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Fission as Feature-Movement

McGinnis, Martha

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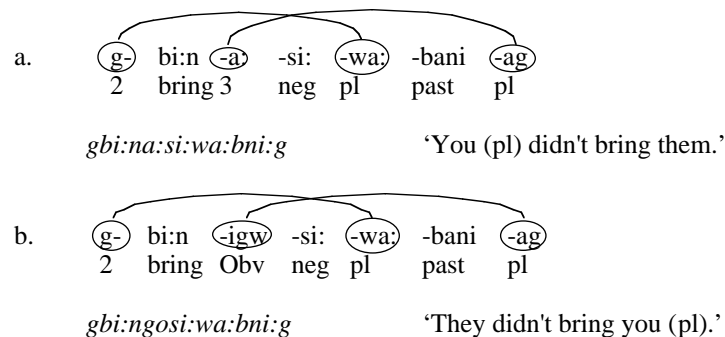
Fission as Feature-Movement*

Martha McGinnis, MIT

1. Introduction

Verbs in Ojibwa are morphologically complex, with transitive forms bearing several affixes to indicate features of the subject and object (1). No simple correspondence can be established between these affixes and the syntactic arguments associated with T and V. Rather, word-internal operations must apply to give the surface configuration of morphemes within the verb. I propose that these operations follow the motivation and constraints of syntactic movement, and thus constitute an instance of word-internal syntax.

(1) Multiple feature positions



The present analysis demonstrates that word-internal operations are driven by the same considerations as operations applying to units larger than a word. I will argue that fission, previously described as a morphological operation (Halle and Marantz 1993), is a type of syntactic movement motivated by word-internal licensing requirements. One difference between polysynthetic

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languages like Ojibwa and languages like English is that the former have the word-internal licensing requirements motivating fission. Fission involves movement of features from one head-internal syntactic node to another, leaving behind a copy of the moved features. Such movement falls under a recent formulation of syntactic movement (Chomsky 1995), by which each functional head attracts a feature from a terminal node.

This account incorporates a number of concepts from Distributed Morphology (DM; Halle and Marantz 1993, 1994). DM maintains that the pieces of inflection are arranged in a hierarchical configuration provided by the syntax. Only syntactic features are present on terminal nodes during syntactic operations; phonological features are inserted late in the derivation. A set of vocabulary items competes for insertion into each terminal node, with the outcome of the competition determined by the nature and specificity of the features associated with each item. The following analysis of verbal inflection in Ojibwa has its foundations in the analysis of the related language Potawatomi in Halle and Marantz (1993).

In accordance with Halle and Marantz (1993) and Chomsky (1995), I have eliminated Agr heads from the syntax. A licensing relation constitutes attraction of a feature by a licensing head. Features of the subject are attracted to T, and features of the object to a light verb *v*. Chomsky (1995) claims that overt attraction of a particular feature “pied-pipes” the whole bundle of syntactic features to a specifier position. The present analysis, however, supports the view that both overt and covert movement involves the attraction of syntactic features to a head. These features adjoin to the head, subsumed under the same category as the head in the syntax, but visible as a separate node for purposes of vocabulary insertion. To identify the head-adjoined feature nodes, I call them subject features (SF) and object features (OF).

2. Distributed Morphology

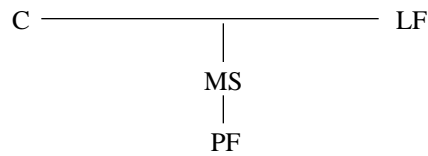
Under the DM view, the operations that produce words are distributed among various systems. Some are phonological, while others take place within a morphological component (Morphological Structure, MS). Still others, however, take place in the syntax; examples would include incorporation of an object into the verb in Mohawk (Baker 1988) or raising of the verb to Tense in French (Pollock 1989), as in (2).

(2) Syntactic word-formation

- a. [TP Marie [T [V embrasse] ra] [VP souvent tv Jean]]
'Marie will kiss Jean often.'
- b. embrasse -ra
kiss fut.3sg
'(she) will kiss'

The organization of the grammar can be represented as in (3).¹ The terminal nodes of a structure are bundles of formal syntactic and semantic features, devoid of language-particular phonological and idiomatic content. These bundles undergo syntactic operations in the computational system (C), which terminates at LF. Partway to the LF interface, the syntactic structure branches off to MS, undergoes morphological operations, and enters the phonological component as it proceeds towards the PF interface.

(3) The Grammar



At MS, phonological information is inserted into the terminal nodes via a competition among vocabulary items bearing phonological content. While the formal features of the node are fully specified, those of the item are underspecified to varying degrees. Competition inserts the most fully specified item whose features are consistent with those of the terminal node. In addition to specificity, feature hierarchies may also affect the ranking of items for insertion (e.g. Noyer 1992, Harley 1994). Once inserted, vocabulary items are subject to phonological and morphophonological rules.

An example of competition for vocabulary insertion is given below. The features of the subject and the object compete for insertion into the position of the pronominal clitic to the left of the verb stem in Ojibwa. (4) shows the ranking of vocabulary items competing for insertion into this node. I assume that first-person plural inclusive has the features [+1,+2], while the first-person plural exclusive has the features [+1,+3]. If any second-person features are present from either the subject or the object, the second-person vocabulary item is inserted (5a,b). Otherwise, if first-person features are present, the first-person item is inserted (c). Finally, if only third-person features are present, only the “elsewhere” item can be inserted (d).

(4) Vocabulary items: pronominal clitic

[+2]	<—>	/g-/
[+1]	<—>	/n-/
else	<—>	/w-/

¹ This is not precisely the view sketched in Halle and Marantz (1993).

(5) Competition for vocabulary insertion

- | | | | |
|----|-----------------------------------|-----------------|---------------------------------------------------------|
| a. | g-
[+2 +pl Nom; +1 Acc] | bi:n-i-mw | ‘ You (pl) bring me.’
(Rhodes 1976: 3,11a) |
| b. | g-
[+1 Nom; +2 +pl Acc] | bi:n-ini-mw | ‘I bring you (pl) .’
(Rhodes 1976: 3, 11b) |
| c. | n-
[+1 +3 +pl Nom] | bi:n-a:-nani-an | ‘ We (excl) bring him.’
(Rhodes 1976: 3, 11c) |
| d. | w-
[+3 Nom] | bi:n-a:-an | ‘ He brings him (obv).’
(Rhodes 1976: 3, 11c) |

Inflectional data from Ojibwa motivate several refinements of the DM model. In particular, they clarify the nature of fission and word-internal licensing, suggesting that at least some idiosyncratic morphological rules can be reformulated as instances of word-internal syntactic movement.

3. Word-Internal Feature-Checking

Ojibwa is an Algonquian language, related to Potawatomi, Menomini, Fox, and Cree. The dialect on which this discussion is based is spoken in the area of Ottawa, Canada. The language has a rich system of agreement morphology, which appears in addition to independent DPs; there are no independent nonemphatic pronouns. Following the analysis of Potawatomi given by Halle and Marantz (1993), I assume that Ojibwa is a nonconfigurational language. Overt DPs are adjoined to the highest projection (CP), doubling null pronominal arguments within the clause (Jelinek 1984).

Morphological distinctions are made in Ojibwa for person, number, animacy, and obviation. Negation and tense/mood are also marked on the verb. There are two inflectional types or “orders”: the independent order and the conjunct order.² This analysis draws mainly on the independent order verb form.

² These are known as “orders” because negation generally shows up to the right of the verb stem in the independent order (i), and to the left in the conjunct order (ii). However, Rhodes (1976) notes that all speakers are able to produce the typical independent negation in conjunct forms as well. The conjunct form also lacks preverbal person-marking, and bears different postverbal agreement affixes from the independent form. It is usually considered that independent forms in Algonquian occur in matrix clauses and conjunct forms in dependent clauses, but the correlation is far from complete (Starks 1994).

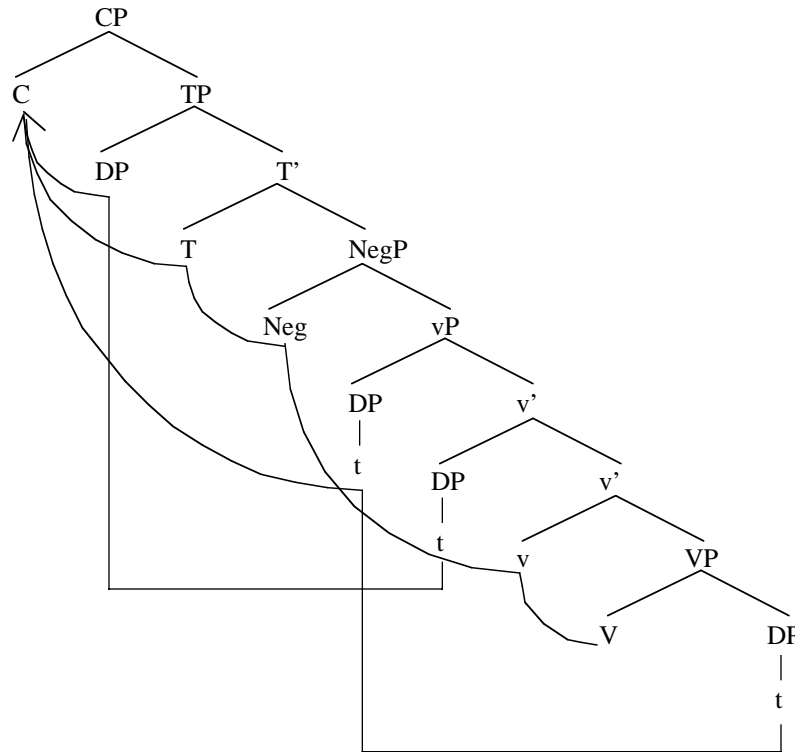
- | | | |
|------|--------------------------------------------------------|-------------------------------------|
| (i) | g-bi:n-a:- si :-wa:-ag
2-bring-3-Neg-pl-3.pl | ‘You (pl) don’t bring them.’ |
| (ii) | bwa :- no:ntuw -ag
Neg-hear-3.pl | ‘...if I don’t hear him.’ |

The full system of obviation in Algonquian languages, having both discourse and intrasentential effects, is as yet little understood. Only intrasentential effects are relevant to the present discussion. In a clause with two animate third-person arguments, one and only one must be obviative. Obviation is marked on any overt DPs, in addition to being indicated on the verb. I follow Halle and Marantz in assuming that an argument can be [+obv], [-obv] or [∅obv].

3.1 *Checking*

I assume the syntactic structure in (6) for independent order clauses in Ojibwa. The clause is a CP containing tense and negation. The verb moves up through v and Neg (if present) and T to C, forming a complex C. Certain pronominal arguments in Ojibwa are syntactically affixal, which means that they must be licensed by word-internal agreement as well as by attraction to the specifier of T or v. These arguments, which I will call clitics, are overtly attracted to the complex C for word-internal licensing.

(6) Ojibwa Syntax

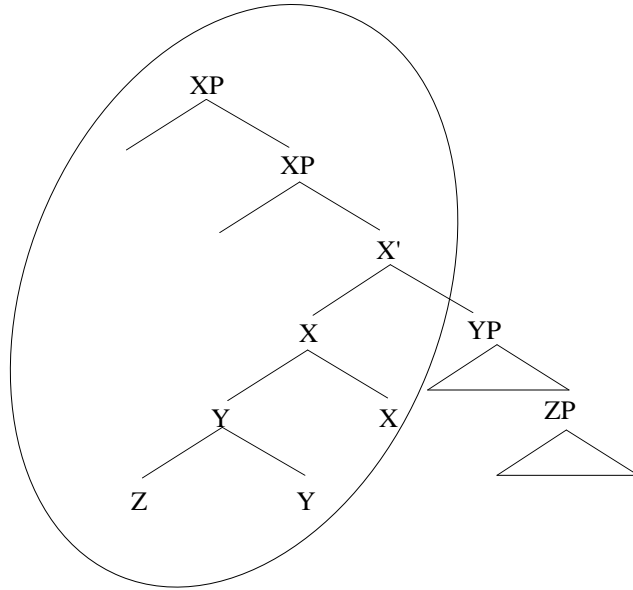


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The appropriate licensing relation obtains within the checking domain of the attracted features on T or V, defined as in Chomsky (1993). This could be considered a true checking relation; features of an argument are attracted first to T or v, and then to C, where they are checked against their features in T or v.

The definition of checking domain I assume is as follows. The checking domain of a head H is the “minimal residue” of Chomsky (1993), including everything contained in the first maximal projection *dominating* H, even if this projection is not the maximal projection *of* H. In (7), for example, the checking domain of Y is indicated by an ellipse.

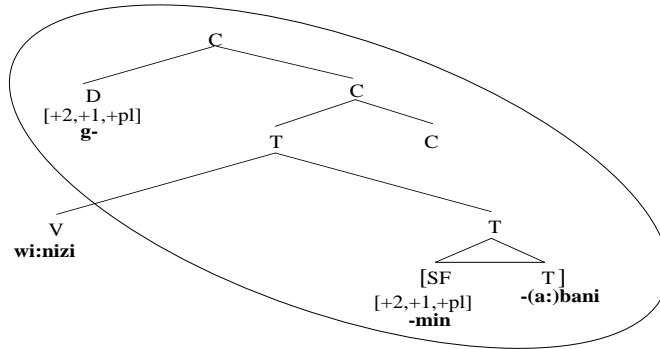
(7)



Clauses with a lone animate argument in Ojibwa provide a simple example of the way word-internal licensing operates. (8a) shows the structure of an intransitive clause. As with all intransitives, the object-attracting light verb *v* is absent. The clitic *D* adjoins to *C* to be licensed word-internally by its agreement features on *T*. According to the definition of checking domain noted above, the clitic in (8) is in a licensing relation with *C* and *T*, but not with *V*, as indicated by the ellipse.

(8) Word-internal checking

a.



b. *gwi:nzimna:ba*
 'We (incl) were dirty.'

(Rhodes 1976: 3, 17)

Before vocabulary insertion, the terminal nodes bear fully specified formal features. Underspecified vocabulary items compete for insertion at each node; the inserted items are shown in bold. (b) is the phonological form of (a), produced by the application of morphophonological and phonological rules.

3.2 Vocabulary Items

In the simple example given above, there are several nodes for vocabulary insertion, including C, V, T, D, and SF. C is always null, implying either that there are no vocabulary items for C, or that a null default always wins. The item inserted into V is not uniquely determined by the syntactic features on the V node. Competition for T is between two items, the past tense item and the null default.

(9) The Tense node

[+past]	<—>	/(a:)bani/
else	<—>	∅

a. *g-wi:nizi-min-(a:)bani*
 'We (incl) **were** dirty.'
gwi:nzimna:ba

= (8b)

b. *g-wi:nizi-min-∅*
 'We (incl) **are** dirty.'
gwi:nzimi

(Rhodes 1976: 3, 5)

McGinnis - Fission as Feature-Movement

There are several competitors for D and SF. The relevant items are given in (10) and (11). Remaining competitors will be discussed as they arise. (12a,b) show the first and second-person clitic items, respectively. (b) also shows the default plural item. (12c) shows that the second-person features of the first-person plural inclusive [+1,+2] are preferred over its first-person features for vocabulary insertion into the clitic D node. This preference may be determined by an extra feature appearing on the second-person item, making it more specific than the first-person item, or else by a feature hierarchy ranking second-person above first-person features. The first-person item cannot be reduced to the default item, as the default is a third item, to be discussed in section 5. (12c,d) show that the more specific first-person plural item in SF is preferred over the default plural item where possible.

(10) The D node

[+2]	<—>	/g-/
[+1]	<—>	/n-/

(11) The SF node

[+1,+pl]	<—>	/-min/
[+pl]	<—>	/-mw/

- (12) a. **n-wi:nizi**
 'I am dirty.'
nwi:niz (Rhodes 1976: 3, 5)
- b. **g-wi:nizi-mw-(a:)bani**
 'You (pl) were dirty.'
gwi:nzimwa:ba (Rhodes 1976: 3, 17)
- c. **g-wi:nizi-min-(a:)bani**
 'We (incl) were dirty.'
wi:nzimna:ba = (8b)
- d. **n-wi:nizi-min-(a:)bani**
 'We (excl) were dirty.'
nwi:nzimna:ba (Rhodes 1976: 3, 17)

4. Feature-driven fission

I will argue that, at least in some cases, fission is an instance of syntactic movement within a word. In contrast, fission is described by Halle and Marantz (1993) as a language-particular morphological operation. A typical fission rule is given in (12).

(13) Fission

$$\begin{array}{l} \text{CI + Stem} \longrightarrow [+pl] + \text{CI + Stem} \text{ (linear order irrelevant)} \\ | \\ [+pl] \end{array} \quad \text{(Halle and Marantz 1993: 3)}$$

The effect of fission is that one bundle of formal features splits into two, with different features pronounced in separate positions within the word. Under the approach outlined in Chomsky (1995), movement involves attracting a formal feature away from its bundle to the checking domain of a functional head, so that copies of the features appear in separate positions within the clause. It is clear that these two notions have much in common. I suggest that fission is word-internal movement, motivated by feature-checking requirements. On a generous assumption, fission can move features from any terminal node to any other within the same X^0 ; however, fission takes place only to create a licensing relation.

Unlike the copy of a syntactically moved node, the copy of a fissioned node is subject to vocabulary insertion.³ Thus features of the same node may be pronounced more than once within a word. Chomsky (1995) postulates a PF requirement that the features of a word should be pronounced together. As a result, when a feature is attracted in overt syntax, the remaining features from the same bundle cannot be stranded, but instead the whole category must be pied-piped along. The requirement in question appears not to be a phonological requirement, since different copies of the same feature chain can be pronounced in separate phonological positions, as long as these positions fall within the same word. Rather, a condition of lexical integrity requires all features of a chain to be pronounced within the same X^0 .

4.1 *Fission*

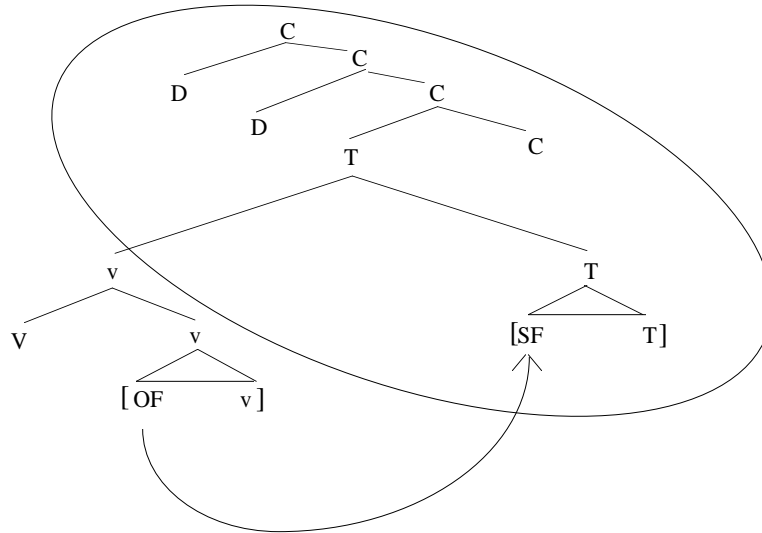
One instance of fission in Ojibwa occurs in transitive clauses in order to license pronominal clitics word-internally. A simple account of transitive verbal morphology follows from the basic assumption that these clitics must be licensed by checking against their agreement features on *v* and *T*. I will assume further that a verbal head to which the clitic adjoins can move no further, and thus cannot be properly licensed by movement to *C*. This assumption prevents the clitic from being attracted to the verb before it moves to *C*.

In intransitive clauses, the single argument raises to *C* for word-internal licensing by its agreement features on *T*. In transitive clauses, both the subject and the object raise for word-internal licensing. The object clitic, however,

³ It has been proposed (for example in Pesetsky 1995) that resumptive pronouns are the pronounced trace of syntactic movement. I will assume that a resumptive pronoun is too far from its antecedent to be a trace of the same chain, licensed for pronunciation. Rather, it belongs to a separate chain, so its relation to its antecedent is not subject to the locality conditions on chain formation.

cannot be licensed in this C-adjoined position, which is in the checking domain of T, but not of V or v. As a result, the object features (OF) on v fission off and attach to T. Certain features of this chain are pronounced in each position within C. The two D nodes, bearing features of the subject and object, are then licensed by checking against their features on T.

(14)



The object features from v fuse with T to form a single node within the syntax. These features are subsumed under the category of the attracting head. Because these features are moving word-internally, the PF “pied-piping” requirement is vacuously satisfied: all features of the chain are pronounced within the same X^0 . In this respect, word-internal movement resembles movement at LF, which need not obey the PF requirement. We may conclude that a feature attracted to a head at LF can also be subsumed under the category label of that head, rather than pied-piping its own category along with it when it moves.

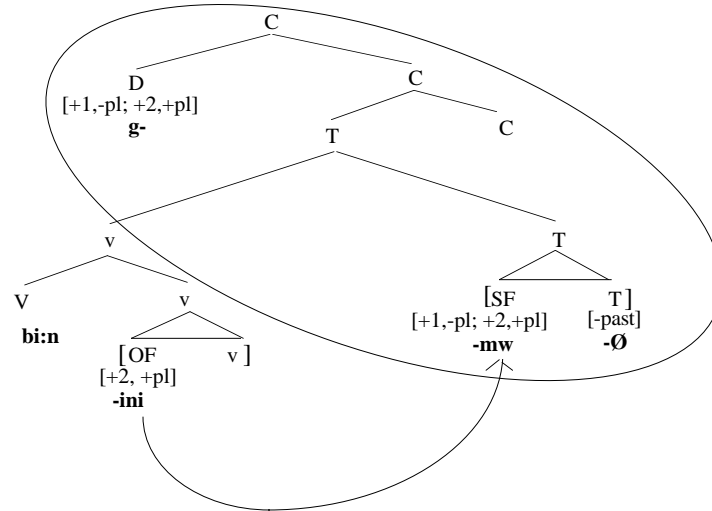
Chomsky (1995) reaches the same conclusion, arguing that certain locality conditions on overt movement actually apply to category-chains, rather than feature-chains. If category-movement is driven by a PF requirement, only feature-attraction need occur at LF; thus, the locality conditions in question do not apply at LF. If the present approach is correct, such conditions would likewise be expected not to apply word-internally.

The two D nodes fuse at MS to form a single node. Features of the subject and object compete for insertion into this node. An example of the structure after fusion is given in (15). The features of the subject and object appear in D and in SF, still in the proper checking relation. A copy of the

moved features remains on the verb in OF, into which a vocabulary item is also inserted. The light verb *v* assigning structural case is null.

(15) Word-internal checking via fission and fusion

a.



b. *gbi:nnim*
 'I bring you (pl).' = (5b)

4.2 Vocabulary Items

The vocabulary items competing for insertion into the OF node are given in (16). No competition can be observed between these items in the independent order, since they are inserted in the position of mutually exclusive features. In the independent order, these two items appear only in clauses without a third-person argument. If a third-person argument is present, a different configuration results, to be discussed in section 5. Without a third-person argument, ranking between the first- and second-person vocabulary items cannot be tested. The conjunct order, however, does provide evidence for the ranking of person features in competition for OF. In (c), the first-person plural inclusive features [+1,+2] yield insertion of the second-person item. We may conclude that the second-person item outranks the first-person item for OF, as it does for D. The first-person item is not the default, however, as there are further OF items, also to be discussed in section 5.

(16) The OF node

[+2]	<—>	/-ini/
[+1]	<—>	/-i/

- a. **g-bi:n-*ini*-mw**
‘I bring **you (pl)**.’
gbi:nnim = (5b)
- b. **g-bi:n-*i*-min**
‘You (sg/pl) bring **us (excl)**.’
gbi:zmi (Rhodes 1976: 3, 11a)
- c. **wa:bam-*ini*-angw**
‘... that he sees **us (incl)**.’
wa:bminnang (Rhodes 1976: 7, 45bii)⁴

The vocabulary items for D and SF given in section 3.2 are in competition for insertion into these nodes in transitive clauses as well. As already noted, the second-person D item, *g-*, is preferred to the first-person item, *n-*, if any second-person features are present. On the other hand, the first-person plural SF item, *-min*, is preferred to the default plural item, *-mw*, if any first-person plural features are present. In transitive clauses, the features relevant to the competition may come from either the subject or the object, since the features of both arguments can be found on D and SF. Thus, as (17) shows, in any clause with second-person features, the second-person D item *g-* is inserted. Likewise, the first-person plural SF item *-min* is inserted in any clause with first-person plural features.⁵

(17) Competition among fused features

- a. **g-no:ntaw-*ini*-*min***
‘**We (excl)** hear **you (sg/pl)**.’
keno:nto:nemin (Bloomfield 1957: 7.24)
- b. **g-bi:n-*i*-*min***
‘**You (sg/pl)** bring **us (excl)**.’
gbi:zmi = (16b)

⁴ The form given in (16c) has an extra [n] phonetically: [wa:bminnang]. On the basis of this difference, Rhodes (1976) argues that this morpheme is not *-ini*.

⁵ Some internal structure is preserved despite the fusion of features. Fusion of first-person singular features with second person plural features is not sufficient to trigger insertion of the first-person plural item. This item is inserted only if the first-person and plural features belong to the same argument; thus the distinction between arguments must be preserved even on a fused node. Note that forms like (17a) do not occur in the dialect in Rhodes (1976); these appear with an impersonal agent instead of the first-person exclusive subject.

I have argued that fission is syntactic movement within a word. Such movement can be motivated by the word-internal licensing requirements of a clitic, which must be checked against its agreement features on T and v. Feature-attraction licenses arguments within a clause, while checking against the attracted features licenses them within a word.

As it stands, the system accounts for clauses with first- and second-person arguments only. Clauses containing third-person arguments are subject to different requirements, owing partly to the participation of third-person features in a system of obviation.

5. Fission for Obviation

Third-person arguments are involved in an obviation system. I hypothesize that obviation involves a relation with a discourse topic in the specifier of CP, like that proposed by Huang (1984). Features of a third-person argument are attracted to C to enter a local relation with this topic. Since the movement is word-internal, pronunciation is licensed for both the moved feature and its copy. Feature-attraction by C and T accounts in part for third-person verbal morphology.⁶ However, the obviation properties of third-person arguments give rise to different syntactic configurations as well.

5.1 *Third-Person Arguments*

Halle and Marantz (1993) argue that pronouns in Potawatomi are [+obv], [-obv] or [∅obv]. First and second person arguments are [-obv]. If two third-person arguments are present, one is [+obv] and the other is [-obv]; otherwise, a third-person argument may be [+obv] or [∅obv]. All and only [-obv] arguments are clitics. As a result, a clause with two third-person arguments has one [-obv] clitic, which adjoins to C to enter into a relation with its agreement features on T.

It is clear from the appearance of the agreement node on T that [+obv] and [∅obv] arguments are not clitics. A clitic argument is licensed by attraction to T or v, then adjunction to C and checking against its agreement features on T. The agreement node is then subject to vocabulary insertion. If the features of a third-person plural [+obv] or [∅obv] argument are present on the agreement node (SF) under T, they should cause the default plural item to be inserted into SF. (18) shows that this prediction is not borne out: third-person features appear on C, not on T.

⁶ One vocabulary item in Ojibwa, *-w* between Neg and T, is associated with both impersonal passives and third-person unaccusatives, as well as with third-person reflexives. This distribution is the same as that of Italian *-si* (Alec Marantz, p.c.), but at present I have no account of these constructions.

(18) Absence of 3-object agreement on SF

- a. * $[_C[_D n-]]$ $[[[_T[_v[_V bi:n]]] [_{OF} -a:]]$ $[_{SF} -wa:]$ $[-\emptyset]$]]
 * $[_C[_D 1,3]]$ $[[[_T[_v[_V bring]]] [_{OF} 3]]$ $[_{SF} 3.pl]$ Pres]]
 ('I bring **them.**')

- b. $[_C[_D n-]]$ $[[[_T[_v[_V bi:n]]] [_{OF} -a:]]$ $[_{SF} -\emptyset]$ $[-\emptyset]$] **-ag**
 $[_C[_D 1]]$ $[[[_T[_v[_V bring]]] [_{OF} 3]]$ $[_{SF} 1.sg]$ Pres] **3.pl**
 'I bring **them.**'

nbi:na:g

(Rhodes 1976: 3, 11c)

The argument which becomes the subject is attracted to T. I propose that the [-obv] feature is attracted to T.⁷ If two [-obv] arguments are present in the clause, features of the closest one are attracted to spec-TP. If only one is present, that one is attracted. Thus [-obv] patients may be attracted to the subject position over [+obv] or [\emptyset obv] third-person agents. This movement does not violate locality conditions, since T attracts the closest relevant feature.

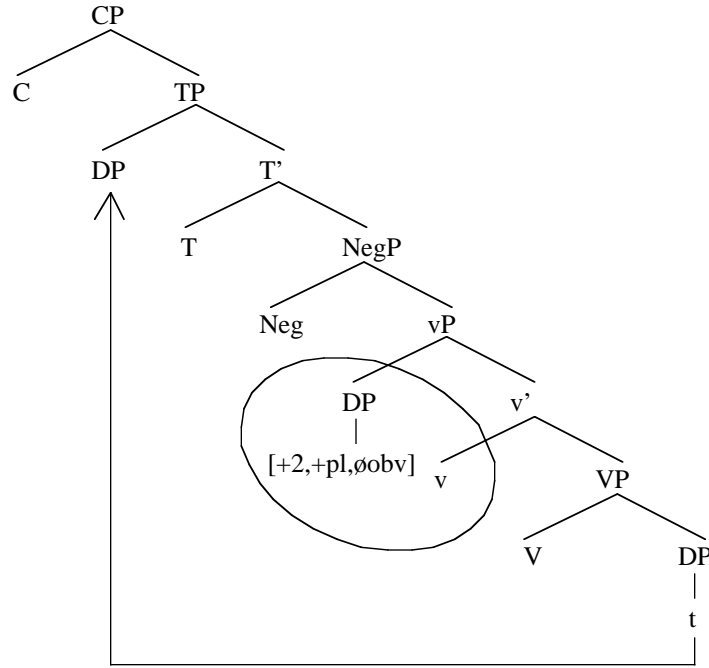
I propose that there is a light verb, *-igw*, which takes a [+obv] or [\emptyset obv] argument in its specifier and assigns it inherent case. For example, in (19), the third-person argument is [\emptyset obv]. Its features are attracted to v, while those of the [-obv] second-person argument are attracted to T.

⁷ The feature [-obv] thus resembles the nominative case feature of Chomsky (1995). note that for dependent clauses with a lone intransitive argument, the obviation properties of this argument do not prevent it from being controlled from a higher clause. In this case, no [-obv] feature is available for attraction to T, so the argument is attracted by its D-features for EPP reasons. Plural agreement with lone third-person arguments in matrix clauses is on C, rather than on T, supporting the view that such arguments do not bear the same relation to T as [-obv] arguments.

(i) wi:nizi-w-**ag** 'They are dirty.'
 (ii) *w-wi:nizi-**wa:**

(19) Licensing of [\emptyset obv] by v

a.



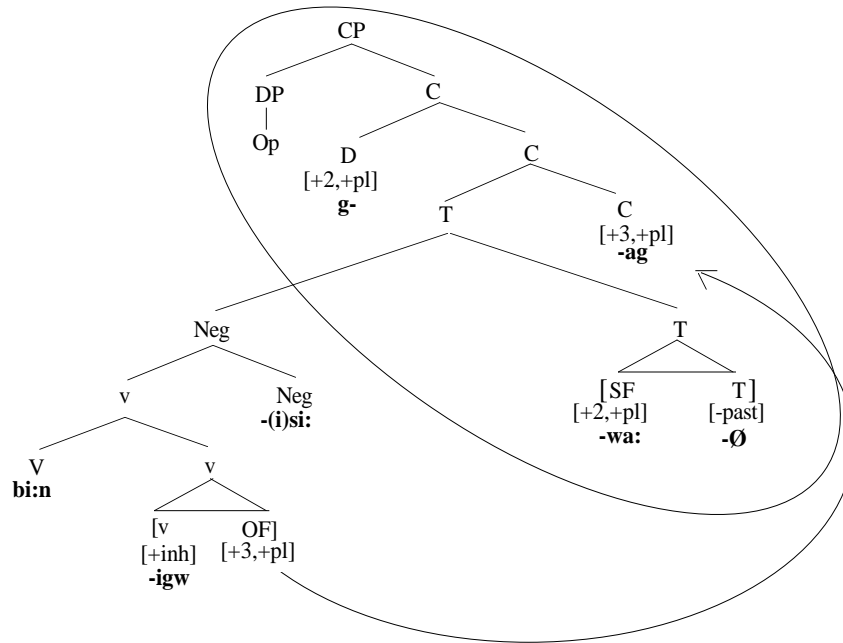
b. g-bi:n-igw-si:-wa:-ag
 'They don't bring you (pl).'
 gbi:ngosi:wa:g

(Rhodes 1976: 3, 15c)

In (19), the second-person argument is also a clitic, so it adjoins to C to check against its agreement features on T. Likewise, the features (OF) of the third-person argument are attracted from *-igw* to C in order to enter a local relation with the topic in spec-CP.⁸ The configuration in C is shown in (20). Of course, the argument features on *v* are not the features of the underlying object, but rather those of the inherently case-marked specifier of *v*.

(20) Fission from *-igw* for Obviation

a.



- b. g-bi:n-igw-si:-wa:-ag
 'They don't bring you (pl).'
 gbi:ngosi:wa:g = (19b)

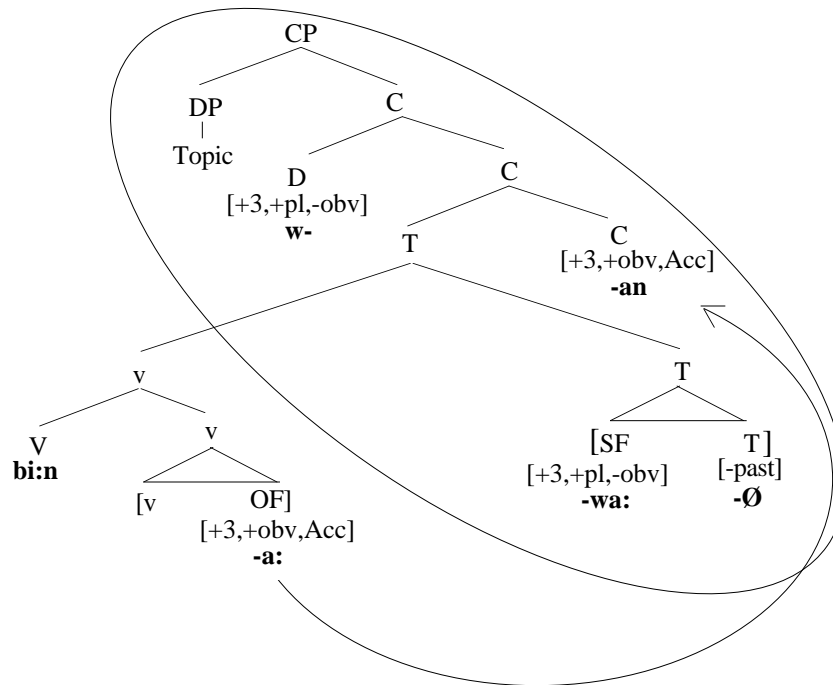
⁸ Fission to C is always from third-person arguments with [\emptyset obv] or [+obv] features, even if the [-obv] subject in spec-TP is third-person as well.

McGinnis - Fission as Feature-Movement

A [-obv] third-person complement of V is attracted by its [-obv] feature to T over the [+obv] argument. If the complement of V is [+obv] or [∅obv] third person, I assume that it is structurally case-marked by the verb. The features of this argument, attracted to v for structural case-marking, appear on the OF node for the purposes of vocabulary insertion. Features are attracted from this node to C to participate in the obviation system.

(21) Fission from v for Obviation

a.



b. *wbi:na:wa:n*
 'They bring him/them (obv).'

(Rhodes 1976: 3, 11c)

5.2 *Vocabulary Items*

A number of vocabulary items are associated with third-person arguments. The inherent-case-marking light verb *v* competes with the structural case-marking null default *v*.

(22) The *v* node

[+inh]	<—>	/-igw/
else	<—>	∅

- a. **g-bi:n-igw**
 ‘He brings you (sg).’
gbi:nig (Rhodes 1976: 3, 13d)

The OF node has another vocabulary item, *-a:*, which is inserted if the object is third-person. Note, however, that a [-obv] object is attracted to T, not *v*, so [-obv] third-person objects as in (23b) do not trigger *-a:*. The third-person OF item is specified as accusative to distinguish it from the inherently case-marked OF item, which is the null default. Thus the inherently case-marked [+obv] argument in (23b) also fails to trigger insertion of *-a:*.

(23) The OF node

[+2]	<—>	/-ini/
[+1]	<—>	/-i/
[Acc]	<—>	/-a:/
else	<—>	∅

- a. **w-bi:n-a:-(i)wa:-an**
 ‘They bring **him/them (obv)**.’
wbi:na:wa:n = (21b)
- b. ***w-bi:n-a:-igw-an**
 (‘He/they (obv) bring(s) him.’)

The vocabulary items for the C node are shown in (24). The fact that the third-person argument in (24b) can be interpreted as singular or plural shows that the vocabulary item associated with [+pl] is lower-ranked than the one associated with [+obv]. Ordering may be determined by a feature hierarchy which ranks obviation features higher than number features.

(24) The C Node

[+obv]	<—>	/-an/
[+pl]	<—>	/-ag/ ⁹

- a. g-bi:n-igw-(i)wa:-bani-**ag**
 ‘**They** brought you (pl).’
gbi:ngowa:bni:g (Rhodes 1976: 3, 15c)

- b. w-bi:n-igw-(i)wa:-**an**
 ‘**He/they (obv)** bring(s) them.’
wbi:ngowa:n (Rhodes 1976: 3, 11d)

There is also a default item inserted into C-adjoined clitic D. When the [+obv] or [∅obv] third-person argument is licensed by v, the features of the [-obv] third-person argument move up to T, their category pied-piping to the specifier of T. Like other pronouns in spec-TP, this category is a clitic, whose features must be checked word-internally against its attracted features on T. The full set of vocabulary items competing for insertion into the clitic node is given in (25). The third-person item is the default, since if both first- and third-person features are present, the first-person item is inserted (25a).

(25) The D node

[+2]	<—>	/g-/
[+1]	<—>	/n-/
else	<—>	/w-/

- a. n-bi:n-igw-(i)na:ni
 ‘He brings **us (excl)**.’
nbi:ngona: (Rhodes 1976: 3, 13d)

- b. w-bi:n-igw-(i)wa:-an
 ‘He/they (obv) bring(s) **them**.’
wbi:ngowa:n = (24b)

In the environment of a third-person argument, different vocabulary items are inserted into SF under T. The same items also appear on DPs inflected to agree with their possessors. The presence of third-person features is a necessary environment for the insertion of these items.

⁹ The inflection of inanimates is omitted here. Note that the vocabulary items listed for the C can also be inserted as inflection on full DPs (cf. Halle and Marantz 1993). The plural inanimate item *-an* is higher-ranked than either of the vocabulary items given for C.

(i)	<i>ji:ma:nan</i>	ji:ma:n- an	‘canoes’ (inan)	(Rhodes 1976: 1, 53)
(ii)	<i>go:ko:sag</i>	go:ko:s- ag	‘pigs’ (anim)	(Rhodes 1976: 1, 54)
(iii)	<i>wgo:ko:sman</i>	w-go:ko:s-im- an	‘his pig(s) (obv)’	(Rhodes 1976: 1, 54)

(26) The SF node

[+1,+pl]	<—>	/-na:ni/ in env. [+3]
[+pl]	<—>	/-(i)wa:/ in env. [+3]
[+1,+pl]	<—>	/-min/
[+pl]	<—>	/-mw/

- a. **n**-bi:n-igw-(**i**)na:ni-ag
 ‘They bring **us (excl).**’
nbi:ngona:nig (Rhodes 1976: 3, 11d)
- b. **g**-bi:n-igw-(**i**)wa:-bani-ag
 ‘They brought **you (pl).**’
gbi:ngowa:bni:g = (24a)

6. Predictions

At least two other accounts have been made of Ojibwa phrase structure and morphology. Perlmutter and Rhodes (1988) propose that Ojibwa undergoes a process of subject-object reversal, motivated by a person hierarchy such that second person > first person > nonobviative third person > obviative third person. They claim that the subject always bears the features of the argument with the highest-ranked person features. If the agent has lower-ranked person features than the patient, subject-object reversal takes place. Such a reversal would mean that the verb’s internal argument becomes the subject, while its external argument becomes the object, depending on the relative ranking of the person features of the two arguments.

Perlmutter and Rhodes’ claims have both syntactic and morphological motivation. Morphologically, the pronominal clitic is always the highest-ranked element on the person hierarchy. Under the approach of Halle and Marantz (1993), however, the appearance of the clitic does not depend on its status as a subject or an object; the features of both arguments are fused on the clitic. Rather, the form of the clitic depends on the ranking of items in the competition for vocabulary insertion. The competition for insertion into the D node is partly determined by a feature hierarchy, according to which second person > first person > other. Indeed, Halle and Marantz argue that person and obviation features play no role in determining the syntactic status of an argument in Potawatomi. Since features of both subjects and objects appear on the SF node under T, as well as on D, these nodes can provide no morphological evidence for syntactic roles.

Perlmutter and Rhodes do, however, provide syntactic evidence for a subset of the “reversal” cases, in clauses with a third-person agent and a [-obv] patient. This evidence arises from control constructions. The subject of a dependent conjunct clause may be controlled from within the independent clause. Borer (1989) argues that control is possible because anaphoric features

on Infl (here, T) are bound by an argument in the higher clause. A null pronominal subject (pro) is identified by its relation to the bound Infl. Only subjects enter such a relation, so only subjects can be controlled from the matrix clause through Infl.

(27) is a conjunct form bearing the *-igw* head. By the account I have given, the [-obv] patient in (27) is licensed as a subject by T, raising over the [+obv] agent licensed by *-igw*. Perlmutter and Rhodes claim that *-igw* indicates subject/object reversal, with a patient subject and an agent object.

(27) no:nta-**igw**-t '... if he (obv) hears him.'
hear -v -3
no:nta:kot (Bloomfield 1957: 8.21)

Both theories predict that the patient subject of a conjunct form with *-igw* can be controlled via anaphoric T from the higher clause. This prediction is correct. In (27) the matrix verb lacks obviation marking. The absence of such marking indicates that the nonobviative argument is being controlled, rather than the obviative argument. Obviation marking on the full DPs shows that the nonobviative argument is the patient, and the obviative argument the agent. Thus it is the patient that is being controlled in (27). This evidence weighs against an extension of Halle and Marantz's claim for Potawatomi that the [+obv] argument in such examples is a subject, and the [-obv] argument an object.

(28) Control of third-person subject

ni-gikenim-a:-(***an**) Ma:gi: ba:shkizw-igo-d **aniniw-an**
1-know-3-(***obv**) Marge shoot-v-3 **man-[+obv]**
'I know Marge to have been shot by **the man (obv)**.'

Note that the subject in Ojibwa enters into two syntactic relations with T. One relation is created by attraction, by which only subjects are associated with T. The other relation is created by adjunction to C for clitic/agreement checking, by which both subjects and objects are associated with the agreement features on T. The fact that only the subject can be the controller suggests that the relevant relation for control is the one created by attraction.

Forms with first- and second-person arguments are another matter, however. *-i* appears after the verb stem when the object is first person, *-ini* when the object is second person. The same items appear in the independent and conjunct orders.¹⁰ Perlmutter and Rhodes claim that *-i* marks "direct" forms in the independent order, and *-ini* "inverse" forms, under the view that

¹⁰ Though acknowledging a departure from Bloomfield (1957) and others, Rhodes (1976) argues that *-ini* is a different morpheme in the independent and conjunct forms (see footnote 4). He notes the existence of a dialect with *-inin* in the conjunct, but not in the independent form.

first- and third-person agents become objects when, as in (29), the patient is second-person. This distribution is also consistent with the current proposal, by which these suffixes are the vocabulary items inserted into an object agreement node.

- (29) a. wa:bam-**ini**-egw
 see-2-3>2pl
 ‘... that he sees **you (pl)**’
- b. wa:bam-**ini** -agogw
 see-2-1sg>2pl
 ‘... that I see **you (pl)**’

However, the two proposals differ with respect to the structural position of the two arguments, and thus with respect to the possibilities for control into the subject of the conjunct clause. Under the current proposal, the second-person argument in examples like (30) is the object, yielding agreement on OF. As a result, a conjunct form with *-ini* should not allow control of the second-person argument. Under Perlmutter and Rhodes’ account, on the other hand, the agent and patient reverse their structural relations so that the patient becomes the subject. The *-ini* conjunct form should thus allow control of the second-person argument. The actual form, given below, provides crucial empirical support for the current analysis. Features of the first-person argument, not those of the second-person argument, are present in the matrix clause. Thus, the agent is a subject, controlled via anaphoric T.

- (30) Control of agent subject in *-ini* conjunct form¹¹

n-gikenim-igw wa:bam-*ini* -a:nh
 1-know-3 see-2-1sg>2sg
 ‘He knows **me** to see you.’

7. Overview

The foregoing analysis of verbal inflection in Ojibwa illustrates several features of the syntax and morphology of the language. Word-internal syntactic movement accounts for the appearance of features of the same argument in several positions within a word. This movement is motivated in Ojibwa by two requirements, the need for clitics to check against their agreement features, and the need for third-person [+obv] and [∅obv] arguments to be in the checking domain of a discourse topic in spec-CP. I have also presented evidence against subject-object inversion according to a person hierarchy. Rather, the evidence supports the attraction of [-obv] arguments to subject position over any [+obv] or [∅obv] arguments that intervene.

¹¹ This exquisite datum was generously provided by Richard Rhodes (p.c.).

In particular, I have outlined a method for subsuming word-internal mechanisms under the universal operations of syntax. Moreover, word-internal movement appears to bear some similarity to LF movement. Further research along these lines would undoubtedly give enlightening results.

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Department of Linguistics and Philosophy
20D-219 MIT
Cambridge, MA 02139
USA

marthajo@mit.edu