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THEMATIC PROPERTIES OF ALGONQUIAN VERB ROOTS*

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1. INTRODUCTION, GOALS

In this paper we address the internal structure of verb stems in Algonquian languages. Verb stems are usually complex, made up of several distinct morphemes. Previously, however, very little attention has been paid to the arrangement of these forms within a restrictive theory of morphology. The primary goal then, is to determine internal structure, and to examine the consequences of the analysis. In so doing, the notion of transitivity will be examined, and separate morphemes of the verbal complex found to play distinct roles in its determination.

Questions of transitivity arise in any treatment of Algonquian verb morphology. Most verbs are overtly marked for transitivity via agreement with an argument. The pattern of agreement is ergative, so depending on the subject or object that triggers it, the native speaker and/or linguistic researcher can determine if a clause is transitive. Other indications of transitivity include obviation and 'voice' (directionality). In a transitive clause with two third-person arguments, one of them must be marked as 'proximate'—more salient to speaker—the other obviative. If the object outranks the subject on a person hierarchy, a 'passive' (inverse) verb-form is required. Transitivity can be expressed in various ways in different theories. Within a Principles & Parameters-type theory, specification of argument structure, as well as subcategorization features capture this notion. This is especially important with respect to Algonquin where, it is claimed, the construct of transitivity itself can be broken down and shared by different parts of the complex verb stem.

Because Algonquian languages are generally regarded as polysynthetic, it is also worthwhile to examine them in terms of Baker's (1996) Polysynthesis Parameter. Accordingly, rich agreement and noun-incorporation should be attested in this type of language. While there is ample evidence of the former, there is some question as to whether nouns can be incorporated as in, e.g. Mohawk. This issue turns on the status of medials, or noun-like elements within the verb stem. Here it will be argued that medials arise through base-generation, rather than incorporation. Moreover, the generation and internal structure of the verb stem allows for adverbial elements as well, which are not easily accounted for in Baker's theory.

2. SOME BACKGROUND IN ALGONQUIAN

Algonquian is a language family spoken mostly in the Eastern US & Canada. It is comprised of East, Central and Western sub-groups. As a whole, all of the Algonquian languages are characterized by rich verbal morphology, with agreement marking for both subjects and direct objects. Pronouns are never obligatory, and when they do occur tend to be emphatic. It might be supposed that the agreement morphemes are themselves pronominal, or that members

of Algonquian are 'pronominal-argument languages' (cf. Jelinek 1984). In any case, this aspect of typology seems to satisfy one of Baker's (1996) criteria for consideration as a polysynthetic language.

Other significant features of Algonquian languages are 1) a gender distinction based on animacy, 2) a system of cross & counter-referencing NPs across sentences and discourse, 3) a 'person' hierarchy that operates in transitive sentences, and 4) the use of separate verb paradigms for different sentence-functions (called "orders" by Algonquianists).

Animacy is a grammatical, rather than a biological property of nouns; NPs are thus lexically-specified as being [+/-animate]. The pattern of agreement is ergative, with transitive verbs agreeing in gender with their objects, intransitives with their subjects. Together, gender and transitivity produce a four-way classification: transitive animate (TA), transitive inanimate (TI), animate intransitive (AI) and inanimate intransitive (II).

2.1. *Initials, medials and finals*

Verbs stems in Algonquian languages can be simplex, but are often comprised of identifiable morphemes referred to as initials, medials, and finals. To some extent, the meaning of the stem can be derived from the meaning of its parts, but semantic extension is a regular process too, hence any given verb may be interpreted pragmatically (Rhodes 1986). Some examples of complex verbs in Algonquian are given below (from Leavitt 1992):

(1) Complex verbs (Passamaquoddy)

- a. *'pasko-cok-opoli-hk-omon*
3-break(IN)-soft.obj(M)-cover(F)-foot(F/TI)
'S/he tramples something soft so that it breaks'
- b. *pasko-cok-onike*
break(IN)-soft.obj(M)-hand(F/AI)
's/he breaks soft objects by hand' (= 'squish')
- c. *pask-apsk-onike*
break(IN)-hard.obj(M)-hand(F/AI)
's/he breaks hard objects by hand' (= 'crush')

In (1a-b) it is the finals that mainly vary, while medials and initials remain constant; (1b-c) show variation in the form of medials. Not every verb-component appears in every stem. In (2-3) below, medials and initials are absent, respectively (Passamaquoddy, from Leavitt 1992).

(2) Verb stems with no medials

- a. *'pask-ehl-al*
3-break(IN)-F/TA(F)-3'
's/he breaks it'
- b. *'pask-on-al*
3-break(IN)-hand(F/TA)-3'
's/he breaks it by hand'

(3) Verb stems with no initials

- a. *'-kec-cehs-uwam-al*
3-off(PV)-article(M)-take(F/TA)-3'
's/he takes off h/ clothes'
- b. *'-kec-cehs-uwatom-on*
3-from(PV)-part(M)-take(F/TI)-3
's/he takes a part from it
(e.g. car, TV, house)'

In general, finals carry only basic information, e.g. 'take', 'grasp', 'by hand', etc.; these are sometimes referred to as concrete finals. The variable interpretation of complex stems is demonstrated in (3a-b).

2.1.1. *Finals*

Finals occupy the rightmost position of the complex stem. They are responsible for encoding gender agreement with the absolutive argument—the transitive object or intransitive subject. Many verbs contain identifiable finals, but the fact that others do not has led to different treatments of their status. Some researchers (cf. Bloomfield 1946, Rhodes 1986) have posited an 'abstract', or covert final for verbs that apparently lack them; others (Goddard 1990, Mellow 1992) assume that finals are simply absent from these forms. The former view will be adopted to here, where finals constitute the only obligatory element of the verb stem.

2.1.2. *Medials*

Medials are optional noun-like elements that occur to the left of finals. Wolfart (1971) has classified different types of medials in Cree, most of them falling into one of four categories. Some medials are derived from verbal roots ('muskrat'), whereas others have an independent existence as possessed nominals (e.g. 'head'). Mellow (1991) has argued that these two types of medials represent bonafied instances of noun-incorporation along the lines of Baker (1996). Reduced medials signifying body parts (e.g. 'arm' or 'hand') or object shapes (e.g. 'wood') are uncontroversially regarded as base-generated. The question, however, is whether they form a constituent with one verb stem component (final, initial) to the exclusion of the other.

2.1.3. *Preverbs and initials*

Most verb stems are specified for initials, a fact which has led some researchers (Goddard 1990; Mellow 1991) to suggest that these elements constitute the morphological head of a complex form. Indeed, initials often carry the most semantic weight, as the following examples show (Goddard 1990):

(4) Initials (Fox, Munsee)

- a. *mihkem-ehkwew-e*
court(IN)-woman(M)-F/AI
'court a woman'
- b. *nemat-api*
upright(IN)-sit(F/AI)
'sit upright'
- c. *monah-ipon-e*
dig(IN)-potato(M)-F/AI
'dig potatoes'

According to Rhodes (1986), "Initials have the widest range of meanings. They may encode meanings we would take to be verbal, adverbial, adjectival, or modal in nature, either modifying some part of the predication or logically coordinating with the concrete final" (p.6). In Section 3.1 it will be argued that the primary role of initials in complex verb stems is one of modification.

Another sub-stem element of complex forms is the preverb, appearing on the left periphery. The following examples provide an illustration (Leavitt 1992):

(5) Preverbs (Passamaquoddy)

- a. *napici* *koli-hqeh-mon*
 onto(PV) attach(IN)-surface(M)-FTI
 'S/he sticks it onto something'
- b. *sici* *napici* *kol-te*
 near(PV) onto(PV) attach(IN)-F/AI
 'It hangs in there solidly and close (e.g. a coat)'
- c. *musi-k-on-omon*
 away(PV)-act(IN)-hand(F)-F/TI
 'S/he tears it down or apart'

Preverbs can have an aspectual character, modifying the extent or result of the event described by the main components. Preverbs are often analyzed as initials, for understandable reasons: the same form can double as one or the other! The difference between the two can only be ascertained by morphological and syntactic tests: preverbs—but not initials—have a corresponding free form which can be separated from the verb stem by a person prefix, and more than one preverb (but not initial) can occur with the same verb (5b). In addition to their ability to be 'stacked', preverbs display another important property with regard to order. This issue will be taken up in Section 3.2.

2.1.4. Diagnostics for transitivity

Two diagnostics serve to establish transitivity in Algonquian, directionality and agreement. Directionality refers to the course of action described by the verb between the subject and the object. The forms themselves are called direct and inverse. First it is necessary to acknowledge the following hierarchy of animate NPs:

(6) THE PERSON HIERARCHY: 2 > 1 > 3 > 3'

Direct forms of verbs entail that subjects outrank objects on the person hierarchy. A sentence that translates as 'You saw me', for example, contains a special morpheme on the verb (the direct theme-sign) which indicates the direction of the given action. In similar fashion, a first person performing an action on third person, or a proximate third person performing an action on an obviative requires a direct theme sign.

When a subject lower on the hierarchy performs an action on an object higher up, a different theme sign, the inverse, is selected. This would be the case in a sentence that translates as 'I saw you', or perhaps more appropriately, 'You were seen by me' (neither argument undergoes demotion, however). Examples of direct and inverse forms can be seen in the following sentences (Francis & Leavitt 1992):

(7) Directionality (Passamaquoddy)

	a. <u>Direct</u>		b. <u>Inverse</u>
1	<i>ntokom-a</i> 'I hit him'	1	<i>ntokom-oq</i> 'He hit me'
2	<i>ktokom-a</i> 'You hit him(SG)'	2	<i>ktokom-oq</i> 'He hit you(SG)'
3	<i>'tokom-al</i> 'He hit her(OBV)'	3	<i>'tokom-oqul</i> 'She(OBV) hit him'

Directionality appears to be a reflex of the fact that person-marking takes the form of a prefix regardless of whether the argument it cross-references is subject or object. It goes without saying, however, that if a verb is marked with a direct or inverse theme-sign, it must have a subject and a direct object—i.e., it is a transitive verb with two syntactic arguments.

Agreement in its many forms provides another diagnostic for transitivity in the conventional sense. Algonquian languages are very rich in agreement, as already demonstrated. Subjects are cross-referenced by person prefixes in the independent order, and various suffixes encode features of both subject and direct object. A sample of agreement appears below (directionality not shown):

(8) Agreement in Passamaquoddy

a. <i>n-ucem-a</i>	<i>n-ucem-ak</i>
1-kiss-3.SG	1-kiss-3.PL
'I kiss him/her'	'I kiss them'
b. <i>n-ucem-an</i>	<i>n-ucem-an-nuk</i>
1-kiss-1.PL/3.SG	1-kiss-1.PL-3.PL
'We kiss him/her'	'We kiss them'

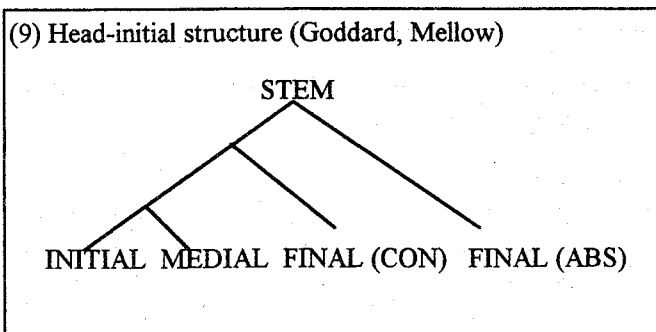
Prior to agreement, verb stems are classified in terms of transitivity and gender by the finals that comprise them (see above). Nevertheless, this aspect of Algonquian verbs does not necessarily reflect syntactic transitivity. In 4.1 it is suggested that while finals indicate the number of arguments to be assigned, they are not responsible for assignment *per se*.

2.2. *The structure of the verb stem*

Verb stems in Algonquian may be comprised of several parts, but how are they organized? Basically there are two schools of thought: either the initial element constitutes the head, or else the final does.

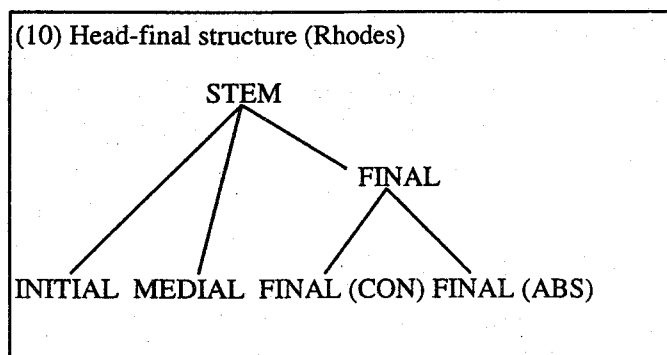
2.2.1. *Competing viewpoints*

Goddard (1990) notes that initials are prevalent in Fox, and that finals can be lacking. He assumes that complex stems are headed by initials, although no formal analysis is offered. If initials constitute morphological heads, the structure shown in (9) would be appropriate:

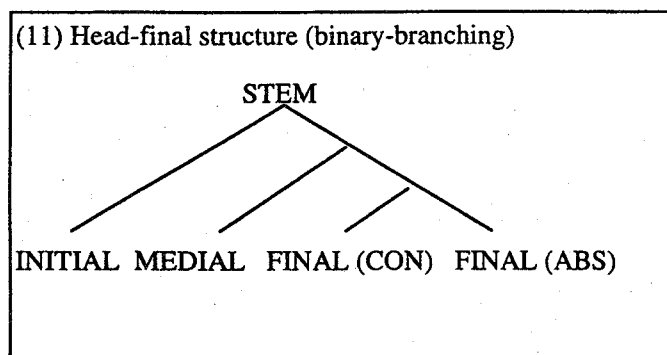


In addition to regarding the most salient semantic component as the head, the structure shown above captures the 'inflectional' nature of finals by assuming they are 'added on', perhaps later in a derivation. (9) also allows for designated medials to arise through noun-incorporation. As Mellow (1991) himself points out though, the disadvantage of such a view is that what semantic information finals do carry is lost under a purely inflectional treatment.

The alternative to the initial-as-head hypothesis, of course, is one that takes the final to be the head. Following the traditional approach of Bloomfield (1946), Rhodes (1986) states flatly that the final is the head of the verb stem, giving the following structure:



On the final-as-head hypothesis, verb stems that seem to lack final elements must be analyzed as having covert ones. Historically there is some evidence for this approach (that is, older forms have overt finals), but in any case there is a well-established tradition of treating stems this way. In current approaches to morphology, however, it is generally assumed that internal word-structure is binary branching. A more appropriate representation of (10) might then see the medial as forming a unit with the final(s), as shown below:



In the following section it will be argued that (11) is the correct structure for complex verb stems in Algonquian that do not involve secondary derivation.

2.2.2. *Syntactic properties of stem-formation*

There are several reasons for supposing that the final-as-head hypothesis is correct. First, recall that finals reflect the gender features of absolutive arguments, which is a kind of agreement (but cf. footnote 1). Person/number morphemes appearing on the right-periphery of the verb stem also represent agreement. It makes sense then to assume that all agreement features have the same underlying form. Of course, this would allow for ease of acquisition on the part of the language learner.

In many current approaches to word-formation (cf. Baker 1988), complex verbs can consist of separate syntactic units prior to concatenation. Typical cases involve causative or passive morphemes which have an independent status early in a derivation. Subsequent applications of head movement produce complex forms like *taberareru* 'is eaten', or

tabesaserareru 'is made to eat' in Japanese, for example. There is evidence in Algonquian too that certain stems are formed syntactically, or that, according to Goddard "...the concatenation of elements in the sentence logically precedes [their] morphological composition" (p.479). Here these data will be examined and an analysis proposed.

Goddard (1990) notes that preverbs in Fox can have semantic scope over one final to the exclusion of another, where the latter signifies verbs of thinking or saying:

(12) Sentential complements (Fox)

- a) *kisi-kik-enow-enem-aki*
 finish-clanfeast-celebrate-think.about-1SG/3
 'when I thought they were finished celebrating the clanfeast'
- b) *nekotahi iniyeka ototeweniw-acim-api*
 somewhere they(OBV) have.town-say.about-3([-DEF])
 'it is said of them that they have a town somewhere'

In (12a) the preverb *kisi* 'finish' pertains to the celebrating, rather than the thinking; in (12b), *nekotahi* 'somewhere' refers to the having of a town, rather than the site of saying it.

Another piece of evidence that suggests that stems are formed syntactically comes from what Goddard calls PREVERB BUMPING. Accordingly, "...when more than one preverb occurs in a compound stem...they always conform to a strict sequential order" (ibid, p.479). This can be seen in the data below:

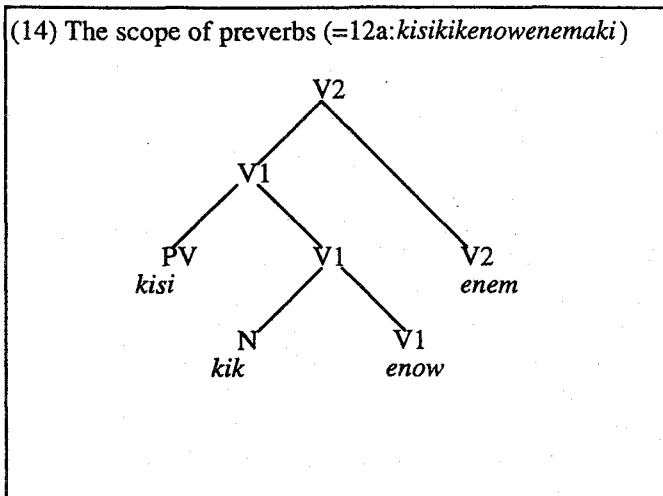
(13) Preverb bumping (Fox)

- a) *pem-ose*
 along-walk
 'walk along'
- b) *wep-ose*
 begin-walk
 'begin walking'
- c) *pemi-wep-ose-wa*
 along-begin-walk-3/SG
 'He starts walking (along)'
- d) **wep-pem-ose-wa*
 begin-along-walk-3/SG
 'He starts walking (along)'

Either of the preverbs can take part in stem-formation, as shown in (13a-b); when both of them occur, however, only one order (13c) is allowed. The term preverb bumping gets its name from the apparent priority that one preverb has over another. This might not be surprising if preverbs were of different categories, and could somehow alter the conditions of subsequent attachment. There is no independent motivation for this, however, the semantics of the stems remaining fairly constant. A more plausible approach would be to treat preverb-bumping analogously to the ordering of pre-nominal adjectives in English, e.g. 'a big white house', as opposed to 'a white big house'. Of course this is a syntactic construction, and implies that verb stem formation in Algonquian is syntactic too.

3. A FINAL-HEADED VERB STEM

Let us take the derivation of secondary stems in (12) as a starting point. A plausible structure for the scope of preverbs would be one in which a preverb c-commands a primary, but not a secondary final. The following diagram represents this state of affairs:



The structure in (14) implies that a secondary stem is formed in two stages. First, the primary stem (V1) is derived, and then V2—a secondary final—is attached to its right. An alternative structure in which both finals were c-commanded by the preverb would not accommodate the fact that *kisi* 'finish' pertains to one final, but not the other.

3.1. Medials as nouns

The structure shown in (14) assumes that *kik* 'clanfeast' is a medial of the category N, and forms a constituent with the concrete final *enow* 'celebrate'. In the absence of a concrete final, it is assumed that a medial forms a constituent with an abstract final. In this respect it corresponds roughly to the direct object of a verb-phrase, and in fact proposed cases of noun incorporation in Algonquian languages are compatible with this view. Since both transitive and intransitive verbs may involve medials, however, it must also be possible to generate them independently of incorporation. Whether they receive a theta-role or not is an entirely different matter, one that will be taken up in Section 4.2.

3.2. Preverbs and initials as adverbs

Preverbs and initials are left-adjoined to the medial-final complex in (14). In this way, they are ensured of assigning scope over the primary, but not the secondary final. Their position as the outermost component of the primary stem allows for multiple attachments—preverb stacking—and so long as (14) is taken as a syntactic structure, strict ordering as well, (preverb bumping). Suffice to say, the position occupied by the preverb (or initial) corresponds to an adverbial or resultative phrase within a syntactic projection of VP.

3.3. Finals as verbal heads

The question as to where secondary (as well as primary) stem-formation takes place is now addressed. It has been suggested that (14) represents a syntactic, rather than a morphological structure, which would imply that complex stems are derived in the syntax. But this is not necessarily the case: (14) could manifest the internal structure of a complex word while

maintaining basically syntactic properties. These include the projection of a headed structure by a final (V2 above), and the selection of a similar projection as a complement (V1). Merger would certainly occur post-syntactically, perhaps through V-incorporation.

The structure proposed for complex stems in (14) raises further questions regarding initials, however. In particular, it is not obvious how theta-roles are assigned, especially since the semantically heavy initials are not in head position. This will be taken up in the following section.

4. TRANSITIVITY AND THETA-ROLE ASSIGNMENT

The proposal so far is that complex stems in Algonquian are binary-branching structures headed by finals. The latter are regarded as verbal in character, medials as nominal and initials/preverbs as adjectival. Initials also specify propositional content, however, which in formal (Principles & Parameters) terms is expressed through theta-role assignment. An initial meaning 'break', for instance, should be capable of assigning two theta-roles. At the same time, finals seem to indicate the valency of the stem, or the number of entities that require a theta-role. Suppose then that the lexical entry of a complex stem can be decomposed as follows:

(15) Decomposition of the complex stem *paskehl* 'break' (=2a)

V-component	Form	Specification	Function
INITIAL	<i>pas-</i>	[Agent, Theme]	TYPE
FINAL	<i>-ehl</i>	TA (= 'two')	NUMBER

The representation of initials and finals as separate entities allows them to share the task of theta-role assignment, the latter by specifying the number of arguments, the former by naming the roles themselves. At the same time, however, they could function independently of one another. Situations are thus predicted to arise in which, say, the final indicates that one argument is involved, but the initial names two. Conversely, a transitive final normally implies that two arguments will be present to receive a theta-role, but some initial combining with it may specify only one type. In the following sections, it will be shown that each of these situations is attested in Algonquian languages, usually systematically, but also in individual lexical entries.

4.1. Mismatch No. 1: transitive initials and intransitive finals

The first predicted 'mismatch' between valency (number) and argument structure (named theta-roles) involves intransitive finals and initials with two theta-roles to assign. This state of affairs can actually be played out in one of two ways: either the extra theta-role is assigned in the syntax to an argument which does not trigger agreement, or it is assigned word-internally to a medial. As it turns out, most Algonquian languages are characterized by a verb-form called the 'pseudo-transitive', examples of which are given in (16):

(16) Pseudo-transitives (Francis & Leavitt 1990)

- a. *pcitahk-ehiti* *kunuwehtahsuwinu*
 send(AI/3/PL)-PAST messengers
 '...they sent messengers...'
- b. *kis-olutom-oniya*
 PAST-discuss(AI)-3/PL
 '...they decided (discussed) it...'

In both (16a-b), the subject triggers gender agreement, as expected with intransitive finals. In addition, these forms fail to induce the Person Hierarchy (6) which applies only in transitive clauses. Nevertheless, a second argument is either present (16a) or part of the meaning of the stem (16b)—in both cases satisfying the role of Theme. This construction is thus consistent with the proposal that lexical properties of verb-components may be realized independently from each other.

Given that the medial component of a verb stem is nominal in character, the possibility also exists that it can be referential, hence require a theta-role. Recall that certain medials in Cree are analyzed by Mellow (1991) as having undergone a process of incorporation. One of the problems of this analysis is that sometimes medials retain features of definiteness, as in the following example shows:

(17) Incorporation in Cree (Mellow 1991:250)

a. *nooc-i-h-iiw wacaskwa*

hunt-Ø-TA-AGR muskrat

'He hunts the muskrat'

b. *noot-acaskw-ii-w*

hunt-muskrat-AI-AGR

'He muskrat-hunts' ([-DEF]) OR 'He hunts the muskrat' ([+DEF])

In many languages incorporation entails a loss of definiteness, but in (17b) *acaskw* 'muskrat' can be [+/-DEF]. On the other hand, if this medial were base-generated in the structure proposed for complex stems (14), nothing would rule out a [+DEF] feature. Again we must assume that a basically morphological structure has properties normally associated with the syntactic component. The semantically transitive initial thus assigns the role of Theme to *acaskw* 'muskrat' in (17b). Of course, not all medials are assumed to be incorporated, and some—in particular reduced body parts and object shapes—are semantically oblique. In these cases it is not clear whether they would receive a theta-role, or if they share one with a separate NP in the discourse. Medials thus provide a means of realizing the extra argument of an otherwise intransitive verb.

Finally, the hypothesis predicts that initials with two theta-roles to assign cannot occur with intransitive finals *unless* there is a medial in the verb stem or a pseudo object in the syntax to receive it. As far as the available data is concerned, no such forms are known to exist.

4.2. Mismatch No. 2: intransitive initials and transitive finals

Consider now mismatches of another kind, where the theta-roles named by an initial are 'outnumbered' by the transitivity specification of a final. Two separate cases come to mind, i.e. when the initial has one theta-role to assign and the final calls for two, and when the initial assigns no theta-role at all, and the final calls for one. First it should be pointed out that not just any initial can occur with a transitive final, which is to say that mismatches are not completely arbitrary. An initial signifying 'sleep' for example, could never be combined with a transitive final, as there is no real-world basis for it. On the other hand, a situation might arise in which a verb like 'sleep' is used transitively, perhaps by means of a causative construction. More generally, however, single-role initials can be paired with transitive finals after a lexical process has defocussed the primary argument. The result is what Algonquianists call the indefinite subject construction, logically understood as a proposition carried out by no one in particular.

The indefinite subject construction (ISC) occurs in Passamaquoddy, first where an initial assigns one theta-role, and the final is intransitive (from Francis & Leavitt 1993):

(18) ISC: animate intransitives

a) *opin*

'Someone is sitting'

b) *opultin*

'Some people are sitting'

Both: 'There is sitting'

Both forms are also easily translated as 'There is sitting', somewhat analogously to impersonal passives in German (*Es wurde getanzt*, 'There was dancing'). Unlike definite subject constructions, however, there is no subject agreement morpheme in (18a-b). ISC's are often used as nominal modifiers, where defocussing of the Agent can be seen more clearly (Bob Leavitt, pc):

(19) ISC: changed conjunct form

a) *Nil tehpu epi epimok, kotokik sehkolotuwok.*

'I'm the only one (sitting) in the sitting space;
the rest are standing up'

b) *Kotokik opultuwok epultimok.*

'The others are (sitting) in other seating places'

Transitive finals in the ISC can also form the basis of intransitive clauses, which would not otherwise be expected (from Francis & Leavitt 1992):

(20) ISC: transitive animates (direct)

a) *tokom-a-Ø*

hit-DIR-3/SG

'Someone hit him/her'

b) *tokom-a-k*

hit-DIR-3/PL

'Someone hit them'

The forms in (20) contain a verb stem with a TA final, a theme-sign, and a suffix marking person/number of the object. Crucially, subject agreement prefixes are absent. This indicates that the verb has but one argument to assign externally, the role of Agent being understood. As such it represents a mismatch between the number of arguments specified by the final and their actual assignment, as determined by the initial.

Another indication that sentences like those in (20) are syntactically intransitive (despite the permissible use of transitive finals) comes from obviation. Recall that normally third person objects are marked distinctly from third-person subjects within the same sentence by means of special verb morphology. In the ISC, however, there is no obviative marking of the object—neither on the NP itself nor on the verb—which would indicate the presence of a subject.

The last diagnostic of transitivity—the presence of direct and inverse theme signs—is inconclusive. While both forms are attested in the ISC, they mean essentially the same, as can be seen in the glosses of (21):

(21) ISC: transitive animates (inverse)

a) *tokom-aw-Ø*

hit-INV-3/SG

'S/he is hit (by someone)/Someone hits him/her'

- b) *tokom-aw-iyik*
 hit-INV-3/PL
 'They are hit (by someone)/Someone hit them'

One must look beyond third person paradigms to see that ISC's are intransitive. If they were not, indefinite first- and second person subjects might co-occur with third person objects using a direct theme-sign. The fact that all such combinations use the inverse thus undermines any attempt to prove their transitivity.

The only cases where single-role initials match up with transitive finals are in this (ISC) construction. As stated, this is because no real-world event can name fewer arguments than already enumerated. The converse is not true, however—that is, an initial can name more participants than the final indicates. Evidence of this type of mismatch was shown in Section 4.1 above.

5. CONCLUSION & SUMMARY

In conclusion, it has been claimed that the head of complex verb stems in Algonquian is the final, and together with medials and initials form a left-branching structure. As a result, the initial and the final each take part in theta-role assignment, the latter specifying their number and the former by naming them. Certain mismatches between the verb-components were predicted to occur in which initials named more or fewer theta-roles than the finals called for. Evidence was adduced to verify these predictions.

Inasmuch as the forms, their properties and the principles which govern them stand up to further scrutiny, this study demonstrates that transitivity can be broken down, or decomposed into discrete components of naming and enumerating arguments, with morphological and syntactic analogues. Previous research has already documented semantic vs syntactic transitivity.

It was also argued that incorporation did not take place in Algonquian, as might otherwise be expected in a polysynthetic language (Baker 1996). Nevertheless, the base-generation of medials to the left of the final/head is more-or-less compatible with the Polysynthesis Parameter:

(22) THE POLYSYNTHESIS PARAMETER (informal)

Every argument of a head element must be related to a morpheme
 in the word containing that head.

Moreover, the base-generation of initials as V-adjuncts enriches the theory of polysynthesis, which is unable to accommodate adverbs in complex words by means of incorporation.

It was suggested that the internal structure of the complex verb stem was imported from the syntax, such that verb-components (initials, medials and finals) had the distribution and behaviour of adjectives, nouns and verbs within a right-headed VP. Inasmuch as this can be determined, no such VP structure has existed in any Algonquian language. Nevertheless, the inferences are clear: previous stages of the proto-language must have had an SOV word order. While there is no way to verify this claim, other aspects of Algonquian word and morpheme order point in the same direction: person prefixes have certain subject properties (Campana 1996), inflectional morphology attaches to the right of the verb stem, etc. It is a topic that needs to be explored in depth.

NOTES

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1. In fact, however, NPs do not trigger gender agreement so much as co-occur with a verb-form of the appropriate type; mismatches can and sometimes do occur.

2. The coding is standard among Algonquianists, and reflects ergativity as well. Other abbreviations used here are as follows: 1=first person, 2=second person, 3=third person (proximate), 3'=third person (obviative), AGR=agreement, [+/-DEF]=(in)definite, DIR=direct theme sign, F=final, IN=initial, INV=inverse theme sign, M=medial, OBV=obviative, PV=preverb, SG=singular, PL=plural.

3. In the structuralist tradition, a form translated 'be a muskrat' contains a verbal root. For some it may be more felicitous to consider muskrat as a noun that combines with inflectional material later in a derivation.

4. This occurs in the Independent order only, typically used for declarative sentences. In the Conjunct order (questions, relative clauses, etc.) person marking is strictly suffixal. Cf. Campana (1996) for details.

5. Person, number, and obviation suffixes are sometimes realized as portmanteau morphemes. Also, some morphophonemic changes have taken place in (8), such that directionality marking and object agreement are both no longer visible.

6. Recall that preverbs are often considered as initials if they form a phonological unit with the other components.

7. In the discussion that follows, 'argument' will imply 'referential entities', whether these are represented in the syntax, as morphological forms, or as part of the meaning structure.

8. Pseudo-transitives are often characterized as AI+O forms.

9. The question as to what licenses the object NP goes beyond the purposes of this paper. Inherent Case is a strong possibility.

10. In fact, Mellow does not provide an account of the verbal morpheme *-i-* in (17a); we may take this as another instance of a base-generated medial which does not receive a theta-role.

11. Further instances of ditransitive verbs can be constructed, but are not considered here.

12. Agent is considered primary, otherwise Theme.

13. It is acknowledged that both first- and second persons are inherently definite, however.

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