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SPECIAL SESSION

ON

SYNTAX AND SEMANTICS

OF THE INDIGENOUS LANGUAGES OF THE AMERICAS

Edited by

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Some More Impossible Words

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> As is well known, they [American Indian languages] are unusually variant in form from each other, and it is perhaps not too much to say that there is hardly a morphological type which is not illustrated in the American field. [Edward Sapir *Collected Works*, V: 144, from a previously unpublished note]
>
> There is hardly a classificatory peculiarity which does not receive a wealth of illumination from American Indian languages. It is safe to say that no sound general treatment of language is possible without constant recourse to these materials. [op.cit. p. 145]
>
> *"When **I** use a word," Humpty Dumpty said,..., "It means just what I choose it to mean -- neither more nor less."*

1. Background

The title is ambiguous: 'some additional impossible words' -- 'some words that are more impossible than some others.' I mean it as a blend of the two. The 'others' are the sort discussed in a recent exchange between Fodor and Lepore on the one hand and Hale and Keyser on the other (*LI* 30:3), which took off from earlier papers by Hale and Keyser (see the references under these names). That discussion circled around examples like these:

(1) *It cowed a calf. (= 'A cow had a calf.')
*He shelved the books on.
*The book shelved.

The former authors dispute and the latter defend the idea that such supposedly impossible words or interpretations are evidence for complex derivations of some words from syntactic or near-syntactic meaning structures.

The present paper is not in the first place about such examples, but the general question behind it is related:

(2) **What is the relation between the grammar of words and the grammar of phrases?**

(I hold that some of the kinds of meanings of word formations that are supposed to be excluded by explanations such as those of Hale and Keyser, can easily exist as meanings of sub-word items and operations.)

In several papers (Bach, 1994, 1996) I have raised this question in the context of discussing languages with big words, 'polysynthetic' languages in one or the other older meanings of that term. The two older senses I have in mind are: 'having unusually complex words' and 'expressing in a single word what can be only expressed by a sentence (in some other language of reference)' (see Denny, 1989). My general point has been to try to undermine views that try to build word structures from phrasal syntax (or vice versa for all that). Let's follow Swadesh's happy terminology and speak of 'internal' and 'external' syntax (Swadesh, 1939).

One kind of argument goes to show that the two domains go their independent ways in various languages. A pair of languages can be similar in external syntax and very different in their internal syntax, or the reverse, with all combinations attested. In a previous paper (Bach, 1996), I cited pairs of languages that have very similar word structures and very different phrasal syntax: Haisla and other Wakashan languages compared with Yup'ik and other Eskimo-Aleut languages, as well as languages with globally similar phrasal syntax and quite different word structures: verb initial languages like Haisla and Nisg̲a'a (Tsimshianic) or verb-final languages like Tlingit and other Na-Dene languages and Japanese or Turkish. These comparisons show that whatever else the languages might have in common, the details of how words are constructed and how phrases are constructed can vary quite independently.

Another kind of argument takes off from this question:

(3) **What is the relationship between the meanings of the elements of word-internal and word-external syntax?**

If the kinds of meanings that are found in the two domains are incomparable -- that is if there are types of meanings that are found in one domain but not in the other -- then that fact would serve further to undermine theories that hold that one domain mirrors the other, or that they are just two ends of a kind of continuum.

So to take one extreme view: if there are languages in which complex words are just sentences (on one of those views of 'polysynthesis'), then we would expect the categories and their semantic values to be the same within words as outside of words.

Here I will pursue further this second question, and draw upon materials from some native languages of North America. I follow the sage advice of Edward

Sapir who admonished us that serious discussions of morphology could hardly ignore the rich data of American languages.

There are two subquestions that go into Question (3): one has to do with the meanings of the basic and derived elements in the domain in question, the other has to do with the kinds of relationships into which these meanings can enter in the two domains. (Another big set of questions has to do with the ways in which internal and external syntax are related. I won't have very much to say about this last kind of question here.)

An even bigger question behind my musings is about language diversity:

(4) **How come languages are as different as they are?**

This question contrasts with its mate, which has been almost exclusively the center of attention in a lot of linguistics in the last decades:

(5) **How come languages are as similar as they are?**

Both questions presuppose that we have some sensible way of characterizing similarity and difference.

(6) **General thesis: meanings of morphemes that make up parts of words are different from meanings of whole words (in general).**

More precisely, the kinds of meanings that are associated with the elements of the phrasal syntax and those expressed by elements inside of words are incomparable (in the set-theoretic sense). There is overlap: some meanings can be expressed either in words or in parts of words, but there are residues in both directions.

Here is and initial example (from previous papers): Instrumental causatives, widespread in several North American language families: Haida (isolate), Siouan, Algonquian: these are affixes which form transitive verbs from instransitives, and add a notion of instrument or manner to a causative result: to cause to V by means of the hand, mouth, in a glancing manner, etc., as in these examples from Lakhota:

(7)

gmiya	'roll around'
kagmiya	'roll (cause by striking)'
nagmiya	'roll (cause with foot)' (cf. Boas Deloria, 1941)

A sort of ugly paraphrase in broken English might be: strike-roll, kick-roll. These paraphrases pertain to the resultant words. Try to paraphrase the meaning that could be extracted from the prefixes themselves, **na-** and **ka-** and I think you will see what I mean. These meanings are even hard to render exactly, since we don't have direct ways of expressing lambda-abstraction or the like in ordinary

language: 'that function **f** from predicates to relations such that ... More on such examples below.

What I will try to show is that, in derivational processes, any meaning that can be used to make an interesting class of words (or subwords) can be the meaning of a word internal morpheme or process (operation). This conclusion is not very interesting for theories of Constraints, but it is highly interesting for theories of Freedoms.

Preliminarily, it is necessary to sort out kinds of words, and kinds of formatives: e.g. open class words versus functional items, inflectional versus derivational formatives.

For concreteness, I will assume a simple categorial framework with a standard structure of (model-theoretic) interpretations. The particular choice is not essential to my argument, but what is crucial is the assumption that there is a constrained mapping from elements, categories, rules, operations to their meanings. For a structure of meanings I will take a standard model theoretic interpretation: a domain of individuals, truth-values, worlds (and possibly times) and all functions built of these elements.

2. Exhibits

2.1. Instrumental Causatives

By 'instrumental causative' I mean this: an item or operation that takes as input (argument) an intransitive verb (or adjective) and produces an item which is a transitive verb and has (as defining characteristic) an instance of the following meaning rule:

(8) **A**. Let **a** be the meaning of the intransitive verb that is the argument of the function, and **b** be the particular instrument associated with the item or rule, then the resultant transitive verb denotes that function **f** such that for any individual **x** **f(x)** denotes the set **M** of individuals **y** such that **y** is a member of **M** [at a time, world, etc.] iff by means of the instrument **b, y** causes **x** to be in the set **a** [at that time, world, etc.].

In quasi-English: ' **y** uses **b** to make **x** (be) **a** .'

This is just a rough indication of the meaning of the item in question: an affix for making causatives with some particular instrument. A similar meaning rule would be needed for a causative for a manner (for example, 'with a glancing blow' or the like).

I'll leave it as an exercise to the reader to try to derive these sorts of words from (quasi-) syntactic structures. Two candidate structures come to mind, corresponding to the paraphrases I've been using:

(9) **x causes y to roll by means of x's foot**
x uses x's foot to make y roll

These instrumental causatives pop up in a number of different languages, as noted already, including

(10) **Haida Instrumental Causative Prefixes** (Lawrence, 1977):

k'ut'ahl die
k'ak'ut'ahl kill by beating
kik'ut'ahl kill by poking
kuk'ut'ahl kill by pushing or hitting with fist
tlak'ut'ahl let die (general causative)

Another interesting parallel is an affix in Misantla Totonac, which has the effect of composing a transitive verb with an instrument seeking function:

(11) **Misantla Totonac Instrumental affix** (MacKay, 1999):

/maq-nii/ kill X
/lii-maq-nii kill X using Y
/kaak-spit/ peel X
/lii-kaak-spit/ peel X with Y

Let's note that there are perfectly ordinary lexical items that we can think of, in for example English, that have meanings corresponding to the *resultant* lexical items: my Webster's Collegiate Dictionary includes this idefinition:

(12) **strangle**: to choke to death by compressing the throat with something (as a hand or a rope)

This meaning is quite complex, including the notions of dying, causation, performing an action on a certain body part or area, and an instrument. The body-part or body-area meaning, by the way, is quite reminiscent, in the way it is incorporated [!!] into the whole meaning of the word, of the well-known body-part suffixes of some American languages.

My intuition about the meaning of the instrumental causative affixes of Lakota and other languages, is that are not possible candidates for meanings of lexical words. My general point again is:

Any interesting component of the meaning of a word, is a candidate for the meaning of a an affix or operation that is used for making up lexical words or items. What is 'interesting' enough to generalize over will obviously be dependent not only on general cognitive properties of people but also on particulars of the lives that they lead. What is available for formal operations or relations will similarly be determined by general properties of Language and by parochial properties of individual languages.

Instrumental causatives occur in a number of American languages -- besides Siouan languages, unrelated Haida, and Algonquian are ones that I have encountered. The formations are sufficiently striking to have formed an important part of Chafe's arguments (1976) for the genetic relatedness of Siouan and Caddoan.

I claim that no words or non-affixal lexical items have just the meaning of the instrumental causative affixes of Lakota or Haida. We can make up a syntactic constituent with such meanings only by using rather outré means, such as occur in weird right-node raised phrases:

(13) **I soothed and <u>used a pacifier to make</u> calm -- my baby**.

Here the underlined portion of the sentence is categorially equivalent to the instrumental affixes we have been looking at.

2.2. Phrasal and non-phrasal categories.

By definition, the argument and resultant categories of the phrasal syntax are the categories that appear in the operation of the phrasal syntax. It is often assumed that these are chosen from a universal set, and include such categories as these: **S, N, V, A, DP (NP), VP** and so on. It is controversial whether all languages make the same choices, or whether such lists (under various theoretical frameworks) constitute a closed set of options. Again following a categorial framework, I will assume a definition of possible categories based on a primitive set, say **w, t, e** and all functor categories built up from these. The syntax to semantics map assigns the denotations:

(14) **Syntactic/Semantic assumptions:**

w	**worlds**
e	**individuals**
t	**truth-values**
b/a, a\b	**<a,b>** (functors: functions from **a**-type denotatations to **b**-type denotations)

(NB: 'functor' does not mean 'functional category' in the sense of various non-categorial frameworks). In 'some version of X-bar theory' we would have the $\mathbf{X^0}$ lexical categories, the (possibly) non-lexical phrasal categories, and the various projections of the $\mathbf{X^0}$ lexical categories. Note that in the categorial setup, the categories incorporate the sort of information given by subcategorization in X-bar theories. So, for example, a transitive verb is categorized in X-bar systems by the feature specifications [V -N] (say) and also by a subcategorization feature indicating that it takes a noun-phrase complement, in categorial terms the subcategorization is the primary property and the verb will be classed as (say) **IV/NP** or the like.

In addition to this general category and type theory, I assume that there is a crosscutting distinction between basic (lexical) members of various categories and (possibly) corresponding phrasal categories, as in the manner of Montague's PTQ (Montague, 1973). And following Dowty (1979), I assume a sharp difference between lexical rules, which extend the language, and rules of the grammar proper. One implication or implementation of this difference is the principle that the output categories of the grammar proper do not include the basic categories of the lexicon. So we might at first blush perhaps identify these basic categories ($\mathbf{B_{CAT}}$) with the $\mathbf{X^0}$ categories of various frameworks. This is not quite the whole story, however, because of the existence of phrasal complex lexical items, consisting of combinations of elements each of which is member of some $\mathbf{X^0}$ item: *look up*, *rely on...*, and the like.

2.2.1. Resultant (output) Categories

So for a start, (morpho-)syntactically, any operation or item that is categorized as taking items of some category as argument or input and yielding an item of a (basic) lexical category as output will be a lexical category. This is hardly a new idea. Traditionally, affixes and compounding operations are regularly classified as noun-to-noun, adjective-to-noun, and so on. We want to ask this question:

Are there resultant categories for derivational processes that are not among the syntactic categories of a language?

2.2.2. Argument (input) Categories

What the input or argument categories for lexical categories is is a more controversial question. In particular:

(15) **Can phrasal categories be input to lexical rules?**

Watch out for a confusing factor here: a the internal grammar of words is not to be identified with lexical grammar (cf. Di Sciullo and Williams, 1987).

Now let's go back to look at some more real stuff.

2.3. Wakashan Roots and Affixes

First let's look at a few examples from Haisla:

All Haisla lexical words are built up on the basis of an initial root, and sequence of (zero or more) derivational affixes. Here's the word for Haisla:

(16)	**'ixsduq^{w}ia:**	**√'ik-**	**-sdu**	**-qi**	**-a**
	bald-headed eagle	good	color	head	completive
	guk^{w}ila	**√guk^{w}-**	**-[g]il**		**-a**
	build a house	dwell	-make		completive
	gux^{w} (guk^{w})	house			
	guk^{w}ela	dwell at			

gux^{w}dema village, world

beg^{w}anem	**√bek^{w}**	**=anem**	
person	human	(nominal)	
bek^{w}'ala	**√bek(-**	**-[k̲]al**	**-a**
speak, discuss	human	sound of,language	completive

bek^{w}'es sasquatch, monkey

baak^{w}uala speak together

beke^{w}'ex̄di deity, God (obs.)

Now, there are several things to say about these examples.

First, the roots are not in general lexical items. In form, this is sometimes obvious: the item **√bek^{w}-** for example is unpronounceable by itself. With **guk^{w}-** it is not quite so obvious, as there exists a word **guk^{w}** (**gux^{w}**) with the meaning 'house', but the meaning of this is not the same as that of the root, and it makes sense to think of the word meaning 'house' arising from zero-affixation.

Second, there is a question about the status of predicatives in Wakashan(Jacobsen, 1979): Are there nouns and verbs in these languages. I don't think this issue is settled. Suppose there are. It still seems pretty clear that all predicatives in Wakashan (Northern at least) are available to be used as nominals or verbals in the syntax. Then the input and the output of the derivational processes are also of this category, a sublexical category that must have some additional dressing to emerge into the syntax. So roots and affixes and (possibly) stems are categorized in ways that are distinct from the ways in which lexical items and also phrasal constituents are categorized. What about their meanings? I am going to suggest that roots, and some affixes have resultant meanings that are also different from the meanings that lexical items have. Take first a root like **√bek^{w}-**. It cannot take an argument, hence it cannot be a simple predicate of type **<e,t>**, either nominal (as a base for generalized quantifier meanings) or verbal as an intransitive verb to combine (either as function or argument) with a subject. It contributes a component of the meaning of the words derived from it. A decompositonal view of meanings might identify its meaning with some component of a complex meaning. Further, when it combines with a derivational affix, it forms an input category that cannot be identified with any lexical category. Moreover, the affixes that take roots and stems as arguments take and yield meanings that cannot be identified with the meaning of any lexical item. Hence, these items are truly 'impossible words.'

Let's now look briefly at another language (group) for some somewhat different kinds of exhibits: Algonquian. I'll take my main examples from Western Abenaki, since it is one language I am beginning to get a little first hand knowledge about, but I draw freely from extensive literature on other languages, much of which is squarely based on Bloomfield's work (on Menomini, Eastern Ojibway, Cree)

Unlike Wakashan, the Algonquian languages exhibit a very sharp difference, both morphologically and syntactically, between Nouns and Verbs. In the verbal

system, they all follow a fourway classification between intransitive and transitive verbs, crosscutting a classification according to the gender classification of the first argument of the verb, subjects for intransitives and objects for transitives, giving the wellknown categories:

(17) **Algonquian Verbs: AI, II, TA, TI**

that is Animate Instransitive, Inanimate Intransitive, Transitive Animate, and Transitive Inanimate, as in these examples from

(18) **Western Abenaki(Laurent, 1884)**:

AI **mkuigo** 'he, she, it is red'
II **mkuigen** 'it (inanimate) is red'
TA **nami(h)a** s/he sees (a mink etc.) indefinite animate
TI n'**namito** I see (a house etc. indefinite inanimate)

I want to mention here two interesting kinds of subword elements that go into complex words in Algonquian. The first are the socalled 'finals.' These are suffixes that go onto stems to yield items of the four categories just mentioned. Sometimes, they carry some kind of meaningful content, but often they only serve to make a verb of the various categories, often into animate/inanimate pairs, as in the examples just given. It would take us too far afield to try to give anything but the barest facts. The analyses are exceedingly complex as lots of stuff gets glommed together with a lot of edge effects, allomorphy and so on. Let me just cite a few examples from

(19) **Maliseet-Passamaquoddy** (Sherwood, 1986):

AI - II pairs:
məciko he is bad
məcikən it is bad
nisəwək they are two in number
nisənol they (in) are two in number
təlak^{w}əso it (an) is cooking
təlak^{w}əte it (in) is cooking

(The suffixes here contribute the meaning 'cook, burn' as well as specifiying the gender class of the subject.)

TA - TI pairs
nəməyal he sees him (obviative)
nəmihton he sees it (compare the WA examples above)
mahal he eats him (obviative)
micin he eats it

Like the Wakashan examples, these finals are examples of impossible words, defined as taking stems that are unspecified as to their categorization and yielding items of definite lexical categories.
The other kind of morphemes I want to cite from Algonquian are the so called 'theme signs' which comprise part of the inflectional system of verbs. Let me go back to

(20) **Western Abenaki Theme Signs**

knamii 'you (sg) see me'
k- nami- -i
2- see -you-to-me
knamiol I see you
k- nami- -ol (-□l)
2 see me-to-you

Here, the theme signs are **-i** and **-əl**, which specify the orientation of the arguments as indicated in the glosses, and there are two more theme signs for local (1st, 2nd) subjects and objects and third person arguments. (Sometimes people put all these together into a system of 'direct' and 'inverse' marking.)

We might call these elements 'submanteaux' or 'partmanteaux': converses of the items called 'portmanteaux' that combine several disparate elements into a single affix: many languages show such forms in the inflections of transitive verbs, where we see subject-object combinations as in the following examples from Yup'ik.

2.4. Portmanteaux

(21) **Yup'ik transitive inflections**

tangrr- see

3
ISG-IISG: **tangrramken** SG-IIDU: **tangrramtek**
ISG-IIPL: **tangrramci** SG-IIISG: **tangrraqa**
ISG-IIIDU: **tangrragka** ISG-IIIPL: **tangrranka**
IDU-IISG: **tangrramegten** IDU-IIDU: **tangrramegtek**
etc. for all combinations...

B Meaning rule for a 'me-you' portmanteau: a function f from transitive verb meanings to sentence meanings such that for all transitive verb

meanings ɣ **f(ɣ)** is true iff the speaker stands in the relation ɣ to the hearer (ɣ (you')(me')).

Patterns like these are familiar also from the Iroquoian languages as well. The point is that it is pretty useless to analyze such affixes into combinations of independent morphemes for the two participants.

Claim: no lexical word denotes such a function. Is it impossible to derive according to your favorite theory of deriving words? Great: then we have another morpheme that is an impossible word.

(In discussion, Richard Rhodes gave a counterexample: Klamath has three words that are portmanteaux for you-and-me subject/object meanings, cf. Barker, 1964: 242-3 . I take this to show that my main claim has to do with open lexical classes, so that there will be no general category of Nom-Nom combinations like Japanese *oyako* 'parent-child' that can function as subject-cum-object with a transitive verb: OYAKO love(s) = 'parents love children'.)

3. Final Discussion

Let me return to the two questions I asked earlier in this talk: How come languages are so similar to each other? How come they are so different? There is a kind of practical puzzle that reflects these questions. On the one hand, serious linguists can claim that human languages are so similar that a Martian scientist would conclude that they are all the same (Chomsky, 1995; Pinker, 1994, actually, this is not exactly what Chomsky says). On the other hand, try to tell an unspoiled -- that is, nonlinguist -- speaker of any two mildly different languages that they are basically identical and you will be laughed out of court. How can this be?

Even writers like Chomsky will add a proviso: "up to the lexicon" or the like. The kinds of facts I have touched on here today show that differences in the grammar of words and in the resources and patterns that people draw on to make up new words and other lexical items are a far from trivial matter. They make up a major part of the texture of a language as it lives in the minds and hearts of people. I suspect that when we are impressed with the extreme diversity of languages, we are basing our judgments primarily on differences among languages in the realm of word-grammar, and on the relationships between word-grammar and phrase-grammar. These domains lie behind the old and venerable typologies that use terms like: analytic, synthetic, polysynthetic, isolating, fusional, agglutinative.

I guess what it comes down to, when you reflect on how similar or different languages are, is: Compared to what? Compared to cabbages or kings, languages are very similar, practically the same, we might say. But compared to styles of walking? to modes of expression and decoration in clothes? cooking? art?

Maybe I can end as I started with Sapir and Humpty-Dumpty.

Sapir: there is a section in *Language* where Sapir argues for the psychological reality, one might say immediacy of the word, there is another where he discusses differences among languages in quite esthetic terms, and his examples go primarily to the domains I have been discussing here . It is hard to talk about the word structures of a polysynthetic language like Nuuchahnulth or Haisla without using words like "exuberant."

Really finally, Humpty again:

"The question is," said Humpty Dumpty, "which is to be the master --- that's all."

References

Bach, Emmon. 1993. On the semantics of polysynthesis. *BLS* 19:361-368. Guenter, Joshua S., Barbara A. Kaiser, and Cheryl C. Zoll, eds. *Proceedings of the Nineteenth Annual Meeting of the Berkeley Linguistics Society.* February 12-15, 1993.

Bach, Emmon. 1994a. The meanings of words. In Mandy Harvey and Lynn Santelmann, eds., *Proceedings from Semantics and Linguistic Theory* (SALT) IV/ (Ithaca: Cornell University Department of Modern Languages and Linguistics), 16-34.

Bach, Emmon. 1994b. The semantics of syntactic categories: a cross-linguistic perspective. In John Macnamara and Gonzalo E. Reyes, eds., *The Logical Foundations of Linguistic Theory* (New York and Oxford: Oxford University Press), pp. 264--281.

Bach, Emmon. 1996. On the grammar of complex words. In Anna-Maria di Sciullo, ed. *Configurations: Essays on Structure and Interpretation* (Somerville: Cascadilla Press), pp. 1--16.

Barker, M.A.R. 1964. *Klamath Grammar.* Berkeley and Los Angeles: University of California Press. University of California Publications in Linguistics, Volume 32.

Chafe, Wallace L. 1976. *The Caddoan, Iroquoian, and Siouan Languages.* The Hague-Paris: Mouton

Chomsky, Noam. 1995. *The Minimalist Program.* Cambridge, Mass. and London: The MIT Press.

Denny, J. Peter. 1989. Polysynthesis in Algonquian and Eskimo. In Donna B. Gerdts and Karin Michelson, eds., *Theoretical Perspectives on Native American Languages* (Albany: SUNY Press), pp. 230-258.

Di Sciullo, Anna-Marie and Edwin Williams. 1987. *On the Definition of Word.* Cambridge, Massachusetts: MIT Press.

Dowty, David R. 1979. *Word Meaning and Montague Grammar.* Dordrecht: Reidel.

Fodor, Jerry and Ernie Lepore. 1999. Impossible words? *Linguistic Inquiry* 30:445--453.

Hale, Kenneth and Samuel Jay Keyser. 1999. A response to Fodor and Lepore "Impossible Words?" *Linguistic Inquiry* 30:453--466.

Hale, Kenneth and Samuel Jay Keyser. 1993. On argument structure and the lexical expression of syntactic relations. In Kenneth Hale and Samuel Jay Keyser, eds., *The View from Building 20.* (Cambridge, Mass. and London: MIT Press), pp. 53-109.

Jacobsen, William H., Jr. 1979. Noun and verb in Nootkan. In Barbara S. Efrat, ed., *he Victoria Conference on Northwestern Languages.* (Victoria: B.C. Provincial Museum), pp. 83-155.

Laurent, Joseph. 1884. *New familar Abenakis and English dialogues.* Quebec: Leger Brousseau.

Lawrence, Erma, compiler. 1977. *Haida Dictionary.* Fairbanks: Alaska Native Language Center.

MacKay, Carolyn J. 1999. *A Grammar of Misantla Totonac.* Salt Lake City: The University of Utah Press.

Montague, R. 1973. The proper treatment of quantification in ordinary English. In Richard Montague, *Formal Philosophy*, edited by Richmond Thomason (New Haven: Yale University Press), pp. 247-270.

Pinker, Steven. 1994. *The Language Instinct.* New York: William Morrow

Sherwood, David F. 1986. *Maliseet-Passamaquoddy verb morphology.* (Canadian Ethnology service paper no. 105.) Ottawa: Canadian Museum of Civilization.

Swadesh, Morris. 1939. Nootka internal syntax. *IJAL* 9: 77-102.

Argument Structure of Klamath Bipartite Stems

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1. Klamath

1.1 The Klamath-Modoc Language

Klamath, with its southern dialect Modoc, is a Plateau Penutian language of south-central Oregon; its closest relatives are Molala and the Sahaptian languages (Nez Perce and Sahaptin). While the Penutian hypothesis remains controversial (though the evidence for it is substantial; see DeLancey and Golla 1997), the relationship of the "Plateau Penutian" languages--Klamath-Modoc, Sahaptian, Molala, and possibly Cayuse--is supported by substantial evidence (Aoki 1963, Rude 1987, DeLancey, Genetti and Rude 1988, DeLancey 1992, Berman 1996) and is now accepted even by more conservative scholars (Goddard 1996:6, Campbell 1997:121, 318-20).

Klamath-Modoc is effectively extinct, with only a few relatively fluent speakers still living, and no significant body of semi-speakers. The primary documentation is that of Gatschet (1890) and Barker (1963a, b, 1964); this documentation is the basis for the work reported here.

1.2 Outline of Klamath structure

Klamath, like a number of other North American languages, shows extremely free word order. Barker (1964:339-42) checked all 24 possible permutations of the four words in the following sentence:

(1) hoot Naas lilhanks slin
DEM one deer shoot
'He shot one deer.'

Informants clearly rejected only four possibilities, and found all of the following completely acceptable and normal:

(2) hoot slin Naas lilhanks
Naas lilhanks hoot slin
Naas slin lilhanks hoot
lilhanks Naas hoot slin
slin hoot Naas lilhanks
slin hoot lilhanks Naas

Note that not only are SOV, SVO, OSV, and VSO orders all equally acceptable, but the two elements of the NP *Naas lilhanks* 'one deer' can occur in either order, or be discontinuous. All of these and other word-order patterns are well-attested in texts (Underriner 1996).

There is no indexation or cross-reference of arguments in the verb. The case-marking system of ordinary nouns consists of four marked cases: genitive {?am}, object {'as}, locative {dat}, and instrumental {tgi}:

(3) hiswag 'man'
hiswak'am 'man's'
hiswak'as 'man (Object)'

qday	'stone'
qday?am	'of a stone'
qdayyat	'on, under, etc., a stone'
qdaytgi	'with a stone'

Case marking is always according to a nominative-accusative pattern, but there are syntactically and morphologically distinct systems for ordinary nouns, pronouns, kin terms, adjectives, and demonstratives (for details see Rude 1988). Ordinary nouns take pragmatic object marking, i.e. direct objects are case-marked only when highly referential, typically human. These take the object marker |'as|. Adjectives take both subject and object marking, both of which appear to be optional or determined by factors as yet unidentified. The subject suffix for adjectives is |i|, the object marker |a|. Pronouns, kin terms, and demonstratives are obligatorily marked for accusative case. The object marker for kin terms is |a|. Pronouns take the object marker |s|, with some irregular forms. Demonstratives have irregular object forms characterized by an |n| element. Several of these systems are exemplified in the following example (Barker 1963a):

(4) ge-n ni-s sa k'ecc'-a blo?a:k c'leya
this-OBJ I-OBJ they small-OBJ piece.of.fat give
'They gave me this little piece of fat.'

gen, *k'ecc'a*, and *blo?a:k* belong to the same functional NP 'this little piece of fat'. *blo?a:k* is not sufficiently discourse-prominent to merit case marking, but both the adjective *k'ecc'a* and the demonstrative *gen* are marked as objects. Note that the pronominal indirect object *ni* 'I' also takes object marking.

It is widely assumed that extremely free constituent order of the sort exhibited by Klamath must necessarily be accompanied by some fairly explicit form of argument marking or indexation, but Klamath shows that the correlation is not absolute. Clauses with more than one full NP argument are uncommon in text, but since animate objects are marked, it is usually not hard to determine semantic roles, especially in context:

(5) sqel'am'c sdoli: taby'-a mna c'asga:y'a:k- s
Old Marten advise y.bro.-OBJ his Little Weasel-OBJ
'Old Marten told his younger brother Little Weasel'

ton'ip wilisik yamnas sqel ?en- a,
five sack beads Marten take away-INDIC
'Marten took five sacks of beads,'

c'asga:y cis ton'ip'-anti: wilisik yamnas ?en- a.
Weasel also five- PART sack beads take -INDIC
'Weasel also took five sacks of beads.'

In the first clause, with two human participants (Marten and Weasel are myth characters, and thus human for all discourse-pragmatic purposes), there are two coreferential nouns referring to the object in an appositive construction, and both are case-marked; in the next two clauses, with a human actor and an inanimate object, there is no case marking, but the interpretation of the sentences is nevertheless clear.

1.3 Bipartite Stems

The most striking fact about Klamath verbs is that most verb stems are bimorphemic. This phenomenon is found in several languages of western North America (Jacobsen 1980, DeLancey 1996, 1999); I adopt the term "bipartite stem" from Jacobsen's seminal article on the phenomenon as manifested in the Hokan language Washo.

Parts of the Klamath system can be very loosely described in terms of "instrumental prefixes" and "locative-directive suffixes", both familiar notions in North American linguistics. For example, the stem /nqew'a/ 'break in two with a round instrument' consists of an independent stem {qewi̱'} 'break in two' and a bound initial element {n-} 'with a round instrument'; /wdomkanga/ 'swim around here and there' consists of a motional stem {wdom} 'swim' and a locative-

directive element {okang} 'around, here and there'. But in fact the system has a more precise and detailed structure than this (DeLancey 1991a, 1999).

Barker (1963b, 1964) presents a position class analysis of bipartite stems, recognizing four classes of components: initial "classificatory stems", locative-directive suffixes, and two types of stem--one typically requiring a classificatory initial, the other occurring both with and without. Since, as we will see, only certain subsets of the "classificatory stems" are actually classificatory, I adopt another terminological suggestion of Jacobsen's, and refer to Barker's "classificatory stems" as "lexical prefixes" or LP's. In fact, there are three different categories of bipartite stem, corresponding to three more-or-less distinct types of LP. These can be roughly distinguished by their combinatorial properties, though with some fuzziness around the edges of the categories, and can further, with a handful of lexical exceptions, be quite neatly distinguished by differences in argument structure.

2. Bipartite Stems and Argument Structure

2.2 Change-of-state verbs

The first category of bipartite stem is illustrated by the example /nqew'a/ 'break in two with a round instrument'. Stems of this type are built on a set of independent stems which, when unprefixed, are intransitive verbs denoting a change of state:

(6) /ca:y'a/ 'become split, gashed'; /gatt'a/ 'break in two (intr.)'; /p'ak'a/ 'break into pieces, shatter (intr.)'

As simple, monomorphemic stems, these change-of-state stems are always intransitive, and describe a change of state in their single argument:

(7) sciqtGis-ti: boq'e:wis ?a gatt'-atk
bridle-PARTITIVE leather DEC break-STAT
'The leather of the bridle is broken.'

With an initial LP drawn from a specific subset of the LP's which corresponds to what Americanist linguists since Sapir have called "instrumental prefixes", they are transitive:

(8) /nca:y'a/ 'split or gash s.t. with a round instrument'
/wgatt'a/ 'cut in two with a long instrument wielded radially; chop down'
/mp'ak'a/ 'smash, break to pieces with a round instrument'
/wp'ak'a/ 'smash, break to pieces with a long instrument wielded radially'

(9) he: cik ?ins q'ay s?ab-i:-wapk, coy hon
if CONT 2nd/1st NEG tell-BEN-FUT then that

mi-s ni **ye=qew'i**-wapk.
2nd-OBJ I w.foot=break.in.two-FUT

'If *you* won't tell me, I'll **stomp you in two**.' [Old Grizzly speaking to Awl, threatening to step on him and break him in half.]

The subject argument of such a transitive stem is unproblematically an Agent; the object argument, as well as the subject of the intransitive construction, is what a Theme (the argument which is in or undergoes a change of location or state; see DeLancey 1991b).

Note that the relation between the argument structure of the intransitive and transitive corresponds precisely to that of labile or "ergative" verbs of the *break* class in English and many other languages. The analysis of these verbs in Klamath is in some ways less problematic than in a language like English, where the same verb stem occurs both intransitively and transitively. In Klamath we can argue that the change-of-state stem, the second element of these bipartite stems, brings with it a Theme argument slot, and that the LP then adds an Agent slot. How this is done is not completely clear. At first blush it seems that these LP's classify an Instrument. While it would not work in traditional Case Grammar, a case can be made that Instruments in fact occur only together with Agents, in which case an indirect mechanism could be proposed by which the lexicalization in the verb stem of an Instrument necessarily implies an Agent.

At best this would be cumbersome, however, and there are reasons for avoiding a claim that verbs can lexically require an Instrument argument. And there is evidence that these prefixes lexicalize a type of action rather than a type of object. For example, Barker glosses the prefix {kt} as 'hit with the fist, kick', but among the stems formed with this element we find several which do not contain that semantic element, for example:

(10) kten- 'throw (a spear, dart)'
kteqwe:L- 'slide downhill (as a log, avalanche)'
ktoc'i:p'- 'slide out of a tubular object (as lead out of a pencil)'

All of these, as well as the more common 'hit, kick' senses, can be subsumed under a broader sense of 'force applied by a long object (such as an arm or leg) in the axial dimension'. Besides providing a unified interpretation of the forms which include {kt}, this analysis explains the coexistence in the language of two "instrumental prefixes" referring to action with a long or stick-like instrument. For {kt} contrasts with the {w} prefix (see the examples in (7)); the contrast can be seen in the following minimal pair:

(11) /kbol'a/ 'hit in the stomach'
/wbol'a/ 'hit in the stomach with a stick'

/kbol'a/ implies force applied axially; the verb suggests, for example, a punch. /wbol'a/ implies force applied radially; the verb suggests swinging a stick and hitting someone in the stomach.

While it is not clear that we can completely dispense with the semantic notion of shape classification of instruments and still adequately describe the semantics of all attested bipartite stems, it is clear that the dimension of type of action is part of the semantics of this set of lexical prefixes. On this interpretation, the argument structure of these stems is completely straightforward: an intransitive form like /qew'-/ lexicalizes a process leading to a change of state; a transitive form like /wqew'-/ then adds to this lexical reference to an action on the part of an Agent, thus describing a transitive event. This structure, then, directly expresses the logic of Chafe's (1970) categorization of transitive verbs like *break* as Process + Action.

2.3 CLS + LDS stems

The change-of-state system is a minor variation on a pattern familiar from other languages, and quite likely universal. There is another, larger class of bimorphemic stems which are more exotic. These consist of a lexical prefix and a locative-directive suffix (LDS):

(12)	on top	in water	underneath
living object:	ksawal-	ksew-	ksodi:l-
round object:	lawal-	lew-	lodi:l-
long object:	?awal-	?ew-	?odi:l-

In stems of this type the lexical prefix is a classifying element referring to a category of object; the second element describes motion, location or path on the part of that object. These stems are indifferently stative, eventive intransitive, or transitive, according to context; thus most of Barker's glosses for full verb forms have the proviso "intransitive also". Some examples from text illustrate the labile transitivity of Classifying LP + LDS stems:

(13) coy honk ga?as ks=aɖa:q-damn-a
now NARR thus living.obj=on.lap-over.and.over-DEC
'Now he was lying around in her lap this way.'

(14) cakl'a-dat ks=iGog-a sa ?aysis-as
basket-LOC living.obj.=put.in-INDIC 3pl Aisis- OBJ
'They put Aisis into a large basket.'

The verb in each clause consists of the lexical prefix {ks} 'living object' plus a locative-directive suffix; (13) shows such a verb in a stative use, (14) one used transitively.

When the clause has a distinct NP corresponding to the path or location indicated by the LDS, this is marked as locative:

(15) coy honk na:nok Ge:s cewam'c- am
then DEM.OBJ all ipos Old Antelope-GEN

?i=Gog- a mna-tant y'agi- dat
pl.=in.container-INDIC 3sPOSS-OBL.LOC basket-LOC

'Then [she] put all Antelope's ipos into her basket.'

(16) s?as?abam'c qtan- a ks=elwy-ank
Old.Grizzly sleep-IND living.obj.=by.fire-HAVING

loloqs-dat
fire-LOC

'Old Grizzly slept, lying by the fire.'

While the COS stems do not pose the same analytic problem as their English equivalents, these bipartite stems--which do not have any direct counterpart in English--are problematic, in that exactly the same verb form may have both intransitive and transitive argument structures. But these bipartite stems are transparently easy to describe in terms of a simple set of case roles--the two parts of the verb lexicalize, respectively, a Theme and a Loc.

2.4 Compound stems

There is a third, less cohesive, category of bipartite stem, exemplified by the likes of:

(17) /howwal/ 'run, jump on top'
/howwa/ 'run, jump into water'

These have a locative-directive suffix as the second element, but the lexical prefix is drawn from a motley residual set of morphemes which do not show the charac-

teristic semantic or syntactic behavior of either the Instrumental or Theme-classifying subcategories. The bulk of these have meanings related to manner of motion or position, e.g.

(18) {c^{v}} 'sg. sit, slide'
{tg^{v}} 'sg. stand'
{lẇ^{v}lw} 'pl. stand'
{g^{v}} 'go, move of one's own volition'
{ho<u>d</u>} 'sg. run, jump';

Bipartite stems formed on one of these are typically intransitive, with no alternate transitive use:

(19) he: mi-s sli-wapk, Gleg-atk gintak,
if 2nd-OBJ shoot-FUT sg.die-STAT even

?i hot-tgal-ba l-ank sli-wapk honk-s.
2sg jump-get.up-back-having shoot-FUT DEM-OBJ

"If he shoots you, even if you're dead, you'll jump back up and shoot him."

(20) Glewy-ank g-oWaskc-a lmeys-?as gelwipc-ok
quit-having go-away-IND Thunder-OBJ visit-PURP

c'asga:y'a:k-s ha-ks-akc'wi-tk.
Weasel-OBJ REFL-living.obj-narrow.place-STATE

'Leaving there, he went off to visit the Thunders, with Little Weasel in his pocket.'

The relation between the subject and the LDS is the same as with the Theme-classifying stems, i.e. the verb predicates of its subject motion or location defined by the LDS. I have a few examples of stems of this type used transitively:

(21) coy mi-s ni g-alamn-bag-wapk.
then 2nd-OBJ I go-behind-CIS-FUT
'And I'll come following you. '

The object marking on *mi* 'you' shows that the clause is transitive. Presumably this transitivity is an unsystematic consequence of the lexical semantics associated with |g-alamn| 'go-behind' = 'follow'. But the vast majority of stems of this type (e.g. /g-ena/ 'go', /g-apc'a/ 'go out of sight', /g-ewa/ 'go into water', etc., are always intransitive.

A handful of other LP's combine with LDS's to form intrinsically transitive stems, with the transitivity deriving from the intrinsically transitive semantics of the LP. For example, the LP {lw^{y}} refers to clothing; all attested bipartite stems with this element are transitive, referring to clothing or unclothing someone (e.g. /lwoċi:þa/ 'undress s.o.' ({oċi:þ} 'sliding down off a tubular object'), /lwota/ 'put a garment on someone' ({ot̲n̲} 'on, against, attached to')).

2.5 Stem Categories and Argument Structure

Thus the inventory of systematic bipartite stem types is as follows (for more details and description of non-systematic patterns see DeLancey 1999):

Instrumental LP + COS stem

Classifying LP + LDS

Motion LP + LDS

For these regular patterns most of the argument structure can be derived compositionally.

A change-of-state stem has a single NP argument slot, for a Theme. Instrumental LP's and the motional miscellaneous LP's specify an activity, and thus provide an Agent slot. Thus Instrumental LP + COS stems have an Agent and a Theme argument, with Agent realized as subject and Theme as object. A stem like /wp'ak'a/ 'smash, break to pieces with a long instrument wielded radially' derives its argument structure compositionally--the change-of-state stem |p'ak'| takes a Theme argument, and the "instrumental" |w| 'wielding a long instrument radially' provides a slot for and Agent.

LDS's specify a Location, and thus necessarily have a NP argument slot for a Theme. Classifying LP's refer to a Theme, but have to be in construction with a second element which provides a syntactic slot for it, i.e. they do not license an argument, rather they occupy an argument slot. Thus the argument structure of Classifying LP + LDS stems in their intransitive use falls out directly from their lexical structure.

The exception to strict compositionality is Classifier + LDS stems like /l-odi:l-a/ 'round object underneath'. Both elements of the stem name, rather than simply licensing, an argument: |odi:l| names a Location, which then requires a Theme. (Since Location and Theme are relational concepts, it is impossible to have one without the other (DeLancey 1991b, 1997b)). The LDS thus licenses both Theme and Location arguments, and specifies the category of the Location; the classificatory lexical prefix then specifies the category of the Theme. But nothing in the formal structure of the stem correlates with the possibility of adding an Agent argument.

References

Aoki, Haruo. 1963. On Sahaptian-Klamath linguistic affiliations. *IJAL* 29:107-12.
___. 1970. *Nez Perce Grammar*. UCPIL 62.
Barker, M.A.R. 1963a. *Klamath Texts*. UCPIL 30. Berkeley and Los Angeles: University of California Press.
___. 1963b. *Klamath Dictionary*. UCPIL 31. Berkeley and Los Angeles: University of California Press.
___. 1964. *Klamath Grammar*. UCPIL 32. Berkeley and Los Angeles: University of California Press.
Berman, Howard. 1996. The position of Molala in Plateau Penutian. *IJAL* 62:1-30.
Bright, William, and Joel Sherzer. 1976. Areal features in North American Indian languages. In Anwar Dil, (ed.) *Variation and Change in Language: Essays By William Bright*. Stanford: Stanford University Press.
Campbell, Lyle. 1997. *American Indian Languages: The Historical Linguistics of Native America*. New York: Oxford University Press.
DeLancey, Scott. 1991a. Chronological strata of suffix classes in the Klamath verb. *IJAL* 57:426-45.
___. 1991b. Event construal and case role assignment. *BLS 17*, pp. 338-353.
___. 1992. Klamath and Sahaptian numerals. *IJAL* 58:235-39.
___. 1996. Penutian in the bipartite stem belt: Disentangling areal and genetic correspondences. *BLS 22: Special Session on Historical Topics in Native American Languages*.
___. 1997. What an innatist argument should look like. In T. Haukioja et. al. (eds.) *SKY 1997 (1997 Yearbook of the Linguistic Association of Finland)*. Helsinki: Linguistic Association of Finland.
___. 1999. Lexical prefixes and the bipartite stem construction in Klamath. *IJAL* 65.1.56-83.
___, and Victor Golla. 1997. The Penutian hypothesis: Retrospect and prospect. *IJAL* 63:171-202.
___, C. Genetti, and N. Rude. 1988. Some Sahaptian-Klamath-Tsimshianic lexical sets. In Shipley (ed.) 1988.
Gatschet, Albert. 1890. *The Klamath Indians of Southwestern Oregon. Contributions to North American Ethnology, vol. II*. Washington: Govt. Printing Office.
Goddard, Ives. 1996. Introduction. In I. Goddard (ed.) *Handbook of North American Indians 17: Languages*. Washington: Smithsonian Institution.
Jacobsen, William. 1966. Comments on linguistics. In W. d'Azevedo et. al. (eds.) *The Current Status of Anthropological Research in the Great Basin: 1964*. Reno: Desert Research Institute.
___. 1980. Washo bipartite verb stems. In K. Klar et. al. (eds.) *American Indian*

and Indoeuropean Studies: Papers in honor of Madison S. Beeler. New York: Mouton.
Rude, Noel. 1987. Some Klamath-Sahaptian grammatical correspondences. *KWPL* 12:67-83.
___. 1988. Semantic and pragmatic objects in Klamath. In Shipley (ed.) 1988.
Sapir, Edward. 1916. *Time Perspective in Aboriginal American Culture: A Study in Method*. Canada Department of Mines, Geological Survey, Memoir 90, Anthropological Series No. 13. Ottawa: Government Printing Bureau.
Sherzer, Joel. 1976. *An Areal-Typological Study of American Indian Languages North of Mexico*. Amsterdam: North-Holland.
Shipley, William. (ed.). 1988. *In Honor of Mary Haas: From the Haas Festival Conference on Native American linguistics*. New York: de Gruyter.
Underriner, Janne. 1996. *Nonconfigurationality in Klamath*. MA Thesis, Department of Linguistics, University of Oregon.

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Complex Predicates in Tsafiki

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0. Introduction

In Tsafiki (Colorado), a Barbacoan language spoken by approximately 2,000 people in the western lowlands of Ecuador,[1] the majority of verbs are complex predicates, formed by a "coverb" and a "generic" verb. The coverb and the generic verb jointly determine the syntactic structure and semantic interpretation of a single clause. This, of course, is a defining characteristic of complex predicates (Mohanan 1997). In this paper, I will argue that this process of complex predicate formation is not simply compositional in that, the meaning of the final construction cannot be attributed to solely the combination of the individual features of the coverb and the generic verb. The syntactic combination of the individual elements can create semantic participant roles, which are not present in any one of the elements in isolation.

After first presenting a general overview of complex predicates, in Section 2, I will present complex predicate constructions where the process is, to some extent, compositional. In Section 3, I will discuss a type of complex predicate in which the semantic participant role of the subject is created by the construction.

1. Complex Predicates

As noted above, complex predicates in Tsafiki consist of a coverb and a generic verb. Coverbs form a large open class. Coverbs are neutral elements that can occur with a nominalizing suffix to form a nominal (1) or with a generic verb to form a predicate (2). In (1) the nominalizing suffix on the coverb *tera* 'step'

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results in a nominal, 'ladder', whereas when it occurs with the generic verb *ki* 'do/make/hit' it results in the predicate 'dance'.[2]

(1) ya **tera-n-ka-ka** ke-e
ya **step-NM-NCL-ACC** do-DCL
"He made this ladder."

(2) ya-ri **tera-ke**-e
3-FC **step-do-**DCL
"She danced."

In contrast to the coverbs, the 32 generic verbs form a closed class. A generic verb can occur as the sole predicating element in a finite clause. The generic verbs are listed in (3) below:

(3) **Tsafiki Generic Verbs**

piya	'lose'	*ki*	'do'
puya	'die'	*kari*	'cause'
ja	'come'	*suwa*	'cause to become
ji	'go'	*ere*	'send'
la	'come out/up'	*po*	'put'
lo	'go out/up'	*ka*	'get'
fa	'arrive here	*pa*	'talk'
fe	'arrrive there'	*kira*	'see'
pata	'come down'	*fi*	'eat'
pati	'go down'	*ti*	'say/feel/express'
pola	'come across'	*i*	'become'
pole	'go across'	*ta*	'have'
wiya	'come in'	*ra*	'be in a position'
wi	'go in'	*jo*	'be'
luwa	'come floating'	*ito*	'not be/not have'
luwe	'go floating'		
nena	'go around'		

[2] Examples followed by letters and numbers in parentheses are taken from texts. All other examples are from my fieldnotes. The abbreviations used in this paper are: 1F-first person feminine; 1M-first-person masculine; 3-third person; ACC-accusative; ADV-adverb; ASSC-associative; CNGR-congruent; CNTR-contrastive; DCL-declarative; DEM-demonstrative; DS-different subject; EV-evidential; FC-focus; HS-hearsay; INCL-inclusive; INCP-inceptive; INF-infinitive; INSTR-instrument; INT-interrogative; IRR-irrealis; LC-locative; NCL-numeral/adjectival classifier; NCNGR-non-congruent; NEG-negative; NM-nominative; PF-perfective; PL-plural; PRG-progressive; SS-same subject; VCL-verb class marker.

The term generic verb and coverb are borrowed from Schültze-Berndt (2000). The term generic verb is used to distinguish these constructions from light-verb constructions. Complex predicates differ from light verb constructions in several important ways. Primarily, the coverbs, as illustrated above, are not nouns. Secondly, light verb constructions generally form a small set of a language's predicate inventory, whereas in Tsafiki, as in some of the non-Pama-Nyungan languages of Northern Australia, complex predicates are the primary means to form a predicate in the language (Schültze-Berndt 2000). Finally, the generic verb retains syntactic and semantic properties that are not generally associated with light verbs. This will be illustrated throughout the paper.

Examples of two coverb constructions are given in (4). The coverb *wiru* 'stand' first occurs with the generic verb *ra* 'be in a position' to form an intransitive, stative predicate. In its second occurrence, it combines with *i* 'become' to form an intransitive, inchoative predicate.

(4) junni ya-ri numa bene-le **wiru-ra**-sa
then 3-FC already behind-LC **stand-be in position**-DS

man-**wiru-i**-na-yo-e ti-nu-ti-e-ti-'
again-**stand-become**-PRG-CNGR-DCL say-EV-HS-DCL-HS-DCL
"Then (the clay woman) said that (the frog woman) was already standing behind (her) when she stood up." (CCTSONPI.69-70)

In (5), *ba* 'unstick', first occurs with *ki* 'do/make/hit' to form a transitive predicate, and then with *ji* 'go' to form an intransitive predicate.

(5) aman **ba**-le **ki**-chi-ti-na.
now **unstick**-ADV **do**-INCP-say-PRG

tiyan **ba-ji**-chu-na-n?
how **unstick-go**-IRR-PRG-INT
"Now he wanted to remove them (the frog guts). How would they come unstuck?" (CCTSONPI.263)

In (6) *mi* 'know' first occurs with *i* 'become' to form the transitive *mi-i* 'learn' and then with *kari* 'cause' which results in the ditransitive *mi-kari* 'teach'.

(6) jun-ka kira-si-ri **mi-i**-yo-n?
DEM-ACC see-IMM-FC **know-become**-CNGR-INT

o **mi-kari**-la-ki-n?
or **know-cause**-PL-VCL.do-INT
"Did you learn this just by watching or did they teach (you)?" (JAkuru.67)

By comparing the above examples (4)-(6), it is possible to see that the final valency of the clause is a feature of the combination of the coverb with the generic verb. The use of *i* 'become' with the coverb *wiru* 'stand' in (4) results in an intransitive predicate. But the use of *i* 'become' with the coverb *mi* 'know' in (6) results in a transitive. This would seem to indicate that the coverb determines valency. However in (5) the same coverb *ba* 'unstick' forms a transitive predicate with *ki* 'do' and an intransitive with *ji* 'go', which indicates that it is not the coverb alone that determines valency.

The coverbs do not freely combine with all thirty-three of the generic verbs. Hence, the coverbs can be classified according to the set of generic verbs with which they can combine. *Wiru* 'stand' belongs to the set of positional coverbs that generally occur with *i* 'become', *kari* 'cause' and *ra* 'be in a position' to form an inchoative, a causative and a stative respectively. *Ba* 'unstick' belongs to a class of coverbs which regularly combine with *ji* 'go' and *ki* 'do/make/hit' to form an inchoative and causative construction respectively. This class includes *bo* 'crack', *be* 'chip', *biti* 'snap' which can all be roughly characterized as 'break' verbs.

In the next section two classes of intransitive coverbs will be examined in relation to their combination with various generic verbs.

2. Change-of-State and Manner-of-Motion Coverbs

As mentioned above, Tsafiki coverbs form their own grammatical class. However there is a subset of coverbs which can be identified as being derived from ideophones. Tsafiki has a large open class of ideophones, some of which can occur as coverbs. Long stressed vowels and repetition are distinguishing features of ideophones. Example (7) contains two ideophones. The first *biti::le* dramatizes the snapping off of a man's head by a giant lightening bug. The second *poton poton poton* is the sound of the head bouncing around after it is detached from the body.

(7) **Biti::**-le ka-ti-e su-lo-nin
snap-ADV get-HS-DCL feet off ground-go up-CNTR

i-ti-e **poton poton poton**, misu-ka-ri
VCL.become-HS-DCL **poton poton poton**, head-NCL-FC
"He grabbed it **SNAP**! It just jumped up, **poton poton poton**, this head. "
(AAPALUKA.70)

There are basically two classes of ideophones, those representing sounds and those representing movement. In (8), *biti* is repeated twice to dramatize the movement. Note that (8) codes a sound and implies that there is some other participant in the event which is interacting with the subject to produce the sound. In contrast (9) simply codes the manner of motion and there is no other implied participant.

(8) ya **biti biti** ji-e
3 **snap snap** go-DCL
"He went snapping (through the brush)."

(9) ya **soko soko** ji-e
3 **writhe writhe** go-DCL
"He went writhing writhing."

When these same ideophones occur as coverbs there is a striking difference in the constructions. *Biti* occurs with *ji* 'go' to code a change of state (10). The participant that was only implied when *biti* occurred as an ideophone is now the subject of a change-of-state predicate construction, whereas *soko* continues to simply code manner of motion (11).

(10) na-ka chide ali **biti-ji-**e
small-NCL stick branch **snap go-**DCL
"The twig snapped."

(11) pini foro-bi nechi **soko-ji-**e
snake hole-LC from **writhe-go-**DCL
"The snake slithered out of the hole."

The intransitive structures formed with *ji* 'go' imply that coverbs such as *biti* 'snap' select a single non-agentive participant, whereas agentive coverbs such as *soko* 'writhe' select a single agentive participant. Hence, the differences between these constructions could be solely due to the semantic roles of the participants selected by the coverb. However, the dual behavior of motion verbs, particularly in analyses addressing unaccusative and unergative categories, has often been noted in the literature (Rosen 1984, Levin, 1995). The subject of a motion verb can be portrayed as either the instigator of the action or the entity which undergoes a change of location. The dual nature of motion verbs allows them to occur with either an intranstive agentive or non-agentive coverb. The subject will carry the participant role emphasized by the coverb.

2.1 Intransitive coverbs occurring with *ki* 'do/make/hi'

When the intransitive coverbs discussed above combine with *ki* 'do/make/hit' there is again a striking difference between the two constructions. The complex predicate with *biti* 'snap' now codes a causative change-of-state (12), while *soko* 'writhe' codes nontranslational motion (13).

(12) ya na-ka chide ali-ka **biti**-le **ke**-e
3 small-NCL tree branch-ACC **snap**-ADV **do**-DCL
"He snapped the twig."

(13) junni kuru a-ti-to **soko ke**-e.
then guatusa scream-say-SS **writhe** do-DCL
"Then the guatusa writhed, screaming ."

Example (12) clearly demonstrates that the generic verb can contribute to the argument structure of the predicate. The single nonagentive participant of the coverb *biti* 'snap' is coded as the object and the agentive participant of *ki* 'do' is coded as the subject of the clause. When *ki* 'do' combines with the coverb *soko* 'writhe' the result is an intransitive clause with a single agentive subject (13). *Ki* 'do' is ambitransitive in that it can occur in either transitive or intransitive constructions.

Both change-of-state coverbs and motion coverbs can also occur with transitive generic verbs. As noted above, *wiru* 'stand' can occur with *–i* 'become' to form an inchoative and *ra* 'be in a position' to form a stative. To form a causative, *wiru* can combine with *kari* 'cause'. In (14) *kari* contributes an agentive participant to the clause which is coded as the subject, while the non-agentive argument of *wiru* 'stand' is coded as the object.

(14) ya chide-ka **wiru-kari**-e
3 tree-ACC **stand-cause**-DCL
"He stood the pole up."

When manner-of-motion coverbs combine with a transitive generic verb, the agentive participant of the coverb looses its status in terms of being the primary effector (Van Valin and Wilkins 1995) or ultimate cause (DeLancey 1984, 1991) of the event conveyed in the proposition. The transitive generic verb adds an agent/causer while the coverb participant is coded as the causee. *Su* 'feet off the ground" combines with the intransitive *ji* 'go' to indicate running (15). When it combines with the transitive *ere* 'send' it results in a causative predicate (16).

(15) susu **su-ji**-e
dog **feet off ground-go**-DCL
"The dog ran."

(16) ya susu-ka **su-ere**-e
3 dog-ACC **feet off ground-send**-DCL
"He sent the dog running."

(17) la ya-ka tienda-ka ere-yo-e
1M 3-ACC store-LC send-CNGR-DCL
"I sent him to the store."

Ere 'send' and *kari* 'cause' always occur in transitive constructions such as (17). Unlike *ki* 'do', both always require two participants. In (14) and (16) above,

the agentive argument of the generic verb is coded as the subject, regardless of the agentivity status of the semantic participant of the coverb. The single participant of the intransitive coverb is coded as the object.

The interaction of the two types of coverbs with various generic verbs can be summarized as follows:

(18)

nonagentive cov. + *ji* 'go'	= nonagentive intransitive
agentive cov. + *ji* 'go'	= agentive manner of motion intransitive
nonagentive cov. + *ki* 'do'	= causative change-of-state transitive
agentive coverb + *ki* 'do'	= nontranslational motion intransitive
nonagentive cov. + trans.	= causative change-of-state transitive
agentive cov. + trans.	= causative transitive

3. *Ki/i*-class coverbs

The next class of coverbs to be discussed is the by far the largest class in Tsafiki, these coverbs can combine with *ki* 'do/make/hit' or *i* 'become'. So far all the coverbs discussed have been intransitive, contributing a single agentive or nonagentive participant to the clause. The *ki/i* class of coverbs differs in that the coverbs in this class are transitive. This is unproblematic when they occur with *ki* 'do'. As we have seen above, *ki* is ambitransitive occurring in both transitive and intransitive constructions. With a transitive coverb there is compatibility between the agentive participant of the coverb and the agentive participant of the generic verb. Both are agentive participants and the two converge on a single subject. The nonagentive participant of the coverb is coded as the object (19).

(19) Juan Gloria-ka **aman-ke**-e
Juan Gloria-ACC **hug-do**-DCL
"Juan hugged Gloria."

However when combined with *i* 'become', there is a conflict between the agentive participant selected by the coverb and the nonagentive participant of the generic verb. When the generic verb *i* 'become' occurs as a simple verb, it forms a predicate construction with a non-agentive subject (20).

(20) Juan peperoka **i**-e
Juan black dung beetle **become**-DCL
"Juan became/turned into a black dung beetle."

When *i* 'become' combines with a transitive coverb the conflict between the agentive participant of the coverb and the nonagentive participant of the generic verb is resolved by creating an affected agent participant role. The following example occurred during a discussion concerning the movie Terminator II. In the movie the Terminator protects a child from flying bullets by holding the child in front of him while the bullets fly into his back.

(21) terminadori na-ka bala ika-tu-sa pore-**i**-e.
terminator child-ACC bullet crash-NEG-DS cut-**become**-DCL
"The terminator prevented the bullets from hitting the child (by using his own body)."

If the terminator did not use his own body to stop the bullets the presence of *i* 'become' is inappropriate and *ki* 'do' is used instead (22).

(22) terminadori na-ka bala ika-tu-sa
terminator child-ACC bullet crash-NEG-DS

lata-chi pore-**ke**-e.
sheild-INSTR cut-**do**-DCL
"The terminator used a shield to prevent the bullets from hitting the child."

The reflexive like reading resulting from the complex predicate formed with *i* 'become' and a transitive coverb can be seen as a direct result of the convergence of the two participant roles selected by the generic verb and the coverb on a single argument, the subject.

The creation of the affected agent participant role can also arise from the syntactic construction. In Tsafiki, the syntactic subject of an active clause will always be interpreted as the primary effector or ultimate cause of the event. This can be seen most clearly in the passive construction. In the passive construction, the affected entity is coded as the subject, the doer of the action occurs with an oblique suffix *–be* and the verb occurs as a perfective participle which is followed by *i* 'become'. But the affected entitiy, the subject, carries the role of controller and/or instigator of the event. This is not predictable from its role as the effected entity of the action conveyed by the verb, nor from the nonagentive semantic role normally associated with the verb *i* 'become'. The agentive properties of the subject arise from the construction. This is illustrated in (23) and (24). An inanimate subject is not allowed in these constructions (25).

(23) …ya-ri miya-**be**-nan ka-**ya** **i**-no-yo-e
... 3-FC king-**ASSC**-INCL get-**PF** **become**-INF-CNGR-DCL
"...she would let this king himself take her" (MIYA2.12)

(24) tsanke kono-ri kela-**be** fi-ka i-tu-man-ti-e
so rabbit-FC tiger-**ASSC** eat-PF become-NEG-SIT-HS-DCL
"So in this way, they say the rabbit didn't let the tiger eat him." (SA13)

(25) *tsanke ano-ri kela-**be** fi-ka i-tu-man-ti-e
so platano-FC tiger-**ASSC** eat-PF become-NEG-SIT-HS-DCL
(Intended reading) "So in this way, they say the platano didn't let the tiger eat it."

There is another possibility with this combination, which creates a structure very similar in meaning to the passive above, i.e. the nonagentive participant of the generic verb could converge with the nonagentive participant selected by the coverb. But, as illustrated in (23) and (24) above the syntax of the construction will impose a reading in which the subject is interpreted as the instigator of the event, regardless of the presence of an agentive participant selected by the coverb. When this occurs, the result is a permissive causative. In (26) the star woman allows the Tsachi to see her, but the Tsachi, who actually performs the act of seeing, occurs with the associative marker *–be*. This differs from (21) above, in which there were two affected participants, the bullets, which were cut-off and the agent who used his own body to stop them.

(26) ya tsabo sona ya jaatsanke tsachi-**be** **kira-i**-to…
3 star woman 3 like.this tsachi-**ASSC** **see-become**-SS
"This star woman appearing like this to the Tsachi…" (Cctsabo1.142)

The coverb *pore* 'cut' can also occur with this permissive reading (27). Note that there is a change in vowel quality that indicates that the subject of the clause is coreferent with the patient of the coverb and not the agent as it was in (21). (This is not so readily apparent in (26) where the coverb ends in a low vowel). In this clause, the speaker controls and instigates the event but the actual act is performed by another person (27).

(27) tse Maria-**be** a **pura-i-yo**-e
1F Maria-**ASSC** hair **cut-become-CNGR**-DCL
"I had (my) hair cut by/with Maria."

In the following example taken from a text, Salun, a mythical character has been using his unusually long private appendage as a lasso. He throws it into a clump of bamboo, hoping to use it to pull himself out of the river. Instead it gets tangled in the trees and cut off and he goes floating down the river.

(28) aman a-ti-e ti-ti-' loberto loberto loberto
now scream-say-DCL say-HS-DCL loberto loberto loberto

numi wari numi **pora-i**-to...
penis EMPH penis **cut-become**-SS...
"They say he screamed 'loberto loberto loberto' when he got his penis cut off..." (Aasalun.134)

One more possible, although related interpretation, for these complex predicates concerns the degree of resistance offered by the affected entity. Unlike the passives, inanimates are allowed in these constructions, but the reading is always that, contrary to expectations, the action was carried out easily (29).

(35) sili Juan-**be** **pura-i**-e
rope Juan-**ASSC** **cut-become**-DCL
"The rope cut (easily) with Juan." (This implies that the rope was difficult to cut, nobody thought it could be cut, but it cut easily with Juan)

Although these constructions have an inanimate subject, the subject is portrayed as the effector of the action, i.e. the action occurs because of the potential malleability of the subject. In these constructions, whether the subject be animate or inanimate, it carries the role of instigator of the action conveyed by the proposition.

4. Conclusion

Complex predicates comprise the major strategy utilized by Tsafiki to encode events which in other languages are encoded by a single verb. The constructions differ from other types of complex predicates in that the process by which the constructions are formed is not strictly compositional. I have argued that the construction itself can create semantic participant roles that are not individually selected by the coverb or the generic verb, but created by their combination in certain syntactic constructions. The type of complex predicate described here is also found in the non-Pama-Nyungan languages of Northern Australia (Schültze-Berndt 2000). The parallelism found between the Tsafiki complex predicates and the complex predicates found in these languages, indicates that these types of systems are not simply an idiosyncrasy of an individual language or group of related languages, but rather comprise yet another typologically possible system for conveying events. Further research on these types of systems needs to be done to explore the extent to which the proposal presented here is the canonical pattern within languages with these types of complex predicates.

References

DeLancey, Scott. 1984. Notes on agentivity and causation. *Studies in Language* 8:181-214.

DeLancey, Scott. 1991. Event construal and case role assignment. *Proceedings of the Seventeenth Annual Meeting of the Berkely Linguistics Society,* 338-53.

Levin, Beth and Malka Rappaport Hovav. 1995. *Unaccusativity: At the Syntax-Lexical Semantics Interface.* Cambridge, Massachusetts: The MIT Press.

Mohanan, Tara. 1997. Multidimensionality of Representation: NV Complex Predicates in Hindi. In Alsina, J. Bresnan and P. Sells (eds.) *Complex Predicates*, 431-472. Stanford: CSLI Publications

Rosen, C. 1984. The interface between semantic roles and initial grammatical relations. In Pelmutter and C. Rosen (eds.) *Studies in Relational Grammar 2*, 38-77. Chicago: University of Chicago Press.

Schültze-Berndt, Eva. 2000. *The Complex Verb in Jaminjung.* PhD dissertation, Katholieke Universeteit Nijmegen.

Van Valin, Robert Jr. and David P. Wilkins. 1996. In Shibatani, Masayoshi and Sandra A. Thompson (eds.) *Grammatical Constructions: Their Form and Meaning*, 289-322. Oxford: Clarendon Press.

Word Order and Inverse Voice in Isthmus Mixe

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0. Introduction

Isthmus Mixe (IM) is an Mesoamerican language of the Mixe-Zoque family, spoken in southern Mexico in the state of Oaxaca. In the 1990 census there were reported to be 20,000 speakers (Grimes 1996:88). The major city is San Juan Guichicovi; the language is also known as Guichicovi Mixe.

IM is primarily an oral language, and largely undescribed, with no previous published studies of word order. The data analyzed in the present paper were collected mainly by tape recording native speakers during visits by the author to the area, beginning in 1994. Transcriptions were made by the author and edited with the assistance of native speakers. The author had previously worked on a closely related Mixe language for a number of years (see Van Haitsma and Van Haitsma 1976).

1. Background

Traditionally, linguists have accepted basic word order as a language universal, although some exceptions may exist. In this paper the term basic word order refers to the order of the primary arguments of the clause – Verb, Subject, and Object. Greenberg (1966:76) posits basic word order as a fundamental typological parameter and states that the majority of the world's languages have a dominant word order and variations on the dominant order. Steele (1978:595) comments that the variations are not necessarily "semantically identical. ... Variations on a basic word order commonly indicate some change in topic and/or focus."

However, Mithun (1987) questions whether all languages have a basic word order. She argues that for some languages the word order reflects pragmatic functions such as "newsworthiness", rather than syntactic ordering. In spite of this qualification, it is nonetheless desirable for linguists to attempt to discover a basic word order for a previously undescribed language. If a basic syntactic order can be established, then explanations for variations can be sought and general patterns discovered in relation to the basic order.

On the surface, the word order of IM appears to be quite variable, including SOV, SVO, VSO, OSVand OVS. An examination of what is said about the word orders of other Mixe-Zoque languages also shows considerable variability. Yasugi (1995:372-7) lists the basic word order of two Zoque languages as SVO and one as VOS. Four Mixe languages are listed: Sayula Popoluca as having free word order, Oluta Popoluca as SVO, and both Coatlán Mixe and Tlahuitoltepec Mixe as "VSO > SVO / SOV (a marked, non-basic order ...)"; it is unclear as to what is meant by the latter designation.

Campbell, Kaufman and Smith-Stark (1986:547-8) discuss the word order of Mixe languages in some detail and state that Tlahuitoltepec sentences are mainly VSO.[1] Their relevant examples of Coatlán Mixe are SVO. IM is not included in these surveys since there are no previous published studies of IM grammar.

In this paper, I posit a basic word order of SOV and analyze IM as having an inverse voice category that is expressed by subject-object inversion, or OSV. I further claim that this inversion, taken together with discourse factors, explains the surface word order variation. Empirical evidence of the IM inverse voice will be adduced from morphological, syntactic, and pragmatic phenomena based on a quantitative analysis of five IM narrative texts.

The main corpus of data analyzed in this study consists of five folktale-type narratives.[2] The corpus contains a total of 521 clauses, of which 216 are transitive, 241 are intransitive, 36 are verbless, and 28 imperative. Of the 216 transitive clauses, 150 are third person (3P) Subject and 3P Object (3P-3P), an important subcategory to be discussed below. Direct quotations are included in the study corpus, unless otherwise indicated. There is no difference between narrative clauses and direct quotation clauses for the phenomena in the topics under study. Some aspects of the analysis require using direct quotations for first person (1P) and second person (2P) arguments (Section 2.2.1).

2. Grammatical voice

2.1 Definition of Inverse Voice

Based on classical languages such as Sanskrit, Greek, and Latin, the grammatical categories of voice, typically based on inflections of the verb, have traditionally been labeled as active, middle, and passive. These were considered to be universal categories (Fox and Hopper 1994:ix). More recently, the category of *inverse* has been recognized as a distinction of voice in some languages with nominative-accusative case systems. In distinguishing voice types, Givón (1994:8) identifies the active-direct voice as the unmarked standard in which the Agent is more topical than the Patient. The reverse is true of inverse voice, i.e. the Patient is more

[1]Campbell, Kaufman and Smith-Stark (1986:547) state that the SOV word order found in Tlahuitoltepec Mixe and Coatlán Mixe is a "marked, non-basic order when the particle *ti* 'already' (perfective) is present." In Isthmus Mixe there are numerous examples of SOV without the particle *ti* 'already', as well as examples in which it occurs.

[2]The five narratives are named Armadillo (A), Cat and Bird (C&B), Country Boy (CB),Orphan (O), Poor Man (PM).

topical than the Agent. In neither voice is the less topical entity suppressed or demoted. In passive voice, in contrast, the Patient is much more topical than the Agent, which is either suppressed or demoted. And in the antipassive voice, found in some ergative languages, the Agent is much more topical than the Patient.

Although inverse voice is not grammatically encoded in English, it can be represented by fronting the Patient (sometimes called Y-movement or L-dislocation) to show topicality. The following examples illustrate the distinctions between active, passive and *inverse* voice in English.

(1) Active voice: Peter invited Alice to the party.

(2) Passive voice: Alice was invited to the party (by Peter).

(3) *Patient fronting (inverse)*: (As for) Alice, Peter invited her to the party.

The normal expectation is for the action to proceed from the Agent, Peter, to the Patient, Alice, as in example (1); this is the direct-active voice. In the passive voice the Agent is demoted or suppressed along with the notion of a flow of action. If one desires only to demote rather than suppress the Agent in the passive, the *by* plus Agent may be used as shown in parentheses in example (2). In example (3), which represents inverse voice, the Patient, Alice, is marked as more topical by fronting yet Peter remains the Agent of the clause.

Passive voice does not occur in the present corpus of IM texts, and antipassive is not found since IM is a Nominative-Accusative language. The focus of this study, therefore, is the contrast between IM direct-transitive clauses and inverse-transitive clauses.

2.2 Pragmatic and Semantic Inverse Clauses

Givón (1994) identifies two types of inverse clauses: pragmatic and semantic. Semantic inversion is related to agency hierarchy. Pragmatic inversion is related to the topicality or thematic importance of the Subject and Object. IM has both pragmatic and semantic inverse-transitive (INV-TR) clauses.

2.2.1 Semantic inversion

As described by Givón (1994), obligatory semantic inversion is associated with agency hierarchy or saliency, e.g. 1P > 2P > 3P. The direct-transitive (DR-TR) clause is used when the Subject outranks the Object in the hierarchy, and the INV-TR clause is used when the Object outranks the Subject. When semantic inversion is present in a language, the speaker or writer is not given a choice regarding which forms to use; rather, the ranking hierarchy governs their use.

In IM, the agency hierarchy ranking of the participants is: 1P is greater than 2P, and both of these are greater than 3P. Semantic INV-TR clauses are distinguished morphologically from DR-TR clauses by a different set of person-agreement prefixes on the verb. The 1P and 2P INV-TR prefix is *ɟ-* and the DR-TR

prefixes are *n-* '1P' and *m-* '2P'. The semantic INV-TR clause in example (4) shows the Object 1P/2P prefix *ʃʲ-* on the verb. The 1P suffix *-t͡sʲ* on the negative morpheme *kaʔa* co-references the agreement marker on the verb.

(4) Semantic inverse-transitive clause
kaʔa-t͡sʲ ʃʲ-t͡suʔut͡s-ʲ
NEG-1P 1P/2P_INV-eat_meat-CL[3]
'Don't eat me.' (C&B 20)

In contrast, the DR-TR clause, example (5), utilizes the Subject 1P prefix *n-* on the verb. The context indicates that the Object of the Verb is the addressee.

(5) Direct-transitive clause
n-d͡ʒuʔd͡ʒ-aːm-bʲ *t͡sʲaːm*
1P-eat_meat-FUT-CL now
'I'm going to eat [you] now.' (C&B 15)

The contexts of both examples indicate that the Subject in (4) and the Object in (5) is 2P. A NP or pronoun expression of either Subject or Object is not required when the referents are already identifiable from the context.

Since only one argument can be marked on the verb, whenever there is either a 1P Subject or a 1P Object, then 1P is marked on the verb. Likewise, 2P Subject or 2P Object ranks higher than 3P. When the higher ranking person is the Subject, the DR-TR clause is required. When the higher ranking person is the Object, the INV-TR clause is required. Semantic inversion is thus an obligatory grammatical feature of the language.

2.2.2 Pragmatic inversion

Pragmatic inversion differs from semantic inversion in several ways. According to Givón (1994), pragmatic inversion may be employed when both Subject and Object are 3P. The decisive factor in the choice of either the direct voice or the inverse voice is the relative topicality of Subject and Object. Topicality is defined by Givón as thematic importance in the discourse. Thus the DR-TR clause is used when the Subject is more topical than the Object, and the INV-TR clause is used when the Object is more topical than the Subject. When pragmatic inversion is utilized, the speaker or writer chooses to present the Object as more topical based on discourse considerations.

According to Payne (1994:316) "a more topical participant is more agentive, more animate, more individuated, more important either locally or globally, and/or more predictable in the sense that it may have already been referred to

[3]Abbreviations used in examples include the following: BEN benefactive, CL clause marker, INV inverse voice marker, FUT future tense marker, NEG negative.

within the discourse context at hand." Examples (6) and (7) illustrate some of these indicators of topicality in IM.

Example (6) is a pragmatic INV-TR clause. The Subject is *ʔuʃʲp* 'alligator' and the Object is *ha kraˈ* 'the guy'. In addition to Subject-Object inversion, the clause is marked morphologically by an inverse suffix *-i* on the verb.(6) Pragmatic inverse-transitive clause

	O	S	V
manit	*ha kraˈ*	*ʔuʃʲp*	*ʲ-maʰt͡s-i*
then	the guy	alligator	3P-grab-INV

'Then [an] alligator grabbed the guy.' (O 11)

That the Object is more topical than the Subject in (6) is supported a priori by the fact that the Object is human and the Subject is an animal. Moreover, the Object has been previously introduced in the discourse as an orphan boy by means of a major-character type of introduction. The alligator is not introduced at all; it just happens to be in the water where the guy is bathing. Finally, the Object, the guy, is more important globally, because the story continues about him after the alligator dies. Therefore, since both Subject and Object are 3P and the Object is more topical, the INV-TR clause type is used.

In contrast to example (6), the Subject in the DR-TR clause in example (7) is more topical than the Object. The word order is SOV and it lacks the inverse marker suffix *-i* on the verb.

(7) Direct-transitive clause

	S	O	V
manit	*ha t͡sʲiːd*	*ha muːʃʲ*	*ø-maʰt͡s-ʲ*
then	the cat	the bird	3P-grab-CL

'... then the cat grabbed the bird.' (C&B 13)

The Subject, *ha t͡sʲiːd* 'the cat', in this instance is more topical than the Object, *ha muːʃʲ* 'the bird'. The cat is more agentive in this sentence, and it is predictable from real-world knowledge that a cat will catch a bird. In addition, it is important to the events that follow that the cat does catch the bird. Therefore, the clause is direct with the action flowing from the Subject to the Object.

In pragmatic inversion the speaker or writer shows which participant is more topical in a particular situation by the use of DR-TR or INV-TR clauses. In another event in this narrative in which the bird outwits the cat, the bird is shown to be more topical than the cat.

In summary, there is pragmatic, morphological, and syntactic evidence for pragmatic inversion in IM. The pragmatic INV-TR clause is used when the Object is higher in topicality than the Subject. It utilizes the suffix *-i* on the verb which indicates inverse voice, and the NP Object precedes the NP Subject, resulting in OSV order. In contrast, the DR-TR clause is used when the Subject is higher in

topicality than the Object. It lacks inverse voice morphology on the verb and the word order is SOV.

3. Frequency of Explicit Subjects and Objects

Further evidence of the Object's higher topicality in INV-TR clauses can be found in the quantitative distributions of clause types. In IM, the explicit NP expression of Subjects and Objects may be omitted when the discourse context is adequate to identify the participants. The majority of transitive clauses do not use NPs to designate both Subject and Object. Because the Object is higher in topicality in INV-TR clauses, the Subject is the argument most often omitted.

Table 1 shows the explicit arguments of each category found in all the 3P-3P transitive clauses in the narrative corpus. The display is restricted to 3P in order to show the contrast between the pragmatic inverse voice and the direct voice. The percentage of each word order is given, with the number of tokens below the percentage in parentheses.

Table 1: Word order variants of inverse-transitive (INV-TR) and direct-transitive (DR-TR) clauses in Isthmus Mixe

	OV	VO	OSV	OVS	**SV**	**SOV**	SVO	VSO	V
INV-TR	**64%**	3%	3%	3%	**5%**	**X**	X	X	23%
(tokens)	**(25)**	(1)	(1)	(1)	**(2)**				(9)
DR-TR	**18%**	4%	X	X	**26%**	**28%**	7%	1%	16%
(tokens)	**(20)**	(4)			**(29)**	**(31)**	(8)	(1)	(18)

Three columns in Table 1 are in bold type. These are the most significant comparisons between INV-TR and DR-TR clauses related to the presence of explicit NP Subjects and Objects. In the first column, OV word order occurs in 64% of the INV-TR clauses but in only 18% of the DR-TR clauses. In contrast, SV occurs in only 5% of the INV-TR clauses but in 26% of the DR-TR clauses. Finally, SOV is the favored word order in DR-TR clauses at 28%. These findings provide additional evidence that the Object is more topical in INV-TR clauses and the Subject is more topical in DR-TR clauses in IM.

4. Referential Distance and Topic Persistence of Subjects and Objects

Givón (1983) introduced a method of measuring topic continuity in discourse as an indirect means of determining the topicality of grammatical devices. In this analysis of the IM data, Givón's method was employed to measure the topicality of Subjects and Objects, using the measurements of Referential Distance (RD) and Topic Persistence (TP).

RD is a look-back measurement of the distance between a particular referent or topic and its most recent previous mention in the discourse. RD is also referred to as anaphoric accessibility or the cognitive accessibility of the referent in relationship to prior mention in the text (Givón 1994:9). Following Givón's method, numerical values were assigned and the averages were obtained. The lower the RD average, the more continuity or topicality is indicated.

TP is a look-ahead measurement of the persistence of a particular referent in the subsequent discourse. TP is also described as cataphoric persistence or how long the referent remains in the following text. The higher the TP average, the greater is the continuity or topicality. This is in contrast to the RD values, in which lower averages indicate greater continuity.[4]

Table 2: Average Referential Distance (RD) and Topic Persistence (TP) values in Isthmus Mixe transitive clauses

Clause Type	RD Subject	RD Object	TP Subject	TP Object
DR-TR 3-3	1.9	4.6	1.9	1.5
INV-TR 3-3	1.9	3.8	1.5	3.4

Table 2 shows the averages of RD and TP values in the IM 3P-3P transitive clauses. The most significant contrasts are shown by the average RD value of the DR-TR Subject as 1.9, and the RD value of the Object as 4.6, a difference of 2.7 value points. This is as expected, with the lower RD value showing the higher topicality of the Subject in the DR-TR clause.

In the TP measurement, the value for the INV-TR Subject is 1.5 and for the Object it is 3.4, a difference of 1.9 value points. According to the definition of TP, higher value indicates higher topicality. Therefore, the Object is higher in topicality than the Subject in INV-TR clauses. As it turns out, the exact same ratio is seen in the contrast between the TP DR-TR Object and the TP INV-TR Object; therefore the INV-TR Object is higher in topicality than the DR-TR Object.

Other values have smaller differences, which are, however, in the predicted direction. The average RD value of the INV-TR Object is 0.8 points lower than the RD value of the DR-TR Object, which indicates higher topicality of the INV-TR Object in comparison to the DR-TR Object. In the TP values, the DR-TR Subject is 0.4 points higher than the Object, with the TP higher value indicating higher topicality. The one comparison which does not follow the predicted direction is the RD value of the Subject in INV-TR clauses as 1.9 and the Object as 3.8. The difference of 1.8 value points indicates a higher topicality for the Subject. Apart from this one instance, the results indicate the higher topicality of INV-TR Object and the higher topicality of the DR-TR Subject.

[4]See Givón 1983 for further description of the method for calculating RD and TP.

Although the primary purpose of this analysis is to determine the topicality of the Object in relationship to INV-TR clauses, another interesting result is evident. The averages of the RD and TP Subject values are similar for DR-TR clauses and INV-TR clauses. This result shows that the Subjects of INV-TR clauses are not demoted, as they would be in passive clauses, and is a further indicator that inverse voice is the correct interpretation of the data.

5. Basic Word Order

5.1 Word order in DR-TR clauses

Having shown that IM has an inverse voice construction that affects word order, we are now able to resolve the question of the basic word order in IM. Over one-fourth of the 3P-3P transitive clauses in the corpus examined in this study are inverse voice; these clauses must be separated out from the direct-voice clauses to establish the language's basic word order. The word orders of DR-TR clauses in Table 1 show that IM is clearly an SOV language on grounds of frequency of occurrence. SOV is statistically the most frequent word order, occurring in 28% of the DR-TR 3P-3P clauses. Compatible with the SOV order are the one-argument clauses of SV (26%) and OV (18%). These three, SOV, SV, and OV, total 72% of the DR-TR clauses. The Verb alone is also consistent with SOV inasmuch as it does not contradict it.

Variations from the basic word order allow one or both of the NP arguments to follow the verb. These amount to 12% of the total of the DR-TR 3P-3P clauses, and reflect discourse considerations such as emphasis on the Verb when in sentence initial position, first mention or introduction of a postposed argument, or indicating something unusual happening to the postposed argument.

5.2 Word Order in Main-line Clauses

In analyzing basic word order, one parameter not often discussed is that of discourse type. Longacre (1995:333-5) claims that main-line clauses of narrative discourse are the most appropriate to use when establishing the basic word order of a language. Main-line (also called event-line) clauses are those which advance the chronology of the narrative (in contrast to background or off-line clauses). Givón (1994:155) states that "A prototypical transitive event involves an agent with full control, an affected patient, and an active verb form." The main-line clauses in the IM narrative corpus conform to Givón's description of prototypical transitive events more closely than the clauses of the 3P-3P clause corpus taken as a whole. Thus the parameters are more limited for main-line clauses than those used in this study thus far.

Of 79 main-line transitive clauses, 75% (59 tokens) are DR-TR and 25% (20 tokens) are INV-TR, a ratio comparable with the distribution of the two clause types in the corpus as a whole. As shown in Table 3, in the DR-TR 3P-3P main-line clauses, the percentages of SOV and SV clauses (bold type) are even higher than in the entire DR-TR 3P-3P corpus. There are also fewer marked clauses of

SVO and VO. Thus the main-line clauses provide even stronger support for the claim that the basic word order of IM narrative texts is SOV.

Table 3: Comparison of word order in main-line direct-transitive (DR-TR) clauses with all DR-TR 3P-3P clauses in Isthmus Mixe narrative texts

	SOV	**SV**	OV	V	SVO	VO	VSO
Main-line	**32%**	**34%**	14%	14%	5%	2%	0
DR-TR	**(19)**	**(20)**	(8)	(8)	(3)	(1)	0
All 3P-3P	**28%**	**26%**	18%	16%	7%	4%	1%
DR-TR	**(31)**	**(29)**	(20)	(18)	(8)	(4)	(1)

6. Translated materials

Of the clauses analyzed in this study, 28% contain two explicit NP arguments. Considerably more clauses with two explicit NP arguments occur in complex sentences in translated materials. These translations often contain concepts that are uncommon or completely unknown in Mixe society. Since it cannot be assumed that the reader or listener will understand the general context, both DR-TR and INV-TR clauses tend to contain more explicit arguments than in the data used in this study. A pragmatic INV-TR clause from a narrative text translated from the New Testament is shown in example (8). Both Subject and Object arguments are explicit for the sake of clarity.

(8) Pragmatic inverse-transitive clause

	O	S	V
maniti	*Elisabet*	*ha Dios-ʔespiritu*	*ʲ-ni-meʰt͡s-i*
then	Elizabeth	the God-spirit	3P-BEN-arrive-INV

'Then Elizabeth was filled by the Holy Spirit.' (Luke 1:41b).

This sentence is considered well formed by native IM speakers. As discussed in Section 2.2.2, Subject-Object inversion results in OSV word order. Note that the usual English translation of the sentence is passive. The explictness of the translation lends additional evidence to support the claim of basic SOV word order and the inverse voice OSV word order in IM.

7. Conclusion

In this study, I have argued that IM is basically an SOV language with an inverse voice construction which produces the INV-TR clause variation of OSV. The shift of the Object to initial position reflects the greater topicality of the Object in INV-TR clauses, contrasting with DR-TR clauses in which the Subject is more topical.

Results of two quantitative analyses of the corpus of narrative data revealed the higher topicality of the Object in INV-TR clauses. In the first analysis, the Object was explicit in most INV-TR clauses, while the Subject was usually implicit. The ellipsis of the Subject implies higher topicality of the Object. In the second analysis, the Referential Distance and the Topic Persistence values for Subjects and Objects in INV-TR clauses showed higher topicality for Objects compared to the values for DR-TR clauses.

Since 26% of the 3P-3P transitive clauses in the corpus examined in this study are inverse voice, these clauses must be separated out from the direct voice clauses to establish the basic word order of the language. When this is done, SOV emerges clearly as the dominant word order in IM. By distinguishing carefully between grammatical voice categories, and recognizing variations based on discourse factors, it is possible to identify a basic SOV word order on the basis of frequency of occurrence for IM narrative texts.

Previous surveys and studies of Mixe languages have not revealed a language of the SOV word order type. Indeed, Campbell, Kaufman and Smith-Stark (1986:547-8) claim that there are no SOV languages in the Mesoamerican area. Similarly, Yasugi (1995:158) states that "Mesoamerica completely lacks SOV languages at present." However, neither Campbell et al. nor Yasugi had data on IM for their surveys. Yasugi (1995:158) notes, however, that "Mixe-Zoquean is a good candidate for SOV." The present study shows that Yasugi's intuition was correct. Once the inverse-direct voice distinction is recognized, and discourse considerations are taken into account, IM shows clear evidence of a basic SOV word order.

To my knowledge, an inverse voice category has not yet been posited for any other Mixe language. It is possible that closer inspection of such languages might likewise reveal voice and discourse distinctions that would help clarify their basic word orders.

References

Campbell, Lyle, Terrence Kaufman and Thomas C. Smith-Stark. 1986. Meso-America as a linguistic area. *Language* 62.3: 530-70.

El Nuevo Testamento en Mixe de Guichicovi. 1988. Mexico, D.F.: Liga del Sembrador, A.C.

Dieterman, Julia. 1998. Participant reference in Isthmus Mixe narrative discourse. *Journal of Translation and Textlinguistics* 10: 47-79.

Fox, Barbara and Hopper, Paul J. (eds.). 1994. *Voice: Form and function.* Amsterdam: Benjamins.

Givón, Talmy (ed.). 1983. *Topic continuity in discourse: A quantitative cross-language study.* Amsterdam: Benjamins.

Givón, Talmy. 1994. The pragmatics of de-transitive voice: Functional and typological aspects of inversion. In Talmy Givón (ed.). 1994. *Voice and inversion,* 3-44. Amsterdam: Benjamins.

Greenberg, Joseph H. 1966. Some universals of grammar with particular reference to the order of meaningful elements. In Joseph H. Greenberg (ed.). *Universals of Language, 2nd edition*, 73-113. Cambridge, MA: MIT Press.

Grimes, Barbara F (ed.). 1996. *Ethnologue: Languages of the world, 13th edition.* Dallas: SIL.

Longacre, Robert E. 1995. Left shifts in strongly VSO languages. In Pamela Downing and Michael Noonan (eds.). *Word order in discourse,* 331-354. Amsterdam: Benjamins.

Mithun, Marianne. 1987. Is basic word order universal? In Russel S. Tomlin (ed.). *Coherence and Grounding in Discourse,* 281-328. Amsterdam: Benjamins.

Payne, Doris. 1994. The Tupí-Guaraní inverse. In Barbara Fox and Paul J. Hopper, (eds.). *Voice: Form and function,* 313-40. Amsterdam: Benjamins.

Steele, Susan. 1978. Word order variation: A typological study. In Joseph H. Greenberg (ed.). *Universals of human language, Vol 4, Syntax,* 585-624. Stanford: Stanford University Press.

Van Haitsma, Julia Dieterman and Willard Van Haitsma. 1976. *A hierarchical sketch of Mixe as spoken in San José El Paraíso.* Norman, OK: Summer Institute of Linguistics [*Summer Institute of Linguistics Publications in Linguistics and Related Fields* 44].

Yasugi, Yoshiho. 1995. *Native middle American languages: An areal-typological perspective.* Osaka, Japan: National Museum of Ethnology.

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Multiple Antipassives in Halkomelem Salish

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0. Introduction

This paper is an exploration of antipassive constructions in Halkomelem, a Central Coast Salish language of British Columbia. Data are from original fieldwork on Həl̓q̓əmin̓əm̓, the Island dialect of Halkomelem, currently spoken by around one hundred people.[1] In, Halkomelem, a polysynthetic language, words usually contain several morphemes. We have been investigating the morphosyntactic properties of the over one hundred affixes in Halkomelem. This paper reports on two of these affixes, the middle suffix and the activity suffix, and their use in antipassive constructions.

Halkomelem has two different morphological means of marking antipassives. This paper explores the similarities and differences between the two antipassive constructions. Other languages of the world have been shown to have two or more antipassives. Halkomelem antipassives conform to previous generalizations about the form and function of antipassives (e.g. Foley and Van Valin 1984). However, Halkomelem shows one phenomenon that to our knowledge has never been discussed: Halkomelem allows the two antipassives to stack. We give an analysis of stacked antipassives and discuss its implications for the architecture of morphosyntactic theory.

1. The Two Halkomelem Antipassives

We give a transitive clause in (1a) and its antipassive counterpart in (1b).[2]

(1) a. niʔ q̓ʷəl-ət-əs tᵊə sce:łtən.
aux bake-tr-3erg det salmon
'He cooked/barbecued the salmon.'

---

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[2]The following abbreviations are used in glossing the Halkomelem examples: 1 = first person, 2 = second person, 3 = third person, act = activity, appl = applicative, aux = auxiliary, ben = benefactive, comp = complementizer, cont = continuative, cs = causative, det = determiner, emph = emphatic, erg = ergative, fut = future, mid = middle, nom = nominalizer, obj = object, obl = oblique, pos = possessive, pl = plural, sub = subject, ssub = subordinate subject, tr = transitive.

b. ni? q̓ʷəl-əm ?ə tᶿə sce:łtən.
aux bake-mid obl det salmon
'He cooked/barbecued the salmon.'

The verb in the transitive clause in (1a) contains a transitive suffix *-t*, which marks controlled transitive action (Hukari 1976) and the 3rd person ergative agreement suffix. Third person absolutives are Ø-marked in main clauses. Core arguments of the verb are unmarked for case, though they are preceded by determiners signaling degree of distance from the speaker. In contrast, there is no transitive suffix on the verb in (1b); instead the middle suffix *-m (~e?əm, ~əm)* appears, and the patient appears in the oblique case.[3] The suffix *-m* is used for a range of constructions, including logophoric reflexives, personal reflexives, main-clause passives, and various monadic intransitive constructions, including verbs of motion and body care. Gerdts and Hukari (1998) gives an analysis of the middle, arguing for personal reflexive as the source of this construction. Kroeber (1999) discusses the pan-Salish use of the suffix *-m* in antipassives.

The second antipassive uses the activity suffix *-els (~əl̓s)*. Example (2a) gives a transitive clause and (2b) gives the corresponding antipassive.

(2) a. naʔət qʷəs-t-əs tᶿə x̌eɬəm̓ sce:łtən.
aux go in water-tr-3erg det salted salmon
'She put the salted fish in water.'

b. naʔət qʷs-els ʔə tᶿə x̌eɬəm̓ sce:łtən.
aux go in water-act obl det salted salmon
'She soaked the salted fish.'

Again, the antipassive lacks transitive marking and 3rd person ergative agreement, and the patient in the antipassive appears in the oblique case.

There seems to be very little difference in meaning between the transitive clauses and the antipassive clauses. Various person/animacy restrictions come into play, as discussed in Gerdts (1988a, 1988b). As with antipassives in many other languages, the oblique-marked object in Halkomelem antipassives is usually third person and inanimate. It can be definite or indefinite, though often it has a non-individualized or non-specific meaning.

1.1. Antipassive Syntax

The two antipassives are syntactically identical. Gerdts (1998b) presents evidence that antipassives are syntactically intransitive. Causatives provide one argument for this. Causatives can be formed on intransitive bases (3), but not on transitive bases (4).

(3) ni? cən ʔiməš-stəxʷ tᶿə swiẇləs.
aux 1sub walk-cs+tr+3obj det boy
'I made the boy walk.'

[3]We use the term 'patient', without prejudice as to animacy, roughly in the sense of Dowty's (1991) proto-patient. The reader may substitute 'undergoer' or 'notional object'. Gerdts has used the terms 'initial object' and 'theme' in previous work, but we reserve the term 'theme' for locatum or entity in motion, following Jackendoff (1991) and others.

(4) *niʔ cən q̓ʷəl-ət-stəxʷ łə sɬeniʔ (ʔə) kʷθə səplil.
aux 1sub bake-tr-cs+tr+3obj det woman obl det bread
'I had the woman bake the bread.'

Antipassives can form causatives as we see in (5) and (6); the agent of the antipassive is the object of the causative.

(5) niʔ cən q̓ʷəl-əm-stəxʷ łə sɬeniʔ ʔə tθə səplil.
aux 1sub bake-mid-cs det woman obl det bread
'I had the woman bake the bread.'

(6) niʔ cən qʷs-els-stəxʷ łə sɬeniʔ ʔə tθə x̓ełəm̓ sceːɬtən.
aux 1sub go in water-act-cs det woman obl det salted salmon
'I had the woman soak the salted salmon.'

As Gerdts (1988b) argues, the semantic agent of an antipassive is a surface absolutive. In terms of person agreement, Halkomelem is a split ergative language. Only 3rd person shows ergative/absolutive agreement, and only in main clauses. But there are several syntactic constructions that select absolutives, and antipassives feed these constructions. For example, Halkomelem has a constraint that a sole NP argument in a clause with only third person agreement is interpreted as an absolutive. So in the transitive clause in (7), the sole NP argument is the object.

(7) niʔ q̓ʷəl-ət-əs łə sɬeniʔ.
aux bake-tr-3erg det woman
!!'He cooked/barbecued the woman.'
not: 'The woman cooked (something).'

In contrast, the sole NP in the antipassive in (8) is the subject.

(8) niʔ q̓ʷəl-əm łə sɬeniʔ.
aux bake-mid det woman
'The woman cooked (something).'
not: !!'He cooked/barbecued the woman.'

Also, as Gerdts (1988b) notes, only absolutives link to preverbal quantifiers, and only absolutives allow their possessors to extract.

Evidence that the semantic patient is a surface "oblique object" comes from data involving extraction (Gerdts 1988b, Hukari 1976, 1979, 1980). We give a summary of extraction facts in (9).

(9) Extraction (wh-questions, relative clauses, clefts, pseudo-clefts)
  a. No special morphology is used to extract
    • ergatives (ergative agreement is deleted)
    • absolutives
  b. Nominalization with *s-* is used to extract
    • patients of antipassives
    • themes of applicatives
  c. Nominalization with *š(xʷ)-* is used to extract
    • obliques (location, direction, instrumental, manner, stimuli)

Core nominals (9a) extract with no special morphology. But oblique nominals extract via nominalization. Oblique objects (9b) extract with *s-* while true obliques (9c) extract with the prefix *š(xʷ)-*. Examples (10) and (11) show the extraction of the patient of both types of antipassives.

(10) stem k̓ʷə ni? s-qʷs-eʔəm-s łə słeni??
what det aux nom-go in water-mid-3pos det woman
'What did the woman put in the water/soak?'

(11) stem k̓ʷə ni? ʔəṅ-s-x̌əl̓-els?
what aux aux 2pos-nom-write-act
'What did you write?'

The predicate is nominalized with the prefix *s-*. The subject of the nominalization appears as a possessor.

1.2. Antipassive Morphology

There are three ways to mark antipassives: *-els* (12a), *-m* (12b), or Ø (12c).

(12) a. q̓ʷqʷels 'club, bat', łəmc̓els 'pick (fruit)', t̓ᶿasels 'hit with hammer', yəxʷels 'open', q̓p̓els 'tie', ʔak̓ʷels 'hook', łəẇels 'shuck (shellfish)', məkʷels 'pile', łc̓els 'cut', łap̓q̓ʷels 'boil', məq̓els 'poke into ground'
  b. pəṅəm 'plant, bury, ləṅəm 'weave', mək̓ʷeʔəm 'gather', ʔeʔəm 'give', q̓i k̓ʷəm 'bite', miṁiət̓ᶿəm 'mashing' , k̓ʷcsəm 'heat, burn', ʔa:m 'call for'
  c. ʔəłtən 'eat', qaʔqaʔ 'drink', č̓əkʷx̌ 'fry', qʷix̌ʷ 'miss (a target)', səẇq̓ 'seek'

The choice between these is basically a lexical one. *-els*, the activity suffix, is the most popular: approximately 90% of the verbs in our sample take *-els*. Only about 15% of verbs take the middle *-m*. There are around a dozen very common verbs that can form antipassives with Ø morphology. We set aside this last class for the purposes of this paper. Some verbs allow two or three different forms. For example, we see the verb *qʷəs* 'fall in the water' can take either the activity (13) or middle suffix (14).

(13) naʔət qʷs-els ʔə t̓ᶿə x̌̓ełəṁ sce:łtən.
aux go in water-act obl det salted salmon
'She soaked the salted fish.'

(14) niʔ q^{w}s-eʔəm ʔə tθə ƛ̓eɬəm̓ sce:ɬtən.
aux go in water-mid obl det salted salmon
'She soaked the salted fish.'

Some more examples are given in (15). The first column shows the verb root: the root is unaccusative with a patient-oriented meaning. The next two columns show the middle and the activity suffixes. The last column shows the corresponding transitive.

(15)

root	middle	activity	transitive
	-m	*-els*	*-t*
q^{w}əs	q^{w}seʔəm	q^{w}sels	q^{w}sət
'fall in water'	'soak'	'soak'	'put in water'
k̓^{w}əɬ	k̓^{w}ɬeʔəm	k̓^{w}ɬels	k̓^{w}ɬet
'spill'	'pour'	'pour'	'pour it'
c̓əq̓^{w}	c̓q̓^{w}eʔəm	c̓q̓^{w}els	c̓q̓^{w}at
'pierced'	'poke through'	'poke through'	'pierce it'
q̓əp	q̓peʔəm	q̓pels	q̓pət
'collected'	'collect'	'collect'	'collect it'

In fact, we see from an examination of a full-range of data that antipassive and transitive suffixes are closely linked. In our database of over 500 verb bases tested in combination with various suffixes and also in additional sporadic data from the *Hul'q̓umi'n'um' Dictionary* (Hukari and Peter 1995), all verbs that can take the transitive suffix *-t* can form an antipassive. Many stative and unergative verbs do not take *-t*, and these also do not form antipassives. Furthermore, every verb in our sample that takes antipassive *-m* takes transitive *-t*. And verbs that take antipassive *-els* usually take transitive *-t*. There is one small class of exceptions to the last generalization. A dozen motion verbs that form transitives with the causative suffix *-stəx^{w}* also form antipassives in *-els*:[4]

(16) ʔəši:ls 'paddle with something, tow', camels 'bring them up',
šq^{w}i:ls 'take across to the other side', ʔənəx^{w}els 'bringing to a stop',

These motion verbs are exceptional in other ways (Gerdts and Hukari 2000).

Based on these distributional facts, we conclude that, although antipassives are syntactically intransitive, they are semantically transitive. A notional object, whether stated or implied, is always part of the argument structure.

1.3. Antipassive Semantics

So far we have talked about ways in which the two antipassives are similar. We turn now to a way in which the two antipassives are different: they seem to have slightly different meanings. Both antipassive suffixes can be used to make the agent an absolutive. The agent is then accessible to constructions that target absolutives, as discussed in section 1.2 above. Also, both antipassives are used to express non-specific, de-individualized patients, or to avoid expressing a patient..

However, the *-els* activity suffix often brings an additional meaning. It is used to emphasize the action. The event is often a job-like activity that will take time and effort. Sometimes the agent is playing a role in a social situation. He/she

[4]Van Eijk (1997:116) has noted the same sort of small exceptional class of antipassives in Lillooet, a nearby Interior Salish language.

is the delegated doer of the event. For many forms with the activity subject, certain patients are evoked even when they are not expressed. The patient is fully understood from the cultural context of the activity (see also Galloway 1993: 252–255, Hukari 1979, Suttles in prep.):

(17) q̓pels 'collect' [when going around collecting money]
wənels 'throw' [when throwing out money or blankets in the bighouse]
nəẇ̓ els 'bring in' [when showing a picture for ceremonial purposes in the bighouse]
łq̓els 'lay (it) down' [when making a down payment or donating blankets]
θəyqʷels 'dig' [when digging a grave for the funeral]
yəqʷel̓s 'burn' [ritual burning of the clothes of the deceased]
pɛpək̓ʷəls 'smoking' [when smoking salmon for storing]
ƛ̓əy̓q̓els 'push down' [when kneading bread]
yək̓ʷels 'break' [when breaking old plates in ceremony for black faces]
łəẇ̓els '(shaman) working a cure'

In various languages, antipassive is correlated with progressive or continuative aspect. For example, Blake (1987) notes that antipassive in Australian languages is often associated with imperfect, desiderative, or habitual aspect. Adams and Marlett (n.d.) note that the Madija antipassive is more likely to be used when the continuative aspect of the action is emphasized. This is not exactly what is going on in Halkomelem, since antipassives cross-cut the aspect paradigm. Perfective or progressive antipassives are allowed. Nevertheless, the job-like semantics often evoked by the suffix *-els* seems to be a similar phenomenon.

We can see the difference in semantics in the way the two antipassives are nominalized. Using an antipassive base to form a noun is quite common in Halkomelem. In (18), nouns formed with the *s-* prefix express a nominal that corresponds to the patient of the antipassive.

(18)

Noun		Verb	
sƛ̓cels	'design, pattern'	ƛ̓cels	'make a design or pattern'
sq̓pels	'collection (of money)'	q̓pels	'gather something'
spəṅəm	'seed, something planted'	pəṅəm	'plant, bury'
stiləm	'song'	tiləm	'sing'

The activity suffix is also frequently used in instrumental nouns formed with the oblique prefix *š(xʷ)-*. Since the suffix *-els* puts a job-like cast on an event, it makes sense that it would be used to create words for tools.

(19) šc̓aɬq̓ʷəl̓s 'grinder', šč̓ekʷx̌əl̓s 'frying pan', šxʷiʔqəl̓s 'baking pan', słemc̓əls 'picking machine', šseq̓əls 'shake splitter', šxʷaxʷək̓ʷəls 'sander', šxʷʔeʔiθ̓əls 'eraser', šxʷʔiʔx̌wəls 'back-hoe'.

We have found no examples of the middle suffix being used in this fashion. So we find, then, that the *-els* suffix often adds a special job-like meaning to an event, while the middle suffix does not.

2. Stacked Antipassives

The following examples show that in some cases Halkomelem allows antipassives in which both the middle suffix and the activity suffix appear.

(20) q̓ʷəl-əm-cls cən cc ʔ ʔə k̓ʷ scc:łtən ʔəẇ kʷcyəl-əs.
bake-mid-act 1sub fut obl det salmon comp day-3ssub
'I am going to barbeque fish tomorrow.'

(21) ʔi ct pəpəṅ-əṁ-əl̓s ʔə kʷθə sqcwθ.
aux 1plsub plant+cont-mid-act obl det potato
'We are doing the planting of the potatoes.'

(22) k̓ʷs-eʔəm-els ʔə tθə maʔəqʷ!
burn-mid-act obl det water fowl
'Do the job of singeing the water fowl!'

Other examples are given in (23).

(23) ƛ̓x̌eʔəmels 'warm', x̌əl̓əmels 'write', ʔak̓ʷeʔəmels 'hook ', mit̓θeʔəmels 'mashing', k̓ʷł-eʔəm-els 'pour'

The opposite order of stacking—the activity suffix inside the middle suffix—is not allowed, as the data in (24) show.

(24) *q̓ʷəl-els-əm, *pəpəṅ-əl̓s-əṁ, *k̓ʷs-els-(eʔ)əm

When viewed from a semantic perspective, double antipassives are not unexpected, since the two suffixes have slightly different lexical restrictions and different semantic functions. Adding *-els* to a form that already has *-m* adds the additional meaning of a job-like activity, as we see by contrasting the translation of the simple antipassive in (25) to the stacked antipassive in (26).

(25) niʔ k̓ʷł-eʔəm ʔə k̓ʷ ti tθə John.
aux pour-mid-act obl det tea det John
'John poured some tea.'

(26) niʔ k̓ʷł-eʔəm-els ʔə k̓ʷ ti tθə John.
aux pour-mid-act obl det tea det John
'John served some tea.'

In cases like (20), the verb root takes *-em* (*q̓ʷəl-əm*)but not *-els* (**q̓ʷəl-els*). The presence of the *-m* makes the *-els* possible.

Double antipassives have exactly the same surface syntax as single antipassives. They are intransitive, as the causatives in (27) and (28) show.

(27) niʔ cən qʷs-eʔəm-els-stəxʷ łə słeniʔ.
aux 1sub go in water-mid-act-cs det woman
'I had the woman do the soaking.'

(28) ni? cən x̌əl-əm-els-stəx^{w} θə na:s ʔə θə-nə pipə.
act 1sub write-mid-act-cs det nurse obl det-1pos paper
'I had the nurse fill out my form.'

Recall that only intransitives form causatives in Halkomelem. Also the data in (29) and (30) show that the patient in the double antipassive is an oblique object that extracts via *s*-nominalization.

(29) stem ʔaɬə k̓^{w}ə ni? s-q^{w}s-eʔəm-els-s łə słeni??
what emph det aux nom-go in water-mid-act-3pos det woman
'Whatever did the woman soak?'

(30) stem ʔaɬə k̓^{w}ə ni? s-k̓^{w}ɬ-eʔəm-els-s t^{θ}ə John?
what emph det aux nom-pour-mid-act-3pos det John
'Whatever did John serve?'

Thus, adding a second antipassive morpheme has no syntactic consequences.

Stacked *-els* presents a problem for the generalization we gave earlier. We said that *-els* and *-m* work like detransitivizers. They attach to transitives. But in forms like *q̓^{w}əl-əm-els* in (20), the activity suffix is attached to an intransitive base. So we seem to have a violation of our previous generalization. Actually the generalization that we need to accommodate the additional facts is quite straightforward. What *-els* is looking for is not a transitive base to attach to, but a verb root with a transitive argument structure. This claim is supported by evidence from lexical suffixes, the Salish equivalent to noun incorporation:

(31) yə-k^{w}ən-as-əls 'steer horses, drive car' [hold face]
šašəm-aʔq^{w}-els 'smoking fish heads' [smoke-dry head]
k̓^{w}š-as-els 'count money' [count round objects]
x^{w}-t̓^{θ}əq̓^{w}-s-els 'punch in face' [punch face]
ʔəx̌-iws-els 'scrape ducks' [scrape body]
k̓^{w}ax^{w}-əw̓tx̓^{w}-əls 'knock on houses' [knock building]
t̓^{θ}əx̌^{w}-ət̓^{θ}-els 'washing clothes' [wash garment]

In (31) the lexical suffix is the patient. This type of lexical suffixation can result in detransitivization in Halkomelem (Gerdts 1998, Gerdts and Hinkson 1996). So, in fact, the verb base is already detransitivized when the activity suffix *-els* is attached. The suffix *-els* adds the job-like semantics. So we see that the crucial condition on *-els* is that it be attached to a form with a verb root with a transitive argument structure. The middle suffix *-m* is different. Verb bases with lexical suffixes do not form antipassives with *-m*. Another use of the middle, the personal reflexive, is allowed (Gerdts to appear, Gerdts and Hukari 1998), but an antipassive use of the middle suffix following lexical suffixes is not. This, together with the fact that *-m* cannot appear outside of *-els* (*24), shows that, unlike *-els*, *-m* places restrictions on the base to which it attaches. We summarize the difference between *-els* and *-m* in (32).

(32) Transitivity conditions on antipassive morphology:
a. *-m* requires the base to which it attaches to be a 2-place predicate.
b. *-els* requires the underlying predicate to be 2-place.

Both antipassive morphemes require transitivity. But *-m* requires the base to which it attaches to be transitive while *-els* requires the underlying predicate to be transitive.

The requirement in (32b) might seem a little strange if you are used to thinking in terms of ordered, bracketed derivation with Mirror Principle effects (Baker 1988). But having a condition on morphology that requires looking back into the argument structure of the verb root is not unprecedented for Halkomelem. Gerdts (to appear) gives the following restrictions on the two benefactive applicatives:

(33) a. Use *-ələc-* when the underlying predicate is 2-place.
b. Use *-meʔ-* when the underlying predicate is 1-place.

Like the activity suffix, the benefactive *-ələc-* is attached to transitives per (32a), as exemplified in (34), but the benefactive *-meʔ-* is used in intransitive contexts, as exemplified in (35).

(34) niʔ q̓ʷəl-ələc-t-əs ʔə kʷθə sceːłtən.
aux bake-ben-tr-3erg obl det salmon
'He baked the salmon for her.'

(35) kʷukʷ-meʔ-t!
cook-appl-tr
'Cook for him/her!'

But also like the activity suffix, the benefactive can appear after lexical suffixes, as in (36) and (37). So its transitivity requirement is met by the transitivity of the root at the underlying level, not according to the base to which it attaches.

(36) t̓θx̌ʷ-əlwət-ələc-ət!
wash-clothes-ben-tr
'Wash clothes for him/her!'

(37) q̓p̓-əwəł-ələc-ət!
tie-vessel-ben-tr
'Tie up the canoe for him/her!'

We see then that the transitivity of the root can satisfy the transitivity requirement for both the Halkomelem benefactive suffix *-ələc-* and the activity suffix *-els*, despite the fact that there are intervening detransitivizing suffixes.

3. The Structure of Antipassives

What do stacked antipassives tell us about the architecture of morphosyntactic theory? To account for antipassives, we need an analysis involving a transitive argument structure but an intransitive surface syntax. Many different analyses for antipassive constructions have been proposed in the literature. Although the terminology and devices vary across theories, they nevertheless can be grouped into two general approaches.

First, some theories take the "demotion" approach to antipassive. In these theories, antipassive morphology is associated with detransitivization. The first formal treatments of antipassive were given in Relational Grammar (Postal 1977).

The clause is assigned an initial transitive structure, but the initial object is "chomeurized" either via the retreat and advancement of the subject. Another analysis that treats antipassive as a syntactic rule is the Government/Binding Incorporation approach (Baker 1988). Antipassive morphology is base-generated as the object of the verb; the NP object is an adjunct. The morpheme head-moves to the V and absorbs accusative case. Other linguists have proposed non-syntactic demotion. Lexicalist approaches (e.g. Grimshaw & Mester 1985, Farrell 1992) associate antipassive with a lexical rule affecting the argument structure of the clause, turning the object/theme into an oblique nominal. The antipassive morpheme is added to the base as a concomitant to the lexical rule.

Any of the demotion analyses can handle the simple antipassive examples. However, none of them can handle multiple antipassives. When the second antipassive is added, it should correlate with detransitivization. However, the second antipassive cannot detransitivize a structure that has already been detransitivized by the attachment of the first antipassive suffix. Thus, under demotion approaches, multiple antipassives are totally unexplained.

A second approach to antipassive has been proposed, however. Antipassive can be associated with the "maintenance" of an agent by mapping the agent, but not the patient, onto subsequent layers of morphosyntactic structure. Many functional accounts of antipassive imply this process. See, for example, "foregrounding" antipassives (Foley and Van Valin 1984) and the "agent focus" construction in Mayan (Aissen 1999 and references therein). In Mapping Theory, Gerdts (1993, 1995) proposes the following mapping rule:

(38) Do not link the 2 (patient) and cancel the B (object) inflectional position (if there is one).

Such a rule allows for multiple antipassive, since NOT linking the 2 twice has no more effect on the clause than NOT linking the 2 once.

In addition, a mapping analysis is possible within HPSG. Following Manning and Sag (1998) and Wechsler (1998), we propose that antipassive has a complex argument structure. The a-subject of the antipassive corresponds to the a-subject of the inner argument structure, where, by 'a-subject', we mean the leftmost argument on the (local) list.

(39) antipassive ARG-ST $<a_i, <a_i, b>>$

The outer a-subject maps to the syntactic role of subject and, for Halkomelem, we assume that a (distinct) inner argument maps to oblique object. Compare this to passive (Manning and Sag 1998), roughly represented as follows:

(40) passive ARG-ST $<b_i, <a, b_i>>$

That is, the outer a-subject links to the inner a-object and this role would generally map to subject, while the inner a-subject would link to an oblique role (if at all).

If the *-m* antipassive creates the complex argument structure in (39), then the question arises as to the structure of a double antipassive. Is it as follows?

(41) double antipassive ARG-ST $<a_i, <a_i,<a_i, b>>>$

It is not obvious that the complex structure in (41) satisfies the condition on

antipassives, namely that the base predicate's argument structure is transitive. It seems we need access to the inner argument structure, which is transitive.

(42) An outer antipassive [e.g. Halkomelem *-els*] is only possible if the AP morpheme can satisfy a condition on transitivity somewhere within its (innermost) argument structure (cf. (32b)).

Thus we see that double antipassive with no syntactic effect will be possible in an HPSG analysis, provided that the outer antipassive morpheme can satisfy its transitivity requirement from the innermost predicate.

4. Conclusion

In conclusion, antipassives in Halkomelem show many properties that have been attested in antipassives of other languages. One property though, stacking, is something previously unattested. Stacked antipassives are problematic for demotion analyses of antipassives. However, mapping approaches that allow for the crucial feature of an antipassive structure to be the maintenance of the agent into subsequent layers of morphosyntactic structure can accommodate multiple antipassives. We have proposed a mapping analysis within HPSG for the Halkomelem antipassive.

We might ask, why are stacked antipassives so rare? The answer, we think, lies in (32b)—the fact that the suffix *-els* can satisfy its requirement for transitivity from the root rather than from the base it attaches to. Such "look back" licensing runs counter to the usual procedures of ordered, bracketed derivation. We expect "look back" licensing to be rare, so likewise multiple antipassives will also be rare.

References

Adams, Patsy, and Stephen Marlett. n.d. Antipassivization in Madija. Ms., Summer Institute of Linguistics, University of North Dakota.

Aissen, Judith. 1999. Agent Focus and Inverse in Tzotzil. *Language* 75.3:451–485.

Baker, Mark C. 1988. *Incorporation: A Theory of Grammatical Function Changing.* Chicago: The University of Chicago Press.

Blake, Barry. 1987. The Grammatical Development of Australian Languages. *Lingua* 71:170–201.

Dowty, David. 1991. Thematic Proto-roles and Argument Selection. *Language* 67, 547–619.

Farrell, Patrick. 1992. Semantic Relations vs. Abstract Syntactic Relations: Evidence from Halkomelem. *BLS 18,* University of California, Berkeley.

Foley, William A. and Robert D. Van Valin, Jr. 1984. *Functional Syntax and Universal Grammar.* Cambridge: Cambridge University Press.

Galloway, Brent D. 1993. *A Grammar of Upriver Halkomelem.* Berkeley, California: University of California Publications in Linguistics.

Gerdts, Donna B. 1988a. A Nominal Hierarchy in Halkomelem Clausal Organization. *Anthropological Linguistics,* 30.1: 20–36.

Gerdts, Donna B. 1988b. *Object and Absolutive in Halkomelem Salish.* New York: Garland.

Gerdts, Donna B. 1993. Mapping Halkomelem Grammatical Relations. *Linguistics* 31: 591–622.
Gerdts, Donna B. 1995. The A/B Parameter: A Typology of Unergatives, Passives, and Antipassives. In *Proceedings of the 1995 Annual Conference of the Canadian Linguistic Association,* Toronto Working Papers in Linguistics, 191–201.
Gerdts, Donna B. 1998. Incorporation. In Andrew Spencer and Arnold M. Zwicky (eds.), *The Handbook of Morphology*. Oxford: Basil Blackwell, 84–100.
Gerdts, Donna B. to appear. The Combinatorial Properties of Halkomelem Lexical Suffixes. *BLS 25,* University of California, Berkeley.
Gerdts, Donna B., and Mercedes Q. Hinkson. 1996. Salish Lexical Suffixes: A Case of Decategorialization. In Adele E. Goldberg, ed., *Proceedings of the Conference on Conceptual Structure, Discourse, and Language*, Stanford: CSLI, 163–176.
Gerdts, Donna B., and Thomas E. Hukari. 1998. Inside and Outside the Middle. *Papers for the 33rd International Conference on Salish and Neighboring Languages,* Seattle, Washington, 166–220.
Gerdts, Donna B., and Thomas E. Hukari. 2000. The Dual Structure of Halkomelem Motion Verbs. Workshop on American Indigenous Languages, University of California, Santa Barbara.
Grimshaw, Jane, and Ralf-Armin Mester. 1985. Complex Verb Formation in Eskimo, *NLLT* 3, 1–20.
Hukari, Thomas E. 1976. Transitivity in Halkomelem. *ICSL 11.* Seattle, Washington.
Hukari, Thomas E. 1979. Oblique Objects in Halkomelem. *ICSL* 14. Bellingham, 158–172.
Hukari, Thomas E. 1980. Subject and Object in Cowichan. *ICSL* 15. Vancouver.
Hukari, Thomas E., editor, and Ruby Peter, associate editor. 1995. *Hul'qumi'n'um' Dictionary.* Cowichan Tribes.
Jackendoff, Ray. 1991. *Semantic Structures.* Cambridge, Mass.: MIT Press.
Kroeber, Paul D. 1999. *The Salish Language Family: Reconstructing Syntax.* Lincoln, Nebraska: University of Nebraska Press.
Manning, Christopher D., and Ivan A. Sag. 1998. Dissociations Between Argument Structure and Grammatical Relations. In G. Webelhuth, et al. eds., *Lexical and Constructional Aspects of Linguistic Explanation.* CSLI, Stanford University, 63–78.
Postal, Paul. M. 1977. Antipassive in French. *NELS 7.*
Suttles, Wayne. In preparation. *A Reference Grammar of the Musqueam Dialect of Halkomelem.*
van Eijk, Jan. 1997. *The Lillooet Language: Phonology, Morphology, Syntax.* Vancouver, B.C.: UBC Press.
Wechsler, Stephen. 1998. HPSG, GB, and the Balinese Bind. In G. Webelhuth et al., eds. *Lexical and Constructional Aspects of Linguistic Explanation.* CSLI, Stanford University, 179–195.

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The Semantics of the Lexical Suffix **an/ṅak*

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0. Introduction

This paper addresses the semantics of the lexical suffix **an/ṅak* in Salishan, a family of twenty-three languages indigenous to British Columbia and northwestern United States. There are a hundred or more lexical suffixes in Salishan denoting basic vocabulary, such as body parts (FACE, HAND, BACK), cultural implements (CANOE, HOUSE, CLOTHING), and natural elements (FIRE, GROUND, WATER). Most lexical suffixes are extremely old and can be reconstructed for Proto-Salish. Nevertheless, they are still actively used to coin new words. Good control of the lexical suffix system is considered the mark of a fluent speaker.

Lexical suffixes are bound morphemes denoting entities usually referred to by full nouns in other languages, but bearing little or no resemblance to the corresponding full noun forms. See (1) below.

(1) Halkomelem (Suttles in prep. b, §14)

=cəs	céləx	'hand'
=xən	sx̌ə́n̓ə	'foot'
=éwtx^{w}	léləm̓	'house
=əlweʔs	sq̓ə́məl̓	'paddle'

1. The Data

The pan-Salish data for this paper consists of 800 tokens of the suffix **an/ṅak* compiled both from secondary source materials and original field work. The present study differs from other cross-Salish studies in that it considers only the semantics of the lexical suffix **an/ṅak*. Traditionally, this suffix is treated as a member of a morphological class and listed in the lexicon without discussion of its semantics.

It was not possible to obtain an equal number of examples for all languages of the family. However, this does not mean that suffix is not present in every language. It

[1] When I first started working on this topic I was affiliated with Simon Fraser University. My current academic affiliation is with Western Washington University.

simply means that documentation for certain languages is scanty, or not readily available.

(2) Salishan Languages

SALISHAN LANGUAGES			
BRANCH	LANGUAGE	DIALECT	CULTURE AREA
Bella Coola	Bella Coola	Bella Coola, Kimsquit, Talio	
Tillamook*	Tillamook*		
Central Salish	Comox	Island Comox, Sliammon	
	Pentlatch*		
	Sechelt		
	Squamish		
	Halkomelem	Upriver (Chilliwak)	
		Downriver (Musqueam)	
		Island (Cowichan, Nanaimo)	
	Nooksack*		NORTHWEST COAST
	Northern Straits	Saanich, Sooke, Songheese	
		Samish, Lummi, Semiahmo	
	Klallam		
	Lushootseed	Northern Luchootseed	
		Southern Luchootseed	
	Twana*		
Tsamosan	Quinault*		
	Lower Chehalis		
	Upper Chehalis	Satsop, Oakville, Tenino	
	Cowlitz		
Northern	Lillooet	Lower Lillooet	
Interior		Upper Lillooet	
	Thompson		
	Shuswap		
Southern	Okanagan		PLATEAU
Interior	Columbian		
	Kalispel	Spokane, Kalispel, Flathead	
	Coeur d'Alene		

2. Semantics

Primarily, the lexical suffix **an/ṅak* denotes a human or animal belly, but it can also refer to the gut, to several internal organs, to the hip, and to the rump or tail. In addition, the suffix denotes shape, spatial reference points, relational concepts and positive and negative emotions, such as *kind hearted* and *mean spirited.* The suffix also grammaticalizes into a desiderative modality marker.

I argue that the lexical suffix **an/ṅak* is a polysemous morpheme that extends from a concrete core meaning by means of metaphors grounded in culture and cognition.

- The reconstructed proto-form **an/ṅak* establishes the morphological integrity of the suffix throughout the Salishan family. See (3) below.
- The core meaning ABDOMEN assigned to the proto-form corresponds to the most frequent extant meaning of the suffix. [2]

(3) The reconstructed suffix **an/ṅak* ABDOMEN

TILLAMOOK					
Tillamook		a	n		č
CENTRAL COAST					
Comox		ə	n	a	č
Halkomelem		ə	n/l	ə	c
Lushootseed			d	e	č
Saanich			n	e	č
TSAMOSAN					
U. Chehalis		ə	n/ṅ		č
INTERIOR					
Lillooet		a	n/ṅ	a	k
Thompson		ə	n/ṅ	ə	k
Shuswap		e	n/ṅ	e	k
Okanagan		i	n		k
Columbian		a	n/ṅ		k
Spokane		e	n/ṅ		č
Kalispel		e/a	n		č
Coeur d'Alene		i/e	n		k
	*	a	n/ṅ	a	k

The gestalt of the concept denoted by the suffix has an external aspect, the belly mound, and an internal aspect, the ventral cavity. In some Salish languages the suffix denotes the belly mound, while in others it denotes the contents of the belly, i.e. the gut. It is also possible for the suffix to have both meanings within one language.

The important issue here is that in its semantic path the suffix is associated both with the meanings "belly" and "gut". Thus, meaning extensions of the suffix

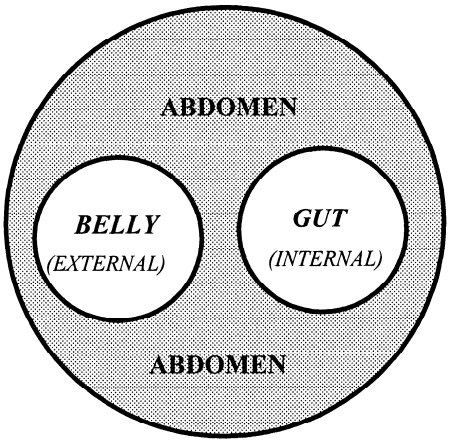
[2] Anatomically, the abdomen is the largest cavity in the body, extending from the thorax to the pelvis. It contains the intestines and some of the accessory organs of digestion, the liver, the spleen and the stomach.

represent, on the one hand, different aspects of the central concept embodied by the suffix, and on the other, the effect of human perception on the encoding of lexical meaning.

2.1. The core meaning.

The core meaning ABDOMEN splits into two well-defined conceptual prototypes, BELLY and GUT as illustrated in (4) below·

(4) The prototypes BELLY and GUT



The prototype BELLY is the source of shape extensions and of several locational and relational extensions.

(5) Thompson (Thompson & Thompson 1996:370)
wax=**énk**
show=**ABDOMEN**
'having one's belly showing [open shirt]'

(6) Lushootseed (Hess 1976:128)
s-q^{w}əbáy=**al**=**dəč**
NOM-dog=CON=**ABDOMEN**
'the belly of a dog'

The prototype GUT denotes the internal viscera and is the source of some locational extensions and of feeling extensions.

(7) Shuswap (Kuipers 1983:19)
x-pt=**éṅk**-tn
LOC-covering=**ABDOMEN**-INSTR
'spleen'

(8) Coeur d'Alene (Reichard: 1938:615)
peṅ=**enč**
bend=**ABDOMEN**
'liver'

Examples (5-8) above illustrate the conceptual prototypes BELLY and GUT.

3. Mechanisms of Extension

The five mechanisms of extension that account for the semantics of the suffix **an/ṅak* throughout Salish are:

The Principle of Anatomical Adjacency
The Principle of Shape Abstraction
The Principle of Canonical Orientation
The Profiling Effect of Predicate Semantics
The Principle of Metaphorical Projection

3.1. The Principle of Anatomical Adjacency

The Principle of Anatomical Adjacency postulates that body-part terms denote by association adjacent parts of human or animal anatomy. Physical contiguity is the only link behind this type of extension. Association may occur between adjacent body parts on the exterior or interior of the body (Matisoff 1978:179).

Hips are defined as the projecting regions on each side of the lower trunk. The portion of the front body extending between the two hips is the "belly".

(9) Upper Chehalis (Kinkade 1991:137) Belly > Hip
tá·ẇ=**nč**
big=**ABDOMEN**
'big hipped'

The adjacency extension "rib" reflects the anatomy of the upper abdomen, which is bounded in the front and on the sides by the lower ribs.

(10) Okanagan (Mattina 1987:175) Belly > Rib
n-sk^{w}ṗt=**ink**
LOC-one side=**ABDOMEN**
'half the ribs'

The anus is the physical end point of the intestines and the external opening for the GUT—an internal to external anatomical adjacency extension. In denoting "anus", the suffix also denotes, again through adjacency, the general area that surrounds the "anus", i.e. the "rump".

(11) Lushootseed (Hess 1976:128) Gut > Anus
ṗəc̓=ál=**dəč**
defecate=CON=**ABDOMEN**
'feces on anus'

(12) Halkomelem (Suttles in prep. a) Anus > Rump
łə́q̓=**ənéc**
end=**ABDOMEN**
'rump'

The tail is the prolongation of the rump.

(13) Upper Chehalis (Kinkade 1991:143)
tó·m̓=**nč**
Rump > Tail
short=**ABDOMEN**
'short-tailed'

(14) Distribution by Branch of Anatomical Adjacency Extensions

DISTRIBUTION PATTERN ANATOMICAL EXTENSIONS	BELLA COOLA	CENTRAL	TSAMOAN	N. INTERIOR	S. INTERIOR
ABDOMEN "Belly"	•	•	•	•	•
ABDOMEN "Hip"	•	•	•		
ABDOMEN "Rib"					•
ABDOMEN "Gut"		•	•	•	•
ABDOMEN "Anus/Rump/Tail"	•	•	•	•	•

3.2. The Principle of Shape Abstraction

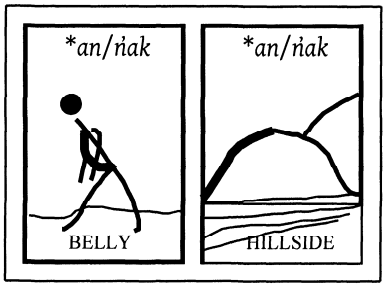
The most salient shape of a body-part is metaphorically extended to other entities in the world perceived as having a similar shape.

The suffix **an/ṅak* denotes the classificatory shape 'prominently curved surface', which refers to hills, humps, mounds, and dome-like objects (Allan 1977:301).

(15) Okanagan (Mattina 1987:55) Belly > Hillside
k^{w}ə̓=**ínk**
warm=**ABDOMEN**
'sunny hillside'

(16) Thompson (Thompson & Thompson 1996:193) Belly > Hillside
n-me^{ʔ}n=**énk**
LOC-shade=**ABDOMEN**
'shady hillside'

(17) The Shape Extension Hillside



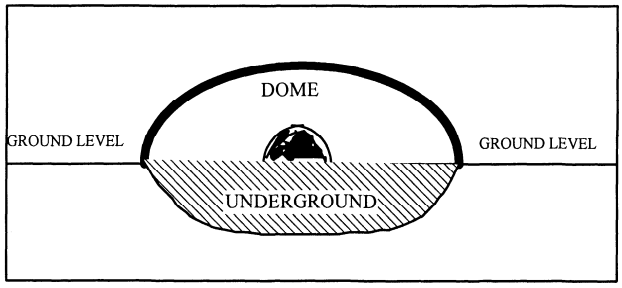
Examples (15) and (16) above illustrate the extension HILLSIDE for the suffix.

The traditional semi-subterranean dwelling of the Plateau area was dome-shaped.

(18) Shuswap (Marianne Ignace p.c.) Belly > Dome
x-ƙm=**ənk**=éɬx^{w}
LOC-surface=**ABDOMEN**=HOUSE
'semi-subterranean dwelling'

Example (18) above illustrates the extension DOME for the suffix. A change of lexical suffix within the same basic stem conveys a totally different shape.[3]

(19) Dome-Shaped Semisubterranean Dwelling



[3] Compare the example below with example (18) containing a different lexical suffix.
Shuswap (Marianne Ignace p.c.)
s-ƙm=**qən**=éɬx^{w}
NOM-surface=**HEAD**=HOUSE
'pitched roof (of house)'

(20) Distribution by Branch of Shape-Based Extensions

DISTRIBUTION PATTERN SHAPE-BASED EXTENSIONS	BELLA COOLA	CENTRAL	TSAMOAN	N. INTERIOR	S. INTERIOR
ABDOMEN "Hillside"				•	•
ABDOMEN "Dome"			•	•	•

3.3. The Principle of Canonical Orientation

Spatial reference points may be denoted by human or animal body-parts in Salish languages. Canonical orientation templates determine the specific structural relation the "belly" bears to the ground. The locational meanings that obtain for the suffix **an/ṅak* project this relation into adjacent space and thus reflect the canonical orientation of the body.

(21) Anthropomorphic and Zoomorphic Templates in Salishan

ORIENTATION	ANTHROPOMORPHIC	ZOOMORPHIC
BODY PART	BELLY/BACK	BELLY/BACK
LOCATION	FRONT/BEHIND	UNDERSIDE/TOP

Under anthropomorphic interpretation the suffix **an/ṅak* ABDOMEN has the locational meaning FRONT.

(22) Lillooet (Albert Nelson p.c.) Belly > Front
n-púś=**ank**
LOC-wet=**ABDOMEN**
'wet front (of clothing on a person)'

(23) Thompson (Thompson & Thompson 1996:274)
q̓amin=**enk**-e-s Belly > Front
throw=**ABDOMEN**-SUF-3SG
'throw fishnet in front of someone else's'

Under zoomorphic interpretation the suffix **an/ṅak* ABDOMEN has the locational meaning UNDERSIDE.

(24) Lillooet (Albert Nelson p.c.)
n-ǩaẇ=**aṅk**=us Belly > Underside
LOC-low=**ABDOMEN**=FACE
'bottom face (of something)'

(25) Thompson (Thompson & Thompson 1996:58)
n-ċəmǩ=**éṅk**=xn Belly > Underside
LOC-worn=**ABDOMEN**=FOOT
'hole develops on sole of footgear'

The zoomorphic opposition HEAD/RUMP expressing the horizontal axis of the body is attested in Central Salish and Bella Coola.[4] The opposition HEAD/FEET expressing the vertical axis of the body is attested in Interior Salish. [5]

(26) Vertical and Horizontal Axes in Salishan

ORIENTATION	ANTHROPOMORPHIC	ZOOMORPHIC
BODY PARTS	HEAD/FEET	HEAD /RUMP
LOCATION	TOP/BOTTOM	FRONT/ENDPOINT

(27) Saanich (Montler: 1986:81)
k^{w}əΘ=**néč**-t End Point
lift (?)=**ABDOMEN**
'He tilted it (lifted it at one end).'

(28) Bella Coola (Saunders and Davis 1975:169) End Point
kuɬ=**nk** ti nucqaq
area=**ABDOMEN** DET needle
'non-pointed end of a needle'

The suffix **an/ṅak* construed as one extreme of the horizontal axis has the locational meaning END POINT in (27) and (28) above.

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[4] Only the prototype GUT is attested in Halkomelem, Squamish and Saanich from which derives the extension RUMP through the Principle of Anatomical Adjacency. The body-part belly is indicated by other lexical suffixes in these languages.

[5] Anthropomorphic HEAD to FEET vertical orientation:
Thompson (Thompson & Thompson 1996:381)
ʔəs-wux^{w}t=**qín**
ASP-snowed=**HEAD**
'snow on top of the mountain'

(29) Distribution by Branch of Locational Extensions

DISTRIBUTION PATTERN LOCATION-LIKE EXTENSIONS	BELLA COOLA	CENTRAL	TSAMOAN	N. INTERIOR	S. INTERIOR
ABDOMEN "Front"	•			•	
ABDOMEN "Bottom/End Point"	•	•			
ABDOMEN "Bottom/Underside"				•	•

3.4. The Profiling Effect of Predicate Semantics

Relational meanings of the suffix obtain only with predicates of motion and position. While locational extensions establish spatial reference points, relational extensions address spatial relations between two entities, or refer to a trajectory in space and its end point. With predicates of motion and position the suffix **an/ṅak* denotes a general relational term which subsumes the notions "under", "below" and "down".

(30) Upper Chehalis (Kinkade 1991:172)
s-yáq̓=**nač**-n — Under/Below/Down
ASP-fall=**ABDOMEN**-3SG
'fall down'

(31) Bella Coola (Saunders 1975:169)
sq̓^{w}-cʔuǎ=**nk** — Under/Below/Down
jump-1SG. unglossed=**ABDOMEN**
'I am going to jump down.'

(32) Distribution by Branch of Relational Extensions

DISTRIBUTION PATTERN RELATION-LIKE EXTENSIONS	BELLA COOLA	CENTRAL	TSAMOAN	N. INTERIOR	S. INTERIOR
ABDOMEN "Under, Below, Down"	•		•	•	•

3.5. Metaphorical Projection and the Seat of Emotions

The concept "seat of emotion" has its root in the physiological effect strong emotions have on the body. The body-part deemed to be the seat of emotion coincides with the internal organ on which a somatic marker imprints. (Damasio 1994:163). Metaphorically, the place where the emotion is felt stands for the emotion itself. (Lakoff 1987). This extension is attested in Interior Salish.[6]

(33) Thompson (Thompson & Thompson 1996:475)
n-ƙəs=**éṅk**
LOC-angry=**ABDOMEN**
'cranky, vicious'

Grammaticalization is a case of historical reanalysis with morphosyntactic consequences. The lexical suffix **an/ṅak* expresses agent oriented modality in Southern Interior Salish. [7]

(34) Columbian (Kinkade n.d.: #637)
lút-kn n-ʔíɬn=**ánk**
NEG-1SG POS-eat=**ABDOMEN**
'I don't want to eat.'

(35) Distribution by Branch of Affect Extensions

DISTRIBUTION PATTERN FEELING EXTENSIONS	BELLA COOLA	CENTRAL	TSAMOAN	N. INTERIOR	S. INTERIOR
ABDOMEN "Negative feeling"				•	•
ABDOMEN "Positive Feeling"					•
ABDOMEN "Desiderative"					•

4. Conclusions

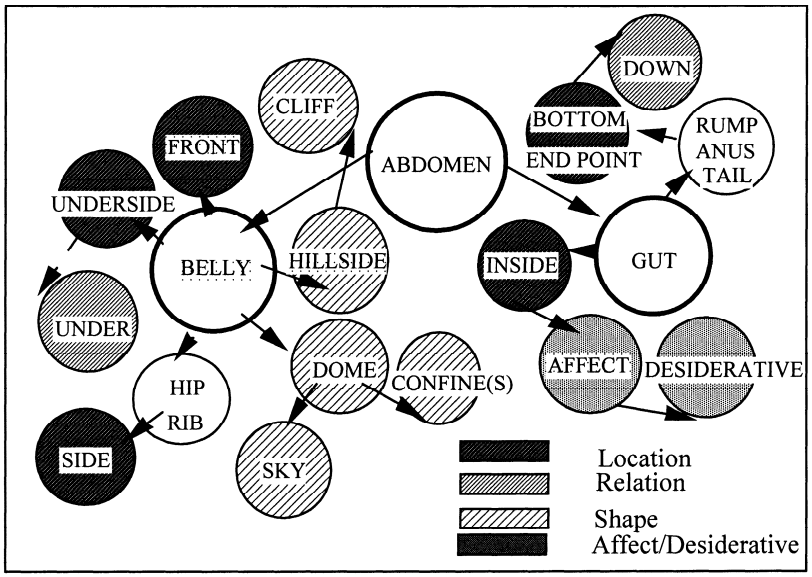
As the first systematic analysis of the semantic extensions of a lexical suffix this paper traces the range of the semantic extensions that obtain for **an/ṅak* throughout

[6] The extension is also possibly attested in Mainland Comox in *łəx̌ = ɑnč = m* "to get cranky" (Davis 1970: 61).

[7] Agent-oriented modality reports on the existence of inner or outer conditions on the agent with respect to completion of the action implied by the predicate (Bybee 1994:177).

Salish to a single concept, ABDOMEN. See (37) below for the full range of meanings that obtain for the suffix **an/ṅak*.[8]

(36) The Semantic Extensions of the Lexical Suffix **an/ṅak*



As a comparative semantic overview this analysis uncovers meaning relationships that appear unmotivated when viewed within a single language, but which can be seen through a systematic study of the extensions of the suffix in all the Salishan languages. The Salish facts argue for a correlation between the meaning extensions of the suffix and the culture area in which the extension occurs. The lexicon viewed from this perspective includes not only the core meaning of the suffix, but also motivated links, grounded in culture, between the separate senses of the suffix. This view of the lexicon is a more accurate representation of the lexical knowledge native speakers of Salish languages seem to have. In addition, the semantics of **an/ṅak* ABDOMEN provide verification for the cognitive mechanisms of body part extensions proposed as universals of human language, and contribute to our understanding of the interface between language and cognition.

[8] Not all semantic extension of the suffix are exemplified in this paper due to space limitations.

References

Allan, Keith. 1977. Classifiers. *Language* 53:285–311.
Bybee, Joan L., Revere Perkins, and William Pagliuca. 1994. *The evolution of grammar*. Chicago: University of Chicago Press.
Damasio, Antonio. 1994. *Descartes' error: Emotion, reason, and the human brain.* Avon Books: New York, New York.
Davis, John H. 1970. Some phonological rules in Mainland Comox. M.A. thesis, University of Victoria.
Hess, Thom. 1976. *A dictionary of Puget Salish*. Seattle: University of Washington Press.
Kinkade, M. Dale. 1991. *Upper Chehalis dictionary. Occasional Papers in Linguistics No. 7*. Missoula: University of Montana Press.
Kinkade, M. Dale. no date. Columbian lexical suffixes. Unpublished field notes.
Kuipers, Aert H. 1983. *Shuswap–English dictionary*. Leuven, Belgium: Peeters.
Lakoff, George. 1987. *Women, fire and dangerous things: What categories reveal about the mind.* Chicago: University of Chicago Press
Matisoff, James A. 1978. *Variational semantics in Tibeto-Burman: The "organic" approach to linguistic comparison, Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics, Volume VI.* Philadelphia: Institute for the Study of Human Issues.
Mattina, Anthony. 1987. *Colville-Okanagan dictionary. Occasional Papers in Linguistics No.5*. Missoula: University of Montana Press.
Montler, Timothy. 1986. *An outline of the morphology and phonology of Saanich, North Straits Salish. Occasional Papers in Linguistics No. 4.* Missoula: University of Montana Press.
Reichard, Gladys A. 1938. Coeur d'Alene grammar. *Handbook of American languages*. Gluckstadt: J.J. Augustin.
Saunders, Ross, and Philip W. Davis. 1975. Bella Coola lexical suffixes. *Anthropological Linguistics* 17.4:154–189.
Suttles, Wayne. In preparation a. *A dictionary of the Musqueam dialect of the Halkomelem Language.*
Suttles, Wayne In preparation b. *A reference grammar of the Musqueam dialect of Halkomelem.*
Thompson, Laurence C., and M. Terry Thompson. 1996. *Thompson River Salish dictionary. Occasional Papers in Linguistics No. 12*. Missoula: University of Montana Press.

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Ergativity and Language Contact on the Oregon Coast: Alsea, Siuslaw and Coos

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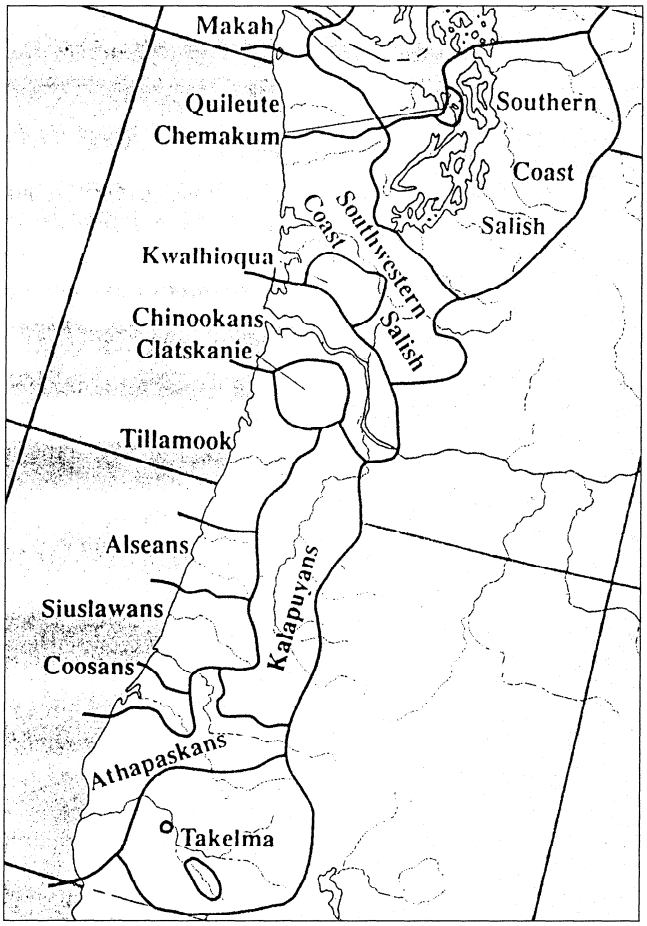
Work over the past three decades has identified several diachronic sources from which accusative and ergative patterns develop. Language-internal processes that can lead to ergative categories are described in Anderson 1977, 1988, Chung 1977, 1978, Payne 1979, Trask 1979, Garrett 1990, Gildea 1998, and elsewhere. Less is known about the spread of ergative patterns through language contact, though Nichols 1993 notes that ergativity is disproportionately frequent in certain areas of the world, particularly in Australia and Eurasia. Heath 1978 discusses the spread of ergative morphology in Arnhem Land, and Fortescue 1997 proposes that the Chukotkan ergative construction is the result of contact with the neighboring Siberian Yupik. Beyond these studies however, examples are relatively rare of the contact-induced development of ergativity.[1]

An intriguing puzzle is provided by three small language families of the Oregon Coast: Alsea, Siuslaw, and Coosan. All disappeared during the twentieth century. The northernmost, Alsea, consists of a single language represented by two dialects: Yaquina, last spoken around 1900, and Alsea proper, whose last speaker died around 1951. The most important published documentation of the language is in texts in Frachtenberg 1917 and 1920. Frachtenberg also completed a grammar in 1918 which remains unpublished. Analyses of the Alsea material are in Pierce 1966 and especially Buckley 1988a, b, and 1989a, b, c. Siuslaw also consists of a single language with two dialects: Siuslaw proper, whose last speaker died around 1960, and Lower Umpqua, whose last speaker died in 1957. The major published Siuslaw material is a volume of Lower Umpqua texts in Frachtenberg 1914 and a grammatical sketch in Frachtenberg 1922. The Coosan family consists of two languages: Hanis, whose last known speaker died in 1972, and Miluk, whose last speaker died in 1961. Published Hanis materials comprise texts in Frachtenberg 1913 and Jacobs 1939, 1940, and a grammar in Frachtenberg 1922. Publications on Miluk consist of notes in Frachtenberg 1914 and texts in Jacobs 1939 and 1940. Guides to all extant material on the languages, largely wordlists, are in Grant 1997 and Mithun 1999.

[1] Helpful comments were provided by Andrew Garrett and Sally Thomason.

FIGURE 1: LANGUAGES OF THE WASHINGTON AND OREGON COAST AT CONTACT
Wayne Suttles, ed. 1990. *Handbook of American Indians:* Northwest Coast. 7: iv.



The three families are not yet considered demonstrably related genetically, though possible relationships have long been discussed. James Owen Dorsey, who collected short vocabularies of Alsea and Siuslaw during a month at the Siletz Reservation in 1884, noted similarities between those two languages. Alsea and Siuslaw were accordingly combined into a stock called Yakonan in Powell 1891, which was further linked to the Coosan languages by Sapir in his hypothesized Coast Oregon Penutian group in 1922. Frachtenberg, however, who carried out the most extensive work with speakers of all of the languages, felt the mergers to be premature (1922: 437). Pierce 1966 echoed this view, pointing to dissimilarities among even the first ten numerals.

(1) Cardinal numbers as published in Pierce 1966: 385

	Alsea	Siuslaw	Hanis	Miluk
1	*xam*	*ałq*	*yixé:*	*hiťči*
2	*xedlk*	*xá:ťsu*	*yuxwé*	*aťsú*
3	*psindlx*	*ši:nx*	*yípsən*	*psinł*
4	*tsu:nkx*	*xá:ťsu:n*	*hešdldl*	*ťsawa*
5	*su:dá:st*	*dláps*	*kátʰmis*	*kqu:ntcínsi*
6	*łaqái:st*	*qátimx*	*yixéwieq*	*ťsawaʰqkaiye*
7	*xédlk łaqái:st*	*xaťsu qtá:max*	*yuxwéwieq*	*psinłan*
8	*psindlx łaqái:st*	*ší:nx qtá:max*	*yixé:aheł*	*aťsúan*
9	*xamwa*	*áłqxat*	*yuxwéaheł*	*hiťšían*
10	*sáu:tist*	*ki:xs*	*dlepq̓áni*	*ťístši*

Certain lexical similarities can be seen across the languages, but the words are generally so close in form that the resemblances have been attributed to borrowing. The question of relationship remains open. Further comparative work and discussion are in Morgan 1985, Buckley 1987, Golla 1997, and Grant 1997.

All three families show ergative case marking. Ergative patterns are not entirely uncommon in the West: they can be found throughout the Eskimo-Aleut family, in Tsimshianic, to a limited degree in Salishan, in Sahaptian, and in Chinookan. The patterns in the various families are dissimilar, however, appearing in different areas of their grammars and involving markers of different shapes, suggestive of distinct diachronic origins. But the Alsea, Siuslaw, and Coosan ergative constructions all consist of ergative case marking on nominals. Furthermore, the ergative markers themselves are nearly identical in shape: Alsea *q/x̣*, Siuslaw *q,* Hanis *x̣,* and Miluk *x̣*.

(2) Alsea: Frachtenberg 1920: 40.23, 50.21, 50.22[2]

a. *łi:yaʔ na:mk̓ hí:k̓e á:lik̓an yá:tsx as mó:luptsiní:sla.*
not ever just motionless stays the Coyote
'But Coyote [ABSOLUTIVE] never remained motionless.'

b *temúhu: ya:sauʔyái:nx q=as mó:luptsiní:sla as qatsí:li:ʔ...*
so.then again.told.him ERG=the Coyote the wolf
'And then Coyote [ERGATIVE] frequently told Wolf [ABSOLUTIVE] ...'

[2] *The data cited here are drawn from Frachtenberg's materials unless noted. The materials are impressive, particularly given the early date and relative brevity of fieldwork. Transcription is broadly phonetic. Some symbols, standard for the time, have been replaced with their current Americanist counterparts, but there is no phonological reanalysis, because individual forms do not always contain sufficient information. Replacements include ə for his E, ɨ for î, ai for aⁱ, au for aᵘ, : for ¯, p̓ for p!, t̓ for t!, k̓ for k!, ʷ for ᵘ, x̣ for k·, š for c, x̣ for x, and ʔ for ᵋ. Buckley 1989 provides a reanalysis of Alsea phonology, Hymes 1966 of Siuslaw, and Pierce 1971 of Hanis.

c. *temúhu: ḵéa tsimaí:-nx q=as qatsí:li:ʔ.*
so.now indeed tries-it ERGATIVE=the wolf
'Then, indeed, Wolf [ERGATIVE] put it on.'

(3) Siuslaw (Lower Umpqua): Frachtenberg 1914: 100.1, 56.1-2, 100.12

a. *Mɨ-łá-ai:tɨn hi:tsɨs qáai.*
kin-mother-my in.house was.inside
'My mother [ABSOLUTIVE] lived in a house.'

b. *Waái:txaux ántsətš‴ax mɨ-łà.*
they.two.told.her they.two.their kin-mother
'Then they two kept on telling their mother [ABSOLUTIVE], ...'

c. *Aɬq qi:u:tšɨɬmæ táyu:n qa-mɨ-lá-ai:tɨn.*
one old.woman kept.her ERGATIVE-kin-mother-my
'My mother [ERGATIVE] kept one old woman [ABSOLUTIVE] (in the house).'

(4) Hanis Coos: Frachtenberg 1913: 80.19, 64.13, 80.20

a. *Emí:hel lə hu:mɨk-ša*
blind the old.woman-ENDEARMENT
'The old woman [ABSOLUTIVE] was blind.'

b. *A:yu ɨɬ sɨsí:nt lə wɨnqas hú:mɨk.*
indeed they visit the spider old.woman
'Indeed, they went to see Spider Old Woman [ABSOLUTIVE].'

c. *Sqats hə wálwal lə-x hu:mɨk-ša*
seize.TRANS the knife the-ERGATIVE old.woman-ENDEARMENT
'The old woman [ERGATIVE] seized the knife.'

(5) Miluk Coos: Jacobs 1940: 159.12-13, 156.2, 158: 10-11

a. *He:má:tsi á:yu-kwi-dá-ʔitš dáh λə-dí:lú:ɬ*
really he.was.there that the young man
'To be sure, the young man [ABSOLUTIVE] was already there.'

b. *Tsú λə dí:lúɬ gu:swídu·kwi·hú:dat λə də-x éstis*
now the young man they.mocked.him the his-ERGATIVE person
'All his people mocked the young man [ABSOLUTIVE].

c. *wí:gu:skwimánx̣t* *λə-x̣* *dí:lúɬ*
he.defeated.them.all the-ERGATIVE young.man
'Then the young man [ERGATIVE] defeated them all.'

The ergative pattern has penetrated the grammars, without visible splits between different aspects or tenses, or between main and subordinate clauses. But the ergative case markers appear only with independent nominals (nouns and independent pronouns), not with bound pronominal clitics or affixes. Neither ergative nor absolutive categories govern syntactic patterning.

The striking similarity in shape among the ergative case markers could hardly be an accident. An obvious explanation is language contact. The Northwest Coast is a well-known culture and linguistic area, with numerous shared traits. When Europeans arrived, the speakers of Alsea proper, Yaquina, Siuslaw, Lower Umpqua, Hanis, and Miluk lived along adjacent 10-20 mile stretches of the Pacific coast. There was extensive contact, multilingualism, and intermarriage (Zenk 1990a,b). In the second half of the nineteenth century, groups were moved onto reservations, where contact was even more intense. Frachtenberg collected his Alsea, Lower Umpqua (Siuslaw), and Hanis Coos materials all at the Siletz Reservation. It is not surprising that effects of the longstanding, close contact should be discernible in the languages. But we can see more: traces remain of the origin and spread of the ergative patterns.

1. The Siuslaw ergative marker *q-*: a loan from Alsea

The Siuslaw ergative prefix *q-* appears only on certain nouns and on first and second person independent pronouns. The Alsea and Coos ergative markers appear with all nominals. The Siuslaw nouns with ergative *q-* fall into a clear category: they are all kinship terms, like 'mother' in (3). Many are strikingly similar in form to their Alsea counterparts. (The prefix *mɨ-* is a kinship marker.)

(6) Some kinship terms: Frachtenberg 1920, 1922

	Alsea	Siuslaw
'father'	*ta:ʔ*	*mɨ-tà*
'mother'	*li:ʔ*	*mɨ-là*
'elder brother	*ha:ʔt́*	*m-a:t́í:*
'younger brother'	*mú:tsɨk*	*m-ú:sk*
'elder sister'	*saʔ*	*mɨ-sí:ai:*
'parent-in-law'	*makɬ*	*məkɬí:*
'son-in-law'	*mu:n*	*mú:n*
'sibling-in-law'	*temx̣t*	*tá:max̣t*

Kinterms would be easily borrowed under the attested patterns of intermarriage. (Coos in-law terms are similar, with Hanis *mɨ-tšlɨn-* 'father-in-law' and *mɨnk-* 'son-in-law', but the others are not, such as *ék^{w}ɬ* 'father' and *-eʔn-* 'mother'.

Siuslaw independent pronouns also show the ergative prefix *q-*.

(7) Siuslaw ergativity in independent pronouns

a. *ḱɬx̣ái* *nà.*
alone I
'I [ABSOLUTIVE] was alone.' 1914: 100.3

b. *Tsíːḱyanx̣* *q-nà* *sɬnx̣yuːts.*
very.thou ERGATIVE-I like.thee
'I [ERGATIVE] like you very much.' 1914: 22.7

c. *Niːx̣ts* *ɬáí*
you eat
'You [ABSOLUTIVE] are eating.' 1922: 577

d. *Híːsanx̣* *máːniːsuːts* *q-níːxts.*
well=thou take.care.of.continually-me ERGATIVE-thou
'You [ERGATIVE] will have to take good care of me.' 1914: 22.2-3

The Siuslaw first and second person pronouns consist of a root denoting person (*na* 1, *niːx̣* 2) followed by an ending similar in form to the subject enclitics. These pronouns can be inflected with the prefix *q-* for ergative case. The third person pronouns, based on demonstratives, show a different ergative marker *–s*. All pronouns also have objective forms, marked by *–tš*. (Epenthetic vowels are inserted in some contexts to break impermissible consonant clusters.)

(8) Siuslaw basic independent pronouns: root + ending: 1922: 576

	BASIC	ERGATIVE	ACCUSATIVE		
na-	*nà(han)*	*q-nà(han)*	*nà-tš*	'I'	(1.SG)
1	*na-ns*	*q-na-ns*	*na-tš-əns*	'you and I'	(1+2.DU)
	na-nɬ	*q-na-nɬ*	*ná-tš-inɬ*	'you all and I'	(1+2.PL)
	ná-uxun	*q-ná-xun*	*ná-tš-auxun*	'we two'	(1+3DU)
	na-nx̣an	*q-na-nx̣an*	*ná-tš-inx̣an*	'we all'	(1+3.PL)
niːx̣-	*niːx̣-ats*	*q-niːx̣-ats*	*niːx̣-atš*	'you'	(2.SG)
2	*niːx̣-ts*	*q-niːx̣-ats*	*níːx̣-tš-əts*	'you two'	(2.DU)
	niːx̣-ats-ətšɬ	*q-níːx̣-ats-ətšɬ*	*níːx̣-tš-tšɬˀ*	'you all'	(2.PL)
səà	*səà*	*səà-s*	*səa-ína(-tš)*	'this/he/she'	(3.SG)
3	*səà-ux̣*	*səá-s-aux̣*	*səa-iná-tš-aux̣*	'they two'	(3.DU)
	səà-nx̣	*səà-s-ənx̣*	*səa-iná-tš-inx̣*	'they all'	(3.PL)

The origin of the accusative marker *–tš* can still be seen within the language. It is the regular allative case suffix that appears with nouns: *haiq-tš* 'to the shore'.

The Siuslaw pronouns resemble those of Alsea, which also consist of a root specifying person followed by an ending. Alsea pronouns in all three persons are inflected for ergative case with the prefix *q-*, again with epenthetic vowels to break impermissible consonant clusters. There is a distinct set of objective pronouns, as in Alsea, but here they are formed by internal vocalic change.

(9) Alsea independent pronouns: Frachtenberg 1918ms: 114

		ERGATIVE	ACCUSATIVE		
qan	*qan(han)*	*qa-qán*	*qwon*	'I'	(1.SG)
	qán-hast	*qa-qánhast*	*qwónhast*	'you and I'	(1+2.DU)
	qa-nχan	*qa-qánχan*	*qwónxan*	's/he and I'	(1+3.DU)
	qán-hał	*qa-qánhał*	*qwónhał*	'we all'	(1.PL)
ni:χ	*ni:χ*	*qa-ní:χ*	*ní:χ*	'you'	(2.SG)
	ní:χ-apst	*qa-ní:χ-apst*	*ní:χ-apst*	'you two'	(2.DU)
	ni:χ-ap	*qa-ní:χ-ap*	*ní:χap*	'you all'	(2.PL)
qátsə	*qátsə*	*qa-qátsə*	*qó:tsə*	'he/she/it	(3.SG)
	qáts-aux	*qa-qáts-aux*	*qó:ts-auχ*	'they two'	(3.DU)
	qats-iłχ	*qa-qáts-iłχ*	*qó:ts-iłχ*	'they all'	(3.PL)

The second person root *ní:χ* is identical to that in Siuslaw. Siuslaw apparently borrowed the second-person pronouns from Alsea in both basic and ergative forms, and the Alsea ergative prefix *q-* rode into Siuslaw with them. (The Coos independent pronouns are formed according to a different pattern, with different roots that are preceded by enclitics: Hanis *nə=χkan* 'I', *é=χkan* 'you', *χǽkæ* 's/he', *ɨsnə=χkan* 'we two (inclusive), etc'. They do not distinguish case.)

Did the adoption of the Alsea ergative marker create an ergative category in Siuslaw? Apparently not. Siuslaw noun morphology seems to have already operated on an ergative basis. Ergative case is indicated on other Siuslaw nouns by ablaut of the stressed vowel of the stem.

(10) Siuslaw ergative marking by á-ablaut: 1922: 570-2

			ABSOLUTIVE	ERGATIVE	
í:	->	*iyá*	*hi:tš*	*hiyátš*	'person'
ú:	->	*uwá*	*łk'anú:k^{w}*	*łk'anuwák^{w}*	'screech owl'
á	->	*á:*	*swáł*	*swá:ł*	'grizzly'
ái	->	*ayá*	*háimu:t*	*hayámu:t*	'all'
V	->	V*á*	*qwótχay*	*qwoátχay*	'beaver'
VCC	->	VC*á*C	*tsχúnpłi:*	*tsχunápłi:*	'coyote'

(11) Siuslaw ablauted ergatives

a. *Ní:štši:* *təx̣* *x̣ɨntmi:s* *hi:tš* *mi:ḱáu:* *ƛayâ?*
how wonder always.travels person bad.in place.in
'How can a person [ABSOLUTIVE] travel in a rough place?' 1914: 12.10

b. *Təmáu:yu:n* *ants* *ƛái* *hi:tš.*
he.will.assemble.them those many person
'He was going to assemble many people [ABSOLUTIVE].' 1914: 7.1

c. *Miyáḱa* *hiyátš* *łtáyu:n.*
bad.ERGATIVE person.ERGATIVE devour.them
'A bad person [ERGATIVE] was devouring them.' 1914: 15.2

2. The Alsea ergative marker *x̣:* a loan from Coosan

The story can be traced back further. Frachtenberg notes (1918ms: 21) that the Alsea ergative marker alternated freely between *q* and *x̣*. Speaker William Smith, for example, used both *qaqán* and *x̣aqán* 'I' (ERGATIVE) in the same tale (1920: 52.19, 40.12). The source of the Alsea ergative can be seen in Coosan.

In the Coosan languages, the marker *x̣*, which appears either as a proclitic to the noun or enclitic to a determiner, also serves as an ablative and instrumental.

(12) Hanis *x̣*

a. *x̣=yɨqántšɨme:x̣* *mæ* *hanƛ* *e?kwɨnai:ɬ.*
ERGATIVE=last people shall they.see.thee
'The last generation [ERGATIVE] shall see you.' 1913: 10.6

b. *x̣=kwɨléƛe:i-tš* *n̥=dji:*
ABLATIVE=sweathouse-in I=came
'I came from the sweathouse.' 1922: 323

c. *ḱwɨn-t* *x̣=mɨɬaqətš*
shoot-TRANSITIVE INSTRUMENTAL=arrow
'He shot at him with an arrow.' 1913: 22.16

Frachtenberg noted the similarity in form and in phonological patterning.

> Three of the six prefixes found in this language—namely the local [ablative], discriminative [ergative], and modal [instrumental] *x*—must have originally expressed one general idea incorporating these three concepts, because the phonetic resemblance between [them] is too perfect to be a mere coincidence. (Frachtenberg 1922: 319)

The resemblance suggests a common diachronid origin. In fact circumstances leading to the development of the ergative category can still be discerned.

Subjects in Hanis are specified by proclitics before the verb.

(13) Hanis pronominal proclitics on verbs

a. AGENT SUBJECTS

n̲=λowɬtat	'I ran'	1913: 92.5
e̲ʔ=λowɬtat	'you ran'	1913: 92.8
λowɬtat	'(he/she) ran'	1913: 92.12

b. PATIENT SUBJECTS

n̲=qáqaɬ	'I sleep'	1913: 40.2
e̲ʔ=qáqaɬ	'you sleep'	1913: 102.1
qáqaɬ	'(he) sleeps'	1913: 102.8

The full set of pronominal markers can be seen in (14).

(14) Hanis subject pronominal proclitics: 1922

n=	'I'	1.SG
ɬs=	'you and I'	1+2.DU
xwɬn=	's/he and I'	1+3.DU
lɬn=	'we all'	1.PL
eʔ=	'you'	2.SG
ɬš=	'you two'	2.DU
šɬn=	'you all'	2.PL
--	(he/she/it)	3.SG
uẋ	'they two'	3.DU
ɬɬ	'they all'	3.PL

Third person singulars are unmarked, though dual and plural number for third person is indicated by particles. Transitive clauses with third person patients thus show the same pronominal marking as intransitive clauses.

(15) Hanis transitives with third person patients

1/3	=	1
2/3	=	2
3/3	=	3

n̲=tó:hɬts	'I hit (him/her/it)'	1913: 64.5
e̲ʔ=tó:hɬts	'you hit (him/her/it)'	1913: 20.19
tó:hɬts	'(s/he) hit (him/her/it)'	1913: 20.19

uχ n=tó:hɬts	'I hit them two'	1922: 352
ɬɬ e?=tó:hɬts	'you hit them all'	1922: 352

If there is no lexical noun phrase third person subjects are not overtly specified.

(16) Hanis transitive with instrument: 1913: 168.20

Tə=χ	*mɬlaq-ətš*	*tó:h-ɬtš*	*lə*	*tse:ɬ*	*kwí:yo:s.*
that=INST	arrow-with	hit-TRANSITIVE	the	little	dog

'He hit the little dog with an arrow'

Such a situation could easily lead to the kind of reanalysis proposed by Garrett (1990), whereby marked instruments are reinterpreted as ergatives. '(He) hit the little dog with an arrow (INSTRUMENTAL) > 'The arrow (ERGATIVE) hit that little dog.' The Coos ergative *χ* now appears with nominals that do not contain the suffix *-ətš* 'at/in/through/on/into'.

(17) Hanis ergative *χ:* 1913: 32.8

χ=qainé:s	*ka:s*	*tsχáu:w-at*	*hæɬ*	*tó:mɬλ*
ERGATIVE=cold	almost	lie-CAUSATIVE	that	old.man

'Cold weather [ERGATIVE] nearly killed that old man.'

A second construction could provide additional motivation for the reanalysis of obliques as ergatives. As noted above, third persons are unmarked by pronominal clitics, so transitive clauses with third person patients (1/3, 2/3) show the same pronominal morphology as intransitives (1=, 2=). In a number of languages, not all combinations of subjects and objects occur. In many of these, speech-act participants (first or second person) are strongly preferred as subjects: if a transitive event involves a first or second person, that participant is always cast as grammatical subject. To this end, transitive clauses with third persons acting on first or second (3/1, 2/3) are obligatorily passivized. This is the situation in Coos.

(18) Hanis pronominal marking on verbs: obligatory passives: 1922: 351

3/1	1= . . . PASSIVE
3/2	2= . . . PASSIVE

n=tó:hɬts-u:	'he hit me'	(= 'I was hit')
e?=tó:hɬts-u:	'he hit you'	(= 'you were hit')

With perfectives, the passive suffix *–u:* usually follows a transitive suffix like *-ts* in (18). With imperfectives, the passive suffix *–i:ɬ* directly follows the stem.

(19) Hanis perfective and imperfective 3/1: 1922: 352

n-ƙ'wɨn-t-u:	*n=ƙ'wɨn-i:ɬ*
1.SG=shoot.at-TRANSITIVE-PASSIVE	1.SG=shoot.at-PASSIVE
'he shot at me'	'he was shooting at me'

Agents can be identified by nominals marked with the ablative/instrumental *x̣*.

(20) Hanis 3/1 with agent: 1913: 24.14

x̣=lau	*kwanɬ*	*tə=n=tsx̣ewé-i:ɬ*	*tə=x̣*	*hú:mɨs.*
OBL=that.one	seems-will	that=1.SG=kill-PASSIVE	that-OBL	woman

'I may be killed by the woman'

Such passive constructions are the only means for expressing actions by a third person agent on a first or second person patient. They are thus used to describe what are understood as fully transitive events in all pragmatic contexts. The result is an inverse system, with the original passive suffix *–u:* serving as an inverse marker. The *x̣*-marked oblique agents would be reinterpreted as core arguments of transitives: ergatives. The paradigm has been fleshed out with direct and inverse suffixes for relations between first and second persons.

(21) Hanis speech-act participants: 1922: 352, 1913: 104.12

2/1 *-a:ɨs*			1/2 *-a:mɨ*		
2/1.SG	2SG= . . .	*-a:ɨs*	1/2.SG	2.SG= . . .	*-a:mɨ*
2/1.DU	1.DU= . . .	*-a:ɨs*	1/2.DU	2.DU= . . .	*-a:mɨ*
2/1.PL	1.PL= . . .	*-a:ɨs*	1/2.PL	2.PL= . . .	*-a:mɨ*

e?=ƙ'wɨnt-á:ɨs	*e?=x̣ɨło:wɨt-á:mɨ*
2.SG=shoot-2/1	2.SG=see.want-1/2
'you shot me'	'I want to see you'

The inverse system was apparently not the sole source of the ergative category, since ergatives appear in transitive clauses with and without inverse marking.

3. The Siuslaw ergative category

We can thus trace the Siuslaw ergative marker *q-* through Alsea to Coos. But, as noted, the ablauted Siuslaw ergative nouns suggest that an older ergative pattern was already in place. Evidence within Siuslaw the origin of the category there.

In Siuslaw, core arguments are indicated by bound pronominal morphology that shows a nominative/accusative basis. Subjects are specified by enclitics attached to the first element of the clause, and objects by suffixes on the verb.

When the first element of the clause is the predicate, the verb stem is followed first by an object suffix and then a subject enclitic: VERB-OBJECT=SUBJECT.

(22) Siuslaw core arguments

a. *Yá:χa=nχan* *hu:tšui:*
much=1+3.PL.SUBJECT play-will
'We shall play a great deal.' 1914: 23.8

b. *Ya?k^{w}s=ɨn* *tša:qáqa-u:n*
seal=1.SG.SUBJECT spear.RDP-3.OBJECT
'I was spearing a seal.' 1914: 68.8

c. *χa-ú:n=auχun* *ants* *mí:ƙa* *hi:tš*
kill-3.OBJECT=1+3.DU.SUBJECT that bad person
'We killed that bad man.' 1914:96.8-9

The full set of subject enclitics can be seen in (23).

(23) Siuslaw pronominal subjects

=ɨn	'I'	1.SG
=ns	'you and I'	1+2.DU
=nɬ	'you all and I'	1+2.PL
=uχun	's/he and I'	1+3.DU
=nχan	'they and I'	1+3.PL
=nχ	'you'	2.SG
=ts	'you two'	2.DU
=tšɨ	'you all'	2.PL
---	(he/she/it)	3.SG
=uχ	'they two'	3.DU
=nχ	'they all'	3.PL

There are just two object suffixes in Siuslaw: *-u:ts* for first or second person objects, and *–u:n* for third. (Epenthetic vowels prevent impermissible clusters.)

(24) Siuslaw object suffixes

a. *Anχa-u:ts=atšɨ.*
leave.alone-1/2.OBJECT=2.PL.SUBJECT
'All of you, leave me alone.' 1914: 27.5

b. *ƛ̓x̣mi:yáy-u:n=anɬ*
kill-3.OBJECT=1+2.DU.SUBJECT
'We will kill him.' 1914: 28.3

If the object is dual or plural, the basic pronominal markers used for dual or plural subjects are added to the object markers.

(25) Siuslaw dual and plural objects

a. *łnáti=nx̣* *λəłú:y-u:ts-auxun*
always=2.SG hit-1/2.OBJECT-1+3.DU
'You are always hitting us.' 1922: 476

b. *temú:-u:n-anx̣=ɬn*
assemble-3.OBJECT-3.PL=1.SG
'I assemble them.' 1922: 476

The shapes of the object markers are suggestive: *-u:ts* for either first or second person objects, and *-u:n* for third person objects. The initial element of each is reminiscent of Siuslaw passive suffixes, visible in lines ii and iii below.

(26) Siuslaw passives: 1914: 78.5-7

Qí:u:nəmái *ƛ̓áai* *pəkú:ya* *x̣a:ƛ̓aí* *ƛ̓áai.*
winter.in many shinny.stick make people
'In the wintertime people make many shinny sticks. i

kí:x̣ *təhq* *x̣a:ƛ̓áy-ù:nə* *ya:áx̣a.*
every what make-PASSIVE much
All kinds of things are made in great quantities. ii

Tsí:ƛ̓i: *ƛ̓áai* *uɬ* *x̣a:ƛ̓áy-u:tnə.*
arrow many and make-PASSIVE
Many arrows are made.' iii

The second element of the first/second person object marker, *-ts*, matches the earlier form of the basic second person singular pronoun. This marker can still be seen in the Siuslaw independent pronoun *niẋa-ts* 'you (SG)'. It has been replaced in the subject enclitic paradigm by the third person plural *=nx̣*, but the second person dual subject enclitic remains *=ts*. The first/second person object marker *–u:ts* thus resembles a passive with second person subject.

It appears that Siuslaw, like Coos, required passivization whenever a third person acted on a first or second (3/1, 3/2): the way to say 'he hit you' was 'you were hit by him'. As the only grammatical means for expressing such a two-

participant event, the structure could easily come to be understood as a basic transitive. The sequence of a passive suffix plus second person (patient) subject would have accordingly been reanalyzed as a second person object marker. The same form was apparently extended to mark first person objects as well.

The structural reanalysis from passive to active transitive is not yet complete in Siuslaw. When a third person acts on a first person (3/1) or a second (3/2), the subject enclitic still refers to the patient, the earlier passive subject.

(27) Siuslaw patients as subjects: 3/1 and 3/2

a. *wáa-u:-ts=ɨn*
tell-1/2.OBJECT=1.SG.SUBJECT
'He told me.' 1914: 58.18

b. *yɨxáy-u:ts=auxun*
see-1/2.OBJECT=1+3.DU.SUBJECT
'He is looking at us two.' 1922: 476

c. *ƛ̓xú:y-u:ts=anx*
know-1/2.OBJECT=2.SG.SUBJECT
'He knows you.' 1922: 476

The same relic occurs when a first person singular acts on any second person (1.SG/2): the original second person patient subject of the passive is still subject.

(28) Siuslaw patient subjects

səatsítšə=nx	*wáay-u:ts*
thus=2.SG.SUBJECT	tell-1/2.OBJECT

'Thus I tell you.' 1914: 36.19

When obligatory passives were reanalyzed as active transitives, marked oblique agents would have been reinterpreted as core arguments, namely ergatives.

VERB-PASSIVE-PATIENT.SUBJECT	(+ SUBJECT)	+	OBLIQUE.AGENT	>
VERB-OBJECT.1/2	(+ ABSOLUTIVE)	+	ERGATIVE.AGENT	

(29) Siuslaw agents of new active transitives

Waháhau:n	*łiyátšit*	*hiyatsɨts-u:n*
again	cougar.ERGATIVE	put.on-3.OBJECT

'It was put on by Cougar' > 'Cougar [ERGATIVE] put it on.' 1914: 13.3-4

The complexity of the pronominal morphology would seem likely to produce confusion. Not only is the same object marker used for both first and second person objects, but the subject enclitics refer sometimes to the agent and sometimes to the patient. The extensive textual material available shows that the roles of participants are frequently clarified with independent pronouns or nouns, which reliably distinguish ergative case for all persons.

(30) Siuslaw ergatives

a. *Səátsa=nx̣* *t=anx̣* *łkwáy-u:ts* *q-nà*
thus=2.SG.SUBJECT this=2.SG.SUBJECT get-1/2.OBJECT ERGATIVE-1
'That is why I came to get you.' 1914: 21.3

b. *Ťqu:lu:y-ú:ts=anx̣* *q-ní:x̣a-ts*
shout-1/2.OBJECT=2.SG.SUBJECT ERGATIVE-you-2.SG
'You are shouting at me.' 1922: 476

c. *Yáquhy-u:ts=anxan* *səà-s.*
look.at-1/2.OBJECT=1+3.PL.SUBJECT 3-ERGATIVE
'He is looking at us.' 1922: 477

d. *ƛ̓x̣ú:y-u:ts =anx̣* *səà-s*
know-1/2.OBJECT =2.SG.SUBJECT 3-ERGATIVE
'He knows you.' 1922: 476

The older Siuslaw ergative nouns, characterized by á-ablaut as described in (10) above, are presumably descended from the oblique agents of passives. These ergative forms do not now match any of the modern obliques (though many of those show *–a*-ablaut), so that piece of the puzzle must remain obscure.

4. The Alsea ergative category

We saw that though Siuslaw borrowed an ergative marker *q-* from Alsea, the loan did not create a new grammatical category in Siuslaw. But what of the borrowing of the ergative marker into Alsea? Alsea also shows internal evidence of the development of an ergative category through reanalysis.

In Alsea, as in Siuslaw, subjects are indicated by pronominal enclitics to the first element of the clause, and objects are indicated by suffixes to the verb.

(31) Alsea subject enclitic and object suffix: 1918ms: 117

I:s *k̓í:l=aux̣* *məkaí:s-tx̣a-n-x̣*
with rock=3.DUAL.SUBJECT hit-TRANSITIVE-3.OBJECT-INDICATIVE
'They hit him with a rock.'

DIRECT OBJECT	1.	*-mts*	INDIRECT OBJECT	1.	*-mtsu:*
	2.	*-u:*		2.	*-m, tsu:*
	3.	*-n*		3.	*-u*

The object suffixes appear to have evolved from passive constructions, just as in Siuslaw. Alsea contains several passive suffixes, among them a patient passive *–un* and a dative passive *-mu*.

(32) Alsea passives: 1918ms: 184

a. *x̂i:s* *łəaís-un.*
habitually see-PASSIVE
'he is looked at'

b. *təsin-áy-əmu-x̣*
point.out-INCHOATIVE-DATIVE.PASSIVE-INDICATIVE
'it is pointed out to him'

Passivization is pervasive in connected speech in Alsea, ensuring that discourse topics are cast as subjects. Clauses with third person agents acting on first (3/1) or second (3/2) are also routinely passivized. The subject enclitics *=n* 'I' in (33)a and *=pst* 'you two' in (33)b refer to the original patient subjects of the passives.

(33) Alsea passives: 1920: 48.19, 54.20-1

a. *x̂i=n* *x̂imha?x̂* *łi:ya?* *łaámx̣ayudi:*
will=1.SG.SUBJECT perhaps not fit.PASSIVE
'It may not, perchance, fit me.' (lit. 'I will not be fit (by it)')

b. *x̂i=pst* *híx̂e* *q=as* *mansti:* *hí:tsləm* *pə-nú:ns-itx̣-u:.*
will=2.DU.SUBJ just ERG=the all people INT-eat-CONT-PASS
'All the people will eat you two.' (lit.'You will be eaten by all the people.')

The modern Alsea object prefixes show traces of earlier passive constructions, though not as clearly as those in Siuslaw. The first person object marker appears to be descended from a sequence involving the dative passive suffix, and the second and third person object markers from one including the patient passive.

The shape of the patient passive marker itself is interesting. Two other suffixes show the form *–u:*, identified by Frachtenberg as 'transitional' and 'neutral'. The transitional 'indicates a transition from one period into another' (1918: 217) and the neutral 'actions best rendered in English by an impersonal verb' (1981: 165). Both often, though not always, occur with inchoative actions marked with inchoative suffixes.

(34) Alsea *–u:* TRANSITIONAL and NETURAL: 1920: 64.37, 32.16

a. *łə-álx̣i:n-i:y-u:.*
VERBALIZER-quiet-INCHOATIVE-TRANSITIONAL
'he became quiet'

b. *tx̣il-áy-u:* *as* *x̣i:l*
split-INCHOATIVE-NEUTRAL the rock
'[No sooner had she placed her cane there when] the rock split.'

These suffixes are a likely diachronic source for the passive marker. A similar development can be seen in Coos. The Coos transitional marker *–i:ye* has a passive use, and appears to be the basis of passive suffixes *–iyəm* and *-iyeqəm.*

The ultimate source of the Alsea passive, transitional, and neutral suffixes can be seen within Alsea itself: a verb root *u:-/wa-* 'become, change, turn into'.

(35) Alsea verb *u:-/wa-* 'become': 1920: 30.3, 156.34

a. *tsaʔmási:yu:* *u:-tx̣-aí:-x̣asx̣*
shadow turn.into-INTRANSITIVE-INCHOATIVE-REFLEXIVE
'He merely turned himself into a shadow.'

b. *x̣́ i:l* *taiʔ* *wá-tx̣-astəx̣* *as* *i:tsaí:s.*
rock only turn.into-INTRANSITIVE-PASSIVE the house
'The house had turned into a rock.'

We can thus see not only the circumstances leading to the development of the ergative category within Alsea, namely obligatory passivization whenever third persons act on first or second, but the source of the passive marker as well, in a verb 'become', a well-known source of passives cross-linguistically.

If Alsea developed an ergative category through internal reanalysis before it borrowed the Coos marker, we are left only with identifying the original Alsea ergative marker. Alsea does show two forms of the ergative: *q* and *x̣*. The first explanation that springs to mind is that Alsea borrowed the Coos ergative *x̣* then subsequently developed a stop variant *q.* Frachtenberg notes, however, that the *q/x̣* alternation is unique to the ergative marker, not a regular process in the language. Alsea may have first developed its own ergative marker *q,* then borrowed the Coos *x̣* as a variant, an easy step since the Coos *x̣* was so similar in both form and function. Modern Alsea shows no surviving oblique marker with either form, so the full history of the form remains obscure.

5. Conclusion

It is still unclear whether the Alsea, Siuslaw, and the Coosan languages ultimately stem from a common ancestor, but it does appear that ergative

markers spread among them through contact, from Coos to Alsea to Siuslaw. The category itself does not seem to have originated in contact, however. Each of the languages shows evidence of the internal development of an ergative category. If the markers but not the category were borrowed, we still have no explanation for the areal concentrations of ergativity noted by Nichols (1993). But the situation on the Oregon Coast suggests some clues.

All three of the families show extensive use of passive constructions in spontaneous speech and multiple passive markers. They also share the routine use of passivization in situations where third person agents act on first or second person patients. Such usage could easily be spread through contact. Speakers accustomed to ensuring that speech-act participants are cast as subjects through obligatory passivization might well carry this practice into other languages they spoke. Thus the category of ergativity itself might not need to be diffused through contact, but circumstances leading to its development could, ultimately resulting in areal concentrations of ergativity.

References

Anderson, Stephen. 1977. On mechanisms by which languages become ergative. *Mechanisms of syntactic change*. C.N. Li, ed. Austin: U. of Texas. 317-63.

1988. Morphological change. *Linguistics: The Cambridge survey*. F.J. Newmeyer, ed. Cambridge University Press. 1: 324-62.

Buckley, Eugene 1987. Coast Oregon Penutian: a lexical comparison. *Pacific Linguistics Conference* 3: 43-69.

1988a. Ergativity in Alsea. *Southern Illinois University Occasional Papers in Linguistics* 14: 28-38.

1988b. Temporal boundaries in Alsea. *BLS* 14: 10-22.

1989a. Reconstructing the sounds of Alsea. *Papers from the 1988 Hokan-Penutian Languages Workshop*. University of Oregon Publications in Linguistics 1: 9-30.

1989b. The structure of the Alsea verb root. *Papers from the 1989 Hokan-Penutian Languages Workshop*. University of Oregon Publications in Linguistics 2: 1-17.

1989c. The Alsea noun phrase. *Kansas W Papers in Linguistics* 14.2: 20-36.

Chung, Sandra. 1977. On the gradual nature of syntactic change. *Mechanisms of syntactic change*. C.N. Li, ed. Austin: University of Texas Press. 3-55

1978. *Case marking and grammatical relations in Polynesian*. Austin: U. Texas.

Fortescue, Michael. 1997. Eskimo influence on the formation of the Chukotkan ergative clause. *Studies in Language* 21.2: 369-409.

Frachtenberg, Leo. 1913. *Coos texts*. Columbia University Contributions to Anthropology 1. Reprinted 1969 in New York: AMS Press.

1914. *Lower Umpqua texts and notes on the Kusan dialect*. Columbia University Contributions to Anthropology 4. New York: Columbia University Press.

1917. Myths of the Alsea Indians of Northwestern Oregon. *IJAL* 1: 64-75.

1918ms. Yakonan (Alsea) grammar. American Philosophical Society. Ms. 394.

1918ms. Yakonan (Alsea) grammar. American Philosophical Society. Ms. 394.
1920. *Alsea texts and myths.* Bureau of American Ethnology Bulletin 67.
1922a. Coos. *Handbook of American Indian Languages* 2: 297-429.
1922b. Siuslawan (Lower Umpqua). *Handbook of Am. Indian Lgs* 2: 431-629
Garrett, Andrew. 1990. The origin of NP split ergativity. *Language* 66: 261-96.
Gildea, Spike 1998. *On reconstructing grammar: comparative Cariban morphosyntax.* New York: Oxford University Press.
Golla, Victor 1997. The Alsea-Wintuan connection. *IJAL* 63: 157-70.
Grant, Anthony 1997. Coast Oregon Penutian: problems and possibilities. *IJAL* 63: 144-56.
Heath, Jeffrey. 1978. *Linguistic diffusion in Arnhem Land.* Canberra: Australian Institute of Aboriginal Studies.
Hymes, Dell. 1966. Some points of Siuslaw phonology. *IJAL* 32: 328-42.
Jacobs, Melville. 1939. Coos narrative and ethnologic texts. *University of Washington Publications. in Anthropology* 8.1: 1-126
1940. Coos myth texts. *UWPA* 8.2: 127-360.
Mithun, Marianne. 1999. *The languages of Native North America.* Cambridge.
Morgan, Lawrence. 1985ms. *Miluk Coos as a Northwest language from typological, areal, and genetic perspectives.* Special Field Examination, Berkeley.
Nichols, Johanna 1993. Ergativity and linguistic geography. *Australian Journal of Linguistics* 13: 39-89.
Payne, John. 1979. Transitivy and intransitivity in the Iranian languages of the USSR. *Papers from the Conference on Non-Slavic Languages of the USSR.* Chicago Linguistic Society. 436-47.
Pierce, Joe. 1966. Genetic classification and Hanis, Miluk, Alsea, Siuslaw, and Takelma. *IJAL* 32: 379-87.
1971. Hanis (Coos) phonemics. *Linguistics* 75: 31-42.
Sapir, Edward. 1921.A bird's eye view of American languages north of Mexico. *Science* n.s. 54: 408. Reprinted 1990 in William Bright, ed. *The collected works of Edward Sapir.* Berlin: Mouton. 251-6.
Suttles, Wayne, ed. 1990. *Handbook of North American Indians 7: Northwest Coast.* Washington D.C.: Smithsonian Institution.
Trask, R.L. 1979. On the origins of ergativity. *Ergativity: towards a theory of grammatical relations.* Frans Plank, ed. London: Academic Press. 385-404.
Weinreich, Uriel 1963. *Languages in contact.* The Hague: Mouton.
Zenk, Henry. 1990a. Alseans. In Suttles, ed. 568-71.
1990b. Siuslawans and Coosans. In Suttles, ed. 572-79.

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Demonstrative words in Passamaquoddy equative constructions[1]

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0. Introduction

Crosslinguistically, demonstratives have been documented to have developed into a wide range of other grammatical items (Diessel 1999a). When the phonological form of the resultant item is no longer identical to that of the source item, the fact that grammaticalization has occurred is clear. However, grammaticalization need not always result in changes to the form of the stem; in such case, where, minimally, there has been change in the item's *function*, there can also be other formal properties of the item that may be evidence of grammaticalization.

In this paper, I present data from passamaquoddy[2], an Algonquian language of Maine and New Brunswick, Canada, where words with phonological forms of demonstratives occur in certain NP-NP constructions. I use the label **equative construction** (after Hengeveld 1996) as the general term, and:

(a) **predicative nominal construction** will refer to NP-NP[3] sentences where the predicate NP is a kind rather than a uniquely identifiable entity, e.g.:

[1] [A penguin] is [a flightless bird].
[2] [Maya Angelou] is [a remarkable writer].

(b) **equative constructions** will refer to NP-NP sentences where a strict identity between the two nominal expressions is asserted, e.g.:

[3] [The capital of Canada] is [Ottawa].
[4] [You] are [the one who has my heart].

In considering whether grammaticalization of demonstratives has occurred for

[1] Thanks to my primary language consultant, David A. Francis at the Sipayik reservation, Maine, for all his assistance, and to Matthew Dryer and Karin Michelson for useful discussion.

[2] The language is called Maliseet in the communities of New Brunswick.

[3] I use 'NP' loosely to also include participles.

the Passamaquoddy data, we will examine what functional and formal changes the items in question have undergone. Firstly, in order to argue that an item has in fact become functionally differentiated from some source demonstrative, we need to define what functions are those associated with demonstratives proper. In the general linguistics literature, demonstratives are frequently described as deictic morphemes that orient the addressee's attention to something in the speech situation or in the linguistic discourse:

> Demonstratives are deictic expressions. They are primarily used to focus the hearer's attention on objects, persons, or locations in the speech situation, but they may also refer to linguistic entities in discourse." (Diessel 1999b: 19, after Lyons 1977: 636-677)

We should note, however, that the endophoric use of demonstratives, referring to things in the linguistic discourse, is not always strictly deictic in the sense of encoding relative spatial location; for this reason, distinguishing (adnominal) demonstratives used for anaphoric deixis from definite article uses, for example, can be tricky (but see Hawkins 1978). Minimally, however, we can say that demonstratives take part in some sort of referential act, whether they are used to refer to beings, objects, places, or more abstract phenomena.

Secondly, with respect to formal characteristics, we will examine an item's syntactic distribution, inflectional behavior, and its substitutional possibilities in terms of which items from the demonstrative paradigm can be used. For convenience, in the discussion to follow, the term "demword" will be used for any item that has the phonological form of a word from the demonstrative paradigm.

It will be argued that while the demwords in Passamaquoddy equative constructions retain certain of the morphological properties of referring demonstratives, they have lost any deictic or referential meaning, as well as displaying other grammatical properties distinct from referring demonstratives. Hence, they can be considered to be the early results of processes of grammaticalization of demonstratives into other grammatical morphemes.

1. Passamaquoddy demonstrative forms

Table 1 gives the non-absentative[4] demonstrative forms of Passamaquoddy. They are morphologically differentiated for three deictic distances — near speaker (NS), near addressee (NA), and away from both speaker and addressee (ASA) — as well as for number, animacy, and, for animate forms, obviation (proximate vs obviative).

[4] Passamaquoddy demonstratives (and nouns) have special absentative forms for reference to things which are dead or otherwise absent from the field of discourse. Only the non-absentative forms appear in the equative sentences to be presented.

Table 1: Passamaquoddy non-absentative demonstrative forms

			near speaker	*near addressee*	*away from speaker and addressee*
Animate	*sg*	*prox*	wot	not	yat
		obv	yuhtol	nihtol	yehtol
	pl	*prox*	yuktok, yukt, yukk	niktok, nikt, nikk	yektok, yekt, yekk
		obv	yuhuht	nihiht	yeheht
Inanimate	*sg*		yut	nit	yet
	pl		yuhtol	nihtol	yehtol

[5] and [6] are examples of referring demwords:

[5] Eci wolinaqahk yut posonut.

eci	woli-naq-ahk	yut	posonut
very	good-appear.II-CH.CONJ	0SG.NS	basket.INAN

This/The basket is beautiful.

[6] Nkisi iywa not amsqocehkan.

n-kisi iyw-a	not	amsqocehkan
1-like.II-INDC.-3SG:3SG	3SG.NA	doll.AN

I like that/the doll.

In Section 2, we look at the occurrence of demwords in predicate nominal sentences, and in Section 3, the demwords in equational sentences. In the interests of space, only affirmative sentences will be presented; negative sentences in some cases have certain words in a different order, but such differences do not affect the thrust of the arguments that will be presented.

2. Demwords in predicate nominal sentences

The data differ depending on whether the subject is a pronoun or is headed by a noun.

2.1. Sentences with pronoun subjects

When the subject of a predicate nominal sentence is a pronoun, there is a simple juxtaposition of [PREDICATE]-[SUBJECT], with no demword linking the two:

[7] Taktal nil.[5]
doctor.AN 1SG
I'm a doctor.

[8] Tuwihput nit.
table.INAN 0SG.NA
That's a table.

2.2. Sentences with noun-headed subjects

When the subject NP is a headed by a noun, a form of a NA demword agreeing in animacy and number with the subject must be present. In affirmative sentences, this demword occurs between the two nominal expressions, but the nominal expressions may generally occur in either order, although there may be a preference for the subject NP to occur first in some constructions.

Although the subject and predicate nominal NPs usually match in animacy, occasionally they do not. For example, in [9], the subject NP *maltuhsis* 'hammer' is animate while the predicate *wehkewakon* 'tool' is inanimate. We see that the demword is the animate form *not*, agreeing with the subject, not the predicate.[6]

[9] Wehkewakon not maltuhsis. (*or* Maltuhsis not wehkewakon.)
tool.INAN 3SG.NA hammer.AN
A hammer is a tool.

[10] is an example of the construction with a plural animate subject, and the demword between subject and predicate is the animate plural NA form *nikt*:

[10] Nutokehkimucik nikt Mali naka Tepit.
(*or* Mali naka Tepit nikt nutokehkimucik.)
nut-okehkim-ucik nikt Mali naka Tepit
regularly-teach.TA-PTCP.3I:3'PL 3PL.NA Mary and David
Mary and David are students.

The following are the corresponding sentences with inanimate subjects. In [11], the demword *nit* agrees with the inanimate singular subject *nukcoktihikon* 'maul', while in [12], we get the inanimate plural demword nihtol for the subject *kompiyuhtawol* 'computers':

[5] Unless otherwise noted, Passamaquoddy examples come from elicitations conducted by the author.

[6] Although copula agreement with the subject is the familiar pattern for English and a number of other European languages, agreement with the predicate nominal also exists, as Diessel (1999a) argues for Hebrew.

[11] Nukcoktihikon nit wehkewakon.
(*or* Wehkewakon nit nukcoktihikon.)
maul.INAN 0SG.NA tool.INAN
A maul is a tool.

[12] Kompiyuhtawol nihtol pili mosinol.
kompiyuhta-wol nihtol pili mosin-ol
computer.INAN-PL 0PL.NA new machine.INAN-PL
Computers are new machines.

2.3. Grammatical status of these demwords

Can the demwords in the Passamaquoddy predicate nominal sentences in Section 2.2 still be understood as demonstratives? If we take, for example, a sentence like [10], one analysis might be to group the demword *nikt* grammatically with the predicate nominal to form a clause, with *nutokehkimucik* 'students' being some sort of topic NP in apposition, as given in [13]:

[13] Nutokehkimucik nikt Mali naka Tepit.
[they are students] [Mary and David]
or Mali naka Tepit nikt nutokehkimucik.
[Mary and David] [they are students]
Mary and David are students.

There are, however, two counter-arguments to this. Firstly, although both the word orders [SUBJECT]-[DEMWORD]-[PREDICATE NOMINAL] and [PREDICATE NOMINAL]-[DEMWORD]-[SUBJECT] are possible, the demword can never occur either clause-initially or clause-finally. For example, the following permutations in [14] are unacceptable:

[14] * Nikt nutokehkimucik Mali naka Tepit.
* Mali naka Tepit nutokehkimucik nikt.

This is puzzling if *nikt* is a pronoun subject in a equational clause associated with *nutokehkimucik*, as set forth in [13], since subject NPs are found both clause-initially and clause-finally in Passamaquoddy (although the clause-final position is the unmarked one).

Secondly, if the demword in the predicate nominal sentences is a pronoun, one would expect that it would be possible to have not just the NA forms, but also the NS and ASA forms, but this is not the case:

[15] *Wehkewakonwot/yat maltuhsis.
(*or* *Maltuhsis wot/yat wchkcwakon.)
tool.INAN 3SG.NS/3SG.ASA hammer.AN
(A hammer is a tool.)

Hence, there are two types of grammatical restrictions, one distributional and the other substitutional, which are distinct from those of entity-referring demword pronouns. The demword in question is restricted to a syntactic position between the two nominal expressions, and restricted to the NA forms. Such characteristics are arguments for considering these demwords as being grammatically distinct **copulas** rather than demonstratives of any sort. The grammaticalization of copulas into demonstratives has been documented in other languages such as Hebrew and Mandarin Chinese (Diessel 1999a; Li and Thompson 1977).

3. Equational sentences

In Passamaquoddy, equational sentences contain a NA demword which show different agreement properties from the demwords discussed in Section 2.2. When the subject is a pronoun, there is a demword that does not agree in animacy when the subject is singular. When the subject headed by a noun, there is a demword which agrees in neither animacy or number with the subject.

3.1. Pronominal subjects

For the elicited equational sentences below, the context was one where one particular item was to be picked out from a number of other items, for example, picking out a particular spoon from a group of several spoons. The demword which occurs between the subject and the predicate is the inanimate singular NA form *nit* for both animate (*emqansis* 'spoon') and inanimate (*mitsut* 'fork') singular subject sentences. The word order must be as presented, i.e. [SUBJECT]-[DEMWORD]-[PREDICATE], in contrast to the unmarked order [PREDICATE]-[SUBJECT] for (affirmative) predicate nominal sentences (see [7]-[8]).

[16] Wot nit emqansis.
3SG.NS 0SG.NA spoon.AN
This is the spoon.

[17] Yut nit mitsut.
0SG.NS 0SG.NA fork.INAN
This is the fork.

In sentences with a sentient personal pronoun as subject, there is some variation amongst different speakers and occasionally from the same speaker as to whether the demword agrees in animacy; hence, I give both the inanimate *nit* and the animate *not* as options. The context in [18]-[19] is one involving identifying the doctor from amongst a group of people:

[18] Kil nit/not taktal?
2SG 0SG.NA/3SG.NA doctor.AN
Are you the doctor?

[19] Nil nit/not taktal.
1SG 0SG.NA/3SG.NA doctor.AN
I am the doctor.

When the pronoun subject is plural, then the demword agrees in both animacy and number with the subject:

[20] Yuktok nikt emqansisok.
yuktok nikt emqansis-ok
3PL.NS 3PL.NA spoon.AN-PL
These are the spoons.

[21] Yuhtol nihtol mitsutiyil.
yuhtol nihtol mitsut-iyil
0PL.NS 0PL.NA fork.INAN-PL
These are the forks.

[22] Nekomaw/Niktok[7] nikt taktalok.
nekomaw/ niktok nikt taktal-ok
3PL 3PL.NA 3PL.NA doctor.AN-PL
They're the doctors.

We will consider the identities of the demwords in this section in Section 3.3.

3.2. Noun-headed subjects

We now look at equational sentences where the subject is headed by a noun. In the following elicited sentences, the context is one where one wishes to exhaustively identify who all of the tribal council members are:

[23] Mali not nit litposuwin.
Mary 3SG.NA 0SG.NA tribal.council.member.AN
Mary is the tribal council member.

[24] Mali naka Tepit nikt nit litposuwinuwok.
Mali naka Tepit nikt nit litposuwin-uwok
Mary and David 3PL.NA 0SG.NA tribal.council.member.AN-PL
Mary and David are the tribal council members.

Note that there are now two demwords present between the subject and predicate NPs, the first agreeing in animacy and number with the subject, the second being invariantly *nit*. If we compare these sentences with their predicate nominal counterparts, as in [10], one obvious analysis is to treat the first demword in [23]-[24] as being parallel to the demwords in Section 2, i.e. as copulas that are agreeing with the subject. This would then leave the following *nit* as being some other morpheme.

[7] *nekomaw* is the sentient third-person plural pronoun; *niktok* is the animate plural NA demword.

3.3. Grammatical status of these demwords

Consider the following text example, where there is a topicalized NP followed by a clause. In that clause, there is an animate subject demword *not*, translated as a pronoun 'he', followed by the inanimate NA demword form *nit* which we discussed in Section 3.2, and then the predicate *kci sakom Kanawak* 'great chief at Kahnawake'.

[25] From *Lewis Mitchell: The Wampum Records* (Leavitt & Francis 1990)

Nihtol lu nikihkuwal, not nit kci sakom Kanawak.

nihtol	lu	Ø-nikihk-uwal	not	nit	kci	sakom
3'SG.NA	FOC	3-parent.AN-PL.POSS.OBV	3SG.NA	0SG.NA	great	chief.AN

Kanawak
Kahnawake.LOC

As for their parent, he was the great chief at Kahnawake.

An obvious possible identity for the *nit* demword here and the other instances of it in Section 3.2 is that of a copula. Although their morphological properties differ from the demwords in predicate nominal sentences discussed in Section 2, the two types of demword are both restricted distributionally and substitutionally.

Complicating the picture somewhat, there are also equational sentences with singular pronoun subjects[8] containing *two* occurrences of *nit* demwords which do not agree in animacy with the subject. The semantics that differentiate the sentences in [26] from the corresponding ones where only one *nit* occurs are not completely clear, but it seems that the context for [26] involves the speaker picking out a particular item, and commenting on its identity as being the exact object that s/he or the addressee has in mind:

[26]

Wot	nit	nit	emqansis?	Wot	nit	nit	emqansis.
3SG.NS	0SG.NA	0SG.NA	spoon.AN	3SG.NS	0SG.NA	0SG.NA	spoon.AN
Is the spoon this one?				The spoon is this one.			

If we analyze one *nit* as a copula, we are still left with another *nit* demword to account for.

Note that the demword immediately preceding the predicate in [26] must be the form *nit*; it cannot be a demword agreeing in animacy or be of some non-NA form:

[8] There are no equivalent plural pronoun subject sentences of this sort, which would be rendered with a single demword between subject and predicate, as in [20]-[22]. An asymmetry between singular and plural sentences is not unexpected in grammaticalization data, since sentences involving singular subjects are far more common and hence tend to undergo greater grammaticalization (e.g. see Heine, Claudi, and Hunnemeyer 1991).

[27] *Wot nit not emqansis.
3SG.NS 0SG.NA 3SG.NA spoon.AN
(The spoon is this one.)

* Wot nit yut/yet emqansis.
3SG.NS 0SG.NA 0SG.NS/0SG.ASA spoon.AN
(The spoon is this one.)

Hence, while the adjacency of the second *nit* in [26] to the nominal predicate might lead one to wonder it could now somehow be understood as modifying the predicate, we should point out that this *nit* would have to be a rather odd sort of adnominal demword, since these generally agree in number and animacy with the head noun, and are not restricted to NA forms (see Section 1).

Let us consider [25] again. This is an example of the topic-comment construction that Li and Thompson (1977) proposed would allow a pronominal subject in the comment clause to become reinterpreted as a copula when the whole sentence is reanalyzed as a subject-predicate construction. We can represent this for [25] as follows:

[28] [TOPIC] [COMMENT]
Nihtol lu nikihkuwal, not nit kci sakom Kanawak.
3'SG.NA FOC their parent 3SG.NA 0SG.NA great chief at Kahnawake
As for their parent, he was the great chief at Kahnawake.
↓
loss of topic-comment structure
subject-predicate reanalysis: demword as copula
↓
[SUBJECT] [PREDICATE]
Nihtol nikihkuwal not nit kci sakom Kanawak.
3'SG.NA their parent 3SG.NA 0SG.NA great chief at Kahnawake
(copula)
Their parent was the great chief at Kahnawake.

In the reanalyzed subject-predicate sentence, the *not* demword which had been the subject of the comment clause in the topic-comment sentence is reanalyzed as a copula. Our analysis is that this is the demword which we saw in equative constructions with noun-headed subjects, predicate nominal sentences in Section 2.2 as well as equational sentences in Section 3.2.

If we take the *not* demword in the reanalyzed [28] sentence as the copula, we are still left with the *nit* demword which follows it to account for. Since this is no longer linking a subject and predicate, it would seem to have lost any copula status it had. Perhaps the reanalysis shown in [28] forces a further reanalysis of this *nit*, although, like the second *nit* discussed for sentences like [26], it is hard to

say what its function is in isolation from the rest of the construction.[9]

To summarize, we encountered four sorts of demwords in Section 3. Firstly, there is a demword which agrees in both animacy and number with the subject NP, occurring as the first demword in equational sentences with noun-headed subjects, and this we analyzed as being the same demword as examined in predicate nominal sentences with noun-headed subjects discussed in Section 2.2, i.e. a copula. Secondly, the equational sentences with pronoun subjects presented in Section 3.2 have a demword where agreement for animacy does not occur with singular demword subjects and occurs varyingly with singular sentient personal pronoun subjects; this also looks like a copula. Thirdly, a particular type of equational sentence with a singular pronoun subject, as given in [27], has two demwords between subject and predicate; assuming that one of the demwords is the same as the one in the Section 3.2 sentences, the other one appears to be associated specifically with the construction exemplified by [27]. Finally, the second demword in equational sentences with noun-headed subjects does not agree in animacy with either singular or plural subjects; again, the meaning of this demword seems best defined in the context of the construction.

The phenomenon of multiple occurrences of demwords in equational sentences has also been reported for another Algonquian language, Fox (Goddard 1989), although further investigation is required to see what similarities and differences those data show compared with Passamaquoddy.

4. Summary and thoughts for future research

Demwords occurring in Passamaquoddy equative constructions all differ from referring demonstratives in being distributionally restricted to occurrence between the subject and the predicate, and being substitutionally limited to NA forms. Amongst them, however, there are differences in morphological properties of animacy and number agreement with the subject in the sentence, which led us to distinguish four different types of demwords.

We proposed that there are two types of copula, one type agreeing in both animacy and number with the subject which occurs in equative constructions (both predicate nominal and equational) where the subject is headed by a noun, and another occurring in equational sentences with pronoun subjects which agrees in animacy in the plural but not consistently in the singular. The other two types of demwords did not ever agree in animacy with the subject, and the data were such that we chose not to try to assign functions to these demwords independent of the constructions in which they appeared. It seems clear, however, that all of the demwords discussed no longer have the referential function which 'demonstratives' are generally understood to, and hence, we conclude that the demwords in equative constructions have developed functionally as well as formally into morphemes which are grammatically distinct from referring demonstratives.

[9] Thanks to Emmon Bach for suggesting this during my oral presentation at BLS-26.

With respect to further research, Passamaquoddy has other demwords not discussed here that are also morphologically derived from items in the demonstrative paradigm, hence demonstrating in a single language the phenomenon of what Craig (1991) has called 'polygrammaticalization', i.e. one type of item developing into a range of other grammatical morphemes. Ideally, a broader investigation of Passamaquoddy demwords would lead to the elucidation of a more unified account, one including both synchronic description of the demwords' functional and formal characteristics as well as plausible accounts for how they developed their current properties through diachronic change. Also, the phenomenon of demwords with a range of non-deictic and/or non-entity-referring functions is not unique to Passamaquoddy (e.g. see Cyr 1996, Cyr 1993 on definite articles in Montagnais and Cree), and similar investigations in other Algonquian languages would allow a comparative perspective to be brought to the Passamaquoddy data, as well as shedding more light on the general topic of demonstratives and grammaticalization.

Abbreviations

0PL	inanimate plural
0SG	inanimate singular
1SG	first person singular
3I	indefinite third person subject
3SG	(animate) third person proximate singular
3'PL	(animate) third person obviative plural
3'SG	(animate) third person obviative singular
-3SG	(animate) non-third person singular
AN	animate
ASA	away from speaker and addressee
CH.CONJ	changed conjunct mode
FOC	focus (gloss for *lu/olu*)
II	inanimate intransitive verb
INAN	inanimate
INDC	indicative mode
LOC	locative
NA	near addressee
NS	near speaker
PL	plural
POSS.OBV	possessive obviative (obviative marking grammatically required by virtue of third-person possession)
PTCP	participle
SG	singular
TA	transitive animate verb. Participants are glossed as *x:y*, where *x* is the agent and *y* is the patient.

References

Craig, Colette. 1991. Ways to go in Rama: a case study in polygrammaticalization. In Elizabeth Traugott and Bernd Heine (eds.), *Approaches to grammaticalization*. 2 volumes. Amsterdam and Philadelphia: John Benjamins.

Cyr, Danielle. 1996. Between grammar and cognition: the expression of definiteness in Plains Cree. *Studies in Honour of H.C. Wolfart*, Memoir 13. Winnipeg, Manitoba: Algonquian and Iroquoian Linguistics.

Cyr, Danielle. 1993. Cross-linguistic quantification: definite articles vs demonstratives. *Language Sciences* **15**.3:195-229.

Diessel, Holger. 1999a. *Demonstratives: form, function, and grammaticalization*. Amsterdam and Philadelphia: John Benjamins.

Diessel, Holger. 1999b. The morphosyntax of demonstratives in synchrony and diachrony. *Linguistic Typology* **3**:1-49.

Goddard, Ives. 1989. Equational sentences in Fox. Paper presented at the SSILA winter meeting. Washington D.C,.

Hawkins, John A. 1978. *Definiteness and indefiniteness: a study in reference and grammaticality prediction*. London: Croom Helm.

Heine, Bernd, Ulrike Claudi, and Friederike Hunnemeyer. 1991. *Grammaticalization: a conceptual framework*. Chicago: University of Chicago Press.

Hengeveld, Kees. 1992. *Non-verbal predication: theory, typology, diachrony*. Berlin: Mouton de Gruyter.

Leavitt, Robert M. and David A. Francis (eds.). 1990. *Wapapi akonutomakonol — the wampum records: Wabanaki traditional laws*. (Revised edition of Lewis Mitchell's recounting, originally published in Prince 1921.) Fredericton: Micmac-Maliseet Institute, University of New Brunswick.

Li, Charles & Sandra A. Thompson. 1977. A mechanism for the development of copula morphemes. In Li, Charles (ed.), *Mechanisms of syntactic change*, 414-444. Austin: University of Texas Press.

Lyons, John. 1977. *Semantics*, 2 volumes. Cambridge, UK and New York: Cambridge University Press.

Prince, John D. 1921. *Passamaquoddy texts*. Vol. X, Publications of the American Ethnological Society, ed. by Franz Boas. New York: G.E. Stechert & Co,.

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Aspectual classes and non-agentive morphosyntax in Lowland Chontal

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1. Introduction

Lowland Chontal is a Mexican indigenous language spoken in the southern part of the state of Oaxaca.[1] The data here are from my fieldwork in San Pedro Huamelula, Oaxaca, and the 1962 grammatical description by Waterhouse.

This paper has three goals: 1) to characterize the morphosyntactic system as agentive; 2) to characterize the language-specific linguistic category of agency as reflecting the volition or intention of the participant; and 3) to characterize the situations that can or must involve a non-agentive participant.

In Chontal, the single argument of an intransitive predicate is expressed sometimes as an independent pronoun and sometimes as a pronominal affix to the verb. Separate classes of intransitive verbs were identified by Waterhouse (1962) and Turner and Turner (1971) in descriptions of both Chontal dialects, but the system was not characterized as active or agentive. Based on these analyses, Smith Stark and Tapia García (1986) identified the system as active-static. In the terminology adopted here, the system is agentive because it is the perceived agency of the argument, and not the lexical aspect of the verb root as state vs. event, that determines the pattern of person marking (Mithun 1991).

In Lowland Chontal, the agentive/non-agentive distinction is found in the encoding of the arguments, as shown in Figure 1.

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[1] There are two major dialects of Chontal of Oaxaca – Highland Chontal, of the mountain area, and Lowland Chontal, on the Pacific coast. According to the 1990 census, there are about 15,000 ethnic Chontales; 3,500 of these reported themselves speakers of the highland dialect, and another 1,000 as speakers of the lowland dialect. However, the speakers tell me there are about 250 truly fluent speakers of Lowland Chontal, all elders. I am grateful to Alberto Espinoza López, Adelaida Espinoza Raymundo, Eulalia Espinoza Raymundo, Romanita García, Petrona García Sosa, Selso Leyba Sosa, Aurelio López Abad, Pámfila López Molina, Paulino López Sosa, Severo López (†), Arturo Pétriz Muñoz, Columba Ramírez, Alberto Rey García, María de Victoria Sosa, Guillermina Trinidad, Inéz Zavaleta Robles, Anatolia, Tomás, and the bilingual education teachers at Alma Chontal elementary school.

	AGT		PAT	
	SG	PL	SG	PL
1st	iya'	iyank'	jl-	-onga'
2nd	ima'	imank'	-o'	-olwa'
3rd	0	0	0	-ola'

Figure 1: Person marking in Lowland Chontal

Agentive arguments occur as independent pronouns for first and second persons; third persons are ellipted or expressed with nominals. Non-agentive arguments occur as pronominal affixes for all but third-person singular, where the agentive /non-agentive contrast is neutralized. The system groups arguments roughly into macroroles of Actor and Undergoer (Foley & Van Valin 1984).

Agentive Actors: In one set of person markers, Actors are expressed with pronouns, from the AGT columns of Figure 1, and the aspect morphology indexes the number of the Actor as singular or plural.

Agentive Actor (transitive predicate).[2]

(1) *pijl-pa* ***iya'*** *lantranay'*
kill-PFV.SG 1S.AGT chickens
'I killed the chickens.'

(2) *pijl-pa'* ***iyank'*** *lantranay'*
kill-PFV.PL 1P.AGT chickens
'We killed the chickens.'

Agentive Actor (intransitive predicate).

(3) *may-pa* ***iya'***
go -PFV.SG 1S.AGT
'I went.'

may-pa' ***iyank'***
go -PFV.PL 1P.AGT
'We went.'

(4) *may-pa* ***0***
go -PFV.SG 3S
'S/he went.'

may-pa' ***0***
go -PFV.PL 3P
'They went.'

Transitive Undergoers: Some but not all transitive Undergoers are marked on the verb in what might be a primary object type of system. Agreement marking seems to depend on factors of animacy and topicality of the Undergoer arguments. Example (1) is repeated here to demonstrate the contrast.

2 Only data pertinent to the discussion are fully glossed. Spanish borrowings are glossed inside parentheses. Abbreviations used in this paper are: 1S-3P person markers; AGT agentive; AND andative; APPL? applicative; DEM demonstrative; DUR durative; IMPF imperfective; PAT non-agentive; PFT perfect; PFV perfective; PL plural; SG singular; STAT stative; TERM terminative; and at morpheme boundary, hyphen = derivation or inflection; equal sign = clitic; plus sign = infix.

Transitive Undergoer, unmarked and marked.

(1') *pijl-pa iya' lantranay'*
kill-PFV.SG 1S.AGT chickens
'I killed the chickens.'

(5) *muk'i-p* ***-ola'*** *sa =iya' la'way'*
teach-PFV-3P.PAT DEM=1S.AGT children
'I taught the children.'

(6) ***jl*** *-muk'i-pa lay-biida latyaygi*
1S.PAT-teach-PFV.SG my -grandmother language
'My grandmother taught me the language.'

In (1'), the Undergoer is not marked on the verb, while in (5-6), affected Undergoers are indexed with pronominal affixes from the PAT columns of Figure 1. Affixes from the same paradigm are used to index the single arguments of intransitive predications in (7) and (8).

Intransitive Undergoer.

(7) ***jl*** *-toj -pa* *toj -p* ***-onga'***
1S.PAT-grow-PFV.SG grow-PFV-1P.PAT
'I grew (up).' 'We grew (up).'

(8) *tyoj-pa* ***0*** *tyoj-p* ***-ola'*** *la'way'*
grow-PFV.SG 3S grow-PFV-3P.PAT children
'S/he grew (up).' 'The children grew (up).'

The pattern of first and third person marking in (7) and (8) contrasts with the use of independent pronouns in (3) and (4).

The second goal of this paper is to characterize the linguistic category of agency in Chontal as reflecting the volition or intention of the participant. Agency can be inherent in the lexical semantics, as with *ma-* 'die' or *toj-* 'grow', or it can be attributed or perceived, as with *xux-* 'be late' or *jak'-* 'disappear'.

The third goal is to characterize the situations that can or must involve a non-agentive participant. These are intransitive predications of a change of state evaluated as outside the volition or intention of the participant. I call these events *transformations*, a term which describes situations of resulting state, prefatory phase, and involuntary response, as well as the moment of change itself.

The organizing principle of the discussion is the aspectual class of each predication, here analyzed as composed of two types of aspect: *situation type* and *viewpoint* (Smith 1997). Situation type aspect is a covert category identified by the verb plus its arguments, similar to Aristotelian classes and verb classes described in Vendler 1967, Chafe 1970, and Dowty 1979, among others. Event structures are classified as achievements, states, activities, semelfactives, and accomplishments. In this paper, only intransitive situation types are discussed; these are defined below, following Smith 1997.

achievements	dynamic, telic, instantaneous
states	static, durative
activities	dynamic, durative, atelic
semelfactives	dynamic, atelic, instantaneous

Viewpoint aspect is an overt category typically evidenced in aspectual inflection. Viewpoint encompasses Aktionsarten and other grammatical categories and depicts the grammaticized perspective from which the speaker expresses the situation as bounded and complete, ongoing, or viewed from one of its endpoints.

2. Agentive/non-agentive marking by aspectual class.

The rest of the paper contrasts expressions with agentive and non-agentive morphosyntax within interacting categories of viewpoint and situation type.

2.1. Achievements.

Achievements are the typical locus of transformation. They are dynamic, telic, and instantaneous. While there is an element of duration implied by many predicates of achievement, in which an activity leads up to the moment of change of state, the endpoint as salient event is the defining feature of this category.

2.1.1. Achievements with agentive inflection.

Intransitive expressions of achievement with agentive inflection are difficult to find in my corpus. Perhaps the only clear example involves a stem derived with an andative suffix and inflected for perfective aspect. Example (9) shows the verb *kway-,* a stative root meaning 'be somewhere, having arrived', collected in a narrative about life on the ranch.

(9) ***kway -x -pa'*** *sa lajl-ale'*
arrive-AND-PFV.PL DEM our -neighbors
'our neighbors would stop by'

The andative suffix means "go and do" the main verbal concept; in Chontal, the affix is used to "go and do" in both space and time.

2.1.2. Achievements with non-agentive inflection.

The majority of my examples of non-agentive inflection, collected in recorded natural discourse and in elicitation, are examples of the achievement situation type. These predicate changes of state, especially in the physical body or in nature. All predicates of transformation in nature collected so far inflect non-agentively.

The following examples show the non-agentive counterpart to (9); all are stative predicates with andative derivation and perfective aspectual viewpoint.

(10) ***xo -gix-p -ola'***
be.tired-AND-PFV-3P.PAT
'they got tired'

(11) ***xux -kix-p -ola'*** *la'way*
be.delayed-AND-PFV-3P.PAT children
'the children got delayed'

(12) ***pagay -x -p -ola'*** *lipa'*
be.in.blossom-AND-PFV-3P.PAT flowers
'the flowers blossomed'

An achievement expressed from an imperfective viewpoint describes the phase leading up to the change of state, as in (13) and (14).

(13) ***ma -'m -ola'***
die-IMPV-3P.PAT
'they will die, they might die'

(14) ***paf' -'m -ola'*** *pijlki laybaaka*
give.birth-IMPF-3P.PAT all my.cows
'all my cows are going to give birth'

In (13) and (14), the outcome is still unknown. In (15-17), perfective viewpoint describes the moment of change or the resulting state.

(15) ***paf' -p -ola'*** *lakajl'no'*
give.birth-PFV-3P.PAT women
'the women gave birth'

(16) ***jak' -p -ola'*** *la'way'*
disappear-PFV-3P.PAT children
'the children disappeared'

(17) ***ma -na -p -ola'***
die-TERM-PFV-3P.PAT
'they died, they have just died; they are dead'

The expression in (17) can be interpreted as achievement or resulting state.

First-person agentivity, a phenomenon attested in many languages of the world, demonstrates 'attributed agency' in Chontal. The roots *so-* 'be tired' and *jak'-* 'disappear' were presented in (10) and (16), respectively, with non-agentive inflection. The predications in (18) and (19) follow the agentive pattern of person marking, suggesting that a speaker can know his or her own volition or intention.

(18) *joypa* ***so*** ***-gix-pa*** *iya'*
now be.tired-AND-PFV.SG 1S.AGT
'I am getting tired'

(19) ***jak'*** ***-pa*** *iya'*
disappear-PFV.SG 1S.AGT
'I disappeared'

The minimal pair of (20-21) suggests that a speaker can signal his or her opinion or evaluation of the participant's intention.

(20) ***xux*** ***-kix-p*** ***-o'***
be.delayed-AND-PFV-2S.PAT
'you took a long time'

(21) ***xux*** ***-kix-pa*** *ima'*
be.delayed-AND-PFV.SG 2S.AGT
'you took a long time'

The non-agentive inflection in (20) implies the participant couldn't help the tardiness, while the agentive inflection in (21) indicates the speaker thinks the person had some control over the situation.

2.1.3. Interaction of situation type, viewpoint, and agency.

A comparison of expressions of 'endure, survive' demonstrates combinatorial possibilities of situation type, viewpoint, and agentive/non-agentive inflection. With human participants, morphosyntactic distinction indicates volition or control, but with plants, there is no distinction. Expressions with *maygo-* are variously translated as 'get well, suffer, endure, survive'. For ease of comparison, I gloss each example in (22-24) as 'survive'.

(22) *injko* ***maygo*** ***-'m*** ***-onga'*** *jo ma -'m -onga'*
who.knows survive-IMPF-2P.PAT or die-IMPF-2P.PAT
'who knows if we will get well or we'll die'

(23) *tonjsal'e* *iyank'* ***maygo*** ***-pa'***
this.is.what 1P.AGT survive-PFV.PL
'this is what we endured, went through'

(24) *maa* ***xnek*** ***-p*** ***-ola'*** *layñegay'*
NEG survive-PFV-3P.PAT cornfields
'the cornfields didn't survive'

In the prefatory state (22), the outcome of suffering is not yet known. The predication is imperfective and non-agentive to reflect the ongoing nature of the situation and the lack of volition on the part of the participant. In (23), the

achievement event is inflected as perfective and agentive: the critical moment of survival has passed, the event is bounded and complete, and the participant is expressed as agentive or in control. And finally, in (24), the parallel achievement event in nature requires a separate lexical item and is inflected as non-agentive even when the outcome is known.

2.2. States.

States are static and durative; endpoints are not part of the viewpoint. This characterization is adapted to describe expressions of state with non-agentive inflection as the resulting states of transformation.

2.2.1. States expressed with various resources (agentive pattern).

States can be expressed as inflected for stative aspect and in relational or attributive constructions. These predications are not semantically agentive, but the presence of pronouns and the indexing number in the aspectual morphology are consonant with patterns of agentive morphosyntax and contrast with non-agentive patterns in 2.2.2. Examples (25-28) present "agentive" states from various aspectual viewpoints.

Stative morphology is used for current, ongoing situations.

(25) *fa'a* ***pang -uk'*** *iya'*
here dwell-STAT.SG 1S.AGT
'I live here'

(26) ***xk'wajing-ojlenna'*** *ma -pij lammixi*
stick.to -STAT.PL LOC-rock small.shrimp
'the tiny shrimp are sticking to the rock.'

Perfective viewpoint describes a past ongoing situation. The verb root *pang-* also means 'sit', so (27) also expresses the achievement 'I sat down here.'

(27) *fa'a* ***pang -pa*** *iya'*
here dwell-PFV.SG 1S.AGT
'I lived here'

Perfect viewpoint describes a resulting state achieved volitionally.

(28) *fa'a* ***kway -tya*** *iya'*
here arrive-PFT.SG 1S.AGT
'(when) I arrived here'

2.2.2. States with non-agentive inflection.

The predications in this section are marked non-agentively to signal that they are the resulting states of transformations deemed beyond the control or intention of the participant. Relative tense is determined from context.

(29) *fa'a* ***jl -pang -tya***
here 1S.PAT-dwell-PFT.SG
'I was born here'

Perfect viewpoint (29) describes a resulting state achieved non-volitionally, in contrast to (28). Note that the verb *pang-*, also seen in (25) and (27), translates as 'be born' with perfect inflection.

The examples in (30-32) are counterparts of the derived stems in (10-12).

(30) ***xoj -t -ola'*** *la'way*
be.tired-PFT-3P.PAT children
'the children are tired (have become tired)'

(31) ***xux -t -ola'*** *la'way*
be.delayed-PFT-3P.PAT children
'the children are late (have been delayed)'

(32) ***pagay -t -ola'*** *lipa'*
be.in.bloom-PFT-3P.PAT flowers
'the flowers were in bloom (had blossomed)'

Whether expressed as achievements, with andative derivation and perfective aspect as in (10-12), or as states, underived and with perfect aspect as in (30-32), the situations are evaluated as beyond the volition or intention of the participant. However, examples (18, 20-21) demonstrated the flexibility speakers have in conveying perceived or attributed agency with typically non-agentive predicates.

2.3. Activities.

Activities are situations characterized as dynamic, durative, and atelic; as such, they do not predicate changes of state, and indeed nearly all examples of activities occur in the agentive pattern. Predications with non-agentive inflection involve roots classifiable as states but expressed as ongoing or progressive, in a prefatory phase to a change of state.

2.3.1. Activities with agentive inflection.

Most activities inflect non-agentively, as in (33) and (34).

(33) ***f'aj-kay'*** *lammixtyo' lanek'*
rise-DUR.PL cats trees
'cats climb trees'

(34) ***may-'me'*** *lakujlwe'*
go -IMPF.PL men
'the men will go'

2.3.2. Activities with non-agentive inflection.

Durative and imperfective viewpoints can be interpreted as prefatory activity.

(35) ***jujl -k -ilya'*** *lankamisa'*
get.dry-DUR-3P.PAT shirts
'the shirts are getting dry'

(36) *faduy iya' layñe'wa'ek',* ***tyoj-'m -ola'***
planting 1S.AGT my.little.trees, grow-IMPF-3P.PAT
'I'm planting my little trees, they will grow'

In (35-36), the endpoints of dryness and growth have not been achieved. In (37), perfective viewpoint signals interpretation as an activity or a resulting state.

(37) ***tyoj-p -ola'***
grow-PFV-3P.PAT
'they grew, they are adults'

The multiple interpretation of (37) corresponds to that of (17).

2.4. Semelfactives.

In Smith's analysis, "semelfactives are single-stage events with no result or outcome" (1997:29). Like achievements, they are dynamic and instantaneous; unlike achievements, they are atelic, as endpoints are irrelevant in a single-stage event. All the predicates examined in this section might arguably be classified as 'involuntary response', yet the patterns of morphosyntax differ.

2.4.1. Semelfactives with agentive inflection.

Predicates of bodily function which inflect agentively include *k'ojpa-* 'cough', *ix-* 'sneeze', *ch'ilyo-* 'defecate', *chalay-* 'urinate', *najwa-* 'vomit', and *stas-* 'pass wind'. The inflection pattern may respond to cultural perceptions of relative control of body function. Alternatively, it may reflect the unergative character of the verbs, each of which predicates a change of state which produces or expels something from the body.

2.4.2. Semelfactives with non-agentive inflection.

Non-agentive semelfactive predications involve involuntary response and motion. *Kwilif-* 'tremble' and *jwix-* 'move in agitation' both denote motion in situ. The first (38) is used to describe someone shivering with cold, trembling in fear, or shaking with the earth during an earthquake. The second (39) was collected in a conversation about pregnant women.

(38) ***kwilif'-p -ola'*** *lansanyu'*
shake -PFV-3P.PAT people
'the people trembled, shivered'

(39) ***jwix-'m -ola'*** *lijlku'u*
jump-IMPF-3P.PAT their.abdomens
'their abdomens were jumping about'

The verbs *tye-* 'fall down,' *tyamay-* 'fall flat,' and *lan-* 'become stuck' all describe the unexpected and involuntary cessation of motion.

(40) ***tye -p -ola'*** *la'way'*
fall.down-PFV-3P.PAT children
'the children fell down'

(41) ***tyamay -x -p -ola'*** *la'way'*
fall.flat-AND-PFV-3P.PAT children
'the children fell flat'

These verbs always occur with non-agentive marking, even in contexts in which the participant has just been warned and arguably might be able to control the event.

2.5. Cognitive and emotional activity.

Predications of cognitive and emotional activity are difficult to classify as situation types. Does *"I think"* depict a state or an activity? With respect to agentive and non-agentive inflection, the domain presents a picture reminiscent of what has been described for changes in the physical body. Some verbs inflect agentively, such as *swelme-* 'think', *fasku-* 'remember', *ja'ko-* 'forget', *smay-* 'dream', *stule-* 'get angry' and *joo-* 'cry, weep', while other situations such as *tos-* 'learn', *tontoj-* 'err', *mes-* 'become wicked', *paychu-* 'fear, be afraid' and *chijko-* 'become calm' (stop crying), are expressed with non-agentive morphology.

While these differences could appeal to a culture-specific understanding of agency (cf. DeLancey 1985), an examination of alternative marking of specific predicates suggests a pattern of using non-agentive morphosyntax to signal the (non-volitional) moment of change as qualitatively distinct from the general state or activity. For example, there are only two occurrences of *tay-* 'comprehend' in the corpus. Both were collected in elicitation, without discourse context to provide a clue to their interpretations. However, it is feasible to suggest that (42) depicts an ongoing state of understanding, while (43) predicates the immediate resulting state of the moment of understanding.

(42) ***tyay -kay'*** *la'way'*
comprehend-DUR.PL children
'the children understand'

(43) ***tya+l+ay -t -olwa'***
comprehend+PL+ -PFT-2P.PAT
'y'all understand (have understood)'

In similar fashion, the corpus includes only two examples of *soo-* 'laugh'. The first is from a narrative about children in the classroom and predicates an ongoing or habitual activity (44). The second example was collected by Waterhouse, in a narrative about a fiesta dance where everyone enjoyed themselves (45).

(44) ***xyo -day'*** *ñi*
laugh-DUR.PL nothing.more
'they just laugh'

(45) ***xyo -go -p -ola'***
laugh-APPL?-PFV-3P.PAT
'they laughed (about it)'

I suggest another translation of (45) could be, "they burst out laughing."

3. Conclusions.

Three main points were argued in this paper. 1) The agent-patient morphosyntactic system of Lowland Chontal is 'agentive' rather than 'active' because it is the perceived agency of the participant, and not the aspectual class of the predication as state vs. event, that determines the pattern of person marking. 2) Non-agentive morphosyntax signals a change of state or transformation evaluated by the speaker as outside the volition or intention of the participant. 3) The term 'transformation' is used as a supertype category that includes predications of resulting state, prefatory phase, and involuntary response, as well as the moment of change itself.

References

Chafe, Wallace. 1970. *Meaning and the structure of language.* Chicago: University of Chicago Press.

DeLancey, Scott. 1985. Agentivity and syntax. Chicago Linguistics Society 21, Parasession on causatives and agentivity, 1-12.

Dowty, David R. 1979. *Word meaning and Montague grammar.* Dordrecht: Reidel.

Foley, William A. and Robert D. Van Valin, Jr. 1984. *Functional syntax and universal grammar.* Cambridge: Cambridge University Press.

Mithun, Marianne. 1991. Active/agentive case marking and its motivations. *Language* 67.3:510-46.

Smith, Carlota S. 1997. *The parameter of aspect*, 2nd edition. Dordrecht: Kluwer Academic Publishers.

Smith Stark, Thomas C. and Fermín Tapia García. 1986. The active-static nature of Amuzgo (Otomanguean). Paper presented at the annual meeting of the Linguistic Society of America, New York, NY.

Turner, Paul and Shirley Turner. 1971. *Chontal to Spanish-English, Spanish to Chontal Dictionary.* Tucson: University of Arizona Press.

Vendler, Zeno. 1967. *Linguistics in philosophy*. Ithaca: Cornell University Press.

Waterhouse, Viola. 1962. The grammatical structure of Oaxaca Chontal. Bloomington: Indiana University Research Center in Anthropology, Folklore, and Linguistics Publication 19; supplement to *International Journal of American Linguistics* 28.2.

Aleut Number Agreement

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Aleut is a seriously endangered group of dialects spoken in the fog-shrouded Aleutians by no more than 150 people. The grammar of this language, especially in its original state, is as clouded as the surroundings in which it is spoken, filled with mysteries and wonders that challenge numerous of the assumptions about languages that linguists have developed on the basis even of the hundreds of far-flung cases that have by now been described in reasonable detail.

1. Aleut and Eskimo

Aleut is the only certain relative of the Eskimo languages. Though it was once believed that the system of grammar found in Eskimo developed out of a system more like the Aleut, it is now generally agreed that things went the other way around. Eskimo languages have large inflectional paradigms in which the person and number of one or two entities are more-or-less explicitly coded on heads of phrases. Aleut presents a much withered set of contrasts. The reduction in the paradigms is particularly striking where there are two actants and both are third person.

For a particular set of such endings, viz. the absolutive of nouns and the indicative of verbs, Berglsland 1997a reconstructs the following forms for Proto-Eskimo-Aleut, where EC ("External Category) is the number of the possessor for the noun and of the Ergative case term for the verb, and IC is the number of the noun itself or of the Absolutive term for the verb. (See also Fortescue et al. 1994):

EC	sg.	du.	pl.
IC			
sg.	-(ng)a	-(ng)ak	-(ng)at
du.	-k	-kek	-ket
pl.	-(ng)i	-(ng)ik	-(ng)it

Table 1. Proto-Eskimo-Aleut third person on third person inflections

In Aleut, the descendant of this transitive paradigm, which Bergsland 1997b (henceforth "AG") calls the anaphoric or referential endings, shows only one category of

number agreement which we can immediately see matches the diagonal in Table 1., i.e., the forms where the number of both actants is the same:

sg.	du.	pl.
-a	-kix	-ngis (ngin)

Table 2. Aleut third person anaphoric (referential) inflections

Eskimo also has a set of inflections for unpossessed nouns and intransitive verbs those in Table 3. being the reconstructions for the absolutive case form of nouns and the indicative mood of verbs:

sg.	du.	pl.
-q	-k	-t

Table 3. Proto-Eskimo-Aleut third person intransitive inflections

These have been inherited intact in Aleut:

sg.	du.	pl.
-x̂	-x	-s (-n)[1]

Table 4. Aleut third person non-anaphoric inflections

In both language groups there is also a case distinction that cross-cuts the other dimensions of inflection. The cases of Eskimo include two direct cases, the absolutive and the relative, so-called by Kleinschmidt 1968, and nowadays usually called the the ergative in Eskimo studies, and several oblique cases. In Aleut, however, ordinary nouns show a contrast only between absolutive and relative. The complete paradigm of third person inflections in Aleut for nouns and certain moods of the verb is found in Table 5., where "A" indicates the anaphoric endings, and non-A the non-anaphoric endings.

[1] The parenthesized forms are what is found in Eastern Aleut.

		sg.	du.	pl.
non-A	ABS	-x̂	-x	-s (-n)
	REL	-m	-x	-s (-n)
A	ABS	-a	-kix	-ngis (ngin)
	REL	-(g)an	-kin	-ngin

Table 5. Aleut third person inflections

In Eskimo the inflections are distributed in a rather ordinary way that is attested in a great many languages around the world. the transitive endings are always and only used for possessed nouns and for transitive verbs, The intransitive endings for unpossessed nouns and for formally intransitive verbs. Nouns agree with their possessors and display their own internal number, and verbs agree with the absolutive and ergative term or terms of the clause. The inflections are redundant when there is an overt possessor or overt terms and can be used alone to signal definite reference to a non-explicit possessor or non-explicit term of the clause. The relative case of Eskimo is used for the possessor of a noun and for the agent of a simple transitive verb (hence the designation "ergative").

As we shall see, the distribution of number morphology, the anaphoric versus non-anaphoric endings, and the absolutive versus relative cases are all quite different from the more-or-less ordinary facts of Eskimo.

2. The Aleut system

It should not be too surprising that the reduced paradigms of Aleut are redeployed in some fashion, but the degree and manner of the rearrangement is truly remarkable. One of the main reasons for the thoroughgoing rewriting of the inflectional job description in this language is that despite the apparent need for pronouns that the collapse of inflections would seem to have engendered, in fact there are no non-reflexive third person pronouns in Aleut at all, a point that Bergsland stressed repeatedly in his work.

What has happened is that the inflectional contrasts that are still available - the marking of the number of one participant, the distinction between anaphoric and non-anaphoric inflections, and the contrast of absolutive and relative - are used to signal features that would be carried by third-person pronouns (if there were any) almost anywhere in the domain of the inflected element. Thus it is not just features of the possessor of an NP that can be recorded on the possessum, but also features of the possessor of the possessor, if that entity has the discourse status of a pronoun. Likewise, it is by no means the case that only features of terms (i.e., arguments) show up inflectionally marked on verbs, but features of possessors of the arguments, of non-arguments, and indeed, elements of subordinate clauses, provided these are in the sort of relation to the discourse that usually invokes pronominal reference in languages that have pronouns or the equivalent of them.

This system makes maximum use of its very limited referential powers. Many of the most basic ambiguities that might arise in a language that lacks third person pronouns are in fact resolved by the number/anaphoricity/case contrasts. Part of the trick is that two of the dimensions of inflection, the number marking and the anaphoric marking, operate independently and can therefore sometimes signal the values of two separate non-explicit participants. The principles of number marking, while remarkable from a cross linguistic perspective, are reasonably clear and will form the substance of this study. It will be necessary to touch on the equally strange, and partly similar principles governing the appearance of anaphoric versus non-anaphoric forms of verbs, but the details of this system are too complex to deal with in a paper of this length.

2.1 Number marking in the NP

Formally possessed[2] nouns in Aleut always bear the anaphoric affixes, indicated by "A" in morpheme glosses, as opposed to the non-anaphoric inflections, which will not be specially indicated. When the possessor of the NP is fully specified in the relative case ("REL"), the number of the affix on the possessum generally reflects the number of the possessum itself.

(1) hla-s ada-a
boy-pl father-A/sg "the boys' father"
(2) tayaĝu-m hla-ngis
man-REL/sg boy-A/pl "the man's sons"

The possessor may be left out and understood as definite, just as in Eskimo, but when this happens in Aleut, the number marking on the head can reflect the number of the head **or** of the possessor, the choice usually being in favor of the term with the higher number. (See Leer 1991 for an enlightening cross-linguistic discussion of this phenomenon.) With the singular number, then, both the possessed noun and the non-overt possessor must be understood as singular. If either or both the non-explicit possessor or the possessed is to be understood as plural, the plural inflection must be used.

(3) hla-a
son-A/sg "his son"

(4) hla-ngis
son-A/pl "his/her sons; their son/sons"

2.2 Number of the non-anaphoric verb.

The non-anaphoric verb generally agrees with a fully specified nominal subject in number:

(5) aliĝ-in awa-na-n-ulux
old.man-pl work-PAST-pl-not "The old men did not work."
(6) Piitra-x̂ asx̂inu-s kidu-ku-x̂
Peter-sg girl-pl help-PRES-sg "Peter is helping the girls."

[2] For a description of the great variety of relationships expressed by "possessors" in Aleut, see my (ref).

As is to be expected, the subject may be absent, its reference and number carried by the verb's inflection, and the subject being understood as definite. Thus *awananulux* is a complete sentence meaning "they did not work", and *asx̂inus kidukux̂* means "he/she is helping the girls.

If the subject is possessed and the possessor is fully specified, the number of the the subject is carried over to the verb as above, in the fashion familiar from many languages including English.

(7) hla-s ada-a awa-ku-x̂ (130)
boy-pl father-A/sg work-PRES-sg "The boys' father is working."

But when the possessor of the subject is missing, there is a surprise: in such a case, the number marking of the verb "as a general rule"[3] (AG 131) reflects not the number of the subject, but number of the missing possessor.

(8) kita-ngis hataĝ-na-x̂ ax̂ta-na-x̂
foot-A/pl slip-PAST-sg appear-PAST-sg
"his feet apparently slipped" (AG 131)

2.3 Anaphoric V marking

The appearance of anaphoric inflection on a verb is also connected with the absence in surface form of some NP, in which case the reference is understood as contextually definite. In fact, anaphoric verb marking **requires** that there be a semantically understood participant that is not reflected in the overt form of the sentence. The following examples illustrate the phenomenon:

(9) a. Piitra-x̂ tayaĝu-x̂ kidu-ku-x̂
Peter-3/s man-3/s help-pres-3/s
"Peter is helping the man." (AG 126)
b. Piitra-m kidu-ku-u
Peter-3/rel/s help-pres-3/A/s
"Peter is helping him/her." (AG 126)

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[3] Several counterexamples from Eastern Aleut are presented in Bergsland (AG:132 (ref), including:

(i) ada-ngis hiing a-ku-x̂
father-A/pl here be-PRES-sg
"Their father is here."

Atkan Aleut and older Eastern would have the plural *akus* here, indicating the number of the non-explicit possessor.

(10) a. Piitra-x̂ tayaĝu-m had-a-n huya-ku-x̂
Peter-3/s man-3/rel/s direction-A/loc go-pres-3/s
"Peter is going toward the man." (AG 126)
b. Piitra-m had-a-n huya-ku-u
Peter-3/rel/s direction-A/loc go-pres-3/A/s
"Peter is going toward him/her."(AG 127)

(11) a. Piitra-x̂ hla-s ada-a kidu-ku-x̂
Peter-3/s boy-pl. father-3/A/s help-pres-3/s
"Peter is helping the boys' father." (AG 144)
b. Piitra-m ada-ngis kidu-ku-ngis
Peter-3/rel/s father-3/A/pl help-pres-3/A/pl
"Peter is helping their father." (AG 144)

In the a. examples we find a non-anaphoric verb form and an absolutive case subject. In the b. examples, there is something missing from the predicate, the verb form is anaphoric, and the subject is in the relative case. Note that the anaphoric form is required not only when the object is missing, but also when the object of what is arguably a postposition is missing (as in 10)) or when the possessor of the object is missing (cf. (11)).

2.4 Number marking of anaphoric verbs

As just described, anaphoric verb marking only occurs when there is something missing outside of the subject. If there is just one piece of the predicate missing then the number of the missing element is marked on the verb, as in the following simple examples. In other words, as Leer 1987 observes, the number of a missing element takes precedence over the number of the subject.

(12) Piitra-m kidu-ku-ngis
P.-REL/sg help-PRES-A/pl "Peter is helping them"

(13) hla-s kidu-ku-u
boy-pl help-PRES-A/sg "the boys are helping him/her."

Example (11b) above shows that the same principles extend to missing possessors of objects. The number marking on the verb in that examples is neither that of the subject, nor of the object, but of the missing **possessor** of the object.

If there is more than one missing item in the clause, they all compete for number marking on the verb, the general scheme being that the one(s) with the highest number wins. The competition includes elements missing form both subject and object and for this reason, the sentence in (14) can have any of the translations shown.

(14) kidu-ku-ngis
help-PRES-A/pl "He/she helped them./They helped him/her/them."

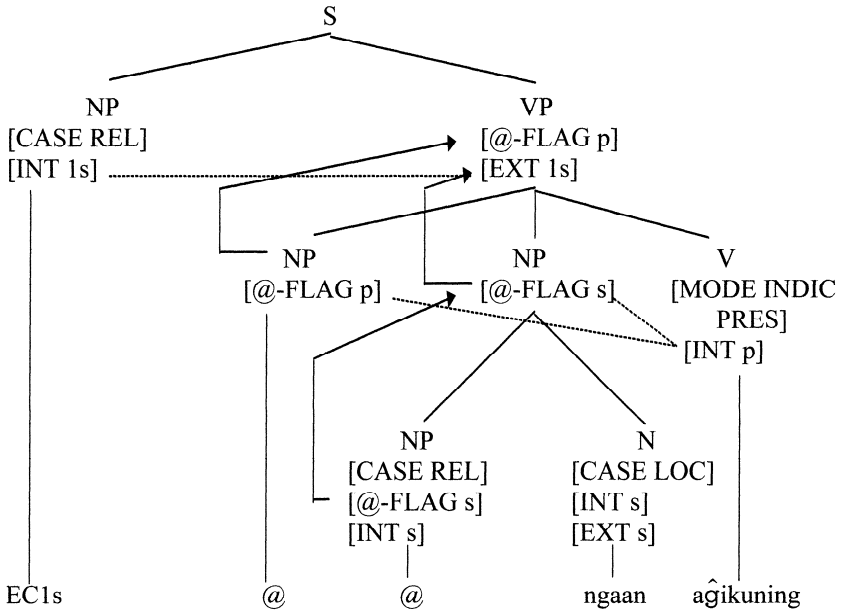
3. Previous accounts

There have been very few attempt to handle the facts of Aleut in a generative framework. Michael Fortescue (1985) produced an analysis in the framework of Dik's Functional Grammar (1978) that rests heavily on notions like Topic and Theme. Jeff Leer (1987a, 1987b) wrote extensively on the problem in a modified Generalized Phrase Structure Grammar framework, but felt it necessary to add transformational movement rules. More recently, in a paper mainly devoted to a different language, Ken Hale (1997) included a very brief sketch of some of the basic facts of Aleut that followed a version of Principles and Parameters/Minimalism Theory. I think it is fair to say that all of these accounts have come to grief. While I don't have the space to undertake a detailed criticism of these works here, but I would like to briefly compare the treatment I am about to give with Leer's and Hale's ideas.

The crux of the problem of Aleut agreement is clearly the handling of the missing elements that the inflection gives clues to. Leer assumes that these are present in the syntactic structure as empty NPs bearing number features as well as a special feature that he calls [@-FLAG]. The [@-FLAG] and number features spread up the tree from wherever they originate according to the scheme of "foot features" of GPSG (Gazdar et al. 1985). If two come together at a single node, only the one with the higher number survives to rise higher in the tree. A verb that inherits the [@-FLAG] feature will be inflected as anaphoric. Leer assumes NP VP structure for the clause, so empty NPs in the subject will not reach the verb and will not induce anaphoric marking. But the number features from an empty element in the subject, will reach the S node, from which point they are spread downward to VP, since they are assumed to be both "head features" and "foot features" (Gazdar et al. 1985). When they reach the verb, the number features that originate from the subject will compete with number features that have spread upwards from within VP, the highest number winning, as before.

Without going into more detail, I reproduce a tree from Leer 1987 to illustrate his intricate system. The solid arrows indicate the passage of foot features, the dotted arrows the passage of head features.

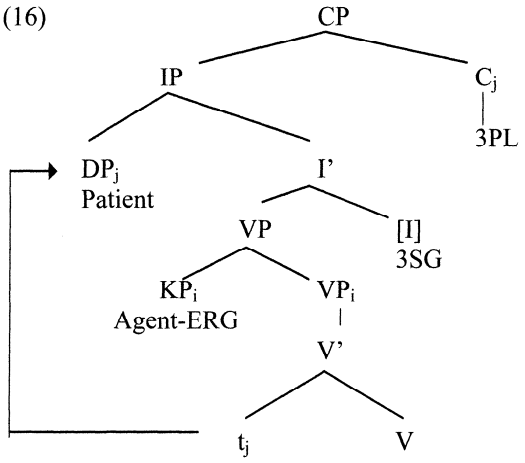
(15) "I gave it to them."



Hale employs a version of Bittner and Hale's (1996) theory of ergativity according to which an intransitive subject or a transitive object must raise to Spec of IP where it is assigned absolutive case by agreement with features in C. The raising is necessitated by the assumption that in a syntactically ergative language, "... the VP is opaque to government at S-Structure. The nominative argument (i.e., the object of the transitive .. and the subject of the intransitive ...) must therefore raise to [Spec, IP] to satisfy a filter that requires it to be governed by C or K ..." The subject of a transitive is then trapped in VP where it cannot get nominative case because the VP is opaque to government and therefore receives marked Structural Case, which in Inuit is the ergative case, for reasons too intricate for me to fully present here.

Bittner's tree for a transitive sentence with a plural object is accordingly:

(16)



Hale extends this to Aleut by saying that "We can simply say that when the object is non-overt – so-called small *pro* – it fails to be case-marked by the verb, for some reason, and therefore raises ..."

It is perhaps unfair to criticize this analysis here, since it is first of all based upon limited data and secondly is meant to be only a suggestion. There are however, several serious problems with a treatment of this kind that I believe illustrate the futility of handling Aleut agreement this way. Two such problems will have to suffice here. First, it is not just objects that do that can trigger the Aleut Effict, but also objects of prepositions, as illustrated in (10) above. Here Hale says: "Suppose, however, that the raising is forced by the postposition, unable to license the non-overt argument for some reason." But this will also have to be the case for the **possessor of the object**, as we have seen. One could also say that the structure fails to assign ergative case "for some reason", but what is the reason? Whatever it is, it cannot be Bittner's reason, for that is a parameter covering the whole language that should hold for all subjects of intransitives and objects of transitives - and only for them. The second problem is that where there is a missing subject (or possessor of the subject) and a missing object (or possessor of the object), they compete for number marking on the verb, as we have seen. In such a case the verb is necessarily anaphoric and the subject is in the relative case. (i.e. Hale and Bittner's ergative). Therefore the object must have raised, stranding the subject. But the number marking of the verb can at the same time be the number of the **subject** or the **possessor of the subject**, if either of these happens to be higher than the number of the object (or the possessor of the object). Thus (14) can mean, inter alia "Their father is helping him", where the anaphoric verb form would indicate for Hale that the object has been raised, but the plural verb form should mean that the subject has been raised. As far as I can tell, both things can't be true at the same time.

4. A Neo-Bergslandian approach

Recall Bergsland's repeated claim that Aleut lacks third person pronouns. Both Hale's and Leer's solutions, however, postulate a sort of third person pronoun, albeit an empty one, in the syntax of the language. Both theories are, in rather different ways, versions of the old fashioned Americanist view (Kroeber 1909, or more modernly, Jelinek 1984) that certain languages have incorporated their pronouns into verbs as inflections, Hale's much more directly so than Leer's, since Hale has the pronouns move around so as to nestle close to the source of the inflectional feature, while Leer merely transmits features around the tree in the manner of traditional concord systems. In any case, Leer's "@" is a sort of a null pronoun.

The problem with the view that Aleut null agreement involves a pronoun is that the language really has pronouns (in the first, second, and reflexive persons) that can show up as inflections. Such morphologically realized pronouns work completely differently from the supposed empty pronouns in the third person. Compare the following examples where a first person pronoun, realized as inflection on the noun or verb, with the corresponding third-person forms:

(17) a. hla-ngis mika-ku-x̂
boy-A/pl play-PRES-sg "His/her sons are playing."

b. hla-ning mika-ku-s
boy-1sg/pl play-PRES-sg "my sons are playing"

(18) a. tayaĝ̂u-m hla-a kidu-ku-u
man-REL/sg boy-A/sg help-PRES-A/sg
"The man is helping his (another's) son."

b. tayaĝ̂u-m hla-ng kidu-ku-x̂
man-REL/sg boy-1sg/sg help-PRES/sg
"The man is helping my son."

In (17a) we see that the number of the missing third-person possessor is what is marked on the verb, not the number of the subject itself. With an incorporated first-person pronominal possessor as in (17b), though, the number of the subject itself is what is reflected on the verb. In (18a) we see that the Aleut Effect is triggered by a third person possessor of the object, whereas it is not triggered by a first person possessor in (18b), even though both are marked inflectionally. First person possession thus counts as a fully specified NP – a pronoun.

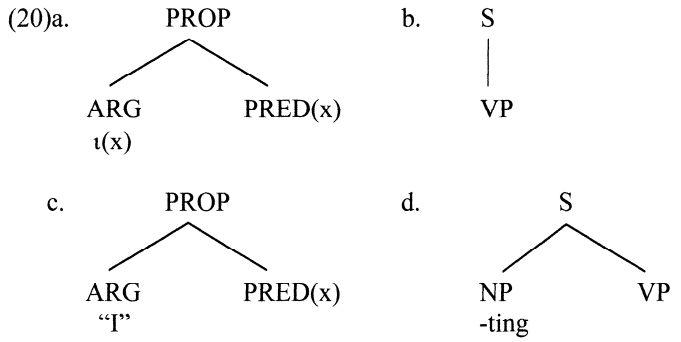
So I would like to take Bergsland seriously and assume that where we would expect a pronoun in the syntax, in fact there is nothing. But what about the understood reference to a third person entity? Well, the way I have become accustomed to thinking about things grammatical, reference is a matter of semantics and semantics is to be located in the semantic component, not the syntax. There is, of course, a close association in both directions between definite, discourse supported reference in the semantics of languages and definite pronouns in their syntaxes, but the correlation is not perfect in either direction. there are definite pronouns without reference (e.g., expletive *it* in English) and there are references without (real) pronouns (e.g., the subjects of English imperatives).

Suppose then that wherever NPs are called for in the syntax of Aleut, they are optional, and the following schema holds generally for the language:

(19) X → ... (NP) ...

In other words, for every syntactic phrase type that includes an NP, there is another just like it, but without the NP.[4]

However, referential expressions in the semantics, that is to say arguments, are not optional, else meaning structures would be ill formed. Suppose we have a meaning structure such as (20a), where the symbolism ι(x) represents the content of a definite, third person pronoun. If Aleut has no syntactic forms to encode this content, but does have the possibility of omitting NPs, then (20b), say the single word *hilakuχ̂* "he/she is reading" is the best match it has in its syntactic repertoire for the content in (20a). Furthermore, (20b) cannot encode any other meaning structure with a more specific argument, a first person pronoun, say, or a descriptive argument, since the language does have expressions that specifically encode such content. The meaning structure in (20c) is directly matched by the syntax in (20d), where it so happens that the pronoun subject is realized as verbal morphology in an expression like hilakuq(ing) "I am reading".



Bergsland's assumption is sufficient all by itself to account for the fact that Aleut sentences with missing NPs are interpreted as if they had third person pronouns in them.

5. The Efficiency of Aleut

Regardless of how outlandish the Aleut system of number and anaphoricity marking might appear, it is remarkably efficient in signaling meaning, as Leer (1987) has trenchantly observed. With just a few inflectional contrasts in the third person, and with a single case distinction, numerous potential ambiguities are eliminated. Consider a verb like *qa-* "eat", which can either be used transitively or intransitively. With one explicit and fully specified NP, the case of the NP and the anaphoricity of the verb will partly determine whether the term is a transitive or intransitive subject or a transitive object. For example, the sentence *qa-m qa-ku-u*, with a relative case NP and an anaphoric verb form (fish-REL/sg eat-PRES-A/sg) can only mean "The fish is eating it."

[4] This is the equivalent of a metarule in the formalism of Gazdar et al. (ref).

If the number of the verb disagrees with the that of the single term, there is a further narrowing of interpretation. Thus *qa-x̂ qa-ku-s*, with a singular absolutive term and a non-anaphoric plural verb (fish-sg eat-PRES-pl), can only mean "They are eating the fish.", while *qa-s qaku-x̂* (fish-pl eat-PRES-sg) is unambiguously "He/she is eating the fishes."

There are further clarifications that result when one or the other term has a missing possessor. The sequence *hlam* "boy-REL/s" *adaa* "father-A/s" could. wout of context, represent a single term "the boy's father (absolutive)" or two terms "the boy (relative)" and "his father (absolutive)". But the verb form will often clear up the ambiguity. *Hla-m ada-a awa-ku- x̂* (boy-REL/sg father-A/sg work-PRES-sg) means "The boy's father is working." and *hla-m ada-a ukux̂ta-na-x̂.* (boy-REL/sg father-A/sg see-PRES-sg) is "He/she saw the boy's father."

I leave it as an exercise to the reader to figure out why these forms have the interpretations they do and no others.

The cunning design of the Aleut agreement system, I wish to suggest, cannot be captured by a traditional set of grammatical rules, which will necessarily miss the fact that maximum use is made of minimal resources. Rather, I would like explore the possibility that Aleut agreement is a matter of grammatical constraints, or forces, or tendencies rather than rules. These sometimes conflict, but in the aggregate they do a good job of signaling meaning without specifically encoding it. It has become stylish nowadays to shy away from rule-governed grammar and turn in the direction of declarative, constraint-based systems such as one finds in HPSG (Pollard and Sag 1994) or OT (Prince and Smolensky 1993). I urge such a view in the case of Aleut not because (or not just because) of its currency, but also because it does a much better job - and much simpler job - of handling the facts.

6. Principles of Aleut number agreement

A very simple and straightforward account of the central facts of Aleut number agreement can be achieved by factoring out four competing principles and establishing a pecking order among them.[5] These principles are all observed explicitly or implicitly in Leer's 1991 article and, as I shall show, are all attested in other languages. As a first approximation, these forces can be ranked in the order given, but with no ranking between (21a.i) and (21a.ii).

(21) a. i. INHER: A head reflects its inherent number
ii NULL: A head reflects the number of a missing element in its domain
b. HIGH: A head agrees with the highest numbered agreement trigger in its domain
c. SUBJ: A verb reflects the number of its subject

[5] Interestingly, Leer (1987a:21) credits John Goldsmith with the idea that "principles of priority that cover part of Aleut agreement. They are:
(i) personal E[mpty] C[ategory] > other
(ii) @ > overt NP
(iii) subject > non-subject
Principles (ii) and (iii) correspond exactly to my (21 a ii) and (21 c). I find the suggestion of such a system in 1987 nearly prescient.

The intuitive idea of the domain of a syntactic element is that it is the semantic constituent that corresponds to the maximal projection of which the syntactic element is the head.[6] I assume that a verb in Aleut heads a clause, so any element of the meaning of that clause is in the domain of the verb. The domain of a noun is any element within the argument corresponding to the NP of which the noun is the head.

6.1 Accounting for the facts

Let us now consider various cases of Aleut number agreement in increasing order of complexity. The simplest is that of an unpossessed noun. Here the only relevant constraint is INHER, since there is no subject, no missing element, and no competition among agreement triggers. Thus unpossessed nouns will ordinarily have suffixes that indicate the number of the noun itself: *hla-x̂* "the boy; *hla-s* "the boys".

The next case to consider is a possessed noun with explicit possessor, where NULL is obviously irrelevant. Whether or not we take the possessor to be a subject, the constraint INHER outranks agreement with the subject, and since there are not other agreement triggers, HIGH will not play any rule. Thus each head will bear its own inherent number: *tayaĝ̂u-m hla-a* "the man's son"; *tayaĝ̂u-s hla-a* "the men's son"; *tayaĝ̂u-m hla-ngis* "the man's sons"; *tayaĝ̂u-s hla-ngis* "the men's sons":

Now let us take up the case of a possessed noun with a null possessor. Here NULL and INHER are both applicable, but only one can be satisfied since there is only one number that can be marked on the head. Since NULL and INHER are unranked with respect to each other, the contest will be decided by the constraint HIGH. For this reason *hla-ngis*, though marked plural, can be interpreted as "their son" with a plural possessor and a singular possessum. Constraint satisfaction arrays for *hla-ngis* and *hla-a* as alternatives for expressing meanings where the number of the head and the possessor disagree are compared in (22) and (23).

(22) "their son"

	NULL	=	INHER	HIGH	SUBJ
hla-ngis	√		*	√	-
hla-a	*		√	*	–

[6] For those who are fond of formalism for its own sake:

Let S be a syntactic expression and PROP be its semantic representation.

Let X be a syntactic head in S and XP the first maximal projection dominating it.

By definition, a meaningful element is any constituent of S whose meaning is represented by some semantic constituent in PROP

The *semantic domain* of X is the smallest semantic constituent in PROP that contains all the meaningful elements dominated by XP

(23) "his/her sons"

	NULL =	INHER	HIGH	SUBJ
hla-ngis	*	√	√	–
hla-a	√	*	*	–

Let us next examine how verbs work in this system. In the following examples, only the form of the verb is being considered, the form of the nominal terms being handled in the manner just discussed. First, if there is a fully specified subject present and there is no competition from null elements elsewhere in the sentence, the only relavant constraint is SUBJ, since verbs have no intrinsic number. Thus *tayaĝ̂u-s awaku-s* is grammatical and means "the men are working", whereas *tayaĝ̂u-s awaku-x̂*, with singular agreement on the verb is ungrammatical. Likewise *tayaĝ̂u-x̂ hla-s kiduku-x̂* is grammatical and means "The man is helping the boys", while **tayaĝ̂u-x̂ hla-s kiduku-s*, which fails to show agreement with the subject, is ungrammatical.

If the entire subject is missing, NULL comes into play. Here the number of the subject and the number of the missing element are of course the same, and therefore *awaku-s* will only mean "They are working" and *awaku-x̂* will only mean "He/she is working." Similarly, with a missing subject and a fully specified object, the verb agreement will give the number of the subject: *hla-x̂ kiduku-x̂* "he/she is helping the boy"; *hla-x̂ kiduku-s* "they are helping the boy." If this latter sentence were to mean "he is helping the boy", there would be unnecessary violations of both NULL and SUBJ.(24) "they are helping the boy"

(24) "they are helping the boy"

	NULL	INHER	HIGH	SUBJ
*hlax̂ kiduku-x̂	*	–	–	*
hlax̂ kiduku-s	√	–	–	√

Next, let us examine the case where the possessor of the subject, and nothing else, is missing. We have already seen example (8) above, where the singular possessor of a plural subject is missing and the verb is singular in agreement with the missing possessor. Similarly, a missing plural possessor of a singular subject will trigger plural agreement on the verb. These two case, when compared to their possible alternatives with the opposite verb agreement, are what demonstrate the greater strength of NULL with respect to both HIGH and SUBJ, as the following constraint-satisfaction tables show.

(25) "his feet slipped"

	NULL	INHER	HIGH	SUBJ
* kitangis hatag̑nas	*	–	√	√
kitangis hatag̑nax̂	√	–	* *	

(26) "their father is working"

	NULL	INHER	HIGH	SUBJ
*adangis awakux̂	*	–	*	√
adangis awakus	√	–	√	*

There is another case, namely where the possessor of a relative-case subject is missing and there is a transitive verb with a specified object. The system here predicts that the verb will agree in number with the missing possessor, but I have not been able to find a clear example of it:

(27) "Their father took the fish" (hypothetical)

	NULL	INHER	HIGH	SUBJ
ada-ngin qa-x̂ su-qa-ngis	√	–	√	*
ada-ngin qa-x̂ su-qa-a	*	–	*	√

One of the most unusual features of the Aleut agreement system is that it extends to subordinate clauses, missing elements of which can have their features recorded on matrix verbs. The triggering of the Aleut effect on matrix verbs because of missing elements in subordinate clauses is a very complex affair having to do with the mood of the verb and coreference conditions between elements of the subordinate and superordinate verbs, but as far as number marking is concerned, things work mostly as predicted by the four ranked constraints that we have been examining.

The verb *ax̂ta-*, for example, is what Bergsland calls an auxiliary. It can take a finite clausal complement in the remote (i.e., PAST) tense, and is used to "indicate an inference about the past". Consider, then, the sentence *tukungis anas ax̂takus* "He was [it is said] their chief", where both the subordinate and the matrix clause verbs agree with the missing possessor of the subordinate clause subject.

(28) *tuku-ngis* *a-na-s* *a$\hat{x}$ta-ku-s* (AG 210)
chief-A/pl be-PAST-pl seem-PRES-pl
"He was [it is said] their chief".

The same thing happens when the object of a transitive subordinate clause is missing. In the sentence *Piitram ukuqangis a$\hat{x}$takus* "Peter found them (they say)", we have a subordinate clause *Piitram ukuqangis* which could be an independent sentence meaning "He found them." Within this clause, the missing plural object triggers plural agreement, as we should now expect, and furthermore, the Aleut Effect is found: the verb is inflected for the anaphoric feature and the subject is in the relative case, since something outside the subject is missing.[7] As in the previous example, the verb agrees with the null element, here a missing subordinate clause object, since the constraint NULL is highly ranked and the missing term is in the domain of the matrix verb, though not in any grammatical relation with it.

(29) *Piitra-m* *uku-qa-ngis* *a$\hat{x}$ta-ku-s* (AG 210)
Peter-REL/sg find-PAST-A/pl seem-PRES-pl
"Peter found them (they say)."

The four forces I have identified are enough to correctly predict the number in these cases. The marking of number is not a matter of syntactic movement or anything of the kind, but simply an indication of the fact that there is a semantic reference that is not directly encoded by a pronoun in the syntax.

6.2 The ordinariness of Aleut

As unprecedented as the Aleut system is, looking at it as the interaction of separate violable constraints brings it to a certain extent in line with what is found in other languages. Subject agreement is, of course, completely pedestrian, as is the extremely widespread tendency for the number of a noun to be marked on the noun itself. These are two of the forces we have observed in Aleut. The predominance of the higher number is actually found in English as a growing tendency to say things like "Closing down conferences are always difficult", a real example produced by Dan Rostenkowski on July 13, 1993. Such examples are also facilitated by a pressure to agree with the nearest noun. But in my corpus of twenty or so examples of proximity agreement, I found only one example in which a singular overrode a plural, namely "What steps does the Sandinista government think is necessary?" (See Sadock 1998.)

As for NULL, there are languages like Breton, (Stump 1984) where only a missing subject triggers agreement. With an overt subject, the verb appears in an unmarked form, but when there is no subject, the verb marks the person and number of the subject:

[7] Note that the main-clause verb, while agreeing in number with the null element in the subordinate clause, does not show the Aleut effect.

(30)	a.	Levrioù	a	lenn(*-ont)	ar	vugale
		books	Pcl	read(*-pl)	the	children
		"The children read books"				
	b.	Levrioù a	lenn-ont			
		books Pcl	read-pl "They read books"			

Perhaps we should also include here the case of French predicate agreement. When the VP is intact, agreement is with the subject, but when the object is not present within the VP headed by the participle, it is the object whose features are registered:

(31) J'ai mis la chemise. "I have donned (m) the shirt(f)."
(32) la chemise que j'ai mise "the shirt(f) that I have donned(f)"
(33) Je l'ai mise. "I have donned(f) it(f) [i.e., the shirt(f)]."

Indeed, in Aleut the placement of the object before the subject creates a null in the predicate that requires number agreement (if nothing else competes) and triggers the Aleut Effect. I cannot find an example with unequivocal agreement, but (35), (Bergsland 1997b:11) illustrates the Aleut effect under inversion of subject and object, at least.

(34)	Paavila-$\hat{x}$	sistra-ng	ajaga$\hat{x}$ta-na-$\hat{x}$
	Paul-sg	sister-1s/sg	marry-PAST-sg "Paul married my sister."
(35)	sistra-ng	Paavila-m	ajaga$\hat{x}$ta-qa-a
	sister-1s/sg	Paul-sg	marry-PAST-sg "Paul married my sister."

7. Conclusions

What is odd about Aleut is not the factors that figure in determining agreement inflection, but how these factors interact. In particular, marking of nouns for their inherent number and verbs for the number of their subjects, while figuring in the inflectional system of this language, play a smaller role than they do in other languages. But there is a reason. Given that there are no third person pronouns in Aleut, number marking is deployed in such a way as to maximize its communicative value. This maximization of effect, it seems to me, is entirely obscured in a rule-governed system. But by separating out the forces, we can see that their ordering is motivated functionally, at least to some extent. In particular, the fact that subject agreement is the least important factor in Aleut agreement is understandable since subject agreement is often redundant and of little communicative value.

I have not dealt here with anaphoric agreement, or the Aleut Effect, as I call it. Preliminary consideration of the phenomenon suggests that it can be modeled in much the same way as number agreement. But the demonstration of that suspicion must wait for a subsequent study.

References

Bergsland, Knut. 1997a. How did the Aleut language become different from the Eskimo languages? *Languages of the North Pacific Rim, Vol. 2*, ed. by Osahito Miyaoka and Minoru Oshima, 1-17. Kyoto: Graduate School of Letters, Kyoto University.

Bergsland, Knut. 1997b. *Aleut grammar - Unangam tunuganaan achixaasiX*. Fairbanks: Alaska Native Language Center.

Bittner, Maria and Ken Hale. 1996 Ergativity: toward a theory of a heterogeneous class. *LI 27*: 531-605.

Dik, Simon C. 1978. *Functional Grammar*. London: Academic Press.

Fortescue, Michael. 1985. Anaphoric Agreement in Aleut. *Predicates and Terms in Functional Grammar*, ed. by M.A. Bolkestein, C. de Groot, and J.L. Mackenzie, 105-26. Dordrecht: Foris.

Fortescue, Michael, Steven Jacobson, and Lawrence Kaplan. 1994. Comparative Eskimo dictionary with Aleut cognates. Fairbanks: Alaska Native Language Center.

Gazdar, Gerald, Ewan Klein, Geoffrey K. Pullum, and Ivan A. Sag. 1985. *Generalized Phrase Structure Grammar*. Oxford: Blackwell.

Hale, Ken. 1997. The Misumalpan causative construction. *Essays on Language Function and Language Type : Dedicated to T. Givón*, ed. by J. Bybee, Haiman, and S. A. Thompson, 199-216. Amsterdam: John Benjamins.

Jelinek, Eloise. 1984 Empty categories, case and configurationality. *NLLT 2*: 39-76.

Kleinschmidt, S. (1851) 1968. *Grammatik der grönländischen Sprache mit teilweisen Einschluss des Labradordialekts*. Hildesheim: Georg Olms.

Kroeber, A.L. 1909. Noun incorporation in American languages. *Verhandlungen der XVI. amerikanisten Kongress*, 568-76. Vienna.

Leer, Jeff. 1987a. Aleut anaphora. M.A. thesis. Chicago: University of Chicago.

Leer, Jeff. 1987b. The relative case in Aleut. Kroeber, Paul D. and Robert E. Moore, eds. *Native American languages and grammatical typology: papers from a conference at the University of Chicago, April 22*, 149-64. Bloomington: Indiana University.

Leer, Jeff. 1991 Evidence for a northern Northwest Coast language area: promiscuous number marking and periphrastic possessive constructions in Haida, Eyak, and Aleut. *IJAL 57*. 158-93.

Pollard, Carl, and Ivan A. Sag. 1994. *Head-Drive Phrase Structure Grammar*. Chicago: University of Chicago Press.

Prince, Alan, and Paul Smolensky. 1993. *Optimality*. unpublished ms., Rutgers University and University of California.

Sadock, Jerrold M. 1998. Grammatical tension. *CLS 34: The Panels*, 179-200.

Stump, Gregory T. 1984. Agreement vs. incorporation in Breton. *Natural Language and Linguistic Theory 2*, 289-348.

Olutec motion verbs: grammaticalization under Mayan contact[1]

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Olutec, a Mixe-Zoquean language from the Mixean subgroup spoken in southern Veracruz, Mexico, has a set of intransitive motion verbs that have followed three different paths of grammaticalization: (1) *auxiliaries of motion* originated from motion-cum-purpose clauses; (2) *directionals* developed from the grammaticalization of serialized verbs in second position; and (3) *associated motion suffixes* grammaticalized from archaic embedded structures. The goal of this work is to demonstrate that Olutec developed the paradigms of *auxiliaries of motion* and *directionals* due to areal contact with Mayan languages spoken in the adjacent region, i.e., languages of the Tzeltalan and Kanjobalan groups.[2] The semantics and morphosyntax of the paradigms of auxiliaries and directionals found in Mayan are remarkably similar to the ones found in Olutec. Historical, typological, and structural facts demonstrate that Olutec (and other Mixe-Zoquean languages) borrowed the directional and auxiliary grammatical patterns from Mayan. On the other hand, with respect to the associated motion paradigm, the evidence suggests that this set of suffixes is an internal development that only occurred in one of the two branches of Mixe-Zoquean languages. The analysis presented here is based on the comparison of grammatical patterns found in Olutec, and the Mayan languages Tzotzil (Tzeltalan), Jakaltek, and Akatek (Kanjobalan).

1. Pronominal marking with motion verbs

Olutec is a head-marking language. The rich inventory of verbal morphology includes pronominal proclitics and plural suffixes that cross-reference core argu-

[1] The Olutec and Akatek data come from fieldnotes and texts collected by the author. Field research was made possible through Universidad de Guadalajara, UNAM, CONACYT, National Geographic Society (#5319-94), National Science Foundation (SBR-9411247 and SBR-9511713) and The Max Planck Institute for Psycholinguistics. My thanks are due Antonio Asistente and many other Olutec speakers for their cooperation, and to Scott DeLancey, Connie Dickinson, Loretta O'Connor and Doris Payne for their valuable suggestions.

[2] See Wichmann (1995) and Kaufman (1997) for the classification of Mixe-Zoquean languages and Campbell and Kaufman (1985) for the classification of Mayan languages.

ments. The language follows an ergative-absolutive alignment.[3] The S and O are marked by absolutive proclitics, whereas the A is marked by ergative proclitics.[4] The simple clause in (1a) illustrates the 1st person absolutive proclitic preceding an intransitive motion verb *nükx* 'go.' In (1b), the 1st person ergative proclitic signals the A of the transitive verb *yak-nükx* 'take.' The pronominal proclitics are selected from three different sets: Set A, Set B and Set C. However, the conditions that trigger the use of each particular set are not relevant here. In the glosses, the specific function of each set is indicated in parenthesis.[5]

(1) a. **ta**=nükx-am-**a:t** tan=na:x-mü
OLU B1(ABS)=go-IRRI-PL.SAP A1(PSR)=land-LOC
'**We** will go to my homeland.' {rp2/256}

b. je˜ machi:ti **tan**=yak-nükx-am
that machete A1(ERG)=CAUS-go-IRRI
'**I** will take that machete.'

The suffix *-(V):t*, in (1a), marks plurality for 1st or 2nd person, whereas the suffix *-küx*, in (2), marks plurality for 3rd person core arguments.

(2) nimetzi ˜i=nükx-**küx**-i tu˜kutik
OLU pair A3(ABS)=go-PL3-INCD together
'**The two of them** go together.' {rspf1/336}

The examples (3a-b) are motion-cum-purpose constructions that contain two verbs: V1 and V2. V1 is a motion verb and V2 is an intransitive or transitive verb which represents the purpose for which the motion was undertaken. In this construction, V1 carries a pronominal proclitic coreferential with the subject of V2. The subject of V2 is marked by an absolutive proclitic when the verb is intransitive, as in (3a), and by an ergative proclitic when the verb is transitive, as in (3b).

[3] The language also exhibits a direct vs. inverse alternation (cf. Zavala 1999).
[4] The labels S, O, and A are used in the sense of Dixon (1979).
[5] The following abbreviations are used: A Set A (ergative in independent clauses, absolutive in dependent clauses, and possessor of nouns); ABS absolutive; AKA Akatek; AN animate enclitic; ASP aspect; AUX auxiliary; B Set B (absolutive in independent clauses); BEN benefactive applicative; C Set C (ergative in dependent clauses); CAUS causative; CL clitic; COM completive for independent; COMD completive for dependent; DIM diminutive; DIR directional; ERG ergative; EV evidential; EXCL exclusive; INCD incompletive for dependent; INCI.I incompletive independent for intransitives; INCI.T incompletive independent for transitives; IRR irrealis; IRRI irrealis for independent; IRRD irrealis for dependent; JAK Jakaltek; LOC locative postposition; MIRAT mirative; NEG negative; NMZR nominalizer; OLU Olutec; PASS passive; PL plural; PL3 plural for third person; PL.SAP plural for a speech act participant; PSR possessor; SUBJ subjunctive; TZO Tzotzil; V1 first verb; V2 second verb; = clitic boundary.

(3) a. ˜**i=nükx**-i=xü=k ˜**i** =wit-i je˜=k koya
OLU A3(ABS)=go-INCD=EV=AN A3(ABS)=walk-INCD that=AN rabbit
'The rabbit was going walking.' {koya/93}

b. **ta=nükx**-am=ak **tax=**nüm-a/-e je/=k je:fe
B1(ABS)=go-IRRI=AN C1(ERG)=say-BEN-INCD that=AN boss
'I am going to tell that to the boss.' {Conejo/6}

When the coreferential subject of V1 and V2 has plural reference, both verbs are suffixed by a plural marker, as in (4).

(4) ˜i=nükx-**küx**-i ta=pük-**küx**-i je˜ tzoy
OLU A3(ABS)=go-PL3-INCD C3(ERG)=grab-PL3-INCD that medicine
'**They** are going to get that medicine.' {sarnozo/63}

The pattern illustrated in (1a-b) to (4), where core arguments are explicitly signaled on the verb by pronominal proclitics and plural suffixes, is consistent throughout various types of simple and complex sentences. There are, however, two types of complex V1-V2 constructions in which this pattern for marking person and number is not attested: a) complex clauses with a nominalized V2, and b) auxiliary constructions. The V1 in both types of constructions is a motion verb. In what follows, only the second type will be discussed.

2. Olutec Auxiliary + V2 construction

Unlike the motion-cum-purpose construction that marks person and number in both V1 and V2, as shown in (3a-b) and (4), the auxiliary construction carries only one pronominal proclitic and one plural marker per clause. These two markers appear on V2. The motion verb (V1) carries only aspect (or mode). The argument structure of the whole clause is determined by V2. Intransitive V2's carry an absolutive proclitic expressing the S, as in (5a), whereas transitive V2's carry an ergative proclitic expressing the A, as in (5b).

(5) a. **nükx**-u tan=ma:j˜-i
OLU go-COMI A1(ABS)=sleep-INCD
'I went to sleep.'

b. **nükx**-a˜n=ak tax=˜e:p-e tan=majaw
go-IRRD=AN C1(ERG)=see-INCD A1(PSR)=woman
'I am going to see my wife.' {olu5/37}

Whereas the examples (5a-b) show that auxiliaries do not take absolutive proclitics, the ones in (6a-b) show that they also do not take plural suffixes when the mover and the entity that performs the action are coreferential and plural. The plural marker only appears on V2.

(6) a. **nükx**-am tax=yakpitzüm-i-**:t** je˜ ko:chi-nak
OLU go-IRRI C1(ERG)=pull_out-INCD-PL.SAP that car-DIM
'**We** are going to pull out that little car.' {lm2/306}

b. na˜kxej **nükx**-i=k ta=kep-**küx**-i ja:yaj-tük
when go-INCD=AN C3(ERG)=look_for-PL3-INCD other-PL
'When **the other ones** went to look for him.' {olu26/59}

In Olutec, the predicates in first position that follow the auxiliary pattern shown in (5a-b) and (6a-b) form a closed set of eight members. Three of the auxiliaries convey motion: *mi:n˜* 'come,' *nükx* 'go,' *˜oy* 'go and return (in completive aspect).' The other five auxiliaries convey aspect and mode: *po:x* 'delay,' *küx* 'finish,' *˜ix˜ i:y˜* 'begin,' *˜it* 'progressive,' and *jat* 'be able.'

All the Olutec auxiliaries have intransitive lexical counterparts that take absolutive proclitics when functioning as main verbs. The form *mi:n˜* 'come' appears in its lexical use in (7a-b), and in its auxiliary use in (7c). (7a) is an intransitive simple clause. (7b) illustrates a motion-cum-purpose clause in which both verbs carry a pronominal proclitic identifying the coreferential subject (S of V1 and A of V2). (7c) is an auxiliary construction with only one pronominal proclitic, identifying the coreferential argument, attached to V2.

(7) a. **min**=ka:=ja:=**mi:n˜**-a˜n
OLU A2(ABS)=NEG=MIRAT=come-IRRD
'You shouldn't have come.' {com/213}

b. **min**=ka:=ja:=**mi:n˜**-a˜n **mix**=to:k-e
A2(ABS)=NEG=MIRAT=come-IRRD C2(ERG)=sell-INCD
'You shouldn't have come to sell it.' {olu4/200}

c. ti: ya˜aj **mi:n˜**-u **mix**=tun-i
what this come-COMI C2(ERG)=do-INCD
'What did you come to do?' {viaj3/106}

Out of a set of fourteen intransitive verbs that conflate motion, deixis and orientation, only three have become auxiliaries: *mi:n˜* 'come,' *nükx* 'go,' and *˜oy* 'go and return.' The rest of the motion verbs, such as *pitzüm* 'exit,' *jamat* 'arrive there,' *tük˜i:y˜* 'enter,' require the absolutive proclitic and the plural suffix in morphosyntactic contexts in which the true auxiliaries do not.

Thus, auxiliaries may be defined as a closed set of grammaticalized verbs with a defective argument structure.

An additional piece of evidence that supports this view comes from a construction in which the auxiliary is followed by a passivized V2. Olutec passives are intransitive clauses with the patient functioning as the only core argument (marked by the absolutive). The agent in passives may not be expressed.

(8) na˜kxej **tan=yak-kep**-e
OLU when A1(ABS)=PASS-look_for-INCD
'When I am being looked for [...]' {viaj2/55}

Auxiliaries can occur before a passivized V2. The only syntactic argument of this complex construction refers to the semantic patient of V2. The entity that moves, which in the active version is coreferential with the semantic agent of V2, cannot be expressed in the passive version of AUX+V2, not even as an oblique phrase. English does not have this type of passive, making the translation awkward. In the translation, I use the pronoun 'they,' which identifies the moving entity coreferential with the agent of V2; even though in the Olutec clauses the understood 'they' is not an argument of the clause and cannot be expressed.

(9) ˜**oy**-u=k ˜i=**yak**-kep-e ˜alwanyil
OLU go_and_return-COMI=AN A3(ABS)=PASS-look_for-INCD mason
'(They) went (and came back) to look for the mason.' {café/6}

The fact that the only core argument in examples such as (9) does not correspond to the mover clearly demonstrates that the auxiliary does not contribute to the argument structure of the AUX+V2 clauses.

3. Auxiliaries as an areal feature

The type of AUX+V2 construction found in Olutec is also attested in the two branches of Mixe-Zoquean languages (Himes 1997; Johnson 2000), and in the Tzeltalan and Kanjobalan groups of the Mayan family. Mayan auxiliary constructions have been amply studied (Aissen 1994; Haviland 1991, 1993; Zavala 1993). In what follows, I will discuss only the Tzotzil auxiliary construction as a representative of the phenomenon found in Tzeltalan and Kanjobalan languages.

Tzotzil, similar to Olutec, is a head-marking language that follows an ergative-absolutive alignment. The absolutive pronominals indicate the S and O, whereas ergative pronominals indicate the A.

Tzotzil motion-cum-purpose and auxiliary constructions are formally equivalent to the corresponding Olutec constructions. Compare the Olutec motion-cum-purpose construction, (3a-b) and (4), with its Tzotzil equivalent, (10).

(10) l-**i-muy**-otikotik **j**-k'el-tikotik
TZO COM-B1(ABS)-ascend-1PL.EXCL A1(ERG)-see-1PL.EXCL
'We went up to see it.' {Aissen 1994: 683}

The Tzotzil auxiliary construction shares most of the structural properties of the Olutec equivalent discussed above. Tzotzil auxiliaries are grammaticalized verbs with defective argument structure. They are not marked for person and number. These markers only appear on the V2, as illustrated in (11).

(11) **muy** **j**-k'el-tikotik
TZO ascend A1(ERG)-see-1PL.EXCL
'We climbed up to see it.' {Aissen 1994: 683}

Tzotzil auxiliaries form a paradigm of 14 members (Haviland 1991, Aissen 1994). The list includes twelve motion auxiliaries whose etymological sources are intransitive motion verbs: *b'a(t)* 'go,' *k'ot* 'arrive there,' *tal* 'come,' *yul* 'return here,' *a(y)* 'go and return,' *och* 'enter,' *lok'* 'exit,' *muy* 'ascend,' *yal* 'descend,' *sut* 'return,' *kom* 'remain,' and *ech'* 'pass.' Tzotzil also has two aspectual auxiliaries whose etymological sources are intransitive phase verbs: *lik* 'arise, start,' *laj* 'finish.'

The Tzotzil passive auxiliary construction is highly similar to the one found in Olutec. When an auxiliary combines with a passivized V2, the 'mover,' which is semantically coreferential with the semantic agent of V2, is omitted or expressed as oblique. Thus, the only core argument involved in (12) is what otherwise is the primary object of V2, i.e., 1st person absolutive (Aissen 1994: 665-75).

(12) **ech'** ak'-b-**at**-ik-**on** j-moton
TZO pass give-BEN-PASS-SUBJ-B1(ABS) A1(PSR)-gift
'They passed by to give me my gift.' {Aissen 1987: 666}

Therefore, cases such as (12) clearly demonstrate that the argument structure of the whole construction depends entirely on the argument structure of the V2.

3.1. AUX+V2: Grammatical borrowing from Mayan to Mixe-Zoque

There are four noticeable features of the auxiliary construction that are shared by Olutec and Tzotzil. First, the members of the auxiliary paradigm were recruited from similar sets of intransitive motion and aspectual verbs. Second, the auxiliaries are not marked for person and number. Third, the auxiliary occurs before the main verb. And fourth, in the passive alternation of the auxiliary construction, the auxiliary maintains its motion semantics, although the moving entity is not conveyed as a core argument of the clause. The first two features are cross-linguistically very common in the process of grammaticalization of lexical intransitive verbs into auxiliaries. The third feature is commonly attested in verb-initial languages. The fourth feature is rarely found in auxiliary constructions cross-linguistically. All the features together, but particularly the last one, indicate that the auxiliary construction must be regarded as an areal feature that has spread through the two branches of the Mixe-Zoquean family and the neighboring Mayan languages of the Kanjobalan and Tzeltalan groups.

We can conclude that we are dealing with a clear case of "indirect diffusion" under language contact, i.e., diffusion of a grammatical pattern without the morphemes that express it (Heath 1978:125). But since what is shared by both language families is a grammatical pattern and not a set of lexical or morphological items, there is the problem of identifying the direction of the diffusion.

At least three facts indicate that the direction of borrowing was from Mayan to Mixe-Zoquean. First, the paradigms of auxiliaries found in Kanjobalan (Akatek, Q'anjob'al and Jakaltek) and Tzeltalan (Tzotzil and Tzeltal) share approximately the same number of items (between 11 to 13 motion auxiliaries and between 2 to 4 phase auxiliaries). No Mixe-Zoquean language has more than 3 motion auxiliaries. Thus, since the auxiliary system in Mayan is semantically much more elaborated than the Mixe-Zoquean, I assume that the Mayan pattern is an earlier development.

Second, the pattern AUX+V2, where V2 is an embedded verb, is typically attested in verb-initial languages. Mayan languages exhibit all the major typological traits that are common to verb-initial languages: prepositions; noun-genitive order; AUX-verb; and LightV-verb. In contrast, Mixe-Zoquean languages have postpositions, genitive-noun order, V-AUX, and verb-LightV patterns associated with verb-final languages. Therefore it is evident that the AUX+V2 pattern found in Mixe-Zoquean was borrowed from languages with verb initial characteristics.

And third, auxiliaries in Kanjobalan languages appear before a V2 following two different patterns. In the first pattern, auxiliaries are not marked for person or number, (13a), similarly to the Tzotzil and Olutec construction discussed above. In the second pattern, the auxiliary takes an absolutive marker cross-referencing the patient of V2, (13b). The construction in (13b), shows an advanced stage of reanalysis of the auxiliary verb into a verbal proclitic.

(13) a. oj-jul **in-y**-a'-kan naj=an
AKA IRR-arrive_here B1(ABS)-A3(ERG)-put-DIR:stay PRO/he=CL1
'He will come (here with me) and then abandon me.' {Zavala 1993: 99}

b. tumi man **in**-jul **s**-chi'-ey-toj eb'
perhaps NEG/IRR B1(ABS)-arrive_here A3(ERG)-bite-DIR-DIR they
'They might come to eat me.' {Zavala 1993: 100}

Since the reanalysis shown in (13b) has not been attested in either of the Mixe-Zoquean languages, but is widespread in three Mayan groups (Kanjobalan, Quichean and Mamean (Zavala 1993)), I conclude that the type of auxiliary construction in (13a) is older in Mayan and that the Mixe-Zoquean languages borrowed from them.

4. Grammaticalized motion verbs as directionals

Olutec exhibits a serial verb construction whose second member is a verb of motion that grammaticalized as a directional. Directionals describe the trajectory of a figure conveyed by the main verb. The meaning of a directional is usually associated with the absolutive argument of the first verb. When the first verb is intransitive, the directional describes the trajectory of the S, but when the first verb is transitive, the directional describes the trajectory of the O. For instance, in (14a) the directional *ka* ˜ 'down' describes the trajectory of the S of the intransitive verb

ma ˜tz 'fell,' whereas in (14b) the same directional describes the trajectory of the O (*te:jana ˜w* 'big tiles') of the transitive verb *yopop* 'pile.'

(14) a. ø=ma˜tz-**ka**˜-u jo:yan
OLU B3(ABS)=fell-DIR:down-COMI nest
'The (wasp's) nest fell down.' {id2/139}

b. te:jana˜w ta=yopop-**ka**˜-i
big_tile C3(ERG)=pile-DIR:down-INCD
'They are piling big tiles down there.' {lm3/486}

There are three reasons for considering directionals as grammaticalized morphemes. First, directionals form a closed paradigm of thirteen members: *-mi:n* ˜ 'hither,' *-nükx* 'thither,' *-ya˜t* 'arriving here,' *-jamat* 'arriving there,' *-pet* 'up,' *-ka*˜ 'down,' *-tük˜i:y*˜ 'in,' *-pitzüm* 'out,' *-yü˜k* 'out,' *-wimpit* 'back,' *-nax* 'across,' *-tuk* 'across,' *-tij* 'staying.'

Second, directionals are verbal suffixes that do not contribute to the argument structure of the clause. And third, unlike their source verbs, directionals do not convey motion. This is clearly appreciated when directionals co-occur with verbs of locution and perception whose semantics do not conflate motion, as in (15)

(15) ja˜=k ˜i=˜ix-**nax**-pe peryo:diko
OLU he=AN A3(ERG)=see-DIR:across-INCI.T newspaper
'He is reading the newspaper.' {rsch1/338}

In the above example neither the agent nor the patient moves. Directionals are used with locution and perception verbs to convey the fact that the sound or range of vision of an entity is directed towards a location fixed in space.

5. Directionals as an areal feature

Comparable directional systems that grammaticalized from motion verbs are found in both branches of the Mixe-Zoquean family and all Mayan languages with the exception of languages of the Yucatecan and Huastecan groups (Kaufman 1997). The most elaborated systems of directionals within the Mayan family are found in the Kanjobalan and Tzeltalan groups (Haviland 1991, 1993; Craig 1993; Zavala 1993). I will use data from Jakaltek to illustrate the pattern found in the languages geographically adjacent to Mixe-Zoquean.

In Jakaltek, directionals are enclitics that appear following non-verbal predicates and verbs. Unlike Olutec, Jakaltek directionals may form chains, i.e., a sequence of up to three directionals may be cliticized to a predicate, as in (16).

(16) x-ø-s-muj-**kan-ay-toj**
JAK COM-B3(ABS)-A3(ERG)-bury-DIR:stay-DIR:down-DIR:thither
'They buried him for good.' {Craig 1993: 25}

The Jakaltek directional paradigm contains 12 elements, most of them related to a verbal lexical form. There are three different subsets that are recognized by the position they occupy after the predicate and by their shared semantic traits. The first set of directionals carries deictic meaning: *-toj* 'thither,' *-tij* 'hither,' *-apnoj* 'arriving there,' and *-ol* 'arriving here.' The second set of directionals encodes path and orientation: *-(a)h* 'up,' *-(a)y* 'down,' *-(o/e/i)k* 'in,' *-(e/i)l* 'out,' and *-(e/i)k'* 'passing, through.' The third set of directionals conveys aspectual meaning: *-pax* 'back, again,' *-kan* 'remaining, still,' and *-kanh* 'up, suddenly.'

5.1. Directionals: Grammatical borrowing from Mayan to Mixe-Zoque

The paradigms of directionals found in Mixe-Zoquean and the adjacent Mayan languages are remarkably similar in terms of the number of forms, their semantics, and their morphosyntactic slot within the verb. Several facts indicate that Olutec and the rest of the Mixe-Zoquean languages acquired the verb-plus-directional pattern from the neighboring Mayan languages. Thus, this is also a case of indirect diffusion in which Olutec borrowed a morphosyntactic pattern without borrowing the lexicon.

There are four traits that indicate that Mayan directionals form a much more elaborated and older system than the one found in Mixe-Zoquean. First, some of the Mayan directionals have undergone phonological erosion, whereas all the directionals in Olutec are formally identical to their lexical source.[6] Second, Mayan predicates take strings of up to three directionals, (16), whereas no Mixe-Zoquean language allows strings of directionals. Third, the kind of root that hosts a directional in Mayan is less restricted than in Olutec. Directionals in Olutec cannot be suffixed to non-verbal predicates, adpositions, or copulas, while this restriction is not found in Mayan. And fourth, in addition to the purely directional meaning, some of the directionals in Mayan languages have become aspectual markers (Craig 1993). No similar development has occurred in Olutec.

I am assuming that a directional system that shows the four features discussed above is in a more advanced stage of grammaticalization than a directional system that lacks them. Therefore, when comparing the various features attested in Kanjobalan and Tzeltalan, but absent in Olutec and other Mixe-Zoquean languages, it is safe to maintain that Mayan languages have had directionals for a longer period of time than Mixe-Zoquean languages, since one would expect that an older system would exhibit characteristics that are usually attested in later stages of a grammaticalized cline. In addition, a comparison of the text frequency of predicate tokens followed by directionals in Jakaltek and Olutec discourse reveals that the use of directionals in Olutec is very limited: 30 % of predicates in Jakaltek Maya (Craig 1993) as compared to only 1% in Olutec.

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[6] I am aware that some other explanation may account for the difference in the degree of phonological erosion among the different language families. However, since the phonological erosion is found only in Mayan, and this aligns with the rest of the evidence presented here, I consider it legitimate to proceed with the interpretation I am suggesting.

(17) a. *Frequency of directionals in Jakaltek discourse*

Total with directionals	=	159 tokens =	**35%**
Total without directionals	=	301 tokens =	65%
TOTAL NUMBER OF PREDICATES=		460	= 100%

b. *Frequency of directionals in Olutec discourse*

Total with directionals	=	204 tokens =	**1%**
Total without directionals	=	19,948 tokens =	99%
TOTAL NUMBER OF PREDICATES=		20,152	=100%

Finally, there is further historical evidence indicating that directionals in Olutec are an innovation that is replacing an older directional system that can be traced back to Proto-Mixe-Zoque (PMZ). Olutec and the rest of the Mixe-Zoquean languages inherited from PMZ a system of lexical affixes that convey directional meaning. The etymology of the majority of these affixes is obscure, although some clearly evolved from body-part nouns or locational adverbs. The Olutec paradigm includes the prefixes *yuk-* 'upwards', *ko:-* (in combination with the suffix *-ta:k˜*) 'downwards'; and the suffixes: *-ta:k˜* 'downwards', *-˜i:y˜* 'inwards', and *-tzo:y˜* 'lack of motion'. Out of these five Olutec affixes, the only one that can be traced back to its etymological source is *yuk-*, originally a locational adverb meaning 'up there.' Both of these uses are illustrated in (18).

(18) ja˜=k tzu:k ˜asta **yuk**-pi ˜i=**yuk**-yokx-e
OLU DEF=AN mouse very up_there-LOC A3(ABS)=upwards-jump-INCD
'The mouse is jumping way up there.' {rsch2/493}

The paradigm of lexical affixes is no longer productive; i.e., these affixes only attach to a few roots. In contrast, the directionals that grammaticalized from verbs may occur with a wide range of verbal roots. This may be an indication that the directional system, whose etymology is still very transparent, was a later development and is in the process of replacing the older lexical affix system.

6. The associated motion construction

Olutec and the rest of the Mixean languages have developed a particular construction to convey complex events with the meaning 'X moves in a particular direction while doing something else.' Similar constructions reported for Australian languages are known as 'associated motion constructions' (Wilkins 1991). In this construction, the two verbs share a single set of pronominal and aspectual markers. V1 determines the argument structure of the clause, while V2 is an intransitive motion verb. The Olutec example in (19a) is intransitive, whereas the example in (19b) is transitive.

(19) a. ø=**piyü˜k-tak-pitzüm**-u ja˜
OLU B3(ABS)=run-LNKR-exit-COMI he
'He went out running.' {id2/175}

b. siga:rru=k ˜i=**ju˜k-tak-mi:n˜**-u
cigarette=AN A3(ERG)=smoke-LNKR-come-COMI
'He came smoking a cigarette.' {rsch1/9}

Note that the two verbs are linked by the suffix *-tak* 'linker'. The etymology of *-tak* is unknown, but it is likely that this suffix was originally a non-finite marker. If this hypothesis is correct, this would mean that what synchronically is a complex verb, originally was a construction containing a subordinated adverbial clause followed by a main clause containing a motion verb. The order of the two verbs is consistent with the verb-final features of Olutec. This word order pattern is also attested when adverbial clauses, participial clauses, and secondary predicates form complex sentences with a matrix verb in second position.

Thirteen Olutec motion verbs participate in the associated motion construction: *mi:n˜* 'come,' *nükx* 'go,' *ya˜t* 'arrive here,' *jamat* 'arrive there,' *tük˜i:y˜* 'enter,' *pitzüm* 'exit,' *pet* 'ascend,' *ka˜* 'descend,' *yü˜k* 'leave,' *nax* 'cross,' *wimpit* 'return,' *wit* 'go about, walk,' and *piyü˜k* 'run.' Note that the last two verbs of this list conflate motion and manner. None of the verbs conflating motion and manner have grammaticalized as auxiliaries or directionals in any of the Mixe-Zoquean or Mayan languages.

Neither Mayan nor Zoquean languages show the type of co-lexicalized construction found in Olutec. Thus, it seems likely that the associated motion construction is a Mixean internal development.

7. Conclusion

Based on the structural and semantic similarities and differences of Olutec and Mayan auxiliaries and directional constructions, I have argued that Olutec and the rest of the Mixe-Zoquean languages developed paradigms of auxiliaries and directionals through areal contact with the adjacent Mayan languages of the Tzeltalan and Kanjobalan groups. The borrowing of syntactic patterns that contain grammaticalized elements inside the construction has received insufficient attention both in grammaticalization theory and historical linguistics. When a language borrows syntactic patterns of this sort, the immediate assumption is that this type of borrowing necessarily implies intense contact and one would expect that in situations of intense contact the target language would show evidence of extensive lexical borrowing (cf. Thomason and Kaufman 1988). However, this prediction is not fulfilled in any of the Mixe-Zoquean languages, which have borrowed Mayan grammatical patterns, but not Mayan grammatical or lexical morphemes.

What is common to find in this linguistic area are morphological and syntactic calques that are translated using the lexicon of the particular language. For instance, in addition to the patterns examined in this paper, some of the Tzeltalan languages and many of the Mixe-Zoquean languages use the grammaticalized form of the verb 'finish' as a 3rd person plural marker. Since this type of development is rare cross-linguistically, it is clear that this is another case of grammatical diffusion under language contact whose direction should be investigated.

References

Aissen, Judith. 1987. *Tzotzil clause structure.* Dordrecht: Reidel.

Aissen, Judith. 1994. Tzotzil auxiliaries. *Linguistics* 32: 657-90.

Campbell, Lyle, and Terrence Kaufman. 1985. Mayan linguistics: where are we now? *Annual Review of Anthopology* 14: 187-98.

Craig, Colette G. 1993. Jakaltek directionals: their meaning and discourse function. *Languages of the World* 7: 23-36.

Dixon, R.M.W. 1979. Ergativity. *Language* 55: 59-138.

Haviland, John B. 1991. The grammaticalization of motion (and time) in Tzotzil. Working paper # 2, Cognitive Anthropology Research Group at the Max Planck Institute for Psycholinguistics.

Haviland, John B. 1993. The syntax of Tzotzil auxiliaries and directionals: the grammaticalization of "motion." *Proceedings of the 19th Annual Meeting of the Berkeley Linguistics Society,* 35-49.

Heath, Jeffrey. 1978. *Linguistic diffusion in Arnhem Land.* Canberra: Australian Institute of Aboriginal Studies.

Himes, Valerie. 1997. *Multi-verb constructions in Sierra Popoluca.* M.A. thesis, University of Pittsburgh.

Johnson, Heidi Anna. 2000. *A grammar of San Miguel Chimalapa Zoque.* Ph.D. dissertation, University of Texas at Austin.

Kaufman, Terrence S. 1997. Grammaticalization through incorporation in the diachrony of Mije-Sokean Verbs. Paper presented at the Rice University Conference on Grammaticalization, Houston, Texas.

Thomason, Sarah Grey and Terrence S. Kaufman. 1988. *Language Contact, creolization, and genetic Linguistics.* Berkeley: University of California Press.

Wichmann, Søren. 1995. *The relationship among the Mixe-Zoquean languages of Mexico.* Salt Lake City: University of Utah Press.

Wilkins, Davis P. 1991. The semantics, pragmatics and diachronic development of 'associated motion' in Mparntwe Arrernte, *Buffalo Papers in Linguistics* 1: 207-257.

Zavala, Roberto. 1993. *Clause integration with verbs of motion in Mayan languages.* M.A. thesis, University of Oregon.

Zavala Roberto. 1994. Se les está 'moviendo' el tapete: Gramaticalización de verbos de movimiento en akateko. *Memorias del II Encuentro de Lingüística en el Noroeste*, Vol 2, 101-144. Hermosillo: Universidad de Sonora.

Zavala, Roberto. 1999. External possessor in Oluta Popoluca (Mixean). Applicatives and incorporation of relational terms. In Doris L. Payne and Immanuel Barshi (eds.) *External Possession*, 339-372. Amsterdam: John Benjamins.

Olutec motion verbs under Mayan contact

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