1. Introduction

In this paper, I examine the role of Person hierarchies in Algonquian. In these languages, sentences containing two obligatory arguments can only be interpreted when one of them (the Actor), is ranked higher on the Person hierarchy than the other (the Patient).\(^1\)

The situation is compounded by the existence of directionality markers, which seem to allow for the recovery of grammatical relations. The following data illustrate the way in which sentences containing transitive animate (TA) verbs can be interpreted in Plains Cree (data from Jolley 1982):

(1) ki(t)asam-a:-w-ak
    2-feed(TA)-Dir.-3-Pl.
    'You feed them'

(2) ki(t)asam-ik-w-ak
    2-feed-Inv.-3-Pl
    'They feed you'

As indicated, only one interpretation is available for each sentence, depending on the selection of directionality marker, direct or inverse. When the direct form -a:- is selected (1), the person higher on the hierarchy is assigned the role of the Agent. In (2), the inverse -ik- is selected, and the person higher on the scale receives the role of Patient. Although several accounts of these phenomena have been proposed in the literature (cf. Jolley 1982, and references cited there), this paper focuses on the question of why a language would appeal to such a hierarchy in the first place.

\(^1\)The Person hierarchy has the form 2 > 1 > Indefinite > 3 > 3’ > 3”, where 2 ( = 2nd person) is ranked higher than 1 ( = 1st person), which in turn is higher than Indefinite NP’s, etc.; 3’ stands for obviative, 3” for ‘further’ obviative. This version of the hierarchy is taken from Jolley (1982).
The paper is organized as follows: in Section 2, evidence showing that Algonquian languages have ergative tendencies will be presented. This proposal has been made before, most recently by Hewson (1987). In Section 3, a theory of phrase structure will be presented that can accommodate the syntactic nature of ergativity. In this respect, it will be suggested that transitive sentences in an ergative language derive from the requirement that both NPs have abstract Case. The consequences that this has for Person hierarchies will be addressed in Section 4. The proposal there is that the mechanism of Case assignment in Algonquian leads to a situation where conventional means of determining grammatical relations are obviated. The conclusion is then reached that thematic roles like Agent or Patient can only be assigned pragmatically, through something like a Person hierarchy.

2. Ergativity in Algonquian

2.1. Morphological ergativity

In both Cree and Ojibwa (as in other languages of the Algonquian family), transitive verbs are marked as taking either animate or inanimate objects. Although every noun is classified as being animate or inanimate, the examples below demonstrate that it is the animacy of the object, and not the subject that is cross-referenced on the verb. Intransitive verbs, on the other hand, cross-reference the animacy of their subjects (Ojibwa data from Grafstein 1984):

(3)  
   a. ni:-wa:banda:n ji:ma:n  
       1- see(TI) canoe  
       ‘I see the canoe’  
   b. ni:-wa:bama: ogima:  
       1- see(TA) chief  
       ‘I see the chief’  
   c. wi:nad-w wi:siniwa:gan  
       dirty(II)-3 table  
       ‘The table is dirty’  
       (TI = transitive inanimate; II = inanimate intransitive)

The examples in (3) are an indication of morphological ergativity. Traditionally, this is defined as the kind of system in which the Patient of a transitive verb and the subject of an intransitive receive the same Case-marking.\(^2\)

Although NPs in Algonquian are not overtly marked for Case, it may be argued that cross-referencing of any kind fulfills the same purpose, i.e.,

\(^2\)Following tradition, this will be referred to as the absolutive Case, while that of the transitive subject will be referred to as the ergative Case.
in making NPs visible to theta-role assignment.  

2.2. Syntactic ergativity

In addition to the morphological ergativity in Algonquian verbal paradigms, there may be evidence that the members of this language family are syntactically ergative as well. Normally, tests for syntactic ergativity involve phenomena such as extraction and coordination, as shown by Dixon (1979) for Australian languages. Accordingly, the Patient of a transitive verb and the subject of an intransitive will undergo extraction with equal ease (as opposed to the transitive subject), or be deleted through identification in coordinate structures. These tests seem to be ill-fitted for Algonquian, however, where the conjunct order obscures whatever subject/object asymmetries might exist.

Still, there may be other tests for syntactic ergativity in these languages. Hewson (1987) has shown that the plural suffix -(w)ak has the distribution that an absolutive NP would have in an ergative language: it is associated with the Patient of a transitive verb, as well as the subject of an intransitive (Ojibwa data from Grafstein 1984):

\begin{align}
(4) & \quad a. \text{nì:-wà:ba}n\text{-a}:-\text{ak ogimà}:-\text{ak} \\
& \quad \text{1-see(TA)-Dir.-Pl. chief-Pl.} \\
& \quad \text{‘I see the chiefs’} \\
& \quad b. \text{wi:nìzi-wak abino:ji:s-ak} \\
& \quad \text{dirty(AI)-Pl. child-Pl.} \\
& \quad \text{‘The children are dirty’} \\
& \quad \text{(AI = animate intransitive)}
\end{align}

The question then is whether the distribution of this morpheme represents syntactic or morphological ergativity. If it is the latter, it might be an instance of a system which is morphologically ergative, but syntactically accusative. In this case, both transitive and intransitive subjects would undergo extraction with equal ease, just as they do in English. Also owing to the conjunct order, however, there is little evidence for assuming that Algonquian languages are syntactically accusative (data from Western Ojibwa):

\begin{align}
(5) \quad a. \text{a}ndi \text{ awe: ga}:-\text{gi’:-gi:zìzw-ad?} \\
& \quad \text{WH that Past-cook(TA)-2s/3s(C)} \\
& \quad \text{‘Which one did you cook?’}
\end{align}

\textit{3Cf. Silverstein (1976) for a similar view. Although the matter is far from clear, we will continue to assume that agreement morphology equals Case-marking in this particular type of language. The importance of such a view will become apparent in the course of the discussion.}
b. a:ndi awe: gwi:zes ga:-gi:'-iza:-d  
WH that boy Past-go(AI)-3s(C)  
‘Which boy went?’  
(C = conjunct form)

As indicated, there is no special morphology that differentiates extraction of a non-subject, vs. a subject in the sentences of (5).

It appears then that the attested means of determining whether a language is syntactically or accusative are not applicable in Algonquian. Nevertheless, the distribution of the plural morpheme can still be regarded as indication of syntactic ergativity. This may be seen to follow from the theory of abstract Case assignment, as postulated in the theory of Government and Binding (henceforth GB). The assumption there is that lexical NPs are all Case-marked in acceptable utterances, even if they do not show overt markings for it. One way of recovering the Case features of such NPs is through word order, as in English. This cannot be appealed to as a means of Case-recovery in Algonquian, however, where word order is relatively free. Clearly then, some other means of recovering Case features from bare NPs must be available. The obvious choice would be the agreement features in the verbal complex, which cross-reference lexical, as well as empty NPs. In GB theory, abstract Case assignment is assumed to hold at S-structure, making it a syntactic phenomenon. It follows that if agreement is one form of Case assignment, it too must be syntactic, pointing to an ergative analysis of these languages.4

3. Phrase Structure

So far, it has been suggested that lexical NPs in Algonquian are required to have abstract Case, and that Case is assigned through agreement features on the verb. While seemingly straightforward, this account raises some serious questions with regard to the structure of Algonquian languages. In GB theory, for example, Case is assigned through Government, a relation that is defined on structure. Many researchers have observed, however, that Algonquian languages lack the configurational structure that is relevant for Government (e.g., Grafstein 1984). The question then is how can Case assignment, which depends on Government, be expressed at all? Other

4Although it could be argued that the plural morpheme -(w)ak is a derivational suffix, attaching to the verb stem in the lexicon, at least one diagnostic indicates that this is not the case: the fact that it occurs outside most other affixes. Still, it is possible that inflectional affixes are attached in the lexicon as well. Even if this is true, however, morphemes that encode plurality would still be checked against the NPs that depend on them. Presumably, this mechanism applies in the syntax. It seems then that the plural suffix -(w)ak might just as well be indicative of a syntactic phenomenon, as argued in the text.
researchers have presented evidence involving noun incorporation which would indicate configurationality. It will henceforth be assumed that Case can be assigned through the conventional means of Government.

A still more serious question to the analysis being developed here concerns the mechanics of Government itself. Van Valin (1985) has argued, for example, that a GB analysis cannot not provide an adequate explanation of pro-drop in Lakhota, a Siouan language. His analysis will be discussed briefly in the following section. It will then be claimed that most of his arguments disappear with a more highly-articulated phrase structure based on the proposals of Koopman and Sportiche (1988).

3.1. Problems for a GB analysis

One of the leading critics of the GB approach to Amerindian languages is Van Valin (1985). In particular, he notes that such an approach cannot handle adequately sentences with both subject and object agreement. To recapitulate, Algonquian has sentences of this very type:

(6) ni:-gi:-wa:bam-a:-wak
    1-Past-see(TA)-Dir.-Pl.
    ‘I saw them’

In (6), the subject is cross-referenced by the prefix ni:-, the object by the suffix -wak. There are no lexical NPs in (6), and on a GB approach, the arguments would be analyzed as empty categories (pro). Example (6) is thus indicative of pro-drop, both of the subject and the object.

Van Valin’s interpretation of how GB theory would account for pro-drop in Lakhota (and, by extension, Algonquian) is based on proposals central to the work of Chomsky (1981). One proposal is that Rule R, the joining of inflection with the verb, can be realized as a lowering rule — i.e., one in which inflection (or agreement) moves to the verb, rather than vice versa. Another proposal is that agreement licenses pro-drop through Government.

Van Valin first assumes that object agreement in Lakhota is base-generated under INFL, just as subject agreement is in any other language. In other words, there are two agreement morphemes under Infl at D-structure in a sentence like (6). In order to accommodate object-drop, INFL must be lowered to the verb so that it will govern the object NP position. The subject NP position also needs to be governed, however, in order to license subject-drop. In this case, INFL must remain in its base position. The problem, then, is in how INFL’s functions can be discharged both from its base position (for subject-drop) and the one it assumes after lowering to the verb (for object-drop).
3.2. Raising to INFL

The nature of Van Valin's analysis of the double agreement phenomenon is such that only one of the positions that require licensing by agreement can be governed by INFL before lowering. In other words, INFL cannot govern the complement of V from its base position. This might not be a problem, however, if the NP that needed to be governed were a specifier of V, rather than a complement. The complement of V could then appear in the specifier position of INFL, and both NPs could be governed by agreement.

The type of phrase structure just described has been proposed for English by Koopman and Sportiche (1988). They assume that INFL is a raising category, much the same as seem is assumed to be a raising verb by Chomsky (1981), and many others. Essentially, INFL is regarded as a category that takes a VP complement with a subject position. In English, lexical NPs cannot remain in this position, because it is not Case-marked. Instead, this NP must raise into the specifier position of INFL, where it receives nominative Case. The following is an S-structure representation of an English sentence:

(7)  
\[
\text{IP} \rightarrow \text{INFL} \rightarrow \text{VP} \rightarrow \text{t}_i \rightarrow \text{V'} \rightarrow \text{NP}
\]

\*e.g., 'The man (Nom.) shot the moose (Acc.).'

In English, accusative Case is assigned to the object NP by the verb. In an ergative language, however, the verb may not assign a Case feature to its object. Still, the object NP could undergo raising, provided that the specifier position of INFL were free. This, then, is the proposal concerning ergative languages in general: transitive verbs do not assign an abstract Case to their objects, which must then undergo raising to INFL. The assumption is that INFL assigns absolutive Case, the same feature it assigns to the subject of an intransitive expression. Moreover, INFL must also be capable of assigning another Case feature (the ergative) to the subject of its VP complement; if it did not do this, this NP would not pass the Case Filter. The following is a proposed S-structure representation for a transitive sentence in an ergative language:
In the next section, the details of agreement indexing will be examined, as well as the consequences that arise from this analysis.

4. Indexing and Hierarchies

4.1. Agreement indexing

So far, it has been assumed that theta-roles are assigned to argument positions, which must be Case-marked. If Case-marking takes the form of agreement morphemes under INFL, INFL has to govern them. It has been suggested that this is possible only if INFL is considered as a raising category, one which has a VP complement with an empty specifier position. Case features under INFL may then have access to the VP, as the specifier of a complement can be governed by a c-commanding head.\(^5\)

In addition, Case features under INFL may have access to the specifier position of IP, through the general convention of “Spec.-head agreement”. Using indices, Case-assignment through agreement is represented formally as follows:

\[
\begin{align*}
(9) & \quad \text{IP} \\
& \quad \text{I'} \\
& \quad [\text{NP}_i] \\
& \quad \text{INFL} \\
& \quad \text{VP} \\
& \quad \text{NP} \\
& \quad \text{V'} \\
& \quad \text{V} \\
& \quad t_i \\
\end{align*}
\]

In (9), INFL is comprised of two agreement morphemes (and the feature Tense, not shown here). As indicated, the indices that encode agreement are inherited by INFL, through the general process of feature percolation.\(^5\)

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\(^5\)This is similar to the way in which an exceptional Case-marking verb would govern the subject of its complement (as in, e.g., ‘We want him to leave’).
On this analysis, the NPs are understood as being Case-marked by INFL, rather than by the agreement morphemes themselves. The reason is that only INFL is a governor. If, however, an NP in the specifier position of IP is co-indexed with INFL (as required), and if INFL also bears the index of the NP specified of the VP, the former will, in essence, be co-indexed with the latter, and vice versa. The two NPs, in other words, will be indexed with each other through the INFL node. The following section examines the important consequences that linking has for theta-role assignment and the use of Person hierarchies in Algonquian.

4.2. Thematic roles

If both NP positions of a transitive verb are co-indexed with each other in the way described above, the effect may be to obviate the association of specific theta-roles with uniquely marked NP positions. Normally, these are visible through overt Case-marking or word order. As already noted, however, word order in Algonquian is quite free, and thus cannot provide the visible targets necessary for unique association. As for Case-marking, it has been argued that Algonquian languages are syntactically ergative, and that this kind of language is to be associated with a particular syntactic configuration. Nevertheless, there are no unique Cases in Algonquian per se, i.e., Cases that identify one NP in a transitive expression as having the role of Agent or Patient. This is obvious from sentences with contrastive directionality markers (data from Ojibwa):

(10) a. ni:-gi:-wa:bam-a: mo:z
    'I saw the moose'

b. ni:-gi:-wa:bam-igw mo:z
    'The moose saw me'

The only candidate for an ergative agreement marker in (10) — that which could identify the Agent in both sentences — is the 1st person prefix ni-. As indicated, however, this morpheme is not always associated with an Agent. Crucially, however, while Person/Number features must play a role in theta-role assignment, they cannot be directly linked to NP positions. The reason is that NPs co-indexed with each other are not uniquely marked. If, then, theta-roles cannot be assigned to uniquely Case-marked positions in Algonquian, some other means must be available to identify them. This could be accomplished through a Person hierarchy.

In conclusion, the basis for assigning theta-roles in Algonquian may be understood in terms of "inherent lexical content", as proposed by Silverstein (1976). The basis for this concept is the pragmatic salience of one person with respect to another in a speech act. An addressee (2nd person) is thus considered by a speaker of Algonquian to be more Agent-like than himself
(1st person), or someone else (3rd person) in a direct form (inverse forms would be marked). This is one possible explanation for the use of Person hierarchies in Algonquian.

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