

## Wh-agreement in Ojibwe : consequences for feature inheritance and the categorial status of tense\*

Bethany Lochbihler & Eric Mathieu  
McGill University & University of Ottawa

This paper argues that Ojibwe, an Algonquian language, exhibits wh-agreement, which surfaces on T rather than on C or *v* (as is the case in other languages with wh-agreement). We propose that the agreement features realized on T are passed down from C via feature inheritance. It is argued that the role of C in the conjunct clauses is to introduce  $\delta$ -features (i.e. discourse features), while the role of C in the independent is to introduce  $\phi$ -features. The absence of proclitics in the conjunct is derived from the fact that C never introduces  $\phi$ -features in this context. One consequence of our analysis is that Tense is a functional head in Ojibwe, and is not adverbial.

### 1 Introduction

The aim of this paper is to show that  $\phi$ -features are not the only features that can be inherited from C to T (cf. Chomsky 2008, Richards 2007). T can also inherit  $\delta$ -features (i.e. discourse features) from C, which we claim are proper formal features comparable to  $\phi$ -features (see Aboh 2008). Evidence is found in Ojibwe, an Algonquian language, which exhibits so-called initial change on tense markers, which we correlate with wh-agreement on T. Initial change has been discussed in Algonquian languages for a long time (e.g. Bloomfield 1957), but it has never been directly connected to wh-agreement (however, see Blain 1999). One major consequence of our analysis of wh-agreement is that Tense is a functional head in Ojibwe, and not a modifier, unlike Blackfoot, according to the analysis by Wiltschko & Ritter (2007). They claim that Tense is an adverbial head in that language, and that Infl in Blackfoot is realized through Person. We show that this generalization cannot be made across Algonquian languages, citing evidence from the agreement facts in Ojibwe.

Our work builds on Lees (1979), Pagotto (1980), Johns (1980), Campana (1996), and Brittain (1997), who account for the conjunct order found on embedded clauses in Algonquian. However, unlike our

---

\* Many thanks to our language consultants for sharing their time and teaching us Ojibwe. These are Philomene Chegahno, Berdina Johnston, Donald Keeshig, Joanne Keeshig, Isabel Millette, Juanita Pheasant, Ernestine Proulx and Ella Waukey. We wish to thank the audience at WSCLA, especially Rose-Marie-Déchainé and Martina Wiltschko for their questions and comments. We also wish to thank Hamida Demirdache for brief, but very helpful, discussion about tense. Section 4 would not have existed as it currently stands without her input.

predecessors, we present a minimalist analysis that does not involve Spec-Head agreement or movement of the verb to C. We argue that the wh-agreement exhibited in Ojibwe in interrogatives, relative clauses, focus constructions and past participles is realized in the T (and not exclusively the C) domain. Our proposal states that although C in the independent order (plain matrix clauses) introduces  $\phi$ -features, the role of C in conjunct clauses (e.g. embedded clauses) is to introduce  $\delta$ -features. This particular division of labour between the independent order and the conjunct order has, as we shall see in the body of the paper, important ramifications for the distribution of proclitics and on the spell-out positions of agreement.

The paper is organized as follows. Section 2 introduces the Ojibwe data and argues for the correlation between “initial change” and wh-constructions. Section 3 presents our analysis of the wh-agreement, appealing to feature inheritance. Section 4 argues that Tense in Ojibwe is a functional head and section 5 concludes the paper.

## 2 Wh-agreement in Ojibwe

Wh-agreement is a phenomenon found in many different languages, including French (Rizzi 1990), Scottish Gaelic (Adger 2003), Irish (McCloskey 1979), Chamorro (Chung 1994, 1998), Hausa (Tuller 1986), Kikuyu (Clements 1984) and Palauan (Georgopoulos 1991). It has been previously observed on several categories, such as C and *v*. In French and Scottish Gaelic special complementizers surface in the context of wh-movement, giving wh-agreement on C. For example, in French, the complementizer *que* is used when there is no wh-movement (1a), but the wh-complementizer *qui* is used to agree with the wh-phrase in constructions like (1b). Similarly for Scottish Gaelic, the regular complementizer *gu* in (2a) alternates with *a* in (2b), agreeing with the wh-phrase. These special complementizers (*qui*, *a*) only occur alongside wh-movement, constituting wh-agreement on C. Otherwise the regular complementizers are used.<sup>1</sup>

- (1) a. Tu as dit *que* le livre était tombé. (French)  
you have said that the book had fallen  
‘You said that the book had fallen.’  
b. Qu’est-ce que tu as dit **qui** était tombé?  
what-is-this that you have said that.agr was fallen  
‘Who did you say had fallen?’
- (2) a. Tha mi a’ smaoinichadh *gu* bheil Iain air a mhisg  
am I asp thinking that is Iain in his drink  
‘I think that Iain is drunk.’ (Scottish Gaelic)  
b. Cò tha thu a’ smaoinichadh **a** tha air a mhisg?  
whoare you asp thinking that.agr is on his drink  
‘Who do you think is drunk?’ (Adger 2003:362)

<sup>1</sup> All examples are from Ojibwe unless specified otherwise. Abbreviations are as follows: pst=past, pres=present, fut=(volitional) future, OBV=obviative, DIR=direct, INV=inverse, wh.X=wh-agreement, Cong=conjunct order, Indep=independent order, pl=plural, sg=singular, poss=possessive, subj=subject, obj=object, INCHO=inchoative, EMPH=emphatic, rel=relative.

In Chamorro, wh-agreement appears on *v*, as analyzed by Chung (1994, 1998). (3) is a simple declarative construction in Chamorro with the verb *fa'gasi* 'wash'. In (4) the verb changes its form to agree with the moved wh-element, becoming *fuma'gasi* when the wh-word is the nominative argument (4a) and *fina'gasése* for an object wh-argument (4b).

- (3) Ha-fa'gasi si Juan i kareta. (Chamorro)  
 Agr-wash Juan the car  
 'Juan washed the car.'
- (4) a. Hay<sub>i</sub> fuma'gasi t<sub>i</sub> i kareta? (Chamorro)  
 who WH[nom].wash the car  
 'Who washed the car?'
- b. Hafa<sub>i</sub> fina'gasése-nña si Henry t<sub>i</sub> pära hagu?  
 what WH[obj].wash.Prog-agr Henry for you  
 'What is Henry washing for you?' (Chung 1998:236)

These phenomena in Chamorro are labeled wh-agreement rather than  $\phi$ -agreement since they are not cases of direct agreement with the  $\phi$ -features of the subject or object, but only with their case properties. In French and Scottish Gaelic, the term wh-agreement is also appropriate, since no direct agreement with  $\phi$ -features is involved. In contrast, languages like Dutch (Bennis & Haegeman 1984) and Lokaá (Baker 2008) have agreement on complementizers that involve  $\phi$ -features. The latter type is not the focus of this study and we leave it aside.

Wh-agreement can be found on the categories C and *v*; however, we claim that T is also a possible locus for this kind of agreement, as the data in Ojibwe shows. We are building on previous literature that discusses the phenomenon of "initial change" in Ojibwe (described below, also found in other Algonquian languages, although usually less robustly) which we argue is actually wh-agreement correlating with wh-movement. Initial change has been discussed for Algonquian languages by Rogers (1978), Lees (1979), Pagotto (1980), Johns (1981), Campana (1996), Brittain (1997), and Richards (2004); however the direct connection between initial change and wh-movement has not been explicitly made or explored (with the possible exception of Blain 1999).

Ojibwe verbs are marked for tense by a prefix (often labeled a preverb in Algonquian literature) that attaches to the verbal stem. These prefixes take the forms in (5) in matrix clauses of the "independent order", as well as in "simple conjunct" clauses, which can stand alone or appear in a subordinated context.

- (5) Declarative Tense Prefixes

|                   |             |
|-------------------|-------------|
| Present           | $\emptyset$ |
| Past              | <i>gii-</i> |
| Volitional Future | <i>wii-</i> |
| Future            | <i>ga-</i>  |

The tense prefixes (and other preverbs) change shape in wh-clauses where wh-movement has occurred. This is what is known as "initial change"

(associated with the “changed conjunct order”) (Bloomfield 1957), which changes the quality of the initial vowel giving the tense prefix shapes in (6), relating to the unchanged prefixes in (5).

(6) Wh- Tense Prefixes (changed conjunct order)

|                      |             |
|----------------------|-------------|
| Wh-Present           | <i>e-</i>   |
| Wh-Past              | <i>gaa-</i> |
| Wh-Volitional Future | <i>waa-</i> |
| Wh-Future            | <i>ge-</i>  |

To show how initial change constitutes wh-agreement, we will focus on two pairs of tense prefixes, *gii-/gaa-* ‘past’ and *wii-/waa-* ‘volitional future’. Consider the alternations in the tense prefixes in the following examples.

- (7) a. Mani **gii**-shishimik kwezhigaans-an  
 Mary pst-steal cookie-pl  
 ‘Mary stole the cookies.’  
 b. wegenesh<sub>i</sub> t<sub>i</sub> **gaa**-shishimik nen kwezhigaans-an?  
 who wh.pst-steal those cookie-pl  
 ‘Who stole the cookies?’

We see in (7a) that a normal, declarative construction uses the past prefix *gii-* from the set in (5). When this construction is transformed into a wh-question as in (7b), *gii-* undergoes initial change and the alternant *gaa-* appears. This alternation signals agreement with the moved wh-element, *wegenesh* ‘who’. In (8a) there is a declarative future construction using *wii-*, which becomes the changed *waa-* in (8b) when the object is questioned.

- (8) a. gekik bemzhej-ik **wii**-miigaaj-a wemtigoozhii-n  
 those person-pl fut-fight-OBV Frenchmen-OBV  
 ‘Those people are going to fight those French people.’  
 b. aaniish<sub>i</sub> na gekik **waa**-miigaaj-ik t<sub>i</sub>?  
 who Q those wh.fut-fight-INV  
 ‘Who are they (those people) going to fight?’

This wh-agreement, realized as initial change, is obligatory in wh-questions (9), and creates ungrammaticality in non-wh-constructions (10).

- (9) a. wenesh gaa-/\*gii-waabm-aa-t John-an  
 who wh.pst-/\*pst-see-DIR-OBV John-OBV  
 ‘Who saw John?’ (Philomene Chegano, May 5, 2008)  
 b. anish pi gaa-/\*gii-maajdit nimosh  
 when wh.pst-/\*pst-start dog  
 ‘When did the dog start?’
- (10) maaba kwe gii-/\*gaa-waabm nen nine-n  
 that woman pst-/\*wh.pst-see that man-OBV  
 gii-/\*gaa-shishi-goang nen kwezhigaans-an  
 pst-/\*wh.pst-steal-CONJ those cookie-pl  
 ‘That woman saw the man steal the cookies.’

The generalization that the “initial change” realized on T is wh-agreement is strengthened by the fact that every clause through which a wh-element has moved must be wh-marked (i.e. bear wh-agreement), a fact seen in long distance questions (11)-(12). As is well-known, languages that have wh-agreement show successive cyclic agreement (see Haik 1990 for a sample of many languages).

- (11) a. Mani gii-waabm-n [John giinona-d Peter-an]  
 Mary pst-see-TI John talk-OBV Peter-OBV  
 ‘Mary saw John talking to Peter.’  
 b. wegenesh<sub>i</sub> Mani **gaa**-waabm-a-t [<sub>i</sub>John **gaa**-giinonad <sub>i</sub>]?  
 who Mary wh.pst-see-DIR-OBV John wh.pst-talk  
 ‘Who did Mary see John talking to?’
- (12) aniish<sub>i</sub> Bill **gaa**-eneendang [<sub>i</sub> John **gaa**-kedat  
 what Bill wh.pst-think John wh.pst-say  
 [<sub>i</sub> Mary **gaa**-giishnedot <sub>i</sub>]]  
 Mary wh.pst-buy  
 ‘What does Bill think John said Mary bought?’  
 (Ella Waukey, May 6, 2008)

(11a) is the answer to the wh-question in (11b). Notice that both the embedded and matrix verbs are marked with wh-agreement in (11b), not simply the matrix verb. This is because the wh-element *wegenesh* ‘who’ has moved from the embedded clause, as the indirect object, to the front of the matrix clause, marking both clauses as wh. Similarly in (12), *aniish* ‘what’ moves from the lowest clause to matrix CP so all three clauses are marked with wh-agreement.

So far it has been shown that wh-questions show wh-agreement on T, in contrast to declaratives which not only lack this agreement, but which are ungrammatical if this agreement is added. Our analysis of initial change as marking clauses for wh-movement predicts that wh-interrogatives are only one of the contexts where wh-agreement will appear in Ojibwe. Other contexts for this agreement are constructions involving relative clauses, focus constructions and participles/reduced relatives (discussed below). These are the types of constructions discussed by Chomsky (1977) as involving wh-movement in English.

Ojibwe relative clauses consistently display wh-agreement on T, shown in (13) and (14) (see also Johns 1980 for relative clause formation in Rainy River Ojibwe).

- (13) Mii wa nini [dakweman **gaa**-bkinaagen’jin mbingoo.]  
 it’s that man poss.wife wh.pst-win bingo  
 ‘That’s the man whose wife won at bingo.’ (Valentine 2001:585)
- (14) Mii dash gii-zhitoowaad iw mshkik-waaboo [**waa**-abjitoowaad.]  
 and then pst-make that medicine-liquid wh.fut-use  
 ‘They made the liquid medicine which they were going to use.’  
 (Valentine 2001:582)

Wh-agreement in relative clauses is entirely expected since relative clauses are standardly analyzed as containing a wh-relative pronoun. The relative pronoun wh-moves to the front of the relative clause, maintaining the connection between wh-agreement on T and wh-movement in Ojibwe.

Focus constructions similarly exhibit wh-agreement in the language, which is also expected since focus has been viewed as wh-movement (Chomsky 1977). Rogers (1978) provides many examples with focused elements that trigger wh-agreement, and a few are given in (15)-(17). We assume along standard lines that a null operator is present in Spec-CP.

- (15) niizhwaak dso-bboon **gaa**-ko-zhiweebak maanda  
two hundred years wh.pst-formerly-happen this  
'It was two hundred years ago that this happened.'  
(Rogers 1978:170)
- (16) mii dash **gaa**-nji-wiijeeyaawaad.  
and then wh.pst-reason-stay.with  
'And that's the reason he stayed with her.' (Rogers 1978:171)
- (17) Mii dash maa **gaa**-nji-googii-d gii-nakzhiwe-d widi yaani-d.  
and then there wh.pst-dive-3s pst-swim-3s over.there be-OBV  
'It is from there that he dived and swam over to where they were.'  
(Valentine 2001:945)

Wh-agreement is also found in participles, or reduced relatives. In Ojibwe, these have both verbal and nominal properties and resemble relative clauses (18).

- (18) a. **gaa**-miinaas-wangdwaa-nin  
wh.pst-evidently.neglected.to.give-3pl  
'What we evidently neglected to give to them'
- b. **gaa**-waabem-ag-ig  
wh.pst-see-1subj-3pl  
'those whom I saw' (Rogers 1978:173)

In this section we have presented the initial change data in Ojibwe and argued that initial change is actually wh-agreement, appearing in clauses where wh-movement has occurred. All clauses through and in which wh-movement has occurred are obligatorily marked by wh-agreement, and any clause without wh-movement may not have wh-agreement. Wh-agreement does not only appear in wh-interrogatives, but also in other constructions associated with wh-movement, such as relative clauses, focus constructions and participles.

The following section presents our analysis of the wh-agreement phenomenon in Ojibwe, accounting for why this agreement appears on the category T in this language.

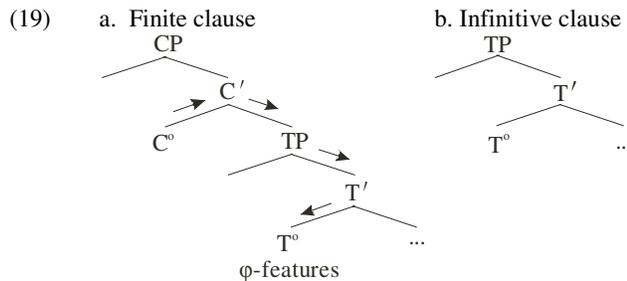
### 3 The account: wh-agreement as feature inheritance

In this section, we establish a correlation between the wh-agreement found on T in Ojibwe, and the presence of a dominating CP.

#### 3.1 Feature inheritance

Initial change/wh-agreement only surfaces when wh-movement has occurred in a clause. Assuming, as the standard theory maintains, that the landing site for wh-movement is the specifier of CP (i.e. not Spec-TP), then the agreement features that surface on T in Ojibwe must *depend* on C, the locus of wh-movement. It is our proposal that the wh-agreement features reach T via inheritance from C.

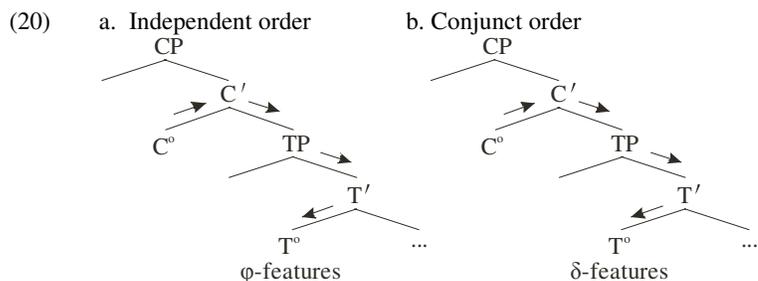
Feature inheritance of  $\phi$ -features has been independently argued for by Chomsky (2008) who argues that T does not have its own Agree ( $\phi$ -) features and cannot act as a probe on its own. According to Chomsky, T inherits its  $[\text{u}\phi]$  features from C, as in (19a), so that it is C that ultimately initiates the Agree relation that values the subject's interpretable  $\phi$ -features and that can trigger subject movement. Subjects land in Spec-TP, and not Spec-CP, since C's Agree/ $\phi$ -features have been passed on to T. This notion of feature inheritance gives an elegant account of infinitives as TPs that are not dominated by a CP, as shown in (19b). Because there is no C level, T does not inherit any Agree features and agreement with a subject is impossible (infinitival T does not show agreement and cannot assign nominative case). This new account of the difference between finite and non-finite clauses is more principled than previous accounts, and is an improvement on the previous stipulation that non-tensed clauses have defective T, while tensed clauses have non-defective T (Chomsky 2000, 2001).



The Chomsky (2008) discussion of feature inheritance lays the groundwork for our analysis of wh-agreement in Ojibwe, but a few things must be clarified. There are no infinitives in Ojibwe (Rogers 1978), so there is no defective/non-defective T contrast to be accounted for. However, this does not necessarily mean that C always transfers  $\phi$ -features to T either. Feature inheritance has been introduced in the context of  $\phi$ -feature agreement; however we propose that another type of feature –  $\delta$ -features – can also undergo feature inheritance from C to T.  $\delta$ -features are those pertaining to discourse features, such as wh-, focus, and topic. The term “ $\delta$ -feature” is important because wh-agreement in Ojibwe (and in other wh-

agreement languages) is not correlated with  $\phi$ -features agreement (i.e. person, gender or number), but instead relates to the discourse.

We argue that there are two types of C in Ojibwe: one which introduces  $\phi$ -features, found in the independent order (20a) (related to main clauses and non-wh-sentences) *and* one that introduces  $\delta$ -features, found in the conjunct order (20b) (embedded clauses and wh- or focus/topic clauses).



The difference between the independent and conjunct orders in terms of  $\phi$ - and  $\delta$ -features is realized in the data. The independent order bears person proclitics (21a), which are absent in the conjunct (21b) since it lacks  $\phi$ -features on C.

- (21) a. **n**-waabm-aa  
 1-see(Indep)-DIR  
 'I see her/him.'
- b. waabm-ag  
 see(Conj)-1subj  
 '(if) I see her/him.' (Valentine 2001:279)

Our proposal takes the following shape. Wh-operators raise to the specifier of CP, attracted by the [*uwh*] probe on C. The wh-agreement (i.e.  $\delta$ -) features on C are inherited down to T (like in (20a)), and the tense morphemes are spelled-out with initial change, signaling the wh-agreement. Even though C is the center of wh-movement and the original bearer of wh-features, it is T that gains these features and shows the overt agreement.

### 3.2 Independent vs. conjunct order

One consequence of our analysis is that, unlike Brittain (1997), the independent order does not signal the absence of a CP. On the contrary, C in the independent order is necessary to introduce  $\phi$ -features, which appear in the person proclitic. In the independent order, we assume T inherits the  $\phi$ -features from C and enters into an Agree relation with the proclitic in Spec-TP. A CP is also necessary in the conjunct order, but for different reasons: the conjunct order is associated with a discourse environment and C introduces  $\delta$ - rather than  $\phi$ -features.

Unlike our account, previous analyses of the difference between the independent and conjunct orders require movement of the verb to C in the conjunct order (Campana 1997; Brittain 1997, 2001). The purpose of this movement is to account for the fact that there are proclitics in the

independent, but not the conjunct (see (21)), indicating person proclitics and initial change/the conjunct paradigm are in complementary distribution. The idea is that the proclitic appears in C in the independent when there is no verb movement, but is blocked in the conjunct when the verb moves to C and takes up that slot (see also Halle and Marantz 1993, where it is argued that initial change and the proclitics both appear in C, in complementary distribution).

There are arguments against the idea that the verb raises to C in Algonquian languages. For Passamaquoddy, Bruening (2001:48-49) mentions that negation and unmarked (i.e. non-left-dislocated) NPs can appear between *wh*-phrases and the verb, which is impossible if the *wh*-phrase is in Spec-CP and the verb in C.<sup>2</sup> Example (11b), repeated here as (22), illustrates this possibility in Ojibwe. The non-focused/non-topicalized NP *Mani* ‘Mary’ intervenes between the *wh*-phrase *wegenesh* ‘who’ and the verbal complex. In (23) a non-topicalized/focalized adverb *gichi-wewiib* ‘very quickly/in great hurry’ can also intervene between the *wh*-phrase *wegonesh* ‘why’ and the verbal complex as illustrated in (23).

(22) *wegenesh*<sub>i</sub> *Mani* ***gaa***-*waabm*-a-t [t<sub>i</sub> *John* ***gaa***-*giionad* t<sub>i</sub>]?  
 who Mary *wh.pst-see-DIR-OBV* John *wh.pst-talk*  
 ‘Who did Mary see John talking to?’

(23) *wegonesh* *naa* *gichi-wewiib* ***gaa***-*ani-onji-maajaawaa*-d?  
 why EMPH great-quickly *wh.pst-away-from-go-3PL*  
 ‘Why have they all left in such a great hurry?’  
 (Bloomfield & Nichols 1991:78)

The evidence for V-to-C raising in Ojibwe is lacking, and the only motivation for this movement is to attempt to account for the absence of the person proclitic in the conjunct order. In fact, it seems that the verb cannot possibly raise to C since *wh*-agreement in Ojibwe surfaces in environments where no T-to-C movement is attested cross-linguistically (see Richards 2004). These environments include: i) relative clauses, (13) and (14); ii) focus constructions (15)-(17); and iii) embedded *wh*-questions (24).

(24) ***gaa*** *gii-kendam-sii* [(*wegenesh*); t<sub>i</sub> ***gaa***-*shishimik-owang*  
 no *pst-know-neg* [(who) *wh.pst-steal-conj*  
*nen* *kwezhigaans-an*].  
 those cookie-pl  
 ‘I don’t know who stole the cookies.’

Another fact that argues against V-to-C movement in Ojibwe is that the tense morpheme is a prefix. Tense markers are usually suffixes rather than prefixes in the world’s languages, and it is commonly asserted that a complex verb form is built up by successive applications of head movement. The surface position of the verb must be at least as high as the head that represents the outermost morpheme in the verb form (Julien 2002). Because tense does not appear on the right edge of the verbal complex, but

<sup>2</sup> We assume that Ojibwe is a configurational language (see Bruening 2001 for Passamaquoddy).

rather on the left edge, an analysis where the verb must move through and past T does not achieve the morpheme order observed.

### 3.3 Remaining issues

In this section we will discuss a few issues that fall out from our analysis of *wh*-agreement in Ojibwe. We will address the status of  $\phi$ -features in *wh*-constructions, the difference between the conjunct order and the changed conjunct (i.e. with initial change), the realization of *wh*-agreement in the absence of an overt tense morpheme (e.g. in the present tense), and the motivation for feature inheritance.

First, we want to argue that in the conjunct order, the  $\phi$ -features normally realized on the proclitic are introduced by *v*, explaining why the argument  $\phi$ -features surface as suffixes rather than as a prefix in the that order (see Boeckx 2000 and Alexiadou 2001 for the idea that *v* can assign Nominative when T is prohibited from doing so). Consider (25).

- (25) a. *g-waabm-aa*  
 2-see(Indep)-DIR  
 ‘You see her/him.’  
 b. *waabm-ad*  
 see(Conj)-2subj  
 ‘(if) you see her/him.’ (Valentine 2001:269, 276)

(25a) in the independent order has a proclitic *g-* agreeing with the 2<sup>nd</sup> person argument. (25b) is in the conjunct order and therefore lacks a proclitic. Instead the suffix *-ad* ‘2<sup>nd</sup> subject’ is used, so that *v* takes over  $\phi$ -agreement from C in the conjunct.

Second, we need to be able to differentiate the two types of conjunct orders – the simple conjunct (found in normal embedded clauses, for example), and the changed conjunct (i.e. with initial change, as in *wh*-constructions). We have argued that conjunct clauses possess C’s with  $\delta$ /discourse-features that are transferred to T, and that independent clauses instead have  $\phi$ -features on C. The simple conjunct, like the changed conjunct, lacks the person proclitic found in the independent (and so lacks [u $\phi$ ] on C), but does not exhibit initial change (26) and therefore cannot have the same  $\delta$ -features found in *wh*-constructions.

- (26) *Gii-maajii-daabaan-’go-yaanh*  
 pst-start-drive-in.sleigh-Conj  
 ‘So I took off.’ (Chippewa-Ottawa texts, Francis X. Fox and Nora Soney with Richard Rhodes, in Nichols 1988:44)

We argue that simple conjunct clauses actually do involve a special discourse function relating to topics (rather than *wh*-operators), such that C in this environment bears  $\delta$ -features, rather than  $\phi$ -features, but those which are unique from *wh*-agreement features.

We can see the correlation between the conjunct order and topichood when we place the conjunct sentence in (26) into the discourse context from which it is taken. The statement ‘So I took off’ in (27) is in the conjunct order and must be somehow embedded. However, this clause is not

subordinated by a matrix clause but rather the statement ‘So I took off’ depends on the context set up by the previous discourse. The conjunct inflection is triggered since the statement is anaphoric on discourse already introduced in the text/narrative. However, unlike *wh-* and focus, topic does not trigger discourse agreement (this appears to be universal). This is why no initial change surfaces in (26).

- (27) “Aanii-sh iidig ezhwebak?” ndinendam. Mii-sh ge go mkwendmaan*h* jii*baat*googiizhgad. “Ndaangshenh nga-oo-*mb*waachaa,” ndinendam. Gii-*maaj*iidaabaan’goyaan*h*. ‘So I wonder what’s going on. But then I remember that it’s Friday. So I say to myself, “I’ll just go visit my cousin.” So I took off.’ (Chippewa-Ottawa texts, Francis X. Fox and Nora Soney with Richard Rhodes, in Nichols 1988:43-44)

The idea that conjunct clauses involve topicalization is consistent with a recent proposal made by Cook (2008) who argues that there are two kinds of clauses in Plains Cree: indexical clauses, which are evaluated with respect to the speech situation (independent order); and anaphoric clauses, which are evaluated with respect to a contextually-given (anaphoric) situation (conjunct order). However, there seems to be a difference between Plains Cree and Ojibwe where only embedded clauses with the *changed* conjunct can appear as matrix clauses in Plains Cree, while in Ojibwe, no such restriction applies. Matrix sentences can either be in the independent or the conjunct order, whether the latter is changed or simple. There are many examples of matrix clauses in the simple conjunct in the text collected in Nichols (1988).

The third issue arising from our proposal is how to account for the sentences that lack an overt tense prefix and instead show initial change on a preverb (adverbial element), or on the first vowel of the verb stem. This situation is illustrated by the data in (28).

- (28) a. Aaniiish **ja**abaakweet  
 why cooking  
 ‘Why is he cooking?’  
 b. Aaniiish **gee**chi jiiabaakweet?  
 why big cooking  
 ‘Why is he cooking the big breakfast?’  
 c. Aaniiish **eeni** + *nji* weebi *gchi* jiiabaakweet *odi*?  
 why INCHO rel.root still big cooking there  
 ‘Why is he still developing into a big cook-off over there?’  
 (Howell 2008)

We argue that T still inherits the *wh*-agreement features from C in (28). The difference between these examples and those with a past or future prefix (see, for example (7) and (8)) is that T is phonologically null – that is, the present tense does not necessarily spell-out any segments. However, the *wh*-agreement features always spell-out in T (even if not associated with phonological segments also in T) as a morpho-phonological feature, call it [change]. This [change] feature must be realized in the surface form and so

it associates with the closest phonological material on its right (29) (a standard phonological process).

- (29) Morpho-phonological feature association at spell-out
- a. *Feature inheritance*      *Spell-out/feature association* (cf. (28)a)
- |        |          |          |          |
|--------|----------|----------|----------|
| C      | T        | T        |          |
|        | [past]   | /gii-/   |          |
| [δ-wh] | → [δ-wh] | ⋮        | → [gaa-] |
|        |          | [change] |          |
- b. *Feature inheritance*      *Spell-out/feature association* (cf. (28)b)
- |        |          |       |          |         |            |
|--------|----------|-------|----------|---------|------------|
| C      | T        | A     | T        | A       |            |
|        | [pres]   | [BIG] | /ø-/     | /gichi/ |            |
| [δ-wh] | → [δ-wh] |       | [change] | ⋮       | → [geechi] |

Therefore, it is always the leftmost preverb that is marked by initial change, as the data in (28) shows (especially (28c)). Note that we need C to T feature inheritance to account for wh-agreement in Ojibwe and that this phenomenon cannot be fully accounted for by morpho-phonological feature association. It cannot be the case that the wh-features remain on C and spell-out on C as [change] to then associate with the tense morpheme on its right. This is because when elements intervene between C and T, it is still the tense morpheme that gets initial change, not the intervening element, seen in (30) and (31). Therefore, initial change cannot simply be a phonological process but must involve the formal δ-features moving from C to the dominated T head.

- (30) wegenesh<sub>i</sub>    Mani/\*Meni    **gaa**-waabm-aa-t  
 who            Mary            wh.pst-see-DIR-OBV  
 [t<sub>i</sub>    John **gaa**-giinonad t<sub>i</sub>]?  
 John wh.pst-talk  
 ‘Who did Mary see John talking to?’

- (31) Wegonesh naa/\***nyaa**    gichi-wewiib    gaa-ani-onji-maajaawaa-d?  
 why            EMPH            big-quickly    wh.pst-away-from-go-3pl  
 ‘Why have they all left in such a great hurry?’  
 (Adapted from Bloomfield & Nichols 1991:78)

Initial change only appears on T, or in its absence, elements to the right of T, not simply to the right of C.

The fourth question is why the δ-features have to pass down to T instead of staying on C. The answer to this question can be found in a recent discussion on phase-heads (Richards 2007): C must transfer its φ-features to T so that these uninterpretable features can be valued and deleted at the same instant, that is, the instant of spell-out for the complement of C. If this is true for φ-features, then it must also be true for δ-features. Once the CP phase spells out (technically the complement of C), then the δ-features are no longer accessible. In the context of Ojibwe, this mechanism ensures that a matrix tense marker is not inflected for wh. Only (32a) is possible while (32b) is ungrammatical.

- (32) a. Mii dash **gii**-zhitoowaad iw mshkik-waaboo  
 and then pst-make that medicine-liquid  
 [**waa**-aabjitoowaad.]  
 wh.fut-use  
 ‘They made the liquid medicine which they were going to  
 use.’ (Valentine 2001:582)
- b. \*Mii dash **gaa**-zhitoowaad iw mshkik-waaboo [**waa**-  
 aabjitoowaad.]

The matrix clause is in the independent order. Therefore C introduces  $\phi$ -features, while the embedded clause is in the conjunct order where C introduces  $\delta$ -features. Since  $\delta$ -features are passed down to T, they do not remain active in the derivation. They are therefore not part of the upper phases (vP and CP in the matrix clause), which explains the lack of wh-agreement on the upper tense prefix in (32a).

### 3.4 Section summary

In this section we have argued that wh-agreement in Ojibwe surfaces on T via wh-feature inheritance from C. Feature inheritance has been independently proposed by Chomsky (2008) for  $\phi$ -features, and we have extended the proposal so that  $\delta$ -features may also be inherited. The difference between the independent and conjunct orders is then that C bears  $\phi$ -features in the former and  $\delta$ -features in the latter, including in simple conjunct/non-wh-constructions. Section 4 looks at the status of T as a functional head in Ojibwe, standing in contrast to Blackfoot where T is argued to be adverbial (Ritter & Wiltschko 2004).

## 4 Tense is a functional head

One important consequence of our analysis is that, since agreement with T is possible, it must be the case that T is a functional head in Ojibwe. Agreement is usually assumed to be on functional heads and not, say, on adjuncts. The indication that T is a functional head in Ojibwe is interesting since it has been recently argued for Blackfoot (another Algonquian language) that tense is not a functional element (Ritter & Wiltschko 2004, 2007), indicating a distinction between the two related languages. Ritter & Wiltschko argue that tense is expressed in Blackfoot through adverbial elements, and that Infl (T in our terms) is actually concerned with Person and the relation between participants, rather than the relation between events. It has been argued that Halkomelem Salish also lacks tense (Wiltschko 2003, but see Matthewson 2005 for a different opinion on Salish languages), and Infl is instead centered on Location (Ritter & Wiltschko 2004, 2007).

Wiltschko & Ritter argue that because both Halkomelem Salish and Blackfoot lack infinitives, copulae, expletives, tense dependencies, case and possibly A-movement of any kind, the tense grammatical system in these languages is very different from, say, the tense grammatical system in English. There does not appear to be any evidence in Halkomelem Salish or Blackfoot for the idea that T or Spec-TP, the canonical subject position, are projected.

Although Ojibwe appears to lack infinitives and expletives, it does, however, have a verb that corresponds to a copula, namely the animate intransitive final *-i*, as illustrated in (33).

- (33) ikwew-i  
 woman-VAI  
 'be a woman'

It remains to be tested whether the language has tense dependencies, and although initial findings point to the view that Ojibwe lack case and A-movement (e.g. Lochbihler 2008), more research is necessary before these claims can be ascertained. If, however, we use the set of specific properties used by Ritter & Wiltschko – reproduced in (34) – in order to diagnose whether a language has functional or adverbial tense, Ojibwe behaves more like English than it behaves like Halkomelem Salish or Blackfoot.

- (34) a. tense markers are not obligatory  
 b. tense markers are not in complimentary distribution  
 c. tense markers do not occupy a fixed position  
 d. tense markers can attach to many categories

Let us first consider the property in (34a). In Halkomelem Salish (Wiltschko 2003), the sentence in (35) without overt tense marking can be interpreted as past, present or future. In Blackfoot (Ritter & Wiltschko 2004), the sentence in (37a) can be interpreted as either past or present while the sentence in (37b) can be interpreted as either past or future.

- (35) tsel í:mex  
 1sg.s walking  
 'I am/was/will be walking.' (Wiltschko 2003:687)

- (36) a. Kit-ána aasá'ni-wa  
 2-daughter cry-3sg  
 i) 'Your daughter cried' (cf. Frantz 1991:36(v))  
 ii) 'Your daughter is crying.' (Ritter & Wiltschko 2004)  
 b. Nit-sspiy-ihpinnaan  
 1-dance-1pl  
 i) 'We danced.' (cf. Frantz 1991:36(x))  
 ii) 'We are going to dance.' (Ritter & Wiltschko 2004)

Conversely, Ojibwe does not allow tense markers to be optional. The sentence in (37) cannot be interpreted as past or future, only as present tense since there is no overt tense morpheme – the temporal meaning of the sentence is fixed.

- (37) Nenabozh niimi'iwe.  
 Nenabozh give.dance  
 'Nenabush gives a dance.' (Bloomfield & Nichols 1991:18)  
 \*'Nenabush gave a dance.'  
 \*'Nenabush will give a dance.'

For example, in order to obtain a past tense interpretation, the morpheme *gii-* needs to be added to the verbal complex as in (38).

- (38) Nenabozh **gii**-niimi' iwe.  
 Nenabozh pst-give.dance  
 'Nenabush gave a dance.' (Bloomfield & Nichols 1991:18)

According to Wiltschko (2003), if the past and future tense markers in Halkomelem Salish were instances of the functional head T, we would expect them to be in complementary distribution. However, both the past tense marker *lh-* and the future tense marker *-cha* can appear within the same clause (property (34b)). Consider (39).

- (39) í-lh-tsel-cha ímex.  
 aux-past-1sg.s-fut walk  
 'I was going to walk.' (Wiltschko 2003:686)

In (39) we also see the effects of property (34c) since the potential tense morphemes appear as prefix or suffix. A fixed position would be expected if tense were a functional head in Halkomelem.

In Ojibwe, as we have seen, the verbal tense morphemes (past, present and future) are prefixed to the verb in the same slot. These prefixes do not appear in different positions meaning that they do not look adverbial, but rather functional in nature unlike Halkomelem Salish (and Blackfoot).

Finally, tense markers can, according to Wiltschko (2003), appear on all sorts of categories, including nominals as shown in (40) (see also Demirdache 1997, 1998 for Lillooet Salish and Lecarme 1996, 1998, 2004 for Somali, but see Matthewson 2005 for different views on tense appearing on nominals). The nominal is interpreted as *late/deceased*. In other cases, the past tense marker on the nominal indicates that ownership is no longer in effect.

- (40) ímex te-l si:lá-lh  
 walk det-1sg.poss grandfather-pst  
 'My late grandfather walked.' (Burton 1997:73)

In Ojibwe, the only environment where past tense morphology is tolerated apart from verbal contexts is on nouns. Ojibwe has preterit suffixes which can suffix to verbs or nouns to express relations that are no longer in effect, such as ownership or relationship (the latter due to the passing away of the relative). The ending is the same as found in preterit verbal mode.

- (41) a. nmishoos-iban  
 'My late grandfather'  
 b. nimashkimod-iban  
 'the bag I used to have' (Nichols, Price & Lickers 2002:26)

It is not clear, however, that these are pure cases of tense. They may be more akin to aspectual markers, and a suffix typically occurs in a slot that corresponds to aspect.

If, as argued by Ritter & Wiltschko (2004, 2007), Blackfoot is like Halkomelem Salish in lacking function tense, then Blackfoot must be very different from Ojibwe where tense is clearly a functional head. Furthermore, we can see differences between Blackfoot and Ojibwe in the realization of initial change, which must be in a peripheral position on the verbal complex in Ojibwe, but does not have to be in Blackfoot (Frantz 1991:36). Further discrepancies between Blackfoot and other Algonquian languages are discussed in Cook (2008).

This section has argued that although it has been claimed that tense is an adverbial element in Blackfoot, this cannot be the case for all Algonquian languages. Tense in Ojibwe is clearly functional since it bears wh-agreement and since Ojibwe does not exhibit any of the properties in (34) associated with tenseless languages.

## 5 Conclusion

In this paper we have argued that the phenomenon labeled initial change in Ojibwe is actually the realization of wh-agreement on T. The locus of this agreement is actually C, but appears on T because of the process of feature inheritance, following Chomsky (2008). This wh-agreement shows up not only in wh-questions but also in other constructions involving operator such movement, like in relative clauses, for example. An important consequence of our analysis is that tense in Ojibwe is a functional head, and is not adverbial as Ritter & Wiltschko (2004, 2007) have argued for Blackfoot.

## References

- Aboh, E. (2008). Information Structuring Begins with The Numeration. <http://ling.auf.net/lingBuzz/000712>
- Adger, D. (2003). *Core syntax*. Oxford: Oxford University Press.
- Alexiadou (2001). Locating (nominative) Case features in the tree. *Workshop on Case Theory*, 1 - 33, Marburg, Germany.
- Baker, M. (2008). *The syntax of agreement and concord*. Cambridge: Cambridge University Press.
- Bennis, H. & L. Haegeman (1984). On the status of agreement and relative clauses in West-Flemish. In W. de Geest & Y. Putseys (eds.), *Sentential complementation*. Dordrecht: Foris, pp. 33-53.
- Blain, E. (1999). Complementizer *kâ-* in Nêhiyawêwin (Plains Cree). In L. Bar-el, R.-M. Déchaine, and C. Reinholtz (eds.), *Proceedings from the Workshop on the Structure and Constituency in Native American Languages*. Cambridge, MA: MIT Occasional Papers in Linguistics 17, pp. 1-12.
- Blain, E. & R.-M. Déchaine (2007). Evidential types: Evidence from Cree dialects. *International Journal of American Linguistics* 73: 257-291.
- Bloomfield, L. (1957). *Eastern Ojibwa: Grammatical Sketch, Texts and Word List*. Ann Arbor: University of Michigan Press.
- Bloomfield, L., & Nichols, J. D. (1991). *The dog's children: Anishinaabe texts told by Angeline Williams*. Publications of the Algonquian Text Society. Winnipeg: The University of Manitoba Press.
- Boeckx (2001). Quirky agreement. *Studia Linguistica* 54, 354-380.

- Burton, S., 1997. Past tense on nouns as death, destruction and loss. In K. Kusumoto, (Ed.), *Proceedings of NELS 27*. GLSA. University of Massachusetts, Amherst, pp. 65-77.
- Brittain, J. (1997). The conjunct verb in Sheshatshit Montagnais. *The Canadian Journal of Linguistics* 42(3): 253-284.
- Brittain, J. (2001). *The Morphosyntax of the Algonquian Conjunct Verb: A Minimalist Approach*. Outstanding Dissertations in Linguistics. Oxford: Routledge.
- Bruening, B. (2001). *Syntax at the edge: cross-clausal phenomena and the syntax of Passamaquoddy*. PhD dissertation, MIT.
- Campana, M. (1996). The conjunct order in Algonquian. *The Canadian Journal of Linguistics* 41(3): 201-234.
- Chomsky, N. (1977). On Wh-Movement. In P. Culicover, T. Wasow and A. Akajiam (eds.), *Formal Syntax*. New York: Academic Press, pp. 71-132.
- Chomsky, N. (2000). Minimalist inquiries: The framework. In R. Martin, D. Michaels, & J. Uriagereka (eds.), *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik* (pp. 89-155). Cambridge, MA: MIT Press.
- Chomsky, N. (2001). Derivation by phase. In M. Kenstowicz (Ed.), *Ken Hale: A Life in language*. Cambridge, MA: MIT Press, pp. 1-52.
- Chomsky, N. (2008). On phases. In R. Freidin, C. P. Otero & M. L. Zubizarreta (eds.), *Foundational Issues in Linguistic Theory: Essays in Honor of Jean-Roger Vergnaud* (Current Studies in Linguistics). Cambridge, MA: MIT Press, pp. 133-166.
- Chung, S. (1994). Wh-agreement and "referentiality" in Chamorro. *Linguistic Inquiry* 25:1-44.
- Chung, S. (1998). *The Design of Agreement: Evidence from Chamorro*. Chicago: University of Chicago Press.
- Clements, G. (1984). Binding domains in Kikuyu. *Studies in the Linguistic Sciences* 14: 37-56.
- Cook, C. (2008). *The syntax and semantics of clause-typing in Plains Cree*. PhD dissertation, University of British Columbia.
- Demirdache, H. (1997). A cross-linguistic asymmetry in the temporal interpretation of DPs. In A. Green & V. Motapanyane (eds.), *Proceedings of ESCOL 1996*. Cornell Linguistics Circle. Ithaca, NY, pp. 42-54.
- Demirdache, H. (1998). On the temporal location of predication times: the role of determiners in Lillooet Salish. In E. Curtis, J. Lyle, & G. Webster (eds.), *Proceedings of WCCFL 1997*. Seattle: CSLI Publications, University of Washington, pp. 129-144.
- Frantz, D. (1991). *Blackfoot grammar*. Toronto: University of Toronto Press.
- Georgopoulos, C. (1991). *Syntactic Variables: Resumptive pronouns and A'-binding in Palauan*. Dordrecht: Kluwer.
- Haik, I. (1990). Anaphoric, Pronominal and Referential INFL. *Natural Language and Linguistic Theory* 8: 347-374.
- Halle, M., & Marantz, A. (1993). Distributed morphology and the pieces of inflection. In K. Hale & S.J. Keyser (eds.), *The view from Building 20*. Cambridge, MA: MIT Press, pp. 53-109.
- Howell, J. (2008). In defence of readjustment rules and why Nishnaabemwin is not 'Martian'. Poster presented at *the annual meeting of the Canadian Linguistics Association*. University of British Columbia, June 1.
- Johns, A. (1980). *Relative clauses and related phenomena*. MA thesis, University of Ottawa.
- Julien, M. (2002). *Syntactic heads and word formation*. Oxford: Oxford University Press.

- Lecarme, J. (1996). Tense in the nominal system: the Somali DP. In J. Lecarme, J. Lowenstamm & U. Shlonsky (eds.), *Studies in Afroasiatic Grammar. Holland Academic Graphics*. The Hague, pp. 1–20.
- Lecarme, J. (1998). Nominal tense and tense theory. In F. Corblin, C. Dobrovie-Sorin, & J.-M. Marandin (eds.), *Empirical Issues in Formal Syntax and Semantics 2: Selected Papers from the Colloque de Syntaxe et Semantique, Paris (CSSP)*. The Hauge: Holland Academic Graphics, pp. 30–52.
- Lecarme, J. (2004). Tense nominals. In J. Guéron & J. Lecarme (eds.), *The syntax of time*. Cambridge, MA: MIT Press, pp. 441-475.
- Lees, J. (1979). A mini-grammar of Cree-Montagnais. *Montreal Working Papers* 12:109-148.
- Lochbihler, B. (2008). Argument Licensing: Case is not Universal. Paper presented at the annual meeting of the Canadian Linguistic Association. University of British Columbia, May 31.
- Matthewson, L. (2005). On the absence of tense on determiners. *Lingua* 115: 1697–1735.
- McCloskey, J. (1979). *Transformational Syntax and Model Theoretic Semantics: A Case-Study in Modern Irish*. Dordrecht and Boston: Reidel.
- Nichols, J. D. (1988). *An Ojibwe text anthology*. Centre for Research and Teaching of Canadian Languages. University of Western Ontario.
- Nichols, J.D., C. Price, & K. Lickers (2002). *Native languages*. A support document for the teaching of language patterns. Ojibwe and Cree. Ontario Ministry of Education, Resource Guide, The Ontario curriculum, Grades 1 to 12. Toronto.
- Pagotto, L. (1980). On complementizer adjuncts in the Rapid Lake dialect of Algonquin. *Papers of the eleventh Algonquian Conference*, pp. 231-246.
- Proulx, P. (1995). Initial change in Blackfoot. In I. Mezhevich, H. Bliss & M.B. Dobrovolsky (eds.), *Calgary Papers in Linguistics*, Vol. 26. University of Calgary, Department of Linguistics, pp. 1-26.
- Richards, N. (2004). The Syntax of the Conjunct and Independent Orders in Wampanoag. *International Journal of American Linguistics* 70: 327–68.
- Richards, M. (2007). On feature inheritance: an argument from the phase impenetrability condition. *Linguistic Inquiry* 38: 231-246.
- Ritter, E., & Rosen, S.T. (2005). Agreement without A positions: Another look at Algonquian. *Linguistic Inquiry* 36: 648-660.
- Ritter, E. & M. Wiltschko (2004). The lack of tense as a syntactic category. Evidence from Blackfoot and Halkomelem. *Papers for the 39th International Conference on Salish and Neighbouring languages*, pp. 341-370.
- Ritter, E. & M. Wiltschko (2007). Varieties of INFL: TENSE, LOCATION, and PERSON. Presented at The Second Brussels Conference on Generative Linguistics June 25-27, 2007.
- Rizzi, L. (1990). *Relativized Minimality*. Cambridge, MA: MIT Press.
- Rogers, J. (1978). Differential focusing in Ojibwa conjunct verbs: On circumstances, participants, or events. *International Journal of American Linguistics* 44: 167-179.
- Tuller, L. (1986). *Bijjective relations in Universal Grammar and the syntax of Hausa*. Doctoral dissertation, University of California, LA.
- Valentine, J. R. (2001). *Nishnaabemwin reference grammar*. Toronto: University of Toronto Press.
- Wiltschko, M. (2003). On the interpretability of tense on D and its consequences for case theory. *Lingua* 113: 659-696.