

# Mi'gmaq as a discourse configurational language\*

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**Abstract:** I argue that Mi'gmaq is discourse configurational, in that the underlying syntax is configurational but discourse factors contribute to the surface appearance of non-configurationality. I present three diagnostics—superiority effects, Binding Condition C effects, and Long-Distance Agreement—to show that the syntactic structure of Mi'gmaq is underlyingly configurational. I follow by present results from a production experiment to show that focus, a discourse factor, can effect surface word order.

**Keywords:** syntax, prosody, configurationality, discourse, Algonquian, Mi'gmaq

## 1 Introduction

Mi'gmaq (Eastern Algonquian) is a language which can be described as being non-configurational since it typically displays the characteristics in (1).

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

However, it is not the case that we can understand the underlying syntactic structure based on surface appearance alone. It is necessary to leave prior theoretical biases aside and use syntactic tests in order to determine the underlying syntactic structure. In this paper, I argue that Mi'gmaq is discourse configurational, in that it is underlyingly configurational, but discourse factors contribute to the surface appearance of non-configurationality. In Section 2, I present three diagnostics to show that the syntactic structure of Mi'gmaq is underlyingly configurational. In Section 3, I present results from a production experiment to show that focus, a discourse factor, can effect surface word order. I conclude in Section 4.

## 2 Configurationality

In this section I present three arguments to argue for the underlying configurational nature of Mi'gmaq: superiority effects, Binding Condition C effects, and Long-Distance Agreement. All three are subject-object asymmetries, which provide evidence that: a) subjects asymmetrically c-command objects, and b) arguments being base generated in A(argument)-positions. These two characteristics are important aspects of a configurational account.

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## 2.1 Superiority

Mi'gmaq has obligatory *wh*-movement.<sup>1</sup> For a *wh*-word to receive a *wh*-phrase interpretation, it must undergo *wh*-movement, otherwise it will receive a *wh*-indefinite interpretation. In (2), *wen* 'who' undergoes *wh*-movement to Spec-CP, thus linearly precedes the object (*wenju'su'n* 'apple') and the verb (*pegwatelg* 's/he buys it'), regardless of the order in which they appear. However, if the *wen* does not undergo *wh*-movement it proceeds the verb, receives a *wh*-indefinite interpretation ('anyone'), as in the yes-no questions in (3).

### (2) *Wh*-QUESTION

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

### (3) YES-NO QUESTION

- a. wenju'su'n pegwatel-g **wen**?  
 apple buy.VTI-3 **one**  
 'Is **anyone** buying the/an apple?' \*'Who is buying the/an apple?'
- b. pegwatelg wenju'su'n **wen**?
- c. pegwatelg **wen** wenju'su'n?

Mi'gmaq has multiple *wh*-questions, and in order for both *wh*-words to receive a *wh*-phrase interpretation, they both must move to Spec-CP. However, the only grammatical word order is the one in which the subject *wh*-phrase precedes the object *wh*-phrase (4a). Word orders in which the object *wh*-phrase precedes the subject *wh*-phrase (4b) are ungrammatical. Word orders in which only *wh*-phrase undergoes *wh*-movement, such as (4c), do not result in multiple *wh*-question interpretation.

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

- a. **wen goqwei** pegisi-toq-s'p?  
**who what** bring.VTI-3-PST  
 'Who brought **what**? [triggers a pair-list response]
- b. \***goqwei wen** pegisi-toq-s'p?  
**what who** bring.VTI-3-PST  
 intended: 'Who brought **what**?' or 'What did **who** buy?'
- c. **wen** pegisi-toq-s'p **goqwei**?  
**who** bring.VTI-3-PST **what**  
 'Who brought **anything/something**?'; \*'Who brought **what**?'

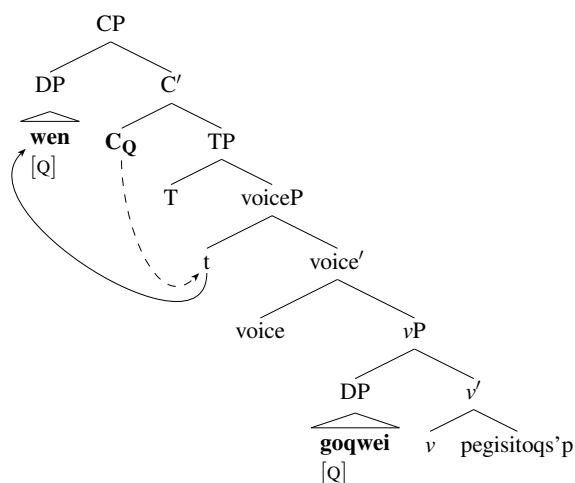
This strict ordering of subjects before objects after *wh*-movement can be account for as a superiority effect (Chomsky 1973; Richards 1997) or an instance of relativized minimality (Rizzi

<sup>1</sup>Please see Hamilton 2013 for arguments in favour of a *wh*-movement analysis for Mi'gmaq.

1990). The explanation being that the base-generated c-command relationship is maintained after *wh*-movement. This Mi'gmaq data can be accounted for assuming a standard account of multiple *wh*-movement in languages with superiority effects, e.g., Richards (1997) for Bulgarian.

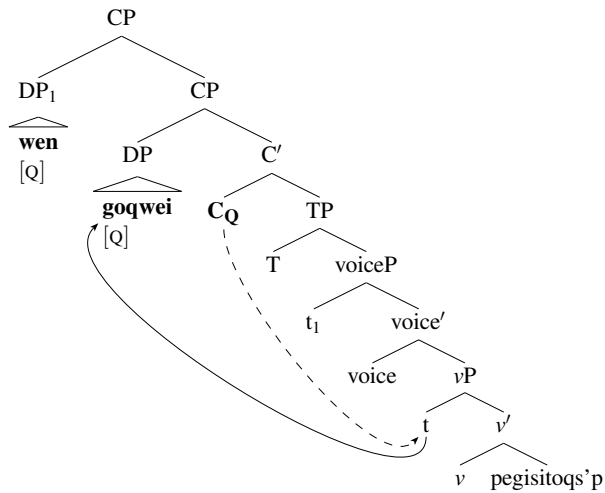
The derivation of superiority effects adopts standard assumptions about *wh*-movement: (i) that it is triggered by a Q-feature (Cable 2007) on  $C^0$  which is shared by *wh*-phrases, and (ii) that it involves a probe-goal AGREE relationship (Chomsky 2001), such that (a) feature probing is limited to 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. The derivation has two steps, the first involving the principle ATTRACT CLOSEST (5) and the second involving the principle SHORTEST MOVE (6) (Richards 1997). In step one,  $C^0$  has a Q-feature and probes, AGREES, and raises the subject *wh*-phrase (*wen*) to Spec-CP. Although both *wh*-phrases have the relevant Q-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 Q probe on  $C^0$ . This is the principle ATTRACT CLOSEST (Richards 1997). This results in the representation in (5).

(5) ACCOUNT FOR 4, STEP 1: ATTRACT CLOSEST



In step two, in  $C^0$  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). This results in the representation in (6). Thus rigid subject before object ordering with *wh*-phrases in Mi'gmaq receives a principled analysis under this account.

(6) ACCOUNT FOR (4), STEP 2: SHORTEST MOVE



Thus, the strict ordering of subject *wh*-phrases before object *wh*-phrases is taken to be indicative of an underlying asymmetry between subject and object A-positions. The fact that this is the result of *wh*-movement supports the base-generation of *wh*-phrases in argument positions.

## 2.2 Binding

Mi'gmaq has a unique possessive construction unattested for other Algonquian languages, in which the possessor is marked with the possessive suffix *-ewei* and cannot be marked for obviation. This provides us a rare glimpse into the structural relationship between subjects and objects via binding. In Mi'gmaq, as in other Algonquian languages, 3rd persons are either morphologically unmarked and interpreted as being proximate, roughly equivalent to being topical, or morphologically marked as being obviative, relatively less topical than a proximate 3rd person. This particular possessive construction only applies in limited contexts, as it is only possible with an alienable possessum (McClay 2012).<sup>2</sup> In forms where the subject is a proper name (*Mali*) and the object possessor is a pronoun (*negm*), co-reference is possible (7a). In forms where the subject is a pronoun (*negm*) and the object possessor is a proper name (*Mali*), co-reference is not possible (7b). In (7a), disjoint reference is triggered whether the subject pronoun is overt or not.

<sup>2</sup>The other possessive construction, in which the possessum but not the possessor is marked with a possessive morpheme, can be used with both alienable and inalienable possessum.

(7) POSSESSIVE DP OBJECTS

- a. SUBJECT DP, PRONOUN OBJECT POSSESSOR  
**Mali**<sub>1</sub> ges-at-g [**negm**<sub>1/2</sub>-ewei wi'gatign]  
**Mary** like-VTI-3 [**3**-POSS book]  
'**Mary**<sub>1</sub> likes **her**<sub>1/2</sub> book.'
- b. SUBJECT PRONOUN, DP OBJECT POSSESSOR  
(**negm**<sub>7</sub>) ges-at-g [**Mali**<sub>\*7/8</sub>-ewei wi'gatign]  
(**3**) like-VTI-3 [**Mary**-POSS book]  
'**She**<sub>7</sub> likes **Mary**<sub>\*7/8</sub>'s book.'

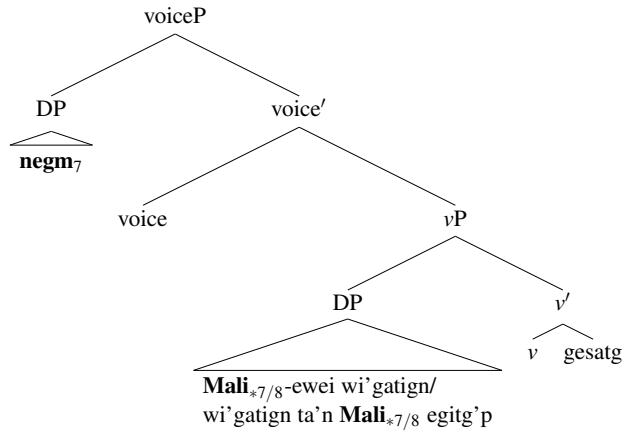
Evidence that this asymmetry is not a product of this particular possessive construction but is structural, comes from similar effects when the relevant pronoun or DP is embedded in a relative clause that modifies the matrix object (8). In (8a), the matrix subject is a proper name (*Mali*) and the embedded subject that modifies the matrix object is an optional 3rd person singular pronoun (*negm*). Similar to the possessive construction, the pronoun can optionally co-refer with the matrix subject. In (8b) where their positions are switched, the matrix subject is the optional 3rd 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 2001, 2013). 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.

(8) OBJECTS MODIFIED BY RELATIVE A RELATIVE CLAUSE

- a. **Mali**<sub>1</sub> ges-at-g wi'gatign [ta'n (negm<sub>1/2</sub>) egit-g-'p]  
**Mary** like-VTI-3 book [COMP (**3**) read-3-PST.DK]  
'**Mary**<sub>1</sub> likes the book that **she**<sub>1/2</sub> read.'
- b. (**negm**<sub>7</sub>) ges-at-g wi'gatign [ta'n Mali<sub>\*7/8</sub> egit-g-'p]  
(**3**) like-VTI-3 book [COMP **Mary** read-3-PST.DK]  
'**She**<sub>7</sub> likes the book that **Mary**<sub>\*7/8</sub> read.'

The potential for subjects to bind 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 (7b) and (8b), the obligatory disjoint reference with the subject pronoun (*negm*) is analyzed as a Binding Condition C effect. Binding Condition C is defined as in (Chomsky 1986): An R-expression is free. Thus, because in their base-generated positions, *negm* c-commands, thus can bind, *Mali* in both (7b) and (8b), disjoint reference is triggered. Both examples are collapsed together and shown in (9).

(9) ANALYSIS OF (7b) and (8b)



Thus, disjoint reference is taken to be indicative of the fact that subjects asymmetrically c-command and bind into objects, causing a Binding Condition C effect. This data follows from the assumption that DPs are always base generated in argument positions, thus always have a consistent asymmetric relation.

### 2.3 Long-Distance Agreement

Long-Distance Agreement (LDA) is the label given to a configuration in which a matrix verb agrees with a constituent of its sentential complement (Branigan and MacKenzie 2002; Polinsky and Potsdam 2001).<sup>3</sup> In Mi'gmaq, LDA can occur with arguments that originate in embedded declaratives, although they pattern differently.<sup>4</sup> Mi'gmaq has an inverse system in which all forms are direct, except forms in which an obviative 3rd person in the subject and proximate 3rd person is the object. Recall that 3rd persons are either morphologically unmarked and interpreted as being proximate, roughly equivalent to being topical, or morphologically marked as being obviative, relatively less topical than a proximate 3rd person.

In the dataset below, the matrix verb is in the direct and contains forms with (10b) and (10c), and without (10a) LDA. Note that in all three forms, the embedded clause is identical and enclosed in brackets.<sup>5</sup> In the form where LDA does not occur (10a), the matrix verb *ge(j)i-* 'know' has a suffix (*-tu*) that indexes an inanimate object. The inanimate object suffix can be analyzed as default agreement with the complement clause itself (Piggott 1989), since clauses do not have  $\phi$ -features. In direct forms in Mi'gmaq, LDA is limited to the embedded subject, as in (10b). Here the suffix *-g* (3rd person singular) can appear on the matrix verb and index the embedded subject *Mary*. This contrasts with (10c), as an additional suffix *-ig* (3rd person plural) cannot be attached to the verb. This shows that agreement cannot occur with the embedded object *Sa'nal aq Je'gal*.

<sup>3</sup>The analysis presented in this subsection is the result of joint work with Brandon J. Fry.

<sup>4</sup>I assume that arguments that undergo LDA are base-generated in embedded clauses without motivation given space concerns. See Branigan and MacKenzie 2002 for supporting evidence of this analysis for Innu-aimûn.

<sup>5</sup>It is an open question whether LDA's arguments move into the matrix clause or stay in the embedded clause. Since in either case, movement must to through the edge of the embedded, I focus on this movement and leave the question of movement into the matrix clause for further research. The square brackets here and throughout serve as a guide.

(10) MI'GMAQ, EMBEDDED DECLARATIVE DIRECT

a. NON-LDA, DEFAULT AGREEMENT

ge(j)i-tu [**Mali** ges-al-a-j-i Sa'n-al aq Je'g-al]  
know-VTI [**Mary** love-VTA-DIR.3-3-3.PL John-OBV COOR Jack-OBV]  
'I know that Mary loves John and Jack.'

b. LDA WITH EMBEDDED SUBJECT

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

c. \*LDA WITH EMBEDDED OBJECT

\*geji'-**g-ig** [**Mali** ges-al-a-j-i **Sa'n-al** aq **Je'g-al**]  
know-VTA-3-3.PL [**Mary** love-VTA-DIR.3-3-3.PL **John-OBV** COOR **Jack-OBV**]  
intended: 'I know that Mary loves **John and Jack**.'

It is important to note that if the embedded argument which undergoes LDA is overt (it may also be covert), it must linearly precede all other material in the embedded clause. While varying word orders are possible in embedded clauses in without LDA, only SVO and SOV word orders are acceptable in embedded clauses in which LDA occurs, such as in (10b). For (10c), however, varying the word order in the embedded clause does not improve the grammaticality. This also applies for all Mi'gmaq declarative LDA data.

When LDA occurs with embedded declaratives in the inverse, the reverse pattern appears, as LDA is only possible with the embedded object and not the subject. In (11b), the 3rd person singular (-g) and 3rd person plural (-ig) suffixes appear on the matrix verb. These suffixes combine to index the embedded object *Sa'n aq Je'g* 'John and Jack.' In (11a), however, if only the 3rd person singular suffix (-g) is attached to the verb, the result is ungrammatical. This is intended to index agreement with the embedded subject *Mali-al* 'Mary-OBV'. This shows that LDA cannot target the embedded object in the inverse in Mi'gmaq. In sum, LDA can only target the subject in the direct and the object in the inverse.

(11) MI'GMAQ, EMBEDDED DECLARATIVE INVERSE

a. \*LDA WITH EMBEDDED SUBJECT

\*geji'-**g** [**Sa'n** aq Je'g ges-al-gwi'-tit-l **Mali-al**]  
know-VTA-3 [**John** COOR **Jack** love-VTA-INV-3.PL-OBV **Mary-OBV**]  
intended: 'I know that **Mary** loves John and Jack.'

b. LDA WITH EMBEDDED OBJECT

geji'-**g-ig** [**Sa'n** aq **Je'g** ges-al-gwi'-tit-l Mali-al]  
know-VTA-3-3.PL [**John** COOR **Jack** love-VTA-INV-4.PL-OBV Mary-OBV]  
'I know that Mary loves **John and Jack**.'

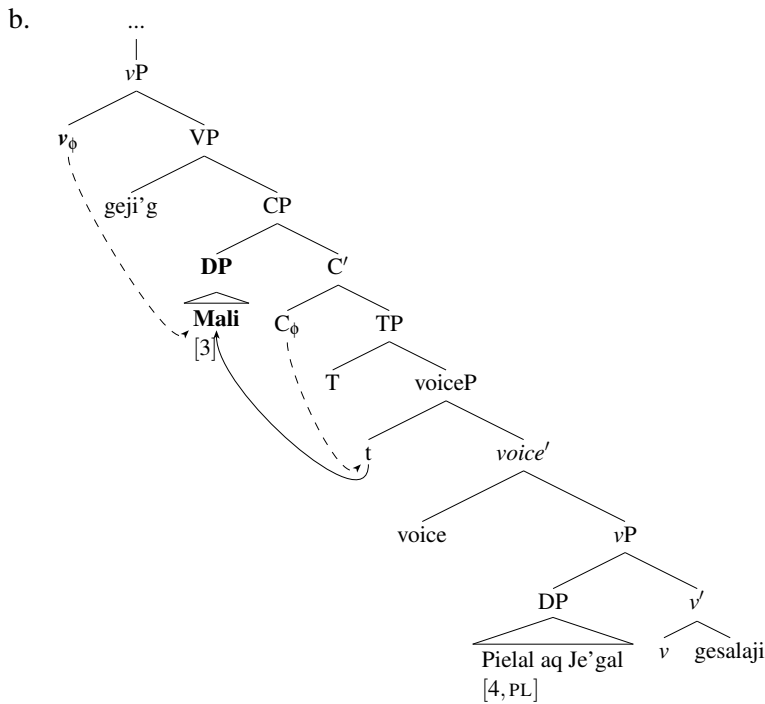
If LDA with embedded declaratives was driven by A'-movement triggered by a specific feature, such as in topicalization, focus, or *wh*-movement, then we expect that any argument bearing this feature would be able to undergo LDA, as in Innu-aimûn (Branigan and MacKenzie 2002) or Passamaquoddy (Bruening 2001, 2009; LeSourd 2010). In order to derive the declarative pattern

under the same analysis, we would need to stipulate that only subjects in the direct and objects in the inverse can bear a specific feature. Such an analysis only serves to describe the pattern as opposed to explaining it. I propose that the explanation resides in the structural asymmetry between subjects and objects, and involves a  $\phi$ -feature probe on embedded  $C^0$  which attracts the closest DP with  $\phi$ -features to embedded Spec-CP. Although the means by which arguments get to embedded Spec-CP differs between the embedded interrogative and declarative analyses, what ties the two analyses together is that LDA occurs with the argument in embedded Spec-CP.

In the direct, embedded declarative  $C^0$  has a  $\phi$ -feature probe. It probes, AGREES with, and raises the structurally highest argument, the subject *Mali*, as shown in (12). If subjects and objects are base generated in A-positions with the subject position c-commanding the object position, then we can explain why LDA with the object is not possible in these forms. It is simply because the subject is structurally higher than the object, thus will be the closest potential goal for the  $\phi$ -probe on embedded  $C^0$ .

(12) ANALYSIS OF LDA WITH AN EMBEDDED DECLARATIVE DIRECT

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



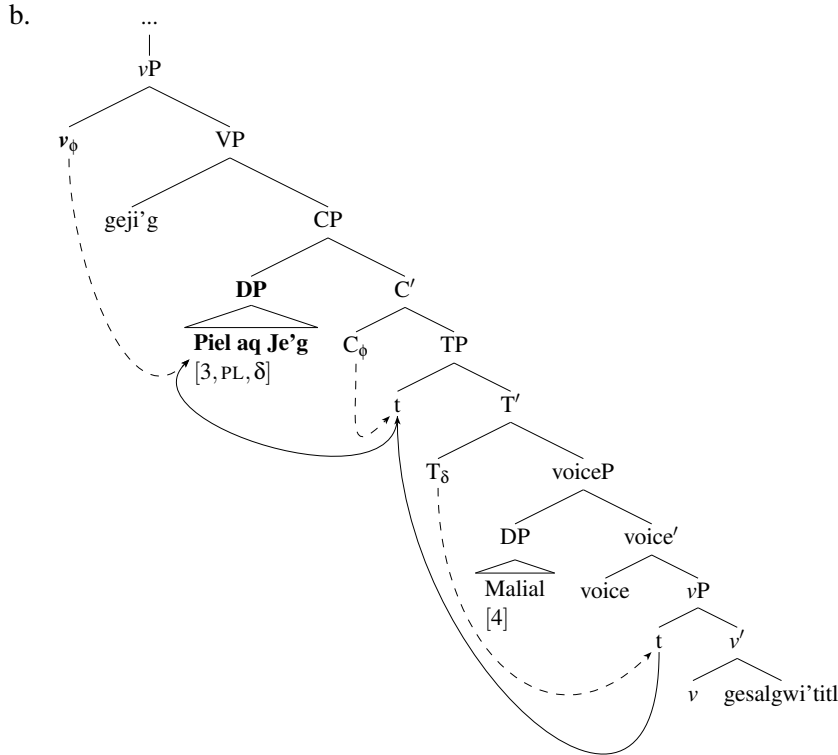
In the inverse, the embedded declarative  $C^0$  also has a  $\phi$ -feature probe. It probes, AGREES with, and raises the structurally highest argument, which is the object *Sa'n aq Je'g*, as in (13). The embedded object becomes structurally higher in the inverse because it undergoes A-movement over the subject to a higher functional projection, e.g., embedded Spec-TP (Bruening 2001, 2009; Oxford 2014). This movement is triggered by a  $\delta$ -probe on  $T^0$  which probes both the subject and object, but only AGREES with and raises the proximate DP, assuming that proximate is more topical than



obviative. In inverse forms, this will always be the object DP. This analysis allows us to derive the inverse LDA pattern, as the  $\phi$ -probe on  $C^0$  will raise the object DP since it is the structurally highest in its derived position in embedded Spec-TP.<sup>6</sup>

(13) ANALYSIS OF LDA WITH AN EMBEDDED DECLARATIVE INVERSE

- a. **geji'g** [Sa'n aq Je'g ges-al-gwi'-tit-l Mali-al]  
 know.VTA-3-3.PL [John COOR Jack love-VTA-INV-4.PL-OBV Mary-OBV]  
 'I know that Mary loves **John and Jack**.'



To summarize, we have seen that the pattern of LDA in embedded declaratives in Mi'gmaq is limited to subjects in the direct and objects in the inverse. Under a configurational account, this pattern of LDA is analyzed as being limited to the structurally highest argument. While the subject is base-generated as the highest in the direct, the object undergoes a movement over the subject in the inverse and becomes the structurally highest.

## 2.4 Summary

I have presented evidence showing that DPs are base generated in A-positions and that the subject A-position asymmetrically c-commands the object A-position in Mi'gmaq from: superiority effects, Binding Condition C effects, and Long-Distance Agreement. If this is the right analysis of the underlying syntactic structure of Mi'gmaq, then we need to account for the fact that surface word order is relatively free. The most apparent account would attribute word order variation to discourse

<sup>6</sup>Movement to embedded Spec-TP also occurs in the embedded direct clauses, but has been omitted from (12) for simplicity.

factors. In the next section, I present evidence to show that this account is on the right track, as focus can affect word order in Mi'gmaq.

### 3 Focus

In this section I discuss an experiment designed to determine the effect of focus, a discourse factor, on word order.<sup>7</sup> The experimental hypothesis is that speakers of Mi'gmaq will be able to manipulate word order to convey focus information since Mi'gmaq is a discourse configurational language. This hypothesis was supported by the results.

#### 3.1 Experimental design

This is self-paced production experiment that was modelled after Calhoun 2013, originally designed for Samoan, and run with minimal changes. This experiment targets two different kinds of focus: question focus on the constituent which answers the *wh*-phrase in the question, and corrective focus on the constituent which corrects a constituent in a previous question. The placement of focus was varied on the subject or object. A summary of the conditions is shown in (14), and includes broad focus, in which the entire answer is focused, as a baseline for comparison.

(14) CONDITIONS

- a. Broad focus (BroadF)
- b. Subject Question-focus (SubjQF)
- c. Subject Corrective-focus (SubjCF)
- d. Object Question-focus (ObjQF)
- e. Object Corrective-focus (ObjCF)

The experiment has twenty items, in which the animacy of the object and transitivity of the verb varies. All subjects are animate, while objects vary between being animate (n=6) or inanimate (n=14).<sup>8</sup> Balancing of items across animacy of objects and the transitivity of the verb was sacrificed in order to maintain potential comparability with Calhoun 2013. Forms in which the object are animate are marked as being obviative. Recall that 3rd persons are either morphologically unmarked and interpreted as being proximate, roughly equivalent to being topical, or morphologically marked as being obviative, relatively less topical than a proximate 3rd person. Forms with animate object are either in transitive utterances with animate subject (VTA) or are implicit objects in intransitive utterances with an animate subject (VAI+O). Forms with an animate subject and inanimate objects (VTI) fill out the rest of the items.

The task involved presenting a participant with a picture depicting an event. Participants heard a question and prompted to answer naturally, appropriately, and in a complete utterance based on

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<sup>7</sup>The experiment presented in this subsection is the result of joint work with Michael Wagner, Janine Metallic, Mary Ann Metallic, Janice Vicaire, and Elise McClay.

<sup>8</sup>More specifically, all subjects and two objects are real-world animate, i.e., dog, and girl, while the remaining four objects were grammatically animate, i.e., ball, milk, and shirt. This does not effect the data in this experiment, although in future experiments balancing real-world and grammatically animate objects would be ideal and may potentially effect word order.

the information in the picture. Questions were presented to prompt participants to answer with a particular focus. A sample picture is shown in Figure 1, and a corresponding set of condition specific questions is shown in (15). The word order is noted next to each condition and note that three conditions have SVO word order, i.e., SubjQF, SubjCF, and ObjectCF, while ObjQF has OVS and BroadF V. These were determined to be the most natural word orders by first language Mi'gmaq speaking co-authors.



Figure 1: Sample picture (Calhoun 2013)

(15) SAMPLE ITEM: QUESTIONS BY CONDITION

- a. BROADF: V  
Taliaq-ass                    sepei?  
happen.VII-PST.IK this.morning  
'What happened this morning?'
- b. SUBJQF: SVO  
**Wen** gis-oqs'-g-'s                    gegs sepei?  
**who** already-bake.VTI-3-PST.IK cake this.morning  
'Who baked the cake this morning?'
- c. OBJQF: OVS  
**Goqwei** gis-oqs'-g-'s                    gisigui'sgw sepei?  
**what** already-bake.VTI-3-PST.IK old.woman this.morning  
'What did the grandmother bake this morning?'

- d. SUBCF: SVO  
 'Lpa'tuj gis-oqs'-g-'s                      gegs sepei?  
 boy            already-bake.VTI-3-PST.IK cake this.morning  
 'Did **the boy** bake the cake this morning?'
- e. OBJCF: SVO  
 Gisigui'sgw gis-oqs'-g-'s                      **petaqan** sepei?  
 old.woman    already-bake.VTI-3-PST.IK **pie**            this.morning  
 'Did the grandmother bake **a pie** this morning?'

The experiment was run so that all participants saw all conditions from all items and did not include fillers. Participants were given a training session immediately prior to undertaking the experiment to familiarize them with subjects, objects and the experimental task. Given that there is not a standard orthography and as a result there is varying levels of literacy in the community, the entire experiment and instructions were recorded and presented aurally. The experiment was run in a room in the Listuguj Education Directorate on a 17" Macbook Pro with a LogitechH390 USB headset. The training session was presented using Microsoft Power Point 2011. The experiment was presented using MatLab (Version 2010) and Psychtoolbox extensions (Kleiner et al. 2007). Sound files were annotated and truncated using Praat (Boersma and Weenink 2013). Sound files were aligned with transcripts using the ProsodyLab aligner (Gorman et al. 2011). Data was extracted using Praat and analyzed using R (Team et al. 2012).

The experiment was run on 15 native speakers of the Listuguj-dialect of Mi'gmaq, spoken in Listuguj, Quebec, Canada. All speakers are bilingual, 2nd language English speakers, with many also having rudimentary knowledge of French. 4 speakers were excluded for not following instructions, leaving 11 (7 women and 4 men) for data analysis. Of the 1100 potential tokens, 779 mono clausal utterances remained for data analysis after others were excluded for various reasons, e.g., dropped arguments, blanks, and errors.

### 3.2 Results

Table 1 shows the breakdown of word order by condition. Across all conditions, SVO word order was the most common within each (58%–98%) and across all conditions (87%). OVS was the next most common word order across conditions (7%), but was mainly limited to the ObjQF condition (37%). SOV was sparingly used across conditions (5%) and used most commonly in the BroadF (9%) and ObjCF (8%) conditions. The other three word orders were quite rare. A Chi<sup>2</sup> test for independence shows that word order is not independent from condition ( $p > 0.001$ ). To support this finding, a logistic regression model was fit with word order (SVO vs. other) as the predictor and condition as the fixed variable. All conditions, except ObjCF, significantly differ from BroadF. Subject focus conditions shows less variation from SVO word order than BroadF ( $z = -3.083$ ,  $p = 0.002$  for both SubjQF and SubjCF). While ObjQF shows significantly more variation from SVO word order than BroadF ( $z = 5.768$ ,  $p > 0.001$ ).

ObjQF was the only condition where another word order (OVS) other than SVO was frequent. Table 3 shows the breakdown of word order by verb type in ObjQF. VTI forms showed a 51% to 41% split between SVO and OVS forms, while VTA forms showed a 82% to 18% split. A Chi<sup>2</sup> test for independence of the difference between VTI and VTA, shows that word order is not independent from verb type ( $p = 0.007$ ). This is supported by a logistic regression model, fit with word order as

**Table 1:** Word order by condition

	BroadF	SubjQF	ObjQF	SubjCF	ObjCF	Total
SVO	160 (88%)	161 (98%)	74 (58%)	161 (98%)	120 (86%)	676 (87%)
OVS	1 (0.5%)	1 (0.5%)	47 (37%)	0	7 (5%)	56 (7%)
SOV	17 (9%)	1 (0.5%)	4 (3%)	4 (2%)	11 (8%)	37 (5%)
OSV	1 (0.5%)	1 (0.5%)	3 (2%)	0	0	5 (0.6%)
VSO	1 (0.5%)	1 (0.5%)	0	0	1 (0.7%)	3 (0.4%)
VOS	1 (1%)	0	0	0	1 (0.7%)	2 (0.3%)
Total	181	165	128	165	140	779

the predictor (SVO vs. other) and verb type (VTI vs. VTA) as the fixed effect. In ObjQF, word order in VTA verbs differ significantly from VTI verbs ( $z=-2.788$ ,  $p=0.005$ ).

**Table 2:** Word order by verb type in ObjQF

	VTI	VTA	VAI+O	Total
SVO	43 (51%)	23 (82%)	8 (53%)	74 (58%)
OVS	35 (41%)	5 (18%)	7 (47%)	47 (37%)
SOV	4 (5%)	0	0	4 (3%)
OSV	3 (4%)	0	0	3 (2%)
Total	85 (66%)	28 (22%)	15 (12%)	128

### 3.3 Discussion and summary

Support for the experimental hypothesis was found as word order and condition were found not to be independent. While the BroadF condition allowed some word order variation (SVO=88%), very little word order variation was found in subject focus conditions (SVO=98% in both SubjQF and SubjCF). The ObjQF condition allowing even more word order variation (SVO=58%). One possible explanation for the increase in OVS word order in ObjQF is because the question used was in OVS word order as well, which may have led to an increase use of OVS word orders in the answers. A follow-up experiment has recently been conducted to test the effect of question word order on answer word order using the same experimental design with 10 new first-language Mi'gmaq speakers from Listuguj, Quebec. Preliminary results suggest that question word order does not effect answer word order.

The word order data suggests that there are two focus strategies: Focus-A, in which the focused element always appears utterance initial, SVO in SubjF conditions and OVS in ObjF conditions; and Focus-B in which the word order is invariant, i.e., SVO in all conditions. These two strategies appear to interact with verb type, as while VTIs show a relatively even proportion of SVO to OVS (51:41), VTAs are predominantly SVO (82%). Given the fact that all of the forms in this experiment had 3rd person animate DPs, in VTAs animate object were obviative, which suggests that the avoidance of ordering objects before subjects can be reducible to an avoidance of ordering obviative DPs before proximate DPs. This provides experimental support for Junker 2004, who suggests a similar effect of obviation on word order for East Cree.

In sum, the results show that focus can, and does, have an effect on word order in Mi'gmaq. The effect of discourse is also implicated through the interaction of obviative objects and word order.

#### 4 Conclusion

In this paper I presented a series of subject-object asymmetries–superiority effects, Binding Condition C effects and Long-Distance Agreement—to argue that arguments are base-generated in A-positions in which the subject asymmetrically c-commands the object in Mi'gmaq. I followed with experimental tests to show that focus, a discourse factor, can effect the word order in Mi'gmaq. Both of these support the hypothesis that Mi'gmaq is a discourse configurational language. This suggests that exploring other discourse effects, such as topics, will further aid in understanding word order variation in Mi'gmaq.

#### References

- Boersma, P. and Weenink, D. (2013). Praat. *Amsterdam: Department of Phonetics, University of Amsterdam. [ijpor.oxfordjournals.org](http://ijpor.oxfordjournals.org), (5.3.39).*
- Branigan, P. and MacKenzie, M. (2002). Altruism, A-movement, and object agreement in Innu-aimûn. *Linguistic Inquiry*, 33(3):385–407.
- Brittain, J. (2001). *The morphosyntax of the Algonquian conjunct verb: A minimalist approach*. Routledge.
- Brittain, J. (2013). Obviation and coreference relations in Cree-Montagnais-Naskapi. *Linguistica Atlantica*, 23:69–91.
- Bruening, B. (2001). *Syntax at the edge: Cross-clausal phenomena and the syntax of Passamaquoddy*. PhD thesis, Massachusetts Institute of Technology.
- Bruening, B. (2009). Algonquian languages have A-movement and A-agreement. *Linguistic Inquiry*, 40(3):427–445.
- Cable, S. (2007). *The grammar of Q: Q-particles and the nature of Wh-fronting, as revealed by the Wh-questions of Tlingit*. PhD thesis, Massachusetts Institute of Technology.
- Calhoun, S. (2013). The interaction of prosody and syntax in Samoan focus marking. Ms. Victoria University of Wellington.
- Chomsky, N. (1973). Conditions on transformations. A festschrift for Morris Halle, edited by Stephen Anderson & Paul Kiparsky, 232–286.
- Chomsky, N. (1986). *Knowledge of language: Its nature, origin, and use*. Greenwood Publishing Group.
- Chomsky, N. (2001). Derivation by phase. Ken Hale: A life in language, Ed. by Michael Kenstowicz, 1–52.
- Gorman, K., Howell, J., and Wagner, M. (2011). Prosodylab-aligner: A tool for forced alignment of laboratory speech. *Canadian Acoustics*, 39(3):192–193.
- Hale, K. (1983). Warlpiri and the grammar of non-configurational languages. *Natural Language & Linguistic Theory*, 1(1):5–47.

- Hamilton, M. D. (2013). Wh-movement in Mi'gmaq. Presented at the Canadian Linguistics Association, University of Victoria.
- Junker, M.-O. (2004). Focus, obviation, and word order in East Cree. *Lingua*, 114(3):345–365.
- Kleiner, M., Brainard, D., Pelli, D., Ingling, A., Murray, R., and Broussard, C. (2007). What's new in psychtoolbox-3. *Perception*, 36(14):1–1.
- LeSourd, P. (2010). Raising to object in Maliseet-Pasamaquody. In Bliss, H. and Girard, R., editors, *Workshop on Structure and Constituency in Native American Languages*, volume 13 and 14. UBCWPL 26.
- McClay, E. (2012). Possession in Mi'gmaq. Honors thesis, McGill University.
- Oxford, W. R. (2014). *Microparameters of agreement: A diachronic perspective on Algonquian verb inflection*. PhD thesis, University of Toronto.
- Piggott, G. (1989). Argument structure and the morphology of the Ojibwa verb. *Theoretical perspectives on Native American languages*, pages 35–49.
- Polinsky, M. and Potsdam, E. (2001). Long-distance agreement and topic in Tsez. *Natural Language & Linguistic Theory*, 19(3):583–646.
- Richards, N. (1997). *What moves where when in which language?* PhD thesis, Massachusetts Institute of Technology.
- Rizzi, L. (1990). *Relativized minimality*. The MIT Press.
- Team, R. C. et al. (2012). R: A language and environment for statistical computing.
- Version, M. (2010). 7.10. 0.499 (r2010a). *The MathWorks, Inc. Protected by US and international patents*.