of the theme sign (i.e. after the verb final *-al*). It may also include the inner suffix.[22] In first person singular passives the suffix *-im'g* appears and in third person singular passives the suffix *-u't* appears.

Regardless of the analysis, in passives of TA+O (ditransitive) forms only the goal can participate, as it is only the goal DP that is indexed by the passive suffix. This is exemplified in (35).[23]

[22]Note that a negative suffix does not appear in negative passive forms, thus does not aid in segmenting this possible complex morpheme. Only the negative particle, e.g. *mu*, appears before the verb.

[23]The verb final appears in a default form, as introduced in 2.3.1.

(35) a. elugw-atm-**u**-**i**-'pn-n a'pi'-l
fix-DFLT-**APPL**-**1OBJ**-3.PST-OBV net-OBV
'S/he fixed a/the net(an) for me'
b. elugw-atm-**u**-**img**-'p a'pi
fix-DFLT-**APPL**-**2OBJ**-**1PL**-PST net
'I was fixed a/the net(an)'
c. *elugw-atm-**ut**-'p a'pi
fix-DFLT-**APPL.PASS.3**-PST net
intended: 'The net(an) was fixed for us'

The form in (35a) is the TA+O active form, from which the passives in (35b) and (35c) are derived. In (35b), the passive suffix indexes the 1st person goal DP. However, the passive suffix cannot index the third person singular theme DP, as shown by (35c). The ability for only the goal DP to participate in a passive shows that this is an asymmetric applicative. Note that the applicative morpheme is not recognizable in (35c) as the third person passive suffix also begins with *-u*.

The same pattern exists for reflexives. Consider the two reflexive sentences in (36).

(36) a. elugw-**al**-**si**-**eg**
work-AN-**REFL**-**1PL**
'We worked ourselves'
b. elugw-**al**-**si**-**t**
fix-AN-**REFL**-**3**
'S/he worked her/himself'

In both forms, the verb appears with a reflexive morpheme (*-si*) and the TA final (*-al*), which shows that the internal argument is animate. After the reflexive marker, both verbs appear with an inner suffix (*-eg* 1st person plural and *-t* third person, respectively) which indexes the theme DP.

With ditransitives, the goal DP can participate in a reflexive, as shown in (37a). Here the 1st person plural goal DP is indexed on the inner suffix (*-eg*). However, the theme DP cannot participate in a reflexive, since the inner suffix cannot index the theme DP (*-t* third person), as shown in (37b). This shows that goal DPs and not theme DPs can participate in both passives and reflexives.

(37) a. elugw-atm-**asi-eg** a'pi
fix-DFLT-APPL.**REFL**-**1PL** net
'We are fixing a/the net(an) **for ourselves**'
b. *elugw-atm-**asi-t**
fix-DFLT-APPL.**REFL**-**1PL**
intended: 'We worked ourselves for Mary'

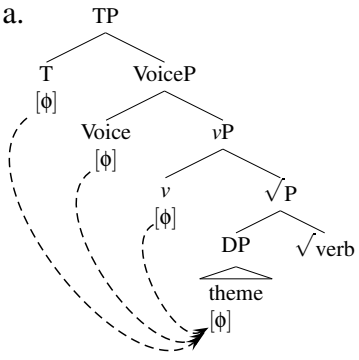
In 3.5.2, I outline a Configurational Account of this data. In 3.5.3, I show why asymmetric applicatives are problematic for the PAH, but not for the Hybrid Account.

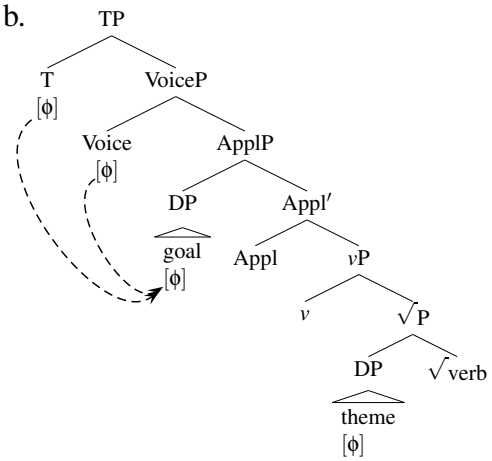
### 3.5.2 Configurational Account

In a Configurational Account, the goal DP would be introduced in the specifier of a high Applicative Phrase (ApplP), as discussed in 2.2.2. Following the Uniform in Theta Role Assignment Hypothesis (UTAH; Baker 1988) in TA+O, the theme is base-generated in the same position as in TAs and TIs. This places the goal DP in position which asymmetrically c-commands the theme DP. This underlying structure accounts for the goal-theme asymmetry in Mi'gmaq in a straightforward manner.

The representation for TAs and TA+O with their accessibility to higher ϕ-probes is shown in (38).[24]

(38) STRUCTURE: TA VS. DITRANSITIVE

a.


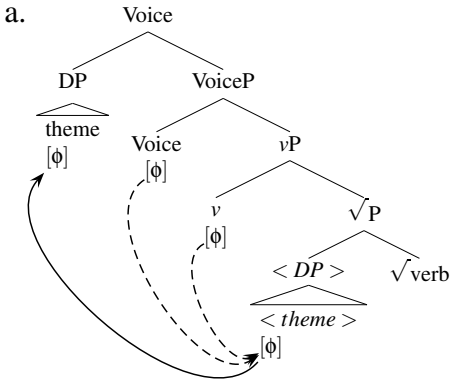

b.


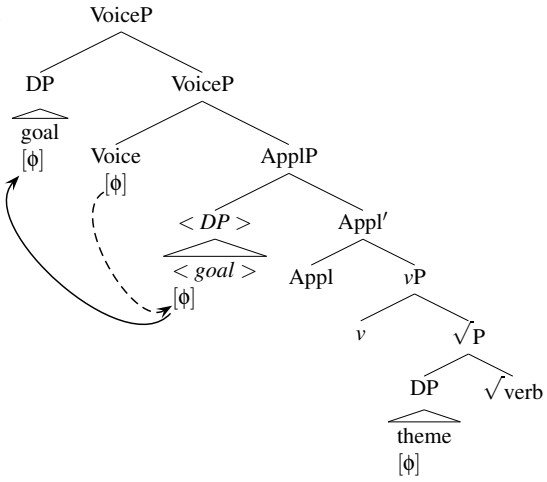

[24]In (38) and the rest of the trees in this chapter, I ignore the subject DP in Spec-VoiceP for simplicity.

In TAs, the ϕ-probes on $v^0$ (verb final), Voice$^0$ (theme sign), and T$^0$ (inner suffix) all potentially probe the theme DP. For ditransitives, only the ϕ-probes on Voice$^0$ and T$^0$ probe the goal DP. Since T$^0$ and Voice$^0$ only probe the subject and highest internal argument, as discussed in 2.3.2 and 2.3.3 respectively, we can understand why only the goal DP can be probed in ditransitives.[25] This accounts for the goal-theme asymmetry with respect to agreement.

The same goal-theme asymmetry also holds for syntactic operations. One standard analysis of passive movement from the base-generated position of the object (following UTAH) to Spec-VoiceP (the 'subject' position). This is shown in (39) for TAs and TA+Os.[26]

(39) PASSIVE: TA VS. DITRANSITIVE

a.



b.



Under this account, passive Voice$^0$ has a simple ϕ-feature probe which enters into an AGREE relation and ATTRACTs the structurally highest argument. In TAs, the theme is the structurally closest DP to Voice$^0$, thus the argument attracted to Spec-VoiceP. This is shown in (39a). In TA+Os, the goal DP is the only DP that can be attracted to Spec-VoiceP, since it is structurally higher than the theme DP, thus structurally closer to Voice$^0$. This is shown in (29b)

Under the Configurational Account, the ability for goal DPs but not theme DPs to participate in passives is directly related to the structural asymmetry between their respective A-positions. Without this structural asymmetry it is not clear how to derive this asymmetry in passives.

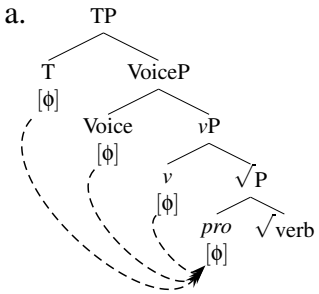
[25]Note that $v^0$ does not have a ϕ-probe in TA+Os. This accounts for why it always appears in default form. See Hamilton (to appear a) and Hamilton (to appear c) for a detailed analysis.

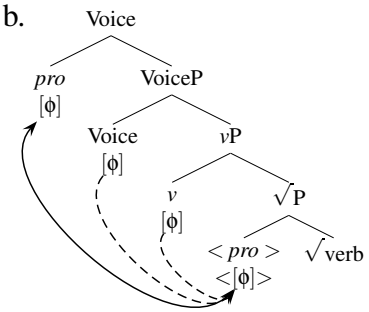
[26]In (39) I ignore the probe on $v^0$.

### 3.5.3 PAH and Hybrid account

The ability to account for asymmetric applicatives is contingent on the presence of hierarchical structure in the verbal domain, which is possible in the Hybrid account, but not in the PAH. Beginning with TA forms, the Hybrid account derives passives as in (40).

(40) HYBRID ACCOUNT: TA ACTIVE AND PASSIVE

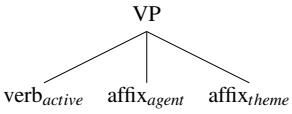
a. 

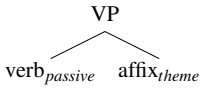

b. 


The Hybrid account is nearly identical to the Configurational Account with *pro*s filling A-positions rather than the DPs themselves. Assuming that these *pro*s have the relevant ϕ-features, both agreement and the passive proceed as in the Configurational Account. The theme *pro* is targeted for AGREE by $v^0$, Voice$^0$, and T$^0$ in the same manner, as in (40a), and it is available to undergo passive movement, as in (40b).

For the PAH, the actual affixes are the arguments, so the corresponding subject and object pronominal arguments would occur in A-positions in active TA forms, as in (41a).[27] In the passive form in (41b), only the theme pronominal argument would appear in an A-position, and the verb would be correspondingly specified as passive, in order to trigger the passive form as opposed to an intransitive form. Thus, the PAH would not posit a movement analysis, but the passive is triggered via feature content or semantic interpretation.

(41) PAH: TA ACTIVE AND PASSIVE

a. 

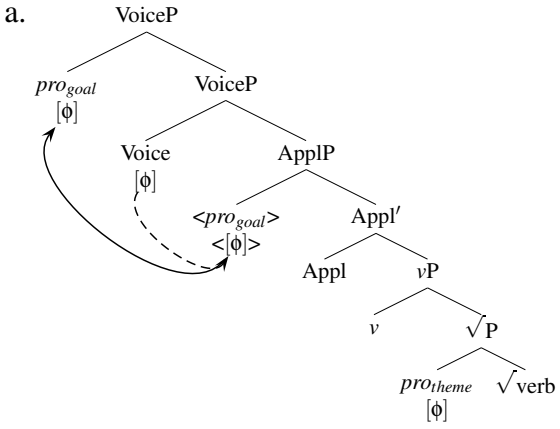

b. 


[27] In this chapter, I ignore the case against pronominal arguments from Chapter 2, and focus solely on the investigation off hierarchical structure and position of DPs.

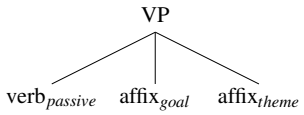
Since the the Hybrid account has hierarchical structure, in ditransitives a high ApplP analysis is also possible, but with *pro* base-generated in Spec-ApplP. This allows the goal *pro* to undergo passive movement as in TA forms, as in (42a). Thus, the asymmetry between the goal *pro* and theme *pro* is tied to hierarchical structure as in the Configurational Account.

(42) HYBRID ACCOUNT VS. PAH

a.




b.




For the PAH, on the other hand, the ability for the goal rather than the theme to be the target of the passive must be stipulated, since neither stands in a structurally closer relationship to the verb as both c-command the verb and each other, as in (42b). One possibility is to use a notion such as linear precedence and stipulate that goals appear linearly before themes to limit the passive to the goal. Another is to simply stipulate that passives occur with goals and not themes if both are present. Abstracting away from questions about how the PAH would represent additional applicative morphology, both of these options are less satisfying than the structural account provided by the Configurational and Hybrid accounts.

Thus, asymmetric applicative forms are easily handled by the Configurational and Hybrid Accounts. However this data cannot be accounted for by the PAH, due to a lack of hierarchical structure and inability to have DPs base-generated in A-positions.

## 3.6 Conclusion

In this chapter I presented three asymmetries between arguments to support a Configurational Account of the syntax of Mi'gmaq. The rigid ordering of subject *wh*-phrases before object *wh*-phrases in multiple *wh*-questions is explained as a Superiority effect. The presence of disjoint reference effects in objects with a proper name possessor or embedded proper name is explained as a Binding Condition C effect. The presence of a goal-theme asymmetry in ditransitives is best analyzed as a structural asymmetry between arguments. The analysis of each of these asymmetries crucially relies on the assumption that DPs are base-generated in their respective A-positions, from which the subject asymmetrically c-commands the object and the goal asymmetrically c-commands the theme. The assumption that DPs are adjuncts, thus not base-generated in their respective A-positions and lacking any relative structural asymmetries between them, resulted in the inability for the PAH to provide an explanation of any of these phenomena in a principled manner. The Hybrid account, on the other hand, had mixed results. The presence of asymmetries between A-positions in the verbal domain allowed the Hybrid account to derive goal-theme asymmetries in ditransitives. The ability to have *wh*-phrases base-generated in these hierarchically organized A-positions allowed for a successful account of Superiority effects. However, having argument DPs base-generated as adjuncts instead of in A-positions rendered the Hybrid account unable to derive Binding Condition C effects as the ϕ-features of the possessor are crucially referenced in the verbal domain. Thus as a result of these three diagnostics, the Configurational analysis of Mi'gmaq is the most appropriate.

In Chapter 4, I present an analysis of Long-Distance Agreement (LDA) which will provide an additional argument for subject-object asymmetries in Mi'gmaq. In this chapter, we will also investigate the effect of discourse on the syntax, which is a topic explored in Chapter 5 as an explanation for the surface non-configurational appearance of Mi'gmaq.

# Chapter 4

# Long-Distance Agreement

## 4.1 Introduction

In this section I present an analysis of Long-Distance Agreement (LDA) in Algonquian languages based on Hamilton & Fry to appear.[1] In addition to being an important characterization of the attested Algonquian-LDA forms, it provides: (i) another instance of a subject-object asymmetry in Mi'gmaq, which supports the findings in Chapter 3, and (ii) an important introduction of the effect of the discourse in the syntax (formalized via discourse, or δ, features following Miyagawa 2010) which sets the stage for the production experiment in Chapter 5.

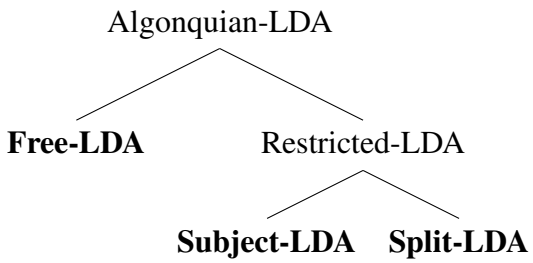
LDA, or Cross-Clausal Agreement, is an agreement relationship that holds between a verb and a constituent of its sentential complement (Polinsky & Potsdam, 2001; Branigan & MacKenzie, 2002). LDA has been investigated in a variety of Algonquian languages, including Blackfoot (Frantz, 1978; Bliss, 2009), Plains Cree (Dahlstrom, 1991), Ottawa Ojibwe (Rhodes, 1994), Meskwaki (Dahlstrom, 1995), Passamaquoddy (Bruening, 2001, 2009; LeSourd, 2010), Innu-aimûn (Branigan & MacKenzie, 2002), and Kitigan Zibi (Maniwaki) Algonquin (Lochbihler & Mathieu, to appear).

Focusing first on LDA involving embedded declaratives, two main patterns are attested: (1) "Free-LDA", in which LDA can occur with any embedded constituent, and (2) "Restricted-LDA",

[1] This chapter builds on equal authorship collaborative work with Brandon J Fry.

in which LDA is limited to a particular embedded argument. Within the Restricted-LDA group there is further variation as to whether LDA is limited to embedded subjects ("Subject-LDA"), or subjects in the direct and objects in the inverse ("Split-LDA"). These are schematized in (1).

(1)




After introducing LDA in 4.2, I outline these three patterns in 4.3 and introduce Mi'gmaq into this typology as a Split-LDA language. In 4.4 and 4.5, I present an analysis which derives all three LDA patterns via two sources of variation: (i) the feature content of embedded declarative $C^0$—either δ (Free-LDA) or ϕ (Restricted-LDA)—and (ii) the nature of the inverse system—either the presence of syntactic movement of the object in inverse forms (Split-LDA), or the absence of such movement (Subject-LDA). This account is summarized in Table 4.1. Note that in the account of δ-features introduced by Miyagawa (2010) and followed here, the inventory of δ-features includes those for topics ([TOP]), focus ([FOC]), and *wh*-movement ([WH]). I use δ as a notational convenience to represent the features triggering these three types of movement, which are typically grouped together as A'-movement.

Table 4.1: LDA VARIATION: 2 SOURCES

| **$C_{probe}$** | **Inverse mov't** | **LDA pattern** |
|---|---|---|
| δ | ✔ | Free-LDA |
| | ✖ | |
| ϕ | ✔ | Split-LDA |
| | ✖ | Subject-LDA |

An implication of this analysis of inverse systems is that we account for the existence of two different kinds of inverse systems: one that is syntactic which involves movement, and another which lacks movement and is morphological. Whether inverse systems in Algonquian languages

involve movement has been the topic of much debate (see Bruening 2001, a response from Ritter & Rosen 2005, and reply back from Bruening 2009). Under the analysis presented in this chapter, there is not a single right answer for all Algonquian languages, but rather, languages differ. In addition to finding evidence to support systems with and without movement, the analysis presented aligns with previous claims in the literature.

I conclude in 4.6, and propose a hypothesis for the non-configurational appearance of Mi'gmaq based on discourse factors, which will be supported by the production experiment presented in Chapter 5.

## 4.2 Background

The analysis of Tsez (NE Caucasian) in Polinsky & Potsdam (2001) has been influential in the literature on LDA. An example of Long Distance Agreement in Tsez is shown in (2). This example illustrates three core characteristics of LDA forms: (i) both the matrix and embedded verb agree with a single DP (what I call the 'LDA target'), (ii) at most a single overt copy of the LDA target appears, and (iii) the appearance of non-locality between the matrix verb and the overt copy of the LDA target.

(2) TSEZ (Polinsky & Potsdam, 2001)

eni-r [už-ā **magalu** **b**-āc'-ru-łi] **b**-iy-xo
mother-DAT [boy-ERG **bread.III.ABS** **III**-eat-PSTPRT-NMLZ] **III**-know-PRES

'The mother knows the boy ate **the bread**'

In the example above, the matrix verb (*biyxo* 'knows') and the embedded verb (*b-āc'ruɬi*) both appear with agreement (class III prefix *b*) with the embedded absolutive argument (*magalu* 'bread'). Polinsky & Potsdam (2001) argue that the overt copy of the absolutive argument appears in the embedded clause, thus placing it in an apparently non-local relationship with the matrix verb.

An example of LDA in Algonquian is shown for Kitigan Zibi Algonquin in (3).

(3) KITIGAN ZIBI ALGONQUIN

ni-giken-**im**-**aa** [aniniw-ag gii-baashkizw-aa-waa-**d Mani-an** ]
1-know-**AN**-**DIR** [man-PL PST-shoot-DIR-3PL-**3** **Mary-OBV** ]

'I know that the men shot **Mary**.'

Both the matrix verb (*nigikenimaa* 'I know X about her/him') and embedded verb (*giibaashkizwaawaad* 'They shot her/him') display agreement with the embedded object (*Manian* 'Mary(obv)'). The surface position of the LDA target can vary, as it can appear in the embedded clause, as in (3), in the left-periphery of the main clause, or between both verbs in a position which could be in either clause.

LDA forms such as this raise questions regarding how this apparently non-local agreement relationship can occur and what drives it. While many analyses have converged on proposals in which Long Distance Agreement involves a more local relationship between the matrix verb and the embedded argument, details differ.[2] LDA has been investigated in a number of different languages, including Hindi (Boeckx, 2004; Bhatt, 2005), Itelmen (Bobaljik & Wurmbrand, 2005), and Basque (Etxepare, 2007). The local nature of AGREE in LDA has been derived via at least the five different analyses, listed in (4).

(4) DIFFERING LDA ACCOUNTS

a. *Null pro account*:
*Matrix argument*: LDA target base-generated in the matrix clause and a null *pro* in the embedded clause
*Proleptic*: A null *pro* is base-generated in the matrix clause and the LDA target in the embedded clause (Dahlstrom, 1991; Davies, 2005; LeSourd, 2010)

b. *$C^0$-mediated account*:
An intermediate agreement relationship with embedded $C^0$ links the embedded LDA target and the matrix verb (Etxepare, 2007; Preminger, 2009)

c. *Base-generation account*:
The LDA target is base-generated in embedded Spec-CP (Bruening, 2001)

[2]An alternate analysis presented by Boškovic (2007) loosens the locality domain of AGREE, such that it differs from MERGE and allows for long-distance agreement. I do not opt for this analysis, as it is unclear how to constrain long-distance agreement to LDA forms alone.

d. *Restructuring account*:
The embedded clause is not a full CP and thus allows the matrix verb to AGREE and/or raise the LDA target into the matrix clause (Boeckx, 2004; Bhatt, 2005; Bobaljik & Wurmbrand, 2005; Boeckx, 2010)

e. *Movement account*:
The LDA target undergoes overt or covert movement to embedded Spec-CP, or via embedded Spec-CP into the matrix clause (Massam, 1985; Polinsky & Potsdam, 2001; Bruening, 2001; Branigan & MacKenzie, 2002; Ritter & Rosen, 2005; Lochbihler & Mathieu, to appear)

While Algonquian languages have a variety of LDA patterns, as I outline in the next section, there are several commonalities, which immediately exclude some of these accounts. The first is that LDA occurs into finite embedded clauses, including embedded interrogatives and clauses with an overt complementizer.[3] Thus, a restructuring account (option (d) above) is unlikely, as LDA embedded clauses are not necessarily smaller than a CP.

The second is that the *wh*-phrase at the edge of an embedded interrogative or one that has participated in long-distance *wh*-movement can be a potential LDA target. Recall that this was introduced in 3.3.3, and the LDA forms are shown again in (5). The form in (5a) is an embedded interrogative and the form in (5b) has undergone successive cyclic movement to left-edge of the matrix clause.

(5) a. Mali gej-i-**a**-**j**-**i(g)** [ta'n **wen-ig** ges-al-g-**i(g)** ]
Mary know.AN-**3OBJ**-**3**-**3PL** [COMP **who-PL** love-AN-3-3PL ]
'Mary knows who(pl) I love.'

b. **wen-ig** Mali gej-i-**a**-**j**-**i(g)** [ges-al-g-**i(g)** ]?
**who-PL** Mary know.AN-**3OBJ**-**3**-**3PL** [love-AN-3OBJ-3-3PL ]
'Who(pl) does Mary know I love?'

This makes the null *pro* account (option (a) above) problematic. In the matrix argument version of this account, the *wh*-phrase would be base-generated in the matrix clause and a co-referring null *pro* base-generated in the embedded clause. To see how this would work, consider the following

[3] In fact, Algonquian may only have finite clauses (Glyne Piggott, p.c.).

English paraphrase:

(6) I know of **the men** that **they** shot Mary.

The matrix predicate *know* takes an argument, here *the men*, and the embedded clause has a co-referential argument. Under this analysis, there is actually no long distance agreement, there is only local agreement with an argument introduced in the same clause.

But this analysis is not possible for (5a) given that embedded *wh*-phrases appear after the complementizer-like element *ta'n*, which appears in embedded interrogative $C^0$ and in some relative clauses. It is thus clear that the *wh*-phrase is in the embedded clause in (5a).

The example also appears to rule out the proleptic version of this account, where there is a null *pro* in the matrix clause and the overt argument is realized in the embedded clause. Since it is the *wh*-phrase of an embedded question, it is not a referential argument, and cannot be be picked up by a co-referent *pro* in the matrix clause either, which would be posited under the proleptic account (Branigan & MacKenzie, 2002).

To illustrate this, consider an attempt at paraphrasing 'Mary knows who I love' with an overt proleptic argument. Clearly, this leads to a different meaning from the one conveyed with with the embedded question in (7).

(7) Mary knows of **some people** that I love them.

These forms are also problematic for the base-generation account (option (c) above). First, it is unclear why the *wh*-phrase would follow the complementizer if it was base-generated in Spec-CP in (5a). In addition, we showed that Mi'gmaq has *wh*-movement, thus it is unclear why we would want to posit a different analysis of *wh*-movement for LDA forms.

This leaves us with the $C^0$ mediated (option (b) above) and movement (option (e) above) accounts. To a certain degree, $C^0$ plays an important role in movement account by triggering movement of the LDA trigger to embedded Spec-CP. However, since the the account I pursue necessarily involves the additional step of movement, which need not be a central element of the

$C^0$ mediated account, I assume the movement account.

The third and final commonality found across LDA in Algonquian languages is that there appears to be an alternation between LDA and non-LDA forms, which makes LDA seem 'optional,' but is more likely related to discourse factors. The role of discourse, particularly topichood, has been linked to LDA in many languages, such as Tsez (Polinsky & Potsdam, 2001), Hindi (Boeckx, 2004; Bhatt, 2005), Itelmen (Bobaljik & Wurmbrand, 2005), and Basque (Etxepare, 2007). As such, LDA in Algonquian appears to be different from long-distance dependencies such as control and raising (Branigan & MacKenzie, 2002). This also makes a movement analysis attractive, since we can motivate movement to embedded Spec-CP via *wh*-movement or discourse movement, such as topicalization.

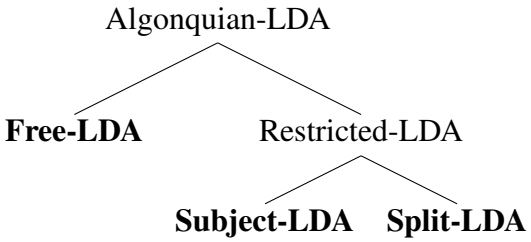
As a result of these commonalities, I present a movement analysis of LDA in which the relationship between the matrix verb and LDA target is more local than the surface forms suggests. This analysis is similar to the one in Bruening (2001), Branigan & MacKenzie (2002), and Lochbihler & Mathieu (to appear), but introduces variation in order to account for all three LDA-patterns. Specifically, I argue that three main patterns of LDA (Free vs. Restricted) involve the feature content of $C^0$ ($\delta$ vs. $\phi$). I also argue that the different pattens of Restricted-LDA (Subject vs. Split) depend on whether the inverse involves syntactic movement (Split-LDA) or does not and is morphological (Subject-LDA). I suggest that LDA can thus be used as a diagnostic for the structural height of embedded arguments, and insight into the nature of inverse systems. I outline these patterns in the next section.

## 4.3 3 LDA patterns

In this section I review the three patterns before turning to a movement account of each. As noted above, there are three attested patterns of LDA with embedded declarative clauses discussed in the Algonquian literature: (i) what I call "Free-LDA", which can occur with any embedded constituent, (ii) what I call "Subject-LDA", which is restricted to embedded subjects, and (iii) what I call "Split-LDA", which is restricted to subjects in the direct and objects in the inverse. These

patterns can be schematized as in (8), with Subject- and Split-LDA combining to constitute the Restricted-LDA pattern.

(8)




### 4.3.1 Free-LDA

The ability for LDA to occur with any embedded argument is the most well-known pattern and has been reported for Passamaquoddy (Bruening, 2001, 2009; LeSourd, 2010), Innu-aimûn (Branigan & MacKenzie, 2002), and some dialects of Ojibwe (e.g. Kitigan Zibi (Maniwaki) Algonquin Lochbihler & Mathieu to appear). Here I show that in Kitigan Zibi, any core argument may be an LDA target regardless of whether it is a subject or object and regardless of whether the embedded verb is direct or inverse.

A comparison of non-LDA with LDA forms in Kitigan Zibi is shown in (9). These examples are bi-clausal, with the matrix verb *giken-* 'know' and embedded verb *baashkizw-* 'shoot.' The matrix verb displays a different set of verbal inflections (Independent Order) than the embedded verb (Conjunct Order), which is the case for most Algonquian languages (though notably, this contrast is absent in Mi'gmaq). The embedded verb is in the direct, as shown by the direct theme sign *-aa*. The embedded verbs and its constituents, including arguments which undergo LDA, are enclosed in square brackets throughout.[4] The argument that is the target of LDA and the matrix verb affixes which index it are in bold throughout.

[4]Enclosing embedded constituents in square brackets is done for ease of presentation but is not intended to represent an analysis of the structural position of arguments that undergo LDA, which is addressed in 5.6.

(9) EMBEDDED DECLARATIVE DIRECT, KITIGAN ZIBI ALGONQUIN (Hamilton & Fry, to appear)

a. NON-LDA

ni-giken-**daan** [aniniw-ag gii-baashkizw-aa-waa-d Mani-an ]
1-know-**DFLT** [man-PL PST-shoot-DIR-3PL-3 Mary-OBV ]

'I know that the men shot Mary(obv).'

b. LDA WITH EMBEDDED SUBJECT

ni-giken-**im-aa-g** [**aniniw-ag** gii-baashkizw-aa-waa-d Mani-an ]
1-know-**AN-DIR-3PL** [**man-PL** PST-shoot-DIR-3PL-3 Mary-OBV ]

'I know that **the men** shot Mary(obv).'

c. LDA WITH EMBEDDED OBJECT

ni-giken-**im-aa** [aniniw-ag gii-baashkizw-aa-waa-d **Mani-an** ]
1-know-**AN-DIR** [man-PL PST-shoot-DIR-3PL-3 **Mary-OBV** ]

'I know that the men shot **Mary(obv)**.'

In (9a), the matrix verb does not display agreement with an animate object. Instead, it appears with the TI verb final *-daan* (glossed as "default" in parallel with the Mi'gmaq analysis in Chapter 2). The first person subject is indexed via the prefix *ni-*. There are three differences between (9a) and (9b), as the matrix verb in the latter has: (a) an animate TA final (*-im*) which only appears when the object is animate, (b) a TA theme sign (*-aa* direct, indexing a first person subject and third person object), and (c) a person suffix (*-g* third person plural). All three of these differences indicate that the matrix verb in (9b) indexes the embedded third person plural subject *aniniwag* 'the men' in the same way it would index an object. In (9c), the matrix verb has the same animate verb final and TA theme sign, but lacks the third person plural suffix. This indicates that the third person singular object *Mani-an* 'Mary(obv)' is being indexed by the matrix verb. The last two forms show that it is possible for the matrix verb to display typical object agreement with the embedded subject (9b) or object (9c).

Just as with embedded direct clauses in (9), either the subject or object in an embedded inverse clause can be the target of LDA with the matrix verb. The examples in (10) have an embedded verb with the inverse morpheme *-ig*. The form in (10a) shows a non-LDA form, which contrasts with the LDA forms in (10b) and (10c).

(10) EMBEDDED DECLARATIVE INVERSE, KITIGAN ZIBI ALGONQUIN (Hamilton & Fry, to appear)

a. NON-LDA

ni-giken-**daan** [aniniw-ag gii-baashkizw-ig-waa-d Mani-an ]
1-know-**DFLT** [man-PL PST-shoot-INV-3PL-3 Mary-OBV ]

'I know that Mary shot the men.'

b. LDA WITH EMBEDDED SUBJECT

ni-giken-**im-aa** [aniniw-ag gii-baashkizw-ig-waa-d **Mani-an** ]
1-know-**AN-DIR** [man-PL PST-shoot-INV-3PL-3 **Mary-OBV** ]

'I know that **Mary(obv)** shot the men.'

c. LDA WITH EMBEDDED OBJECT

ni-giken-**im-aa-g** [**aniniw-ag** gii-baashkizw-ig-waa-d Mani-an ]
1-know-**AN-DIR-3PL** [**man-PL** PST-shoot-INV-3PL-3 Mary-OBV ]

'I know that Mary(obv) shot **the men**.'

In the non-LDA form in (10a), the matrix verb shows the same default verb final and 1st person prefix as in (9a). The obviative subject *Mani-an* can be the LDA target, as in (10b). This is shown by the animate verb final and direct TA morpheme on the matrix verb. The proximate object *aniniwag* can be the LDA target in (10c), since the matrix verb additionally has the third person plural outer suffix.

A summary of the Free-LDA pattern is shown in Table 4.2. Both the subject and object are possible targets for LDA regardless of the ϕ-feature content of the subject and object and whether the embedded clause is in the direct or inverse.

Table 4.2: SUMMARY: FREE-LDA PATTERN

| **LDA pattern** | **Direct** | | **Inverse** | |
|---|---|---|---|---|
| | **Emb. subject** | **Emb. object** | **Emb. subject** | **Emb. object** |
| **Free** | ✔ | ✔ | ✔ | ✔ |

### 4.3.2 Restricted-LDA

The other attested, yet lesser known, pattern in Algonquian restricts LDA to a particular embedded argument. This comes in two different forms. The first is Subject-LDA and is characterized by

LDA being restricted to embedded subjects. This is attested in Plains Cree (Dahlstrom, 1991) and with a subset of Ottawa (Ojibwe) speakers (Dialect 1) (Rhodes, 1994). The second is Split-LDA' and is characterized by LDA being restricted to embedded subjects when the embedded verb is direct and embedded objects when the embedded verb is inverse. This has been previously attested only in a different subset of Ottawa (Ojibwe) speakers (Dialect 3) (Rhodes, 1994). However, I demonstrate that Mi'gmaq (Listuguj dialect) also has a Split-LDA pattern. Both patterns are described in turn below.

#### 4.3.2.1 Subject-LDA

In Subject-LDA, the matrix verb can only show agreement with the embedded subject, regardless of whether the embedded clause is direct or inverse. A comparison of an attested embedded subject LDA form in Plains Cree is shown in (11a) and contrasted with an ungrammatical embedded object LDA form in (11b). These examples are bi-clausal, with the matrix verb root *kisskey-* 'know' and embedded verb root *saakih* 'love'. The embedded clause in each is identical and in the direct, as indicated by the theme sign *-aa*.

(11) EMBEDDED DECLARATIVE DIRECT FORMS, PLAINS CREE (Dahlstrom, 1991)

a. LDA WITH EMBEDDED SUBJECT

ni-kiskeey-**im**-**aa**-w [**George** ee-saakih-aa-t o-kosis-a ]
1-know-**TA**-**DIR**-DFLT [**George** CONJ-love.AN-DIR-3 3.POSS-son-OBV ]
'I know that **George** loves his sons.'

b. NO LDA WITH EMBEDDED OBJECT

*ni-kiskeey-**im**-**im**-**aa**-**wa** [George ee-saakih-aa-t **o**-**kosis**-**a** ]
1-know-**TA**-**OBV**-**DIR**-OBV [George CONJ-love.AN-DIR-3 **3.POSS**-**son**-**OBV** ]
intended: 'I know that George loves **his sons**.'

In both, the matrix verb has an animate TA final (*-im*) and a TA theme sign (*-aa* direct, first person subject and third person object), and thus indexes an object with ϕ-features. In the grammatical (11a), the verb has no inner suffix, which indicates that the verb is indexing the embedded third person subject *George*. In the ungrammatical (11b), the verb has two obviative

suffixes (*-im* and *-wa*), which indicates that it is indexing the third person obviative plural object *okosisa* 'his sons(obv)'.[5] The fact that only (11a) is grammatical indicates that LDA can only occur with embedded subjects.

Even when the embedded clause is in the inverse, still only LDA with the embedded subject is possible. A grammatical LDA form with the embedded subject in Plains Cree is shown in (12a) and contrasted with an ungrammatical embedded object LDA form in (12b). The embedded clause in each is identical and in the inverse, as indicated by the theme sign *-iko*.

(12) EMBEDDED DECLARATIVE INVERSE FORMS, PLAINS CREE (Dahlstrom, 1991)

a. LDA WITH EMBEDDED SUBJECT, INVERSE COMPLEMENT CLAUSE

ni-kiskeey-**im**-**im**-**aa**-**wa** [George ee-saakih-iko-t **o-kosis-a** ]
1-know-**AN-OBV-DIR-obv** [George CONJ-love.AN-INV-3 **3.POSS-son-OBV** ]
'I know that **his sons** love George.

b. NO LDA WITH EMBEDDED OBJECT, INVERSE COMPLEMENT CLAUSE

*ni-kiskeey-**im**-**aa**-w [**George** ee-saakih-iko-t o-kosis-a ]
1-know-**AN-DIR**-DFLT [**George** CONJ-love.AN-INV-3 3.POSS-son-OBV ]
intended: 'I know that his sons love **George**.'

In these forms *okosisa* 'his sons(obv)' is the obviative subject and *George* is the proximate object. The LDA form in (12a), which has obviative suffixes (*-im* and *-wa*) and indexes the embedded subject (*okosisa*), is grammatical. However, the form in (12b), which lacks these suffixes and indexes the embedded object, is ungrammatical. When considered together, these data show that the only relevant factor for LDA is grammatical role (i.e. subjects or external arguments of transitives are available for LDA), rather than the feature content of the arguments themselves.

Since only third person forms are shown in these examples, Table 4.3 shows the full embedded declarative pattern with transitives with all combinations of person: "local" forms are between two SAPs, "mixed" forms are with a third person and SAP argument, and "third person" forms are between third persons.[6] Embedded arguments that are possible LDA targets are in bold and

[5]Note that in Plains Cree, obviative arguments are ambiguous between a singular and plural interpretation: when an argument is both obviative and plural, only an obviative suffix appears. This is different from Mi'gmaq, as the plural suffix appear if an argument is both obviative and plural.

[6]Note that Table 7 ignores plural since number does not interact with the LDA pattern.

enclosed in a box. The general comparison of the Subject- and Free-LDA patterns follows in Table 4.4.

Table 4.3: FULL SUBJECT-LDA PATTERN, EMBEDDED TRANSITIVE DECLARATIVES

| set | description | **Direct** | **Inverse** |
|---|---|---|---|
| local | SAPs | **SAP** >SAP | |
| mixed | SAP & 3rdP | **3/4** >SAP **SAP** >3/4 | |
| 3rd person | 3rdPs | **3** >4 | **4** >3 |

Table 4.4: SUMMARY: 2 LDA PATTERNS

| **LDA patterns** | | **Direct** | | **Inverse** | |
|---|---|---|---|---|---|
| | | **Emb. subject** | **Emb. object** | **Emb. subject** | **Emb. object** |
| **Free** | | ✔ | ✔ | ✔ | ✔ |
| **Restricted** | **Subject** | ✔ | ✖ | ✔ | ✖ |

#### 4.3.2.2 Split-LDA

The other Restricted-LDA pattern is Split-LDA, which is similar to Subject-LDA in limiting LDA to embedded subjects in the direct. It differs, however, from Subject-LDA in that it limits LDA to embedded objects in the inverse. The Mi'gmaq data in (13) illustrates a contrast with the non-LDA form in (13a) with a grammatical embedded subject LDA form in (13b) and an ungrammatical embedded object LDA form in (13c). These examples are bi-clausal, with the matrix verb root *ge(j)-* 'know' and the embedded verb root *ges-* 'love'.[7] The embedded clause in each is in the direct, as indicated by the direct, or third person object indexing suffix, *-a*.

[7]Recall in Mi'gmaq, inflection in both matrix and embedded clauses is historically related to the Conjunct form in other Algonquian languages (see footnote 8 in 1.2.3).

(13) EMBEDDED DECLARATIVE DIRECT FORMS, MI'GMAQ

a. NON-LDA

ge(j)-**itu** [Mali ges-al-a-j-i(g) Piel-al aq Je'g-al ]
know-DFLT [Mary love-AN-3OBJ-3-3PL Peter-OBV COOR Jack-OBV ]
'I know that Mary loves Peter and Jack.'

b. LDA WITH EMBEDDED SUBJECT

gej-**i-g** [**Mali** ges-al-a-j-i(g) Piel-al aq Je'g-al ]
know-**AN-3** [**Mary** love-AN-3OBJ-3-3PL Peter-OBV COOR Jack-OBV ]
'I know that **Mary** loves Peter and Jack.'

c. *LDA WITH EMBEDDED OBJECT

*gej-**i-g-ig** [Mali ges-al-a-j-i(g) **Piel-al aq Je'g-al** ]
know-**AN-3-3PL** [Mary love-AN-3OBJ-3-3PL **Peter-OBV COOR Jack-OBV** ]
intended: 'I know that Mary loves **Peter and Jack**.'

In the non-LDA form in (13a), the matrix verb has the default verb final (*-(i)tu*). This contrasts with the matrix verb in (13b) which has an animate verb final (*-i*) and third person inner suffix (*-g*), which indexes the third person singular embedded subject *Mali* 'Mary.' The matrix verb in (13c) appears with the same animate verb final and inner suffix, but also has a third person plural outer suffix (*-i'g*). The matrix verb in this LDA form indexes the third person plural embedded object *Pielal aq Je'gal* 'Peter(obv) and Jack(obv).' The fact that (13b), but not (13c), is grammatical shows that LDA is only possible with the subject in embedded declaratives in the direct. Thus in the direct, Mi'gmaq (Split-LDA) and Plains Cree (Subject-LDA) pattern the same.

However, when the embedded clause is in the inverse, LDA is possible with only the embedded object. The data in (14) show a comparison between a non-LDA form (14a) and LDA forms with the embedded subject (14b) and embedded object form (14c). The embedded clause in each is identical and in the inverse, as indicated by the morpheme *-gw*.[8]

[8]Note that in the 3>SAPpl forms with the *-ugsi* theme sign pattern with the direct in only allowing LDA with the third person subject. This presents evidence against *-ugsi* as an inverse marker. See Coon & Bale (2014) and 2.3.2 for related discussion.

(14) EMBEDDED DECLARATIVE INVERSE FORMS, MI'GMAQ

a. NON-LDA

ge(j)-**itu** [Mali ges-al-gwi-tit-l Piel-al aq Je'g-al ]
know-DFLT [Mary love-AN-INV-4PL-OBV Peter-OBV COOR Jack-OBV ]
'I know that Peter and Jack love Mary.

b. *LDA WITH EMBEDDED SUBJECT

*geji'-**g-ig** [Mali ges-al-gwi-tit-l **Piel-al aq Je'g-al** ]
know.AN-**3-3PL** [Mary love-AN-INV-4PL-OBV **Peter-OBV COOR Jack-OBV** ]
intended: I know that **Peter and Jack** love Mary.

c. LDA WITH EMBEDDED OBJECT

geji'-**g** [**Mali** ges-al-gwi-tit-l Piel-al aq Je'g-al ]
know.AN-**3** [**Mary** love-AN-INV-4PL-OBV Peter-OBV COOR Jack-OBV ]
'I know that Peter and Jack love **Mary**.

The embedded clauses in (14) are identical to (13), except they have the inverse morpheme. In these forms the obviative DP *Pielal aq Je'gal* 'Peter(obv) and Jack(obv)' is the subject and *Mali* is the proximate object. Interestingly, LDA is now only possible with the embedded object *Mali* and not the embedded subject *Pielal aq Je'gal*. In (14b) the matrix verb has the third person plural outer suffix and indexes the embedded plural subject *Pielal aq Je'gal*. But this is ungrammatical, while (14c), which lacks the third person plural outer suffix and indexes the third person embedded object *Mali*, is grammatical. This contrasts with the Plains Cree (Subject-LDA) pattern in which only the subject was still a possible LDA target with embedded inverse clauses.[9]

Again, since only third person forms have been discussed thus far, the full pattern is shown in Table 4.5. Note that this is the exact same pattern as in Subject-LDA, except in the inverse (shaded in grey) LDA is restricted with the 3rd person proximate object.

[9]Based on the transitive forms presented so far, one might conclude that LDA is not possible with plural or obviative arguments, since in both sets of examples in (13) and (14) LDA is limited to the proximate singular argument and not possible with the obviative plural one. However, the intransitive examples in (ia) and (ib) show that obviative (*Sa'n ug-gwij-l* 'John's mother') and plural (*Sa'n aq Piel* 'John and Peter') arguments, respectively, can be LDA targets.

(i) a. Mali gej-i-a-t-**l** **Sa'n ug-gwij-l** welm-'nittl
Mary know-AN-3OBJ-3-**OBV** **John 3.POSS-mother-OBV** kind.AI-OBV
'Mary knows that **John's mother** is kind'

b. gej-i-g-**ig** **Sa'n aq Piel** welm-a'ti-j-ig
know-AN-3-**3PL** **John COOR Peter** kind.AI-DU-3-3PL
'I know that **John and Peter** are kind'

Table 4.5: FULL SPLIT-LDA PATTERN, DECLARATIVES

| form | description | **Direct** | **Inverse** |
|---|---|---|---|
| local | SAPs | **SAP** >SAP | |
| mixed | SAP & 3rdP | **3/4** >SAP, **SAP** >3/4 | |
| 3rd person | 3rdPs | **3/4** >4 | 4> **3** |

The general comparison of all three patterns is shown in Table 4.6. In the next section, I introduce an analysis to account for the full range of LDA data.

Table 4.6: SUMMARY: 3 LDA PATTERNS IN EMBEDDED DECLARATIVES

| **LDA patterns** | | **Direct** | | **Inverse** | |
|---|---|---|---|---|---|
| | | **Emb. subject** | **Emb. object** | **Emb. subject** | **Emb. object** |
| **Free** | | ✔ | ✔ | ✔ | ✔ |
| **Restricted** | **Subject** | ✔ | ✖ | ✔ | ✖ |
| | **Split** | ✔ | ✖ | ✖ | ✔ |

## 4.4 Features and embedded $C^0$

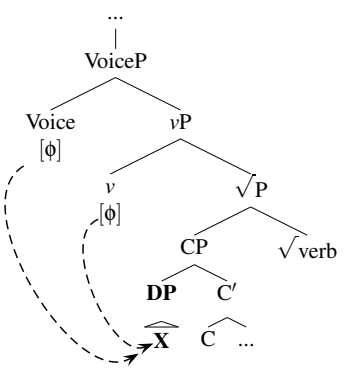
### 4.4.1 Proposal

I propose that what ties all three LDA patterns together is that they all involve the matrix verb displaying agreement with an argument in embedded Spec-CP. Accordingly there is nothing truly "long-distance" about LDA. The LDA target is in the local domain of the matrix verb phrase, thus a potential goal for AGREE. This is not a novel aspect of this analysis, as many previous analyses posit movement (overt or covert) to the left-edge of the embedded clause in order to allow an embedded argument to be a target for LDA (e.g. Polinsky & Potsdam 2001, Bruening 2001, Bruening 2009, and Lochbihler & Mathieu to appear).

The representation in (15) shows that AGREE occurs with the LDA target in the same manner as with a typical object. Both $v^0$ and Voice$^0$ have $\phi$-probes which probe and AGREE with the LDA

target, with agreement surfacing on the matrix verb as the verb final and theme sign respectively.[10]

(15)




I propose that the distinction between Free- and Restricted-LDA patterns lies in the manner in which LDA targets reach embedded Spec-CP: either via a discourse (δ) feature (Miyagawa, 2010) or person (ϕ) feature probe on $C^0$. This is summarized in Table 4.7. Discourse features are a set of features which trigger A'-movement that is motivated by discourse factors. The set of discourse features are topic ([TOP]), focus ([FOC]), and *wh* ([WH]). I use δ as a notational convenience to represent the features triggering these three types of movement. I return to a discussion of the discourse status if LDA targets in 4.4.4.

Table 4.7: LDA VARIATION: FEATURE CONTENT OF EMBEDDED $C^0$

| $C_{probe}$ | LDA pattern |
|---|---|
| δ | Free-LDA |
| ϕ | Restricted-LDA |

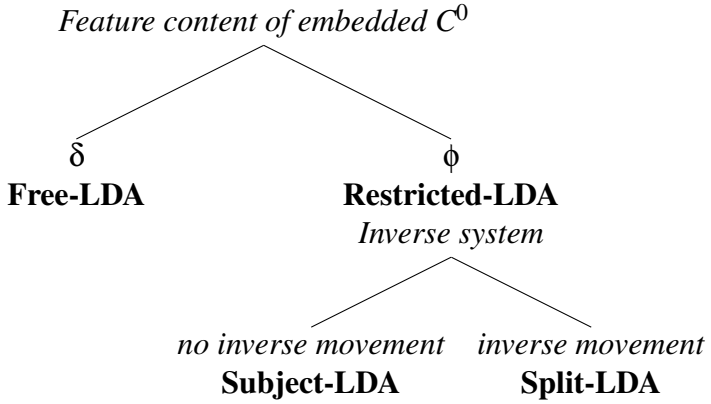
Because Free-LDA is triggered by a δ-probe on $C^0$, it may target any argument that has a δ-feature: *wh*-words, topics, and focussed elements, regardless of their grammatical function. This is similar to the analysis proposed for Tsez (Caucasian; Polinsky and Potsdam, 2001), Passamaquoddy (Bruening, 2001), Innu-aimûn (Branigan & MacKenzie, 2002), and Kitigan Zibi

[10]Here I represent the embedded CP as a complement of the root, though nothing crucial hinges on the exact position of this, so long as Spec,CP is accessible to the probes on $v^0$ and $Voice^0$.

(Maniwaki) Algonquin (Lochbihler & Mathieu, to appear).[11] Restricted-LDA, on the other hand, is triggered by a (simple) ϕ-probe on $C^0$, thus the target can only be the structurally highest argument.[12] Since in both Restricted-LDA patterns, the subject is structurally higher than the object, LDA is limited to the subject. I discuss this further in 4.4.2 below.

The difference between Free and Restricted LDA, under this analysis, is determined by which kinds of features are probing. The next step is to account for the two different patterns of Restricted LDA. Based on work in Hamilton & Fry (to appear), I propose that the difference between Subject- and Split-LDA patterns is due to variation in inverse systems, as it either involves syntactic movement (Bruening, 2001, 2009) or not (Ritter & Rosen, 2005; Lochbihler, 2012). I propose that Split-LDA languages have syntactic movement, thus the proximate object undergoes movement to a derived position above the subject, making it the structurally highest argument for LDA. Subject-LDA languages, on the other hand, lack such movement and LDA is still limited to the subject, which is the structurally highest argument in the direct. The variation between LDA patterns can be schematized as in (16). I discuss the feature content of $C^0$ in this section, and variation in the inverse system in the following section.

(16)




[11] Although Bliss (2009) argues against a movement analysis, we can account for the Blackfoot LDA data assuming that DPs in embedded Spec-CP are not equidistant for AGREE, and focused DPs are structurally higher than topic DPs, thus in an outer specifier of embedded CP.

[12] This makes the prediction that LDA cannot occur with inanimate DPs since they do not have ϕ-features. This is a correct prediction.

### 4.4.2 Embedded $C^0$

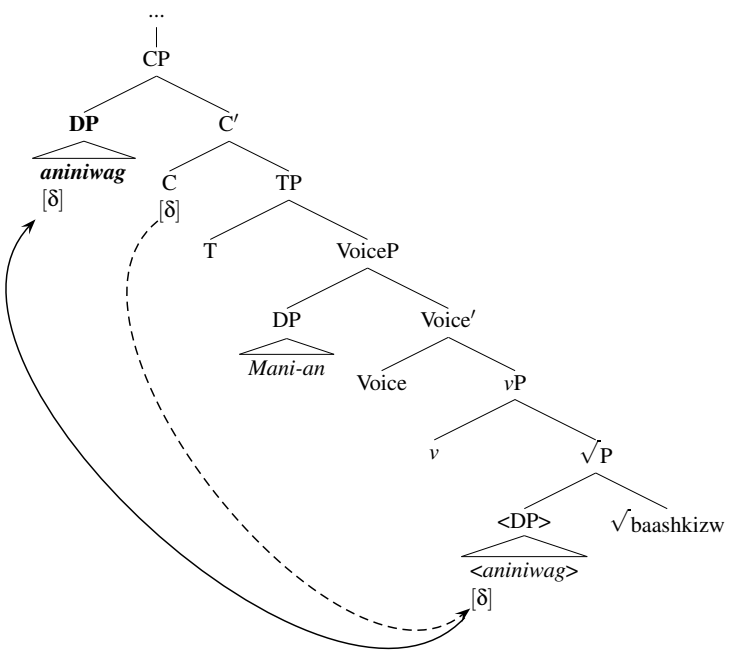
I propose that the contrast between Free-LDA and Restricted-LDA languages is derived through the feature content of embedded declarative $C^0$; I return to interrogative $C^0$ in 4.4.3 below. Specifically, embedded declarative $C^0$ may either enter the derivation with δ-features (Miyagawa, 2010) or ϕ-features (also see Lochbihler & Mathieu to appear). In Free-LDA languages, LDA is possible with any embedded argument in embedded declaratives. In these languages, embedded $C^0$ has a δ-feature and LDA occurs with an embedded argument that enters the derivation with a δ-feature.[13] As such, $C^0$ with a δ-feature will probe its c-command domain for the structurally closest DP with δ-features (i.e. a *wh*-phrase or any DP which will be topicalized or focused), and if an appropriate goal is found, $C^0$ will AGREE and attract this goal to embedded Spec-CP. Consider (17) for illustration. In this example, the third person embedded object enters the derivation with a δ-feature. Embedded declarative $C^0$ also enters the derivation with a δ-feature and probes, AGREEs with, and attracts the third person patient to embedded Spec-CP. The embedded object is then in a local enough position for matrix $v^0$ to probe and AGREE with it.

[13] Here I focus on DPs which are marked with a δ-feature for topic or focus reasons. I return to interrogative DPs in 4.4.3 below.

(17) FREE-LDA, KITIGAN ZIBI ALGONQUIN (Lochbihler & Mathieu, to appear)

a. ni-giken-**im-aa-g** [**aniniw-ag** gii-baashkizw-ig-waa-d Mani-an ]
1-know-**AN-DIR-3PL** [**man-PL** PST-shoot-INV-3PL-3 Mary-OBV ]
'I know that Mary shot **the men**.'

b.




Following the covert movement analysis in Polinsky & Potsdam (2001), I assume that the surface position of the LDA target represents one of its copies in the syntactic derivation. Although it might appear overtly in its base-generated position, this does not necessarily mean that the LDA target has not undergone movement in the syntactic derivation. I propose that all LDA targets undergo movement to embedded Spec-CP regardless of their linear order when pronounced. Thus, the narrow syntax produces a syntactic object with various copies of the LDA target, and the accounting for which copy is pronounced is done at the Sensory-Motor interface (formerly Phonetic Form, or PF). This interface is where linearization of the hierarchical syntactic object constructed during the syntactic derivation occurs.

This analysis is parallel to in-situ *wh*-languages which have covert *wh*-movement but the copy of the *wh*-phrase is always pronounced in its base-generated position. It is similar to analyses of Kitigan Zibi (Lochbihler & Mathieu to appear), Passamaquoddy (Bruening 2001), Innu-aimûn (Branigan & MacKenzie 2002; with δ-features replacing their *O*-feature), and Tsez (Polinsky &

Potsdam 2001 with A'-movement being overt and copy deletion occurring at SM).

Restricted-LDA languages, on the other hand, have a ϕ-probe on embedded declarative $C^0$, thus only the structurally closest DP with person features will be attracted to embedded Spec-CP and potentially undergo LDA. Assuming that it is possible to extend the Configurational Analysis of Mi'gmaq developed thus far to other Algonquian languages, subjects are always merged structurally higher than objects, which correctly predicts that LDA can only occur with subjects in declaratives. In (18), the embedded subject *okosisa* 'his sons(obv)' merges with the verb root and the embedded subject *George* merges later with VoiceP. Thus the embedded subject is structurally higher than the embedded subject. Embedded $C^0$, bearing a ϕ-feature, probes, AGREEs with, and raises the embedded agent to embedded Spec-CP. The embedded agent is then in a local enough position for matrix $v^0$ to probe and AGREE with it.

(18) RESTRICTED-LDA, PLAINS CREE (SUBJECT-LDA) (Dahlstrom, 1991)

a. ni-kiskeey-**im**-**aa**-w [**George** ee-saakih-aa-t o-kosis-a ]
1-know-**AN**-**DIR**-DFLT [**George** CONJ-love.AN-DIR-3 3.POSS-son-OBV ]
'I know that **George** loves his sons.'

b.

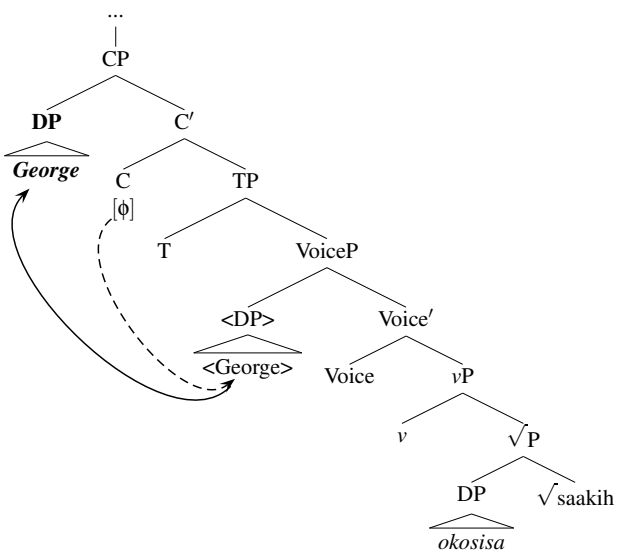



Table 4.8 summarizes the analysis of the difference between Free- and Restricted-LDA languages.

Table 4.8: LDA VARIATION: FEATURE CONTENT OF EMBEDDED $C^0$

| $C_{probe}$ | LDA pattern |
|---|---|
| δ | Free-LDA |
| ϕ | Restricted-LDA |

This account does not assume Strong Uniformity (Miyagawa, 2010); that $C^0$ must always be base-generated with both ϕ- and δ-features.[14] An alternate analysis that assumes String Uniformity, is possible. This makes sense for Free-LDA languages since $C^0$ could "multitask" (Richards, 2012) by always attracting the DP with both features, which easily derives this pattern. However for Restricted-LDA languages, we would have to assume that LDA-targets are either never or always marked with δ-features. If they are never marked with δ-features, then the δ-probe on embedded $C^0$ is vacuous and the ϕ-probe does all of the work. If LDA-targets are always marked with δ-features, than we have to assume that the structurally highest DP always has δ-features, since it is the DP that is always attracted. Both of these options are somewhat stipulative, which makes the non-Strong Uniformity account developed here more straight forward since it identifies the minimal feature probe necessary to derive these patterns. Nonetheless, we will see from the embedded interrogative data below that it appears that δ-features do not play a role in determining LDA-targets in Restricted LDA-languages.

### 4.4.3 Supporting evidence: Embedded interrogatives

LDA in Embedded interrogatives provides support for the analysis of Algonquian LDA presented here. Recall that I propose embedded $C^0$ in declaratives has a δ-feature in Free-LDA languages and a ϕ-feature in Restricted-LDA languages. The only prerequisite for being an LDA target in Free-LDA language is being marked with a δ-feature. In Restricted-LDA languages the prerequisites to be an LDA target are twofold: (i) having ϕ-features, and (ii) being the structurally closest argument to embedded $C^0$.

However, in embedded interrogatives in a *wh*-movement language, $C^0$ necessarily has a

[14] I'm grateful to Norvin Richards for raising this point.

δ-feature (assuming that WH is a sub-type of δ-features). This makes the prediction that in embedded interrogatives, the Restricted-LDA pattern should be similar to Free-LDA in allowing the LDA target to be any embedded *wh*-argument. This prediction is supported by Mi'gmaq, a *wh*-movement language, as argued in 3.3. In Mi'gmaq, any embedded *wh*-phrase in an embedded interrogative can be an LDA target. This is shown in (19).

(19) MI'GMAQ

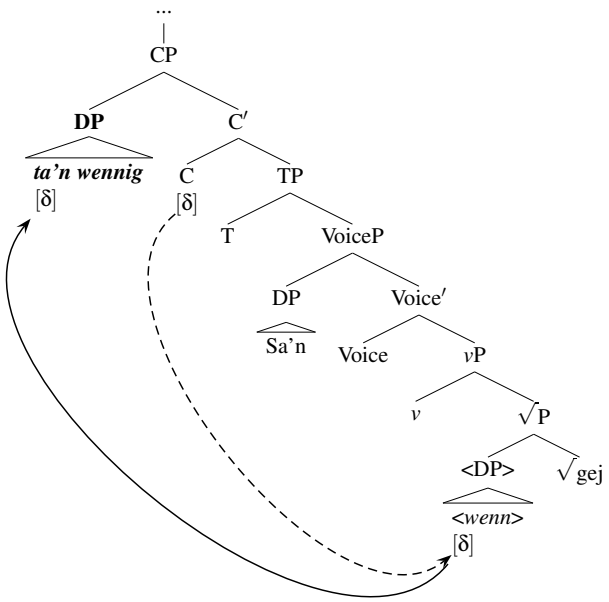
a. gej-i'-**g** [ta'n **wen** ges-al-a-j-i Mali-al aq
know-AN-**3** [COMP **who** love-AN-3OBJ/DIR-3-3PL Mary-OBV COOR
Gatlin-al ]
Catherine-OBV ]
'I know **who** loves Mary and Catherine.'

b. gej-i'-**g**-**ig** [ta'n **wen-ig** Sa'n ges-al-a-j-i ]
know-AN-**3**-**3PL** [COMP **who-PL** John love-AN-3OBJ/DIR-3-3PL ]
'I know **who(pl)** John loves.'

In (19a), the embedded *wh*-subject (*wen*) is the LDA target, as the verb shows third person agreement (*-g* third person inner suffix). In (19b), the embedded *wh*-object (*wenig*) is the LDA target, as the verb shows third person plural agreement (*-ig* third person plural outer suffix).

The derivation of (19a) is shown in (20), where only the *wh*-object has a δ-feature, and is the only DP attracted to embedded Spec-CP by the δ-probe on $C^0$.

(20) DERIVATION OF (19a)




This supports the analysis at hand, since it confirms the link between δ-features and an LDA pattern that is blind to grammatical role and structural height, i.e. the Free-LDA pattern. The Restricted-LDA pattern in embedded declaratives stands out as being different, since structural height is crucial (which, assuming a Configurational Account is linked to grammatical role, except in Split-LDA inverse forms).

In addition to the feature specification of embedded $C^0$, δ-features play a reduced role in Restricted-LDA forms in general. This is because in embedded interrogatives, LDA targets are limited to embedded *wh*-phrases. Complementary, but ungrammatical, pairs with the forms in (19) are shown in (21).[15]

[15]Note that when successive cyclic *wh*-movement occurs, LDA is still restricted to the *wh*-phrase that has moved through embedded Spec-CP, see (11b) in 3.3.3.

(21) MI'GMAQ

a. *gej-i'-**g**-**ig** [ta'n wen ges-al-a-j-i **Mali-al aq**
know-AN-**3**-**3PL** [COMP who love-AN-3OBJ/DIR-3-3PL **Mary-OBV COOR**
**Gatlin-al** ]
**Catherine-OBV** ]
intended: I know who loves **Mary and Catherine**.

b. *gej-i'-**g** [ta'n wen-ig **Sa'n** ges-al-a-j-i ]
know-AN-**3** [COMP who-PL **John** love-AN-3OBJ/DIR-3-3PL ]
intended: I know who(pl) **John** loves.

In (21a), the matrix verb indexes the embedded object (*Malial aq Gatlinal*), as shown by the 3rd person plural outer suffix on the matrix verb (*-ig*). This is ungrammatical because the object is not marked with a δ-feature, but the embedded *wh*-subject is, and has been attracted to embedded Spec-CP. The same holds for (21b), as agreement with third person subject is ungrammatical, as there is an embedded *wh*-phrase which is marked with δ and has already moved to embedded Spec-CP. Since Mi'gmaq is a multiple *wh*-movement language, if either the embedded object in (21a) or embedded subject in (21b) had a δ-feature, we would expect that they would also be attracted to embedded Spec-CP. The fact that they are not, supports that LDA-targets in Restricted-LDA languages are not obligatorily marked with δ-features, like they are in Free-LDA languages.

This makes an additional prediction for Free-LDA languages. If there are multiple δ-marked DPs in embedded interrogatives and the embedded $C^0$ multiply attracts, then we should expect that both are attracted to embedded Spec-CP and either can be an LDA target. This is supported by the Kitigan Zibi data in (22).[16]

[16]Specifically, it is possible that both embedded arguments are attracted to Spec-CP which means that both are accessible to the matrix verb. Alternately, it is possible that LDA is only possible with the highest specifier and the *wh*-phrase is in a higher specifier in (22a) and a lower specifier in (22b). Thanks to Norvin Richards and Alan Bale for raising this point.

(22) KITIGAN ZIBI ALGONQUIN (Hamilton & Fry, to appear)

a. ni-giken-**im**-**aa** [**awinin** menowen-aa-waa-gin ]
1-know-**AN**-**dir** [**who** *wh*.like-DIR-3PL-3 ]
'I know **who** they like.'

b. ni-giken-**im**-**aa**-**g** [awinin menowen-aa-waa-gin ]
1-know-**AN**-**dir**-**3PL** [who *wh*.like-DIR-3PL-3 ]
'I know who **they** like.'

In both forms in (22), the *wh*-phrase (*awinin* 'who') moves to embedded Spec-CP for a *wh*-phrase interpretation (Kitigan Zibi is an obligatory *wh*-movement language). This makes the *wh*-phrase a possible LDA target in both (22a) and (22b). In (22a), it is the LDA target, as the matrix verb shows third person object agreement (with the direct affix indexing both the first person subject and third person object). However, movement of the *wh*-phrase to the left-edge of the embedded clause does not preclude the other DP from also being attracted to embedded Spec-CP and acting as an LDA target. In (22b), the matrix verb displays the animate verb final, the direct theme sign, and the 3rd person plural suffix (*-g*), which shows that the embedded 3rd person plural subject DP is the LDA target. This means that it must also have a δ-feature and is attracted to embedded Spec-CP as well, in order to be a potential local goal for LDA. This supports the hypothesis that LDA in Free-LDA languages is driven by δ-features on embedded $C^0$ and LDA targets.

In sum, I have argued that LDA in embedded declaratives in Free-LDA languages and in embedded interrogatives both involve a δ-feature on $C^0$. This δ-probe attracts only δ-marked DPs, which are either *wh*-phrases or discourse prominent DPs, i.e. topic or focus. This contrasts with LDA in embedded declaratives in Restricted-LDA languages, which does not involve δ-marking, but is structural, in that the closest ϕ-bearing DP is attracted to embedded Spec-CP.

LDA can thus be seen as a diagnostic for the relative structural position of embedded DPs in Restricted-LDA languages. In Subject-LDA languages, since LDA is limited to subjects, they must always be structurally higher than objects in both the direct and inverse. However, since LDA is limited to subjects in all forms except the inverse in Split-LDA, these Split-LDA languages must have a special property that allows the object to be structurally higher than the subject in the

inverse. In the next section, I propose that contrast between Subject- and Split-LDA patterns in the inverse involves the absence or presence of inverse movement.

Before moving to the next section, I address the lack of a discourse motivation in LDA in Mi'gmaq.

### 4.4.4 Restricted-LDA and discourse status

There is a transparent link in Free-LDA languages between the discourse status of a DP and its ability to be an LDA target. This is because these DPs are base-generated with a δ-feature, which is what makes them potential LDA targets. LDA targets in Passamaquoddy (Bruening, 2001, 2009) and Innu-aimûn (Branigan & MacKenzie, 2002) have been argued to be topics, while such targets in Blackfoot (Bliss, 2009) have been argued to be focus, and all LDA languages appear to have *wh*-phrases as LDA targets. However, it is unclear if LDA targets in Restricted-LDA have a similar consistent discourse status in embedded declaratives (since it is clear in embedded interrogatives that LDA is limited to *wh*-phrases).

Interestingly, LDA targets in Mi'gmaq may be topical, but need not. LDA verbs fall into at least two classes, "know-type" verbs and "want-type" verbs. LDA targets in know-type verbs cannot be universal quantifiers (e.g. (23a) with *mowen* 'no one', and (23b) with *te's* 'every') and although they can be indefinite (e.g. *natuen* 'someone' in (23c)) they can only have a specific interpretation. Thus, LDA targets in know-type verbs appear to have a requirement for referentiality, which is one diagnostic for a topic (see discussion in Polinsky & Potsdam 2001).

(23) KNOW-TYPE VERBS

a. *gej-i'-**g** [**mo-wen** ges-al-a-t-l Sa'n-al ]
know-**AN-3** [**NEG-one** love-AN-3obj-3-OBV John-OBV ]
intended: 'I know that **no one** loves John'

b. *gej-**i'-g** [**te's e'pites** ges-al-a-t-l Sa'n-al ]
know-AN-3 [**every woman** love-AN-3obj-3-OBV John-OBV ]
intended: 'I know that **every woman** loves John'

c. gej-i'-g [**nat-uen** ges-al-a-t-l Sa'n-al ]
know-AN-3 [**some-one** love-AN-3obj-3-OBV John-OBV ]
'I know that **someone (specific)** loves John'

However, want-type verbs do not have the same requirement: universal quantifiers can be LDA targets, as in (24a) and (24b), and the indefinite has a non-specific interpretation as in (24c).

(24) WANT-TYPE VERBS

a. pew-**al**-**g** [**mo**-**wen** 'gs-al-a-pn-n Sa'n-al ]
want-**AN**-**3** [**NEG**-**one** love.IRR-AN-3obj-3-OBV John-OBV ]
'I want **no one** to love John'

b. pew-**al**-**g** [**te's** **e'pites** 'gs-al-a-pn-n Sa'n-al ]
want-AN-3 [**every woman** love.IRR-AN-3obj-3-OBV John-OBV ]
'I want **every woman** to love John'

c. pew-**al**-g [**nat-uen** 'gs-al-a-pn-n Sa'n-al ]
want-AN-3 [**some-one** love.IRR-AN-3obj-3-OBV John-OBV ]
'I want **someone** (anyone) to love John'

As opposed to the discourse status of a DP enabling it to be an LDA target, as in Free-LDA, it is possible in Restricted-LDA languages that discourse status is gained as a result of being an LDA target. Thus, discourse status could result from the LDA enabling predicate, which allows for this variation between know-type and want-type verbs. Another possibility is that know-type and want-type verbs are different constructions which look identical on the surface. I ultimately leave investigation of the differences between these types of LDA verbs for future research.

## 4.5 Inverse system variation

### 4.5.1 Inverse movement

Across Algonquian languages there have been different accounts for the inverse systems discussed in chapter 1.2.3 above: some involve syntactic movement (Bruening, 2001, 2009), while others are purely morphological (Ritter & Rosen, 2005; Lochbihler, 2012). I propose that there is not one right answer, but rather, both of these options are possible. Following Hamilton & Fry (to appear), I propose that LDA can be used as a diagnostic in Restricted-LDA languages. The results converge with claims about the inverse system of particular languages and existing evidence about quantifier scope.

Recall that within Restricted-LDA languages, LDA is uniformly limited to subjects, except in the Split-LDA forms with inverse embedded verbs. This is shown in Table 4.9 (highlighted in grey).

Table 4.9: SUMMARY: RESTRICTED-LDA PATTERNS IN EMBEDDED DECLARATIVES

| **LDA patterns** | | **Direct** | | **Inverse** | |
|---|---|---|---|---|---|
| | | **Emb. subject** | **Emb. object** | **Emb. subject** | **Emb. object** |
| **Restricted** | **Subject** | ✔ | ✖ | ✔ | ✖ |
| | **Split** | ✔ | ✖ | ✖ | ✔ |

Since LDA in Restricted-LDA languages involves a ϕ-probe on $C^0$ which attracts the structurally highest argument, I propose that LDA can be seen as a diagnostic for the relative structural height of embedded DPs. Specifically, I propose that in Subject-LDA languages the inverse is purely morphological (does not involve syntactic movement), while in Split-LDA languages, syntactic movement is involved.[17]

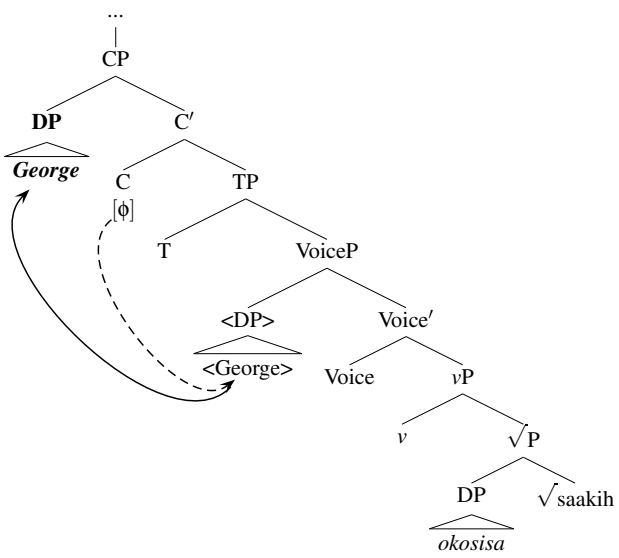
Assuming a Configurational Account, subjects are always structurally higher than objects in both the direct and inverse in Subject-LDA languages. This is why only the subject is attracted to embedded Spec-CP by the ϕ-probe on embedded $C^0$. This means that the inverse system in these languages does not involve syntactic movement, and inverse forms are identical to the representation of the direct forms in (18), and shown again below in (25).

[17]Given that LDA in Free-LDA languages is δ-driven (or A'-movement) of whichever DP is marked with a δ-feature, it sheds very little light on the syntax of embedded clauses, such as the properties of the inverse system.

(25) RESTRICTED-LDA, PLAINS CREE (SUBJECT-LDA) (Dahlstrom, 1991)

a. ni-kiskeey-**im**-**aa**-w [**George** ee-saakih-aa-t o-kosis-a ]
1-know-**AN**-**DIR**-DFLT [**George** CONJ-love.AN-DIR-3 3.POSS-son-OBV ]
'I know that **George** loves his sons.'

b.



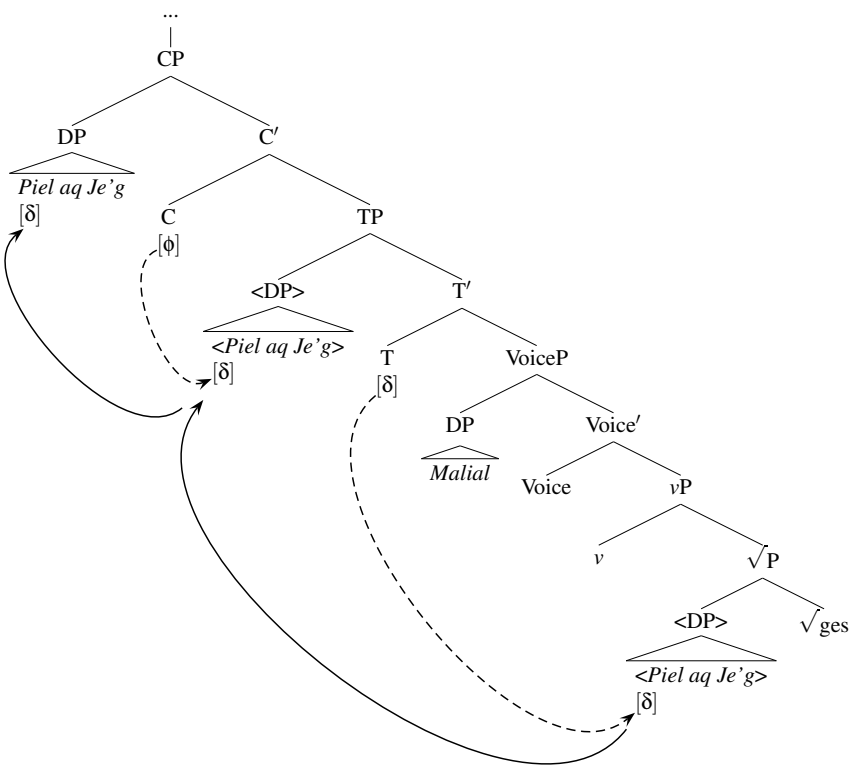

The direct forms in Split-LDA languages are identical to the representation in (18), since the subject is always structurally higher than the object. However in inverse forms, Split-LDA languages are unique in that only the object can be a target for LDA. The proposal is that Split-LDA languages have inverse movement of the proximate object over the obviative subject. Such inverse movement has been previously proposed for Passamaquoddy (Bruening, 2001, 2009). Inverse movement places the proximate object in a derived position which is structurally higher than the obviative subject. This is important, since $C^0$ has a (simple) ϕ-probe, as in the direct, which will attract the structurally highest argument: the proximate object in its derived position. This accounts for why only the proximate object can undergo LDA in the inverse.

I illustrate this for an inverse form in Mi'gmaq, in (26).

(26) SPLIT-LDA, MIGMAQ

a. gej-i'-**g-ig** [**Piel aq Je'g** ges-al-gwi'-tit-l Mali-al ]
know-AN-**3-3PL** [**Peter COOR Jack** love-AN-INV-3PL-OBV Mary-OBV ]
'I know that **Peter and Jack** are loved by Mary.'

b.




The proximate embedded object (*Piel aq Je'g*) is merged in Spec-$\sqrt{}$P and the obviative embedded subject (*Malial*) is merged higher in Spec-VoiceP. Following Bruening (2001, 2009), inverse movement of the obviative object occurs to Spec-TP. I adopt Bruening's account and leave the exact mechanism as a topic of future research.[18] When the ϕ-feature on $C^0$ probes, it will AGREE and raise the object DP *Piel aq Je'g* from its derived position to embedded Spec-CP, since it is the structurally closest DP after inverse movement. This places the embedded object DP in a local enough relation for it to be visible to the probes on matrix Voice$^0$ and $v^0$.

The summary of my account for the three patterns of LDA in Algonquian languages is shown

[18]Bruening (2001, 2009) characterizes this as A-movement of the obviative object over the proximate subject. This can be formalized as being triggered by a ϕ-probe on $T^0$ which is relativized for proximate, under the assumption that proximate is a ϕ-feature. If we assume that proximate is a δ-feature, roughly equivalent to a topic, then we could formalize this as δ, or (A'), movement. Following Miyagawa (2010), some kinds of δ-movement can be A-movement, such as some instances of scrambling in Japanese. I leave an investigation of the location, trigger, and nature of inverse movement for further research. The exact account is not crucial for my account, as long as the object appears in a derived position over the subject in order to feed the ϕ-probe on $C^0$.

in Table 4.10.

Table 4.10: LDA VARIATION: 2 SOURCES

| $C_{probe}$ | Inverse mov't | LDA pattern |
|---|---|---|
| δ | ✔ | Free-LDA |
| | ✖ | |
| ϕ | ✔ | Split-LDA |
| | ✖ | Subject-LDA |

As noted above in footnote 12, since LDA in Free-LDA languages involves attraction of δ-marked DP, it sheds very little light on the syntax of embedded clauses, such as the properties of the inverse system. In fact, some Free-LDA languages have been argued to have inverse movement, such as Passamaquoddy (Bruening, 2001), while others have been argued to lack it, such as Kitigan Zibi Algonquin (Lochbihler, 2012). LDA does not provide definitive evidence for either, since it is δ-feature marking and not the structural height of arguments that determines the potential targets for LDA in these languages. Thus regardless of the nature of the inverse system, both have the same LDA pattern, as shown in Table 4.10. Supporting evidence for inverse movement from quantifier scope is discussed next, with alternate analyses addressed in the following section.

### 4.5.2 Supporting evidence: Quantifier scope

The distinction between Subject and Split-LDA languages in terms of inverse systems aligns exactly with previous literature, as shown in Table 4.11. Plains Cree (Dahlstrom, 1991), and the Subject-LDA dialect of Ottawa Ojibwe (Rhodes, 1994), and Kitigan Zibi (Lochbihler, 2012) have both been argued to have identical grammatical relations between subjects and objects in the direct and inverse. While the Split-LDA dialect of Ottawa Ojibwe (Rhodes, 1994), and Passamaquoddy (Bruening, 2001, 2009) have all been argued to have a reversal of the subject and object grammatical roles in the inverse.

Table 4.11: VARIATION AND ALGONQUIAN LANGUAGES

| $C_{feature}$ | Inverse mov't | LDA pattern | Sample languages |
|---|---|---|---|
| δ | ✔ | Free-LDA | Passamaquoddy |
| | ✖ | | Kitigan Zibi Algonquin |
| ϕ | ✔ | Split-LDA | Mi'gmaq, Ottawa (dialect 1) |
| | ✖ | Subject-LDA | Plains Cree, Ottawa (dialect 3) |

Bruening (2001, 2009) has presented scope evidence to support the movement of object DPs over subject DPs in the inverse in Passamaquoddy. He showed that in the direct, subjects take rigid scope over objects, while in the inverse the object has a scope bearing position both above and below the subject. This has been the only previously attested instance of this scope evidence.[19] I show that this also holds for Mi'gmaq, which has not been previously investigated.

In order to test scope relations between two scope bearing elements, it is important to employ a form in which there is an existential quantifier in subject position and universal quantifier in object position.[20] I take a bare noun to be an existential, and *te's* to be a universal quantifier. Importantly, *te's* is roughly translated as 'every' and triggers singular agreement on both the noun it modifies and the verb, as in (27).[21]

For the examples in (27), speakers were asked if each form is felicitous in context (i) and (ii). Given these two contexts, the utterances in (27) were presented to speakers and they were asked if the sentences were true in that context.[22]

[19]Lochbihler (2012) specifically shows that Ojibwe has ambiguous scope between subjects and objects in both the direct and inverse using the same quantifier tests as Bruening (2001, 2009). However, there is some question as to whether a true universal quantifier is used in these examples. Further investigation is necessary to support the inventory of quantifiers in Ojibwe.

[20]This is because if the universal quantifier is in the subject position and the existential quantifier in the object position, the inverse scope scenario is entailed by the surface scope scenario, and is not instructive as to the scope relations between the quantifiers (Reinhart, 1976, 1997; Scontras et al., 2014).

[21]Note that in Mi'gmaq, *te's* crucially differs from *ms't* which is roughly translated as 'all' and triggers plural agreement on both the noun it modifies and the verb.

[22]Although the examples in (27) have a different word order, SVO in (27) and OVS in (27), they both are identical in having a proximate-verb-obviative order, which is the most natural for each. This raises the important question about whether the overt word order is the source of the scope judgements, rather than the direct-inverse status. Chapter 5 presents data to show that proximate-obviative status of DPs affects word order. Thus it is difficult to delineate the affect of each on the scope data in (27). This is a topic for future research. I'm grateful to Alan Bale for raising this question.

(27) MI'GMAQ

(i) Context: One boy (e.g. *Sa'n* 'John') loves every single girl in his class.

(ii) Context: There are an equal number of girls and boys in the class. The boys and girls are arranged in pairs and for each pair, the boy likes the girl.

a. lpa'tuj ges-al-a-t-l **te's (i'-nguteji-nnitl) e'pite's-l**
boy love-AN-3OBJ-3-OBV **every (REP-one-OBV) girl-OBV**
'A boy loves every girl'; (i) $\exists > \forall$; (ii) $*\forall > \exists$

b. **te's (i'-nguteji-t) e'pite's** ges-al-t-l lpa'tuj-l
**every (REP-one-3) girl** love-AN-3OBJ-3-OBV boy-OBV
'A boy loves every girl'; 'Every girl is loved by a boy'; (i) $\exists > \forall$; (ii) $\forall > \exists$

For the utterance with the verb in the direct (27), speakers unanimously report that it is only felicitous to use it to describe context (i), or the surface scope, where a single boy loves all the girls in his class. Context (ii), or the inverse scope, is not possible, thus the direct form has rigid surface scope. However, for the utterance with the verb in the inverse (27), speakers unanimously report that it is felicitous to use it to describe both contexts. Thus since both the surface and inverse scope readings are possible, the inverse form has ambiguous scope.

I take the rigid scope in the direct form to indicate that the subject asymmetrically c-commands the object throughout the derivation. Following Bruening (2001, 2009), I take the ambiguous scope in the inverse form as being due to the object having a base-generated position below the subject and a position above the subject that is derived via movement. This provides support for inverse movement in Mi'gmaq and the analysis of LDA developed in this chapter.

Before concluding, I address the status of LDA as a diagnostic for underlying syntactic structure.

## 4.6 Revisiting the configurationality debate

Recall that in Chapter 3 I presented three argument asymmetries in favour of a Configurational account of the syntax of Mi'gmaq. The Split-LDA pattern in Mi'gmaq is another asymmetry as only the structurally highest embedded argument can be the LDA-target: subjects in the direct and objects in the inverse. The $\phi$-probe analysis of embedded $C^0$ assumes an underlying configurational structure, such that the subject asymmetrically c-commands the object. This raises the question if

the Configurational account assumed here is necessary to derive this pattern, or if the PAH or the Hybrid account can also capture this generalization. Neither the PAH nor Hybrid account can derive the embedded declarative LDA pattern given that the relevant DPs are not base generated in A-positions under either account. SInce these DPs are adjuncts, either DP can be structurally higher than the other regardless of overt word order, as shown in the possible representations of (28) in (29).

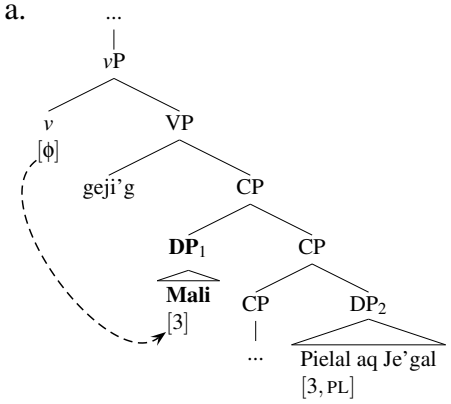
(28) EMBEDDED DECLARATIVE SPLIT-LDA

geji'-**g** [**Mali** ges-al-a-j-i Sa'n-al aq Je'g-al ]
know.TA-**3** [**Mary** love-TA-DIR.3-3-3.PL John-OBV COOR Jack-OBV ]

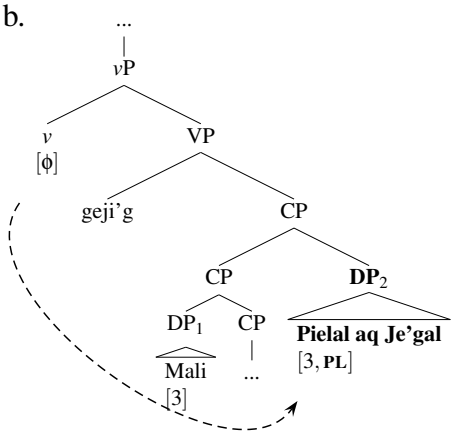
'I know that **Mary** loves John and Jack.'

(29) PAH AND HYBRID ACCOUNT

a.




b.




The direct embedded declarative in (28) could either have the representation in which *Mali* is the structurally highest and thus undergoes LDA, or the one in which *Pielal aq Je'gal* is the structurally highest and is predicted to undergo LDA. Thus both the PAH and Hybrid accounts incorrectly predict that either embedded argument should be able to undergo LDA in Mi'gmaq. Although I only show the Hybrid account in these trees, the PAH would have the same result and only differs in the verbal domain in ways which are trivial to LDA.

A remaining possibility would be to base-generate the argument that undergoes LDA in the left-periphery. This would ensure that the relevant argument is structurally close enough to matrix verb to trigger LDA, and would result in this argument being linearly ordered before all other elements of the embedded clause. However, it would be necessary to stipulate that subjects in the direct and objects in the inverse have a particular discourse role, such as topic. It is unclear if this can be motivated, but we would need strong evidence to support this claim. But even if this is the case, in non-LDA forms, we would then predict strict word orderings in declaratives which would also need to be motivated, but runs counter to the motivation for having DPs as adjuncts to begin with. As such, it is unclear how to limit LDA in embedded declaratives to the pattens described for Mi'gmaq with DPs as adjuncts.[23]

## 4.7 Conclusion

In this chapter, I introduced and presented an analysis of three patterns of LDA across Algonquian languages which shows variation between languages in the feature specification of embedded $C^0$ and the nature of inverse systems. The first kind of LDA involves promotion of an embedded argument based on discourse status. This kind of LDA is present in embedded interrogatives in all Algonquian languages and in the embedded declaratives of Free-LDA languages. The second kind of LDA involves the promotion of an embedded argument based on the relative structural position of DP arguments, with the structurally highest one being attracted . This kind of LDA is present in embedded declaratives in Restricted-LDA languages. Further variation between Restricted-LDA languages was found to hinge on the nature of the inverse system, specifically whether there was inverse movement of the proximate object over the obviative subject, or not.

[23]It is important to note that the Hybrid account can derive the embedded declarative LDA patterns under the account developed here if both DPs are absent. Given that the subject A-position asymmetrically c-commands the object A-position, if there are no intervening DPs with $\phi$-features, then the subject *pro* is the structurally highest argument, thus embedded $C_\phi$ can probe, AGREEs, and raise subject *pro* to embedded Spec-CP. In the inverse, embedded $T_\delta$ can probe, AGREE, and raises the object *pro* to embedded Spec-TP under the assumption that *pro* can bear $\delta$ features. Thus embedded $C_\phi$ can probe, AGREE, and raises the object *pro* since it is the structurally highest element with $\phi$-features after this inverse A-movement. But, if only one DP is overt, than both the PAH and Hybrid account predict that LDA could only occur with this DP, since it would be the closest DP with $\phi$-features accessible for $C_\phi$. However, the data in 5.1 holds regardless of whether DPs are overt or covert.

Given the subject-object asymmetry shown in the LDA pattern in Mi'gmaq, we have another piece of evidence to support the Configurational Account. The conclusion that Mi'gmaq has an underlying Configurational syntactic structure raises questions about the source of the surface appearance of non-configurationality.

There is a growing consensus that discourse factors have an effect on word order variation (Tomlin & Rhodes, 1992; Dahlstrom, 1995, 2003; Junker, 2004; Wolvengrey, 2011; Dahlstrom, 2012). Thus, a promising direction of research is to extend analyses of discourse configurational languages, such as Hungarian (Kiss, 1987) and Japanese (Saito, 1985; Miyagawa, 2010), to Mi'gmaq and see if it is a discourse configurational language. Therefore it is important to study the left-periphery and information structure notions, including focus and topic, in order to uncover specific motivations for word order variation. In Chapter 5, I present experimental research which shows that word order can be manipulated to mark focus in Mi'gmaq. This lends further support to a Configurational Account for Mi'gmaq and the hypothesis that discourse effects surface appearance.

# Chapter 5

# Focus

## 5.1 Introduction

Each of the previous three chapters present evidence for a Configurational Account of the underlying syntactic structure of Mi'gmaq. If this analysis is on the right track then we need to explain the non-configurational surface appearance of Mi'gmaq. Based on the discourse effects in Chapter 4 and the previous Algonquian literature, the most plausible hypothesis is that discourse factors affect the surface characteristics of Mi'gmaq. This chapter presents an experiment which investigates the production of answers to questions with a variety of different focused constituents.[1] The results show that focus has a syntactic reflex, as focus can affect word order and whether non-focused constituents are overt. Focus also has a prosodic reflex, as the closest correlate for focus is maximum intensity. Focused constituents at the left-edge of the clause have a higher maximum intensity than a non-focused constituents. These results support the hypothesis that discourse factors affect word order, which is the source of the disparity between the underlying configurational syntactic structure and non-configurational surface appearance.

In addition, I explore the phrasing of utterances, which typically involves the verb and preceding argument phrased together. Although this phrasing does not interact with focus, it potentially provides interesting implications for the syntactic structure motivated throughout this

[1]This Chapter builds on a collaborative project with Michael Wagner, Janine Metallic, Mary Ann Metallic, Janice Vicaire, and Elise McClay.

thesis.

In this chapter, I begin with relevant background in 5.2 and outline the methodology of the experiment in 5.3. From 5.4 to 5.6, I present and discuss the results of the experiment with respect to word order and prosodic prominence. In 5.7, I present and discuss the results with respect to phrasing and speculate about how this phrasing maps to the syntactic structure. I conclude in 5.8.

## 5.2 Background

There is growing consensus that the left-periphery has a special discourse function in Algonquian languages. There is variation in whether it is assumed that DPs in the left-periphery are external to the clause (e.g. Dahlstrom 1995, Blain 1997, Junker 2003, Wolvengrey 2011) or whether they move to the specifier of a functional projection there (e.g. Bruening 2001, Brittain 2001a, Branigan & MacKenzie 2002, Lochbihler 2012, Denzer-King 2013, Lochbihler & Mathieu to appear). In Chapter 3, I argued that *wh*-phrases in Mi'gmaq are base-generated in A-positions and undergo *wh*-movement to Spec-CP. As an extension, I expect DPs marked with a special discourse function (i.e. topic or focus) to likewise undergo movement to the left-periphery.[2] Since currently there are clearer diagnostics for focus than topics (discussed further below), the experiment in this chapter investigates focus in order to gain insight into discourse effects in general.

Two kinds of focus are looked at that are easily identified: question-focus and corrective-focus. Question focus is the realization of focus on a constituent in an answer that corresponds to a *wh*-phrase in the preceding question. This is easily diagnosed by presenting speakers with a *wh*-question and investigating the answer. Corrective focus is the placement of focus on a constituent that corrects (from the perspective of the speaker) a constituent in a previous utterance. This is also easily diagnosed by presenting speakers with an utterance that includes a constituent that is clearly incorrect and investigating the response given.

Although focus marking varies across languages, the most common patterns involve word order and/or prosody. In a language with rigid word order, such as English, prosody convey focus. On

[2]Although it is a possible that some topics are base-generated at the left-periphery (Aissen, 1992), I assume that focus involves movement parallel to *wh*-movement.

the other hand, in a language with free word order, such as Hungarian (Kiss, 1987; Szendrői, 2003; Féry, 2013), the focused constituent is placed into a more prominent position. It is also possible that word order and prosody interact, movement of a focused constituent places it in a position more prominently marked prosodically (Zubizarreta, 1998; Féry, 2013). Since Mi'gmaq has *wh*-movement to the left-periphery (as shown in Chapter 3) the expectation is that this might also be the location where focused elements will be moved.

There has been no previous investigation of the prosody of Mi'gmaq and very little on sentential prosody in Algonquian languages. As such, it is unclear what to expect in terms of prosodic marking of focus, if it is even marked. While this investigation is preliminary, it also represents a step towards understanding the prosodic marking of focus in an Algonquian language.

In the next section, I outline the methodology of the experiment.

## 5.3 Methodology

A production experiment was designed to investigate whether focus has a syntactic reflex in Mi'gmaq, thus implicating discourse factors as having an affect on the surface constituency. The experiment was also designed to investigate whether focus has an acoustic correlate.

### 5.3.1 Design

A planned production experiment was run at the Listuguj Education Directorate in Listuguj, Quebec. It was modelled after an experiment run in Calhoun (2013) which was designed specifically for Samoan (Polynesian; Austronesian). The experimental design was changed minimally in order to facilitate direct comparison with Samoan as well as English and French, which were both run separately in the Prosody Lab at McGill University.

This experiment is designed to identify two different kinds of focus: (a) question-focus, which places focus on constituent in an answer that corresponds to the *wh*-phrase in the preceding question, and (b) corrective-focus, which places focus on a constituent that corrects a constituent in a previous utterance. The placement of focus was varied on the subject and object. As a baseline

for comparison, broad focus, in which focus is placed on the entire answer to a question, was also included. A summary of the conditions is shown in (1).

(1) CONDITIONS

a. Broad focus
b. Subject focus
   (i) Subject Question-focus
   (ii) Subject Corrective-focus
c. Object focus
   (i) Object Question-focus
   (ii) Object Corrective-focus

This experiment has 20 items, in which the animacy of the object and transitivity of the verb is varied, as shown in (2). All subjects are animate, while objects varied between being animate in 6 of the items, or inanimate in the remaining 14 items.[3] The stimuli included TA verbs, in which the object is animate, and TI verbs, in which the object is inanimate. TA verbs were all in the direct, and had third person proximate subjects and third person obviative objects. The experiment also involved AI+O verbs, as introduced in 1.2.1, which are intransitive verbs with an unindexed object. In order to maintain comparability with Samoan, English, and French, the same experimental materials were used, which made it impossible to balance items for the animacy of objects and transitivity of the verbs.[4]

Table 5.1: OBJECT ANIMACY BY ITEM

| object animacy | verb type | n | list |
|---|---|---|---|
| inanimate | VTI | 14 | bed, bicycle, books(x2), bread, cake(x2), car, chair, cheese, fire, flower, jam, spade |
| animate | VTA | 4 | ball, dog, girl, shirt |
| | VAI+O | 2 | ball, milk |

[3]More specifically, all subjects and 2 objects are real-world animate, i.e. dog, and girl, while the remaining animate objects were grammatically animate, i.e. ball, milk, and shirt. Although animacy was not found to have a significant effect on the data in this experiment, in future experiments balancing real-world and grammatically animate objects would be ideal as this could potentially affect surface word order.

[4]This chapter reports on the Mi'gmaq results alone. A comparison of Samoan, Mi'gmaq, French and other languages is an ongoing project and beyond the scope of this dissertation.

Participants were presented with a picture depicting an event, such as in Figure 1. When participants were ready, they pressed a button to hear a question and were prompted to answer based on the information in the picture, and in a natural, appropriate, and complete utterance. Questions were presented in Mi'gmaq to prompt participants to answer with a particular focus. The set of condition-specific questions with the relevant focused constituents in bold is shown in (2), and corresponds to the picture in Figure 1. Note that three of the questions have SVO word order (Subject Question-focus, Subject Corrective-focus, and Object Corrective focus), one has OVS (Object Question-focus), and the other only a verb (Broad focus). These were determined to be the most natural word orders by collaborators who are first language speakers of Mi'gmaq.

Figure 5.1: Sample picture (Calhoun, 2013)

(2) SAMPLE ITEM: QUESTIONS BY CONDITION

a. BROAD FOCUS (V)

**Taliaq-ass** sepei?
**happen.II-PST.IK** this.morning
'What happened this morning?'

b. SUBJECT QUESTION-FOCUS (SVO)

**Wen** gis-oqs'-g-'s gegs sepei?
**who** already-bake.DFLT-3-PST.IK cake this.morning

'**Who** baked the cake this morning?'

c. OBJECT QUESTION-FOCUS (OVS)

**Goqwei** gis-oqs'-g-'s gisigui'sgw sepei?
**what** already-bake.DFLT-3-PST.IK old.woman this.morning

'**What** did the grandmother bake this morning?'

d. SUBJECT CORRECTIVE-FOCUS (SVO)

**'Lpa'tuj** gis-oqs'-g-'s gegs sepei?
**boy** already-bake.DFLT-3-PST.IK cake this.morning

'Did **the boy** bake the cake this morning?'

e. OBJECT CORRECTIVE-FOCUS (SVO)

Gisigui'sgw gis-oqs'-g-'s **petaqan** sepei?
old.woman already-bake.DFLT-3-PST.IK **pie** this.morning

'Did the grandmother bake **a pie** this morning?'

This experiment did not include fillers and was run so that all participants saw all tokens. Tokens were presented in a pseudo-random order such that no condition was ever repeated more than once. The item order was controlled as follows: the total number of trials was organized into 5 latin-square playlists which included exactly one trial from each item, and an equal number of trials from each condition. These five blocks of trials where ordered relative to each other randomly. Within each block, the order was completely random. This randomization has the consequence that we can analyze our experiment as a latin-square design if we analyze only the first fifth of the trials.

Participants completed a training session immediately prior to the experiment in order to familiarize themselves with the experimental materials and task. Given that there is not a standard orthography and there are varying levels of literacy in the community, the entire experiment and instructions were recorded and presented aurally in Mi'gmaq.

The experiment was run in a spare classroom in the Listuguj Education Directorate on a 15" Macbook Pro with a Logitech H390 USB headset. The training session was presented using Microsoft Power Point 2011. The experiment was presented with MatLab (Mathworks, R2010b) and Psychtoolbox extensions (Brainard, 1997; Pelli, 1997). Sound files were annotated and

truncated using Praat (Boersma & Weenink, 2014). Sound files were aligned with transcripts using the ProsodyLab aligner (Gorman, et. al, 2011). Data was extracted using Praat and analyzed using R (Urbanek, et. al., 2013).

The experiment was run with 15 fluent speakers of the Listuguj-dialect of Mi'gmaq, all over 50 years of age. All speakers self-identified as first language Mi'gmaq speakers and second language English speakers, with many also having rudimentary knowledge of French. 4 speakers were excluded for not adequately following experimental instructions, leaving 11 (7 women and 4 men) for data analysis. Of the 1100 potential remaining tokens, 109 were excluded because the recording did not work, or included errors or major disfluencies. This left 991 tokens for data analysis.

In the next section, I present the word order results. This is followed by the presentation of prosodic prominence results in 5.5. In 5.6 I discuss both with respect to the overall focus marking strategies in Mi'gmaq. In 5.7, I present phrasing results and discuss this in relation to the syntactic analysis of Mi'gmaq developed in this thesis. I conclude in 5.8.

## 5.4 Word order results

These results show that SVO is the predominant word used in each condition. There is an interaction between word order and focus, such that: (a) SVO word order is used more in both Subject focus conditions than in the Broad focus condition, and (b) SVO word order is used less in the Object Question-focus condition than in the Broad focus condition. In addition, deletion of non-focused constituents was much more common in all conditions, except for the Broad focus condition. Finally, there was an effect of animacy on word order in the Object Question-focus condition, such that animate objects (which are all obviative) are less likely to occur in OVS word order than inanimate objects (which are not relevant for the proximate-obviative distinction in Mi'gmaq).

A full breakdown of the word order choices is shown in Figure 5.2. This includes full utterances (in the first six rows), utterances that include a dropped argument (in the next four rows), and fragment answers with only the focused constituent (in the last two rows).

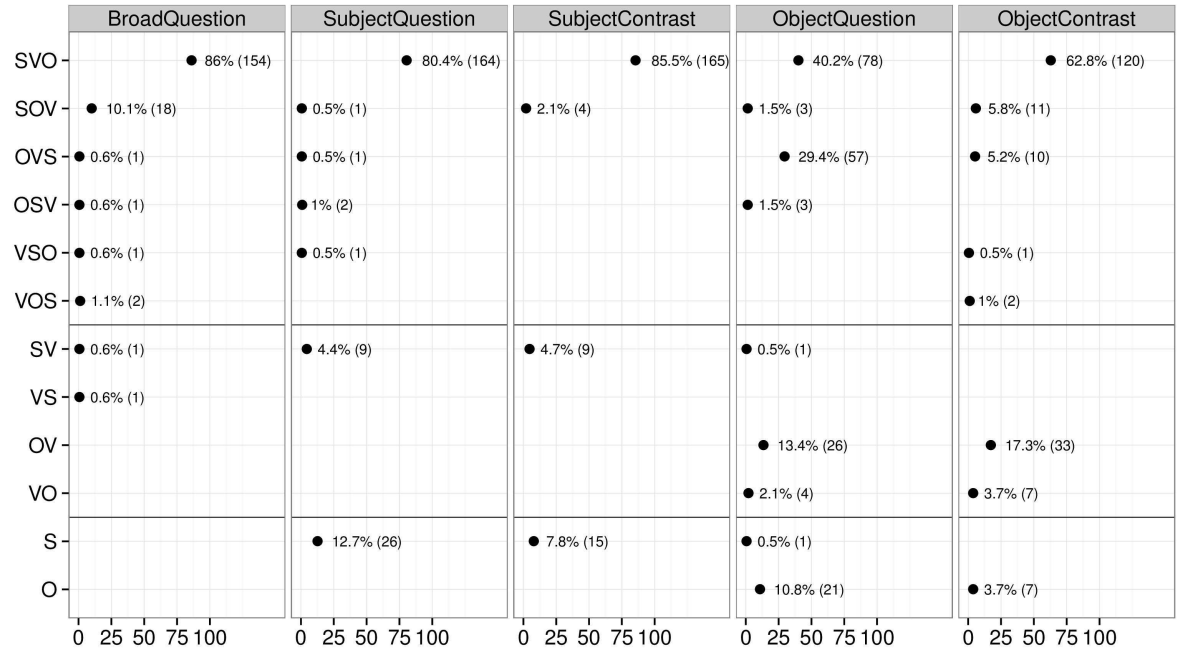



Figure 5.2: Frequency of word order by condition

Note that although some word orders are extremely rare (i.e. OSV, VSO and VOS), all are attested. Also note that participants were instructed to answer in full sentences in order to aid in understanding word order choices and prosodic phrasing. This explicit instruction is necessary as it is common for Mi'gmaq speakers to drop one or both arguments in conversation. However, the fact that dropped arguments and fragment answers were still relatively common despite these instructions suggests that both are employed more frequently in discourse than in the experimental results.

The Broad focus condition (answers to the question 'What happened?') is the baseline as the entire response is in focus. Word order results appear in the first column in Figure 1. SVO word order was predominantly used (86% of the responses), with SOV as the only other common alternative (10% of the responses). Note that dropped arguments were extremely rare and fragment answers were not attested in this condition. This provides initial support regarding the effectiveness of the experimental stimuli, since we do not expect constituents that have not been previously mentioned in the question to be omitted in the response.

There are two Subject focus conditions: Subject question-focus (answers questions such as '*Who* baked the cake this morning?') with word order results in the second column of Figure 1, and Subject Corrective-focus (answers questions such as 'Did *the boy* bake the cake this morning?') with word order results in the third column of Figure 1. Word order results for both Subject focus conditions are similar, which suggests that question and corrective focus are marked the same with respect to word order.

The main generalization across all Subject focus conditions is that the focused subject was utterance initial (excluding the negative particle *moqwa* in Subject Corrective-focus). In full utterances, SVO word order was almost exclusively used, as there was no other noteworthy word order alternative. The next most common answer was a fragment answer which only included the focused subject, although this was more common in Subject Question-focus (12.7%) condition than in the Subject Contrastive-focus (7.8%) condition. It was also common to drop the object, which is previously mentioned in the question.[5] But if the object was dropped, only SV word order is attested.

There are two Object focus conditions: Object question-focus (answers questions such as '*What* did the grandmother bake this morning?') with word order results in the fourth column of Figure 1, and Object Corrective-focus (answers questions such as 'Did the grandmother bake *a pie* this morning?') with word order results in the fifth and final column of Figure 1. Object focus conditions patterned similarly, except word order in full utterances. In full utterances, Object Question-focus patterned different from all other conditions, and Object Corrective-focus patterned with Broad focus.

The main generalization across all Object focus conditions is that there is a stronger preference for the focused object to be utterance initial than in other conditions, although SVO word order was still the most frequent choice in full utterances. SVO word order was still the most frequent choice in Object Question-focus (40.2%), but it was used the least frequently in this than any other condition. This was due to the frequent use of OVS (29.4%) which is the most frequent non-SVO word order used in any condition. Subject drop was common (13.4%) and predominantly resulted

[5]Although this word order strategy is not possible in a language such as English, it is similar to pronominalization of the object with respect to focus.

in OV when done. Fragment answers with only the focused object were also common (10.8%).

Object Corrective-focus also showed less SVO word order (62.8%) than Broad focus or Subject focus conditions, but more than Object Question-focus. SOV and OVS were the next most frequent word orders in full utterances (5.8% and 5.2%), but were much less common than SVO, and OVS was employed far less than in Object Question-focus. Similarly to Object Question-focus, in the Object Corrective-focus condition, subject drop was common (17.3%), with OV order being the predominant choice. While fragment answers with only the focused object were somewhat frequent (3.7%), it was much less common than in Object Question-focus.

The difference between Object focus and other conditions, as well as between Object focus conditions is supported by the results of a logistic regression model fit with word order (OVS vs. other) as the predictor and condition as the fixed variable. Using this model, Object focus significantly differs from Broad focus and Subj focus conditions ($z=-5.870$, $p<0.001$ for both Subject Question-focus and Subject Contrastive-focus). In addition, Object Question-focus significantly differs from Object Corrective-focus ($z=-6.091$, $p<0.001$) with respect to word order choice.

The unique patterning of the Object Question-focus condition warrants closer examination. It is a possibility is that the form of the question caused more instances of OVS than other conditions (questions were presented in OVS word order due to wh-movement). However, we also want to identify if there are any other factors involved in the word order distribution between SVO and OVS. The generalization within the Object Question-focus condition is that the animacy of the object affects word order in full utterances.

Recall that there is variation in the stimuli based on the transitivity of the verb and animacy of the object. There were 14 items with TI verbs (transitive verbs with animate objects), 4 with TA verbs (transitive verbs with animate objects) and 2 AI+O verbs (intransitive verbs with an additional object, both of which are animate in the stimuli). Figure 5.3 shows the breakdown of word order by the type of verb.

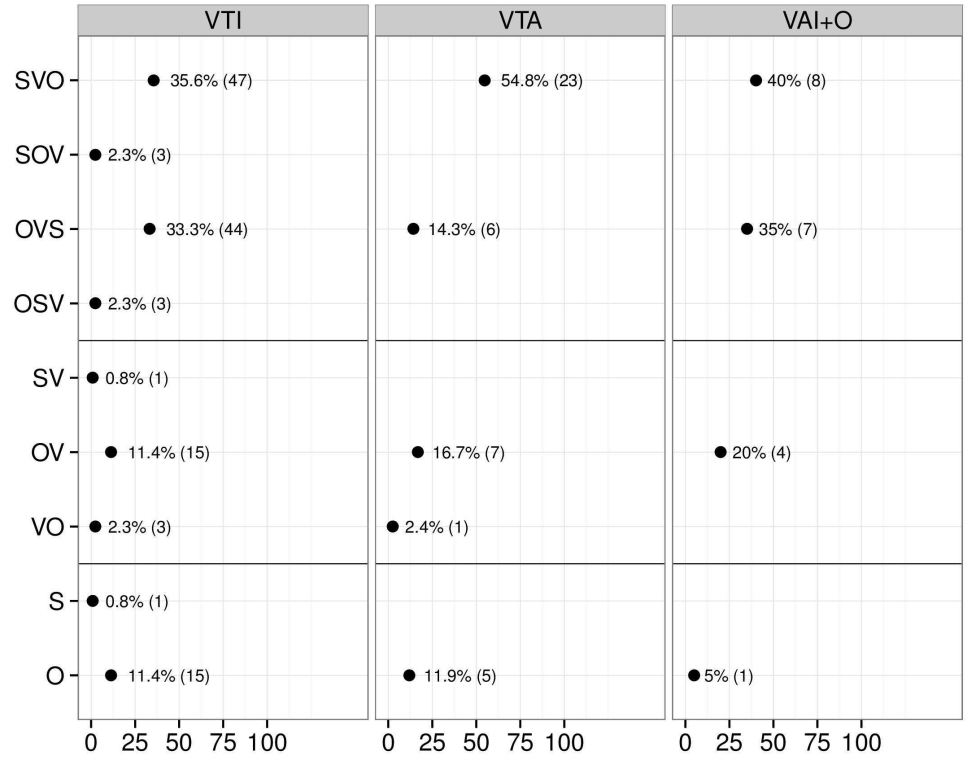



Figure 5.3: Frequency of word order by verb type in the Object Question-focus condition

In full utterances, TI and AI+O were similar in having a near equal distribution between SVO and OVS word order (TI: 35.6% vs. 33.3%; AI+O: 40 vs. 35%). However, this is significantly different from TAs, since SVO forms were much more common than OVS word order (54.8% vs. 14.3%). In other utterances, all commonly had instances of dropped objects with resulting OV word order (TI: 11.4%; AI+O: 20%; TA: 16.7%), as well as fragment answers with only the focused object (TI:11.4%; AI+O: 5%; 11.9%).

The source of the difference between TA and the other verbs is likely due to obviation. There is no obviation involved in TI verbs, since obviation is only required when there are two third person animate arguments. AI+O forms all include an animate proximate subject and an animate obviative object, but the verb is not marked for obviation. The fact that SVO word order is strongly preferred even when the object is in focus in TA forms suggests that there is a preference for ordering proximate DPs before obviative DPs.

However, while this preference accounts for some of the SVO bias in the Object Question-focus condition, it is still an open question why SVO is very common in TI forms. One possibility is that there is also a preference to order animate DPs before inanimate DPs. But it is hard to factor out the affect of grammatical role, since in TI forms the animate DP is always the subject and there are clear subject-object asymmetries in Mi'gmaq (as outlined in Chapters 3 and 4).

Another question regards the patterning of AI+O with TI forms. One possibility is that this is an artifact of having so few AI+O forms (2 items) in the stimuli. More extensive testing would be needed to see if this result is robust. However, if this is a reliable result, then it suggests that even if both are animate, there is a difference between secondary objects (i.e. the object in AI+O forms) and primary objects (e.g. the object in TA forms).

In sum, focus has a significant effect on word order. Word order is chosen in Subject focus conditions such that the focused subject almost always appears utterance initial. There is a similar tendency in Object focus conditions with respect to the focused object, but this is mediated by a tendency to chose SVO word order in full utterances. Focus also influenced the deletion of non-focused constituents and use of fragment answers, which were frequent in all conditions except Broad focus. Additionally, the proximate-obviative status of objects affected their relative ordering in full utterances, as shown in the Object Question-focus condition.

## 5.5 Prosodic prominence

Results related to prosodic prominence show that the closest acoustic correlate for focus is intensity. The intensity of focused subjects significantly differs from non-focused subjects. The difference in the relative intensity of the subject and object is significantly higher when the subject is focused, than when it is not. This is shown to be a property of focus and not word order. Within the Object Question-focus condition, the maximum intensity of the focused object in OVS word order differs from the non-focused subject in SVO word order. Thus, focused objects in OVS word order are shown to pattern more closely with focused subjects in SVO word order, while non-focused subjects in SVO word order were shown to pattern with neither.

Since SVO word order was the most common word order used in each condition, we can compare SVO across conditions to see if there is an interaction between focus and prosodic prominence. A variety of acoustic measures were tested, but the only relevant correlate was maximum intensity (measured in decibels). A comparison of the maximum intensity of each constituent by condition is shown in Figure 5.4.

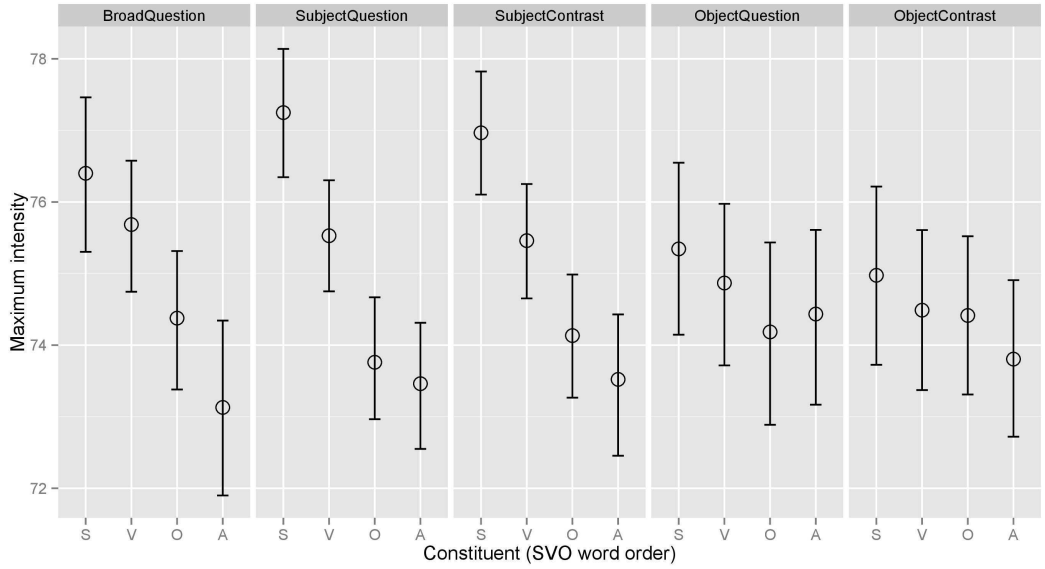



Figure 5.4: Maximum intensity per constituent in SVO word order by condition; S = subject, V = verb, O = object, A = adjunct

This data can be boiled down into two results: one regarding the maximum intensity of the subject and another regarding the scaling of maximum intensity across constituents in an utterance. First, the maximum intensity of focused subjects (i.e. in Broad focus and Subject focus conditions) is significantly higher than non-focused subjects (i.e. in Object focus conditions). This result is isolated and shown in Figure 5.5. Subject focus and Object focus conditions are collapsed together.

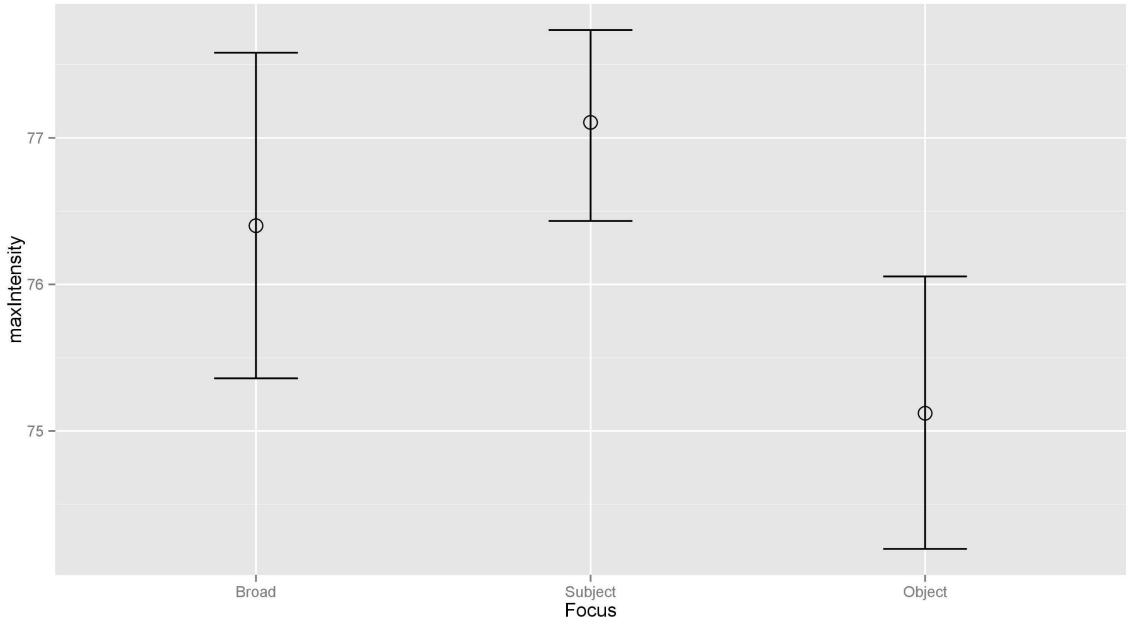



Figure 5.5: Maximum intensity of the subject by focused constituent in answers using SVO word order

As shown in figure 5.5, the maximum intensity of the subject differs significantly between Subject focus and Object focus conditions, but neither significantly differs from the Broad focus condition.

Second, the maximum intensity is scaled in such a manner that it: (a) decreases in a stepwise fashion on each consecutive constituent when the subject is in focus (i.e. in Broad focus and Subject focus conditions), and (b) is relatively flat when the subject is not in focus (i.e. in Object focus conditions). This is represented in Figure 5.6., which compares conditions with respect to the intensity difference between the subject and object (which is the maximum intensity of the subject minus the maximum intensity of the object). A positive difference shows that the subject has a higher maximum intensity than the object, and a negative difference shows that the subject has a lower maximum intensity than the object.

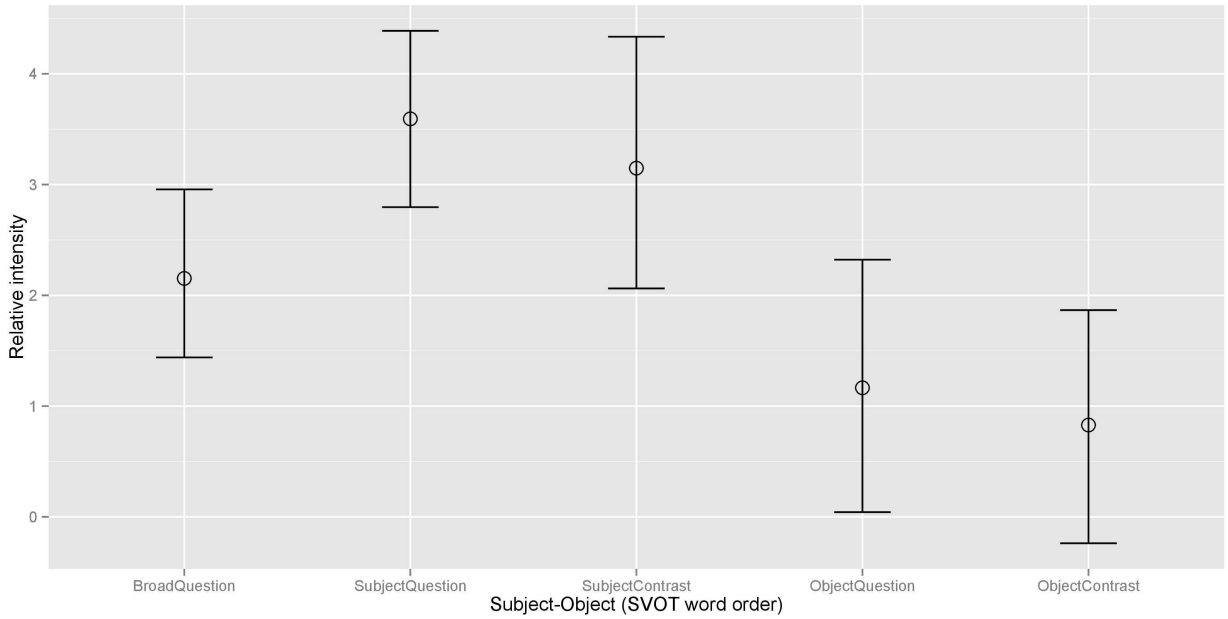



Figure 5.6: Relative maximum intensity of the subject vs. the object

As shown in figure 5.6, there is a larger (positive) difference in relative intensity when the subject is in focus (i.e. in Broad focus and Subject focus) and a smaller difference when it is not in focus (i.e. in Object focus). The results of a logistic regression mixed model fit with relative intensity as the predictor and condition as the fixed variable shows that Subject focus significantly differs from Broad focus (Subject Question-focus: t=3.24; Subject Contrqative-focus: t=2.048), but Object focus does not differ from Broad focus (Object Question-focus: t=-1.363; Object Contrastive-focus: t=-1.019). Given that the Subject focus and Object focus effects go in the opposite direction, it is clear that Subject focus also significantly differs from Object focus as well.

The prosodic prominence results thus far, raise the question of whether what is relevant for these maximum intensity results is SVO word order itself, or if it is a more general property of focused constituents that are utterance initial. The generalization from the Object Question-focus condition is that increased maximum intensity occurs on all utterance-initial focused constituents.

Within the Object Question-focus condition, there are two common word orders: SVO and OVS. Regardless of the word order, the object is in focus. Thus by comparing the maximum

intensity of constituents in these word orders, we can see if the interaction of focus and intensity also holds for non-SVO word orders. Figure 5.7 shows a comparison of the maximum intensity of each constituent in OVS word order in the Object Question-focus condition with SVO word order in the Subject Question-focus condition and Object Question-focus condition.

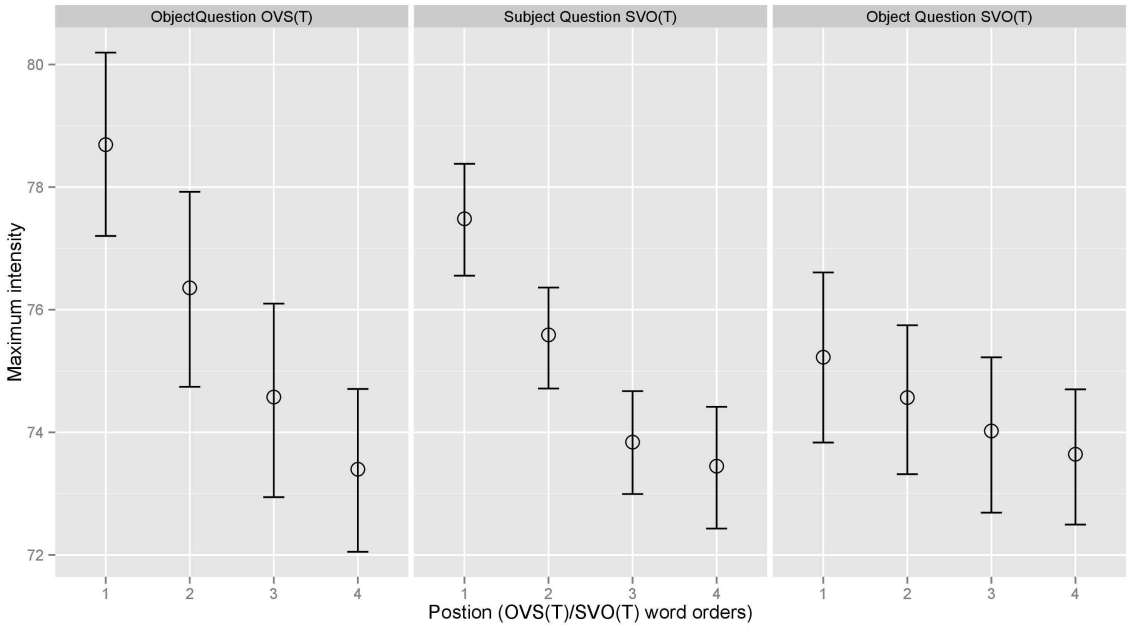



Figure 5.7: Maximum intensity by constituent; OVS order in Object Question-focus condition (left column), SVO order in Subject Question-focus condition (middle column), and SVO order in Object Question-focus condition (right column); numbers represent linear order of constituents

As shown in figure 5.7, OVS order in the Object Question-focus condition is much more similar to SVO order in the Subject Question-focus condition than SVO order in the Object Question-focus condition. This similarity holds for both the maximum intensity of the utterance initial constituent and the scaling of maximum intensity across the utterance.

First, we can see that the maximum intensity of the focused object in OVS word order in the Object Question-focus condition (in the first column) does not significantly differ from the maximum intensity of the focused subject in SVO word order in the Subject Question-focus condition (in the second column). Both of these significantly differ from the maximum intensity of the non-focuses subject in SVO word order in the Object Question-focus condition (in the third

column). This result is isolated and shown separately in Figure 5.8.

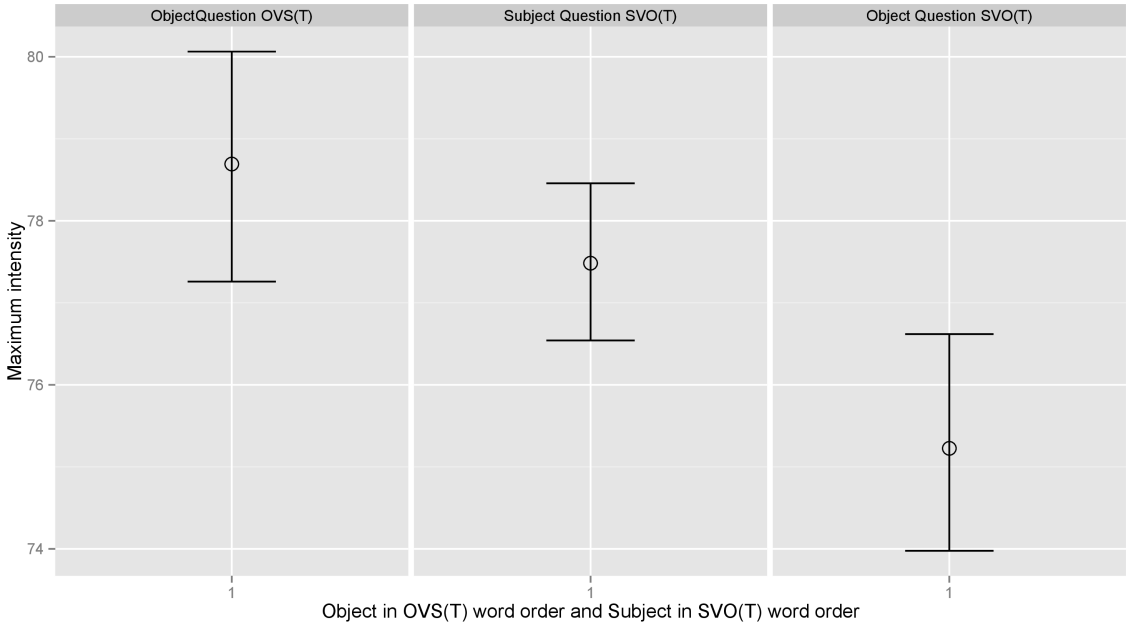



Figure 5.8: Maximum intensity of the focused object in OVS order in Object Question-focus condition (left column), focused subject in SVO order in the Subject Question-focus condition (middle column), and non-focused subject in SVO order in the Object Question-focus condition (right column).

Second, the scaling of maximum intensity is similar between OVS word order in the Object Question-focus condition and SVO in the Subject Question-focus condition. Neither is similar to the flatter scaling found in SVO word order in the Object Question-focus condition. This result is isolated and shown in 5.9 using the relative intensity metric.

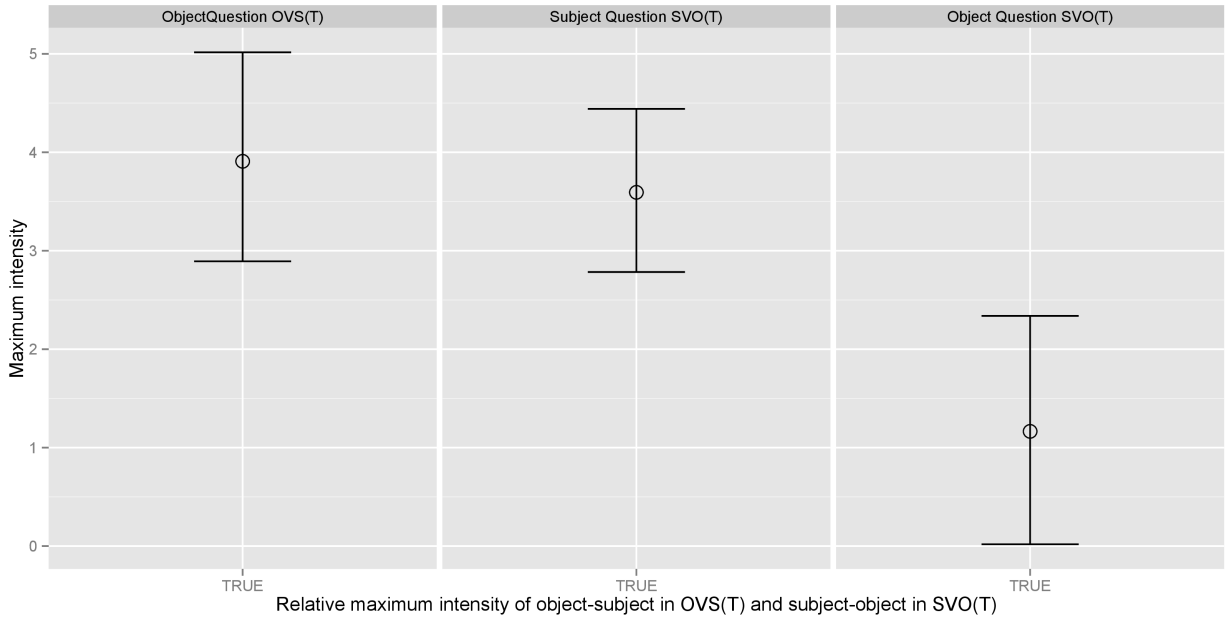



Figure 5.9: Relative maximum intensity of the object vs. subject in OVS word order in Object Question-focus (left column), subject vs. object in SVO word order in Subject Question-focus condition (middle column), and subject vs. object in SVO word order in Object Question-focus condition (right column)

It is clear that OVS word order in the Object Question-focus condition and SVO in the Subject Question-focus condition do not significantly differ from each other, but both significantly differ from SVO word order in the Object Question-focus condition.

In sum, a clause initial focused constituent is prosodically marked by an increase in maximum intensity, and triggers a different maximum intensity contour than if there is no focused element clause initial. Thus, in addition to the word order effect shown in 5.4, focus also affects prosodic prominence. In order to test the salience of prosodic cues, it would be interesting to test whether listeners can reliably distinguish Subject focus from Broad focus, for example, when word order is held constant. While there are significant acoustic differences, it is not clear that these will be very reliable cues for focus.

## 5.6 Discussion

The results of this experiment have shown that there are three means by which a focused constituent is typically marked in Mi'gmaq: (1) being obligatorily overt (not being dropped), (2) placing focused constituents in utterance initial position, and (3) prosodic prominence marking, via increased intensity. Let me discuss each of these three aspects of focus-marking in more detail.

First, focused constituents are almost always overt, as there are almost no cases of a focused constituent being dropped by a participant. This suggests that constituents can only be dropped if previously mentioned, and only when they are not themselves focused. Thus, dropping of non-focused constituents is one way in which focused constituents gain prominence in the discourse.

Dropping arguments is an integral part of the grammar of Mi'gmaq. Although dropping arguments was common in the experimental data, the fact that participants were explicitly asked to answer in full utterances yet nonetheless dropped them, suggests that the proportion of dropped arguments in the data is still underrepresented.

Second, word order is manipulated such that focused constituents are utterance initial. Although word order in the Broad focus condition is predominantly SVO, which is surprising given our expectations for freer word order, it was almost exclusively SVO in Subject focus conditions. In the Object Question-focus condition, OVS word order was common, which supports the generalization that utterance initial position marks prominence. However, there was a clear bias towards SVO word order throughout all conditions, including the Broad focus and Object Corrective-focus condition. In the Object Question-focus condition the verb type affected the word order, such that there was a strong tendency towards selecting SVO with TA verbs. The most likely source for this tendency is a speaker preference to order proximate before obviative DPs in Mi'gmaq, which has also been reported for other Algonquian languages (e.g. Junker 2003).

However, the tendency in the Object Question-focus condition for SVO with TI verbs needs a different explanation and suggests that the bias for SVO may have a variety of sources. The fact that all participants are bilingual speakers of English, which has strict SVO word order, is one possible explanation for why SVO word order was chosen so frequently. This is particularly plausible

given that participants spend more time speaking English than Mi'gmaq on a daily basis. It is also possible that speakers have a preference towards ordering animate before inanimate DPs. This would not be surprising if unlike animate DPs, inanimate DPs lack person features (as assumed throughout this thesis).

Third, focused constituents are marked prosodically with increased prominence. When presented with an SVO utterance, focused and non-focused subjects receive a different degree of intensity, which affects the intensity contour of the utterance. In Subject focus conditions, the subject is produced with a level of maximum intensity that greater than other constituents and creates a larger contrast with other constituents that follow, such as the object. In Object focus conditions, the subject is produced with a similar level of maximum intensity to the other constituents and creates a flat contour. The lack of a relative contrast between constituents is a way of marking the importance of later constituents, such as a focused object at the end of the utterance. Thus even when the word order is limited to SVO, there is a prosodic means of marking the prominence of focused constituents.

In OVS word order in the Object Question-focus condition, a similar increased maximum intensity on the object and greater contrast with following constituents was observed. This shows that the prosodic prominence interacts with focus and word order, such that focused utterance-initial elements are marked prosodically.

With respect to word order in Mi'gmaq, the finding that focus can affect syntactic constituency supports the hypothesis that discourse factors play a role in the non-configurational appearance of Mi'gmaq. This warrants further investigation into focus and topic constructions to understand and locate the influence of discourse in Mi'gmaq, and Algonquian languages in general.

In the next section, I discuss phrasing results from the experimental data and speculate about how this links with the syntactic analysis developed in this thesis.

## 5.7 Phrasing

### 5.7.1 Results

The results show that in SVO and OVS utterances, the verb forms a prosodic constituent with the preceding argument to the exclusion of the following argument (i.e. [SV][O] and [OV][S]). ASVO utterances are phrases [ASV][O] which support the assumption that this phrasing reflects syntactic constituency and not simply a prosodic constraint which triggers phrasing of the first two constituents in an utterance. Under the assumption that there is a direct relationship between syntactic and prosodic structure, this has implications for syntactic structure.

There is body of literature which suggest that prosodic data can be used to investigate syntactic constituent structure (i.e. Lehiste 1973). Under this assumption, the phrasing of full utterances provides information about the underlying constituency between subjects, objects and the verb. For example, in an English SVO utterance, there is typically a boundary between the subject and verb, which correlates with the syntactic division of a sentence into a subject DP and a predicate VP. Under the assumption that this represents constituent structure, the verb and object are phrased together, thus form a syntactic constituent as well. This follows intuition about underlying syntactic structure, such that the verb and object have a closer relationship, for the interpretation of the verbs and verb-object idioms (i.e. Marantz 1984).

In this section I examine the consequences that phrasing has for the syntactic structure of Mi'gmaq. Since focus interacts with constituent structure (i.e. via the displacement of focused constituents) I examine whether there is also an interaction between focus and phrasing.

I discuss two cues related to phrasing: pausing and pitch. First, I investigate where speakers pause in full utterances. Then I investigate the maximum pitch scaling between constituents, which may be affected by constituent boundaries. I finish by investigating pitch scaling within a constituent, under the assumption that pitch may be affected in a constituent at the edge of a boundary. Since SVO utterances are the most common in each condition, I explore SVO utterances for each cue.

The first diagnostic for phrasing is the tendency for pauses to fall between prosodic

constituents, as opposed to within one. Figure 5.10 shows the proportion of SVO tokens in which each constituent is followed by a pause.

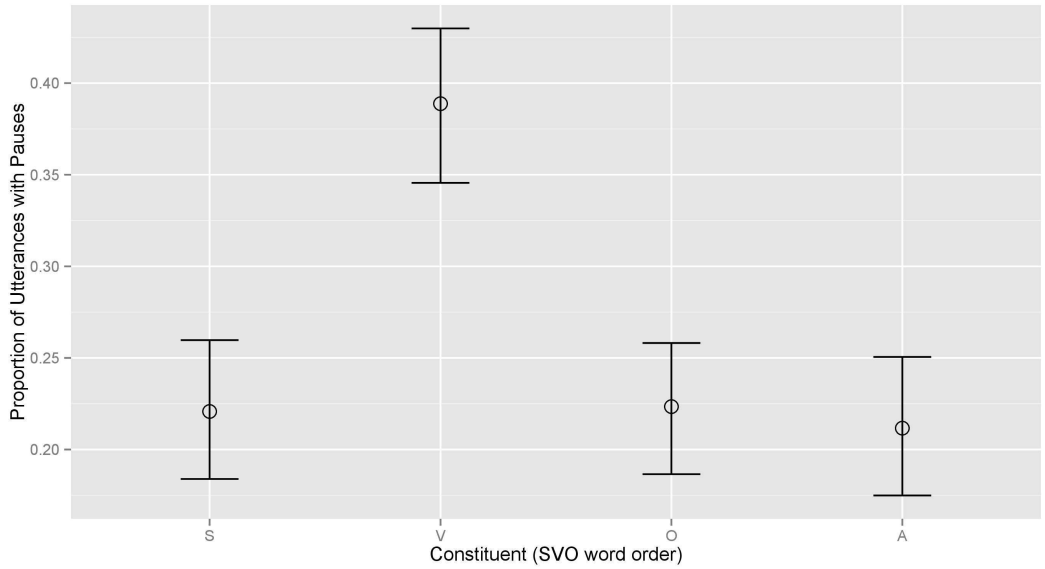



Figure 5.10: Proportion of tokens with pauses after a constituent in Subject-Verb-Object-Adjunct (SVOA) word order

As shown in figure 5.10, a prosodic break in the form of a pause occurs most frequently after the verb. This break even occurs when the verb is not the second word in the sentence, as shown in figure 5.11 which analyzes the pauses in SVO sentences where an adjunct occurs at the beginning of the sentence.

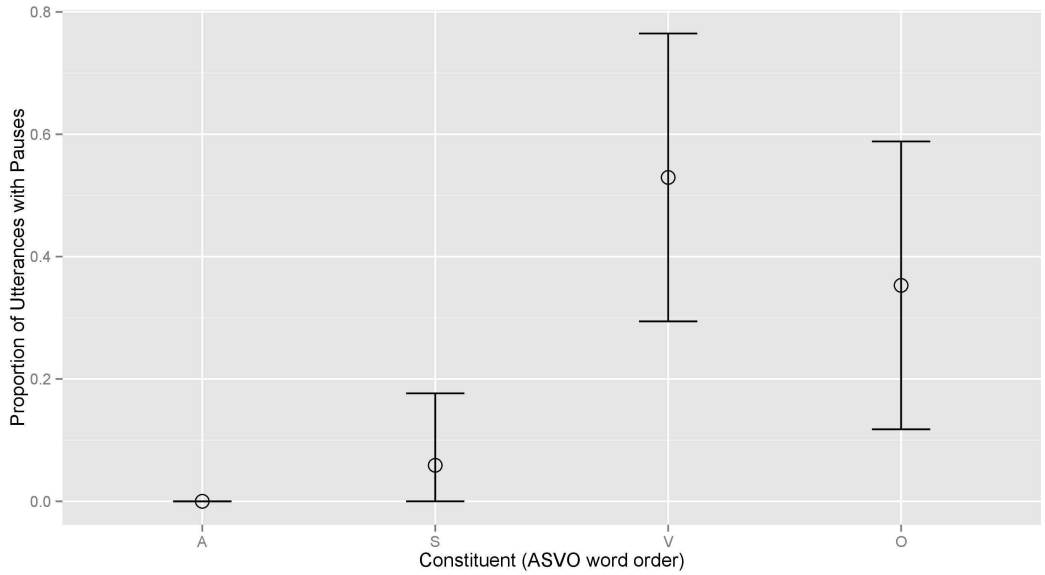



Figure 5.11: Proportion of tokens with pauses after a constituent in ASVO word order

If there is a prosodic break between the subject and the verb, then this would suggest that the subject and verb are in separate constituents, whereas in contrast, if there is a prosodic break between the verb and the object, then this would suggest that the subject and verb are constituents. Figue 5.11 shows that regardless of the number of constituents that preceded the verb, the subject and verb form a prosodic unit.

The second diagnostic is the presence of pitch scaling between elements within a constituent. If the subject and verb are phrased together, as suggested by the phrasing data, then there may be a specific pitch scaling between them, such as a rise or fall, to the exclusion of the object. Figure 5.12 shows the maximum pitch for each constituent in SVO tokens by condition.

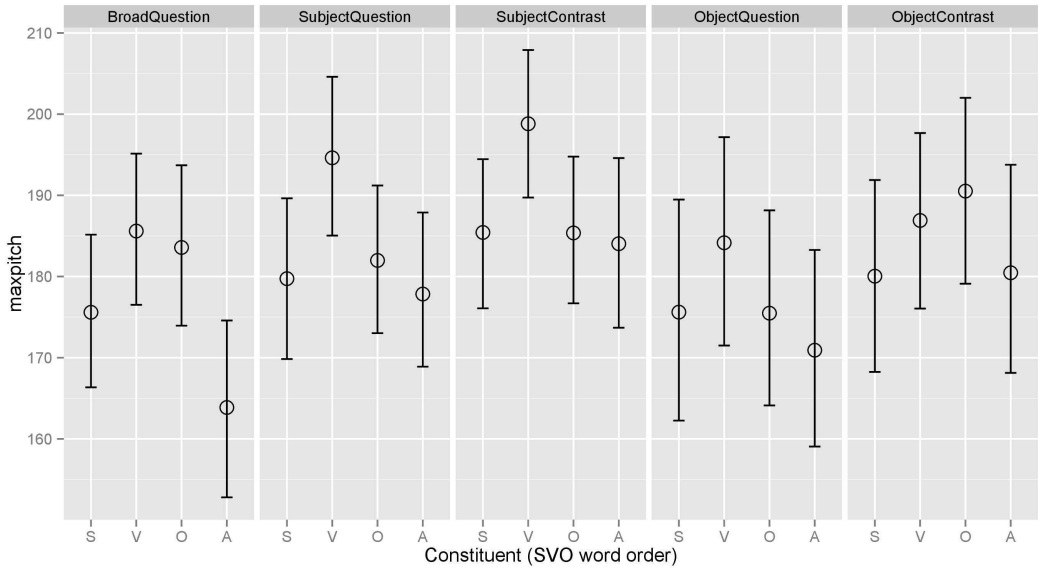



Figure 5.12: Maximum pitch for each constituent in SVO word order by condition

As shown in figure 5.12, there is an increase in maximum pitch from the subject to object. The largest increases occurs in the Subject focus conditions. The object is produced with a maximum pitch that is level or lower than the verb. As a result, the verb (which is at the right-edge of the utterance-initial constituent, has a high (H*) pitch.

Support for this comes from OVS word order in the Object Question-focus condition. This is shown in Figure 5.13.

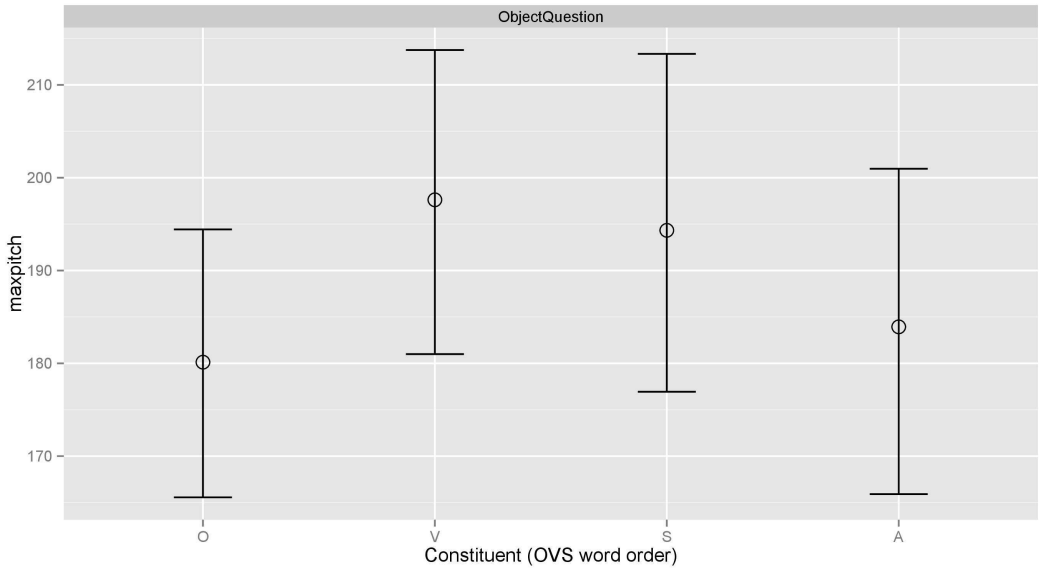



Figure 5.13: Maximum pitch for each constituent in OVS word order by condition

As shown in figure 5.13, the pitch rise is more general, as it occurs from the first to second constituent in the leftmost phonological phrase. This occurs from the object to verb in OVS word order, suggesting that the verb has a high pitch in OVS utterances, as it did in the SVO utterances.

The third, and final, diagnostic is the tendency for pitch falls to occur at the edge of prosodic constituents. Under the assumption that SVO utterances are phrased [SV][O], we expect to find a pitch decrease at the end of the verb and object, but not the subject. Figure 5.14 shows the difference between the second and fourth pitch for each constituent in SVO word order in each condition. This metric is calculated by dividing the word into four units and subtracting the pitch on the second unit and fourth unit, such that a positive value indicates that the second pitch is higher and a negative value that the fourth pitch is higher.

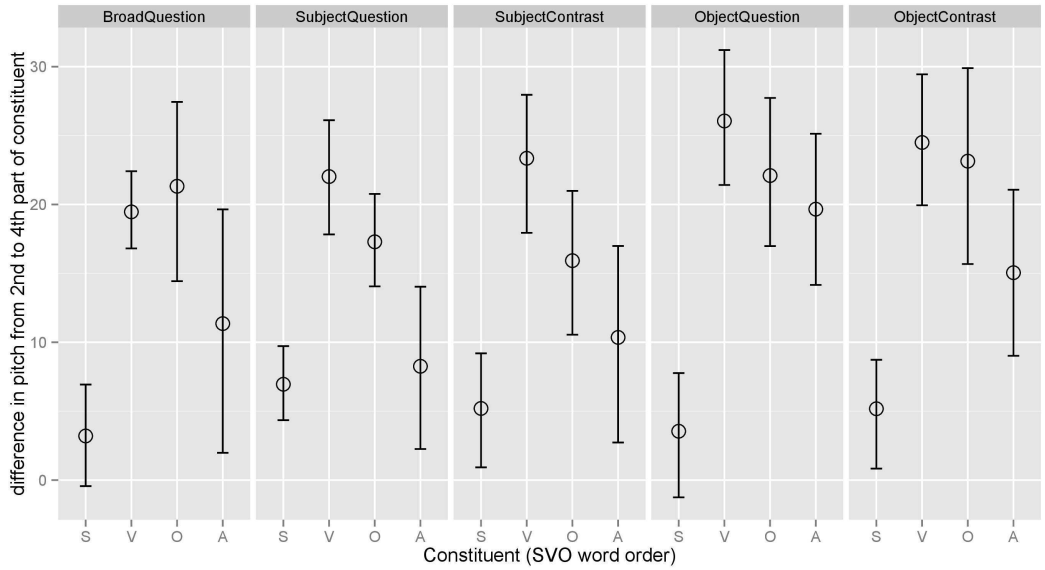



Figure 5.14: The difference in pitch from 2nd to 4th part of constituent in SVO word order by condition

As shown in figure 5.14, while the pitch does not fall in subjects, there is a sharp decrease in pitch in both verbs and object. Consistent across all conditions is that the subject is relatively flat with only a drop of 5 or 10 Hz from the second to fourth pitch. However, this differs significantly from verbs, for which there is typically a 20-25 Hz decrease, and objects, for which there is typically a 15-20 Hz decrease. This suggest that the right-edge of a phrase is also marked with a low (L) pitch.

Thus combined with the maximum pitch increase data, it appears that the right edge of a phrase has an H*L pitch contour. This is why the verb, which is the rightmost element of the phrase containing the subject and verb, and the object, which is in a phrase of its own, both have the same H*L pitch contour.

Support for this comes from OVS word order in the Object Question-focus condition. This is shown in Figure 5.15, with the same metric which tracks the difference between the second and fourth pitch.

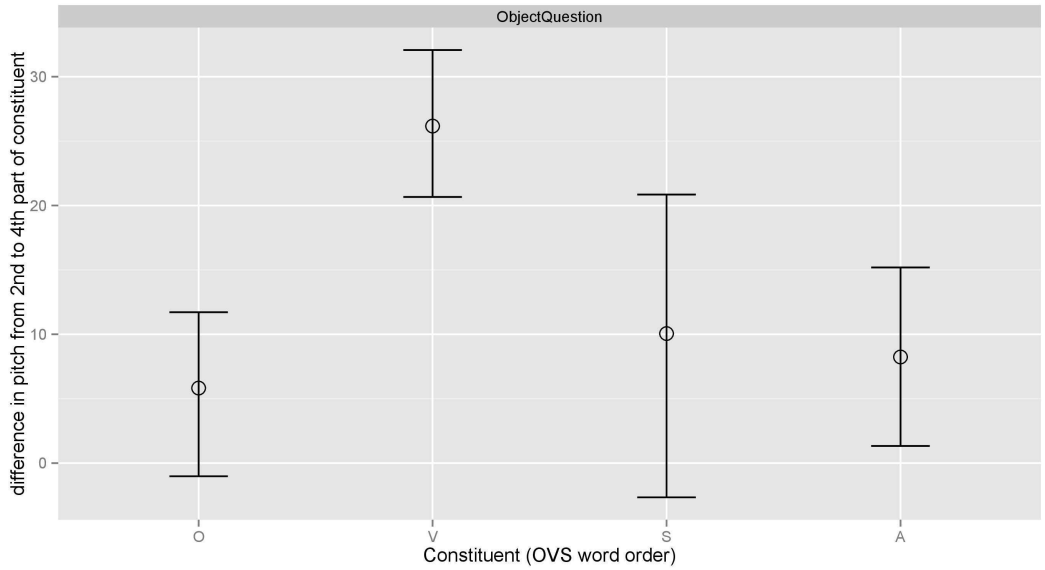



Figure 5.15: The difference in pitch from 2nd to 4th part of constituent in OVS word order in the Object Question-focus condition

As shown in figure 5.15, the pitch fall occurs in the second element of the first constituent and in the second constituent as well. There is a similar tendency towards a flat pitch on the object (the leftmost element of the first phrase) and pitch fall on the verb (the rightmost element of the first phrase) as in Figure 5.15 with SVO word order.

More support that this occurs at the edge of a prosodic boundary comes from SVO word orders in which an adjunct precedes the subject. This is shown in Figure 5.16.

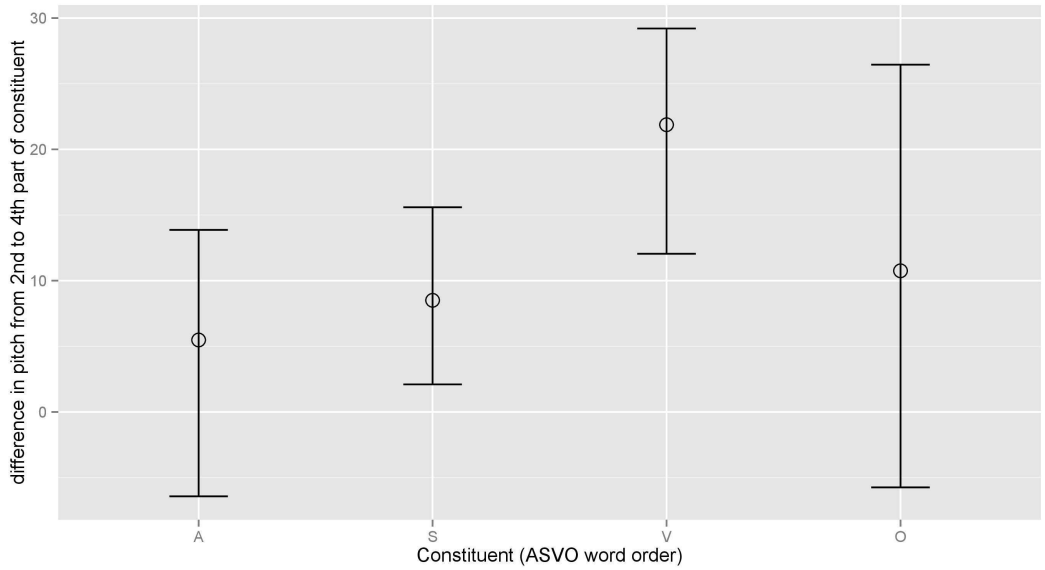



Figure 5.16: The difference in pitch from 2nd to 4th part of constituent in ASVO word order

As shown in figure 5.16, regardless of the number of elements in a single prosodic phrase, the pitch fall is limited to the element which precedes the prosodic boundary. In ASVO word orders, the biggest pitch fall appear on the verb and object, signalling that they are at a the right-edge of a phrase, as in Figures 5.14 and 5.15. The pitch on the initial adjunct and subject are flat, which supports the fact that both are phrased with the verb, rather than being phrased separately or together to the exclusion of the verb.

In sum, the most frequent phrasing of a transitive utterance is the verb with a preceding argument, and other preceding material, to the exclusion of following constituents. This is supported by SVO utterances since: (a) the verb is consistently followed by the highest proportion of pauses, (b) the verb is marked with a H*L pitch contour since it is the rightmost element of the first prosodic phrase, and (c) the object is also marked with the H*L contour since it appears in its own prosodic phrase. Similar findings for pitch in OVS word orders indicates that these phrasing generalizations are not SVO specific. In addition, ASVO word orders show that this phrasing is linked to syntactic structure, as it is not simply due to a prosodic constraint that phrases the first two elements of an utterance together.

In addition to checking for acoustic correlates, all tokens were annotated by hand for phrasing.

This was done for two reasons: (i) in order to see if there was independent evidence for the [SV][O] phrasing results from the acoustic measures, and (ii) to see if there is an interaction between phrasing and focus.

Figure 5.17 shows the most frequent phrasings reported. All phrasings attested in less than 9 tokens were excluded. The percentages for each word order (i.e. SVOT, SVO, ISVO, ISVOT, SOV, and OVST) originally added up to 100%, but this is no longer the case with the exclusion of infrequent phrasings. Note that in the annotations, *I* represents the polar particle *moqwa* 'no' and *T* represents a time adverbial. For example, an English equivalent of an ISVOT utterance would be 'No, THE GRANDMOTHER baked the cake this morning'.

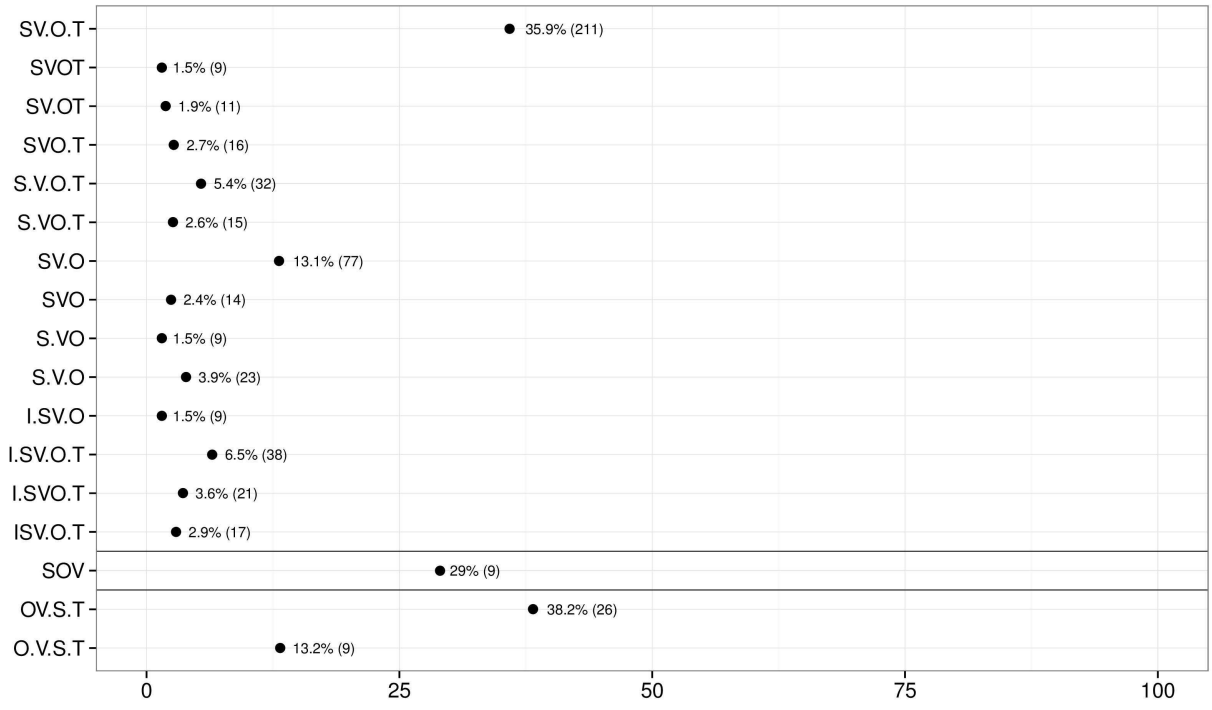



Figure 5.17: Most frequent annotated phrasings, organized by word order

In SVOT, SVO, and OVST word orders, phrasings with the subject and verb together were by far the most frequent. The second generalization is that each constituent following the verb is set off by a prosodic boundary, not just the one immediately following the verb. This supports the acoustic results presented above. The next most frequent phrasing has a prosodic break after each

constituent (i.e., [S][V][O]). or no prosodic break at all [SVO]. The only frequent word order for SOV is [SVO] with all three elements phrased together.

In order to test if there is an interaction between phrasing and focus, the eight most common SVO phrasings were compared across conditions. This is shown in 5.18. Recall that in the annotations, *I* represents the polar particle *moqwa* 'no' and *T* represents a time adverbial.

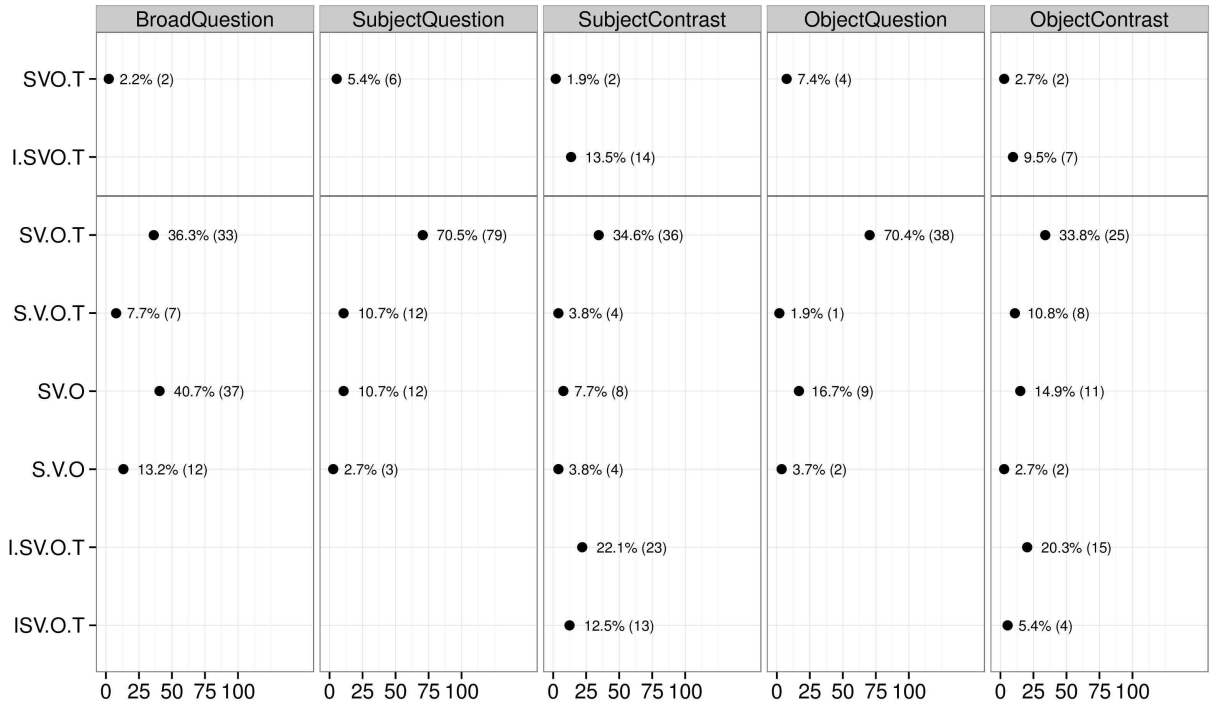



Figure 5.18: Most frequent annotated phrasings by condition.

There does not appear to be an interaction between focus and prosodic phrasing, as the distribution of which phrasing is produced is qualitatively similar for similar word orders. The most common phrasing (SV.O.T) was nearly identical between the Subject and Object Question-focus (70.5% vs. 70.4%), and with the other three conditions (36.3% vs. 34.6% vs. 33.8%). This difference is attributable to the fact that Subject and Object Corrective-focus had many of the same phrasing with a negative particle preceding (I.SV.O.T). While in Broad focus, SV.O was very frequent, thus the adjunct was often dropped from the answer.

Thus, the annotations supported the acoustic measures by showing that [SV][O] phrasing is

very common in Mi'gmaq. However there was no interaction found between phrasing and focus.

### 5.7.2 Discussion

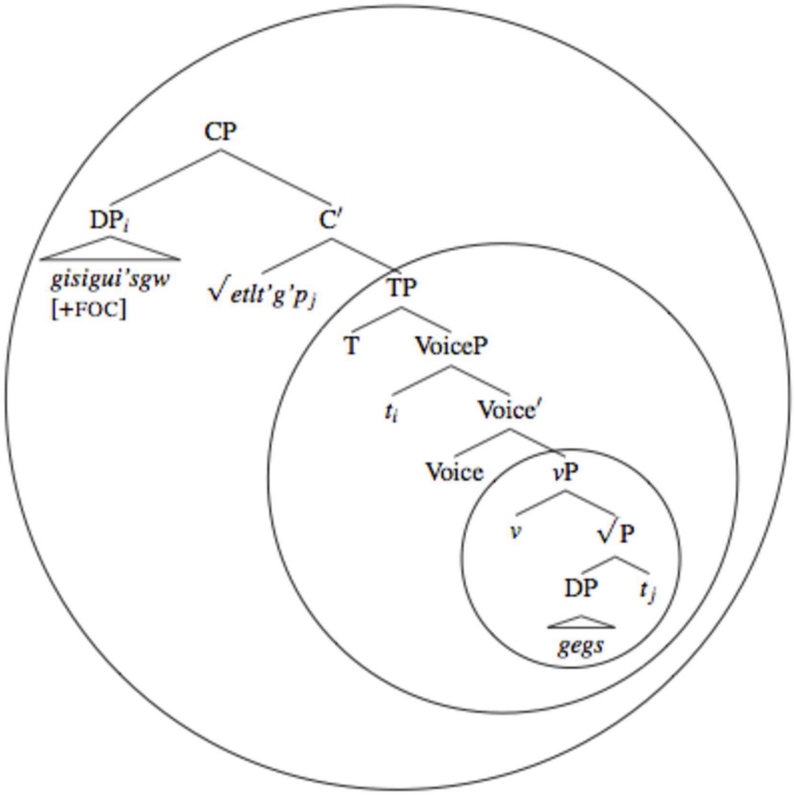
The results show that verbs are phrased together with the preceding argument (and adjuncts) to the exclusion of the following argument. The resulting [SV][O] phrasing is surprising, since it differs from the [S][VO] phrasing typical in English. This is interesting as it raises questions regarding syntax-prosody mapping. An important question is whether this phrasing provides evidence about the underlying syntactic structure, or not. If it has nothing to do with syntactic structure then we would expect that phrasing is simply linked to linear order. However, this is clearly not the case. The evidence from ASVO word orders show that this phrasing is not simply related to linear order, but is sensitive to constituency labels. Thus, this phrasing appears to be related to the constituency of the verb and the preceding argument.

An account of [SV][O] phrasing in Mi'gmaq must also consider the fact that English is phrased [S][VO] and both have been argued to have the same underlying syntactic structure in this thesis. Thus we must look to syntactic motivation for this difference in phrasing. The first potential account uses the assumption that the verb moves higher in the clause in Mi'gmaq than in English. It relies on the additional assumption that there is cyclic spell-out in the derivation to derive the difference between Mi'gmaq and English phrasing. The second potential account relies on the assumption that Mi'gmaq can have rampant rightward movement (extraposition), whereas, this is somewhat limited in English.

One possibility is that [SV][O] phrasing represents the cyclic nature of spell-out in the derivation in Mi'gmaq. If we assume a phase-based derivation (Chomsky, 2000, 2001), then Voice$^0$ and C$^0$ would be phase heads, and trigger spell-out of their complements. Under a strict cyclic derivation, once a cycle has been sent to spell-out, it forms an impenetrable phonological domain but cannot be changed in further cycles. If these cycles map to separate prosodic domains, this might cause mismatches in syntactic and prosodic constituency.

If we assume that focused or other discourse prominent DPs are attracted to Spec-CP, and the verb in Mi'gmaq undergoes head movement to C$^0$, then we expect both the preverbal DP and the

verb will be spelled out in the same cycle (the root phase). Regardless of whether the object DP undergoes movement to Spec-VoiceP or stays in Spec-$\sqrt{}$P, it will be spelled out in a lower cycle (the $C^0$ or $Voice^0$ phase). This is shown in (3).[6]




(gisigui'sgw etlt'-g-'p)ϕ (gegs)ϕ
(old.woman bake-3-PST) (cake)
'The grandmother baked a cake.'

Figure 5.19: Deriving [SV][O] in Mi'gmaq via cyclic spell-out; SV in root phase (outer cycle) and O in $Voice^0$ phase (innermost cycle)

Here, circles represent cycles and each circle maps to a different prosodic domain. This is one way to derive the [SV][O] phrasing in Mi'gmaq. This proposal could account for the difference between the [SV][O] phrasing in Mi'gmaq and [S][VO] phrasing in English via the difference in verb movement. In English, the verb does not move out of the lowest phase (the $Voice^0/v^0$ phase). Thus the verb and object would spelled-out in the same phase and would be part of the same

[6]The search for similar phrasing is a topic for future research. Norvin Richards suggest that we look for this phrasing pattern in V2 languages.

prosodic domain. Since the subject undergoes movement to Spec-TP, it would spelled out in a higher phrase, and thus would appear in a separate prosodic domain. This is shown in figure 5.20, with circles representing phases and phonological domains.

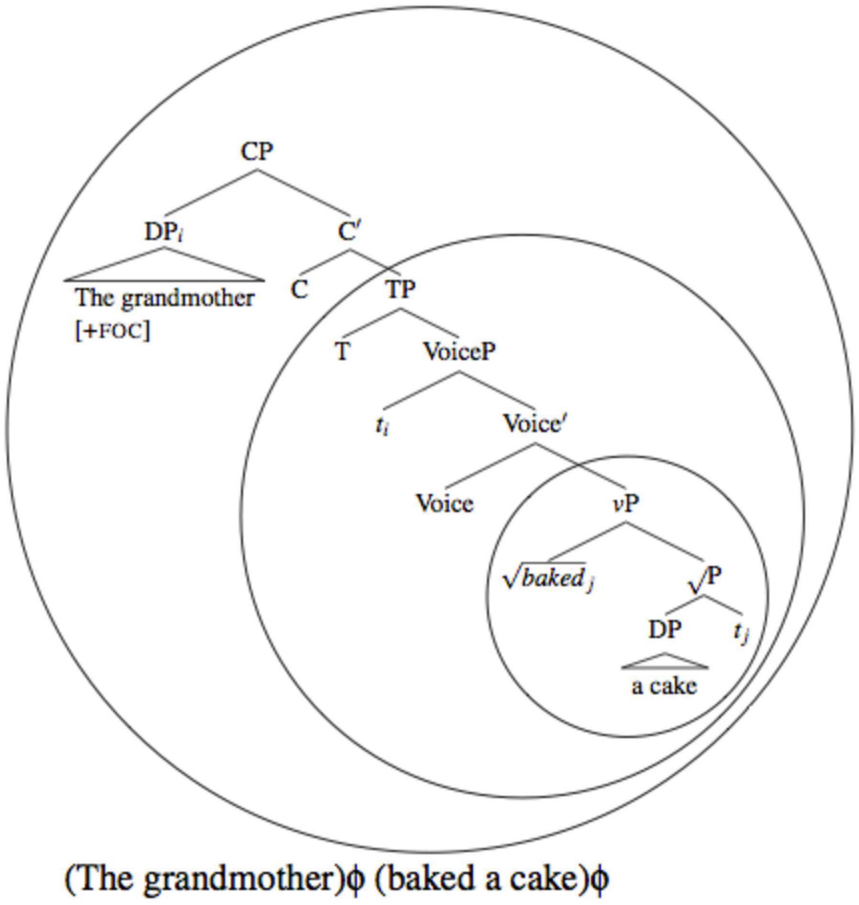
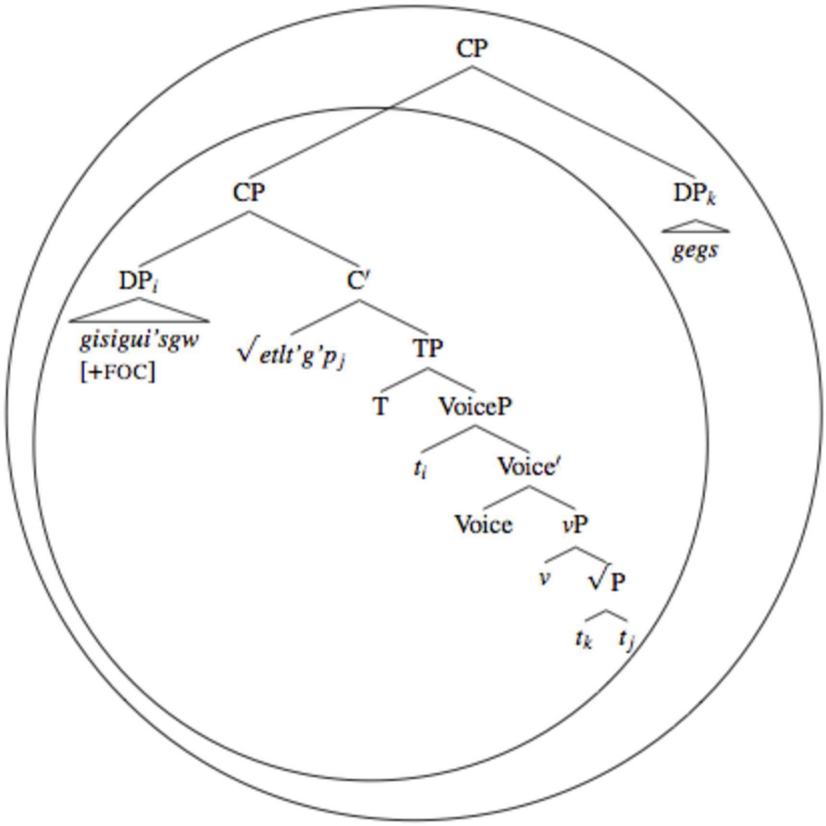



Figure 5.20: Deriving [S][VO] in English via cyclic spell-out; S in root phase (outer cycle) and VO in Voice$^0$ phase (innermost cycle)

This analysis assumes that there is a mismatch between syntax and prosody with respect to the phase. Although this makes interesting predictions, there is no independent support that prosodic phrasing is influenced by phase boundaries. Although this is a possible scenario of how the syntactic derivation maps to prosody, it is one that is in need of independent support.

The second possibility is that a prosodic boundary follows every CP. Following Hirsch & Wagner (to appear), we could assume that multiple rightward movement leads to multiple prosodic boundaries preceding each rightward moved constituent. Thus if the Object DP undergoes

rightward movement to the specifier of CP, it would not be part of the lower CP domain. The subject and verb would be part of the lower CP domain and the object would be part of the higher CP domain. This is shown in figure 5.21, with circles representing CP domains and phonological domains.




(gisigui'sgw etlt'-g-'p)ϕ (gegs)ϕ
(old.woman bake-3-PST) (cake)
'The grandmother baked a cake.'

Figure 5.21: Deriving [SV][O] in Mi'gmaq via right dislocation; SV in lower CP (inner cycle) and O in higher CP (outer cycle)

A rightward movement analysis of the placement of the constituent to the right of the verb in Mi'gmaq would explain why every constituent following the verb in Mi'gmaq is followed by a prosodic boundary, but constituents before the verb are not. However, this analysis raises the question of whether there is any independent evidence for rightward movement.

## 5.8 Conclusion

This chapter showed that: (1) focus affects word order, and (2) focus affects prosodic prominence, yet (3) prosodic phrasing does not support grouping the object and verb together as a constituent (at least not on the surface). (1) and (2) support my hypothesis that discourse factors influence word order, whereas (3) does not directly support my hypothesized underlying phrase structure. However, there are at least two explanations for why the verb and object do not form a prosodic phrase despite being a syntactic constituent underlyingly. One has to do with the interaction of phases with prosody and the other has to do with rightward movement. Either is plausible, but further investigation is required to see if either is accurate.

Given that focus is a discourse factor, we can take this experimental result as evidence to support the hypothesis that discourse factors are directly involved in deriving the surface non-configurational appearance of Mi'gmaq from a configurational underlying syntactic structure. This is important as it provides support for a Configurational account of the syntax of Mi'gmaq, as argued for in preceding chapters.

# Chapter 6

# Summary and further questions

## 6.1 Summary

In this thesis I have argued that the underlying structure of Mi'gmaq is configurational despite its non-configurational surface appearance. I consider that being configurational means that a language has: (1) DPs base-generated in argument positions (A-positions), and (2) A-positions are arranged hierarchically, such that subjects asymmetrically c-command objects, and goals asymmetrically c-command themes. I have proposed that instead of the underlying structure being the locus of surface non-configurationality, the locus is in the effect of the discourse on the syntactic computation.

First, I will summarize the evidence presented for Mi'gmaq being configurational, before summarizing the evidence presented that discourse is the source of the non-configurational appearance of Mi'gmaq.

### 6.1.1 Arguments for configurationality

Based on my definition of configurationality, my goal has been to show that Mi'gmaq has (1) hierarchical syntactic structure, and (2) DPs are base-generated in fixed positions in this structure, such that they have a consistent relationship with respect to each other, i.e. asymmetric c-command. I proposed a clause structure in Chapter 2, and a series of argument asymmetries to

support this structure in Chapters 3 and 4.

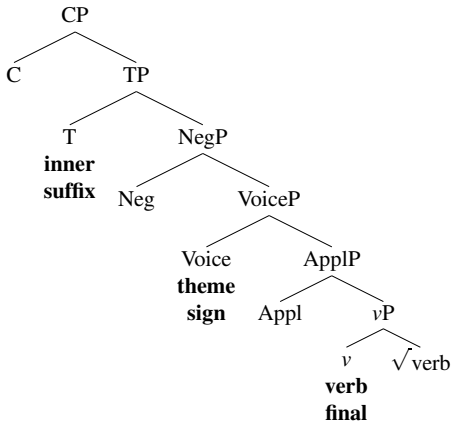
#### 6.1.1.1 Clause structure

I began in Chapter 2 by mapping the complex verb in Table 6.1 to the clausal structure in (1). This was done under the following assumptions: (1) that the verb in Mi'gmaq undergoes successive cyclic head movement (until at least $T^0$) such that it picks up each functional head on the way up the tree following the Head Movement Constraint (Travis, 1984), and (2) that the Mirror Principle (Baker, 1985) is respected, such that the order of affixes reflects the order in which they have attached.

Table 6.1: VERB TEMPLATE

| | root | **verb final** | $Appl^0$ | **theme sign** | $Neg^0$ | **inner suffix** | $T^0$ | **outer suffix** |
|---|---|---|---|---|---|---|---|---|
| mu | elug | -**atm** | -u | -**i** | -w | -**g** | -pn | -**ig** |
| NEG | fix | **DFLT** | APPL | **1.obj** | NEG | **3** | PST.DK | **3PL** |
| | | | | 'They didn't fix it for me' | | | | |

(1) CLAUSE STRUCTURE: TA+O

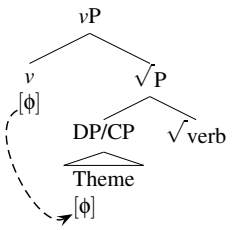



Note that I argued that the applicative morpheme is in a high ApplP (Pylkkänen, 2008) due to the ability to applicativize intransitive verbs (see Hamilton to appear c and Hamilton to appear a for further discussion, and Bruening 2001 for a similar proposals in other Algonquian languages). I placed this between $Voice^0$ and $v^0$ due to morpheme order.

I continued by presenting an AGREE (Chomsky, 2000, 2001) account of three of the four ϕ-indexing affixes in bold on Table 6.1 and (1): verb finals, theme signs, and inner suffixes. I left the outer suffix for future research.

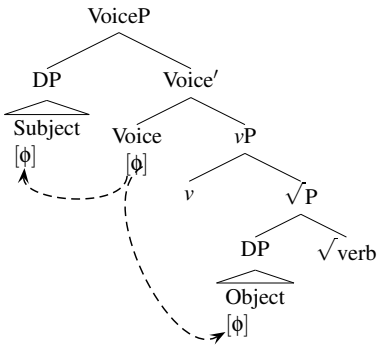
Due to its transitivizing nature, and previous proposals by Brittain (2003), Hirose (2003), and Mathieu (2008), I propose that the verb final is in $v^0$. The verb final indexes the theme DP if animate, otherwise a default morpheme appears. The account of the verb final is shown in (2). This representation follows Bobaljik & Harley (2012) by placing the theme DP in Spec-$\sqrt{}$P.

(2)




I argued that the theme sign is in Voice$^0$ (following Oxford 2014). Support comes from the ability for theme signs to index both the structurally highest object and the subject (which is in Spec-VoiceP following Kratzer 1996). Thus it is in a position to probe both, as in (3), assuming that the probing domain includes its specifier (following Béjar & Rezac 2009). In addition, theme signs are in complementary distribution with other Voice$^0$s, such as reflexive *-(i)'si*.

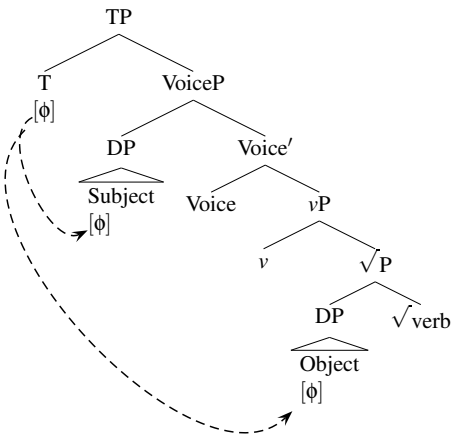
(3)




I argued that the inner suffix is in T$^0$ (following Coon & Bale 2014). Support comes from tense/mood conditioned allomorphy. Inner suffixes can index either the subject or structurally

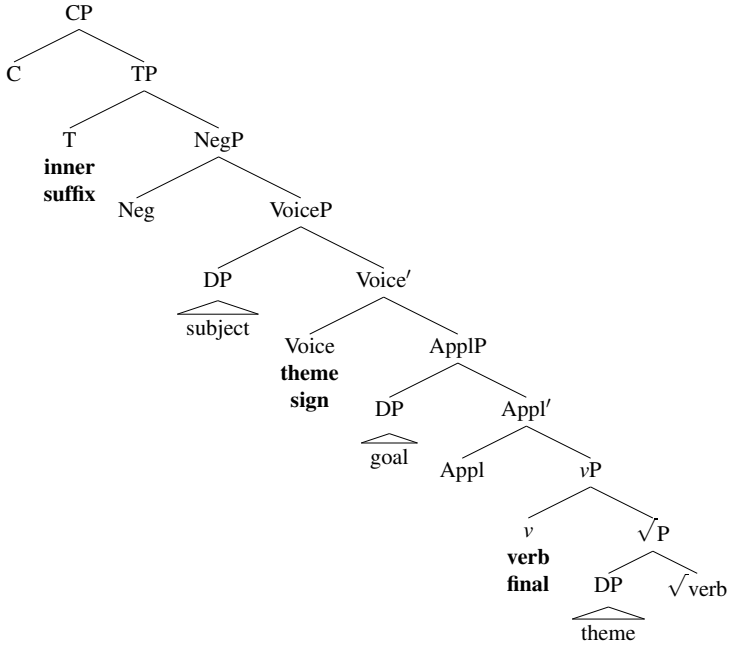
highest object depending on a complicated list of factors, but generally Speech Act Participant (SAP) plurals are preferred (Coon & Bale, 2014). The ϕ-probe on $T^0$ needs the ability to probe both arguments. This is shown in (4).

(4)




Putting the clause structure and ϕ-indexing affix analysis together, we get the representation in (5).

(5) CLAUSE STRUCTURE: TA+O



This gives us the expectation that the subject asymmetrically c-commands the theme, and the goal asymmetrically c-commands the theme.

#### 6.1.1.2 Asymmetries among arguments

I presented three arguments that subjects asymmetrically c-commands themes: Superiority effects, Condition C effects, and Long-Distance Agreement.

First, in multiple *wh*-questions, the subject *wh*-phrase must precede the theme *wh*-phrase. This is shown in (6).

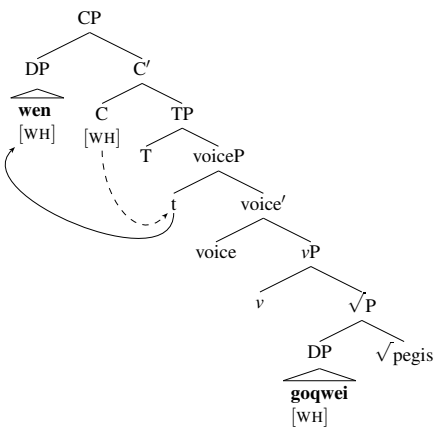
(6) *Context: I tell you that I went to a pot-luck yesterday. You ask me:*

a. **wen goqwei** pegis-it-oq-s'p?
**who what** bring-DFLT-3-PST
'Who brought what?' [triggers a pair-list response]

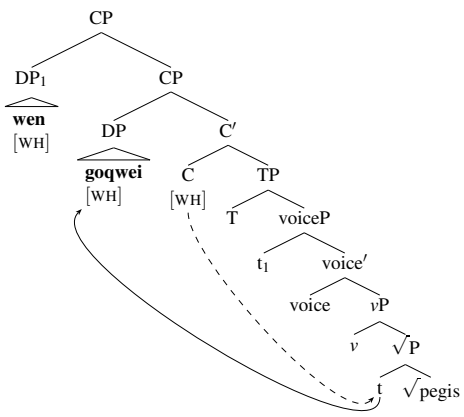
b. ***goqwei wen** pegis-it-oq-s'p?
**what who** bring-DFLT-3-PST
intended: 'Who brought what?' or 'What did who buy?'

I argued that Mi'gmaq has *wh*-movement, and the key to this is showing that preverbal *wh*-words get a *wh*-phrase interpretation. Although Mi'gmaq lacks Weak Crossover effects (potentially due to the proximate-obviative marking system), it displays other supporting evidence, such as extraction constraints and successive cyclic *wh*-movement. I proposed that we can derive the superiority effect as a restriction that the Asymmetric c-command relationship between the subject and theme must hold after *wh*-movement as it did before. I proposed a Richards (1997)-style account, as shown in (7).

(7) a.




b.



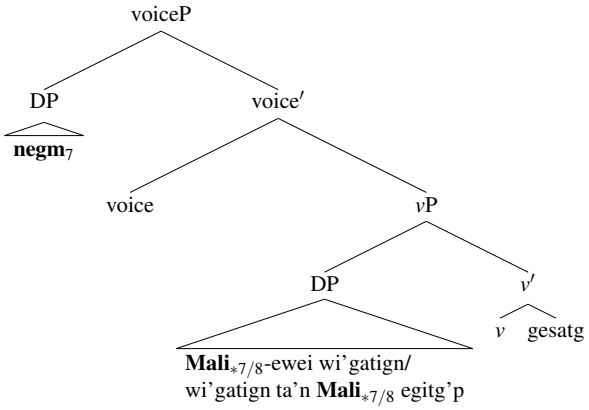

Second, Condition C effects appear in forms such as in (8).

(8) a. ges-at-g **Mali-al**$_{*1/2}$ **ugt**-wi'gatign
like-DFLT-3 **Mali-OBV** **3.POSS**-book
'S/he$_1$ likes Mary$_{*1/2}$'s book'

b. (**negm**$_7$) ges-at-g [**Mali**$_{*7/8}$-ewei wi'gatign ]
(**3**) like-DFLT-3 [**Mary**-POSS book ]
'She$_7$ likes Mary$_{*7/8}$'s book.'

This is parallel to the same disjoint reference effects in English. If we assume that the object possessive DP is in the c-command domain of the subject pronoun, we can account for this effect, as shown in (9).

(9)



The fact that Condition C effects are absent in similar forms in Mohawk is used as evidence that full DPs are adjuncts in this language by Baker (1996). Given the presence of disjoint reference, I reject this possibility for Mi'gmaq.

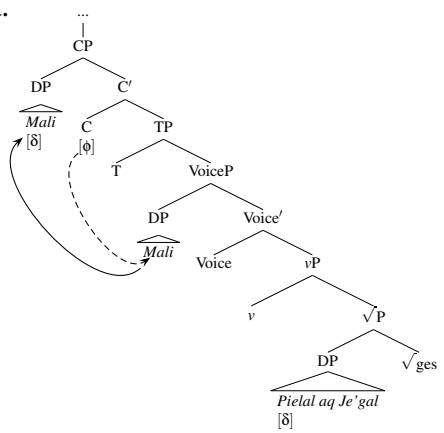
Third, Mi'gmaq is a Restricted-Long-Distance Agreement (LDA) language in which LDA is only possible with embedded subjects (10a), or the object in the inverse (10b).

(10) a. gej-**i**-**g** [**Mali** ges-al-a-j-i(g) Piel-al aq Je'g-al ]
know-**AN**-**3** [**Mary** love-AN-3OBJ-3-3PL Peter-OBV COOR Jack-OBV ]
'I know that **Mary** loves Peter and Jack.'

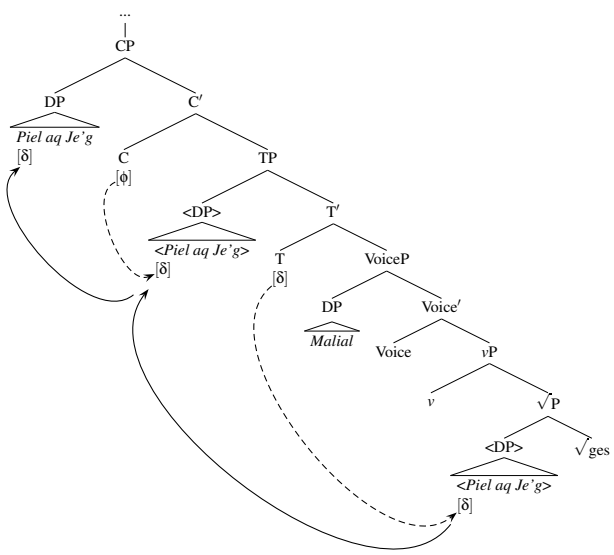
b. gej-i'-**g**-**ig** [**Piel aq Je'g** ges-al-gwi'-tit-l Mali-al ]
know-AN-**3**-**3PL** [**Peter COOR Jack** love-AN-INV-3PL-OBV Mary-OBV ]
'I know that **Peter and Jack** are loved by Mary.'

I proposed an account in which LDA in Restricted-LDA languages is limited to the structurally highest embedded argument, which is the subject in most forms, since it is the highest base-generated argument in the clause (in Spec-VoiceP). I proposed that it is only possible with the object in the inverse since Mi'gmaq has syntactic movement of the proximate object over the obviative subject in inverse forms (see Bruening 2001, 2009 for Passamaquoddy). Both of these forms are shown in (11).

(11) a.




b.



I presented two arguments that the goal asymmetrically c-commands the theme from applicatives. The first piece of evidence comes from the ability for the theme sign and inner suffix to index the goal but not the theme in TA+O forms. This is shown in (12).

(12) mu elugw-atm-u-**i**-w-**eg**
NEG love-DFLT-APPL-**1OBJ**-NEG-**1PL**
'You/you-all are not fixing it(IN/AN) for us'

Theme signs can index both the subject and structurally highest object and the inner suffix can index either the subject of the structurally highest object. In this case, the structurally highest object is the goal.

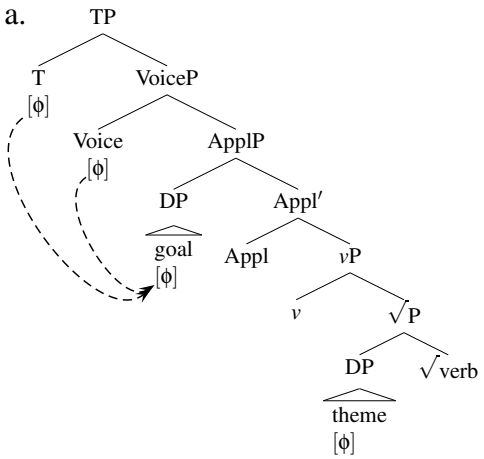
The second piece of evidence comes from the ability for goals, but not themes, to participate in passives and reflexives.[1] The passive data is shown in (13).

(13) a. elugw-atm-**u**-**i**-'pn-n a'pi'-l
fix-DFLT-**APPL**-**1OBJ**-3.PST-OBV net-OBV
'S/he fixed a/the net(an) for me'
b. elugw-atm-**u**-**img**-'p a'pi
fix-DFLT-**APPL**-**2OBJ**-**1PL**-PST net
'I was fixed a/the net(an)'
c. *elugw-atm-**ut**-'p a'pi
fix-DFLT-**APPL.PASS.3**-PST net
intended: 'The net(an) was fixed for us'

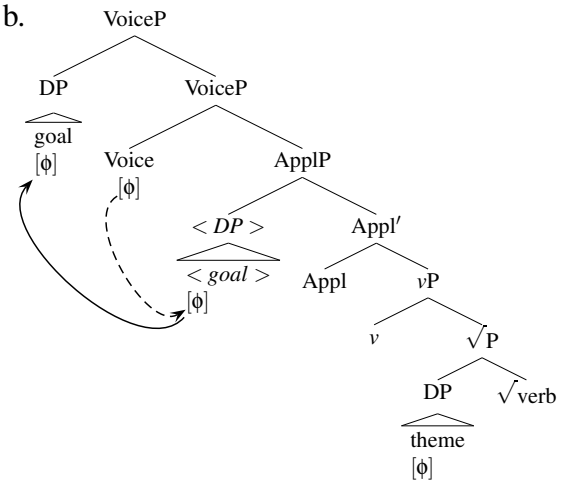
Under a movement account of the passive and the reflexive (following Hornstein 1999), the ϕ-probe on Voice$^0$ only attracts the structurally highest argument, which is the goal. This account is shown in (14).

[1]Note that I use passives as a cover term for either a passive or unspecified actor construction. The decision about how to describe these forms is left for future research, since it does not affect the analysis at hand.

(14) a.

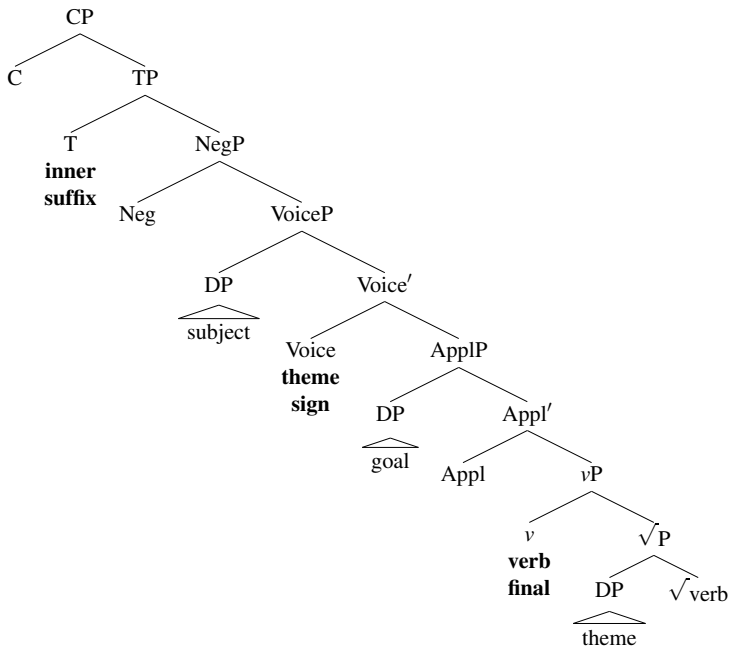



b.




I consider all of the data presented to support the underlying structure of the TA+O as in (15). The subject asymmetrically c-commands the theme (and goal) and the goal c-commands the theme. All arguments are base-generated in their A-positions, and the three ϕ-indexing affixes analyzed (verb final, theme sign, and outer suffix) are all agreement morphemes.

(15)




I reject the possibility that the Pronominal Argument Hypothesis (PAH; Jelinek 1984) applies to Mi'gmaq. There are no clear pronominal arguments, overt DPs are not adjuncts but are based-

generated in A-positions that are hierarchically organized.

I also reject the Hybrid Account (Baker, 1996). The Hybrid Account is similar to the Configurational Account in positing agreement affixes and base-generation of some elements in A-positions (i.e. *wh*-phrases, and complement CPs). The main area of similarity is that all other DPs are posited to be adjuncts that are co-indexed with null *pro*s in A-positions. The best evidence against this hypothesis is the presence of Condition C effects in Mi'gmaq, which fail Baker's diagnostic for adjunct DPs.

LDA presents another argument against the Hybrid Account. In forms in which there are no overt DPs, the Hybrid account derives the same data as the configurational account, since the null subject pronoun is higher than the null object pronoun. However, if there is one overt DP, this should be the only DP that can be an LDA target. If there are two overt arguments, then either should be able to be potential LDA targets.

### 6.1.2 Discourse as locus for surface non-configurationality

Under my account, the underlying structure of Mi'gmaq is identical to that of a configurational language. This raises the question why the language appears non-configurational on the surface? My proposal is that discourse has an effect in Mi'gmaq, which it does not have in a configurational language. We saw two different areas in which the discourse has an effect: LDA and focus.

In Long-Distance Agreement, we saw that there is one common pattern across Algonquian languages in which an embedded argument can be a target for agreement with the matrix verb. Following Polinsky & Potsdam (2001), Bruening (2001), Branigan & MacKenzie (2002), and Lochbihler & Mathieu (to appear), I analyzed this as discourse-driven movement to the left-periphery of the embedded clause. Although the pattern in embedded declaratives is more restricted, the assignment of proximate or obviative is similar to assigning a topic and non-topicality in Mi'gmaq, as LDA is limited to proximate DPs when both arguments are third person. I argued that the inverse system triggered syntactic movement, with which LDA was used to diagnose.

This was followed by an experimental investigation into focus constructions. This

experiment provides direct evidence that discourse affects two of the common characteristics of non-configurational languages: free word order and ability to drop arguments. One of the central results of this experiment is that focus condition has a significant effect on word order. There was a tendency for participants to select word orders in which the focused constituent is utterance initial, although there is a general tendency to select SVO word order. We also saw that the animacy of the object effected the selection of word order, since proximate subjects were preferred to be ordered before obviative objects (which only occur when the object is animate).

In addition to word order, the dropping of arguments also varied by condition. An argument can only be dropped if it is previously mentioned if the discourse. This is shown in the Broad focus condition, since the entire utterance has not been previously mentioned and dropping an argument was very rare. Both dropping the non-focused DP (argument drop) as well as only answering with the focused argument (fragment answer) is a common choice in both the Subject and Object focus conditions. While fragment answers were consistent across these conditions, argument drop was much more frequent in Object focus conditions. The overwhelming majority of these were of OV word order. The subject was often dropped when using OVS word order. Thus, in addition to manipulating word order to mark focus, dropping arguments was also common and is one strategy to emphasize the prominence of the focused DP.

## 6.2 Implications and further research

### 6.2.1 Mi'gmaq

Mi'gmaq is one of the least well studied of Algonquian languages, and this thesis contributes to our understanding. In light of this thesis, the most pressing area in need of study is discourse factors, such as topichood. This is important, since we have the expectation that topics should affect word order and argument drop given the investigation of focus in Chapter 5. If topic and focus have a similar effect then this would provide support for the analysis in this thesis.

It is clear that investigation of proximate-obviative marking is necessary. Two pieces of evidence support an analysis of proximate DPs as topics. The first is the preference to order

proximate DPs before obviative DPs, which is also related to the dropping of proximate DPs when obviative DPs precede them (i.e. when the obviative DP is in focus). The second is inverse movement. Since there must be a motivation for this type of movement, topicalization is one, although it seems to be similar to scrambling since it has A-movement effects. Exploring proximate DPs with diagnostics for topics, i.e. Aissen 1992 and Polinsky & Potsdam 2001, a clearer understanding of these phenomena may lead to a greater understanding of not only proximate-obviative marking, but also topic marking in general in Mi'gmaq.

### 6.2.2 Algonquian languages

The big question that this thesis presents for Algonquian languages is whether or not all Algonquian languages are underlyingly configurational. In this thesis, we have seen at least three sources of variation: (i) presence of *wh*-movement, multiple-*wh* movement, and superiority effects, (ii) the pattern of LDA, and (iii) the nature if the inverse system (syntactic movement, or not). But it is unclear how much variation there is and whether this variation has its source in the underlying syntactic structure.

If this variation does not reside in the underlying syntactic structure, then we would expect that all Algonquian languages are underlyingly configurational. The presence of a goal-theme asymmetry across all studied Algonquian languages, minimally presents evidence for a hierarchical verbal structure, which excludes the PAH as a possible account.

In addition to this, Plains Cree is an Algonquian language which lacks a configurational analysis, since previous analyses have followed a PAH or Hybrid Account (Dahlstrom, 1991; Blain, 1997; Hirose, 2003). However, it exhibits a Restricted-LDA pattern, as LDA is strictly limited to embedded subjects. This is unexpected under the Hybrid Account, since overt DPs are adjuncts and do not stand in a structural relationship with each other. Plains Cree lacks Weak Crossover and multiple *wh*-questions, but *wh*-phrases must precede the verb and exhibit the full range of island sensitivity (Blain, 1997). Thus, there is a possibility that Plains Cree may also be underlyingly configurational.

It is important to take a closer look at the syntax of each Algonquian language, to see if there

is any true counter-evidence to a Configurational Account. It is a possibility that the variation we find is variation in how the discourse affects the surface structure, as opposed to variation in the underlying syntactic structure itself.

### 6.2.3 Syntactic theory

As stated in the introduction, the results in this thesis are consistent with the strong hypothesis that all human languages share the same underlying structure. If this is the case, then we can push this hypothesis one step further, and propose that the syntactic variation we see between languages can be attributed to the how the influence of the discourse is formalized (see also discourse configurationality, e.g. Kiss 1987 and Miyagawa 2010). We can imagine that there is a range of difference possible formalizations related to word order and prosody. On one end of the word order spectrum stand languages with little or no word order variation, such as English, and languages with free word order (including argument drop), such as Mi'gmaq, on the other. Another spectrum would be prosody, with languages that use little of no emphasis on prosodic cues on one end, and languages with a great degree of emphasis on prosodic cues on the other. There may even be an interaction between these spectrums, as languages with little or no word order variation may rely on prosodic cues more heavily, such as English. Some analyses, have even used prosodic prominence as a way to motivate word order variation (Zubizarreta, 1998; Féry, 2013), which shows that there may be different kinds of interactions between prosody and word order variation. This might be one way to conceptualize the fronting of focused constituents in Mi'gmaq.

An important implication of this thesis is the need to study the interaction of prosody, syntax, and discourse in Algonquian languages, surface non-configurational languages, and surface configurational languages. This is important to understand the full range of possibilities and to see whether there is a typology that emerges. The expectation that arises out of this thesis is that languages with freer word order may display discourse related motivations for this movement. If this is related to prosodic prominence, then we can begin to understand why this movement occurs. It is possible that the kind of displacement encoded by δ-features could have a prosodic motivation,

i.e. Richards 2010. If this is the case, then we will have gone a step closer to figuring out why displacement occurs, and we could make predictions about in which constructions displacement occurs. This should be the ultimate goal of investigating the discourse and motivating the use of discourse features in the syntax.

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