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SPECIAL SESSION
ON
HISTORICAL ISSUES IN
NATIVE AMERICAN LANGUAGES

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Edited by
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and
Roxane Beeler

Berkeley Linguistics Society
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This volume is dedicated to the memory of
Mary Haas
(1910-1996)

SPECIAL SESSION

Metonymy and the Creation of New Words in Hupa*

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All languages create new words constantly, via such processes as semantic shifts and borrowings. In the case of semantic shift, a language extends the meanings of words which already exist in the lexicon. This allows the language to cover new meanings without creating new words. In the case of borrowing, a language utilizes words from the lexicons of other languages. Typically, these words are borrowed when a particular cultural item or concept is borrowed as well, or when the speakers of the borrowing language come into contact with a natural phenomenon for which they have no name, but which does have a name in another language. It is also possible for a language to simply create a new word altogether. Each language has its own particular set of rules for creating words in this way. Thus the process of coinage, and the rules within each language for coining new lexical items, is one of the places in which unique aspects of a language can be found.

In this study, I will show that languages do not only have certain preferred formal structures for creating new words, but that they have certain preferred conceptual structures, as well. In other words, we expect that when a language creates new words through the process of coinage, it will have particular grammatical rules for doing so. Perhaps the language uses certain verb formations in creating new words, or it may use nouns plus a particular particle. In any case, it is possible to study a language and to gain some sense of the ways in which that language creates new words. I will show that languages do not simply have these formal, grammatical, rules for forming new words, but that they have particular preferred cognitive structures as well. This means that certain ways of looking at the world, of categorizing the world, are preferred by language speakers, and are used by them in the creation of new lexical items. Looking at this phenomenon can lead us in interesting directions in cognitive linguistics.

This is a study of the creation of new words in Hupa, an Athapaskan language spoken in Northern California. I have chosen to work with Hupa due to the fact that, like many other Native Californian languages, there has been an influx of new words in the last hundred years or so. This makes it easier to study the processes by which new words are created, since there are so many which are being created in the present time, and to see any trends which may exist in the creation of words in general. It would, of course, be possible to study this phenomenon in any language, as all languages use (among other processes) coinage to create new words. However, I believe that this recent influx of new words in Hupa presents a researcher with the opportunity to investigate both traditional forms of coinage, and to study whether those forms are those which are being used today, at a time when there is a flood of new vocabulary being added to the language. If there is indeed a pattern in the coinage of new nouns, it can be examined by comparing traditional forms of noun creation with the ways in which nouns are created at the present time.

To begin, it is important to understand the historical reasons for this influx of new lexical items. The history of Hupa language loss parallels the history of many other tribes in California. To quote Leanne Hinton, "after decades of social change, and of attempts by authorities to eradicate native language use, Native

California languages are spoken only by a few elders" (Hinton 1994:14). The process which led to this outcome, and the result itself, mean that the languages of California are not spoken every day, and in fact are often used only in particular, ritualized contexts, or for only a small part of a conversation, such as the greeting or parting phrases. Thus, "new words stopped being incorporated into many California languages when they ceased to be languages of daily communication" (Hinton 1995:38). However, even when a language is still used as the language of daily communication, it is possible for the language to stop creating new words. This could be due to several reasons. First, it is possible that when the topic of conversation centered around something for which Hupa had no words, the language of conversation switched to English. This topic-activated code-switching would alleviate the need for the creation of new words for these subjects. It is also possible that Hupa speakers simply used the English words that they needed, inserting them into the middle of conversations which were otherwise in Hupa. However, these words were not permanently borrowed into Hupa. In either case, the result is the same — Hupa, like many languages, therefore lacks some vocabulary in these areas, and is currently creating new words to use in situations such as these.

There are several reasons why the possible strategies which I mentioned above are no longer acceptable to speakers and learners of Hupa. To begin with, the language is undergoing a revitalization process, meaning that there is an increased interest in using the language for more than just ceremonial purposes. Hupa has had two teams involved in the California Master-Apprentice Program, an intensive language learning program run by the Native California Network, in which a fluent speaker of Hupa works in close contact with an apprentice to teach her or him to speak Hupa. It also has a summer immersion camp, in which many families participate, learning Hupa words and phrases which they can use in everyday contexts. There is a school program, and many of the tribal elders meet weekly. And finally, there are people meeting with speakers of Hupa throughout the tribe, in order to learn the language. In most of these situations, one of the main goals is to use Hupa as the language of everyday communication. Communication in the present time deals with topics very different from those in traditional life, and therefore demands the modernization of the lexicon.

It would be possible for these words to be borrowed from English. I mentioned above that borrowing is a frequently used process when a new item or concept has to be named. However, speakers of languages like Hupa are working to restore those languages in the face of English encroachment, rendering the borrowing of English terminology an undesirable option. Also, there is a feeling that language and culture are closely related, and that maintaining traditional forms of word creation helps to maintain important cultural ties. This sense of the identity between languages and other aspects of culture is strong among many Native American tribes, and goes as far back as the 1700's, as can be seen in this quote by a member of the Six Nations of the Iroquois Confederacy, who said,

> Several of our young people were formerly brought up at the Colleges of the Northern Provinces; they were instructed in all your Sciences; but, when they came back to us, they were bad Runners, ignorant of every means of living in the Woods, unable to bear either Cold or Hunger, knew neither how to build a Cabin, take a Deer, or kill an Enemy, spoke our Language

imperfectly, were therefore neither fit for Hunters, Warriors, nor Counsellors. (Rawls 1984:3)

In this speaker's view, language is placed on a par with the other cultural skills mentioned. Language is one of the skills which a culturally adept member of a community must possess. Non-fluency in their native language is considered to be an important reason as to why these young people were no longer considered by other members of their communities to be fit leaders. We see here a strong correlation between language and culture. Thus, the encroachment of English could be seen as a threat not only to Native languages, but to Native culture, as well. The use of English borrowings thus becomes a sign of cultural decay. Therefore, in spite of the fact that borrowing is, in fact, a common process throughout the world's languages, the borrowing of English words into languages like Hupa is generally dispreferred as a strategy.

Unlike borrowing, coinage is a way to bring new words into a language utilizing resources within the language itself. For example, it is possible to use a language's metaphor system to create new phrases or words which can be used to talk about a novel situation. This strategy systematically connects a concrete domain to a more abstract domain, allowing the users of the language to understand the abstract domain in terms of the concrete domain (Lakoff 1980). While languages do have many metaphors in common, due to the fact that metaphors are often based on bodily experiences common to all human beings, languages also have their own particular metaphors, or their own particular way of instantiating a given metaphor. For example, Hupa, like English, has the metaphor A RELATIONSHIP IS A JOURNEY. However, while the English metaphor typically focuses on automobiles and ships as a means of transport ("they're spinning their wheels", "their relationship is on the rocks"), Hupa focuses on walking ("they're walking together" meaning "they're married"). Thus, it would be possible for Hupa to use this metaphor to name such a concept as divorce, utilizing a word which means that the people in question are no longer walking together. Using metaphors which already exist in a language to create new words can therefore be one way of retaining ties to older linguistic and cultural traditions (Ahlers n.d.). However, as the creation of new words via cognitive metaphor does not appear to be a common strategy in Hupa, I will not be discussing it in detail here.

Hupa does use image metaphors (IM), though, in which the name of an object evokes a particular image which can be mapped onto the object, giving the hearer an understanding of what the object looks like. These metaphors are not systematic in the way that cognitive metaphors are, in that they are typically used once, for one object, and not extended or used in reasoning (Lakoff 1980). I am distinguishing these uses of image metaphor from nouns in Hupa which are formed by pointing out the resemblence (R) between two things (for example, below, the word for 'beans' which means 'pine nuts-they resemble').

The process of metonymy (M) is also used to coin new words. In this process, the name of one part of an object can be used to stand for the whole object, or the name of the entire object could be used to stand for a part of the object. In the use of metonymy, it is always a salient feature which is chosen to name the whole. This too can lead to interesting cultural insights, in that it can point to what is considered salient by the speakers of a particular language. It is also possible to utilize a particular kind of frame metonymy. In this case, a part of a frame is used to stand for the entire frame, and then for a salient object in that frame. This

essentially allows one member of a frame to be used to name another member of the frame. All of these processes make use of a language's particular formal structure.

But what is interesting about the addition of new items to a language's lexicon, is that languages appear to have preferences for certain of these processes. These preferences are not just for particular formal structures, by which I mean that morphological structure which is used to create new forms, but for certain cognitive structures, as well. Hupa appears to prefer to use the process of coinage through "frame metonymy", a process which I mentioned above. In this case, Hupa particularly focuses on metonymy within an associated action frame (AAF). I am following Charles Fillmore in understanding a frame to mean the canonical, pre-packaged cognitive representation of a type of event relative to which a lexical item is understood and defined (Fillmore 1982). Frames such as these typically involve cultural knowledge about a particular situation or social interaction. Thus, the creation of new words in this way can also take into account cultural information. For example, the English verbs "buy" and "sell" label particular sub-events within the commercial transaction frame, and each evokes the frame as a whole in being understood. Neither of these terms can be adequately defined without referring to the other, and without referring to a cultural context of mercantilism. In this paper, I am using "action frame" to mean the frame within which an action is situated. Thus, the process of metonymy allows one aspect of such a frame to be used to stand for a salient object in that frame. This is the process which is used more frequently than any other in the creation of words in Hupa.

I will now present some of the many examples of these processes at work in older Hupa lexical items. This demonstrates that these processes have been at work in Hupa for quite some time, and are not just recent additions to the language. These examples can be seen below. Here I am using AAF to mean associated action frame, IM to mean image metaphor, M to stand for metonymy, and R to mean resemblance. These items are taken from the second draft edition of the Hupa Language Dictionary. A brief note on the transcription conventions which I am using: a capital L is a voiceless lateral fricative, an apostrophe is a glottal stop, the letters wh are pronounced [hw], and a colon indicates a long vowel. In each case, salient morpheme boundaries are indicated by dashes, and the same morpheme breaks are indicated by dashes in the glosses.

The first example which I would like to discuss is a case of metonymy (M). The name for angelica is taken from one of its salient features — namely its prolific roots. Thus, a feature which is an important part of the object is used to name the object.

mixa:che'e'-xole:n   'angelica' (its roots-there are plenty) (M)

The next two cases are image metaphors (IM). These examples, 'ankle' and 'arm', are both named based on an image of what ankles and arms look like.

whi-qe:-jiwol'   '(my) ankle' (my leg-ball) (IM)
whiky'a:ng'ay   'arm' (it extends away from me) (IM)

The rest of the examples are all named after salient actions which are performed with the objects in question (this is associated action frame metonymy) (AAF). For instance, a bat is named after a salient action which it performs, namely flying around at night. And the word for barbeque refers to the action of sticking, for example, salmon steaks on sticks pointed towards the roasting fire. The case of 'acorn' is more complex than the others. As with the rest of the objects in this list, it is named after a salient action performed with acorns, that is, eating them.

However, it is important to note that there is another metonymy taking place here — acorns are being chosen as a salient form of food. There are other kinds of food which can be eaten, and which therefore should be able to be named using the collocation 'what someone eats', but acorns are the most salient food item, and therefore bear that name. This is a case in which the choice of which item to name with this phrase indicates a fact about the culture which uses the language, namely that acorns are a staple food. This can also be seen in the word for 'boat', which means 'in it-they travel'. This indicates that boats are a salient means of travel.

dahch'iwile:l	'arrows' (he holds them up) (AAF)
k'iwinya'n	'acorn' (what someone eats) (AAF)
t'anq'-ts'isday	'acorn camp' (in the fall-she stays there) (AAF)
xang'-ch'ing'-k'iniLnoy	'barbeque' (fire-towards-somebody sticks things up) (AAF)
xatL'e'-na:mat'	'bat' (at night-it flaps around) (AAF)
me'dil (< me'-na'dil)	'boat/canoe' (in it-they travel) (AAF)

Associated action frame metonymy appears to be the most frequent way of naming lexical items. In Hupa, there exist some 300 root nouns (these are nouns which are unanalyzable). A majority of the rest of the nouns in the language are created using the formal process seen in the examples above (the third person singular present of verbs — this will be discussed below). And of these, it would appear that most focus on metonymy via an associated action frame. Although this process of noun formation is common to all of the Pacific Coast Athapaskan (PCA) languages, Hupa appears to utilize it more often than any of the others, even replacing a relatively large number of the root nouns which are inherited from proto-Athapaskan into the other PCA languages.

Examples such as these show that this process has been productive in Hupa for quite some time, as these are all older cultural items. Thus, this process exists as a model for the formation of new words. It is well known that productivity is defined as analogy with pre-existing forms. In English, the creation of noun-noun compounds serves much the same function as the processes which I am discussing. Mary Ellen Ryder, in discussing English noun-noun compounding, states that

> new forms are produced based on analogy with existing conventional expressions. That is, once a pattern begins, the more established forms there are in that pattern, the more likely it is that a new form will be based on one or more of those forms, or on a slightly more abstract template based on them. (Ryder 1994, 253)

This seems to be as true for conceptual patterns as it is for formal patterns. In other words, a language can not only prefer to use, for example, a third person singular present verb in its creation of new nouns, but it can also prefer to use one of the conceptual strategies which I mentioned above — metonymy, for instance. Thus, the fact that associated action frame metonymy has been used frequently in the creation of Hupa words in the past makes it possible, and even likely, that the pattern will be used in the creation of new words.

Therefore it is useful to look for instances of the use of the process of metonymy in the creation of new words in Hupa, which can be seen in the examples in the next section. This list includes two examples of resemblance (R), namely 'beans', which focuses on the resemblance to pine nuts, and 'spaghetti',

which involves both an associated action frame (AAF) and resemblance. The action of dunking in water is used, as well as the fact that spaghetti looks like eelstrings (eel tendons).

na:de'tL'-nehwa:n	'beans' (pine nuts-they resemble) (R)
te'qi:wil q'ots' qi-ye:jo:-ne:wha:n	'spaghetti' (in the water it is dunked, looks like eelstrings) (AAF, R)

There is also an example of the use of image metaphor (IM), in 'coffee'. In this case, an image of what black water would look like is created, and this is compared to the item, coffee.

ta'na: na-Liwhin	'coffee' (water-black) (IM)

There is also a case of metonymy (M) in this list. This is in the name for turkey, which uses a salient feature of the turkey, namely its coxcomb, to name the turkey.

mining'-q'it-nak'iLat'	'turkey' (its face-on-there is flapping around) (M)

Finally, there are many examples of words which are named specifically using associated action frames, such as butter, which is named after the characteristic action of spreading butter on top of bread. We see again that this type of conceptual pattern is in the majority, and seems to be preferentially chosen in the creation of new nouns.

'aid:-nahL'its	'automobile/train' (by itself it runs around) (AAF)
miq'it-k'iwiLiw	'butter' (on top-it is smeared) (AAF)
mitah-'a:iL'e:n	'baking powder' (amongst it-someone scatters it) (AAF)
jiwolch-na'k'iLwal	'baseball' (ball-he hits it around) (AAF)
'a:diL-na:k'iLtal	'bicycle' (by oneself-one kicks around) (AAF)
misah-me:q'-silay	'bridle' (in [horse's] mouth-inside it-it [rope] lies) (AAF)

Thus we see that here, the same process described above (AAF), and seen in many traditional vocabulary items from Hupa, is used synchronically to create new words.

The inclination towards this process is so strong in Hupa that sometimes words which already have monomorphemic names also have other names which were created via these conceptual patterns. An example of this may be seen below.

'bobcat'	mindich	mimiLna:tal'-jiwol(-ch)
		its paw/foot(print)-round-(dimin.) (R)

Thus we see that for some items, there is a tendency to create names which use the processes discussed above alongside the already existing monomorphemic names. This could be due to the lexical content of these words. It is common in many languages for the names of powerful animals to be taboo under many circumstances, and thus for alternate names for them to exist side by side with the original names. This has happened in northern Indo-European languages where the name for bear is not inherited from Proto-Indo-European, but is made from phrases like 'honey-eater' or 'brown one' (Bloomfield 1933, 104). It is also the case in

Hupa that there are naming taboos in place which dictate that when a person passes away, their name may not be used.

> The name of the person [who has died] cannot be spoken without offense, even when it is thought of in its common application as the name of an animal or object and not as the name of a person. A man of some note was called xa, "goose." After his death the word was avoided by saying Lekontcditetile, "the one that likes salt." This name has established itself as the name of the wild goose, the younger people knowing no other. There are several other known examples of such creations. (Goddard 1903:73-4)

Thus, Hupa has had many such opportunities to create new words.
     It is also important to notice that Hupa leans towards the use of certain formal structures. In particular, new nouns tend to be created using the third person singular of verbs. Interestingly, other languages can use the same conceptual patterns above, but different formal structures, as can be seen in the Havasupai examples, below (Leanne Hinton, personal communication). In Havasupai, generic nouns which are used as heads of relative clauses are attached to verbs in order to create new nouns. One of the most prolific of these prefixes is *gwe*, which could be glossed (in its nominalizing function) as 'the thing(s) that'. In many of its uses, it also relies on an associated action frame, as can be seen below.

gwe 'haavl 'aamj	'boat' (thing that goes in the water) (AAF)
gwe myaav g'am	'airplane' (thing that goes in the sky) (AAF)
gwe hwaaljo	'farm' (place where things are dug) (AAF)

Havasupai also uses other mechanisms which are discussed above, such as metonymy, utilizing prefixes in each case, unlike Hupa, which uses the third person singular of verbs in most of its new words. Other languages may also use the sort of frame metonymy patterns just discussed in naming structures, utilizing still different formal structures. For example, in English, it is possible to recruit a bare verb root via associated action frame metonymy to refer to an object, as in the nominal uses of 'spread' and 'cook'. Thus, these pervasive conceptual structures do not depend on a particular linguistic structure. It should be noted, however, that such uses of associated action frame metonymy are rare in English, especially when compared to the prolific use of this process in Hupa. So we see that a preference for a particular cognitive structure makes a language unique not because no other languages use that structure, but because they may not use that cognitive structure as frequently as another language does, and they may not combine it with the same formal structure.
     The same conceptual structures which are used in the creation of new vocabulary can often be seen in other aspects of the grammar as well. An example of this can be seen in Mixtec (Alejandro de Avila, personal communication). Plant taxonomy in this language relies on the usefulness of the plants in question, rather than on biological similarities between the plants, although speakers are not unaware of these similarities. For example, there are two varieties of milkweed, which speakers recognize as being biologically similar, but which are given two different classifier prefixes. The first plant is used for medicinal purposes, and is given the prefix indicating that it belongs to the class of medicinal plants, *yuku-xatu*. The second plant is used in rituals, and is given a different prefix, *ita-kutu*. This classification by use also extends into other areas of the language, as in the

differentiation between two verbs for 'eat', with one of them, *xaxi*, being used to refer to foods which are snack-like, and the other of them, *xixi*, being used to refer to eating substantial meals, with tortillas, for example. In this case, it would appear that the latter type of food is seen as being of much more use to a person, giving energy, strength, and nutrition.

All languages have productive patterns which they use for such purposes as creating new words. These productive patterns are often associated with conceptual structures, such as frame metonymy. When a productive formal process uses a particular cognitive pattern, speakers are more likely to extend that pattern to the creation of, for example, new lexical items. This finding appears to indicate that the cognitive patterns which already exist in a language strongly influence the cognitive patterns which speakers use to extend and change the language. Since phenomena such as metonymy and frame semantic relationships are not simply linguistic, but are a way of conceptualizing the world, it is possible to conclude that this linguistic preference influences, and is influenced by, the cognitive preferences of the speakers.

These findings are also interesting for speakers of Native American languages who are revitalizing their languages. It shows that, even in the face of language change through lexical development, as speakers, the Hupa are helping their language to maintain the characteristics which make it unique — for example, its use of associated action frame metonymy. Note that it is not simply a use of AAFs which makes Hupa unique, as other languages can use this conceptual structure as well. But a combination of a particular formal method for creating new nouns, combined with the strongly preferred, and therefore prolific, use of associated action frames point to one feature which differentiates Hupa from many other languages. Such uses of frame metonymy are part of what creates the character of the language. It also allows speakers of Hupa to maintain ties to traditional culture. This is done in several ways. First, the terms themselves can refer back to traditional cultural items (for example, 'beans [like pine nuts]'). It also maintains a traditional grammatical pattern of naming things. And finally, the use of frame metonymy in naming modern items facilitates the placement of those items in a traditional context and worldview. Leanne Hinton paraphrases Parris Butler (Mojave apprentice in the Master-Apprentice program) talking about this process. "If I make up a descriptive term for the computer, I would be describing it in a non-traditional way. But if an elder, steeped in Mojave tradition, looks at the computer he will make up another term, one that describes the object from a more traditional value system" (Hinton 1995:39).

So, we can see that studying the creation of new words in Hupa can not only give us insight into human cognition, but just as importantly, it can give us a window into language and culture maintenance and revitalization. This one process allows us, as theoretical linguists, to draw conclusions about language processing and the interrelationship between language and culture. It also allows us, as people who are interested in the language maintenance programs which exist all around us in this state, insight into the amazing ability of a language to undergo a great deal of change and to still maintain its own unique character.

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Interior Salish Reduplication in a Diachronic Perspective

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0. Introduction

As has been noted repeatedly throughout this century (Hill-Tout 1902, Haeberlin 1918, Reichard 1959, Sherzer 1976, van Eijk 1990), reduplication is a salient feature of the Interior Salish [IS] languages.[1] From a formal standpoint, IS reduplication falls into three basic types: *CVC-, *CV- and *-VC. As a process of affixation, IS reduplication interacts with the complex systems of morpholexical stress assignment characteristic of the IS languages, In addition to expressing such common categories as distributive, plural, repetitive/intensive, or diminutive, IS reduplication may also express a first singular referent (in SWP), special counting forms for 'people' and 'animals' (see **6** below), or the highly unusual notion 'out-of-control' (Carlson & Thompson 1982, see section **3** below). Finally, certain affixes obligatorily require a particular reduplication pattern throughout the various IS languages.

1. *CVC- Reduplication in Interior Salish

All Interior Salish languages possess a productive use of *CVC-reduplication. This generally conveys a distributive, repetitive/intensive or plural meaning. In most IS languages this is a weak (unstressed) affix, with the vowel reduced or lost in the reduplicated syllable, unless C_2 is a glottal obstruent. In many IS languages, glides syllabify to homorganic high vowels in reduplicated syllables. Also, in some instances glottalized obstruents deglottalize in reduplicated syllables. Note that prefixes are outside the domain of reduplication in IS, i.e. they never count as C_1.

In the KAL-SPK and CLV-OKN dialects of Interior Salish, the productive *CVC- reduplication was metrically weak; only certain lexicalized forms exhibit a stressed *CVC- copy, e.g. CLV **XWa@tXWt** 'duck(s)', **na@xW´nxW** 'wife/wives' or **sXa@?Xa?** 'father(s)-in-law'. In CA, virtually all examples have a stressed CVC-prefix; in the pre-CA dialect of PIS, a variable *CVC- reduplicative prefix began to be reinterpreted as a strong affix, leaving only very limited lexical residue of stems with unstressed CVC- reduplicated syllables.

(1)

CLV[2]	**tən-t'ina?**	'ears'
	ca?-ca?ám	'he hits repeatedly'
	s-tɬ-táɬəm	'boats'
OKN	**ƛ'əχ-ƛ'χáp**	'elders'
	kəl-t'u?-t'wáq	'buttons broke off'
KAL[3]	**sʷ-up-upulexʷ**	'grasses'
	qʷəc-qʷácqən	'hats'
	tiː-teye?	'they are bad'

SPK	suː-sewɬkʷ	'rivers'
	nəč-əníčəntxʷ	'you cut them'
	s-χəl-χált	'days'
CA	gʷál-gʷəlp	'it blazed here and there'
	u-čæp-číp	'they are soft'

In THM and SWP, the productive *CVC- reduplication is weak (again with some lexically specified exceptions that exhibit stressed *CVC- syllables (e.g. THM kéykix 'hands, arms' or skʷʼózkʷʼəz 'aunts'). In LIL the prefix is metrically variable, but the metrical class of the stems is determined by the phonological shape, not arbitrary morpholexical specification: stems with [ə] or whose C_2 is [ʔ] are weak and thus the reduplicated syllable bears the stress; with other stems, the *CVC- copy is unstressed. However, forms like LIL sqáyqyəxʷ 'men' (< sqayxʷ 'man') attest to an earlier variably stressed affix in the usual IS sense.

(2)

THM[4]	ʔes-χəp-χəp	'things piled up here & there'
	n-ki-keym	'keep following'
SWP	kəc-kicx	'DIST/PL arrive'
	s-pl-plt'n	'lairs'
LIL[5]	cíʔcʔiʔʷʼ	'bleed all over'
	sməlmúlac	'women'

In addition to the productive use of *CVC- reduplication, there was at least one other use of a *CVC- reduplicative prefix in Proto-Interior Salish. This formed a variety of qualitative adjectives, frequently in conjunction with the affix -t.

(3)

CA	pás-past	'causes amazement'
	lúp-lupt	'it keeps dry'
OKN	pχ-páχt	'smart'
	kəc-káct	'willing'
KAL[6]	qʷənʼ-qʷínt	'poor'
SPK	qʼxʷ-qʼexʷt	'conceited'
LIL	ʕəlʕəl	'strong'
	nəqʷ-núqʷ	'warm'
SWP	təkʷ-túkʷt	'silent'
	qíxʷ-qəxʷt	'shy'
THM	zéwʼ-zuʔt	'tiresome'
	míʔ-miʔt[7]	'it's very contagious'

Both of these *CVC- prefixes are treated as metrically identical in most of the IS languages. In CA all forms are strong (stressed), while in KAL-SPK and CLV-OKN these are both metrically weak.[8] Also, in LIL these are both metrically variable, subject to the phonological conditioning mentioned above. In SWP and THM however these two *CVC- reduplicative formations are metrically distinct: 'distributive/plural' *CVC- is weak, while 'attributive' *CVC- is variable (SWP) or

strong (THM). Coast Salish evidence suggests that THM and SWP may be archaic in preserving these constructions as metrically distinct; for example, in Saanich, where productive *CVC- ('augmentative') reduplication is weak, but *CVC-'attributive' reduplication is strong: **slənləníʔ** 'women' vs. **qʷəlqʷəl** 'talkative'. Due to the presence of two *CVC- reduplication types in PIS, there may have been a mutually-influencing effect on the metrical class of the reduplicative prefixes in a given PIS dialect. The two originally distinct constructions collapsed historically into one in most dialects, the metrical outcome specific to each group: strong in pre-CA, weak in KAL-OKN, and variable in (pre-)LIL (where the metrical class of the stem cam to be determined by its phonological shape).

2. *CV- Reduplication in Interior Salish

All IS languages exhibit a reduplicative affix whose historical origin is a *CV- prefix. These forms generally convey a diminutive meaning, with a few unpredictable lexicalizations. Throughout the IS languages, resonants tend to become glottalized in diminutive reduplicated syllables, sometimes spreading to all relevant segments in the word; the sound/symbolic association of glottalization with diminutives is a characteristic trait of the western Plateau region (Nichols 1971).

In the Southern IS languages, the productive affix is generally weak in CA and KAL (usually accompanied by a diminutive prefix in the latter language); in CLV-OKN most examples show a weak prefix, but a number of lexicalized forms exist with a stressed reduplicative prefix.[9] The SPK system is highly archaic: strong stems have strong prefixes, but weak stems with strong stem-suffixes have weak *CV- prefixes.

(4)

CLV	**kə-kwápaʔ**	'dog'
	s-tə-taɬm	'little boat'
KAL	**sɬ-kʷ-kʷλ̓'us**	'little face'
	ɬ-pu-ps	'kitten'
	ɬ-xʷ-xʷist	'little one walks; he walks w/ little steps'
SPK[10]	**χ-χλ̓'əcin**	'dog'
	l'úl'əkʷ	'small stick of wood'
CA[11]	**hin-q'u-q'ušəm'íčn'šən'**	'dog'
	šə-šəl'úl'um̓'xʷn'	'hoe'

The Northern Interior Salish languages present a slightly different picture. In all three languages, the synchronic process is one of infixation, copying the consonant preceding the stressed vowel following that vowel, sometimes with a copy of the vowel as well, i.e. $*C_\alpha V'C_\alpha(V)C_\beta$-. In strong stems this is C_1, but it may be any consonant preceding the stressed vowel in longer bases with stressed suffixes.[12]

(5)

THM	**wi-w'-km**	'(baby) sees something'
	qʷintwa-w'-x	'talk w/ each other a little'
LIL	**kʷ-akʷ-əƛ̓t**	'little plate'
	sqə-qə-yux	'boy'
SWP[13]	**sqa-qa-ləmuxʷ**	'boy'
	c'ilá-l'-a	'little basket'

Diminutive reduplication was a *CV- prefix in Proto-IS. SPK forms like **l'úl'əkʷ** 'little stick of wood' with stressed *CV- are reminiscent of the stress-targeting infixal copy process characteristic of the NIS languages. In Proto-NIS (pre-LIL and THM-SWP), the copying of a stressed prefix became reinterpreted as a stress-targeting infix copy, i.e. $*C_1V'C_1(V)C_2 > *(\text{-})C_\alpha V'C_\alpha(V)C_\beta$. In PIS, and (pre-)SPK, the *CV- prefix was strong, and thus attracted stress with strong roots (and frequently causing vowel reduction in the stem-syllable), but with weak roots possessing strong suffixes, suffixal stress-attraction wins out (with vowel reduction in the reduplicated syllables). The presence of this kind of variation may have led to the majority of reinterpretations of this affix as (first variable and then) weak metrically in the SIS languages.

(6)   Stress assignment in PIS and SPK *CV- Reduplication

strong-√			*weak-√*		
*CV-	√	(X)	*C(V)-	√	X
*	*	-	*	-	*
*	-	-	-	-	*

Coast Salish evidence is suggestive of a strong or variable reduplicative prefix. Diminutive reduplication (like all patterns) is highly varied throughout the Coast Salish and 'other' Salish languages. There seem to have been two options *CV- prefix or *Cí-, for example Halkomelem **s-kʷí-kʷəl** 'waterfall', Sechelt **s-tó-təlo** 'rivulet', Snoqualmie-Duwamish **u-χá-χal** 'he is writing little notes', Snohomish **sosəpqs** 'small seal', **kʷʼíkʷʼlu** 'little skin' (< **kʷʼalu**), or Squamish **sqʼíqʼiml** 'paddle' (<**sqʼəml**). Note also the following forms in the highly divergent Bella Coola: **syuːt-i** 'little song' (< **syut**), **qʷuːqʷlun-i** 'little beaver' (< **qʷuluːn**), **xi-xnaːs-i** 'little woman' (< **xnas**), all with suffixed -i, length(-shift) and [±reduplication]. Lexicalized stressed *Cí- can be found in IS languages as well, for example OKN **xí-xuʔtəm** 'girl' (OCB 1993: 17) or LIL **ƛ̓íƛ̓xutc** 'small plate'.[14]

3. *-VC Reduplication in Interior Salish

In contrast with *CVC- 'distributive/plural/repetitive' and *CV- 'diminutive' reduplication, which are both fairly common formal and functional types, Proto-Interior Salish also possessed another productive reduplicative formation that is somewhat more marked cross-linguistically. This is *-VC reduplication, which conveys two basic notions: a continuative-telic aspect, and more interestingly the highly unusual notion 'out-of-control'. This signifies an action was done or state brought about accidentally or otherwise without the control or volition of the

subject/referent.[15] In some Salish languages, one or the other of these meanings has been extended and the remaining one basically lost; *-VC reduplication is found throughout the family, but is most characteristic of the IS languages.

In Proto-IS, *-VC reduplication was a variably stressed affix. This is preserved in KAL-SPK and CLV-OKN. In CA and CMB this has become a weak suffix. As with other reduplication patterns, glides syllabify to homorganic (high) vowels; sporadic glottalization of resonants is also encountered.[16] Finally, *-VC reduplication is obligatory with certain affixes (see **5** below).

(7)

CA	yáʕ-áʕ	'they assembled'
	pen'-ən'	'it has come to be bent'
	čél-əl-xʷ	'hollow object came to upside down position'
CLV[17]	ƛ'ə-ál	'dead'
	sqʷim'-m'	'scared'
	kʷul'-l'	'be born'
	xw'-aw'	'it has been dried'
OKN[18]	pƛ'-aƛ'	'(house) collapsed'
	mqʷ'-aqʷ'	'became lumpy'
KAL	t'ixʷ-xʷ-ələm	'gets changed, becomes different'
	k'ull	'is made/born'
	tkʷ'ukʷ'	'lies/falls down'
SPK[19]	nič-əč	'got cut'
	xʷkʷ'-ukʷ'	'got clean'
	qʷaw-u	'drunk'
	p'exʷ-xʷ	'got bright all of a sudden'
CMB[20]	qʷaʕʷ-ʕʷ	'drunk'
	xʷuy'-iʔ	'got dressed, packed up'
	məl'-l'xʷ	'was/got crooked'
	napəxʷúxʷ	'bloated'

In SWP, there are only a limited number of lexicalized forms with *-VC reduplication, all with stressed affixes, suggesting a variable or strong suffix. In LIL, the affix is variable, while Thompson and Thompson (1992) consider the THM affix to be metrically weak, despite the presence in this language (and LIL too) of -VC reduplicated forms that appear to be stress-targeting copies similar to the diminutive.

(8)

THM[21]	q'iw'-uʔ	'bones accidentally broken'
	nmiʔ -iʔ	'it got loose by itself'
	siʕʷ-ʕʷ	'distributed by someone'
	cw-uw	'grow up'
	qʷc-əc	'tremble'
	pəzqʷóqʷ	'someone chipped a piece off it'
	nk'ʔétətkʷu	'he fell in the water'

LIL[22]	púɬ-əɬ	'(be) boil(ing)'
	qáxʷ-əxʷ	'break'
	p'liχʷ-əχʷ	'boil/flow over'
	pɬ-uɬ	'thick'
	ql-il	'angry'
	ƛ'qʷáw'-w'əs	'get together'
SWP	q'ʕ-eʕ	'move heavily'
	xw-ew	'dry up'
	pəxʷ-úxʷ	'swell up'
	pukʷ-úkʷ	'be spilled'

While most salient in the IS languages, *-VC reduplication has various reflexes in other languages of the family, e.g. Comox (Kroeber (1988)'s 'inceptive' reduplication) **pəs-əs** 'get numb' or **č'əp-əp-χ** 'get dirty', Upper Chehalis (Kinkade (1964)'s 'slow' reduplication) **ʔet yəppɬ** 'walks slowly back and forth' or **məccqʷtn** 'keeps on grinding it slowly', or lexicalized stems in Twana (Drachmann 1969) **kʷəɬaɬ** 'spill' or **ɬiq'aq'** 'slip' and Snohomish (Haeberlin 1918) **ʔuxʷuxʷ** 'go about in a dither accomplishing nothing' or **saqʷ'aqʷ'** 'fly slowly in circles'. Many of these have stressed reduplicated syllables, but others do not, and thus either strong or variable seems to have been the metrical class of the *-VC affix in Proto-Salish.[23]

4. Multiple Reduplication in Interior Salish

Multiple reduplication in the Interior Salish languages falls into several basic types: lexicalized simplicia and onomatopoeia (9), 'emphatics', 'intensives' or 'expressives' of various types (10), and combinations of the productive means (including plurals of lexicalized reduplicated simplicia).

(9) lexicalized simplicia and onomatopoeia

SPK	n'qʷ'qʷ'm'qʷ'um	'hot dog, sausage'
CLV	t'qʷqʷiqʷ	'explosion'
	cmkʷkʷukʷ	'be crawling from under'
CMB	c'iʕʷʕʷíʕʷ	'spear hitting rock after missing fish'
	waχχaχ	'snake rattles'
	p'ac'əcəcc	'obscene noise'
LIL	kʷətkʷətkʷətaxʷac	'heart is beating, pounding'
SWP	təkʷəkWíkW	'throw off sparks' [Deadman's Creek]

(10) 'emphatics', 'intensives', 'expressives'

CLV	q'yxʷxʷaxʷ	'to stink'
CMB	cipálələʎəl	'leaves are shaking and shaking'
LIL	ɬəlalíl	'keeps sprinkling'
	p'liχʷiχʷíχʷ	'keep boiling over'
	xʷəmaməm	'hurry up'

zuqʷəqʷúqʷ   'struggle through'

Combinations of the productive IS reduplicative constructions also occur. As follows logically from the formal realizations of *CVC- 'plural' and *CV- 'diminutive', in the SIS languages this is a sequence of reduplicated prefixes, while in the NIS languages, the stress-targeting nature of the *-C(V) copy sometimes results in a prefix plus infix combination.[24]

(11) diminutive plurals, etc.

SPK	p'p'np'in	'small long objects lying on the ground'
CLV	stətɬtáɬəm	'boat.DIM.PL'
THM	scəw'cəcəw'	'DIM.PL.work'
	st'əmt'əmámalt	'cow.DIM.PL'
SWP	c'ilcilal'a	'basket.DIM.PL'
	sqalqaqaləmuxʷ	'boy.PL'

In SWP, the multiply reduplicated pattern $C_1VC_1VC_1C_2$ (i.e. double *CV- reduplication) has been grammaticalized as the productive means of forming the comparative degree of adjectives.

(12)	qʷəqʷeqʷc	'warmer'	√qʷec
	tətet'xt	'taller'	√t'ex-t
	qʷəqʷuqʷct	'fatter'	√qʷuc-t

5. Affix-triggered reduplication and 'Affix-Duplication' in IS

A variety of affixes seem to be obligatorily associated with particular reduplicative patterns throughout the IS languages.[25] An affix attested in both branches of IS associated with *CVC- reduplication is *-uɬ 'one who Xes'. Note the regular shift of stress to the strong suffix in these forms.

(13) *-uɬ/-oɬ (*CVC-)

LIL	nuqʷnaqʷóɬ	'robber'
KAL[26]	nlkalkalsúɬ	'prostitute'
	kaikaimúɬ	'one who writes too much'
SPK	qʷl'qʷltúɬ	'he talks a lot'
OKN	qʷ'əlqʷ'lúɬ	'good berry-picker'
	txət'xt'úɬ	'good care-taker'

In SWP, *CV- (diminutive) reduplication (stress-targeting *-´C(V)-) is obligatory when there is a [1SG] referent; forms like 'you're squeezing me' (which lack [n]) suggest that the reduplication is triggered by the category [1SG], not a particular affix.

(14)

ɣnci-c-tx^w	'my house'
cf. **ɣʔcitx^w**	'your house'
pi-p-c'n	'I'm squeezing it'
pi-p-c'cmx	'you're squeezing me'
cu-c-tkn ʔnsʔi-ʔ-λn	'I want to eat'
cf. **cut ʔsʔiλns**	'he wants to eat'

*-VC reduplication has become obligatory with various affixes of 'low transitivity' appropriate with an 'out-of-control' reading throughout the IS languages. Although there is some agreement among the languages with respect to the particular affixes that are associated with *-VC reduplication, these may be parallel innovations rather than retentions from various proto-systems. For example, the affix -**nun** meaning 'succeed in Xing' in CA and 'accidentally/manage to X' in CMB[27] both require -VC reduplication, but the corresponding affix in SPK does not.[28]

(15) -**nun** [-Control] (*-VC)

CA	**šət'ət'núnən**	'I succeeded in beating him'
	χəsestnunən	'I succeeded in making it well'
CMB	**cəkknunn**	'I accidentally/managed to hit it'

But note SPK **k^w'ul'núnten**   'I managed to do it'

Finally, some affixes themselves seem to be 'duplicated' or copied in various constructions. As the first CA example shows, more than one Coda-consonant can be copied in an 'affix-duplication', while this is never true of *CVC- or *-VC reduplication in IS languages.

(16) 'affix-duplication'

CA	**icxu̧m'umíltelt**	'she came to miss her child'
	c'el'əlíšəš	'he came to a standing position'
	caqcaqaqəlípep	'he fell on his back'
CLV	**x^wrrapp**	'he is anxious'

6. Reduplicated Numerals in the IS languages

Reduplication is found in a variety of numeral forms throughout the IS languages. This is generally one of three types: reduplicated simplicia, counting forms for 'people' (*CV(C)-) and counting forms for animals (*CV-). Examples of the first type include '7', '9', and multiples of '100'.

(17) lexicalized simplicia

SWP	səséle	'2'
	cúcɬke?	'7'
	tmɬnkʷúkʷ'?e	'9'
	χəcpqiqnkst	'100'
CA	m'əm'əsqən'	'400'
	cucən'txtm'qən	'700'
CMB[29]	musəs	'4'
	xəccakst	'100'
SPK	sísp'əl	'7'
KAL	χχan'út	'9'

The 'people' counting forms appear with a stressed *CVC- prefix and a deictic clitic in CLV-OKN and SWP, but lacking one in THM.

(18) 'people' counting forms

THM[30]	mosmas	'4 people'
CLV	k-musəms	'(they are) 4 people'
	k-cilcəlkst	'(they are) 5 people'
OKN	k-mosməs	'4 people'
SWP[31]	t-musməs	'4 people'
	tk-cilclkst	'5 people'

The reduplicated counting forms for 'animals' are found only in the NIS languages. These are historically diminutive *CV- reduplicated forms.

(19) 'animal' counting forms

THM	moms	'4 animals'	
SWP[32]	mums	'4 animals'	
	?ú?pəkst	'10 animals'	
LIL	pəpála	'1 animal'	not **páp(ə)la

Reduplicated numerals expressing reference to people (*CVC-) and animals (*CV- are also attested in some Coast Salish languages, e.g. Squamish **c'ic's** '9 animals' (< **c'əs**), **t'a-t'q'ač** '6 animals' (< **t'aq'ač**), **t'əq-t'aq'ač** '6 people' or Tillamook **čən-čanat** '3 people'.[33]

7 Conclusions

There were three (mostly) productive reduplicative constructions in Proto-Interior Salish, *CVC- 'distributive' (weak), *CV- 'diminutive' (strong), and *-VC 'out-of-control' (variable). In addition, there was at least one other (metrically distinct) *CVC- reduplication pattern used in the formation of many attributives;

this latter may be the *CVC- reduplication pattern that was obligatory with the Proto-Interior Salish affix *-úɬ 'one who Xes (a lot/well)'. Also, speakers of the Interior Salish proto-language utilized *CVC- and *CV- reduplication to create counting forms for 'people' and 'animals', respectively. Finally, glide syllabification in reduplication is probably quite old, being found in Coast Salish as well, e.g. Clallam (Thompson & Thompson 1971) xi-xəyəkʷ'ʼs 'raccoon.PL' and t'u-tawiʔ 'arm.PL' or Twana (Drachmann 1969) t'oʔ-t'awʼ 'mussel.PL' and kʷeʔ-kʷoy 'bend.PL'.

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[1] The IS languages are spoken by a few middle aged and elderly speakers in communities throughout the northwestern part of America and adjacent parts of Canada. The Southern IS languages are Coeur d'Alene [CA], Columbia-Wenatchi [CMB], Colville [CLV], Kalispel [KAL], Okanagan [OKN], and Spokane [SPK], while Lillooet [LIL], Shuswap [SWP], and Thompson River Salish [THM] constitute the Northern IS group. Only a small number of speakers remain and some languages are near extinction. Preservation efforts are active among the OKN of British Columbia however.

[2] Initial ƛ̓ never deglottalizes in CLV, but in non-initial position the reduplicated copy is frequently [t], e.g. skʷtkʷλ'us 'eyes' vs. ƛ̓'əχƛ̓'áχəχ 'elders'.

[3] Some CV roots in KAL reduplicate only CV (npupusnug 'worthy of love', √pu), while with others an affixal consonant (particularly those of certain 'lexical' suffixes) may serve as C_2, e.g. pčpečstəm 'he takes on gloves' (-čst 'hand'); similar boundary crossing with a lexical suffix can be found in Coast Salish Comox ǰidǰidis 'teeth' (-dis 'tooth').

[4] In THM, unlike KAL-SPK, glides syllabify to homorganic short high vowels.

[5] Unlike most other IS languages, in LIL CVC- reduplication generally does not convey a 'many participants' meaning; rather, 'repetitve/intensive' meanings are typical.

[6] While resonant glottalization is characteristic of IS diminutive reduplication, one finds an idiolectal/register preference for optionally extending this to any reduplicative construction, as in this KAL form.

[7] The stem is √miy' 'spread around, distribute', cf. miʔt 'he's infected'. The reduplicated form must be derived from the form with glottal stop, itself derived from syllabification of the glottalized y' (> iʔ).

[8] The one SPK exception in Carlson (et al. 1989) is clearly a lexicalized doubly-reduplicated form with both *CV- and *CVC- reduplication: qʷqʷámqʷmt 'adorable'.

[9] For example, sχáχpaʔ 'paternal grandfather', qáqnaʔ 'paternal grandmother', or n'in'k'mən 'knife'.

[10] Note the SPK lexicalized simplicia ččəyéʔ 'grandchild' and ttəw'ít 'boy' and their PL forms čičəyéʔ 'grandchildren' and titəw'ít 'boys'.

[11] Most of the diminutive forms in CA published materials are lexicalized forms like these, which mean respectively 'one with small wrinkles on its feet' and 'one which gives the ground little chops'. Other diminutive *CV- reduplicated forms are attested, e.g. čn'ə-n'aʔᵃn'aʔᵃs 'little ones getting wet', with infixed -ʔ- serving as C_2 in the CVC- reduplication in this form. Note the spread of resonant glottalization in the CA diminutive forms; the prefix [hin-] is specified as [-glottalization].

[12] Various lexicalized forms attest to the presence of a *CV- prefix as the historical origin of the diminutive reduplicative construction, e.g. THM ɬə-ɬíʕ'ʕ' 'scattered' (not **ɬíɬ(ə)ʕ'ʕ'); this is considered by Thompson & Thompson (1981) to be 'affective' reduplication in THM, albeit a pattern historically derived from the *CV- diminutive.

[13] As is apparent from the SWP and LIL forms meaning 'boy', a copy of the stem vowel may appear following the infixed reduplicated consonant; this is highly suggestive that a prefix is the historical origin of the construction, as only glottal (or 'laryngeal') consonants would allow an 'echo'-vowel in infixing processes in the IS languages.

[14] It should be mentioned that cross-linguistically, the association of [i] with diminutives is quite common, in both reduplicated and unreduplicated forms, cf. English *teeny-weeny* or Tommy.

[15] The meanings of these constructions range in the literature from '(a state that has) come to be without effort on its own part' for CA (van Eijk 1990: 244-5), a 'resultative' for CLV, 'a completed process' (in contrast with interior glottalization) for OKN, a 'verbal process (which) develops gradually and comes to an end' for KAL (Vogt 1940: 62), 'get Xed' for SPK (Carlson 1972), or 'an ongoing process, usually one that is bound to lead to an expected result' for LIL (van Eijk 1990: 241).

[16] Thus, the originally diminutive sound symbolism characteristic of the region (Nichols 1971) has become reinterpreted as a kind of 'affective' sound symbolism associated (by a particular speaker of a given IS language) with any reduplicative construction. As mentioned above, deglottalization of obstruents is also seen sporadically throughout the IS languages in reduplicated syllables. Therefore, a two-fold sound symbolism has become available for IS speakers for use in conjunction with reduplication.

[17] Note the following C_3 reduplicated forms in CLV: **lipχʷχʷ** 'be crawling from under' and **tyxxmanqs** 'stumble'.

[18] Note the unusual PL formations **ƛ'íχəχpt** 'adults, elders' and **kəkəw'w'ap** 'dogs' The former might be an example of 'truncated CVC-' reduplication, but the latter is simply an unusual use of -VC reduplication to mark the category [PL] with this lexicalized reduplicated simplex stem.

[19] In SPK -VC reduplication adds a [-Control] [+Emphatic] meaning, except with a few lexically specified [+Control] roots; note that transitivizing affixes in SPK generally add a [+Control] meaning, as is in line with the volitional or control nature of 'transitivity' cross-linguistically, unless the stem is marked [-Control] [+Emphatic] by -VC reduplication (Carlson 1972, et al. 1989).

[20] There are a few less common uses of -VC reduplication in CMB, e.g. lexicalized simplicia **ppál'al'a?** 'bony fish sp.' , irregular PL formations (possibly 'truncated *CVC-) **?asəsqʷsa?** 'sons' (< **?asqʷsa?**), or even an example of a stress-targeting copy: **kɨnk'hápp** 'door opened by itself'. Note that the root of the form 'got dressed' is √**xʷuy** and thus the resonant glottalization must have preceded the syllabification of the glide; 'glottalization stability' is maintained as usual in Coda-position, realized segmentally as [**?**].

[21] Use of -VC reduplicated forms in THM is more extensive than in LIL and especially SWP. In addition to the by now familiar 'out-of-control' or otherwise 'low transitivity' connotations of the formation, -VC reduplication is used to express a variety of detransitive nuances, e.g. **tew-u kn** 'I am sold s.thg.' (vs. **tew kn** 'I sell s.thg.'). Also, according to Thompson and Thompson (1992: 99), -VC reduplication is used in THM when 'the action is accomplished by a person or other agency that is not in focus'. Not only is -VC reduplication moving into a stressed-targeting copy process, but in stems lacking (lexical) suffixes, the metrical class is determined by LIL-type phonological factors: stems whose vowel is [ə] or whose C_2 is glottal are weak and thus shift stress to the reduplicated syllable, but other simple stems retain the stress, and the reduplicated syllable is reduced.

[22] In LIL, all three common reduplicative patterns have been reinterpreted as having a phonological conditioning for the copy. Some SIS languages also exhibit a tendency to reorganize the metrical class of stems according to phonological shape; for example in CLV 2/3 of all CVC roots have stress on the reduplicated syllable, while 'heavy' stems of the CVCX-shape overwhelmingly keep stress on the stem vowel and thus have weak, reduced reduplicated syllables.

[23] Note that van Eijk (1990:237) considers Lushootseed to represent a state that is closest to the ancestral system.

[24] The formation of diminutive plurals in the IS languages garnered some interest in the theoretical literature in the recent past (Marantz 1982; Broseow 1983). Broselow argues for a 'Morphological Subjacency', with the attendant crossing violations of bounding nodes. Her analysis views NIS diminutive reduplication not as a morphological stem-forming process, but rather as some kind of quasi-phonological process, in order to preserve her notion of 'Subjacency'. As is well known, infixation processes are not elegantly handled in most theoretical frameworks of morphology. However, it is not clear why NIS diminutive reduplication should be thought of as so radically

different from the SIS systems, where the 'stem-forming' properties of the reduplicative construction are maintained. The diminutive reduplication process simply extended the scope of its application from [stem] to [word], i.e. from the (morpho)lexical to the (morpho)synactic (or 'post-lexical') level during the development of the NIS languages.

[25] As discussed in **1** above, so-called 'attributive' *CVC- reduplication is frequently seen with the common affix -**t** in both NIS and SIS languages, e.g. OKN **pχ-páχt** 'smart' or SWP **qíxʷqəxʷt** 'shy'; this can be found without reduplication however.

[26] In early sources on KAL (e.g. Haeberlin 1918), several affixes are said to require *CVC-reduplication, including -**(s)nug** 'worthy of' and -**nueg** 'RECIP'. **npupusnug** 'worth loving' and **kaesngalgalnuegui** 'we frighten each other'. The diminutive affix **l/ł** may be used without diminutive reduplication, therefore the affix does not trigger the reduplication, but rather 'hypericonically' indexes the category 'diminutive' in the reduplicated forms.

[27] In CMB -**m** the 'middle voice' marker likewise requires *-VC reduplication: **nkən'n'cinm** 'he got poisoned'. Similarly, the cognate affix in Coast Salish Twana is found frequently with *-VC reduplicated forms: **qʷ'əl'əlab** 'sinking, begins to sink' (-(**a**)**b** 'intrans').

[28] Various affixes or particles seem to have required -VC reduplication in KAL, including -**utem** 'able to be Xed' and the NEG particle **tas**: **elchchutem** 'able to be bound' or **tas kupp** 'does not move'; both of these are in line with the 'out-of-control' or 'low-transitivity' connotation of *-VC reduplication in IS languages.

[29] Note that the reduplicated numerals in CMB are of the *-VC type, but of the *CV- type in all the other IS languages.

[30] The THM forms for numerals of the shape CVy- have the following formal realization **səséye** '2 people' and **papáia** '1 person'.

[31] The SWP 'people' counting forms are highly complicated. '8' and '9' lack these counting forms altogether, while '7' merely adds the deictic clitic to the base form. '2 people' is unreduplicated, effectively "undoing" the reduplication found in the corresponding simplex (**tkʔsele** or **tk'sele**). The form for '6 people' shows a *CV- stress-targeting reduplication **təq'mémkst**.

[32] Note SWP **kʷíkʷʼnx** 'how many animals' and its striking parallel in Coast Salish Squamish **kʷíkʷin** 'how many animals', both with stressed *CV- reduplicated prefixes.

[33] As in IS languages, other patterns can be found expressing reference to 'people' with numerals in Coast Salish languages, e.g. Snohomish **bəbuus** '4 people' and **łixʷixʷ** '3 people'. Note also Sooke **ʔəpəpníkʷs** '10 animals', with -VC or 'truncated CVC- reduplication and a lexical suffix meaning 'animal'.

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The effects of K'ichean/Mamean contact in Sipakapense[*]

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1. Introduction

Sipakapense is a K'ichean language in the western highlands of Guatemala, spoken in an area southwest of Huehuetenango (see map next page). Sipakapense was first reported in the literature by Kaufman (1976a) and has been briefly discussed in the work of Kaufman (1976b), Campbell (1977), and DuBois (1981). The relationships between languages in the Eastern Mayan family are given below:
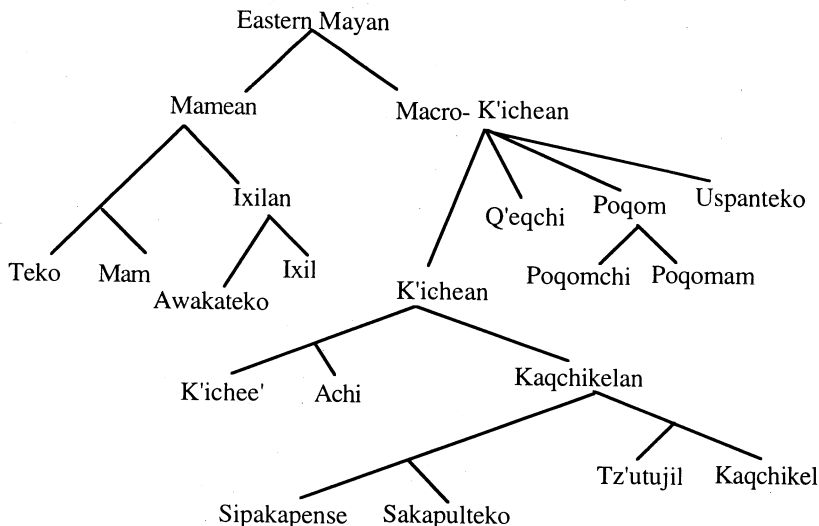
Figure 1: Genetic relationships within Eastern Mayan[1]

Sipakapense has undergone numerous changes due to language contact and exhibits a number of linguistic features that cannot be explained through internal change. Because of these changes (and Sipakapense's geographic isolation from other K'ichean languages), Sipakapense is the most unique of all K'ichean languages.[2] In this paper, I will outline the effects of language contact in Sipakapense. I propose three distinct periods of contact: an early period of contact between Proto-Ixilan and Proto-Sakapulteko-Sipakapense (PSS), an ongoing and intense period of contact with Mam, and a period of contact with K'ichee'.[3]

Ixil

Chajul

San Juan Cotzal

Nebaj

Awakateko
Aguacatán

Cunén

Sipacapa

Huehuetenango

Spanish

SACAPULAS
Sakapulteko

Salquil

Sipakapense

K'ichee'

Mam

Momostenango

Sta Cruz del Quiché
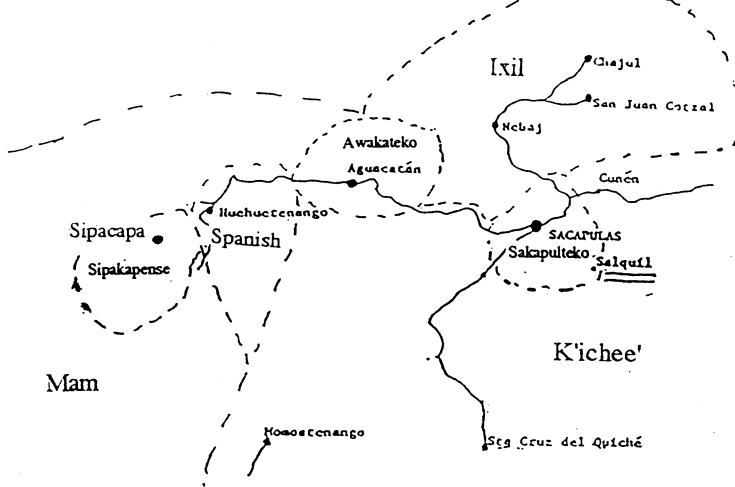
Present location of languages discussed

1.1. Historical background

The Kaqchikelan languages were most likely separated into Sipakapense-Sakapulteko and Tz'utjuil-Kaqchikel by the westward expansion of the K'ichee' (see DuBois 1981: 84-6). According to Sipakapense oral history (Ambrosio Zacinto 1995), the Sipakapense and Sakapultekos were orinially a single people, living in the area of present day Sacapulas, with the Sipakapense occupying Saquil, just to the southeast of Sacapulas (see map above). The Sipakapense were forced to leave Saquil because of land disputes and moved into the Mam region to their current home. Later, during the 14th century, the K'ichee' ruler K'iq'ab' (Q'uik'ab'), moved westward, conquering the Mam capital of Saqulew (Zaculeu).[4] Even after the K'ichee' left the Mam region, the K'ichee' and Sipakapense regions shared a border until fairly recently, when this area became primarily Spanish speaking (Cojti et al. 1992).

This historical situation has placed Sipakapense in close contact with several other Mayan langauges. When the Sipakapense inhabited Saquil, PSS was in direct contact with an early form of Ixil (a Mamean language). After moving to the area of Sipacapa, Sipakapense entered a long period of intense contact with Mam. From the 14th to 20th centuries, Sipakapense was also in contact with K'ichee', although this contact was probably less intense than that between Mam and Sipakapense.

2.0 Proto-Sakapulteko-Sipakapense contact with Proto-Ixilan

Sipakapense and Sakapulteko share several borrowings from Mamean (in particular from Proto-Ixilan) which are not found in other K'ichean langauges. These words are not found in Mam, which is understandable, as there is no historical evidence for contact between Mam and PSS. These borrowings are most readily explained as resulting from contact between PSS and an early form of Ixil or Proto-Ixilan, a branch of Mamean distinct from Mam. Two examples of such borrowings are given in Table 1.

Language (Subgrouping)	"skunk"	"buzzard"
Sipakapense (Kaqchikelan)	ksiy	quʔs
Sakapulteko (Kaqchikelan)	kisiy	---
Ixil (Mamean-Ixilan)	tʃisi (>*kisi)	quʔs
Mam (Mamean)	ʃiʔwil	k'uts/loʃ
Awakateko (Mamean-Ixilan)	ʃiwl	quʔs, kilitʃ
K'ichee' (K'ichean)	paar	k'utʃ
Kaqchikel (Kaqchikelan)	par	k'utʃ

Table 1: Eastern Mayan words for "skunk" and "buzzard"[5]

2.1 Negative potential marker

Negation in K'ichean languages is typically marked with a particle /ma/ or /man/ preceding whatever is being negated, often (but not always) in combination with the irrealis marker /ta(χ)/, which follows whatever is negated, as shown in example 1, from Tz'utujil[6].

1) Tz'utujil (Dayley 1985: 321):   Ma   ʃ+ø+b'e   ta χar Aa Luʔ.
NEG CMP+3sABS+go IRR DET CLS Pedro.
Pedro didn't go.

Thus, K'ichean languages (other than Sakapulteko and Sipakapense) maintain the Proto-Mayan negative particle *ma (Kaufman 1964: 124).[7] In both Sipakapense and Sakapulteko, this negative particle has been lost. In Sakapulteko, the majority of negative forms use only the K'ichean irrealis particle (which has been reanalyzed as a negative marker). (Negation in Sipakapense is further discussed in section 3.3 below):

2) Sakapulteko (DuBois 1981: 241):   ʃeelaa taχ.
silk   NEG
It is not silk.

Both Sipakapense and Sakapulteko have specific forms of negation for potential or imperative constructions. In these forms, the optative/hortative aspect markers are not used, with both the potential and negative meanings carried by a single prefix. The form of the negative potential is /mi?/ in Sipakapense and /m(i)-/ in Sakapulteko:

3) Sakapulteko (DuBois 1981: 165):   mi+ø+peet+aq
               NPT+3sABS+come+PFM
               Let him not come!

4) Sipakapense[8]:   Mi?+ø+n+tz'ul+iχ
               NPT+3sABS+1sERG+hug+DRV
               I won't hug him/her.

While distinct structures for different types of negation do not occur in other K'ichean languages, they are found in the Mamean family.[9] Although Ixil does not contain a particle that corresponds exactly to the negative potential markers in Sipakapense and Sakapulteko, it does contain a negative marker /mih/ which is used in negations meaning "neither" or "none at all," shown in example 5) below:

5) Ixil (Ayres 1991: 194)[10]: Mih va?q vinaq opoon t tyeempo.
           NEG DET people arrive PREP time
           Nobody arrived on time.

The particle for verb negation in Ixil, /ye?/, is an innovation. Comparison with Mam, in which all forms of negation (including a special form for negative potential) begin with /mi-/ suggests that the /mih/ form in Ixil is a reflex of the Proto-Mamean negative particle. It is probable that at some earlier stage of Ixil, the marker /mih/ had a broader range of uses, possibly including negative potential constructions. Thus, the negative potential marker in Sipakapense and Sakapulteko may have also been borrowed from contact during an earlier stage in the history of Ixil.

2.2 The interrogative particle

In addition to these borrowings, the interogative particle in Sipakapense is a borrowing from Mamean, but not from Mam itself. In Sipakapense, yes/no questions are formed by the addition of the particle /mu/ at the begining of a sentence. In all other K'ichean languages (including Sakapulteko), these questions are formed with a particle /la/ (also at the beginning of a sentence). The /mu/ particle in Sipakapense is most likely a borrowing from Ixil, in which yes/no questions are formed with a particle /ma/ or /mo/[11], as in example 6):

6) Ixil (Ayres 1991: 184): Ma la b'en aʃ s vi'?
           INT POT go 2sABS REL 1s
           Are you going with me? (Nebaj dialect)

The /mu/ particle in Sipakapense is used in exactly the same way:

7) Sipakapense: Mu ʃk+iʃ+b'e+k tʃwaq tʃ+χay?
        INT FUT+2pABS+go+PFM tomorrow PREP+house
        Are you going home tomorrow?

   As this /mu/ particle must be explained as a borrowing and it does not occur in Mam, its presence in Sipakapense suggests that it may be another influence from contact with Ixil. These examples suggest that PSS was in contact with Pre-Ixil (or Proto-Ixilan) for several reasons. The presence of the negative potential marker in both Sakapulteko and Sipakapense suggests that the borrowing occurred before the two langauges separated. In addition, Sipakapense would not have direct contact with either Sakapulteko or Ixil after the point at which the Sipakapense left Ixil. Finally, these forms do not occur in any of the dialects of Mam or K'ichee' that are geographically between Sipakapense and Ixil, ruling out the possibility of a later local diffusion.

3.0 The effects of Mam-Sipakapense contact

   After splitting off from Sakapulteko, Sipakapense began a period of intense contact with Mam. This contact continues today and is currently increasing due to an influx of Mam speakers into the Sipakapense region. The effect of Sipakapense contact with Mam is a case of language maintenance with moderate to heavy structural borrowing (Thomason and Kaufman 1988), as Mam influences can be found at all levels of Sipakapense grammar. This section outlines these influences.

3.1 Lexical borrowings

   Sipakpense contains numerous lexical borrowings from Mam which do not occur in Sakapulteko (or any other K'ichean language). Some examples are given in table 2 below, with corresponding examples from Kaqchikel for comparison with K'ichean.

Sipakapense	Mam	gloss	Kaqchikel
yol	yoolat	to speak, converse	tsiχ
wiʔtoon	wiʔtan	cypress tree	k'isis
muuχ	muuχ	cloud	suts'
puʔt	puʔt	butterfly (Sip) moth (Mam)	malaʃ, palamaʃ

Table 2: Some borrowings from Mam into Sipakapense[12]

3.2 Phonology

Mam underwent a sound change of dissimilatory palatalization in which a velar stop was palatalized before short non-back (or unrounded) vowels when followed by a uvular consonant (England 1990: 224). This process spread into K'ichean languages (cf. Grimes 1969, Campbell 1974), including Sipakapense. In Sipakapense the effects of this change were subsequently undone by a further sound change in which short /a/ went to short /e/ between velar stops and uvular consonants. Hence those examples in which palatalizations due to dissimilation (i.e. short /a/ before a uvular) were regularized (becoming /e/) to fit the less marked palatalization before front vowels (which also occurs in Sipakapense). Examples include the following:

8) Sipakapense: /ikeχ/   [icʸeχ] "axe"   (cf. K'ichee' [icʸaχ] "axe")

                    /keq/   [cʸeq] "red"   (cf. K'ichee'[cʸaq] "red")

In Mam, short unstressed vowels are usualy dropped before a stressed vowel (cf. England 1983, 43-4). Sipakapense has adopted this process of dropping vowels before stress (which generally falls on the last syllable of a word). Thus, many root vowels drop or surface depending on morphology:

9) Sipakapense: iʃiím   "corn"   w+ʃím   "my corn"
                                                    1sERG+corn

ʃ+ø+in+b'án   tʃ+ø+a+b'n+áʔ
CMP+3sABS+1sERG+do   OPT+3sABS+2sERG+do+OPT
"I did it."   "Do it."

Primarily due to differences in morphological structure, vowel dropping in Sipakapense produces series of up to six consecutive consonants (compared with only four in Mam):

10) Sipakapense: ʃtqpʃoχ   ʃtqsb'χaχ

                    ʃt+ø+q+pʃoχ   ʃɨ+ø+q+sb'χaχ
                    FUT+3sABS+1pERG+shatter FUT+3sABS+1pERG+whack
                    We are going to shatter it. We are going to whack him/her/it.

3.3 Morphology

Although Proto-K'ichean distinguished between completive and recent (or proximate) past aspects (Robertson 1992: 125), the recent past has been lost in all K'ichean languages other than Sipakapense. It is possible that the maintenance of the recent past in Sipakapense was influenced by the fact that Mam also makes a distinction between past and recent past (cf. England 1983: 162). The presence of a large number of Mam-Sipakapense bilinguals may have contributed to the retention of this aspectual distinction.

Negation in Sipakapense is quite different from that found in other K'ichean languages (see 3.1 above). As in Sakapulteko, the K'ichean negative particle /ma(n)/ has been lost. In Sipakapense, verbs are negative with the particle /qa(l)/,

which is not found in any other K'ichean language.[13] One possible source for this particle is the Mam conditional particle /qa/ ("if"). This particle can combine with /mii/ to form a negative conditional, /qamii/, which immediately precedes whatever is negated (England 1983: 244). It is possible that this particle /qa/ was borrowed into Sipakapense as a general negative marker.

3.4 Syntactc change

England (1991) has reconstructed Proto-Mayan word order as VOS, with VSO allowed for certain marked objects. The majority of Mamean languages (all but the Cotzal dialect of Ixil) have a fixed VSO word order. The spread of VSO word order in Mamean is part of a local diffusion of a variety of lingusitic features, including a series of retroflex consonants and the use of noun classifiers (England 1992: 45-57).   Although Sipakapense is located in the area of this diffusion, the only diffusion feature found in Sipakapense is the change to VSO word order, which is not a complete change.

Word order in K'ichean languages resembles that proposed for Proto-Mayan. In K'ichean languages, VOS is the predominant order, with VSO typically occurring when both subject and object are definite NPs. In addition, K'ichean languages often allow for either VSO or VOS word order when a sentence contains one definite and one indefinite NP, with the definite NP always interpreted as the subject. Sipakapense maintains this variability for sentences with definite subjects and indefinite objects, but has moved to VSO word order in all other cases. Thus, Sipakapense has VSO order for the vast majority of instances in which other K'ichean languages would have VOS order. Table 3 below contains exmaples of the word order found with different combinations of definite and indefinite NPs in Sipakapense and Tz'utujil (which is typical of the patterns found in K'ichean languages).

Constituents		Possible word orders			
		Sipakapense		Tz'utujil	
Subject	Object	VOS	VSO	VOS	VSO
Definite	Definite	*	√	*	√
Definite	Indefinite ("χun")	√	√	√	√
Indefinite ("χun")	Indefinite ("χun")	*[14]	*	*	*
Indef ("ri/χa[15] χun")	Indef ("ri/χa χun")	*	√	√	*
Definite	Indef ("ri/χa χun")	*	√	√	*

Table 3: Word order in Sipakapense and Tz'utujil[16]

4.0 K'ichee' contact with Sipakapense

In addition to contact with Mamean languages, Sipakapense exhibits the effects of contact with K'ichee'. Sipakapense actually seems to have had more influence from K'ichee' than Sakapulteko, even though speakers of Sakapulteko have been in a contact situation with K'ichee' that is as intense as the contact between Sipakapense and Mam. As described by DuBois (1981: 66-70), K'ichee'-Sakapulteko contact is restricted to lexical borrowings. In contrast, Sipakapense has borrowed two morphosyntactic elements from K'ichee': a tense-aspect marker and the comitative relational noun.

4.1 The optative/imperative prefix

Robertson (1992: 68) has reconstructed the optative/imperative prefix in Proto-Mayan as *tˀⁱi+ before 3sABS, *q+ before 1pABS and *ki+ before other persons. In K'ichean languages, the *q- form has been lost through paradigm levelling. In Kaqchikelan languages the optative/imperative prefix before 3sABS became t(i)+, while the form for other persons remains k(i)+. In K'ichee', the corresponding forms are tʃ(i)+ and k(i)+, respectively, although some K'ichee' dialects use tʃ(i)+ for all optative/imperative constructions (as in the example below).

11) Optatives/imperatives in K'ichean:

a) Kaqchikel (Garcia Matzar et al. 1992: 77):

> k+in+a+tʃap+aʔ   "Grab me!"
> OPT+1sABS+2sERG+grab+OPT

> t+ø+a+tʃap+aʔ   "Grab him/her/it!"
> OPT+3sABS+2sERG+grab+OPT

b) K'ichee' (Suy Tum 1988: 55):

> tʃ+in+a+tʃ'ay+aʔ   "Hit me!"
> OPT+1sABS+2sERB+hit+OPT

> tʃ+ø+a+tʃ'ay+aʔ   "Hit it/him/her!"
> OPT+3sABS+2sERG+hit+OPT

The K'ichee' form tʃ(i)+ was borrowed into Sipakapense, replacing the Kaqchikelan t(i)+ in optative and imperative constructions (before 3sABS). The original Kaqchikelan t(i)+ was maintained, however, taking a secondary dubative or dislocative meaning. Thus, t(i)+ is used to mark uncertainty (without the desire conveyed by the optative) or to indicate that the action conveyed by the verb takes place in a location other than the present location of the speaker. The distinction between these forms is not found in other K'ichean langauges.

12) Sipakapense: k+at+wr+oq   tʃ+ø+a+tχ+aʔ

               OPT+2sABS+sleep+OPT   OPT+3sABS+2sERG+eat+OPT

                       "Sleep!"   "Eat it!"

T+ø+in+tχ+aʔ   χruχ t+ø+pe ri tʃ'iitʃ' ?

DBL+3sABS+eat+OPT   When DBL+3sABS+come DET bus

"I'm going to eat (trans.) over there."   "When is the bus coming?"

4.2 The comitative relational noun

Another borrowing from K'ichee' into Sipakapense is the comitative/instrumental relational noun /+uk'/, "with X" shown in 13) below. As all other Kaqchikelan languages have /+ik'in/ forms for this relational noun, the presence of /+uk'/ in Sipakapense is best explained as a borrowing from K'ichee'.

13) Comitative relational nouns

a) Sakapulteko:
w+ik'iin
1sERG+"with"
with me (DuBois 1981: 192)

b) Kaqchikel:
ru+k'in/r+ik'in
3sERB+"with"
with her/him/it (Rodríguez Guaján 1994)

c) K'ichee':
r+uk'
3sERG+with
with her/him/it (López Ixcoy 1994: 78)

d) Sipakapense:
r+uk'
3sERG+with
with her/him/it

5.0 Conclusion

The above examples demonstrate the ways in which Sipakapense has been effected by contact with other Mayan languages. In addition, these data presented here have implications for the genetic classification of the K'ichean family. The Kaqchikelan branch presented in the tree in section 1 of this paper (originally proposed in DuBois 1981) has not been widely adopted by Mayanists, who often follow Campbell's (1977) original assertion that Sipakapense and Sakapulteko are dialects of K'ichee'. However, the correspondence between the K'ichee' and Sipakapense optative/imperative marker (presented in section 4.1) is best understood as a borrowing (rather than some shared attribute of K'ichee' dialects) both because all other Kaqchikelan languages display a different marker (t(i)+), but also because the original Kaqchikelan marker is maintained with a secondary meaning. This adds to the evidence for Kaqchikelan which DuBois (1981) presents based on internal change. Thus, studies of internal (genetic) change as well as studies of contact phenomena both contribute to understanding the full history of any given language family.

1 This tree follows Kaufman (1974) with revisions from DuBois (1981). It should be noted that Robertson (1992, 123) argues for a different classification for Mamean, suggesting that Awakateko is closer to Mam and Teko than to Ixil. As Robertson's claim is based solely on the structures of the verbal complex in these languages, I have retained Kaufman's classification for the time being. Also, there are arguments for classifying K'ichee' and Achi as a single language (Sis Iboy and López Ixcoy 1992). Similarly it has been argued that Poqomchi and Poqomam should be classified as a single language (Benito Perez 1992).

2 In a preliminary mutual intelligibility experiment (Cuz 1993), Sipakapense was the least intelligible to speakers of all other K'ichean languages.

3 Of course, there has also been a period of intense contact with Spanish from the mid-1500's to the present, the effects of which are beyond the scope of this paper.

4 Carmack 1981, 135-37) discusses this campaign. The original manuscript sources include Recinos 1984 (1957), 140 ff, and the Popul Vuh (e.g. Tedlock 1985, 213-6).

5 These data are primarily from Dienhart 1990. Throughout this paper, original transcriptions are transliterated into IPA.

6 Abbreviation conventions are as follows: ABS = absolutive, ERG = ergative, CLS = classifier, POT = potential aspect, REC = recent past, OPT = optative/imperative aspect, HOR = hortative aspect, CMP = completive aspect, DBL = dubatitve/dislocative aspect, NPT = negative potential aspect, FUT = future aspect, PREP = preposition, REL = relational noun, INT = interogative particle, NEG = negative, IRR = irrealis, CAUS = causative, DIR = directional, DET = determiner, and PFM = phrase final marker, DRV = derived transitive verb ending

7 The **n** in the /man/ form found in many dialects of K'ichean langauges is most likely due to a tendency to maintain CVC syllable structure by adding a coda consonant to CV roots, usually either a nasal or a copy of the onset consonant as in Proto-K'ichean "mother" = *tʃu, Sipakapense = tʃutʃ, Proto-K'ichean "man" = *atʃi, Kaqchikel = atʃin. For more detail, see DuBois 1985.

8 All Sipakapense data are from field notes collected by the author during 1994-1995.

9 For example Mam contains four distinct negative constructions corresponding to different types of negation. For details, see England 1983: 244-8.

10 Ixil glosses are my own based on my understanding of Ayres' grammar.

11 Ayres (1991, 184) notes that sentences using /mo/ are not common, but does not discuss the particular distinctions between the use of /mo/ and /ma/.

12 Mam data from Maldonado Andrés et al. 1986, Kaqchikel examples from Rodríguez Guaján et al 1990.

13 Poqomam does have a prefix /qaʔ/ which is used to form questions (e.g. qaʔsa,
    "what/how"; qaʔkeh, "who")(Benito Pérez 1994, 111), but the similarity with
    Sipakapense seems coincidental.
14 Sentences with both subject and object marked with "χun" are ambiguous and
    can only be interpreted with clarity when the subject is topicalized (under SVO
    word order).
15 Sipakapense *ri χun* corresponds with Tz'utujil *χa χʋn*.   Both combine the
    definite (*ri/χa*) and indefinite (*χun*) articles to indicate an indefinite.
16 Tz'utujil data from England (1991).

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The Bipartite Stem Belt: Disentangling Areal and Genetic Correspondences

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> Even where genetic relationship is clearly
> indicated ... the evidence of diffusion of
> traits from neighboring tribes, related or
> not, is seen on every hand. This makes the
> task of determining the validity of the
> various alleged Hokan languages and the
> various alleged Penutian languages all the
> more difficult ... [and] point[s] up once
> again that diffusional studies are just as
> important for prehistory as genetic studies
> and what is even more in need of emphasis, it
> points up the desirability of pursuing
> diffusional studies along with genetic
> studies. This is nowhere more necessary than
> in the case of the Hokan and Penutian
> languages wherever they may be found, but
> particularly in California where they may
> very well have existed side by side for many
> millennia. (Haas 1976:359)

The term "bipartite stem" (Jacobsen 1980) refers to a
pattern of compound stem construction found in northern
California and Oregon, which crosses genetic
boundaries, occurring in Hokan and Penutian languages,
but also seems to roughly correlate with plausible
genetic subunits (Northern Hokan, Plateau Penutian +
Maiduan). While the pattern has clear functional
analogies to patterns of stem construction in Salish,
Wakashan, Algic, and other North American languages,
its specific structural manifestations clearly
distinguish the languages of what I am calling the
"Bipartite Stem Belt" from those to the north and south
of it. Different aspects of this bipartite stem
pattern appear to be different ages, so that their
distribution in the area suggests a chronology of
various prehistoric contacts. This evidence is
consistent with other linguistic and archaeological
evidence, and can potentially be used to bolster and
complement recent suggestions about Penutian dispersal.
    The pattern shows the most elaborate development
in a "core area", a set of languages including at least
Washo, Klamath, Sahaptin, Yana, and Atsugewi. (Some or
all of Molala, Achumawi, and Shasta very likely belong
to this core area as well, but the situation is not
clear from the data available to me). Elements of the

pattern are shared in many surrounding languages, particularly Nez Perce, Maiduan, Pomoan, and to an extent Numic; this larger set of languages is what I mean by the Bipartite Stem Belt.

1   Elements of an areal pattern

The areal pattern which we are discussing has been recognized since the beginning of systematic California linguistics (Dixon and Kroeber 1919, Sapir 1916, Taylor 1961, Jacobsen 1966, Sherzer 1976, DeLancey 1988). Discussion of its defining features is often couched in terms of "instrumental prefixes" and "locative(-directive) suffixes". While they have the advantage of familiarity, these terms are misleading in two important ways--in the assumption of greater (in the case of the "instrumentals") or less (in the case of the "locatives") semantic specificity than the categories of the languages actually manifest, and in the implication, contained in the words "prefix" and "suffix", that we are dealing with a clearly grammatical as opposed to lexical phenomenon. At the most general level, we are better to refer simply to initial and final stem elements, or simply "initials" and "finals". For the more specific grammatical categories which define the bipartite stem pattern I will refer to "lexical prefixes" (LP's) and "locative-directive stems" (LDS's).

1.1 Lexical prefixes

The principal feature which has historically been recognized as subject to areal spread in Northern California is a set of initial stem elements, usually but not always analyzed as prefixes. In all of the languages which have this category some or all of the members can have reference to the shape of an instrument, and the category is traditionally referred to as "instrumental prefixes". But in all languages for which I have data some members of the category can also refer to the shape of a Theme argument, and in the more elaborated systems characteristic of our area bound stems referring to manner of motion also occupy this same positional slot. In the core languages the positional category also includes a motley set of bound stems with no discernable semantic connection to any of these fields.
      We find the closest approximation to a truly "instrumental" category in languages like Maiduan, Takelma, and Numic. In all of these most of the prefixes or initial stem elements index a body part or

the shape of an object, but some express more abstract
adverbial notions, while the shape classifiers may
index an instrument or some other kind of argument,
typically a Theme (DeLancey 1991a). For example, in
Konkow (Maiduan) /bó-jolmì:n/ 'bash w. a rock-like
instrument', the prefix |bᵛ| classifies an instrument,
but in /bó-ki:n/ 'rock-like obj. is lying, put rock-
like obj. down' it indexes the Theme of a predicate
referring indifferently to location or motion
(intransitive or transitive). Likewise in Takelma the
17 body-part prefixes often express the instrument with
a transitive verb, but they can also index object
arguments of various semantic functions, and several of
them also have semantically extended functions
reminiscent of the "adverbial" LP's of Sahaptian or the
adverbial functions of some LP's in Klamath. A similar
pattern is reported for the Numic languages, where
similar-sized sets of prefixes, primarily but not
exclusively referring to body parts, have a semantic
range extending beyond instrumentality to include
"liquid, heat, and cold ... degree or direction of
force, location, transitivity, and also other
grammatical features" (Nichols 1974:155). Both the
Takelma and the Numic categories are directly relatable
to noun-incorporation constructions, though the
inventory (particularly in Numic languages) will
include morphemes whose nominal origins are quite
opaque. It is worth noting here a conclusion that I
will suggest later, that the existence in a LP system
of a certain number of members whose lexical origin is
transparent is not in itself an argument for the recent
origin of the category, as languages with such a
category tend to continue to recruit new members, and
to lose old, resulting in a slow relexicalization of
what may otherwise be relatively stable categories. A
very similar pattern, as distant genetically and
geographically from either of these as they are from
one another, is found in Pomoan. Again, the size of
the stem-initial category is quite similar, and the
semantic range quite comparable, to the languages we
have just discussed (Oswalt 1976:15-7).

In the core languages, we find much larger and
more elaborated sets of initial stem elements, of
sufficient semantic variety to make it impossible to
retain the term "instrumental" even for its sentimental
associations. In Klamath, for example, there is a
category of initial stem element which, while it
includes a number of morphemes referring to body parts
or shape categories as instruments, also includes
elements which index the shape or other semantic
category of a Theme argument, morphemes referring to

manner of motion, and a miscellaneous set with no
particular semantic coherence. Since no more specific
term accurately describes the set, I adopt Jacobsen's
(1980) term "lexical prefix", adapted from Salishan
studies (where "lexical suffix" refers to a
functionally similar category of stem-final elements),
for the equivalent set of initials in Washo. These
"prefixes" appear to have more than one origin; some
are quite clearly verbs, and the bipartite stems which
they form are at least etymologically best thought of
as verb compounds. Jacobs specifically notes the same
thing of the Sahaptin LP category:

> it cannot be maintained that anterior roots
> are true prefixes; tagging them prefixes or
> alternatively, anterior roots or quasi-roots,
> does not properly describe their usage, which
> varies from nearly genuine prefixation to
> true compounding and in some cases complete
> root independence.   (1931:153-4)

Even for the much smaller and more cohesive LP category
in Maiduan, the analysis of the category is subject to
debate: Dixon (1911) and Ultan (1967) label them
prefixes, but Shipley (1964) considers the Maidu LP's
"root morphemes", while noting that this is as much a
historical as a synchronic question.
     A very intriguing pattern is that the LP's in many
of these languages share similar phonological profiles
and behavior. They are typically phonologically light,
and in a geographically and genetically diverse range
of languages (Nez Perce, Klamath, Washo, Maiduan,
Pomoan) they undergo some degree of vowel harmony with
the stem to which they are attached--even when the
language does not otherwise show vowel harmony. This
fact definitively ties the languages that share it into
an areal complex; we can imagine two languages
independently, or semi-independently, innovating an
instrumental or more general lexical prefix category--a
noun incorporation construction would be a typical
source--but there is no imaginable reason why Pomoan
and Maiduan, for example, would both independently
develop a vowel harmony rule applying only to this
category.

1.2 Locative-directive stems

Languages of this area are rich in lexicalizations of
this subcategory of motion verb, representing elaborate
classifications of the semantic field of direction,
path, and location (as opposed to types and manners of

motion like 'go', 'walk', 'run', etc.). Stems
representing this semantic category are not, of course,
necessarily an overtly distinct grammatical category,
but one of the characteristic features of the bipartite
stem pattern is some degree of grammaticalization of
verbs of this type.

We can illustrate the specialization of the
category with Chinookan, which is otherwise not a
participant in the bipartite stem pattern. Dyk (1933)
describes the existence in Wishram of what are clearly
in some sense bipartite stems: "rather loose
combinations of two-stems ... easily broken up in their
component parts each of which is freely combined with
others" (1933:76). (He also notes the existence of
"several" compound stems one or both elements of which
are unique to them; a feature widespread among
languages of the Bipartite Stem Belt proper). The
order of elements is fixed, that is, there is a set of
initial and another of final compounding elements, with
no overlap. Members of each class can also occur as
independent simple stems. Initial stems are apparently
a large open class, but there are only something like
40 final elements, and only half of these combine
productively. These also occur independently; all are
"intransitive verbs of motion with specific directional
connotations" (p. 77) which as finals combine only with
primary motional stems. In compound stems they are
exactly parallel to the locative-directive "suffixes"
of Klamath or the "posterior roots" of Sahaptin.

Examination of Aoki's magnificent dictionary
(1994) of Nez Perce provides a very similar picture.
There are about three dozen verb stems which he states
occur only preceded by a LP. About half of these have
meanings related to motion or direction. As in
Wishram, they combine predictably with motional
initials, but they also occur with LP's with other
(e.g. shape-classifying) meanings:

> (1) áhsa 'to (go) up', as in |co-láhsa-| 'lift a
> pole' ({cú:-} 'with a pointed object or a pole-
> like object), |wa:-láhsa-| 'fly, jump up; ({we:-}
> 'fly, move fast'), etc.

Almost all of these begin with a morphophonemically
variable /l/, which may be the remnant of an older
morphological mark of verb concatenation. Several of
these are transparently analyzable, showing recent
expansion of the category; for example {(l)áhtq'i} 'out
of water; up and out', analyzable into {láhsa} 'up' and
the verb stem {taq'í:} 'out of water, come to shore'.

In Klamath we find a much larger set of locative-directional stems, with well over 100 members. Except for their number, these are very like the corresponding category in Nez Perce: they are bound morphemes, occurring always as the final element of a compound stem (though certain of them can occur after others); they have unique morphophonemic behavior, each having a characteristic initial vowel which surfaces only with certain initial stem elements (see DeLancey 1991); and they combine freely with both motional and shape-classifying initials. As in Nez Perce, a few members of the category are clearly recent developments, showing that the category has continued to expand over time, but most are synchronically opaque and not related to any independent stem.

The Nez Perce LDS's clearly represent a highly grammaticalized category: a relatively small (15-20) set of bound morphemes, with characteristic morphophonemic behavior. The Chinookan category is less grammaticalized; though it is about the same size, the fact that its members occur as free as well as bound stems immediately makes us think more of lexical stems than grammatical affixes. The Klamath pattern deviates in the other direction; as in Nez Perce, these are a closed class of bound morphemes, with peculiar and characteristic morphophonemic behavior--but there are ten times as many, with concomitant semantic variety and specificity. Nevertheless it is clear that we are looking here at essentially the same phenomenon, and, given the geographical proximity of the historic distribution of the languages, it is hardly imaginable that its occurrence in all of them is coincidental.

Here in a nutshell we can see the problem with the traditional "stem" vs. "affix" model, as several scholars have recently noted (Jacobsen 1980, Langdon 1990). In Wishram, there can be no question of the verbal nature of the LDS's, since they occur freely as motion stems in their own right. Aoki has no choice but to analyze the Nez Perce stems as verb stems, despite their bound status, because they fall into exactly the same two stem classes as all other verbs. Barker calls the Klamath category suffixes, but in fact the same argument can be made as in Nez Perce for considering them to be ultimately verbal in nature. As we will see below, while Klamath lacks the luxuriant stem alternations of Yok-Utian or Takelma, it does show two very interesting irregular stem classes: -i'-stems and n-stems. Both of these are probably quite old; the n-stems probably represent inheritance from Proto-Plateau, and the -i'-stems very possibly from Proto-Penutian. Both categories are well-represented among

the locative-directive "suffixes", which thus in a
fundamental and organic way behave like other verbs in
the language.

1.3   A taxonomy of bipartite stem types

The typological complex which we have to sort out here
is more complicated than simply a matter of possessing
both instrumental prefixes and locative-directive
suffixes. The core languages are characterized by the
fact that a majority of the verb stems of the language
are bipartite, consisting of a LP and a second element.
The second element is not always a LDS, but typically
most or all of the potential second elements in a
language are bound morphemes which cannot occur without
a LP (raising further problems for a simple stem vs.
affix analysis). In Washo, Yana, Klamath, and
Sahaptin, at least, there are several different kinds
of bipartite stem, depending on the type of LP and
second element. I will use Klamath data to illustrate;
Jacobs' description of Sahaptin, Jacobsen's of Washo,
and Sapir's of Yana mention all of these, and each
language has one or two additional minor types. Talmy
(1974), in his description of Atsugewi, works harder to
reduce the semantic range to a unified, rather abstract
principle, but examination of his examples suggests
that the overall system is similar.
   Klamath has about 500 simplex stems, but the
majority of stems consist of two (or occasionally more)
bound elements. These bipartite stems are of four
types (DeLancey 1995ms). LP's referring to instruments
or actions combine with stems referring to a change of
state. Most of these change-of-state stems can occur
unprefixed, in which case they are intransitive; with
an instrumental LP they are transitive, e.g. /ntew'-/
'break, shatter a surface with a round instrument'
({n-} 'round instrument', {tewi'} 'thin surface to
break, shatter'). LP's referring to the shape or other
semantic category of a Theme argument combine with
bound LDS's to create stems, which can be used both
intransitively and transitively: e.g. /lew-/ 'puts a
round obj. into water, flat place (intr. also)' ({lᵛ}
'round object', {ew} 'in(to) water, a flat place').
LP's referring to manner of motion also combine with
LDS's, creating complex motion verbs. e.g. /howw-/
'run, jump into water, flat place' ({hod} 'sg. run,
jump', {ew} (as above)). We must also recognize a
miscellaneous category of LP's or combinations of LP
and final which do not fit any of the above categories:
/dalmni/ 'looks up' ({dᵉl} 'look' and {amni} 'up,
upstream, uphill'), /lGacw-/ 'has a stripe on the hair,

head' ({1Gᵉ} 'striped', {acw} 'on the head, hair').
There is also a significant number of bipartite stems
one element of which occurs only in that stem and no
other, and other bound stem elements which do not
easily fit into any of the general classifying,
instrumental, motional, or change-of-state or LDS
categories.

2   A comparative problem: Plateau Penutian and
     Maiduan

The classic Sapirean version of Penutian recognizes
three major groupings in our area: Californian,
consisting of the four California stocks (Miwok-
Costanoan, Yokutsan, Wintuan, and Maiduan), Oregon
Penutian, consisting of Takelma, Kalapuya, and the
Coast Oregon languages, and Plateau, consisting of
Sahaptian, Molala-Cayuse, and Klamath-Modoc.
(Chinookan, Tsimshianic, and "Mexican Penutian" were
the other branches (1929/1990)). While there is
increasing evidence for the validity of something like
Sapir's Plateau branch, the "California Penutian" unit,
inherited from Dixon and Kroeber's pioneering work, has
turned out to be a phantom. That is not, of course, to
say that there is no evidence that these languages are
related--but there is no factual basis for a claim that
they compose a unified subgroup of Penutian to the
exclusion of other putatively Penutian languages (cf.
Hymes 1964), and it is now established that Wintuan
(Whistler 1977) and Maiduan (Shipley and Smith 1977)
represent separate, independent migrations, almost
certainly from different proximate origins; very
possibly they are related at no shallower level than
Proto-Penutian.

2.1 Klamath as a Penutian Language

I will not discuss lexical evidence for a Penutian
affiliation for Klamath and Sahaptian here, except to
assert that there is as much evidence for the
relationship of Klamath to Yokuts, and for Klamath to
Maiduan, as for Yokuts and Maiduan, and thus no
argument on the basis of lexical evidence for a special
relationship between Maiduan and Yokuts which excludes
Klamath. Moreover, Klamath shows some fossilized
structural features which make it look more Penutian
than is sometimes assumed. As Silverstein points out,
the evidence from Takelma and Yok-Utian suggests that,
in a language related to these, we should expect
"morphological debris found at the end of stems,
irregularities in lexical form under derivation and

inflection" (1979:660). Although Barker's presentation
of his data in terms of "morphophonemes" obscures the
similarities to other languages, Klamath does in fact
have stem classes of verb characterized by irregularity
in their derived and inflected forms. The oldest and
most interesting from a comparative Penutian point of
view are the glottal and i-stems. A number of Klamath
verbs have a final /i/ before consonants, but not
vowels. Most of these also have the final glottal
morphophoneme which Barker writes as |'|. This
glottalizes a preceding sonorant when the |i| is not
realized; thus with the stem {qewi'} 'break in two' we
get forms like /qew'a/ 'break in two', with the |i|
lost before a vocalic suffix, and the stem sonorant
therefore glottalized, vs. /qe:witk/ 'pl. broken,
destroyed', with the |i| retained before a consonant,
and the glottalization therefore lost. While we cannot
directly equate this irregularity with similar patterns
in other languages unless we can identify specific
cognate stems, it is intriguingly reminiscent of stem
alternations in Yokuts.

2.2 Klamath and Sahaptian

The genetic relationship between the Sahaptian family
(Sahaptin and Nez Perce) and Klamath is recognized even
by conservative Penutian skeptics as very plausible,
and considerable lexical and grammatical evidence has
been presented for it (Aoki 1963, Rude 1987, DeLancey,
Genetti and Rude 1988, DeLancey 1991b). These
languages also share both the bipartite stem pattern
and several specific roots participating in it, both as
initials and finals.
    For example, Nez Perce {wîlé:} 'run, move
quickly', which Aoki (1970) analyzes as a LP, and
Klamath {wle} 'run (few, four-legged animal)', which
Barker analyzes as a bound verb stem which requires a
LDS, in fact have identical compositional behavior,
occurring in both languages only in compounds like:

> Nez Perce: /wila-láhsa-sa/ 'I am running uphill'
> ({láhsa} 'to (go) up'), /wile-léhne-ce/ 'I am
> running down' ({léhne} 'down, downward,
> downhill'), etc.

> Klamath: /wle-qwe:L-/ 'few, four-legged animals
> run down a hill' ({eqwe:L} 'down the hill, out of
> a tree, downslope'), /wle-Yanc'-/ 'few, four-
> legged animals run along the edge of a cliff,
> along a bank' ({oYn} 'along a mountainside, cliff,
> twisting riverbank;), etc.

Given the correspondence in form and meaning and in position class and combinatorial behavior, the two stems are indubitably cognate. (This is one of the most widely attested and best known pan-Penutian etyma; cf. Shipley 1966). We have good reason to suppose that their status as bound motional stems which occur with grammaticalized LDS's is likewise common inheritance from Proto-Plateau.

But this hypothesis entails that the existence of a specialized class of LDS's occurring as bound final elements of bipartite stems is common inheritance, which in turn implies that at least some members of this category in the two languages should be cognate. And examination of the bound second-position stem elements with which this etymon combines in the two languages does turn up a few plausible cognates; the most promising that I have noted are:

NP {(l)eylé:k} 'into (typically into a hole)'; Kl. {(o)ne:g} 'in(to) a hole'

NP {(l)áhtq'i} 'out of water; up and out', composed of {láhsa} 'up' and {taq'í:} 'to come out of water, to come out to the shore', cp. Kl. {(o)tq'ag} 'up out of (as water, dirt, a hole, etc.)'; also possibly related here are NP {(l)éht} 'out'; Kl. {(o)dg} 'out of a container', {(o)dG} 'taking away, removing, depriving',

NP {(l)éhyek}, 'upstream, upriver' and {letíyek} 'high'; Kl. {(o)ye:g} 'up, raising, lifting'

NP {lawí:} 'to leave (sometimes to get food)'; Kl. {(o)wi} 'spreading out, scattering'

However, four plausible sets (and a few more speculative similarities) among the 15 or so LDS's in Nez Perce, and the 125 or so in Klamath, is not an impressive showing. If the sets given here are valid, then, since they correspond in grammatical category as well as form and meaning, they constitute sufficient basis to attribute this bound category to the proto-language. Nevertheless, the small number of cognates, and the huge disparity in size between the sets in the two languages, demonstrates considerable independent secondary development in the daughter languages.

Thus though there is some reason--in the overall structural parallelism and the close correspondence of isolated elements of the system like *wile--to attribute parts of this stem composition system to a common ancestor of Sahaptian and Klamath, it is

nevertheless clear that there have been extensive
independent developments in the languages since their
separation, including in particular the innovation in
one or (almost certainly) both of many new members of
the various bound stem classes.

In fact, the same is true even within Sahaptian.
It is easier to find strong resemblant pairs of LP's or
bound LDS's between Nez Perce and Sahaptin than for
either of those and Klamath, but still a very
substantial number of both initials and finals are
unique to one Sahaptian language or the other. Some
sets establish specific independent developments in the
two languages. For example, Aoki (1994) lists as a
bound LDS in Nez Perce {(l)éhyek} 'upstream, upriver',
and an independent verb stem {toláy} 'go upstream'. In
Jacobs 1931 we find the Sahaptin "posterior root", i.e.
a bound stem, {-tuni-} 'upstream', cognate to the Nez
Perce independent stem. Thus we see that the two
languages have chosen different roots to grammaticalize
for this meaning. This is a recurrent pattern in the
languages of the Belt: indications that the LP's and
LDS's are quite old as grammaticalized categories,
together with data showing continual expansion of the
categories and replacement of forms over time.

2.3 Plateau Penutian and Maiduan

From the earliest days of Penutian research Maiduan has
been recognized as distinctly unlike the other
(California) Penutian languages in its use of
instrumental prefixes and locative-directive suffixes,
both unknown in any of the other four California
groups. Both Dixon and Kroeber (1919) and Sapir (1916)
ascribe this to contact with the northern Hokan
languages Washo, Achumawi, Atsugewi, and Yana. Once
the California Penutian hypothesis is abandoned,
however, precisely these facts about Maiduan stand out
as a strong structural correspondence with the Plateau
languages. Both Klamath and Sahaptian have extensive
series of initial instrumental or adverbial and final
LDS elements. There is a small body of promising
lexical and grammatical comparisons suggesting a
special connection within Penutian between Maiduan and
Klamath and Sahaptian, a possibility which would fit
well with Shipley and Smith's (1979) evidence for
relatively late migration of Maiduan into its historic
area.

While Maiduan shares LP's, grammaticalized LDS's
and bipartite stems with the Plateau languages, the
fact that these are also shared with its Hokan
neighbors should cause us to proceed with caution in

attributing the similarities to cognacy, since it
raises the possibility that the development of the
pattern in all of the languages is an areal phenomenon
which postdates the breakup of their nearest common
ancestor. There are structural differences: Maiduan
languages have only 15-20 members of each of LP's and
LDS's. Thus its LDS inventory is comparable to that of
Nez Perce, but much smaller than Klamath or Sahaptin.
From available descriptions Maiduan does not seem to
have a large store of bound initials of any type.
Shipley (1964:38-9) notes that Maidu does have compound
stems, including stems with incorporated nouns and
compounds of two verb stems as well as stems involving
a LP. Still, from the available data, Maiduan seems to
have a significantly less extensive bipartite stem
system than the Plateau languages.

Closer examination, however, does turn up some
parallels. For example, Maidu {welé} 'run' occurs,
like its evident Sahaptian and Klamath cognates, as the
first member of bipartite stems with a second
directional element: /welé-doj/ 'run up (a hill, a
staircase)', /welé-no/ 'run, run along', /welé-sito/
'run across', etc. Thus it shares combinatorial
behavior as well as form and meaning with the Plateau
forms. Unlike these, however, it apparently also
occurs unsuffixed: Shipley (1963:185) lists the form
/hán-welè/ 'run holding something in the arms' ({hán}
'transport by carrying in the arms'. No corresponding
construction with this root would be possible in
Klamath or Sahaptian, where it occurs only as an
initial with a LDS final.

We have, then, no grounds to posit *wile as a
bound initial for the common ancestor of Plateau and
Maiduan, as we tentatively can for Proto-Plateau.
Still, the similar behavior and corresponding order are
significant of something, as we can see by comparing it
with the functionally equivalent construction in
Takelma, also putatively Penutian and spoken at no
great distance from the other languages. Takelma has a
set of grammaticalized LDS's, similar in size and
semantic range to the corresponding categories in Nez
Perce and Maiduan (Sapir 1912/1990). But in Takelma
these are initial rather than final elements of the
stem. Thus built on <u>hi-wiliw-</u>, the Takelma cognate to
Plateau *wile, we have compound stems like
<u>dal-hiwiliᵘ-gw-</u> 'run off into brush with', with the
locative-directive prefix <u>dal-</u> 'away into brush, among,
between' and <u>xam-hiwíliᵘ?</u> 'ran to the water' (<u>xam-</u> 'in
river'). Thus, regardless of to what extent it might
be possible to equate particular Takelma morphemes with
Sahaptian, Klamath, or Maiduan forms, the compound

constructions of these languages on the one hand and Takelma on the other must represent independent developments.

There are a few forms among the LP and LDS series in Maiduan with plausible Plateau connections, most notably the instrumental prefix {w} 'sticklike instrument', cp. Kl. {w} 'with a long instrument', Nez Perce {we} 'with chopping instrument', {wet} 'stick-like object'. This even appears in a couple of possibly cognate bipartite stems. Both parts of Maidu /wyk'y't-daw/ 'cut off' and Kl. /w-gatt'-/ 'chop in two, chop down' correspond well, and only slightly weaker is Konkow /wí-c'it'-in/ 'split a small obj. with an instrument', Kl. /w-cic'-/ 'split something thin with a long instrument'.

This list of comparisons pertaining to the bipartite stem system could be extended a bit with a bit more space, and probably slightly further with a bit more research, but it is clear that by far the greater part of the modern bound categories in Maiduan, Sahaptian, and Klamath are secondary independent developments. But once we have even a few substantive comparisons of this sort, we have sufficient basis to reconstruct some form of the bipartite stem pattern for a common ancestor of Plateau and Maiduan. However, we cannot reconstruct anything like the luxuriant development of that pattern which we find in Klamath and Sahaptin--indeed, it is doubtful whether that can be reconstructed even for Proto-Plateau. At most we can reconstruct a more modest system like that found in the Maiduan languages, with a few LP's and a few grammaticalized LDS's. Very possibly even the latter is a later development; we could explain the parallels that we observe if we reconstructed only a somewhat productive construction involving concatenation of motion stems, with manner stems preceding locative-directives.

3   Toward a prehistory of the bipartite stem pattern

We have seen that those aspects of the bipartite stem pattern which Klamath and Sahaptin, languages of the core area, share with Maiduan can plausibly be attributed to a common ancestor which they share at a (considerably) lower level than Proto-Penutian. But, of course, those aspects of the pattern which are shared with the other core languages, all Hokan, cannot be so interpreted. From this we can argue that the attested system of Klamath and Sahaptin must have developed in at least two stages. The initial innovation or adoption of the basic pattern--a LP

category, specialized LDS's, and compounding of motion verbs into bipartite stems--must precede the breakup of Plateau-Maiduan, while the dramatic expansion of the grammaticalized categories and the dominance of the bipartite pattern in the verbal lexicon must postdate it. Moreover, we must suppose a geographical movement of Maiduan in the interim, to remove it from the core area where the areal efflorescence of the bipartite stem pattern took place.

As we have noted, something like the core pattern is found in Washo, Atsugewi, and Yana, probably Achumawi, and perhaps Shasta and Chimariko. Except for Washo, all of these belong to Sapir's postulated Northern Hokan branch. The pattern is not found throughout the branch, however; Karok definitely does not belong, though Haas (1980) discovered fossilized evidence for an earlier instrumental prefix category. There is no evidence in Haas' data of an LDS category: the second elements which she is able to reconstruct are almost all change-of-state or other manipulative predicates, and none appear to be locative-directive elements. Pomoan has a well-developed but relatively small (~20) LP category, and a significant number of bipartite stems, but I don't know to what, if any, extent there is a clearly grammaticalized LDS category.

So we have some elements of the pattern throughout the Hokan languages of Northern California, though it appears that Pomoan, and even more Karok, behave as outliers to the area in this respect. The most significant, geographically non-marginal exception to this picture of northern California and eastern Oregon is Wintuan, as Sapir noted long ago (1916). Wintuan has no trace of anything like our LP category. It does have a highly grammaticalized LDS set, but, as in Takelma, these are initial rather than final elements of the stem. This structural correspondence to Takelma is striking in light of the evidence given by Whistler (1977) and Golla (1993) for a relatively recent northern origin for the Wintuan languages.

Though it is still rough, this assemblage of facts suggests a chronology of areal developments and population movements. We can posit a time when the Northern Hokan languages (regardless of whether or not this turns out to be a valid genetic grouping) were all spoken in a compact and contiguous area, with Proto-Plateau-Maiduan and ancestral Washo nearby, to the northeast and east, respectively. At an early date we can link Takelma with this areal complex as well. This is the period when the LP construction, whatever its origin, spread through all of the languages. The absence of any evidence of LP's in Wintuan implies that

at this date it was spoken still farther north than the point of origin from which it moved into California. This hypothetical areal pattern must be quite old, and it is much less well-defined by synchronic data than the subsequent stages.

The next areal wave, involving grammaticalization of LDS's and the development of bipartite stems not involving instrumental/classifying prefixes, apparently excluded Karok and Takelma; where Pomoan stands in this development is not entirely clear, but my current interpretation is that it participated to some extent in this second stage. This again would appear to have been early. The comparative facts outlined above suggest that this stage was still prior to the breakup of the common ancestor of Plateau Penutian and Maiduan, which implies that, if Northern Hokan including Karok is a genetic unit, it is of somewhat greater time depth than Plateau-Maiduan; it specifically implies that the split of Hokan, and perhaps Pomoan, from Northern Hokan preceded that of Maiduan from Plateau.

The third wave of areal influence is the hypertrophy of the bipartite stem system in the core languages. As we have seen, this affected Washo but apparently missed Maiduan; it also seems to have affected Sahaptin somewhat more than Nez Perce. This obviously places this wave subsequent to the breakup of Plateau, and probably even of Sahaptian. It also has some implications for the geographical relationship of these languages at this time: Sahaptin and Klamath must be in close contact, with Nez Perce somewhat peripheral. This is more-or-less the historic situation. It also places Maiduan at some geographical remove from Klamath and Sahaptin, which again is consistent with historic locations. But Washo, presumably, must have been farther north, in closer contact with Atsugewi and Klamath, than it is at present. Pomoan clearly was not a participant in this development; if it should turn out that Achumawi and/or Shasta are, like Atsugewi and Yana, core Bipartite Belt languages, that implies that this last wave postdated the incursion of Wintuan into the Central Valley--an event which would have insulated Pomoan from areal developments to the east of the Valley.

One problem with this outline involves Numic, all the languages of which have a modest lexical prefix system comparable to those of Maiduan or Pomoan. If I want to attribute the rest of the distribution of this category to an areal spread, then presumably Numic must have been a participant in this complex. But I have just argued that this stage of the areal development occurred quite early, while Uto-Aztecanists in general

consider the Numic expansion northward through the
Great Basin to be quite recent. If the Numic facts are
not to constitute a threat to my hypothesis, I need to
have the Numic languages--or, more likely, a relatively
undifferentiated late Proto-Numic dialect complex--
residing far enough north to participate in the areal
pattern at least 2,000 years ago, and probably a good
bit earlier. There is controversy here already; I will
only point out here that many archeologists find the
posited recent spread and divergence of Numic quite
problematic. For example, Aikens and Witherspoon
(1986) place ancestral Numic in the desert areas of the
Great Basin (which were not constant over time) from
shortly after the initial breakup of Proto-Uto-Aztecan.
This model fits much better with my data, and would
lend itself to the interpretation that Numic might well
have been the original source for the lexical prefix
pattern. Jacobsen (1966) points out that a Numic
dialect complex remaining relatively stable over a long
period of time, while an unorthodox idea among
linguists, is not necessarily implausible. (In this
connection he also suggests Numic as a possible source
for the lexical prefix pattern in Northern California,
which in light of the present research remains an
intriguing possibility).

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INDIGENOUS PIDGINS OF NORTH AMERICA
IN THEIR SOCIOHISTORICAL CONTEXT

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0. AN ENIGMA OF LANGUAGE CONTACT. Over the years, research on language contact in the native languages of North America has demonstrated some surprising parallels in Native American pidgins. Delaware Jargon of northeastern North America, Mobilian Jargon of the central South, and Chinook Jargon of the Northwest Coast have exhibited comparable typological features such as analytic sentence structures in contrast to the synthetic and polysynthetic grammatical patterns of their source languages. These pidgins also operated in similar kinds of linguistically highly diverse environments such as interregional native trade, intertribal alliances and chiefdoms, and contact with European explorers and colonists (Drechsel 1981).

Delaware Jargon, Mobilian Jargon, and Chinook Jargon have also raised a major enigma: Why have no comparable indigenous pidgins developed in other areas of equal or even greater linguistic diversity in North America, particularly in southwestern North America and native California? This question calls for an answer if we assume that the parallels among the three American Indian pidgins are not simply historical accidents. The present essay explores the issue of pidginization in native languages of North America from a bird's eye view and with special attention to an apparent contrast between coastal and interior areas. The following also expands the discussion of the necessity to presume European colonization as trigger for the development of Native American pidgins.[1]

1. MAJOR INDIGENOUS PIDGINS OF NORTH AMERICA. Through the 1970s, linguists and anthropologists recognized Chinook Jargon as the only major indigenous pidgin in North America for which there also existed some substantial descriptive-analytical evidence. At the time, most Americanist linguists considered pidginization an insignificant process of language change, if not an abnormality, in the history of Native American languages — hardly in need of further attention.[2] Students of pidgin and creole languages, long preoccupied with Africa-focused theories of origin, were no more sympathetic to recognize American Indian instances or to assign a central role to native languages in its subject matter. A few scholars went so far as to try and fit Chinook Jargon into a Pacific model of pidginization and creolization; what appeared like an extraordinary case of Native American pidginization had supposedly developed from the relexification of an English-based pidgin of the Hawaiian Islands, which monogeneticist creolists have attempted to integrate into a global scheme with a proposed world-circling medium of West African or Mediterranean origin.[3]

Yet for decades, we have known of several other indigenous contact languages or area-wide *lingue franche* in North America. Some were true pidgins, i.e. structurally and functionally reduced second languages that developed from multilingual contexts with fairly stable grammars of their own (Reinecke 1937: 635-76; Silverstein 1973 MS, Drechsel 1976, Taylor 1981). When

anthropologists and linguists first paid closer attention to Native American pidgins in the late 19th or early 20th century, they were implicitly accepted as indigenous institutions of pre-Columbian origin. At the time, there existed little reason to believe that these media had developed from contact with Europeans. As the study of pidgins and creoles emerged as a distinct area of specialization in linguistics, especially as a result of Hugo Schuchardt's pioneering work, social scientists came to consider Native American pidgins as products of European colonialism like other pidgins, and related the origin of the apparent prototype Chinook Jargon to the fur trade.

Over the past years, historical-sociolinguistic research has assembled a fairly elaborate set of comparative data for Algonquian-based Delaware Jargon on the Atlantic Coast (Thomason 1980, Goddard 1995) and Muskogean-based Mobilian Jargon on the Gulf of Mexico (Crawford 1978, Drechsel 1996a,b). These pidgins as well as Chinook Jargon incorporated what probably were interrelated varieties in the form of Pidgin Massachusett and Powhatan Jargon, the Muskogean-based *lingue franche* Creek and Apalachee, and Nootka Jargon respectively. Still others consisted of distinct if poorly documented instances such as Eskimo Jargon (Stefánsson 1909, Van der Voort 1995).

2. BASIC ISSUES OF ORIGIN. Indigenous grammatical patterns and well-established functions of Delaware Jargon, Mobilian Jargon, and Chinook Jargon in traditional native contexts provide strong sociolinguistic suggestions for their pre-European origins (Drechsel 1984, 1994b, Hymes 1980, Thomason 1980, 1983). Nonetheless, this hypothesis has not gone unchallenged (for counterarguments in the cases of Mobilian Jargon and Chinook Jargon, see Crawford 1978:21-29 and Samarin 1986 and 1988 respectively[4]). Particular arguments against the pre-European existence of Native American pidgins have relied on the following points:

- the absence of any mention of a *lingua franca* in the documents of the earliest European explorers, especially in conjunction with observations of great native linguistic diversity;
- repeated attestations of wide-spread bilingualism, multilingualism, and the use of interpreters or even hand signs in interlingual situations, the latter presumably comparable to the Plains Indians' sign language; and
- lacking records of any regular or systematic interactions among alloglossic native peoples that would have warranted such intertribal media.

When examined closely, these arguments are on weak sociolinguistic and historical grounds.

Absent recognition of indigenous pidgins in early colonial documents may simply be due to a lack of linguistic sophistication by early European explorers and colonists in distinguishing the first language of a Native American community from an indigenous contact medium, i.e. a second language. Early observers frequently confused indigenous *lingue franche* with the speakers' first languages, just as they mistook Mobilian Jargon as Choctaw or Chickasaw proper. What early Europeans understood to be a vernacular has proven to be a contact

medium in many cases, as we can now demonstrate with reconstructable linguistic evidence.[5]

Attestations of bilingualism, multilingualism, and the use of interpreters or even hand signs offer no better counterargument, for they do not preclude the concurrent existence of an indigenous pidgin, as is evident from both historical and modern ethnographic records for Mobilian Jargon and other cases. In addition to their mother tongue, many Native Americans customarily learned two or more languages — usually those of neighboring communities — plus the pidgin; the latter came into use primarily in multilingual situations and in encounters with distant peoples, who did not speak any of the local languages, and was a convenient medium for native interpreters as well. Moreover, when speaking Mobilian Jargon, stereotypically stoic Louisiana Indians could turn quite animated, and often used extensive hand signs for enhancement, as observed in both historical documents and with the last speakers.

Claims to the absence of regular or systematic interactions among native peoples of different areas of North America are unfounded in the light of substantial archaeological evidence for interregional pre-Columbian trade across the entire North American continent (Baugh and Ericson 1994). From a sociolinguistic perspective, such long-distance networks of trade and other interregional relations would have been most suitable contexts for the development of contact languages or pidgins. The sociohistorical and sociolinguistic environment of pre-European North America with its great linguistic diversity may well have been more favorable for the use of indigenous contact media than the colonial period with a rapid decline of native languages which the immigrants never replaced in either number or diversity.[6]

3. COASTAL LOCATIONS OF NATIVE AMERICAN PIDGINS. There is a potentially more serious counterargument to the proposed pre-European origins of Delaware Jargon, Mobilian Jargon, and Chinook Jargon, all located in coastal areas. Proponents of global schemes of pidgin and creole diffusion, whether monogeneticist or not, might interpret this fact as suggestive evidence for contact with peoples from overseas, specifically European explorers and colonists. Their interpretation would seem to gain strength when one searches for evidence of indigenous pidgins in the interior of North America — with few promises for success.

In trade and other intertribal encounters, Indians of the Great Lakes made area-wide use of several Algonquian-based *koinés*, drawing on Eastern Ojibwe (Algonquin), Ottawa, Southwestern Ojibwe, and Cree (Rhodes 1982). They may well have been mutually intelligible varieties of a single wider Algonquian-based *lingua franca* in the area. It is not clear how these Algonquian *koinés* related to their standards in either structure or function or whether true pidginization occurred in these instances. 'Broken Oghibbeway [Ojibwe]' (Nichols 1995) reveals considerably less grammatical reduction or restructuring than Algonquian-based Delaware Jargon; its retention of much inflectional verb morphology characteristic of Ojibwe does not warrant the designation of a pidgin. Some Cree *koiné* must also have been the basis for a form of Cree with French noun phrases variously known as Métis, Métchif, or Michif, which had undergone some form of creolization in the speech of Métis people in the upper Plains. Although a mixed

language with a Cree substrate, Michif is neither a pidgin nor a true creole (Crawford 1985, Rhodes 1986, Thomason and Kaufman 1988:228-33). These considerations have led George Lang (1991) to make a case arguing for the absence of indigenous pidgins in interior Canada, which he attributes to the *coureurs de bois* in their roles as intermediaries and interpreters.

The closest form of interlingual communication comparable to coastal Native American pidgins was the *functionally* equivalent sign language of Plains Indians, whose discussion of origin happens to reflect a similar history with recent suggestions returning to an interpretation of a pre-European existence (see Wurtzburg and Campbell 1995 in response to Samarin 1987). Nonetheless, the use of hand signs rather than speech leaves uncertain its true typological comparability with Delaware Jargon, Mobilian Jargon, or Chinook Jargon.

Although linguistically as manifold as eastern North America, the Southwest (including Coahuiltecan, Kiowa-Tanoan, Keresan, Athapaskan, Uto-Aztecan, and Hokan languages plus the isolate Zuni) offers little evidence for linguistic compromises analogous to Delaware Jargon, Mobilian Jargon, or Chinook Jargon, as already noted in a survey of pidginization in the area (Brandt and MacCrate 1982:201).[7] Hints for indigenous contact media remain few and meager. Charles Voegelin (1959) argued for Hopi (Uto-Aztecan) to have undergone expansion as a result of contact with English, and described the process as creolization without prior pidginization. George L. Trager interpreted the language of the Tewa Pueblo Indians (Kiowa-Tanoan) as a pidgin-creole, but did not develop this idea further (Trager 1971:27; see Brandt 1982:32). One can also find incidental references to Apache and Navajo, closely related dialects or languages of Southern Athapaskan, to have served as interlingual media in contact with the alloglossic Pueblo and Plains Indians from 1598 through the 19th century (Ford 1983:719-20; Gunnerson 1974:86; Taylor 1981:179). Attestation exists especially for Yavapai Indians (Yumans) of Arizona speaking Apache as a *lingua franca* with a smaller number of consonant phonemes when compared with Apache proper (Mierau 1963). Non-Indian traders among the Navajo used reduced, grammatically idiosyncratic varieties of Navajo known as Trader Navajo with their native customers; but the Navajo apparently did not respond to the traders' one-sided linguistic advances. Significantly, speakers of Trader Navajo could discuss little else than trade, and did not understand Navajo proper (Werner 1963, Voegelin, Voegelin, and Schutz 1967:442-44, Silverstein 1973 MS:59-64).[8] In place of an area-wide indigenous pidgin, the prime contact medium of Southwestern Indians apparently was Spanish.

Linguistically the most diverse area in North America, native California (including Hokan, Penutian, Utian, Athapaskan, Uto-Aztecan, and Yukian languages as well as Yurok and Wiyot) presumably would have provided especially fertile grounds for the pidginization of native languages. There exist incidental references to Hupa (Athapaskan) as a *lingua franca* among native communities of northern California; but in contact with alloglossic neighbors, California Indians relied primarily on individuals with multilingual skills, and did not develop widespread forms of societal bi- or multilingualism (Miller 1978:611-12, 614). Nor did California become the home of any pidginized contact medium comparable to those of the Northwest Coast or eastern North America (see Hinton 1994 for a

recent linguistic survey of native California). Instead, the principal medium of California Indians in contact with outsiders during colonial times was Spanish in one form or another, and apparently included a pidginized variety introduced by Chilean sailors in the mid-nineteenth century and known as Chileno (Bartelt 1992).

4. 'COLONIALIST' EXPLANATIONS FOR THE ABSENCE OF INDIGENOUS PIDGINS IN SOUTHWESTERN NORTH AMERICA AND CALIFORNIA. By currently available indications, why then did no Native American pidgins develop in interior North America, especially the Southwest, or in native California?

One response could draw on proposed differences in the policies of Spain, the earliest colonizer of the Southwest and California, from those of other colonial European powers in eastern and northwestern North America. Native American languages under Hispanic influence borrowed substantially more European vocabulary than those under French or English influence, an observation sometimes interpreted as the result of a more benevolent colonial policy by Spain as compared to that of France, England, or the United States (Brown 1994). By the same reasoning, Indians of the Southwest and California supposedly were more inclined to adopt Spanish as a *lingua franca* rather than use one of their own languages. Yet Spain's colonial policy with forced labor (slavery) and an extensive mission system was no less repressive than that of other European powers (see Dobyns 1988). On this ground, the absence of indigenous pidgins in these areas might serve as a reflection of Spain's very power in early colonial North America; indigenous pidgins presumably developed only in regions where European colonists exerted less political control such as Dutch and Swedish settlers in northeastern North America, the French in the Mississippi valley, and Russians on the Northwest Coast. Yet these answers, too, encounter complications with conflicting evidence from southeastern North America. Spain's hold over southern North America was not as firm or certain in early colonial times as it might appear retrospectively; nor was its colonial policy consistent across the area to warrant the assumption for a single form of linguistic acculturation or major sociolinguistic differences from other areas of North America. Significantly, Spaniards 'embraced' Mobilian Jargon-speaking Indians in the greater Mississippi valley, and in Florida used the *lingue franche* Apalachee and Creek, which possibly were eastern varieties of Mobilian Jargon. In early colonial times, Spanish colonists also explored both the Atlantic and Pacific coasts northwards right into the territories of Delaware Jargon and Chinook Jargon speakers.

Alternatively, it is tempting to consider the issue of absent indigenous pidgins in southwestern North America simply as a matter of lacking historical documentation. Spanish accounts conceivably omitted to record instances of Native American pidgins, just as the Hispanic documents of 18th century Louisiana that I have examined for evidence of Mobilian Jargon so far have been remarkably silent about it when French observers had already attested it in some detail since 1700. This explanation appears no more satisfactory than the preceding one, when one considers the great geographic range of influence by Spain as a colonial power. It extended from Florida to California over a greater area in North America than that of other colonial powers except Great Britain or eventually the

United States (Dobyns 1988). This fact would lead one to expect an occasional reference to a Native American pidgin here and there if such indeed existed, whereas the absence of mentionings of Mobilian Jargon in Spanish records of Louisiana conceivably reflects Spain's lesser interest in that part of North America than either Florida or southwestern North America.

However, the absence of documentation for indigenous pidgin in native California also puts a damper on any hypothesis of colonial origin for Native American pidgins on grounds of their coastal location, including any suggestions for an initial stimulus from overseas. By that logic, an indigenous pidgin should have developed in this area of great linguistic diversity as well.

5. CONSIDERATIONS OF PRE-COLUMBIAN SOCIOLINGUISTIC-SOCIOHISTORICAL CONDITIONS. Problems with 'colonialist' models and the absence of a Native American pidgin in California require an alternative explanation. The coastal locations of Delaware Jargon, Mobilian Jargon, and Chinook Jargon offer a likely clue to the enigma of absent indigenous pidgins in the Southwest and native California by pointing to other sociolinguistic and sociohistorical circumstances of language contact, especially the indigenous political economies.

A continental perspective of North American Indian languages confirms the greatest diversity in the coastal areas where the three major pidgins occurred other than in native California. Besides this area, the Northwest Coast (extending from southern Alaska to the Oregon-California border) was the linguistically most diverse area in North America including numerous mutually unintelligible and unrelated languages that belong to several distinct language families (Eyak-Athapaskan, Tlingit, and perhaps Haida; Penutian; Chimakuan; Wakashan; and Salishan). While hardly matching western North America, the Southeast has come to be recognized as a linguistically more complex area than conventionally described (Crawford 1975; for a recent attempt at sorting out sociolinguistic complexities of southeastern North America, see Booker, Hudson, and Rankin 1992); the Northeast has been subject to a similar revision for greater linguistic diversity (see Ives Goddard in Murray 1992:406). Eastern North America has been the home of not only Algonquians, Iroquoians, and Muskogeans, but Siouans, some Caddoans, various distantly related and unrelated isolates, and numerous unidentified languages, leaving virtual blanks in major areas such as the Ohio River valley.

Major routes of native expansion were the very rivers along which Delaware Jargon, Mobilian Jargon, and Chinook Jargon extended. The Delaware, Mississippi, and Columbia Rivers as well as their tributaries, supplemented by a network of land trails, were part of an extensive indigenous infrastructure that linked coastal areas with their interiors and that permitted fairly easy and efficient movements of people and goods by boat (such as log rafts, dug-outs, birchbark canoes, plank canoes, and skin boats). These river systems were the prime arteries that brought native peoples of great distances and different linguistic backgrounds into contact with each other in recent history, just as they had already functioned as main routes for earlier migrations leading to growing populations and greater linguistic diversity in coastal areas. Major attractions of coastal areas were rich natural environments, which supported larger and more diverse communities with

population figures as much as ten times higher than those of interior areas (Murray 1992: 403-4). According to early European observers, the Indians of eastern North America were enthusiastic, fast, and wide-ranging travelers, who roamed hundreds of miles, sometimes more than a thousand; they were the same people who came to serve as guides leading European explorers, traders, and colonists across much of the continent (see Rountree 1993 and Tanner 1989) and in whose very footsteps followed the *coureurs de bois* and *voyageurs* (independent and official traders).[9] Other evidence for long-distance interregional interaction is available in archaeological evidence for regular pre-Columbian trade of exotic natural resources and manufactured goods from the Atlantic coast to the Rocky Mountains. The Northwest Coast shows similar evidence of extensive interregional trade, although the study of potlatch has overshadowed that of trade; the native institution of redistribution or ostentatious destruction of surplus valuables for the purpose of gaining social or political status would not have been possible without an extensive network of interregional trade (see Baugh and Ericson 1994). Most importantly, the rivers along which the three major pidgins spread provided the natural resources for the subsistence of larger groups than local communities or tribes — fish in the case of the Northwest Coast and fertile deposits along with water for horticultural and agricultural societies of eastern North America. Both fishing on the Northwest Coast and food-growing in eastern North America produced substantial surpluses that permitted socioeconomic specialization and the development of fairly complex socio-political organizations in the form of chiefdoms and paramount chiefdoms respectively. Although rather fragile, these sociopolitical institutions tied together linguistically diverse groups into regional political associations, reduced or devastated by epidemic diseases in the greater Mississippi River valley shortly after the Europeans' arrival in North America.

People of native California and the Southwest differed from those of the Northwest Coast and eastern North America in important ways. Rivers did not assume the same significance as either sources of food or means of transportation. With access to rich and diverse natural resources all around, California Indians re-lied on hunting and gathering, and did not come to depend primarily on rivers for their subsistence as did fishermen to the north. Although densely populated, native Californians remained economically independent hunters and gatherers until contact with Europeans, and rarely developed communities larger than small villages or area-wide sociopolitical integration (see Heizer 1978). California Indians also exhibited little enthusiasm for traveling (William Bright, personal communication). On the other hand, food growers of the Southwest with its arid and semi-arid environment could rely much less on rivers as a reliable source of water or easy means of year-round transportation than Indians of eastern North America. Frequently, Southwestern rivers other than the Rio Grande dried up during hot seasons, and turned rough during peak flow, making travel by boat difficult, if not impossible. Notwithstanding archaeological evidence for intertribal contacts in the form of a network of trails, southwestern North America apparently did not maintain close-knit regional networks of the same intensity or geographic range as those of eastern North America during late pre-Columbian times; nor did their chiefdoms assume the sociopolitical complexity of eastern or

even northwestern North America due to the ecological limitations of a predominantly dry environment. Since about 1150, the Southwest has actually suffered from regular droughts (as manifestly evident in the pre-Columbian ruins of Chaco Canyon and Mesa Verde), and supported only smaller communities without *area-wide* integration in the form paramount chiefdoms (see Gumerman 1994).

6. SUMMARY. A contrast of North American areas speaking indigenous pidgins with the Southwest and native California suggests that differences in colonial policies offer unsatisfactory answers and that great linguistic diversity is an insufficient condition for the pidginization of native languages. Another major requirement would seem to have been an infrastructure for easy travel and transportation (such as by boat along coastal areas and on major river systems), which permitted fairly easy gatherings of alloglossic peoples from remote areas — a condition in the Southwest discouraged by its dry environment for some eight hundred years. This argument does not imply that pidginization necessarily depended on navigable rivers; but boats assume a greater significance in the absence of some other efficient means of transportation (such as carrying animals or carriages), as was the case in pre-Columbian North America. The development and institutionalization of a pidgin further depended on regular interactions among diverse speech communities as in an established interregional trading system and alloglossic political alliances (chiefdoms and paramount chiefdoms) — a requirement absent in native California. As indicated by the Southwest, the presence of an infrastructure for easy long-distance travel and transportation and the condition of sociopolitical integration into chiefdoms or paramount chiefdoms may be interrelated, because political control by some central authority would have been difficult without a suitable infrastructure. In their sociolinguistic adaptability, Native American pidgins such as Delaware Jargon, Mobilian Jargon, and Chinook Jargon may in fact have been sociolinguistic analogues of political organizations larger than tribes, but still smaller than states or civilizations; with multiple sources and considerable structural adaptability, pidgins made ideal interlingual media in the chiefdoms and paramount chiefdoms of eastern and northwestern North America, characterized by changing loyalties and alliances.

These considerations do not demonstrate the hypothesis of pre-European origin for Delaware Jargon, Mobilian Jargon, or Chinook Jargon, but solely provide arguments consistent with it and an alternative to unsatisfactory 'colonialist' models. By the present historical scenario, pidginization was a linguistic and sociohistorical process not exclusively associated with European expansion or colonialism, but occurred in indigenous peer polities. This conclusion does not imply that Delaware Jargon, Mobilian Jargon, or Chinook Jargon failed to serve European colonialist purposes as well; quite to the contrary, once Europeans arrived in North America, they made use of indigenous pidgins and other native contact media as part of an already existent infrastructure. Disassociating the pidginization of indigenous languages from European colonialism ultimately does not provide a revisionist argument for a reduction of the historical debt by any of America's former colonial powers or the United States to the native population;

the present explanation only argues for a greater historical and linguistic significance of pidginization in the study of Native American languages.

7. A CONTRASTIVE NOTE ON ESKIMO PIDGIN. Another Native American pidgin, Eskimo Jargon, constitutes a special case in that it is similar to Chinook Jargon, Delaware Jargon, and Mobilian Jargon by its reduced linguistic structure, suggesting a pidginization of Inuit (Stefánsson 1909, Van der Voort 1995; see Drechsel 1981); but it apparently differed in important sociohistorical ways, worthy of mention if for no other reason than typological contrast. Unlike the three major American Indian pidgins, Eskimo Jargon apparently developed as a result of contact with Europeans, specifically whalers, in the northern Atlantic, and may have a history going back as far as the Norse explorations of Labrador in 900 (Van der Voort 1995:138-139). The prime argument against aboriginal development is the absence of a great linguistic diversity among Inuit and their southern neighbors, Algonquian and Athapaskan Indians. In fact, Loucheux or Kutchin Indians (Athapaskans) on the Mackenzie River used instead of Eskimo Jargon a more complex Inuit-based medium that was unintelligible to European speakers of the pidgin (Stefánsson 1909: 218-219). Eskimo Jargon also differed from the other Native American pidgins geopolitically in that, in spite of the Arctic's harsh environment, the Inuit on both their eastern and western borders (eastern Greenland and eastern Siberia) were never as isolated from Asia or Europe as their neighbors to the South. Still, Eskimo Jargon possibly had a history as long as, or even longer than, the other indigenous pidgins of North America.

NOTES

[1] I presented this paper in an early form as 'Indigenous Pidgin Languages, Coastal Chiefdoms, and the Pre-Colonial History of North America' at the Second International Conference: 'Oceans in World History' and 'Indigenous Peoples in World History', Honolulu, on 26 June 1993. I gratefully acknowledge helpful comments by William Bright, Patricia Gilman, Paul Minnis, and William Samarin, none of whom holds any responsibility for the ideas expressed here.

[2] An Americanist linguist as sympathetic to the study of language contact as William Bright (1984:21) assigned little significance to pidginization in Native American languages, and has recognized only short life spans for Chinook Jargon and Mobilian Jargon, although the latter has a longer recorded history than many other, better known instances of pidginization and creolization. A recent review of studies of American Indian languages by another prominent scholar in the field (Mithun 1990) does not even mention any such process of linguistic convergence or a single instance, although one would expect a major publication such as Sarah G. Thomason's and Terrence Kaufman's Language Contact, Creolization, and Genetic Linguistics (1988) to have drawn her attention for the survey.

[3] Samuel V. Johnson (1975:1) observed that 'CJ [Chinook Jargon] is generally considered to be a non-European based pidgin, however evidence suggests that it may in fact be an off-shoot of the general world pidgin. Most of the available data indicate that CJ was not spoken in the NWC [Northwest Coast] before white contact[,] but it was initiated by 18th century European traders

who purchased furs in the NWC, sold these furs in China and spent the winters in Hawaii.' Johnson (1975:17) related Chinook Jargon to either Chinese Pidgin English or American Indian Pidgin English by relexification.

There indeed exists linguistic evidence for historical ties between the Hawaiian Islands and northwestern North America in early colonial times — in the form of Hawaiian loanwords in Chinook Jargon as well as in Eskimo Jargon. The Hawaiian Islands served as a major way station for the European-American exploration and settlement of western North America by sea. Yet these data demonstrate neither that Chinook Jargon or — for that matter — Eskimo Jargon developed from Hawaiian Pidgin nor that the latter was an English- or European-based medium (Drechsel and Makuakāne 1982). Recent historical research suggests as the likely medium of transmission a pidginized form of Polynesian that Hawaiian and other sailors used on ships throughout the Pacific during the 19th century and that they apparently employed also in their initial contacts with native peoples on the West Coast (Drechsel 1995 MS).

[4] Similarly, Ives Goddard (1995:142-143, 148-149) has expressed little enthusiasm for a pre-European origin of Delaware Jargon, but has not entered the debate.

[5] For example, the French Jesuit priest Paul du Ru reported in 1700 a sample of 'Houma,' which has often been identified as Western Muskogean, but presents the first unquestionable historical attestation of Mobilian Jargon: 'Jeheno, Yno, Nanhoulou toutchino atchota.' or †*šno eno nãholo točeno ačofa* 'You [the Great Spirit], I, and the white man, [we] three [are] one.' (Drechsel 1994a:57)

[6] For further discussion of these issues, see Drechsel 1996, Chapter 11, as they apply especially to Mobilian Jargon, but are equally applicable to Delaware Jargon and Chinook Jargon (see Hymes 1980:405-18, Thomason 1980, 1983).

In another argument against the pre-European hypothesis, pidginization of major Native American languages could have come about as the result of a rapid decline of smaller, highly diverse speech communities that under the threat of European colonization adopted the language of a numerically and sociopolitically stronger alloglossic neighbor for lack of a better alternative. This scenario would seem feasible for several small communities of eastern North America endangered by epidemics in the early colonial period, when Europeans had not yet gained the upper hand; but that explanation relies on the presumption that these smaller communities were isolate monolingual societies suddenly subjected to an entirely new sociolinguistic situation brought about by contact with Europeans. This model seems unlikely in the light of substantial archaeological, ethnohistorical, and ethnographic evidence for original intertribal affiliations and traditional forms of bilingualism and multilingualism. Also, such a pidgin would hardly have survived for long; it would either have undergone creolization with the next generation of speakers in small multilingual communities, or would have been replaced by the language of the larger, dominant society. For these reasons, I do not pursue this option further.

[7] What Elizabeth Brandt and Christopher MacCrate (following Ian F. Hancock in Drechsel 1976:70) have listed as an Indian-Spanish-English along the Brazos Trail for an apparent exception actually has proved to be but a sample of Mobilian Jargon with a few Spanish words: 'No, Qshaw, papeshillo; plata, plata, shocke me fina.' or †*no, (e)kšo, papešel(l)o; plata, plata, čokəma fena.* 'No, (that is) not(hing), friend; silver, silver [is] very good.' (see Drechsel 1994a:56)

[8] The use of Navajo as a secret code by the U.S. Army in World War II is no better indicator for an earlier role of the language as a contact medium. Although reduced in structure and func-

tionally limited, the Navajo code was in use only among native speakers in communication with each other by telephone or radio to transmit secret military messages, which they translated to and from English for their superiors. The function of the Navajo code was quite opposite to that of a contact medium. Significantly, speakers of Trader Navajo did not qualify to serve as Navajo code talkers in World War II, as explained by Jimmy King, a native Navajo:

> We had a hard time with some of the white boys that thought they knew the Navajo language ... They were born out here on the trading posts. Their parents were Indian traders. And they were brought up among the Navajos, with the Navajos. They played with the Navajos during their childhood. They picked up the language so well, but never well enough that they could pass the tests to be one of the Code Talkers. They spoke the language like coffee, sugar, and flour and counting of money. They knew how to say that. But there also was always a fraction of a syllable that they could not pronounce exactly as well and precise as it should be so there would be no maybe and if about it ... There were [some] words that they'd never heard. All they knew was what was known as trading-post language — trading with Indians, a pair of gloves, a pair of shoes — they knew that, all that, well. But they could not carry on a conversation outside of the Navajo trading post language. (Bixler 1992:69)

There is no better support for a Navajo contact medium by the analogy of Choctaw and Ojibwe, two other Native American languages that served as cryptographic military codes and that had also provided the foundations for Mobilian Jargon and the Algonquian contact medium of the Great Lakes area. These two languages came into use as military codes because a sizable number of Choctaw and Ojibwe bilinguals enlisted in the U.S. armed forces in World War I (Walker 1983) rather than as a result of their former functions as *lingue franche*.

[9] Prime examples are Algonquians of the Great Lakes area guiding French explorers down the Mississippi River to the Gulf of Mexico and Iroquoians of the Northeast leading European traders across the Rocky Mountains to the Northwest Coast.

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On the grammaticalization of 1st and 2nd person pronominal affixes in North American Indian languages

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1. Introduction[1]

Since the famous articles by Benveniste (1956) on the nature of pronouns and by Jakobson (1957) on the *shifter* character of pronouns, it is widely accepted that there is a major split between the 1st and 2nd person pronouns representing the speech act participants, on the one hand and the 3rd person which is the person or object spoken about. Benveniste therefore suggested that the 3rd person is rather a *non-person*. The 1st and 2nd person pronouns in general refer to human individuals which are identified by the speech act roles they are performing. Speaking and listening are the mutually related and interdependent speech act roles which are the foundation of every communicative event. The symmetrical relation between the basic speech act roles, i.e. the repeated change of the speech act roles during the conversation and the corresponding shift of reference between the 1st and 2nd person are treated equally in the languages of the world which is, in fact true in many cases. Furthermore, because of the essential character of pronouns and other deictic expressions of a language, personal pronouns are sometimes considered as the oldest and most stable parts of the grammar of a language with respect to historical change. Both views have to be revised.

A close look at the personal paradigms of North American Indian languages provides some evidence that the 1st persons have a priority against the 2nd persons and that there are numerous categorial changes involved in the formation of pronominal paradigms which in turn suggests that these paradigms are highly dynamic in nature. I will begin my presentation with different types of data which allow the conclusion that in many instances the establishment of a person paradigm begins with forms for the 1st person. Then I will briefly summarize and comment on the grammaticalization processes which can be found in the examined paradigms of North American Indian languages. The majority of person markers which are involved in these processes show a shift or extension of their person category from a 3rd person or 2nd person towards a 1st person category. I will conclude my presentation with a brief discussion of a special process which can be observed e.g. in transitive paradigms, namely the fact that transitive pronominal forms which include a 1st person in these combinations, although these 1st person forms exist in other paradigms of the language.

2. The priority of the 1st person

The overwhelming majority of person paradigms display correlations between person categories and various other categories such as number, gender, different modal and aspectual categories, and case. These correlations, however, are often not homogeneous but show markedness relations with respect to the different person categories. Besides the expected marking split between 1st and 2nd person versus 3rd person, there are numerous cases which show a split between 1st person and 2nd and 3rd person. This is significant, because these cases are much more frequent than marking splits where a 2nd person opposes the 1st and 3rd person. The latter cases occur only in specific contexts such as imperatives or interrogatives. Let me illustrate some types of splits between the 1st person versus 2nd and 3rd with some examples.

In Maidu, a Californian language of the Penutian stock, the bound pronominal affixes which indicate the subject of the clause distinguish dual and plural number for the 1st person only. The other persons are neutral with respect to number. Compare the paradigm in (1).

(1)   Maidu (Penutian)

	sg	du	pl
1	-s	-as	-es
2	-no	-no	-no
3	-n	-n	-n

Dixon (1911:710)

A similar split can be observed in Kwakiutl, a Wakashan language of the Northwest Pacific coast. The subject paradigm of pronominal suffixes distinguishes singular and plural only for the 1st person; 2nd and 3rd person pronouns are neutral with respect to number (cf. Boas 1911b:529). The same holds with respect to dual marking. There are many languages which have a complete paradigm with singular and plural distinguished for all persons, but a dual form for the 1st person only; this is the case, e.g. in Winnebago and other Siouan languages as well as in the possessive and independent pronominal paradigms of Carrier (cf. Forchheimer 1956:78), an Athapaskan language of Canada. These and other examples suggest that the development of plural and dual pronouns starts with the 1st person (cf. Mithun 1991 for similar conclusions). I did not find a paradigm with a 2nd person plural but no plural form for the 1st person.

Marking splits between 1st person versus 2nd/3rd person also occur with respect to case. When languages start to develop pronominal paradigms which indicate one or two arguments of the clause they very likely begin with the 1st person. In Chitimacha, an isolate of the Southeast, only the object of the clause is indicated by pronominal affixes and it is only the 1st person singular and plural object which is marked (cf. Swadesh 1946:317). Second and 3rd person objects are not distinguished and remain zero marked. In Tonkawa, an isolate originally spoken in Texas, there is a set of pronominal suffixes which indicate the subject of the clause. These pronouns are differentiated for all persons and are conflated with some tense and mode forms. In addition, Tonkawa has developed object prefixes, but these forms distinguish only 1st person singular and plural whereas 2nd and 3rd person objects remain zero (cf. Hoijer 1946: 304ff.).

There are other kinds of split marking between 1st versus 2nd and 3rd person which suggest a priority of the 1st person. Seri, a language of the Hokan stock, has bound pronominal prefixes which indicate 1st and 2nd person singular and plural subjects. The 3rd person generally is not marked. The interesting point here is that only the 1st person singular has two alternate forms which distinguish transitive and intransitive 1st person subjects. The pronominal affix for the transitive 1st person subject could also be called a 1st person ergative[2] (cf. Marlett 1990:514). In the paradigm of the object pronominal prefixes in Seri, there is another instance of alternative forms for the 1st person singular only. The two 1st person singular pronouns display a kind of modal distinction. One form is used in imperatives only[3], the other form is used elsewhere (cf. Marlett 1990:521).

Other instances of an allomorphy which is restricted to 1st persons can be found in Lakhota, a Siouan language of the Great Plains, which has two 1st person possessive pronouns in possessive constructions with inalienable nouns denoting body parts. The two 1st person possessive forms are semantically distinguished by the feature <u>control</u> or <u>volitionality</u> which the speaker is considered to have over the possessed body part (cf. Boas/Deloria 1941:128). A similar allomorphy with

respect to the 1st person can be observed in the independent pronouns of Hopi, an Uto-Aztecan language of Arizona (cf. Whorf 1946:169). In the pronominal object paradigm of Tsimshian, a language of the Northwest Pacific coast, there are two alternative forms for the 1st person singular. One of the forms is used as a regular 1st singular object pronoun; the second form, however, is used only in cases in which the event is conceived as unreal, e.g. in negative sentences, in sentences expressing potentiality, and in conditional clauses (cf. Boas 1911a:387).

There are many other cases of a split between 1st person versus 2nd and 3rd person marking; besides these instances of allomorphy which do not necessarily have to show some kind of semantic distinction, there are often formal irregularities in the 1st person, e.g. the 1st person pronouns tend to be fused formally with other verbal categories to a greater degree than the other persons. All the examples and facts together suggest that there is a priority of the 1st persons over the other persons and that the 1st person is the most likely to become grammaticalized first in the pronominal paradigms.

3. Historical changes of person categories in pronominal paradigms

It is a remarkable feature of person marking systems in North American Indian languages that instances of the formation of polite or formal pronouns for the addressee are very rare. This lack of polite forms can be explained by the fact that traditional Indian societies often did not have a complex social stratification. The polite or rather formal reference to a hearer is frequently indicated by the usage of a 2nd person plural pronoun as in French, or by a 3rd person plural pronoun as in German; 3rd person singular pronouns occur in this function as well. The only instances of polite forms in Indian languages I am aware of for the moment are Eastern Pomo (cf. Head 1978:167) and two Mayan languages, Aguacatec and Quiché (cf. Bricker 1977:2f). The forms for polite reference in the two Mayan languages are based on the 3rd person pronouns. Further it is reported that the indefinite pronoun *ji-* in Navajo was once used as a polite address, but this usage is obsolete now (cf. Saxon 1993:343). It is possible that the polite usage of 2nd plural or 3rd plural pronouns could lead to syncretisms between 2nd singular and plural pronouns or between 2nd singular and 3rd plural forms which can be found sometimes in pronominal paradigms of Indian languages. But other reasons are equally possible and I have no evidence to decide this question.

In tables (1-7), I have summarized a number of historical processes which include a change of the person categories of a pronoun or any other grammatical form, and which lead to the formation of a 1st or 2nd person pronoun.

	← 1st pl.	Chol, Chontal, Tojolobal, Tzeltal
1st sg.	← 2nd sg.	Tsimshian
	← 1st subject	Kalispel, Spokane (borrowed from neighboring Kutenai)
	← adverb 'here'	Mandan (optative only)
	← deictic	Wintu
	← evidential marker	Maricopa (in some aspect/moods only)
	← 3rd possessor	Washo (indirect speech only)

table (1)

1st pl.	← based on 2nd person	Wiyot
	← 3rd pl.	Coos (?), Kiowa
	← plural marker	Tsimshian
	← subject marker	Kalispel, Spokane (borrowed from neighboring Kutenai)
	← indefinite pronoun	Dogrib, Koyukon, Slave, Yuchi, etc.

table (2)

1st incl. pl.	← 1st pl.	Shuswap, Numic
	← based on a 2nd person	Algonkin, Yokuts, Kiowa, Kwakiutl
	← 3rd sg. + incl. pl.	Huave
	← incl. marker + pl.	Mohawk, Chinook

table (3)

1st incl. du.	← 1st pl.	Northern Paiute
	← based on a 2nd person	Yokuts, Kiowa, Coos
	← 3rd sg. + incl. du.	Huave
	← incl. marker + du.	Mohawk, Chinook
	← noun 'man, person'	Siouan

table (4)

1st excl. pl.	← 3rd + excl. marker	Shuswap
	← 3rd pl.	Siuslawan
	← indefinite pronoun	Chinook
	← animate classifier	Yuchi

table (5)

1st excl. du.	← 3rd du.	Siuslawan, Coos (?)
	← indefinite pronoun	Chinook

table (6)

2nd sg.	← 1st sg.	Tunica, Yuchi (?)
	← 1st pl.	Tsimshian, Aztec, Bella Coola

table (7)

The leftmost column contains the person category of the target form, the middle column contains the category of the source form, and the right column indicates the language(s) in which this process can be found. Question marks indicate uncertain cases. Because of lack of space, I cannot go into details here, but let me just point out some general observations. First of all, the processes indicated in tables (1-7) do not always reflect already completed historical changes. For example, the deictic form which refers to the 1st person subject in Wintu — see table (1) — (cf. Schlichter 1986:55) still functions as a deictic temporal or locative expression in

other grammatical contexts in this language. Or the plural marker in Tsimshian — see table (2) — which has become a 1st person plural pronoun — still functions as a plural marker for demonstrative pronouns in this language. The same is true for the indefinite pronoun — see again table (2) —which can be used as a 1st person plural subject pronoun in many Athapaskan languages such as Dogrib, Koyukon, Slave, etc. But this form is still used as either an indefinite or anaphoric pronoun in these languages.

Secondly, as can be expected from the referential nature of these forms, the exclusive 1st person forms are not derived from nor do they contain 2nd person pronominal forms. In the majority of cases the exclusive pronouns are the marked members of an inclusive/exclusive distinction (for some exceptions see Helmbrecht 1996). The inclusive 1st person pronouns are, from a referential point of view, the most complex of the 1st person non-singular pronouns, because their reference includes the speaker, the hearer, and 3rd persons. Therefore, the possible range of sources for the development of these forms is broader than that for the exclusive forms. Many inclusive pronouns are derived from 2nd person pronouns or contain traces of a 2nd person pronoun, because it is the reference to the hearer which is the central difference between exclusive and inclusive pronouns. The ultimate source of inclusive or exclusive markers often cannot be reconstructed and remains unclear; e.g. the Mohawk inclusive marker *te-* cannot be traced back to any source while it seems to be likely that the exclusive marker *ya-* in Mohawk is originally a 3rd person pronoun. Another case where the inclusive marker is transparent is Sierra Miwok. The inclusive marker in Sierra Miwok has its origin in the word for 'two'.

Thirdly, the majority of changes which are indicated in the tables above consist of a shift or extension of the category value from a 3rd or 2nd person towards a 1st person. That means that different pronouns such as indefinite pronouns or 3rd person plural pronouns or 2nd person singular or plural pronouns, or other grammatical markers such as plural replaced old 1st person pronouns or became additional 1st person expressions. The directionality of this process emphasizes again the priority of the 1st person categories over the other person categories. On the other hand, it is possible to find person category changes which run in the opposite direction, but these instances seem to be rare. Some examples of a change from a 1st person to a 2nd person are given in table (7). Especially the change from a 1st person plural to a 2nd person singular seems to occur with some frequency. The functional basis of this change is probably the same which underlies the use of the so-called nursery-we in English and other European languages. People use the 1st person plural pronoun for a 2nd person reference in order to express a strong commitment or empathy with the person who is addressed.

The high number of processes which lead to the replacement of 1st person pronominal forms or to the creation of additional 1st person expression raises the question why it is the 1st person pronouns which are replaced or supplemented by alternative expressions. It is obvious that at some point of the development of the different personal paradigms, speakers begin to avoid an explicit self-reference by using old regular 1st person pronouns and start, simultaneously, to use other forms which do not express a direct speaker reference. The usage of new forms for a speaker reference is, at the beginning, certainly restricted to particular contexts. Usually, this is not a problem with respect to the hearer, because the speaker provides enough background information so that the hearer is in the position to make the right inferences, i.e. the hearer can infer from the context that the speaker is included in the group of individuals referred to. The reasons for this kind of

avoidance of an explicit self-reference may vary from language to language or from culture to culture. But in essence, I believe that there are some kinds of taboos or politeness rules which require that a speaker should not draw too much attention to his or her own person by using an explicit means of self-reference. Speakers should not empathize too much with themselves because this may offend their interlocutors. The mere existence of such an avoidance-rule is a nice confirmation of the fact that the most natural viewpoint is the speaker's own viewpoint and that the person he or she empathizes with is naturally the speaker himself rather than the hearer. In the following section I would like to present some data from some transitive pronominal paradigms which show quite clearly the effects of such an avoidance rule.

4. The avoidance of 1st person expressions in transitive paradigms

Many North American Indian languages indicate more than one core argument of the clause by means of pronominal affixes on the verb. It is very common that these languages have at least two series of pronominal paradigms, one of which refers to the subject and one of which refers to the object of a transitive clause. Subject and object of a transitive clause are very much fused so that it is no longer possible to identify the components with some degree of certainty. In other cases, the transitive pronominal combinations are very transparent and the pronominal parts can easily be segmented. A close examination of such transitive paradigms in different languages shows that it us the 1st person pronoun in these transitive combinations — no matter whether it is the subject or the object — which is quite frequently simply missing or replaced by some other element. An interesting example in this respect is Chinook, a language of the Northwest Pacific coast. Chinook has — according to Boas (1911c:580) — three slightly different series of pronominal prefixes which distinguish singular dual and plural in all three persons. In addition there are inclusive and exclusive forms for dual and plural 1st person as well as gender distinctions for the 3rd person singular. The first series represents the subject of a transitive clause, the second series the object of a transitive clause as well as the subject of an intransitive clause, and the third series contains possessive pronouns. The forms of all three pronominal series are quite similar, but their function in the verbal complex can easily be recognized by their morphological position in relation to each other and to the verbal stem. The subject prefixes of a transitive verb precede the object prefixes which are always closer to the stem than the subject prefixes. Now, one might expect from such a pronominal system that every subject pronoun could be combined equally with every object prefix so that every possible transitive combination — except the reflexive forms, which are usually formed with a separate marker — would occur. This is not the case. In Chinook, the expected transitive forms for a 1st person singular acting on a 2nd person and for the 1st person non-singular exclusive acting on a 2nd person do not occur. Instead, there are replacement forms which clearly show the avoidance of an explicit expression of the 1st person. Compare the transitive pronominal forms in (2) and their analysis.

(2)   Chinook (Boas 1911c: 584)

1st sg.	→	2nd sg.	*yam-*	< *ya-*	(?)	*m-*	(2nd sg. obj.)
1st sg.	→	2nd du.	*yamt-*	< *ya-*	(?)	*mt-*	(2nd du. obj.)
1st sg.	→	2nd pl.	*yamc-*	< *ya-*	(?)	*mc-*	(2nd pl. obj.)
1st excl. du/pl	→	2nd sg.	*qam-*	< *qa-*	(indef. subj.)	*m-*	(2nd sg. obj.)
1st excl. du/pl	→	2nd du.	*qamt-*	< *qa-*	(indef. subj.)	*mt-*	(2nd du. obj.)
1st excl. du/pl	→	2nd pl.	*qamc-*	< *qa-*	(indef. subj.)	*mc-*	(2nd pl. obj.)

All the transitive pronominal forms in (2) which are compound forms exhibit as one part the regular 2nd person object prefixes, as expected. The first part of these forms, however, is not the regular 1st person singular or exclusive subject prefix. Instead, there are replacement forms which represent the 1st person categories. The form *ya-* which replaces the 1st person singular subject cannot be traced back to any other source; the form *qa-*, however, which replaces the 1st person exclusive subject forms is originally the indefinite transitive subject pronoun and it is still in use in this function. Chinook is an example where the expected pronoun for the 1st person in certain transitive combinations is replaced by some other element. In other languages, the expected 1st person pronoun is simply rendered zero, i.e. receives no expression at all. This is, for example, the case in the animate transitive paradigm of the independent indicative in Fox, a language of the Algonkin family (cf. Dahlstrom 1995). Compare the forms in (3a-b).

(3)   Fox (Dahlstrom 1995:97)
    a) *ke-wa:pam- en-   e*
        2   look.at   2.obj-epenth.vowel
        I look at you (sg.).

    b) *ke-wa:pam- en-   e   pwa*
        2-look.at- 2.obj- epenth.vowel- 2.pl.
        I look at you (pl.).

The independent indicative pronouns of the transitive verb 'look at' show no morphological expression of the 1st person singular subject which is acting on a 2nd person. In all other transitive pronouns — no matter whether the 1st person is subject or direct object — the 1st person is clearly represented.

      Other languages which show either a Fox-like or a Chinook-like or a somehow similar deletion of an expected 1st person pronoun in the transitive paradigms are Yuma, a Hokan language, Takelma, a language of the Northwest, Kiowa and Taos, languages of the Kiowa-Tanoan group, Yuchi, an isolate of the Southeast, Winnebago and Ioway-Oto, two Siouan languages, and Kwakiutl.

5. Conclusions

In the previous sections I presented different types of data which suggest that a) the 1st person category has a special status or priority against the other person categories, b) that the 1st person is very likely the first person category which receives a morphological marking with respect to the development of person paradigms, and c) that the 1st person pronouns are, to a high degree, involved in the dynamics of person paradigms, i.e. the historical changes of the form and the category value of pronouns. It is the hypothesis of this paper that there is very

often — due to politeness rules or certain kinds of taboos — a need to form new 1st person pronouns whose initial purpose is not to refer to the speaker in a direct way. This process can ultimately lead to the grammaticalization of all kinds of originally 3rd person pronouns or 2nd person pronouns into 1st person expressions. The avoidance of an explicit self-reference on the side of the speaker does not pose a problem on the part of the hearer. The necessary inferences can easily be drawn by the hearer. First of all, the speaker provides all the necessary background information to facilitate these inferences on the hearer's side, secondly the hearer is naturally very empathic with the speaker which means that he or she takes over the speaker's point of view to get an understanding of what the speaker talks about. The existence of such rules or taboos which demand an avoidance of explicit self-reference is a confirmation of the idea that the most natural point of view is the speaker's own point of view.

Endnotes

[1] I am grateful to Greg Anderson, Gary Bevington, and Lawrence Morgan for their helpful comments. Furthermore, I would like to thank the Alexander von Humboldt Foundation in Germany which provided me with the financial resources to continue my research on person marking.

[2] The fact that an ergative marking pattern arose in Seri for the 1st person only clearly runs against the predictions of Silverstein's agentivity hierarchy. Silverstein (1976) has claimed that 1st and 2nd persons are the least likely categories to receive an ergative marking pattern.

[3] It seems to be very likely that the 1st singular direct object pronoun which is used in imperatives only is etymologically related to the 1st singular transitive subject pronoun.

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The Grammar of Moluche in Thomas Falkner's
A Description of Patagonia (1774)[*]

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Since the 1970s academic revival of interest in the history of linguistic ideas, early missionary grammars of native American languages have received growing scholarly consideration. In 1969 V.E. Hanzeli still called the linguistic discovery of the New World one of the major areas of pre-19th-century linguistics 'that remain to be scrutinized' (1969:14). At the second International Conference of the History of the Language Sciences (ICHoLS 1981) the linguistics of native American languages was one of the novelties (Auroux 1984:XIV). Since then an increasing number of studies have re-evaluated missionary works of the colonial period within the grammatical and cultural context in which they were composed.[1]

Missionaries (Dominicans, Franciscans, Jesuits) engaged in describing the language rules of their Indian converts mainly for practical purposes: they sent home manuscript grammars to initiate new fellow missionaries. Even more important than grammar writing was the production of vocabularies and dictionaries, and the translation of religious texts into the Indian languages to provide the natives access to Christian culture. This translation also had the intention of 'improving' the languages, by elaborating a suitable Christian vocabulary.

Many studies of missionary accounts underline the Latinate bias that characterizes their grammatical description. This framework is hardly surprising, since also the first grammars of European vernaculars, which were published in the 16th century, concluded that those languages had a grammatical system, only by comparing the Latin rules with the modern equivalents. The 'parts of speech' or word classes of Greek and Latin – traditionally noun, pronoun, article (Greek), verb, participle, adverb, conjunction, preposition, and interjection (Latin) – were held to be the ideal linguistic representations of logical categories. If they could not be distinguished in the 'new' Indian languages, those languages were qualified structurally confused and less developed. The idea that Latin word classes and categories were, in fact, language universals and that any difference between Latin and another language was a deviation on the latter's part was due to the classical idea that language was a straightforward reflection of the logical functions of the human mind. As there was one (divine) truth the human mind could encompass, so there was one ideal grammar.

Still, there are examples that go beyond the perspective of traditional grammar and show, as E. Hovdhaugen concludes in an article on the 17th-century grammar of Peruvian Yunga (Mochica) by Fernando de la Carrera (1644), 'that man's ability to think independently about linguistic matter and analyse linguistic problems may be more important than generally assumed' (Hovdhaugen 1992:121).[2]

The discussion of Moluche, published as the final part of Thomas Falkner's general account of 'Patagonia' and its inhabitants (1774), is an example of this.

Thomas Falkner (1707-1784) was born in Manchester as the son of an apothecary. After studying as a surgeon, he was sent out on board the Assiento, a slave ship belonging to the South Sea Corporation. He sailed to the Guinea Coast around 1731, and from there to Buenos Aires, where he fell dangerously ill. He renounced Protestantism and was received into the Society of Jesus in May 1732, and continued to exercise his ministry among the Indians with success. He spent thirty-eight years as a missionary in South America, first in Chaco, Paraguay, and Tucuman, the Pampas, and from 1740 among the native tribes between Rio de la Plata and Magellan's Straight. On the expulsion of the Jesuits in 1767 he was deported, came back to England and died at Plowden Hall, Shropshire, on January 30th 1784.[3]

The Moluches, whose language is described, 'are known among the Spaniards by the name of Aucaes and Araucanos' (1774:96). They call themselves Moluche 'after the word molun, to wage war; and moluche signifies a warriour' (1774:96). Falkner situates them as follows: 'They are dispersed over the country both on the east and west sides of the Cordillera of Chili, from the confines of Peru to the Straits of Magellan, and may be divided into the different nations of Picunches, Pehuenches, and Huilliches' (1774:96). The tribes to the east of the Moluches are called Puelche, 'or Eastern people' (1774:96).

The first three chapters of Falkner's book describe the country's geography and produce. After an account of the inhabitants, and the religion, government and customs of the Moluches and Puelches in chapters IV and V, the final Chapter VI (1774:132-144) gives 'An Account of the Language of the Inhabitants of these Countries'. The text mentions two 'variants' of the Moluche language: that of the 'Huilliches' (1774:135,136,139), and 'Picunches' (1774:136).[4]

Modern studies classify Moluche as a subgroup of the Mapuche or Araucanian language, spoken in Chile and Argentina, which is part of the Penutian language family[5]. The Mapuches refer to their native language as 'Mapudungu' or 'Mapudungun'. Subgroups besides Moluche are, i.a., Lafquenches, Pehuenches, Huilliches, Picunches, and Puelches.[6] Today Mapudungun and Huilliche are still spoken in Chile and Argentina.[7]

Falkner's twelve-page account of Moluche includes a grammatical analysis (1774:132-140), a list of 'numeral words' and adverbs (1774:141), a translation of the Sign of the Cross, the beginning of the Lord's Prayer and the Creed (1774:142-143) – 'intermixed with a few Spanish words, where the Indian idiom is insufficient' (1774:143) – and a short vocabulary of eighty-seven words (1774:144)[8]. The grammar is built on a classical pattern of comparison, but does analyse the flexibility of the verb morphology, and compares its richness to that of Greek.

I will first (1.) present the word paradigms of Falkner's discussion that fit the Latinate grammatical pattern, and next (2.) deal with the language-specific

morphology for which classical structures could not be adduced in his text. His discussion confirms some of the features of the Mapudungu verbal paradigm, which have remained fairly unchanged over nearly 400 years (see Contreras 1989, Salas 1991:173), since the first record of the language in the grammar of the Jesuit Luis de Valdivia (1606)[9]. Surprisingly, Falkner does not refer to Valdivia anywhere in his text. Instead, his account is allegedly based on recollection of his own language practice.[10] To include some comparative reference to Valdivia, I will refer to Salas 1991, which lists Valdivia's verbal paradigms. As I was unable to consult the original work myself this comparison remains incomplete.

1. To give what he calls a 'notion of this language' (1774:143) Falkner's discussion is modelled on the classical Platonic/Aristotelian distinction between two main parts of speech: NOUN (including noun substantive, noun adjective, and pronoun), and VERB (including the participle as one of the verbal moods). Prepositions and adverbs are distinguished, but only in terms of their function as infixes in polysynthetic structures (infra, 1774:140).

In the category of substantive NOUNS Falkner distinguishes the classical 'accidents' – a term used in Latin grammar (Quintilian) to refer to the changes to which words are subject, in accordance with the relations they express –: declension ('declination' 1774:132), case, gender, and number. Unlike in Latin and Greek Moluche substantives have only one declension, and all have the 'common' gender of the classical languages, i.e. are optionally masculine or feminine. Falkner distinguishes the six cases of Latin (nominative, genitive, dative, accusative, vocative, and ablative), of which nominative and vocative are not marked morphologically, genitive is expressed by the suffix <u>ni</u> and dative, accusative, and ablative share the 'suffix or postposition' (1774:132) <u>mo</u>. The accusative can also be expressed by placing the form <u>engu</u> after the base form. There is no distinction between singular and plural case. The relevance of distinguishing three cases which are morphologically identical (dative, accusative, ablative) is not questioned, although <u>mo</u> is identified with the Latin prepositions 'in, contra, cum, per, ob, propter, intra' (1774:141). In discussing number Falkner isolates the forms <u>pu</u> and <u>eng'n</u>[11], which are both used to express the plural, the one put before the substantive, the other after it. The dual number of Latin and Greek does not exist as a morphological category in nouns. An example paradigm is given for <u>huentu</u>, 'man' (1774:133):

	singular		**plural**	
N.	Huentu,	the man	Pu huentu, *or* huentu eng'n,	the men
G.	Huentuni,	of the man, &c.	'and so on, as in the singular'	
D.	Huentumo,			
A.	Huentumo,			
V.	Huentu,			
A.	Huentumo,			
	or Huentu engu			

Adjectives are put before substantives and have no morphological endings for case or number, e.g. (1774:133):

Cume	good,
Cume huentu	a good man,
Cume huentu eng'n	good men.

Pronouns have all three numbers. The suffix <u>iu</u> forms the dual number, and <u>in</u> the plural, which are contracted with the final vowel of the base form (1774:133):

singular		**dual**		**plural**	
Inche,	I	Inchiu,	we two	Inchin,	we many
Eimi,	thou	Eimu,	you two	Eim'n,	you many
Vei,	he				
T'va, or	this				
T'vachi					
Velli,	that				
Inei,	whom				

Two reflexive pronouns are mentioned: <u>quisu</u>, 'he alone or himself', and <u>inche quisu</u>, 'I myself'. Possessive pronouns are <u>ni</u>, the 'sign of the genitive' (133), for 'mine', <u>mi</u>, 'thine', and <u>'n</u>, 'his'.

The Moluche VERB is presented by reference to Latin verbal conjugation and its typical categories or 'accidents' (number, mood, person, tense and voice). Aspect is not mentioned separately, though included in the tense paradigms. Three finite moods – indicative, subjunctive, and imperative – and two infinite moods – infinitive, and participle – are discussed. The two main verb types are the substantive verb <u>gen</u> (root <u>ge</u>), 'or, as it is pronounced' (1774:133) '<u>ngen</u> (to be), and adjective verbs, i.e. all the others (1774:137). Those are further subdivided according to traditional grammar into 'active' verbs, expressing 'doing', 'passive' verbs, expressing 'suffering', and neuter or essential verbs, expressing 'being' (1774:140).

Verbs have only one conjugation, and are never irregular or defective. The finite verb suffix inflection expresses number (singular, dual, plural), mood (indicative, subjunctive)[12] and person (three) (1774:135-136). The following suffix clusters are isolated for the indicative and subjunctive present, which recur in the conjugation of 'all the other tenses' (1774:136)[13]:

Indicative

	singular	**dual**	**plural**
1.	n	iu	in
2.	imi	imui	im'n
3.	y	ingu	ing'n

Subjunctive

	singular	dual	plural
1.	li	liu	liin
2.	limi	limu	lim'n
3.	liy	lingu	ling'n

Both indicative and subjunctive have 'as many tenses as in the Greek tongue' (1774:134) – present, imperfect, perfect, preterperfect, first aorist, second aorist, first future, and second future. Valdivia (Salas 1991:167) mentions the present, imperfect, first future (imperfect future), first mixed tense (future-in-the-past), perfect, pluperfect, second future (perfect future), second mixed tense (perfect-future-in-the-past). As he focusses on the minimal verbal paradigm, Salas (1991) does not mention any tense markers from Valdivia. The 'particles' (1774:134) of tense that can be isolated from Falkner's account are:

Present	(*none*)
Imperfect	bu
Perfect	yee
Preterperfect	yeebu
First aorist	abu
Second aorist	yeabu
First future	a
Second future	yea

The tenses are formed by 'interposing' these markers (1774:134) between the stem and the finite suffixes (1774:134-135). This gives the following paradigms for the verb <u>elun</u> (root <u>elu</u>), 'to give', in the first person singular indicative and subjunctive:

	Indicative	Subjunctive
Present	Elun	Eluli
Imperfect	Elubun	Elubuli
Perfect	Eluyeen	Eluyeeli[14]
Preterperfect	Eluyeebun	Eluyeebuli
First aorist	Eluabun	Eluabuli
Second aorist	Eluyeabun	Eluyeabuli
First future	Eluan	Eluali
Second future	Eluyean	Eluyeali

The passive voice is formed by adding the verb substantive ('n)ge, 'to be', directly to the stem (1774:137). The verb ('n)ge follows the normal inflection of the language. In Valdivia this form is one variant of 'impersonal voice' (Salas 1991:169), involving undetermined agent and determined patient. Falkner gives the following examples:

	Indicative		Subjunctive	
Present	Elugen,	'I have given'[15]	Elugeli,	'I can be given'
Imperfect	Elugebun,	'I was given'		

| *Perfect* | Elungeuyeeli, | 'I may have been given' |
| *Second future* | Elungeali, &c. | 'I shall have been given' |

Besides the indicative, and subjunctive, the finite imperative – now described as 'volitive' mood (Contreras & Santullano 1989:39) –, and the non-finite infinitive and participle mood are mentioned. On the imperative Falkner is very scanty, stating only that it frequently coincides with 'the future of the indicative' (1774:135) – i.e., marked by a –, sometimes in the third person. Valdivia describes all the imperative's finite suffixes for the three persons and numbers, which according to him, however, are only used in the present tense (chapter III, f.13; Salas 1991:169).

The infinitive is formed on the basis of the first person of the indicative of any of the tenses. Falkner's additional remark that the 'genitive of the primitive person' or 'a possessive pronoun' (1774:136) is put before the inflected verb 'to signify the person that acts or suffers' remains rather obscure, since ni elun is translated as 'I to give', ni elubun as 'thou to give' and ni eluvin as 'he to give', while mi and 'n are the respective second and third person possessive pronouns. No parallels in Valdivia could be checked in this case.

There are two participles, an active one ending in lu and a passive one marked by the suffix el. The second is mentioned in Valdivia (Salas 1991:171). Both are formed from the first person of the indicative, and conjugated with all tense infixes, but without carrying markers for person and number. This makes for (1774:136-137):

	Active		*Passive*	
Present	Elulu,	'the person giving'	Eluel,	'the thing given'
Imperfect	Elubulu,	'he that did give'	Elubuel,	'the thing that was given'
Perfect	Eluyelu,	'he that has given'	Eluyeel,	'the thing that has been given'
First future	Elualu,	'he that will give'	Elual,	'the thing that will be given'
First aorist	Eluabulu,	'he that was to give'	&c.	

2. Besides this classical pattern of paradigms, Falkner's description takes into account verbal forms that have no parallel in Latin and Greek. Although like many of his predecessors or contemporaries he considers polysemy a linguistic 'impropriety' (1774:139), and refers to, e.g., the 'equivocation in their tongue which is found especially in the prepositions; where one having many significations, the meaning is oftentimes very much confused' (1774:139), Falkner does give a morphological analysis of some of the typical inflectional structures of the language.[16]

He observes the productive derivation of verbs 'from any part of speech' (1774:133), either by adding the finite verbal suffixes to the stem, or by adding the inflected substantive verb 'nge. For example (1774:134)[17]:

Ata,	'evil' or 'bad'
Atan or Atangen	'to be bad'
Atal'n or Atalcan[18]	'to corrupt' or 'make bad'

Apart from derivation, Falkner observes the 'mode' of 'compounding verbs, altering their significations' (1774:140). He roughly puts several changes of meaning together, viz. 'making affirmatives negatives, neuters actives, and of signifying and expressing how and in what manner the thing is done, by the interposition of prepositions, adverbs, adjectives, &c' (ibid.). As such, he analyses a number of polysynthetic units, as (1774:140):

Pevemgelavin,
'I saw him not on this manner'
'Pen signifies *to see*; pevin is *I saw him*; vemge, *on this manner*; and la is the negative.'

and, (1774:135):

Chasimota iloavinquin,
'Let me eat it with salt'
'Now iloavin is the first future, with the particle vi interposed, to signify *it*. I do not know whether quin is anything more than a particle of ornament; as in the word chasimota; where the concluding syllable ta is useless, but for the sake of sound; as chasimo, without any addition, is the ablative case of chasi, *salt*.'

More importantly, besides the traditional categories of number, mood, tense, person and voice, Falkner analyses another, optional, verbal property, viz. 'that of transition: whereby they signify, as well the person that acts, as him on whom the action passes, by the interposition or addition of certain determinate particles to express it' (1774:137). From the description given, this phenomenon implies that in verbs expressing an action involving two or more referents, one portmanteau morpheme is added to the verbal stem, which marks both the agent and the patient. According to Falkner Moluche shares this feature with the language 'of Peru' (Quechua) (1774:137), in which these forms occur 'in greater number' (1774:137). The property is absent in the languages 'of the Puelches, of the Chaco, or the Guaranies' (1774:137).

Falkner singles out six different types of transition, which formed part of a larger set he says he does not remember completely (1774:137). The first three types are realized by 'particles' which are contracted with the finite suffixes, varying according to mood and to number of the patient. In the fourth type the morphemes of transition vary according to number and mood and are added to the inflected verbal forms. The fifth and sixth type are expressed in affixes placed between stem and finite suffixes (1774:138-140). The following sets can be deduced from Falkner's account:

transition morphemes

(I=indicative, S=subjunctive)

1.	'From me to thee or you'	ei/y (I), el (S)
2.	'From you to me'	en (I)
3.	'From him to me'	mo (I & S)
4.	'From him to thee'	eneu (I,sg.), eymu mo (I,dual), eim'n mo (I,pl.); mo (S)
5.	'From me or you to him'	vi (I & S)
6.	'the mutual', i.e. 'when it is reciprocal on both sides'	huu, or, 'as it is pronounced' wu (I & S)

contraction of transition morphemes and finite suffixes

	Indicative			Subjunctive		
	singular	**dual**	**plural**	**singular**	**dual**	**plural**
1.	eymi	eymu	eim'n	elmi	elmu	elm'n
2.	en	eiu	ein	*no subjunctive forms mentioned*		
3.	mon	moiu	moin	moli	milyu	moliin
4.	*no contraction paradigms mentioned*					
5.	*no contraction paradigms mentioned*					
6.	*no contraction paradigms mentioned*					

Examples are given for the verb <u>elu</u>, such as:

1.	Elueymu	'I give to you two'
2.	Eluen	'You give to me'
3.	Elumoin	'He gives to us many'
4.	Eluneu	'He gives to thee'
5.	Eluviyu /vimu	'We or you two give to him'
6.	Ayuwimi	'Thou lovest thyself'

Forms of 'transition' and their meaning have been discussed by modern studies in terms of 'focal' and 'satellite person' by Salas (1978), in terms of 'suffixes of interaction' for modern Huilliche by Contreras & Santullano (1989:59-60), and in terms of topic inflection in Mapudungun verbs, reflecting a person-oriented hierarchy of discourse participants by Grimes (1985)[19].

3.   Falkner introduced his description of 'Moluche' by saying that the language is 'the most polished, and the most generally understood' (1774:132) of all the languages of the Chilean tribes he knew, and 'more copious and elegant, than could have been expected from an uncivilized people' (1774:132.). This hints at the disturbing discovery of 'regular' structures in Amerindian languages for 18th-century European man. Travellers' and missionaries' accounts were used as 'evidence' in 18th-century studies of human nature and the development of society, to show that the general course in the history of civilization was from 'rudeness' to 'refinement'. Indian tribes taught Europeans about their own cultural

pre-history, and so Indian languages should likewise. Therefore, it was hard to explain that languages which showed 'art' in terms of regular forms of inflection had been formed by their 'primitive' speakers. One way out is expressed in the Scottish judge Lord Monboddo's extensive work on the origin and development of language – which includes Falkner among its references –, viz. to assume that 'some time or other' (1774:549) these peoples were 'connected with some more civilized nation, from whom they have learned to speak' (1774:549). Eventually, the influx of increasingly accurate formal descriptions of exotic languages – one of which this paper hopes to have given the credit it deserves – would prepare the scene for the beginning of anthropological linguistics in the 19th century.

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[*] I was able to read a copy of this work while doing research on descriptions of Amerindian languages in the colonial period at the John Carter Brown Library (Providence, Rhode Island) in spring 1995. It is with great pleasure that I express my thanks to Norman Fiering, Director of the Library, and the members of the Fellowship Committee for granting me a JCB Research Fellowship, which made my research stay possible. I also thank the staff of the library for their kind assistance and hospitality.

[1] See, e.g., the analyses in Auroux & Queixalos (1984), Cowan (1984), Dinneen (1990), Guice (1984), Hovdhaugen (1992), Salmon (1992).

[2] In October 12-14, 1995, an international colloquium on the study of Amerindian languages in the colonial period (La descripcion de las lenguas amerindas en la época colonial) was held at the 'Ibero-amerikanisches Institut' in Berlin, where the overall conclusion of the papers

was that 'many missionary linguists approached the analysis with an open mind and tried various approaches' (Hovdhaugen 1996:131).

3 See The Dictionary of National Biography, vol.I:1033, Oxford University Press (1975).

4 Falkner's work is described in Field (1873:126).

5 Voegelin & Voegelin (1977:287).

6 See Croese 1985.

7 Grimes (1985:141) refers to population estimates of between 200,000 and 500,000, based on a dialect study of Mapuche by Robert A. Croese (1980. Estudio dialectológico del mapuche. Estudios Filológicos de la Universidad Austral de Chile 15:7-38). The International Encyclopedia of Linguistics (ed. by William Bright. 1992 New York & Oxford: Oxford University Press) lists 440,000 speakers reported in 1982, with around 400,000 in Chile between the Itata and Toltén rivers, and 40,000 or more in Argentina (1992,vol.1:102).

8 A non-alphabetical list of nouns, verbs, and adjectives, including a variety of words for, e.g., parts of the body, family members, plants, animals, etc.

9 Arte y Gramatica general de la Lengva que corre en todo el Reyno de Chile, con un Vocabulario y Confessonario (...). En Lima por Francisco del Canto. Año 1606.

10 'A considerable absence from these countries has rendered the recollection very difficult; however, I shall give the best account of it I am able, to satisfy the curious and inquisitive' (1774:132).

11 This paper will not give a systematic comment on Falkner's orthography. To do so, indications of, e.g., nasal vowels and glottal stops, in other missionary grammars should first be examined, which I have not yet been able to look into.

12 Valdivia (chapter III, ff.13-14, in Salas 1991:167) also distinguishes an optative meaning, which is expressed by the 'mixed' tenses of the indicative, by the imperative, or some tenses of the subjunctive.

13 Valdivia (chapter III, f.12,14, in Salas 1991:168-169) distinguishes the following suffixes – Salas does not specify whether the orthography is his or Valdivia's:

Indicative

	singular	**dual**	**plural**
1.	n	yu	iñ
2.	ymi	ymu	ymn
3.	y	yḡu	yḡn

Subjunctive

	singular	**dual**	**plural**
1.	li	lyu	liñ
2.	lmi	lmu	lmn
3.	le	l(ee)ḡu	l(ee)ḡn

14 Falkner mentions the variants 'eluvin' (perfect indicative) and 'eluvili' (perfect subjunctive) for Huilliche (1774:135).

15 The translation should have been 'I am given'.

16 Falkner's originality as a relatively unbiased observer becomes clear when compared with the contemporary grammatical description of Galibi by S.-P. de La Salle de l'Étang (1765). This work states that the Galibi language is 'necessarily poor' in expressing verbal distinctions of tense, mood, and aspect, because of the speakers' 'limited' way of life: 'Une autre preuve de la richesse d'une Langue, se tire & de l'abondance des tours de phrases, & de la quantité de moyens d'exprimer les temps, les modes ou les manieres de signifier d'une façon déterminée ou indéfinie. Il sera aisé de démontrer que cette preuve manque à la Langue des Galibis. (...) Il paroît assez démontré que leur Langue n'est pas abondante; il seroit aussi facile de prouver qu'elle ne peut pas l'être. Il suffiroit de jetter un coup d'oeil sur leur genre de vie, sur leurs

mœurs, sur leurs occupations, sur le peu de connoissances qu'ils ont ou qu'ils peuvent avoir' (1765:xiv).

[17] Instances of derivation are also given in the vocabulary following the grammar (1774:144), e.g., 'Chinu, a knife, a sword. Chingoscun, to wound. Chingosquen, to be wounded.' This example shows that there other affixes involved than the ones mentioned by Falkner in his grammatical account.

[18] The markers l̲ and l̲c̲a̲ are not accounted for. See also note 14.

[19] Compare, e.g., Grimes's example (18) (1985:150):

'*pe-a-E-n*
see-future-PARTICIPANT=MINIMAL-indicative=speaker=singular
you will see me'.

This is an example of Falkner's second transition. It shows that Falkner isolated the 'e' correctly, but that he mistook the finite suffix 'n' for part of the transition morpheme.

Some Mysteries in the Reconstruction of Proto-Yuman*

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Problems of reconstruction are not limited to large families like Hokan or Indo-European, but also abound in small families of languages whose relationship leaves no doubt. This is forcibly brought home to me every time I work on the compilation of the Comparative Dictionary of the Yuman Languages,[1] a collaborative project among Yumanists which uses a computerized lexical database of all Yuman languages. Although the regular recurring sound correspondences and the reconstructed phonological system of Proto-Yuman are well-known and non-controversial based as they are on obvious cognates, the application of these findings to a much broader lexical database reveals difficulties which are worth discussing as they are, I believe, not unique to Yuman languages,[2] and therefore raise issues of broader methodological import.

The Proto-Yuman consonant inventory is:
*p *t *č̣ *kʸ *k *kʷ *q *qʷ *ʔ *s *ṣ *x *xʷ *m *n *nʸ *l *lʸ *r *w *y.
Other consonants found in individual Yuman languages are:
v ṇ t̯ θ d ɬ l̯ʸ š h hʷ r̥.

Proto-Yuman had three basic vowels: *i *a *u, each with a long counterpart. Other vowels occurring in Yuman languages are e and o (both short and long), and ə.

Sound changes affecting consonants are due to unconditioned sound changes, mergers, or position within or outside of the root (Langdon 1975). Vowel contrasts beyond the three Proto-Yuman vowels are due to raising and lowering in specific consonantal environments, or to coalescence of diphthongs; ə is either epenthetic or a reduced unstressed full vowel. (For a list of regular sound correspondences, see Langdon and Munro 1980,[3] and for the history of the Yuman vowel systems, see Langdon 1976).

Typical Proto-Yuman word structure centers on a root, most commonly of the shape *CVC, where the initial *C can be any consonant, *V can be any vowel, short or long, and the final *C can be any consonant except the labialized *kʷ, *xʷ, *qʷ, the palatalized *kʸ, and *ʔ. *u(:) does not occur after labialized consonants, and *i(:) is rare after *kʸ and *lʸ. Roots shorter than the canonical *CVC are attested but are not as frequent. The root is also the stressed syllable of the word. Full words are derived from roots by prefixation, suffixation, length ablaut of vowels, consonantal ablaut in sound symbolic alternations, some noun incorporation, and reduplication. A fair number of reconstructions, small compared to the full lexicon, are longer than a canonical root and cannot be further analyzed. They seem to point to an older layer of lexical formations. Prefixes and suffixes often do not match across languages although the languages are quite closely related, making reconstruction of full words difficult.

Vowel length, which is certainly distinctive in Proto-Yuman, cannot be reconstructed as often or as unambiguously as one would expect in a language

with only three basic vowels. The problem has to do with the fact that vowel length serves a number of grammatical functions among which are various notions of plurality and other derivation (Langdon 1989). In trying to ascertain which roots must be reconstructed with length, it is often difficult to determine whether the presence of length in individual languages is due to derivation or to an original long vowel. Criteria for reconstructing length have therefore not been fully worked out.

Homophony versus polysemy

The problem of homophony versus polysemy which has been discussed at length by Yumanists with respect to grammatical morphemes (Gorbet 1979, Kendall 1975, Munro 1981, Yamamoto 1976), also pervades the lexicon. Given the shortness of the canonical root and the limitations of the phonological inventory, one would predict that homophonous roots would be common, and, while some do indeed exist, they turn out to be not that numerous. This is due to the fact that what appear at first to be homophonous roots with contrasting meanings, upon closer examination turn out to be related in complex semantic networks where the division into several roots becomes quite arbitrary. An example is given in the figure below (taken from Langdon and Hinton 1989:37) which shows the various extensions in meaning of a root *ča(:) and its derived form *ča(:)-m, where the suffix *-m means 'away from the point of reference'.

This reconstruction is also an example of the difficulty discussed above of deciding whether a root should be reconstructed with a long vowel or not, which is indicated in the reconstruction formula by the length mark in parentheses. It also illustrates the problems created by the English translations provided by the various investigators working on these languages and the very different semantic organization of the Yuman lexicon from that of English. Without the phonological commonality of the reconstructed root, there would be no convincing way of demonstrating that such disparate glosses as 'pour, divorce, count' etc share any semantic components at all. The coherence of the semantic network exhibited here would not have been noticed if the computer programs designed to group together all reflexes of a single phonological shape had not forcibly revealed the problem. This is one of the benefits of the total literal-mindedness of computer operations. (See Johnson 1985 for a description of the architecture of the database and the computerized procedures used in this project.)
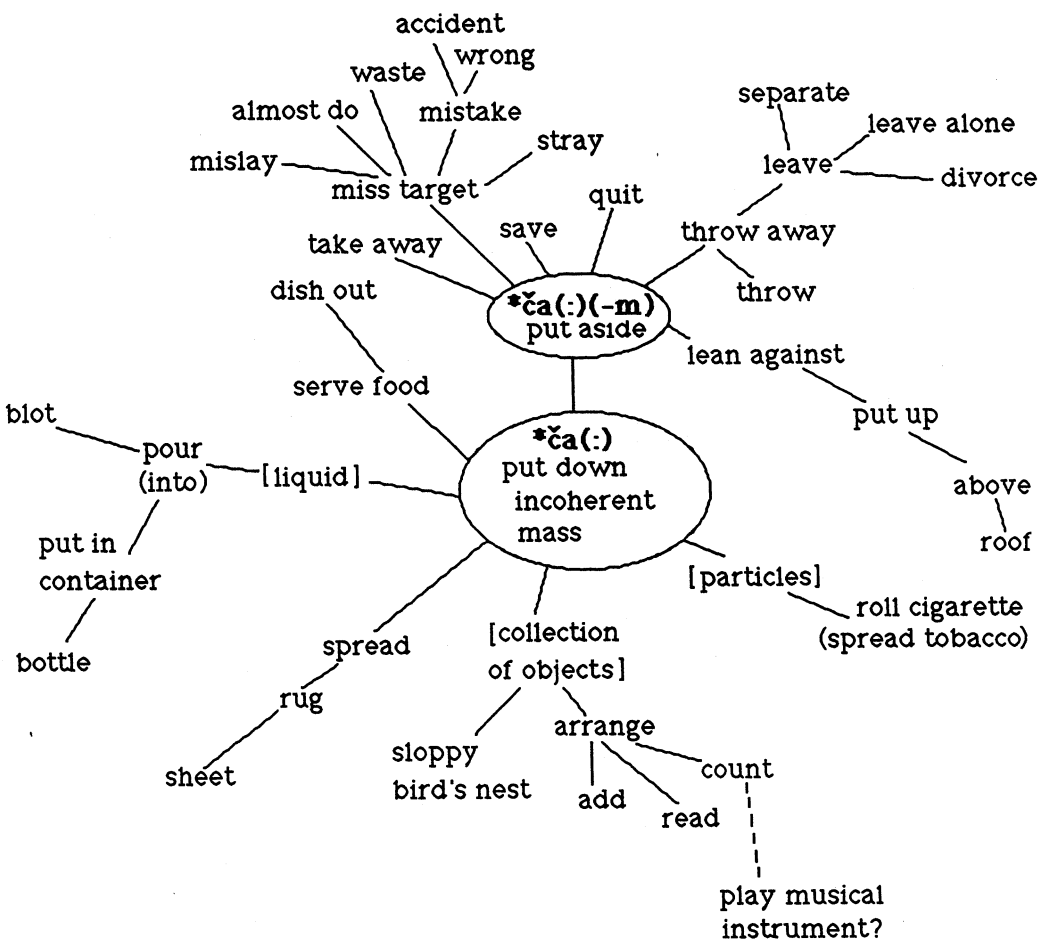
One possible representation of the semantic extensions of
*ča(:) - "put down incoherent mass", and *ča(:)(-m) "put aside".

Sound Symbolism

More troublesome, though actually quite common, are sets of correspon-
dences which enter into sound symbolic alternations, but do not regularly match
across languages (Aoki 1994:20, Oswalt 1971:190). If each attested combination
of reflexes across the various languages were to be assigned a distinct reconstruc-
tion, the sound system of Proto-Yuman would defy typological characterization
as it would contain a large number of laterals and resonants (possibly exceeding
the already fairly large number of stops and clustering mostly in the coronal
area!). Consonantal sound symbolism is known to be very productive in a large
number of American Indian languages (see e.g. Nichols 1971) and often involves,
as in Yuman languages, alternations, not only among resonants but also fricatives,
although almost all sound types can enter into such a relationship to some degree.
In Yuman languages, the process is not totally productive synchronically, but
comparative evidence indicates that it must be reconstructed for Proto-Yuman,
where the most common sounds involved are *n *nʸ *r *l *lʸ, while individual
languages also show that such segments as ṇ θ ł ł̣ʸ ṣ ṣ̌, and even p and v can occur.
Semantically the distinctions denote various degrees of size and intensity. Sound
symbolism can affect both nouns and verbs.

The facts will be illustrated by the case of a particularly productive root (or
rather set of roots) with a plausible reconstruction consisting of an initial *xʷ fol-
lowed by the vowel *a and ending in alternating consonants which will be labeled
*R to suggest the preponderance of cognates with *r. The meanings of the various
reflexes center on the description of activities characterized by persistent,
abrasive motions affecting a surface. Consider the data in table 1 below showing
possible reconstructions followed by their most common meanings in each of the
languages in which they are attested. Glosses followed by a question mark do not
fit as well semantically, but are included for further analysis.

Table 1. The root *xʷaR

*xʷar
IM[4] rub, scrape, scrub, scour, massage, chew, shave, stir, mix, beat
IB sharpen, scrub, scrape, chafe, be scratchy, hoe
TJ file one's nails, shave
CO laughter, calf of leg?
YU laugh, large green grasshopper
MO scrape out, noisy cricket
HA scrape, scratch
HU make small holes in something
WA dig, scrape out
YA hollow out, scrape out
YS hollow out, shave
PM striped, scour, hail, make lining?

*xʷaːr
IM be worn (from scraping), erode, rake, scrape
TJ nailfile, clear away (weeds)
YU leg from knee down?
WA whittle
PM scratch

*xʷal
IM dig, chafe, pull something out real quick
IB dig
TJ dig, scratch, brush across something real fast
CO prune (tree limbs)
MO clean with a scraping, circular motion
HA dig, plant, sow, digging stick
YA dig out, plant, well(n), etc.
YT well(n)
YS dig, plant, well(n), sow
PM dig, scratch, digging stick
PS hole, well(n)
KI strike a match, dig out, rake, scratch, wave hello?, flap ears?, capture?

*xʷalʸ
CO, YU, MA, MO dig

*xʷan
IM, IB, TJ, CO, PM, KI scratch
PM rub thorns off
KI strike a match

*xʷanʸ
YU clear one's throat
MA scratch
MO scrape, shave, rub

*xʷas
IM, IB, TJ wash
CO whip
HA chatter
HU be noisy
WA buzz, hum
KI gizzard

*xʷat
KI brush, stroke
*xʷay
IB, HA, HU, YA, YS, PM, HU, YA, PS to smoke (ritual)

CO cavity, dip
MO talk baby talk, hug
CO, MO, MA, PM, KI whisper

The sets above, all with the vowel *a or *a:, solidly point to actions (or results of actions) involving friction of various degrees of intensity, the differences being presumably due to the differences in the final consonant. This is obviously too simplistic an analysis since the same meanings appear with several of the alternating consonants; for example, *x^{w}ar, *x^{w}al, and *x^{w}an^y can all mean 'scrape', *x^{w}ar and *x^{w}al 'chafe', *x^{w}ar, *x^{w}al, *x^{w}an, *x^{w}an^y 'scratch', *x^{w}ar and *x^{w}an^y 'shave', *x^{w}ar, *x^{w}al, and *x^{w}al^y 'dig', and this is only listing the glosses which are identical in the data; including near synonyms would of course increase the list. Note, however, that *x^{w}as, *x^{w}at, and *x^{w}ay seem somewhat more semantically specialized although a good case can be made for their inclusion in the set. These are also consonants which are more rarely involved in sound symbolic alternations.

Consider now Table 2 which lists roots which seem to be semantic extensions of *x^{w}aR and show, in addition to variations in the last consonant, variations in the vowel and in the initial consonant, but have meanings which are compatible with those of roots in Table 2.

Table 2

*x^{w}ir
IB strip leaves and seeds off
CO, MA, MO fence
YU make a fence
PM inhale, fence

*x^{w}il^y
MO cuddle a baby

*x^{w}im
MO strip leaves and seeds off

*x^{w}iny
MO to scale fish

*x^{w}ip
PM inhale, sigh, sob

*k^{w}ar
TJ,CO,MO laugh, giggle, talk
HA, WA bind (baby to cradleboard)

*k^{w}al
TJ lick
MO wade

CO peel

*kʷan
MO, HA, WA peel

*kʷanʸ
MO clean

*kʷat
CO rake over

*kʷaw
HA talk (cf. *xʷay)

*kʷis
TJ chatter, squeak

*qʷar
YU talk (cf. *kʷaw, *xʷay)

*qʷir
YU, MO, YT, WA sharpen

*qʷal
WA splash
CO,MO row (a boat)

Note that some of these, particularly those with the vowel *i, may also be related to another sound symbolic root *kʷiR whose core meaning has to do with 'twisting, spiraling, turning motions and their results'. This suggests that complex semantic networks illustrated with the root *ča(:) above can also link roots with sound symbolic alternations in "mega networks" weaving in and out of a very large portion of the reconstructed root inventory. The full extent of this phenomenon still remains to be demonstrated but raises the question of where the cut-off point is reached.

Segment Distributional Imbalances

It has often been remarked in linguistic descriptions that not all phonological segments carry the same functional load in the lexical inventory of a language. To my knowledge, little discussion has been devoted to this topic beyond mention of the facts and it is not clear why such imbalances are found. Some fairly obvious reasons can sometimes be inferred. Yuman examples would be voiced stops which occur only in Spanish borrowings, systematic restrictions in distribution, e.g. the absence of labialized consonants in root- and word-final position, sounds whose historical origin is determined by sound shifts occurring in specific environments, e.g. the split of *t into /t/ (dental) and /ṭ/ (alveolar) in Delta-California and Yuma, alveolar /ṭ/ occurring originally only in root-final position. One might also surmise that some highly marked sound types might not be overly

common, but I think that would remain to be demonstrated. As a counter-example, in the Yuman languages that have them, the highly marked and innovative voiceless lateral fricatices ł and ƚʸ are at least as numerous as their voiced counterparts in the Delta-California languages, and enter in sound-symbolic sets with forms which have their voiced counterparts. In these sets, the voiceless ones denote the unmarked, more general, member of the pair with the more basic meaning, e.g. IM əsaⁱʸ 'hand', but əsaⁱʸ 'little hand'. These voiceless laterals are, however, extremely rare in Yuma and Paipai where they have spread from their Delta-California neighbors.

Skewed distributions in Proto-Yuman also include some rather strange ones. At first sight, the large number of roots containing the vowel *a does not appear bizarre, since [a] is certainly the unmarked vowel par excellence. It is without a doubt the most common vowel in the daughter languages as well, but in the reconstructed forms for Proto-Yuman the skewing is much more pronounced (perhaps as high as 80 percent of the reconstructed roots). What can we say about that? An obvious place to start would be to question the validity of the reconstructions. Individual Yuman languages have either 3 or 5 basic vowels, probably with a larger number of /a/'s than other vowels but not unduly unbalanced. The facts which have led me (Landgon 1976) to reconstruct the vowels of Proto-Yuman as only three are fairly well established and to my knowledge no Yumanists have challenged their validity. When the draft printouts of the Comparative Dictionary of the Yuman languages are carefully examined, the number of solid reconstructed roots with *i and *u shrinks even more. If anything, it reminds me most of the reconstruction of Indo-European vowels after the discovery of laryngeals, where the basic number of Indo-European vowels is reduced to essentially one. If it were to turn out on further study that many of the remaining *i and *u vowels of Proto-Yuman are restricted to individual languages or can be shown to be of some other origin, we would certainly have an Indo-European type vowel system. In fact, Proto-Yuman is rather like Indo-European in its general sound system (although it has only one series of stops), and shares its *CVC preferred root shape.

All this makes me very uneasy. Is this perhaps nothing but an artifact of our methods of reconstruction? If so, what do we do?

Another example of skewed distribution, though not as dramatic as the vowel problem, is the paucity of roots beginning in *t. Except in Cocopa, where *t mostly has the reflex /č/, /t/ is an extremely common segment in Yuman languages, both in root final position and in a variety of prefixes and suffixes with derivational and syntactic functions. In each language, it also is quite common in root-initial position. Few of these forms have cognates throughout the family.

An examination of the mechanically produced roots reconstructed from the Yuman lexical database reveals that few solid reconstructions can be proposed with initial *t. These are exhibited in Table 3. Note that Proto-Yuman reconstructions are proposed only where cognates are attested in at least two, non-

contiguous, subgroups.[5]

Table 3

1. *ʔ-xta 'cane, bamboo'
2. *xtat 'back (body part), backbone'
3. *(x)tat 'thorn'
4. *xtaːt 'crawl'
5. *tapṣ 'bloom'
6. *tay 'big'
7. *taq 'open'
8. *tu 'belly, middle, satiated'
9. *tu-y 'pregnant'
10. *ta-k, *ta-m, *ta-p, *tax/*tux 'throw, slap, clap hands, play cards'
11. *tir 'wrap around'
12. *tur 'roll'

Note that 2, 3 and maybe even 4 are probably related and that 9 is derived from 8 by the addition of a suffix meaning 'characterized by'. In 1, *ʔ is clearly segmentable and represents a nominal marker, but the rest of the root is not segmentable, and neither are the longer roots 2, 3, 4, as well as 5. These longer roots, I believe, represent a conservative set of etymologies, a number of which in fact have cognates throughout Hokan. The set of roots in 10 seem to contain a root *ta followed in most cases by suffixes known to derive verb stems (*-k 'hither', *-m 'thither', *-p 'passive, reflexive'), but *tax and *tux, if segmentable at all, must contain an archaic suffix *-x whose meaning cannot be recovered at this point. Note also that *tux may well be a variant of *tax since the vowel *a often is backed and raised before velars and postvelars. 11 and 12 might actually be relatable by vocalic symbolism. When all this is taken into account, the total number of distinct roots with *t- may in fact dwindle to 8.

It seems odd that an unmarked segment like *t, reflexes of which are extremely common in the daughter languages, would have such limited use in root-initial position, especially when compared to other unmarked segments like *č- *m-, *p- which are initial in a large number of roots. The question is, is this meaningful, and if so, is there a way of addressing this question?

Beyond Yuman

Since I have alluded above to parallels with Indo-European, let me pursue this a little more. Imbalances in segment distribution in any reconstructed branch of Indo-European could be compared with other reconstructed branches as well as with Proto-Indo-European itself. We could, for example, look at the famous paucity of evidence for Proto-Indo-European *b, the expected reflexes of which are nevertheless very common in the daughter languages. Proto-Yuman, too, represents a branch of a larger family, Hokan, which, if indeed a valid construct, would rival Indo-European in antiquity and number of branches. This, however,

is where the similarities end. For Hokan, unlike Indo-European, is not attested in any of its branches by ancient documentation of the languages and history of its peoples, nor has the work of reconstruction reached the sophistication and depth of Indo-European. Furthermore, among the most commonly assumed 12 branches,[6] 8 are language isolates, and the work of reconstruction in the remaining families has proceeded in some depth only for Pomoan and Yuman-Cochimí,[7] the Hokan language families containing the largest number of languages and possibly of comparable time depth (for a survey of the history of the Hokan hypothesis, see Langdon 1974, and for a summary of reconstruction work in progress, see Kaufman 1988). I will therefore take a look at reconstructions of Proto-Pomo (McLendon 1973) and Proto-Hokan (Kaufman 1988) in the context of the concerns of this paper.

The Proto-Pomo phonemic inventory (McLendon 1973:52) is richer than the Proto-Yuman system, mostly in that it has four series of stops: voiced (*b and *d only), voiceless, voiceless aspirated, and voiceless glottalized); it also has voiceless fricatives and voiced resonants, plus 5 vowels, each occurring short and long. Except for the richness of the stop system compared to the Yuman stops (only 1 series) the systems are not unlike each other. Furthermore, structural parallels between Proto-Yuman and Proto-Pomo abound (Langdon 1979), among which is a stressed syllable sharing some of the characteristics of the Proto-Yuman root though most Proto-Pomo "roots" lack the final consonant so common in Yuman.

Compared to the distributional imbalances found in Yuman, the five vowels of Proto-Pomo seem to be fairly evenly distributed among reconstructed forms suggesting, at least tentatively, that the Yuman vowel system was subject to considerable erosion. On the other hand, most researchers who have considered the issue assume that Proto-Hokan had only three vowels. Kaufman (1988), the most recent attempt at Proto-Hokan reconstruction, postulates 5 original vowels (plus length and diphthongs), but believes that eventually no more than three vowel qualities will be needed. A very quick glance through the proposed Hokan reconstructions of Kaufman (1988) does not, however, confirm the kind of imbalance favoring *a[8] over the other vowels as found in Yuman. This suggests to me that in Pre-Proto-Yuman times, some rather drastic leveling of vowels did indeed take place under conditions which of course remain to be discovered.

On the question of the paucity of Proto-Yuman roots in *t-, the following observations might be relevant. When comparing Yuman to Pomoan, the conservative view requires that Proto-Yuman *t's be compared with all Proto-Pomo dental-alveolar stops, since Yuman only has one series of stops and since at this stage of our knowledge, reflexes of stops appear to be quite conservative. The total number of reconstructed Proto-Pomo "roots" beginning in any one of these is 42, only two of which, meaning 'big, singular' and 'big, plural', which clearly point to one single etymology, suggest a solid cognate with Yuman. For comparison, all variants of k are represented in over 30 sets. In fact, the distribution of consonants in root-initial position in Proto-Pomo is remarkably even when

compared to Yuman. Can we draw any conclusions from this? Is Proto-Pomo a particularly well-balanced system and if so what does it mean?

When we now compare the distribution of t-like segments in root-initial position in Proto-Hokan (as proposed by Kaufman 1988) about 14 items represent such forms with evidence from all areas of Hokan territory, quite comparable with the Yuman numbers, and at least 4 of them have matches in Proto-Yuman. Other consonants reconstructed by Kaufman for Proto-Hokan seem much better attested, e.g. nasals, fricatives, and resonants. Does this mean that Yuman is more conservative with respect to Hokan than Pomoan? In view of the tentativeness of all this, I would not want to make a prediction, especially since these figures may well represent an artifact of the still primitive state of the art of Hokan studies.

Concluding remarks

One might well ask why I consider these topics worth discussing. Let me review them in the order in which they were presented above.

The complex semantic networks I mentioned are probably a common aspect of semantic change. Methodologically, they rely on the basic assumption of the arbitrariness of the linguistic sign, as they exclude from consideration forms whose semantic content is compatible with the set but whose phonological shape is not. Thus, the root complex reconstructed as *ča(:)(-m) does not include other reconstructions with compatible meanings of, e.g. 'put down, set aside, separate' but with other phonological shapes. Such a root is also discussed in Langdon and Hinton (1989:132) where a reconstruction *č-kʷa has meanings such as 'put down things, put away, etc.' In this set, the prefix *č- denotes that a number of distinct objects are involved and the whole form focuses more on the result of the action than on the action itself. Similarly, the root *ta- plus various suffixes exhibited in Table 3 has a meaning 'throw' which is also one of the the meanings of *ča(:)(-m), but the focus here is more on the action and its force. I believe that when the whole of the reconstructed lexicon of Proto-Yuman is analyzed in this way, a clearer picture will emerge of the unique semantic organization of concepts which characterize the system as a whole. Even the small sample discussed here should indicate that this organizing principle will turn out to be considerably different from that of languages like English.

Contrasting with the above, the sound-symbolic networks illustrated for Yuman in Table 2, and of which there are quite a few, must of necessity violate the absolute arbitrariness of the linguistic sign, since specific segments tend to become associated with contrastive meanings within the sets and thus acquire iconic properties of their own. A lot more work is of course needed to fully demonstrate this.

As to the distributional imbalances, whatever their exact import may be, I believe they occur to a certain degree in all systems. They are a consequence of the tensions between symmetry and its disruption which are constantly at work in

language change, and provide one of the many mechanisms which allow changes to take place.

Let me reiterate that these are totally preliminary observations which if anything, reflect only our very sketchy control of Hokan historical reconstructions. They are presented at this special session on Historical Issues in Native American Linguistics in the hope that the topic will generate further discussion. They also suggest that any sweeping generalizations about proposed deep genetic relationships must be considered with a good deal of caution. There is much work to be done and Hokanists need all the help they can get.

Endnotes

* I particularly wish to thank Joshua Katz, Amy Miller, and Pamela Munro for discussions of some of the issues raised in this paper.

1. The data in this paper come mostly from the computerized database developed in the preparation of the Comparative Dictionary of the Yuman Languages (supported by NSF Grant BNS 8317837), using material collected by all Yumanists without whose efforts the project could not have been undertaken, working in collaboration with the members of the Editorial Board of the project (James Crawford†, Leanne Hinton, Mauricio Mixco, Pamela Munro and myself).

2. Subgroupings within the Yuman family are as follows:
Pai group:
 i. Upland: Havasupai, Hualapai, Yavapai (Western Arizona)
 ii. Paipai (Northern Baja California south of Tiipay)
River group: Maricopa (central Arizona), Yuma (Quechan), Mojave (along the Colorado River north of Cocopa)
California-Delta group:
 i. Cocopa (in the area of Somerton, Arizona and around San Luis, Sonora, Mexico)
 ii. Diegueño: Iipay, Kumeyaay, Tiipay (San Diego County and northern Baja California, Mexico)
Kiliwa (Northern Baja California south of Paipai)

3. Reconstructed *qʷ was inadvertently omitted from that chart, possibly because it is not very common. Its reflexes are /qʷ/ in all Yuman languages except the Diegueño languages, where its reflex is /kʷ/.

4. Language name abbreviations used in this paper are: IM Mesa Grande Iipay, IB Barona Iipay, TJ Jamul Tiipay, CO Cocopa, YU Yuma, MA Maricopa, MO Mojave, HA Havasupai, HU Hualapai data from the tribal dictionary, WA Walapai data from Werner Winter (note that Hualapai and Walapai are variant spellings of the name of a single language), YA Yavapai (Shaterian data), YM Tolkapaya Yavapai (Munro data), YS Tolkapaya Yavapai (Shaterian data), PJ Paipai (Joël data), PM Paipai (Mixco data), PS Paipai (Kaufman and Shaterian data), KI Kiliwa.

5. Also discounted are sets where Mojave alone among River languages has cognate forms with Upland Pai. These are due to recent contact among these languages as demonstrated by Hinton (1979).

6. The most likely Hokan branches are: Karuk, Chimariko, Shasta, Achomawi-Atsuguewi, Yana, Washo, Pomoan, Esselen, Salinan, Yuman-Cochimí, Seri, Oaxaca Chontal (Tequistlatecan).

7. Although Yuman-Cochimí has been demonstrated to be a language family (Mixco 1978), the data considered in this paper are limited to Yuman because the data on Cochimí (which is exinct) do not provide enough detail to support any part of the discussion, and because Proto-Yuman-Cochimí reconstructions have not been worked out.

8. It should be kept in mind that Kaufman's reconstructions are (by his own admission) still very tentative and may of necessity rely more on some branches than on others. Nevertheless the large number of proposed reconstructions is impressive and allows some preliminary observations. Mid vowels are much rarer than others and almost non-existent in reconstructed grammatical morphemes; they often occur in environments conducive to raising and lowering, confirming the impression that fewer vowels may be needed. *a is probably more common than *i and *u, but not excessively so.

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A NEW RECONSTRUCTION OF KIOWA-TANOAN ABLAUT

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1. INTRODUCTION.* Throughout the Kiowa-Tanoan language family, under certain morphosyntactic conditions the initial consonants of some verbs alternate. For example, in (1a) are listed the ablauting consonants in the Northern Tiwa language Picurís. There are three types: roughly, voiced (>nasalized) alternating with voiceless, glottalized alternating with non-glottalized, and a third somewhat heterogeneous group. Some examples of ablauting verbs from Picurís are given in (1b).

(1)a.   m ~ p   p$^{\text{ʔ}}$ ~ p   ʔ ~ k

                         t$^{\text{ʔ}}$ ~ t   w ~ k$^{\text{w}}$

                         c$^{\text{ʔ}}$ ~ č   w ~ x$^{\text{w}}$

                         k$^{\text{ʔ}}$ ~ k   h ~ x

(1)b.   mạ   ~ pạ   'bring'

          t$^{\text{ʔ}}$el   ~ tel   'grind'

          c$^{\text{ʔ}}$ɔn   ~ čɔn   'enter'

          ʔa   ~ ka   'plant'

          wịn   ~ k$^{\text{w}}$ịn   'stand'

          howe   ~ xowe   'believe'

Example (2) from the same language illustrates one of the synchronic morphosyntactic contexts of this ablaut. The subordinate verb *x$^{\text{w}}$ęl* 'dig' in (2a) is ablauted, while main verb *węl* 'dig' in (2b) is not.

(2)a.   tox$^{\text{w}}$iałołe   phal-ma   ma-x$^{\text{w}}$ęl-sai

       coyote.old.man   hole-into   3sg.reflx.-dig-begin

       'The old coyote began to dig into the hole.'

b.   Ø-na-węl-men

       3sg.abs.-agr.-dig-subord.

       'As he dug'

From the earliest work on Kiowa by Harrington (1928), and continued in the work of subsequent scholars, for example Trager (1946), Hale (1962; 1967), Speirs (1966), F. Trager (1968), Zaharlick (1977), Watkins (1977; 1984), Sprott (1992), this ablaut was described for Proto-Kiowa-Tanoan and synchronically as the replacement of a voiced or glottalized initial consonant of a verb by a voiceless or unglottalized consonant in the corresponding secondary form of the verb. In other words the voiced/glottalized form was considered to be the basic form of the root, and the voiceless/unglottalized to be the secondary form of the verb. Hale (1967), for instance, reconstructs the ablaut alternations in (3) for Kiowa-Tanoan. The consonant on the left is established as the basic form and the

consonant on the right its ablauted form. This conception of ablaut assumes that a process of devoicing or deglottalization applied to the initial consonant of the root.[1] For now I leave aside the third group of ablauting forms but will return to them later.

(3)   Basic   ~   Ablauted

$$*b ~ *p$$
$$*d ~ *t$$
$$*z ~ *c$$

         *glottalized ~ *plain
              stop   stop

$$*? ~ *k$$
$$*g^w ~ *k^w$$
$$*h ~ *kh$$

(Tanoan?) $*g^w$ ~ $*kh^w$)

    The primary aim of the present study is to suggest that the ablaut alternations as reconstructed in (3) do not correctly identify which is the basic form of the consonant and which is its secondary ablauted form. I will argue that the original KT ablaut alternations were in fact the opposite of those given above. Specifically, I suggest reconstructing KT ablaut in the proto-language as having consisted of (1) a process of voicing, and (2) a process of glottalization. The reconstruction of the two classes of ablaut alternations I propose is shown in (4).[2]

(4)   Basic $\rightarrow$ Ablauted
                        *voiceless $\rightarrow$ *voiced
                        *plain $\rightarrow$ *glottalized

    This proposal for the analysis of ablaut in Kiowa-Tanoan will have several consequences.   I will eventually argue for the relevance of the directionality of KT ablaut to morphosyntactic reconstruction, including a relocation of the reconstructed site of ablaut, as well as point out implications for comparison with Uto-Aztecan.

    In (5) I give a sketch of KT verbal morphology, based loosely on Picurís (Northern Tiwa), which with some minor differences is representative of the family in general.

(5)   pronom.-special-neg.-narr.-fut.-quantifier-N-V_2-V_1-deriv.-infl.
        clitic   agr.

    I wish to draw attention in particular to the structure of verb complementation.   There are basically two types.   In one type of complementation, the subject of the subordinate clause has no role in the argument structure of the main clause. Here the subordinate verb is marked by a complementizer suffix -$?e$, for example as in (6). "She wanted the men to work".

(6)   sɔnenę   ʔa̧-tʼala-tʼa-či-ʔe   Ø-miau-mę̧n

        men   3pl.abs./3sg.dat.-work-do-modal-<u>comp.</u>   3sg.abs.-want-sub.

        'She wanted the men to work for her'

In the second type of complementation, that which will be relevant to the discussion of consonantal ablaut, the subject of the lower clause has some role in the argument structure of the main clause and is co-referent with either the main clause subject or object. The subordinate verb in this case will be incorporated into the main verb complex. Examples are *xai-ɫeu* 'get-send' as in 'he sent them to get it' and *pę-miau* 'go-want' as in 'he wanted to go'. There is no overt complementizer in such cases, and the subordinate and main verb are part of the same morphological word. The history of ablaut in KT will have something to say about this type of complementation structure historically, as well as synchronically. I will touch on these points in the course of the paper.

2. REVISING THE DESCRIPTION OF KIOWA-TANOAN ABLAUT. In traditional accounts of ablaut in Kiowa-Tanoan (e.g. Hale 1967), the description of the synchronic distribution of ablaut consists of a three-part statement. When 'ablauted' is understood as 'voiceless' or 'unglottalized', ablauted forms appear to occur (i) in nominalizations, (ii) as the first member of a verb compound (i.e. where a subordinate verb has been incorporated into a higher verb), (iii) in the stative members of related stative/active pairs. Examples below come from Picurís (Northern Tiwa). (Data are from Harrington and Roberts (1928).) All three types of ablaut are unproductive.

(7)a.   cʼi   'tie'

        ci   'be tied'

b.   mo   'see'   (m < *b)

        tɔ-po-ne   'student'   [writing-see-nom.]

c.   tʼel   'grind'

        tel-sai   'start to grind'

I will eventually suggest that historically there were not three different types of ablaut as reflected in these three different morphosyntactic contexts, but rather only a single type of ablaut. For now, I leave statement (iii) aside and consider (i) and (ii) concerning the distribution of KT ablaut. Assuming that ablaut was originally conditioned phonologically by material to the left of the consonant undergoing ablaut[1], if we compare the morphosyntactic environment to the left of deverbal nouns and verb compounds, we find that the two have little in common. A nominalized verb may be preceded by Ø, possessor agreement, or an incorporated noun. The first verb of a verb compound may be preceded in its phonological word by a number of elements (depending on the language), for example: Ø, pronominal clitic, narrative particle, modal particles, negative, future, certain quantifiers and adverbials, or an incorporated noun.[2]

The lack of a shared morphosyntactic context for these categories suggests that we should not be looking here for the original phonological trigger of the ablaut. In other words, instead of assuming that the underlined forms in (8) are ablauted forms of the verbs, I propose that we assume these forms are not ablauted and that the ablauted form of the verb is to be found elsewhere. If it indeed is the case that the *p* of *pǫ* in (8a) is untouched by ablaut, we must go back to the reconstructed ablaut pairs given in (3) and switch the left and right columns as I have suggested in (4). Now we identify *p* as the consonant in the unablauted or basic form of the verb and *b* as its ablauted counterpart. The two phonological processes responsible for ablaut should now be described as voicing and glottalization.

(8)a. tə-**pǫ**-ne 'student' [writing-see-nom.]
b. **pǫ**-wɔle 'go out to see' [see-go.out]

cf. mǫ 'see' (m < *b)

The reconstruction I propose gives us a new notion of what we should identify as ablaut and consequently a new notion of the contexts in which ablaut occurred historically. I have suggested that ablauted consonants have been voiced or glottalized, not **devoiced or **deglottalized as under the traditional hypothesis. The question is, where do these ablauted consonants occur? I suggest that the ablauted form of the verb is still found in the verb compound, though its locus is not the one pointed out by the traditional description.

For a verb that undergoes ablaut, the initial consonant of the stem will differ depending on whether it is the first or second verb of a verb compound. For example, as (9) shows, Picurís 'go' shows initial consonant *p when occurring as the first member of such a compound but reflects an earlier *b when it is the second member of the compound. 'go' will also show this reconstructable *b in its use as a simple verb.

(9)a. **pe**-sai
       go-start
b. **pǫ**-**me** (m < *b)
       see-go
c. **me** (m < *b)
       go

Having determined that the form with *p represents the unablauted form, *b must represent the ablauted form of the verb's initial consonant. Therefore it is the *second* verb of a verb compound that underwent ablaut in Proto-Kiowa-Tanoan.

2.1. RECONSTRUCTION OF THE ORIGINAL SITE OF ABLAUT. As I have said, a result of the new reconstruction of the basic and ablauted forms is the discovery that the original KT ablaut was conditioned in verb compounds in a location different from that assumed previously.

Under the traditional hypothesis, so-called ablaut (that is, devoicing or deglottalization) affected the first verb and so was located at the left edge of a verb compound. As verb compounds are right-headed, it was therefore the subordinate verb that was presumed to show ablaut (marked in (10) with an underscore).

(10) Traditional analysis   * * [C̲- ...]$_{SUB}$ - [C- ...]$_{MAIN}$

For example, in the Picurís examples below, *pę* and *čən* in (11a) would have been identified as ablauted forms and *mę* and *c'ən* in (11b) as the basic forms of these stems.

(11)a. pę-sai   č̲ən-sai   (č < *c)
        go-start   enter-start   (m < *b)

   b.   kal-mę   kal-c'ən
        eat-go   eat-enter

Under the proposal I have made concerning the identification of ablaut, however, it is the second verb of the compound that reflects the historically ablauted form of the verb root. Ablaut is therefore reconstructable as having originally been conditioned by an element or elements located *between* the verbs of the compound, as shown in (12). And it is *mę* and *c'ən* in (11b) that are the Picurís reflexes of the ablauted forms of these verbs. One can speculate as to whether the source of ablaut might have been a suffix to the subordinate verb or a prefix to the main verb. There is some evidence at this point to consider one over the other, and I will make a suggestion concerning this later on.

                    Ablaut Trigger
(12)   * [C- ...]$_{SUB}$ - ↓ - [C̲- ...]$_{MAIN}$

2.2. THE SOURCE OF CONFUSION: LANGUAGE INTERNAL REINTERPRETATION OF THE SITE OF ABLAUT. Two types of regular alternations of verb stem consonants are now reconstructed for KT, voicing and glottalization. Through some change, perhaps in the conditioning element itself , the phonological bases of these alternations probably became obscure. Since the consonant alternations were no longer phonologically conditioned, at this point ablaut was grammaticalized as morphosyntactically conditioned. Specifically, ablaut was attributed to the subordinate syntactic configuration.

It seems that upon this grammaticalization, ablaut in these verb compounds underwent profound reanalysis: when subordination became the trigger of ablaut, ablaut was reanalyzed as affecting the subordinate verb instead of the main verb. I illustrate this in (13). V$_{SUB}$ and V$_{MAIN}$ here represent different lexical items; I have represented them both with initial bilabials so that the proposed changes can be more easily understood.

Originally, of two verbs in the relevant configuration, the first appeared in its basic form and the second was ablauted.[4]

(13)a.

$$*p\text{-} ...V_{SUB} \text{ -- } *b\text{-} ... V_{MAIN}$$
$$\uparrow \qquad\qquad \uparrow$$
Basic   Ablauted

When the trigger of ablaut was reanalyzed as being the subordinative configuration, the form of the subordinate verb was reanalyzed as an ablauted form.

(13)b.

$$*p\text{-} ...V_{SUB} \text{ - } *b\text{-} ... V_{MAIN}$$
$$\uparrow \qquad\qquad \uparrow$$
"Ablauted"   "Basic"

This reanalysis changed the synchronic locus of ablaut. In (13a), the main verb bears real phonological ablaut. In (13b) the subordinate verb bears what one might call secondary morphosyntactic ablaut.

Example (14) shows the nature of this grammaticalization of ablaut in Picurís. Here two subordinate verbs, both complements of the verb 'know how to' with identical subjects, are conjoined so that neither can be incorporated morphologically into the higher predicate (as the verb in the second type of complementation structure described earlier usually does). Note however that the ablauting verb 'see' does show ablaut in this syntactic context. This indicates that the original description of ablaut as occurring in the first member of a verb compound is not quite right, at least for Picurís (and also Jemez for which I have a similar example later on). Rather it is the subordinate syntactic role of that first verb in such a compound that triggers ablaut.

(14)   Ɂo-wa-tə-p̱o   wi   Ɂo-wa-tə-pia
      3sg.erg./pl.abs.-neg.-writing-s̲e̲e̲ nor 3sg.erg./pl.abs.-neg.-writing-make

Ø-nipẹ
3sg.abs.- know.how

'He could neither read nor write.'

The grammaticalization of ablaut resulting from the loss of synchronic rules of voicing and glottalization, appeared to create new processes of devoicing and deglottalization of the subordinate verb. Both types of ablaut continue to function in this direction, opposite to that of original ablaut, in the synchronic grammars of the daughter languages. The traditional understanding of KT ablaut as illustrated in (3) reconstructs KT ablaut directly based on the synchronic pattern in the daughter languages But due to the reanalysis described in (13), this pattern should be reversed in order to reconstruct the original locus of ablaut in Proto-Kiowa-Tanoan.

One consequence of the change resulting in the identification the subordinate verb as ablauted was the generalization of the original ablauted form as the basic form of the verb root.[3] Therefore we must be careful to reconstruct for the daughter languages the form of such alternating verbs found in simple clauses as the ablauted form.

Since all branches of the Kiowa-Tanoan family attest what I reconstruct as the ablauted forms of alternating verbs as the basic form synchronically, for example 'look for' shown in (15), (also see data in Hale (1967), Speirs (1966), Sprott (1992), Watkins (1984)), it can be concluded that the reanalysis of KT ablaut, and the replacement of the unablauted form by the ablauted form in the lexical entry of the verb, took place already in Proto-Kiowa-Tanoan.

(15)

	Picurís	Tewa	Jemez	Kiowa	
* t ~ d	nǫ	nų.	nį́	don	'look for'

(*d>n in some cases)

2.3. FURTHER UNIFYING THE MORPHOSYNTACTIC DISTRIBUTION OF ABLAUT. I now turn to the third context in which ablaut is found, the stative/active stems related by an ablauting initial consonant. Though this type of ablaut is generally limited in most of the branches of Kiowa-Tanoan, Tewa shows a relatively greater number of such stems, with all the phonological types of ablaut represented (perhaps a clue that this ablaut is related to the ablaut in subordinate verbs already discussed). Examples are given in (16).

(16) Rio Grande Tewa (Speirs 1966)

		Completive	Stative
	'bring'	ma:	pą?an
	'fill'	p'íre	pi?ren
	'paint'	?aeñu	kae?ñun
	'break'	háve	xa?ven
	'stand up'	wínú	kʷí?nun

In all the branches of KT these stative verbs are main verbs with lexical stative meaning and take inflectional suffixes. The inflectional suffixes themselves require a closer look. In Southern Tiwa the stative present inflectional suffix is -m . The stative suffix is -mo in Taos (Northern Tiwa) and *triggers ablaut* on the verb it accompanies, shown in (17). Compare these to Picurís (Northern Tiwa), -mo , which forms a stative predicate, as in Pic. *xai-mo* 'be ready'. (cf. *xai-?ạn* 'get ready'). Pic. -mo can carry inflection on its own, however, as shown in (18), indicating that -mo is lexically a verb.

(17) S. Tiwa   -m   stative present
      Taos (N.Tiwa)   -mo stative

          Ta.   hoy   'take'
                xoy-mo   'be taken'

      Picurís (N. Tiwa)   -mo   stative

cf.   Tewa   -mù: be, exist
      Towa   -mị̀:   be
      Kiowa   -bé (~ -mé ~ -dé)   stative

(18) ʔa̧-xia-mo   ....   ta-mo   (cf. xai-ʔa̧n 'get ready')
      2sg.abs.-ready-stative 1sg.abs.-stative
      'Are you ready? ...   Yes I am (ready).'

These facts suggest the following model for the development of ablaut in stative verbs. (i) Stative constructions probably can be reconstructed as a lexical verb + a stative verb (though not necessarily the one illustrated in (17)). As discussed above, it is the second verb, not the first, in such a sequence that was historically ablauted.[4] (ii) The verb used to form stative predicates underwent grammaticalization as an inflectional suffix, creating in these environments a new stative root with an initial consonant morphophonemically related to the active root. Finally, (iii) as proposed earlier, the ablauted form of a verb was reanalyzed as unablauted and generalized as the basic, active, form of the verb. The result of (iii) is that the active form of the verb, like other syntactically main clause verbs, is historically ablauted, while by (i) and (ii) the stative form of the verb is historically unablauted. In this way a semantic contrast, formally reflected in the presence vs. absence of the stative verb, has been grammaticalized in the ablaut of the initial consonant of the verb. Synchronically, according to the reanalysis proposed in (13b), this means the stative stem appears to be ablauted and the active stem unablauted.

2.3.1. INTERACTION OF ABLAUT WITH INFLECTION. That stative/active ablaut may be due to the grammaticalization process I have outlined is supported by other evidence of inflectional suffixes interacting with ablaut. This evidence is somewhat sketchy, and I will only mention one other of these here, yet I think as a whole they may form a plausible model of the morphosyntactic origins of ablaut in the proto-language.

This example comes from Jemez (Towa)[5]. The verb ky'á 'lie, be lying down, be in position' has an ablauted form ká: minus the glottalization and palatalization. This alternation apparently does not correspond to a stative/active alternation, however, as is found with cognates of this verb elsewhere in the family. The Jemez ablauted form ká: is found in subordinate constructions, where ablaut is expected synchronically, shown in (19a). Note that this example is somewhat different in that ablaut shows up in the first type of complementation, where the subordinate verb is contained in a separate clause marked by a complementizer -ʔe.[6] More to the point, this synchronically ablauted form of the stem ká: also occurs when the verb is not syntactically subordinate and is inflected with the future suffix -hi̧ʔ, shown in (19b). Based on this we may suspect that this future inflectional suffix -hi̧ʔ derives historically from a verb.[7] In this case the form ká: in this example would reflect the historically unablauted form of the subordinate verb of a verb compound.

(19) ky'á   'lie, be lying down, be in position; 'have' + dative'
      ká: (ablauted form)

a.   ti̧mi̧ví   i̧-ká:-dae-ʔe   i̧-wa:mi̧
      car   1sg.dat.-'have'-irreal.-subord.   1sg.abs.-want
      'I want to own a car'

b.   nį́:   tɨmɨví   ɨ-ká:-hɨ̨?
       1st   car   1sg.dat.-'have'-future
       'I will own a car'

Thus there appears to be some evidence to support the idea that stative/active ablaut originated for the same structural reason as ablaut in other types of subordinate constructions. As a result, we can condense the description of the historical distribution of ablaut to a single morphosyntactic context.

3. 'ABERRANT' ABLAUT. Another result of the reanalysis of Kiowa-Tanoan ablaut proposed here is the opportunity to provide a phonological account for some of the ablaut alternations that do not appear to fit the traditional characterization of ablaut as **voiced --> devoiced. (20) states two of these alternations vis-à-vis the assumptions of the present study. Reflexes of the consonants on the left occur in the subordinate verb of a verb compound, and reflexes of the consonants on the right occur in the main verb of such a compound.

(20)   <u>Basic</u>   ~   <u>Ablauted</u>

        *kh   ~   *h
        *k   ~   *?

3.1. *kh ~ *h. This alternation is interesting in that it may provide a clue as to how to reconstruct the trigger of voiced ablaut (though I admit the conclusions drawn here are somewhat speculative and represent only a first attempt).

The existence of the ablaut alternations *kh ~ *h and *khʷ ~ *gʷ may indicate that the original trigger of ablaut should be reconstructed as a velar consonant. Note, first of all, that although there are five aspirated stops reconstructed {*ph, *th, *ch, *kh, *khʷ}, only *kh and *khʷ have ablauted forms. {*ph *th *ch} remained unaffected by ablaut. This situation contrasts with the unaspirated voiceless stops, where the stop at each point of articulation has an ablauted form: *p ~ *b, *t ~ *d, *c ~ *z, *k ~ *g (>?). This possibly suggests some connection with velar point of articulation.

The lack of ablauted forms for most of the voiceless aspirates may follow from the aspiration, which may have blocked the spread of voicing. Now take *kh, a voiceless aspirate that does have an ablauted form. The ablaut alternation *kh ~ *h does not correspond to the phonological pattern *voiceless ~ *voiced that relates the rest of the ablaut pairs. If the trigger of ablaut was a voiced velar *g however, the velar point of articulation of *kh together with the velar point of articulation of the ablaut trigger may account both for the existence of an ablauted form of *kh as well as for the phonological shape of that ablauted form as *h.

The phonetic sequence [gkʰ] resulting from the juxtaposition of the ablaut trigger *g and initial consonant kh is ambiguous. The sequence [gkʰ] can be analyzed either (i) as a sequence of two segments /g/ and /kʰ/, or (ii) as two segments /g/ /h/ where the voiceless velar [k] portion of phonetic [gkʰ] is

interpreted as the right edge of g devoiced by following h. The possibility of such a phonetic ambiguity would suggest that ablaut trigger *g and the following verb were in close proximity, as one might expect in a context where ablaut develops.

Such an ambiguity, if present, could have led to the reinterpretation of [gkʰ] as the sequence /g/ + /h/. Consequently */h/ was set up as the ablauted form of *kh, analogous to the alternations of other verb initial consonants under similar conditions. Where point of articulation of the hypothetical trigger *g and target do not match, as in the case of *g and {*ph, *th, *ch}, no such phonetic ambiguity is possible

In summary, the fact that among voiceless aspirates it is the velar consonants which have ablauted forms suggests the reconstruction of a velar consonant as ablaut trigger.

3.2. The Alternation *k ~ *?. As for alternation B, I used to think (Nichols (1994) that this type of ablaut could be assimilated to the regular voicing type of ablaut, in the following way.

According to Hale (1967) 'the ablaut of /g/ to /k/ is not attested for Tanoan'. This he says is probably due to 'the extreme rarity of Tanoan stems beginning in /g/'. First of all based on the reconstruction in the present study, the alternation in question should be revised from *g ~ *k to *k ~ *g. Although there are no attestations of *k ~ *g ablaut in Tanoan, the alternation *k ~ *? is attested. I suggested reconstructing *k ~ * ? as the alternation *k ~ *g and posited the change *g > *?. All branches of the family attest this alternation, including Kiowa, indicating the change *g > *? would have occurred before the breakup of the Proto-language.

But the possibilities concerning the *kh ~ h alternation suggest an alternative hypothesis. If voiceless velar k is the initial consonant of the verb, an ablaut trigger *g would, according to the observed pattern, voice this to g. Here again, phonological ambiguity may have played a role. The sequence [g g] is ambiguous between /g/ and /g/, or /g/ + Ø. In other words, I suggest the ablauted form of a verb beginning with k may have been reanalyzed as formed by consonant deletion, with glottal stop inserted by phonetic rule.

This second hypothesis adds weight to the speculation that the trigger of ablaut may have been the voiced velar stop *g. Although I realize this reconstruction is indeed speculative, it at least gives us a clue as to the kinds of morphemes it might be fruitful to consider when looking for the trigger of KT ablaut.

In particular, the location of this ablaut trigger historically between the two verbs suggests a couple of possible morphosyntactic identities of the ablaut trigger, either (a) some type of prefix, perhaps pronominal inflection, to the main verb, or (b) a suffix to the subordinate verb. The most likely candidate however, would seem to be (c) a complementizer. The grammaticalization of ablaut as triggered by subordination, as I described earlier, where the initial consonant of the subordinate verb now reflects ablaut would therefore have merely shifted the overt mark of subordination from a complementizer between the two verbs to ablaut on the subordinate verb, rather than having created a new syntactic construction.[8]

Therefore, although the existence of a complementizer with the form of a voiced velar *g is purely hypothetical at this point, it is interesting to note that

both Kiowa and Taos (Northern Tiwa) have velars in their subordinating clitics and particles, given in (21).[9]

(21)　Taos　　gò̱ / kʼóy
　　　Kiowa　gɔ̀ / kʼɔ̀t

　　　This suggests that the reconstruction proposed in this paper for ablaut may be along the right track, though we are surely only still at the beginning of the story.

　　4. IMPLICATIONS FOR COMPARATIVE STUDIES. In this study I have suggested that a reanalysis of ablaut in the verb compound took place in Proto-Kiowa-Tanoan. As a result, an originally unablauted subordinate verb was reidentified as 'ablauted' and an originally ablauted main verb as 'unablauted'. This new 'unablauted' form, based on the original ablauted root form, was generalized as the basic form of the verb root. For this reason extra care must be taken when doing lexical comparison involving Proto-Kiowa-Tanoan roots. If the 'ablauted' form of the verb root in the descendent languages is indeed the reflex of the originally unablauted root in the proto-language, it is this form of the root that must be considered when undertaking more distant lexical comparison.

　　4.1. THE AZTEC-TANOAN HYPOTHESIS is a case in point. Sapir was the first to propose a Kiowa-Tanoan : Uto-Aztecan linguistic relationship (Sapir 1929). Subsequently, Whorf and Trager (1937) submitted a list of 102 forms reconstructed for Aztec-Tanoan, based on reconstructions for Uto-Aztecan and Tanoan. According to Davis (1979), the Aztec-Tanoan relationship was generally accepted, though Davis cites both Newman (1954) and Miller (1959) as regarding some of the reconstructions as inconclusive or dubious. Davis concludes (p.409):

> "Supporting evidence for the Uto-Aztecan and Proto-Tanoan reconstructions is in many cases quite meager, and few items attest regular correspondences in more than a single consonant and vowel. At the same time, the differences between Uto-Aztecan and Kiowa-Tanoan both in phonology -- the former with a single stop series in contrast to the four way contrast in Kiowa-Tanoan stops -- and grammar are striking. Whatever relationship exists between the two language groups is certainly remote, and the validity of Aztec-Tanoan as discrete entity might be questioned."

　　　The comparisons made by Whorf and Trager (1937) on which the Aztec-Tanoan classification is based must be reviewed in light of the suggestions concerning Kiowa-Tanoan ablaut made in the present study. Reconstructions based on the synchronic 'unablauted' form of the root are now suspect. Whorf and Trager (1937) reconstruct several Aztec-Tanoan forms that rely on a Proto-Tanoan reconstruction based on what are now suspected to be ablauted forms. For example, AT *maw(a) 'see' is reconstructed based on UA *mạwa and PT *mow; AT *yeŋ(a) 'sit' based on UA *yaŋ, PT ẹ; AT *ʔạ 'bathe, wash' based on UA *ʔala, PT *o. The (Kiowa-)Tanoan forms should instead be reconstructed with the initial consonants, *p, *k, *k, respectively.

　　5. FINAL REMARKS. I will admit that one of the drawbacks of the present study is that certain arguments may appear somewhat speculative and partly rely on

phonetic reconstruction. I hope, however, that the study does serve to bring up a few suggestive lines of investigation into the history of Kiowa-Tanoan ablaut, namely what we might look for as the trigger of ablaut and where we might look for it. And I hope to have underscored the the importance of considering the morphosyntactic evidence bearing on ablaut, in addition to the phonological evidence.

* I am grateful Ken Hale, Mark Hale, Calvert Watkins and especially Laurel Watkins for reading earlier versions of this ms. and for extremely helpful discussion of the problem. I would also like to thank Sally Thomason for an opportunity to present the paper at the 6th Workshop on Theory and Method in Linguistic Reconstruction held at the University of Pittsburgh in March 1996, as well as the audiences at both Berkeley and Pittsburgh for their comments. Kiowa-Tanoan consists of Kiowa, Jemez (Towa), Tewa (Rio Grande Tewa and Arizona Tewa), Tiwa (Southern Tiwa: Isleta, Sandia; Northern Tiwa: Picurís, Taos). Internal grouping is still somewhat controversial and is not indicated here.

[1] An assumption that may turn out to be wrong but that for now is a good working hypothesis.

[2] Of course not all categories are found in every branch of the family.

[3] Assuming ablaut was conditioned by some suffixal element of the subordinate verb. If ablaut was conditioned by some prefixal element to the main verb, then ablaut would have affected all main verbs, in simplex as well as in complex clauses, and there would be no need to posit such a generalization.

[4] Note that the stative morpheme in (17), reconstructable with initial consonant *b, may historically have this *b as the result of ablaut.

[5] I am indebted to Ken Hale for pointing out this example to me.

[6] Despite the fact that the subjects of the two clauses are coreferent.

[7] Note incidentally that h is the historically ablauted form of kh, which, although conclusive evidence is still lacking in the present case, is suggestive that this h may be the result of ablaut of a former main verb.

[8] One might argue in support of the analysis of verb incorporation proposed by Baker (1988) that the ablaut on the subordinate verb is a sign that this verb passes through C(omp) on its way to incorporating into V_1.

[9] Thanks to Laurel Watkins for pointing this out to me.

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DEEPER GENETIC RELATIONSHIPS IN NORTH AMERICA: SOME TEMPERED PESSIMISM.

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This paper examines the problem of deeper genetic relationships from the point of view of a particular language family--a kind of microcosmic rather than macrocosmic perspective. The language family is Siouan, or, more inclusively, Siouan and the related Catawban. The author has been engaged in detailed comparison of the fifteen or so Siouan languages since the mid 1970's, and is a member of a team of linguists that is currently completing work on a comparative Siouan phonology, grammatical sketch and dictionary (Carter *et al.* to appear). It is this comparative project that has provided much of the data that are interpreted in what follows.

Catawban included *Catawba, Woccon* and probably numerous other, unattested languages of the protohistoric Carolinas. The Siouan language family comprises four major subgroups and a total of about eighteen languages:

Missouri River Siouan
    Crow
    Hidatsa
Mandan
Mississippi Valley Siouan
    Dakotan: *Teton, Santee, Assiniboine, Stoney*, etc.
    Chiwere/Winnebago: *Ioway, Otoe, Missouria; Winnebago*
    Dhegiha: *Omaha, Ponca, Kansa, Osage, Quapaw*
Ohio Valley Siouan
    Biloxi
    Ofo
    Tutelo, Saponi, Moniton.

Mary Haas (1969) outlined a method for undertaking future reconstruction and distant comparison. "The most challenging way in which new insight into reconstruction can be achieved comes about when one protolanguage is compared with another protolanguage,... This type of comparison can truly be said to be one of the most important new frontiers of historical and comparative linguistics." Her optimism presumably stemmed from the fact that it is easier to discern relationships within Indo-European working from Latin, Sanskrit and Church Slavic than from modern French, Marathi, and Bulgarian.

Haas felt that the same should be true in the Americas, and her proposal was cited in my review of *Language in the Americas* (Rankin 1992) as an ideal way to discover additional genetic ties among the languages of North America. Since that time our team of linguists has completed most of the substantive work on the *Comparative Siouan Dictionary*, and it is now my feeling that, at least in the case of Siouan, Haas's proposal may have been a little optimistic--or perhaps, better stated, that it originally left the author feeling more optimistic than he had a right to be.

Reconstruction of Proto-Siouan has clarified subgrouping and internal developments within that family considerably, but it may not elucidate deeper relationships significantly. A survey of some of the reasons for this, based on details of Proto-Siouan phonology, morphology and lexicon follows.

Reconstructed Siouan vocabulary unfortunately does not provide significantly expanded phonological sequences that can be compared with putative proto-sister languages such as Yuchi, Iroquoian and Caddoan. Perhaps it was naive to think that it would, but linguists' experience with Indo-European certainly suggested this outcome: obviously Latin had a good deal more phonological substance, with its now-lost medial vowels, consonant clusters and (especially) endings, than does modern Spanish, not to mention much more innovative languages such as French.

Most of the comparisons between Siouan and other families up to the present have compared modern Dakota with another language or languages. Chafe (1976), for example, compares Dakota and the phonologically less conservative Winnebago, which are Siouan languages, with Seneca, which is Iroquoian. This has seemed to all of us a perfectly legitimate way to proceed: Dakota, especially, is phonologically conservative in many respects, possessing many consonant clusters, most of them apparently found even root-initially, such as *pt-, ps- pš-; bl-; mn-; kt-, ks-, kš-; gl-, gm-, gn-; tp-, tk-*. The following Dakota examples are fairly typical: *ptá* 'autumn', *psį* 'wild rice', *psį* 'onion', *kpáza* 'evening', *blé* 'lake', *mní* 'water', *kté* 'kill', *kšá* 'bend', *ksá* 'break off', *glí* 'arrive back', *gná* 'set something down'.

Tutelo, Biloxi, Ofo, Crow, and Hidatsa cognates, which we have taken great pains to consider in our reconstructions, often for the first time, show that these interesting Dakotan clusters are usually (perhaps always) bimorphemic and that vowels at one time intervened, breaking up the cluster.

Thus many formerly lost stem-initial syllables have been recovered that in principle at least might be expected to increase the phonological substance of their respective lexemes and thus to provide increased substance for external comparison. The additional syllables that have been recovered, however, have turned out in retrospect almost invariably to be reflexes of a small number of common derivational prefixes, most of which were already established synchronically. Additionally, these derivations turn out mostly to be restricted to Siouan and generally do not appear even in the distantly but demonstrably related Catawba. Siouan cognate sets with Dakotan labial-initial clusters follow:

	AUTUMN	BISON	WATER	MALE
Proto-Si:	*wahtą·	*wihté·	*warį́	*wi ró·ka[1]
Crow:	ba sá·	bi šé·	bilí	bu lá (?)
Hidatsa:	wa tá·	wi té·	wirí	wa·ró·ka
Mandan:	p tą́·-	p tį́·-	w rį́ʔ	w ró k
Lakota:	p tą́-	p té	m ní	b lo ká
Chiwere:	thą́-	čhé·	nį́	dó·ge

	AUTUMN	BISON	WATER	MALE
Winneb:	č ą·-	č é·	nį·	-to k
Dhegiha:	htą·	hté·	nį	Ró·ka
Tutelo:	tą-		manį·	nó·-
Biloxi:			anį	dó ki
Ofo:			anį	i tó·ki
Catawba:		wi dé·		

	FLYING SQUIRREL	PUSH, JUMP	SMELL
Proto-Si:	*wišį·ka	*wasíke	*warą́
Crow:			
Hidatsa:			
Mandan:		p šík	
Lakota:	p šį čá	p síča	
Chiwere:	sį́ ge		-m ną́
Winneb:	-šį·k	wasisík[2]	-b rą́
Dhegiha:		wasísike	-pąną
Tutelo:			b rą́
Biloxi:	či ká		
Ofo:		p če-(di)	
			nə

The above data are representative, and there are many other parallel cases. In nouns PSI *wa- marks inanimate absolutives, while *wi- marks animal terms. In verbs the prefix *wa- provides an indefinite 3rd person object. These three prefixes alone account for the vast majority of labial-initial clusters pC-, bC-, mC-).[3] Siouan languages historically (and in most cases, synchronically) accented the second vowel of the word. This iambic pattern left initial syllable vowels in a weak position. What has happened in all of the central Siouan languages (areally, Mandan and the Mississippi Valley Siouan subgroups) is that initial syllable vowels were consistently lost leaving the often partially assimilated consonant clusters we see in the Dakota language today.

The velar-initial clusters, kC- and gC-, are equally restrictive in their sources. Nearly all can be traced to one of about three earlier prefixes, but in the case of the velar prefixes reconstruction is usually only possible to a node below that of Proto-Siouan in a Siouan *Stammbaum* because the pertinent prefixes are not found in Crow or Hidatsa, the temporally most distant subgroup within Siouan.

The prefix *ki-*, often labeled 'vertitive' by Siouanists, and meaning *back* in the sense of returning, fuses to different degrees with different verbs of motion. It is illustrated here with *ré(-he)* 'go', where its analysis is transparent. *Vertitive* is not found throughout Siouan however, nor is it found in the more distant Catawba. This suggests that it is probably best considered an innovation. *Vertitive* is illustrated here with Proto-Siouan *ré(-he)* 'to go':

	GO BACK
Proto-Si:	*kiré
Crow:	
Hidatsa:	
Mandan:	k ré-
Lakota:	g lá
Chiwere:	g ré
Winneb:	keré
Dhegiha:	k ré
Tutelo:	kilé
Biloxi:	kidé

A second very productive prefix that has fused partially with following verbs is *dative/possessive ki-* and the closely related (probably reduplicated) *kik- reflexive possessive* (or '*suus*'). Compare Lakota *yužá* 'to wash' with *g-lužá* 'to wash one's own'. Proto-Siouan *ki(k)-* is reduced to *g-* preceding *r* (Lakota *y* alternating with *l*) throughout Mississippi Valley Siouan.

So many Proto-Siouan roots are actually shorter than data (especially those initial consonant clusters) from individual daughter languages implied.[4] Most roots are not longer than *CV (CCV roots turn out to be bimorphemic as described in (1), above and *CVC is unexpectedly rare).[5] This drastically cuts the substance of potential comparanda.

A disturbingly large number of the remaining few Proto-Siouan roots with apparent initial consonant clusters turn out to be phonesthemic or otherwise sound symbolic. Most of these are also wanting in Catawba, but even if we were to find similar forms in other languages, it would prove nothing, since sound symbolism of all sorts is ruled out in the establishment of genetic relationships.

In Siouan languages the root-initial clusters consisting of a fricative and *r (sometimes reconstructed as *l) tend to convey an affective, sound symbolic meaning not unlike that of the closely analogous English phonesthemic words in *sl-* (rarely *šl-*) of *slime, sludge, slurp, slip, sleaze, slick, slim, slop, slug, slobber; schlemiel, schlep, schlock, schlump,* etc.

(a)   "slippery" symbolism:

*sra	smooth, bald
*sra·	grease
*kisra	leech, snail
*srá-	stick in
*srą́-	dribble
*srí	ooze out
*srí-	slurp, lick
*srú-	slide, masturbate

*šrą   dirty; scar

(b)   noises:

*xrą	growl
*xrɨ	grunt
*xro-	growl
*xro·	hollow

(c) ripping symbolism:

*sré-	split
*šré-	split, shred
*xré-	rip, tear

*šrį̇ glimmer	*xra- scratch
*šró- slip off	
*šrú- slip, masturbate, wet	

*xrá- slim
*xri slimy, pus, mud
*xri- ooze, sticky
*xrį̇ slime, mucus, semen
*xrį̇ glimmer
*xró- slide, slip off ·

So we have seen that, in the phonology of Proto-Siouan roots, what had appeared to be extensive initial consonant clusters turn out to be either the fused reflexes of a very small number of common prefixes or a form of sound symbolism. And in neither case are we provided with roots containing significantly greater phonological substance that we started with in modern Lakota. In fact we often end up with less.

Let us now turn our attention to morphology proper. The existence of a complex morphological template with fixed positions for particular categories and their inflecting affixes is one factor that might help the linguist see distant ties. In Algonquian, for example, such a template in the verb morphology is a defining characteristic of the language family and, importantly, the proto-language. The author's impression is that much of this template has even helped cement the distant relationship with Wiyot and Yurok.[6]

The rather long and involved prefix template that can be constructed synchronically for most Siouan languages disintegrates diachronically, and for the most part is not available for use in distant comparisons.[7] The Dakotan prefix order is rather typical of what is found in the rest of Siouan and is in some respects actually more elaborate than what is found in the other languages. It will be used here for illustrative purposes, and, although there is not space to discuss every aspect of it, it will convey a general understanding of Siouan verb prefix ordering. (See Patterson 1990:8ff.):[8]

ABSO- LUTIVE wa-	3PL PATI- ENT wichá	DUAL INCL ų̃k-	LOCA- TIVES	1ST & 2ND PERSON AGNT & PATIENT PRONOMINALS	DAT VERT REFLX RECIP	INSTRU- MENTALS	**VERB** **ROOT**

Let us examine several of these categories in more detail and from a diachronic perspective. In Siouan, as opposed to, say, Algonquian:

(a) The *third plural animate patient* prefix, *wičhá-*, is innovated in Dakotan alone from *wičhášta* or *wičhášta* 'man' and was not Proto-Siouan (Rankin 1996). This eliminates one prefix position.

(b) The *dual inclusive* agent/patient prefix, *ų̃k-*, (from earlier *wą̃k-*) is a late grammaticalization in two of the four Siouan subgroups of *wą̃ke* the Proto-

Siouan noun meaning 'person' (Rankin 1996). This eliminates a second prefix position.

(c) There is fairly good evidence that the three so-called *locative* prefixes, *a-* 'on, at', *o-* 'in', *i-* 'toward', as well as the prefix of *instrument*, *i-*, were in fact accented long vowels in Proto-Siouan and so probably distinct roots or proclitics, not prefixes, but there is little else that can be said about them at the moment.

(d) The first and second person agent and patient prefixes have their own internal ordering conventions (as is often the case with pronominals), but in the proto-language the 1st and 2nd person patient markers preceded agent marking, were syntactically distinct, and probably proclitics, as they did not participate in contemporary accentual phenomena, including concomitant vowel lengthening (when accented). Nor did these patient markers ever undergo the initial syllable vowel syncope when not accented that, as we saw above, affected real Proto-Siouan prefixes. The agent prefixes did undergo vowel syncope, as we shall see momentarily.[9] This appears to eliminate the patient prefix position in the verb complex.

(e) Also proclitics or, more likely, distinct verbs in Proto-Siouan were the well known instrumental prefixes (by pulling, by pushing, by foot, by striking, etc.), that seem virtually to characterize the Siouan verb.[10]

Like the patient person markers, the instrumentals also fail to undergo the expected phonological processes associated with prefixes (including contextual aspiration, syncope or lengthening, etc.). In fact, the instrumentals behave as if they were distinct verb roots. And this analysis of the instrumental prefixes as verbs in serial construction is historically confirmed in Catawban, where the Siouan instrumental prefixes are found as distinct, conjugated verb roots, only sometimes used instrumentally (Siebert 1945; v. also Shea 1984 and Voorhis 1984, 1992).

Siouan		Catawba	
ru	'by hand'	du	'by hand' and 'to take' (Siebert)
ka	'by striking'	kaʔ	'to strike, hit' (Siebert)
rą	'by foot'	dɑ	'by foot'; also *dɑʔ* 'go' (Siebert)[11]
Wo	'by blowing/shoot'	pʉ	'by blowing' (Siebert)
ra	'by mouth'	ną sg., *wira* pl. 'to eat' (Voorhis)[12]
aRá	'by heat'	wirą́	'to burn' or *de* 'blaze' (Shea)

Even in present-day Siouan these instrumentals, when they are present, remain the conjugated elements: the agent prefixes precede and fuse with the instrumental rather than the verb root in these cases.[13]

Take for instance the Kansa verb *basé* 'to cut by pushing or thrusting'. *Ba-* is the instrumental 'by pushing', and *-se* is the verb root 'cut'. The personal agent prefixes, which are underlying *wa-* '1st person' and *ya-* 'second person', undergo initial syllable syncope and obstruentize, fusing with the in-

strumental prefix:

*wa+ba+se > p-pá-se   I cut (it).
*ya+ba+se > š-pá-se   you cut (it).

So we must eliminate yet another prefix position, that of the instrumentals.

The conjugational details of this small number of Catawba serial verb constructions that have been morphologized as instrumentals in Siouan were perhaps the strongest proof of the Siouan/Catawban relationship adduced by Siebert (1945), but the fact that they were clearly separate roots in serial constructions further decreases the shrinking number of actual verb prefixes that we might compare outside of Siouan/Catawban.

(f) Lastly, Koontz (1996) shows that even the reflexive and reciprocal prefixal morphology of most Siouan languages was apparently deverbal (from a comitative verb 'to be with', found at least in Dakotan and perhaps more generally). And if this is confirmed we must eliminate one last prefix position.

As we see, moving backward in time, the Proto-Siouan verb morphology template has so shrunk that apparently the only set of present day verb prefixes that is reconstructible as such (i.e., as real prefixes) is the pronominal set: first and second person agent and dative-possessive. Compared with language families having analogous time depth such as Algonquian, this prehistoric increase in typological analyticity would appear to be detrimental to more distant comparison. In other words, it would have been nice to have been able to have compared words containing long strings of morphemes in a rigid order with potential cognates outside of Siouan and Catawban. But this is evidently not possible.

Morphological typology in and of itself can play an important role in genetic comparisons. One of the traits that makes Indo-European so cohesive and convincing as a language family is syncretism of categories in what Nichols (1996) has called *multidimensional paradigmaticity*.

In typical Indo-European languages such as Spanish, for example, the accented suffix *-é* in *habl-é* 'I spoke' fuses several inflectional categories in a single morpheme. Here, *-é* marks not only *first person* and *singular number* but also *past tense* (the present tense is *habl-o*), *perfective aspect* (imperfective is *habla-ba*), and *indicative mode* (a subjunctive would be *habla-se*). There are analogous *portmanteau* suffixes for the other persons, numbers, etc. and these are all arranged in paradigms. Because of the very low probability of just these categories becoming fused into single morphemes, the very presence of a paradigm of such phonologically corresponding *portmanteaux* in two or more languages virtually guarantees genetic relationship according to Nichols.

Such correspondences are in fact what enabled Sir William Jones and others to identify Indo-European languages from the beginning. Siouan, like many American languages, is typologically agglutinating with vanishingly few

of the *portmanteaux* that are such convincing proof of relationship in Indo-European. "One morpheme=one meaning" greatly increases the danger of chance resemblance in distant comparison: "one morpheme=many (syncretized) meanings" greatly decreases that danger in the case of Indo-European. Comparativists have been more than a little spoiled by Indo-European.

Syntax and case alignment are not helpful. Both Siouan and Catawban remain solidly SOV, head-marking and active/stative, but these things can be seen synchronically and are not diagnostic of genetic relationship in any event.

While the reconstruction of Proto-Siouan has strengthened the already demonstrated relationship of Siouan with Catawban (probably at a time depth of 4000+ yrs. B.P.), it has, as we have seen, also revealed an actually decreased lexical cohesion in verbs and decreased phonological substance in the proto-language roots thus making the success of more distant comparisons perhaps somewhat less, rather than more, likely. One may only hope that the Siouan-Catawban trend is not entirely pervasive and that Haas's suggested methodology will prove fruitful even when structural changes such as those found in the history of Siouan are present.[14]

NOTES

(1) Although Hidatsa and Ofo disagree, the initial syllable vowel was almost certainly *-i-, i.e., *wiróka* 'male of a species', as the prefix *wi-* can be seen to have marked a great variety of animal terms. So here where the prefix phonology of the reflexes disagrees, semantics plays the pivotal role. Whether or not *wi-* marked all such terms is still open to some question.

(2) The Winnebago and Dhegiha forms have analogically restored *wa-* in 'push/jump' and 'shake'. The prefix *wa-* marks indefinite third person objects throughout Mississippi Valley Siouan and is very productive. The Dakotan, Mandan and Biloxi form(s) show *p-*, an earlier, fossilized reflex of the PSi prefix. In fact, the simplex sibilants present here in the Chiwere, Winnebago and Dhegiha cognates have to be analyzed as reflexes of earlier *ps-* clusters. Intervocalic simplex *-s- would have voiced in Mississippi Valley Siouan to -z-. Obviously several of the cognates here have undergone reduplication also.

(3) In inflectional morphology the first singular actor prefix, *wa-*, underwent the same processes of syncope and assimilation. Take for example the following "irregular" 1st sg. forms from the Kansa language (a Dhegiha dialect) in which the prefix is italicized in each instance: *b*-lé 'I go', *m*-įkhé 'I sit', *p*-hú 'I come', *p*-páγe 'I make', *t*-tǫbe 'I see', *k*-kǫ-*b*-la 'I want'.

(4) In many cases roots may be shorter than is apparent even here. It is the general rule historically in Siouan that prefixal vowel sequences be broken up by a glide. In most instances this glide is -r- (with rounded vowels, sometimes -w-). Note that in the case of words like Proto-Siouan *wiróka* 'male of a species' the prefix, as we have seen, is *wi-* and there is a derivational suffix (absent in a few of the daughter languages) -ka, which is very common on nouns. This leaves ró the root. But note also that the vowel was probably

lengthened by a second syllable (iambic) lengthening rule, if not in Proto-Siouan then in pre-Proto-Siouan, and finally, that the root-initial *r-* here may be epenthetic, by the constraint on vowel sequences just mentioned. In other words the actual Proto-Siouan root for 'male' may actually have been just **o*, with neither initial *r-* nor vowel length. There are many Siouan words with initial *r-*, and the possibility of epenthesis exists for all of them. And while this particular example may be a kind of *tour de force*, the processes described here are quite general across Siouan. This can leave very little to compare with roots in other language families.

(5) There are several derivational suffixes that may be used to extend Siouan verb roots producing stems with second syllables and secondary meanings. It has for the most part never been possible to isolate any particular meaning for these affixes, and their use is often restricted to particular Siouan subgroups. They include *-ka*, a frequent stative verb formative (**ihtą* 'large', *htąka* 'be large'), also *-pe, -te, -se* (and to a lesser extent *-še, -xe*). **-he* is a frequent but semantically unidentified Proto-Siouan verb suffix, and **-re* is probably related to the Catawba suffix of the same shape which marks declaratives. With the exception of the last of these, cognacy with anything in Catawba is problematic. It is precisely these empty morphs (what Siouanists call *root extensions*) that provide the *CVC-* stems of Dakota.

(6) I am grateful to David Costa, Ives Goddard and Richard Rhodes for their guidance at various times in matters Algonquian. The views expressed here are my own and may or may not be shared by them.

(7) I am not proposing that the existence of parallel templates in languages can by itself serve as evidence of distant relationship. A considerable amount of the actual content of the template would have to be cognate in order for it to play such a role. The vast majority of morphology that is postposed to the Siouan verb is enclitic. Only a few such enclitics seem to be pan-Siouan, e.g., **(į)kte* 'future, potential'.

(8) The ordering presented here is typical and basic for Dakotan dialects. For greater detail--and there are a great many such details, including an outer instrumental prefix set--see any of the comprehensive grammatical treatments of the language. Patterson (1990) is the most recent and therefore incorporates much previous scholarship. No consultation on the facts of Dakota would be complete however without reference to Boas and Deloria (1941).

(9) In addition to the nominal prefixes, *wa-* and *wi-* described above, the agent prefixes **wa-* '1st person' (note 3, above) and **ya-* '2nd person' also underwent systematic truncation in most if not all of Siouan. The same is true of **ki-* 'dative/possessive'. The resultant consonantal allomorphs of the pronominal prefixes include 1st sg. *b-, m-, p-* and 2nd sg. *š-, ž-* and are described in Rankin 1988. Siouanists still have much work to do if we are to understand all of the effects of initial syllable syncope and subsequent analogical restoration of "regular" pronominal allomorphs (the latter especially in Dakotan).

(10) Some examples from the Quapaw language: *pá-baγe* 'to cut in two

with a blade'; *ba-báɣe* 'to break by thrusting'; *pó-baɣe* 'to shoot (a rope or cord) in two'; *da-báɣe* 'to bite in two'; *na-báɣe* 'to break with the feet'; *di-báɣe* 'to break by pulling'; *ka-báɣe* 'to cut in two by striking'.

(11) 'By foot' and 'go', though doublets, conjugate differently in Catawba.

(12) The first four sets were noted by Siebert (1945); the last two are possible additions based on two recent essays into Catawba lexicography. Shea (1984) is a compilation of Catawba vocabulary from published and unpublished sources but mostly excluding the texts collected by Frank Speck. Voorhis (1992) is a compilation from Speck's texts.

(13) The phonological fusion of the pronominals with the instrumentals is important here, as it shows that the relationship of the two elements is old.

I have mostly ignored for the purposes of this paper the innovated set of so-called outer instrumentals that are found in the Mississippi Valley Siouan subgroup. These include the 'by bladed instrument, by shooting' and perhaps 'by extreme of temperature (heat, cold)' prefixes. These are most often (but not in every language) ordered just before the dual inclusive marker in the template, exactly where one would expect them to be, given that the inclusive represents an innovation that took place one node higher in the Siouan *Stammbaum*.

(14) Since writing this paper the author has had the interesting and instructive experience of encountering new data which both strengthen our understanding of the Siouan-Catawban relationship, long ago demonstrated by Siebert (1945), and at the same time suggest some sort of historical connection between this family and Yuchi, an isolate originally spoken in what is now eastern Tennessee. Proto-Siouan-Catawban and Yuchi apparently share a system which classified nouns into [+animate, -human] (marked by *wi-/we-*), [+animate, +human, -personal] (marked with *ko-/go-*) and perhaps other categories. Additional matches are possible, and, of course, Siouan and Yuchi have been considered candidates for genetic relationship at least since Sapir's time. At the moment it is unclear whether this shared system implies such a relationship or whether it is the result of borrowing or perhaps even chance.

A point worth emphasizing is the fact that this discovery came as a direct result of taking the comparative method and sound change regularity seriously. Most Proto-Siouan nouns can be reconstructed with an absolutive prefix whose form is **wa-*; only a few had **wi-*, and the tendency among those of us doing comparative Siouan reconstruction was to look upon these cases as instances of "sporadic" vowel harmony (of vowels that some even considered epenthetic to start with). The author had come to accept some of these explanations, and it was only a minor, transitory annoyance with the sporadic nature of the changes that led him to search a little farther for a grammatical or semantic correlation for PSi **wi-* while producing the handout that accompanied this paper. This abruptly led to a fairly extensive list of animal names which required the prefix and a search of available Catawba data. The remainder of the system began to emerge quickly thereafter. The Yuchi analogs came to

mind because of discussion of that language with students. A voyage to Ser-
endip can come when we least expect it.

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Sound Symbolism in the History of an Algonquian Semantic Domain

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0.1. Introduction. The Algonquian languages are very closely related so that many lexical items, even complex ones, appearing widespread across the family have meanings so similar that it appears at first blush that there is little to be learned there about the semantic change. However, a second look reveals that the very closeness of the languages enables us to see mechanisms of semantic change whose spoor are washed away by the tides of time in deeper and more diverse families like Indo-European, or even Germanic. A careful study of the full range of morphemes populating a specific semantic area in the Algonquian languages of the Great Lakes area reveals three properties of semantic change:

1) that there can be significant interconnected meaning changes among morphemes that occupy niches within a small semantic domain,
2) that innovative semantic subsystems may arise in specific languages, and
3) that there may be sound symbolic effects within the sets of domain related forms.

These ideas are not entirely new. The first has been occasionally discussed in the literature. The two best known examples of connected semantic change are both chain shifts. One is Watkins's discussion of the development of the Indo-European horse terms in Armenian (1970). But a more dramatic case is found in Gamkrelidze and Ivanov's (1994:538) treatment of the semantic shifts in tree names from PIE to Greek, which is summarized in (1). Their discussion falls just short of explicitly claiming that this semantic change is analogous to a "push" or "drag" chain in phonology.

(1)

PIE	Latin	Greek
—	—	μελίη 'ash'
*Hos-kʰ- 'ash'	*ornus* 'moutain ash'	ὀξύη 'beech'
*bʰaHk'- 'beech'	*fagus* 'beech'	φηγός 'oak'
*pʰer(kʰo)u-n- 'oak, thundergod'	*quercus* 'oak'	
		κεραυνός 'lightning'

But in this paper I will be focusing on a different kind of related semantic change. Morphemes with meanings that can be loosely glossed as 'break' and 'tear' in several Algonquian languages of the Great Lakes area show semantic shifts in which in some individual languages a semantically coherent system arises out of a system which is less organized (in a technical sense)—i.e. point 2) above, and that that organization arises along phonological lines—point 3). Of further interest is that, as far as we can tell, this semantic reorganization was not triggered by any change in the semantic field, e.g. through the introduction of new technology, since all the neighboring groups share identical technologies whether or not they undergo this system coalescence.

0.2. Preliminaries. The morphology of interest to us only occurs as part of a larger construction, so before we can go any further it is necessary to explicate the basics of Algonquian verb structure.

The prototypical Algonquian verb is not just morphologically complex but lexically complex. The most straightforward general description of a prototypical Algonquian verb is that it is a compound of a modifier plus a verb. The nature of the information in the modifier is largely determined by the meaning of the verb. For example, motion verbs generally take path or goal modifiers, change of state verbs generally take resultatives, and any verb type can, of course, take a manner modifier. Examples of these verb types are given in (2).

(2) (a) motion verb

      ni·siwene·wa 'he leads him down' [Fox]

ni·s	-	*we-n*	-	*e·*	-	*wa*
down	-	lead-AN	-	3OBV	-	3

  (b) change of state verb

      pohqunnum 'he broke it' [Massachusett]

po·hkw	-	*ən*	-	*əm*	-	*w*
broken	-	manipulate	-	3 INAN	-	3

  (c) verb with manner modifier

      gizhiipatoo 'he runs fast' [SW Ojibwe]

gizhii	-	*patoo*	-	*w*
fast	-	run	-	3

There are, of course, other types of Algonquian verbs semantically, but the morphological structure of the vast majority of primarily derived verbs is like that of the verbs in (2). The parts of the structure have regular names in Algonquianist grammatical terminology. The modifier is called an INITIAL (or, by some writers, a ROOT) and the verb morpheme that heads the construction is called a FINAL. Actually a number of agreement-like morphemes may co-occur with a final and have suppletive allomorphy determined by that final, so that the final is actually a complex that may consist of two parts as in (2a). The parts of the final with more lexical content always occur first and are called CONCRETE FINALS. The more agreement-like parts of the final are called ABSTRACT FINALS. It is traditional in Algonquianist work to cite concrete and abstract finals together, a practice which we will follow in this paper.

There is much more that could be said about Algonquian verb structure, but we need only mention one other thing here. There is also a MEDIAL slot following the initial as shown in (3). Notice that, as in (3a), no final need be present following a medial. Various types of meanings may be expressed by medials including, but not limited to, involved body-part as patient (3a), classification of patient (3b) or instrumental/locative (3c), and adverbial intensification (3d).

(3) (a) *pâskitonêw* 'he has his mouth open' [Plains Cree]

pâsk	-	*iton-ê*	-	*w*
open	-	mouth-MED	-	3

  (b) *odakwegikodaan* 'he cut it short' [Ojibwe]

o	-	*dakw*	-	*eg*	-	*iko-d*	-	*am*	-	*n*
3 ERG	-	body	-	2D FLEX OBJ	-	cut-INAN	-	3 INAN	-	INAN

(c) *ata·hpa·pye·sahto·wa*   'he yanks it on a string' [Fox]
    ata·hp - *a·pye·* -   *sah-t*   -   *o·*   - *wa*
    yanked - string - move-INAN - 3 INAN - 3

(d) *kepa·hkwaham*   'he locks it up' [Menomini]
    kep - *a·hkw* -   *ah*   - *am* - *w*
    blocked - solid(ly) - use an instrument - 3 INAN - 3

For the purposes of this paper we will focus on initials in resultative constructions like that in (2b). All of the morphemes that directly refer to breaking and tearing appear as morphemes of this class.

1. Proto-Algonquian break/tear morphemes. To begin we will reconstruct the most significant morphemes of Proto-Algonquian in the break/tear semantic domain.

1.1. Proto-Algonquian core domain morphemes. There are three reconstructable morphemes with meanings in the core of the break/tear domain. The first is PA **po·θk(w)-* 'broken'. It is the most widely attested morpheme across the family with the widest range of break/tear meanings. The cognates are given in (4).

(4) **po·θk(w)-* 'broken' the most general word: W. Abnaki *boskw-* 'break, sever transversely', Massachusett *pohkw-* 'broken', Mahican *pohkw-* 'tear'; Proto-Cree **po·skw-* 'in two, torn': Plains Cree *pôskw-* 'broken, torn (open)' Naskapi *puuskw-* 'in half', Montagnais *pu·škw-* '(in) half'; Fox *po·hkw-* 'in two', *po·hk-* 'have a hole torn', Ojibwe *bookw-* 'broken (of stick-like objects); broken in two', *book-* 'have a hole torn', Miami-Illinois *po·hk-* 'have a hole torn; burst', *po·hkw-* '(in) half' Shawnee *poʔkw-* 'broken, burst, mashed', Menomini *po·hkw-* 'broken across, broken in two', Cheyenne *e'e-* 'broken'.

A word about the final **w* in this form is in order. There are variant forms of several Proto-Alongquian break/tear words with and without final **w*. This suggests that the **w* appearing at the end of **po·θk(w)-* might be considered a separate morpheme, but it is unclear what the meaning of this **w* might be. Because of this semantic problem we have chosen not to reconstruct the the **w* as separate. Note that Fox, Miami-Illinois, and Ojibwe have reflexes of the morpheme in (4) both with and without the *w*.

The second PA morpheme of wide currency that has a readily reconstructable meaning in the break/tear domain is **ta·tw-* given in (5).

(5) **ta·tw-* 'torn' Proto-Cree 'torn; open': Plains Cree *tâtw-* 'torn; open', Montagnais *tàtw-* 'torn open'; Fox *ta·tw-* 'torn', Ojibwe *taatw-* 'split (open)', Miami-Illinois *ta·tw-* 'torn, rent', Menomini *ta·tw-* 'ripped open'.

The third PA morpheme of wide currency that has a readily reconstructable meaning in the break/tear domain is **pa·šk-* given in (6).

(6) **pa·šk-* 'burst' Massachusett *pashk-* 'burst', W. Abnaki *bask-* 'burst', Proto-Cree **pa·šk-* 'burst; open': Atikamek *pa·šk-* 'burst; open', Plains Cree *pâsk-* 'burst; open', Montagnais *pàss(i)-* 'burst; open'; Fox *pa·šk-* 'cracked', Ojibwe *baashk-* 'burst, cracked', Shawnee *pašk-* 'burst; open', Miami-Illinois *pa·hk-* 'broken; open'.

Notice that the PA forms in both (5) and (6) have some reflexes with the meaning 'open' suggesting a proto-type scenario in which tearable items are effectively containers (including the bodies of animals) so that to be torn is to be open. In the case of PA *pa·šk- this is further enhanced by the fact that there is a similar morpheme PA *pa·xk- 'open (at the top)' with which it merges in some languages by sound law.

1.2. Core domain morphemes in daughter languages. The remaining morphemes that are central break/tear morphemes in particular languages either have reconstructed meanings that are peripheral to the break/tear domain in Proto-Algonquian or are areally restricted morphemes.

1.2.1 PA domain peripheral morphemes. Examples of peripheral break/tear morphemes taking on central meanings in daughter languages are given in (7):

(7) (a) Miami-Illinois *ki·hk-/ki·sk-* 'broken' < PA *ki·šk-* 'severed, having a sheer face' Plains Cree *kîsk-* 'cut through' Fox *ki·šk-* 'cut off', Ojibwe *giishk-* 'cut off, sheared off', Shawnee *kišk-* 'cut off, broken off' Menomini *ki·sk-* 'cut off'.

(b) Miami-Illinois *na·yo-* 'broken' < PA *na(·)w-* 'useless' Plains Cree *nanâw-* 'broken, ruined', Fox *nanaw-* 'in vain', Ojibwe *nanaaw-* 'useless, ruined', *naaw-* 'in vain', Menomini *nanaw-* 'wasted'.

(c) Ojibwe *bak-* 'broken (of string-like objects)' < PA *paxk-* 'plucked' Plains Cree *paskw-* 'plucked, hairless', *pask-* 'severed (of string-like objects)', Atikamek *paškw-* 'plucked, hairless; peeled', Fox *pahk-* 'plucked, severed, separated', Ojibwe *bak-* 'hairless; broken (of string-like objects)', Shawnee *pk-* 'broken, apart', Menomini *pahk(w)-* 'severed; plucked', Cheyenne *po'e-* 'severed'.

(d) Proto-Cree *pi·kw-* 'broken, torn (in general)': PA *pi·k(w)-* 'in pieces': Proto-Cree *pi·kw-* 'broken, torn (in general)': Plains Cree *pîkw-* 'broken, torn (in general)' Atikamek *pi:kw-* 'broken, torn (in general)', Montagnais *pîkw-* 'broken, damaged', Naskapi *piikw-* 'broken, torn (in general)'; Proto-Ojibwe *pi·k(w)-*: SWOjibwe, EOjibwe, Ottawa *biigw-* 'torn; broken in pieces', NW Ojibwe *piikw-* 'torn; broken in pieces', Potawatomi *big-* 'broken, ruined', Fox *pi·kw-* 'dense, densely populated', Menomini *pe·kw-* 'in pieces', Cheyenne *péé-* 'in pieces'.

1.2.2 Areally restricted morphemes. There are just two areally restricted morphemes with core domain meanings. One is found in Shawnee and the other in Menomini. They are cited in (8):

(8) (a) Pre-Shawnee *lelehk-* 'torn': Shawnee *lelhk-* 'torn'.

(b) Menomini *pi·hk-* 'burst'.

The source of these morphemes is unknown, but we will have more to say about the Menomini form in §3 below.

1.3 The Proto-Algonquian core system. Based on the forms given in (4) through (8) above, we can reconstruct the semantics of the Proto-Algonquian system. The system has three core terms with characteristic specializations. There

are two key oppositions. The first is the contrast between the separation or separability of the pieces of the broken entity as opposed to the opening of the broken entity. The second is that for non-separable breaking, affected objects are distinguished between flexible or rigid. The system is summarized in (9).

(9)   PA *po·θk(w)- 'broken/torn off/apart'

    PA *ta·tw- 'torn open (of flexible objects)'

    PA *pa·šk- 'burst/crack open (of rigid objects)'

2. Developments in selected daughter languages. The remaining sections are devoted to a detailed examination of the system of those daughter languages which have sufficient scholarly resources to enable us to work out their systems.

2.1 The Fox system. The Fox system appears to reflect the Proto-Algonquian system with minor changes. The basic opposition is between morphemes that emphasize separation and those that don't. The terms are outlined in (10).

(10) [separated]   [non-separated]
    po·hkw- 'in two'   po·hk- 'have a hole torn'
    pahk- 'plucked, severed, separated'   ta·tw- 'torn'
    pahkw- 'pulled out, missing a piece' pa·šk- 'cracked'

2.2 The Cree system. The Cree system seems to be totally restructured around the semantic innovation of Proto-Algonquian *pi·kw- 'in pieces' > Proto-Cree *pi·kw- 'broken, torn (in general)' which takes a general meaning with the other forms being relegated to specialized meanings.

(11) [general]   [specialized]
    pi·kw- 'broken, torn (in general)'   pask- 'broken (of strings); plucked'
                                      po·hkw- 'in two'
                                      ta·tw- 'torn'
                                      pa·šk- 'burst; open'

2.3 The Ojibwe system. The Ojibwe system shows the most interesting developments. Ojibwe parallels Cree in having adjusted the meaning of the reflex of PA *paxk- 'plucked, hairless' > 'broken (of strings)'. But Ojibwe has restructured the entire system to be sensitive to the shape of objects affected. Thus Ojibwe has four core terms and has lost the Proto-Algonquian emphasis on separation and openness. What is more, the shapes that this innovative system are sensitive to represent the basic shapes of a rudimentary classifier system (Denny 1976). The system is laid out in (12).

(12) bookw-   'broken (of stick-like objects)'
    bak-   'broken (of string-like objects)'
    biigw-   'torn (of sheets)'
    baashk-   'broken (of 3 dim. objects)'

At this point someone might object that Ojibwe might not have originated this system but that it retains the proto-system, implying that the semantic

reconstructions in (10) are simply an artifact of the semantic opacity caused by the collapse of the proto-system in the other daughter languages. However, we would like to argue that the system in (12) arose in Ojibwe by pointing out that in Ojibwe all the core terms are ambiguous between being general terms in which they are shape-sensitive and being specialized terms which have meanings like those of other Algonquian languages. These facts are presented in (13).

(13)

	[classified]	[unclassified]
bookw-	'broken (of stick-like objects)'	'in two'
bak-	'broken (of string-like objects)'	'picked (of fruit), hairless'
biigw-	'torn (of sheets)'	'in pieces'
baashk-	'broken (of 3 dim. objects)'	'burst, cracked'

This ambiguity throughout the system arises from the fact that the meanings of the newly coalesced system do not entirely supplant older meanings, especially in more idiomatic contexts.

3. Some implications of the Ojibwe system. The restructuring that we have just demonstrated for Ojibwe has two kinds of implications. One regards the semantic restructuring that includes the innovation of a noun classification system and the other regards the connection between the phonological form of the Ojibwe break/tear core domain and the semantics, i.e. sound symbolism.

3.1 Classification. The development of a semantic subsystem that has innovated an implicit classifier system in it has, to the best of my knowledge, never before been attested. That is, languages with classification appear always to have had classification. So Ojibwe is significant with respect to the fact that it is a developing classifier language. Ojibwe (and Cree) both have incipient classification in counting as exemplified in (14), although such classification is not obligatory except in anaphoric contexts.

(14) Ojibwe

	[unclassified]	[stick-like]	[string-like]	[sheet-like]
'one'	*bezhig*	*bezhigwaatig*	*bezhigwaabiig*	*bezhigweg*
'two'	*niizh*	*niizhwaatig*	*niizhwaabiig*	*niizhweg*
'three'	*niswi*	*nishwaatig*	*nishwaabiig*	*nishweg*
'four'	*niiwin*	*niiwaatig*	*niiwaabiig*	*niiweg*
'five'	*naanan*	*naanwaatig*	*naanwaabiig*	*naanweg*
etc.				

3.2 Phonological coherence in the Ojibwe break/tear domain. Even more interesting than the innovation of a noun classification system is the choice of morphemes that make up the Ojibwe core system. Two of the terms, *bookw-* 'broken (of stick-like objects)' and *baashk-* 'broken (of 3 dim. objects)', are reflexes of core terms in Proto-Algonquian. The third, *bak-* 'broken (of string-like objects)', is generalized from a specialized Proto-Algonquian term. But the semantically innovative *biigw-* replaced the reflex of the third Proto-Algonquian core domain word, *daadw-* 'tear (open)', which occurs in Ojibwe in the meaning 'split (open)' and is rare in most dialects. This makes it possible to view the Ojibwe core domain set as having a phonological coherence, i.e. as having sound symbolism. To be more explicit, all the forms in this set have the form in (15).

(15) b V ($\check{s}$) $\begin{bmatrix} +obs \\ +velar \end{bmatrix}$ (w)

While this is may not immediately look like a compelling template, consider that prior to a sound change that took place in the last 100 years the forms were as in (16a) and template was as in (16b).

(16) (a)   *poohkw-*   'broken (of stick-like objects)'
             pahk-   'broken (of string-like objects)'
             piikw-   'torn (of sheets)'
             paašk-   'broken (of 3 dim. objects)'

    (b) p V ([+cont]) k (w)

If such a template were taken as a generalization over the optimal form of a core Algonquian break/tear morpheme then there would be a reason that the ancestor of *daadw-* would be discarded in favor of the ancestor of *biigw-*. There is further reason to believe that something like (16b) is active in the semantic domain of breaking and tearing elsewhere in the family. First, there are other specialized Proto-Algonquian break/tear morphemes that share this template or something close to it. These are given in (17).

(17) (a)   PA **pahk(w)-* 'skinned, peeled' Plains Cree, Atikamek *pahkw-* 'skinned', Fox *pahkw-* 'pulled out, missing a piece', Shawnee *pkw-* 'skinned, peeled', Ojibwe *bakw-* 'skinned', Miami *pahkw-* 'peeled; hairless'.

    (b)   PA **pahkwe··* ~ **pačkwe··*'be missing a piece'[1] W. Abnaki *pskwa-* (< **čk) 'be missing a piece', Proto-Cree **pahkwe··* 'be missing a piece': Plains Cree *pahkwê-* 'be missing a piece', Atikamek *pahkwe-* 'divided', Montagnais *pakwe-* 'be missing a piece'; Menomini *pahkwɛ··* ~ *pačkwɛ··* 'be missing a piece', Fox *pahkwe··* 'be missing a piece', Shawnee *pkwee-* 'be missing a piece', Ojibwe *bakwe-* 'be missing a piece.[2]

Secondly, the Menomini morpheme *pi·hk-* 'burst' mentioned above in (8b) is completely innovated matching the template.

Thirdly, Shawnee has an otherwise unattested variant of PA **po·θkw-*in *poškw-* 'broken, in two'. (The facts are summarized in [18]). Again if there is a template like that in (16b), the source of this Shawnee innovation is readily explained.

(18) (a)   PA **po·θkw-* 'broken/torn off/apart': Shawnee *poʔkw-* 'broken, burst'.
    (b)   Pseudo-PA **po·škw-* : Shawnee *poškw-* 'broken in half'.

Having presented a case for the role of sound symbolism in structuring the innovative Ojibwe core break/tear system, it is necessary to digress briefly to discuss the notion of sound symbolism as I am using it here.

3.2.1 Sound symbolism. The kind of sound symbolism that I have been referring to is sometimes called conventional sound symbolism (e.g. Hinton, Nichols, and Ohala 1994:5). That is, there is no iconic relation between any part of (16b) and any proto-type state of impaired physical continuity. Thus (16b) is ultimately arbitrary in the Saussurean sense, but because the relevant structural parts

of (16b) do not match any other analyzable structure in Algonquian, one cannot call (16b) a morpheme. Rather it appears to be an historical accident of Algonquian to have had two core terms in a tight semantic domain similar enough to make a coherent template inferrable. Then as some of the daughter languages attest this inferred template is available to affect either the the semantic history of the forms in this domain (as in Ojibwe or to a lesser extent in Cree) or to affect the phonological history of forms in the domain (as in Menomini and Shawnee).

3.2.2 Sound meaning correlations in the Ojibwe break/tear domain. Unfortunately, in spite of a scholarly history of over 100 years (see Bloomfield's eloquent statement of the nature of conventional sound symbolism [1895:409-410, quoted in Hinton, Nichols, and Ohala 1994]), it is not well enough studied for us to know how deeply one can analyze the coherence of inferrable patterns. So on the maxim of "he who can do the most can do the least", I choose, for the record, to err in the direction of overanalyzing (16b). For Ojibwe it is possible to associate cognitively salient properties with parts of (16b). The core Ojibwe terms are given in (19) in a paradigm labeled by these properties shown as features, but I want the reader to recognize that these are intended to be understood as characterizing cognitive prototypes. In other words I'm taking advantage of feature-type formalism, but intending properties to be understood as cognitively salient attributes and oppositions. Semantically the relevant distinctions are flexible vs. non-flexible and one-dimensional vs. multi-dimensional.

(19)

	[-flex]	[+flex]
[+1D]	*bookw-*	*bak-*
[-1D]	*baashk-*	*biigw-*

We can abstract from (19) the four sound-meaning correspondences summarized in (20). If these are valid generalizations then sticks and sheets form a natural class as opposed to strings and blobs.

(20) (a) $w = \begin{bmatrix} \alpha\ \text{flex} \\ -\alpha\ \text{1D} \end{bmatrix}$ w is associated with sticks and sheets

(b) $\begin{bmatrix} \overset{V}{+\text{hi}} \\ -\alpha\ \text{rd} \\ +\text{long} \end{bmatrix} = \begin{bmatrix} \alpha\ \text{flex} \\ -\alpha\ \text{1D} \end{bmatrix}$ long high vowels are associated with sticks (*oo*) and sheets (*ii*)

(c) $\begin{matrix} a \\ [-\alpha\ \text{long}] \end{matrix} = \begin{bmatrix} \alpha\ \text{flex} \\ \alpha\ \text{1D} \end{bmatrix}$ a is associated with strings (short) and globs (long)

(d) $\begin{bmatrix} +\text{velar} \\ \alpha\ \text{fortis} \end{bmatrix} = [\alpha\ \text{1D}]$ fortis k is associated with one-dimensional objects[3]

Because this is theoretically unknown territory, it is possible that the regularities in (20) could be an artifact of the formalism and the small size of the semantic domain. But note that the grouping of sticks and sheets as a natural class is reflected in the two semantic classes of the reflexes of Proto-Algonquian *po·θk(w)-*.

(21)	PA *po·θk(w)-	'broken (in two)'	'torn (open)'
	W. Abnaki	boskw-	
	Massachusett	pohkw-	
	Mahican		pohkw-
	Plains Cree	pôskw-	pôskw-
	Ojibwe	bookw-	book-
	Miami-Illinois	po·hkw-	po·hk-
	Fox	po·hkw-	po·hk-
	Shawnee	poškw-	po?kw-

4. Conventional sound symbolism and analogical change. Finally I would like to address the question of forms with problematic histories. Two have come up in our discussion, viz. Menomini *pi·hk-* 'burst' and Shawnee *poškw-* 'broken, in two' mentioned in §3.2 above and cited in (22).

(22) (a) Menomini *pi·hk-* 'burst'

  (b) Shawnee *poškw-* 'broken, in two'

The question is why did Menomini and Shawnee create new forms at all. Menomini jettisoned the reflex of *pa·šk-* and replaced it with *pi·hk-*.[4] Shawnee innovated a new variant of *po·θk(w)-*. The standard solution to the Menomini problem is to essentially ignore it. The standard solution to the Shawnee problem is either to posit old variation or propose a language contact explanation. But if we allow for the existence of conventional sound symbolism, a new class of solutions is possible. Templates like (16b) provide for a class of possible morpheme shapes that would be relevant both for the innovation of an entirely new form like the Menomini or for the definition of a class of mutually relevant forms within which analogical changes could occur as in the Shawnee case or more especially in the case of the *w* variants of break/tear words throughout the family.

  Finally I will conclude by saying that this is a very important point for questions of reconstruction. Because the kinds of morphemes examined are garden-variety lexical items on which neo-grammarians' methods should work the best, the fact that we have shown that they are susceptible to analogical pressures means that a serious semantic analysis may be necessary just to do the most basic kind of phonological and morphological reconstruction.

Notes

[1]Forms reflecting PA *pačwe·-* rather than *pahkwe·-* are explicitly indicated.

[2]This morpheme is found in the widespread idiom for 'bread', e.g. Fox *pahkwee šikani*, Menomini *pahki·sikan*, Plains Cree *pahkwêsikan*, Ojibwe *bakweezhigan*, lit. 'that which has a piece cut off'. Some languages only attest this morpheme in that word and possibly in verb forms which could be viewed as backformed from it, e.g. Fox *pahkweešweewa* 'he cuts a slice from [the bread]', *pahkweešamaweewa* 'he cuts a slice (of bread) for him', which given that the artifact to which the expression refers is of very recent foreign origin suggests that the morpheme in question might be borrowed.

[3]The basic contrast in Ojibwe is fortis/lenis, represented by voiced and voiceless symbols respectively. The *k* that occurs as the second member of a cluster is lenis.

[4] The only place Menomini shows a reflex of *pa·šk-* is in the word for 'gun' *pa·skecisekan*, its secondary derivatives, and verb forms that appear to be directly relatable to it. This situation strongly suggests that these reflexes of *pa·šk-* are recently borrowed (actually, semi-calqued)—probably from Ojibwe. This proposal is not without some difficulty because the Menomini word for 'gun' is not a complete morpheme for morpheme match with any other Algonquian language, but it is not necessary to resolve that question here.

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Reconstructing Person and Voice in Kiowa-Tanoan: Pitfalls and Progress*
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1. Introduction. The historical source for passives and related constructions is not an unfamiliar problem in diachronic syntax (e.g. Chung 1978, Anderson 1980, Dixon 1994). Kiowa-Tanoan passives provide a case study in the benefits of traditional comparative reconstruction combined with reconsideration of synchronic analyses to produce a more satisfying understanding of diachronic processes. What complicates the Kiowa-Tanoan case is the complex agreement morphology in which fused combinations of person, number and role have resulted in large numbers of distinct clitics. Anticipating the conclusions, (1) the Kiowa-Tanoan pronominal clitics give evidence of a direction system (direct vs. inverse person), the outlines of which are preserved today in all four subgroups;   (2) the so-called passive constructions described for two of the four subgroups are thinly disguised inverse constructions; (3) reinterpretation of ditransitive clitics as intransitive provided the model for extending reduced valency agreement to simple transitive clauses.

This study begins with an outline of the synchronic descriptions and a reconsideration of the analysis of passives. The evidence suggests that the KT languages bear unmistakeable signs of a direct/inverse opposition in their morphosyntax. The paper then turns to the reconstruction of the agreement clitics, a comparison of agentive case marking and of verb morphology before exploring the diachronic processes by which some of the daughter languages appear to have developed passive constructions.

2. Background. The Kiowa-Tanoan family consists of four subgroups, spoken from Oklahoma to New Mexico and Arizona. The clear geographical and cultural division between the Kiowas of the southern Plains and the Tanoans of the puebloan Southwest has long been assumed to reflect a signficant linguistic split as well. Hale and Harris (1979) suggests that the linguistic split is more apparent than real, a position this study supports.

(1)   Tiwa: (Northern) Taos, Picuris; (Southern) Sandia, Isleta
        Towa
        Tewa: Rio Grande (San Juan, Santa Clara, San Ildefonso, Nambe,
                    Tesuque, (Pojoaque); Arizona Tewa
        Kiowa

Despite the dramatic cultural and environmental differences, the closely related KT family is characterized by an unusually elaborate set of argument indexing clitics numbering from as few as fifty-seven in Tewa to more than seventy-five in Taos and Kiowa.   The pronominal clitics are traditionally described as falling into five functionally distinct paradigms: simple intransitive, simple transitive, reflexive, intransitive dative, and ditransitive. The intransitive, transitive, and reflexive sets are relatively uncontroversial. The other two sets, intransitive dative and ditransitive, are critical in understanding the historical development of the "passives" of Tiwa and Towa. In KT languages, intransitive predications involving two participants make use of the intransitive dative paradigm, which indexes a Dative (a possessor, recipient, or experiencer; see section 5) and a third person Patient. The intransitive

dative clitics, moreover, are those required in passive clauses corresponding to ditransitives. The examples in (2) illustrate both experiencer and possessor Datives.

(2) Intransitive dative: DAT and PAT

a.	Te	dîn-tè:	I need it.
		(1sgD:P-need)	
		nàví è?nú dîn-hè:	My boy is sick.
		(my boy 1sgD:P-be.sick)	
b.	To	té:dè kyā ɨ̀-vé:tæ̀	My shirt faded.
		(shirt perf 1sgD:sgP-fade.pf)	
		kyā ɨ̀-nó?ó	I have finished.
		(perf 1sgD:sgP-finish.pf)	
c.	Ki	yą́-pʰátkyá	I have finished.
		((2,3sgA):1sgD:plP-finish.pf)	
		kút yą́-dɔ́:	They are my books.
		(books (2,3sgA):1sgD:plP-be)	

Although the generalization does not hold for all combinations of person, number, and role, many ditransitive clitics are formally identical to intransitive dative clitics. For example, (2a) and (3a) show the same clitic for Tewa dîn "first person singular Dative plus Patient." Kiowa examples (2c) and (3c) similarly share the clitic yą́ "first person singular Dative plus singular Patient". Towa (2b) and (3b) illustrate the use of the clitic ɨ̀ "first person singular Dative plus singular Patient" in intransitive dative clauses and the so-called passive of a ditransitive. We will return to this isomorphism across paradigms in section 6, where partial reconstruction of the clitics provides an explanation for the resemblances.

(3) Ditransitive: AGT, DAT, PAT

a.	Te	nàví tą̀?nìn dîn-kê?	He got my book.
		(my book 3sgA:1sgD:P)	
b.	To	ní: nǽ:-tǽ délʼɨ̀ ɨ̀-t̂élʼæ̀	He ate my chicken.
		(I that-agt chicken 1sgD:sgP-eat.pass.pf)	
c.	Ki	kút yą́-tʰɔ́n	He found my books.
		(books (2,3sgA):1sgD:plP-find.pf)	

3. The passive analysis. Most published reports based on field work on the Tanoan languages (e.g., Allen and Gardiner 1981; Allen et al 1990, Zaharlick 1982, Kroskrity 1985) have identified syntactic constructions like (3b) above as passives. However, Kiowa (Watkins 1984) and Rio Grande Tewa (Speirs 1966) have not been identified as having any active-passive alternation and Kroskrity (1990) has reevaluated his earlier position on passives in Arizona Tewa. Watkins (1982, 1990) were early efforts to unravel the historical puzzle in KT voice studies, namely, the apparent existence in a closely related family of two strategies for mapping semantic roles onto the grammatical roles registered in the pronominal clitics. In Tiwa and Towa, (a) most transitive verbs have morphologically distinct active and passive stems; (b) pronominal clitics occurring on passive verbs normally also occur with non-derived intransitive verbs; and (c) the agentive NP in a passive clause is case-

marked. The S. Tiwa (4b) and Towa (4d) examples illustrate the morphosyntax of "passives" of simple transitives, in which agents are case-marked, verbs have passive morphology, and the clitics are simple intransitives. Simple active transitive clauses can be compared in (4a) and (4c). Each active and passive clause represents the only construction possible for the particular predication; the passives are thus "forced" in Rosen's (1990) terms.

(4)   S. Tiwa (Isleta)

a. act.   sɨan-ide ti-mu-ban   I saw the man
            (man-sg 1sgA:basP-see-pst)
b. pass.   sɨan-ide-ba te-mu-če-ban   the man saw me
            (man-sg-agt 1sg.intr-see-pass-pst)

        Towa

c. act.   ɸǽlá tà-ɸǫ̀tè   I chased the bear
            (bear 1sgA:basP-chase.pf)
d. pass.   ní: ɸǽlá-tæ̀ ɨ̀-ɸǫ̀tǽ   the bear chased me
            (me bear-agt 2sg.intr-chase.pass.pf)

Passives of ditransitive clauses in (5b) and (5d) show the same agent marking and verb morphology but draw their pronominal clitics from the intransitive dative set, which formally indexes a Dative and a Patient but no Agent (see section 5 for discussion of these labels in KT). Note that (5d), the Towa passive of a ditransitive, is identical to (3b) above. For a third person Agent and a first person Dative, there is no other option.

(5)   S. Tiwa (Isleta)

a. act.   sɨan-ide ta-xʷian-wia-ban   I gave the man the dog
            (man-sg 1sgA:3sgD:sgP-dog-give-pst)
b. pass.   ɨn-xʷian-wia-če-ban sɨan-ide-ba   the man gave me the dog
            (1sgD:sgP-dog-give-pass-pst man-sg-agt)

        Towa

c. act.   ní: nǽ: dél'ɨ tà̠-t'élé   I ate his chicken
            (I that.one chicken 1sgA:3sgD:basP-eat.pf)
d. pass.   ní: nǽ:-tæ̀ dél'ɨ ɨ̀-t'êl'æ̀   he ate my chicken
            (I that.one-agt chicken 1sgD:sgP-eat.pass.pf)

Comparable expressions in the non-passivizing languages Tewa and Kiowa (6), are (a) consistently active and transitive and (b) do not substitute a set of pronominal clitics of reduced valency. On the case-marking of agent nominals, Kiowa differs from all Tanoan languages in having no marking. Tewa marks agents, but the distribution differs from that of Tiwa and Towa (see section 7). To be clear, for Tewa and Kiowa as for the passives in Tiwa and Towa, there is but one option.

(6) Tewa (Rio Grande)

a. act. ìví tą̀ʔnìn dôn-kêʔ   I got his book
        (his book 1A:3sgD:P-get.pf)

b. act. nàví tą̀ʔnìn dîn-kêʔ   he got my book
        (my book 3A:1sgD:P-get.pf)

     Kiowa

c. act. cégùn gyá-ǫ́:   I gave him a dog
        (dog 1sgA:2,3sgD:sgP-give.pf)

d. act. cégùn ę́-ǫ́:   he gave me a dog
        (dog 2,3sgA:1sgD:sgP-give.pf)

As summarized in (7) then, Kiowa lacks any "passive" trappings and Tewa lacks all but case-marked agents. Tiwa and Towa share verb morphology and intransitive clitics; only Taos lacks case-marked agents. It is clear from this checklist of morphosyntactic features why most investigators have reported the existence of passives in KT.

(7)

	Tiwa		Towa	Tewa		Kiowa
	Ta/Pi	Is		Ariz	RG	
Pass vb	yes/yes	yes	yes	no	no	no
Intr pron	yes/yes	yes	yes	no	no	no
Agt case	no/yes	yes	yes	yes	yes	no

What does not appear in the standard checklist, however, is crucial information about the discourse distribution and functions of these constructions. The Tiwa and Towa passives are in fact quite odd despite their classic morphosyntax. So-called passivization is constrained by the person and role of participants in such a way that Speech Act Participants (SAP), i.e., first and second person, are fundamentally distinct from other participants (8). Speakers are thus not free to cast a given clause as active or passive, depending on such usual factors as topicality of participants or activation status. The only alternations occur when both participants are non-SAP animates, that is, third person animate acting on third animate. In these cases, both active and passive versions are possible.

(8)

Agent	Dative/Patient	
1, 2	3	active only
1, 2	1, 2	active only
3	1, 2	passive only
3	3	active or passive

A further constraint, which is also obscured by this summary, is that passives are not permitted when the patient is inanimate. A perfectly ordinary English example like "the building was designed by Calvin and Associates" must be cast as a simple transitive active clause in KT. This particular oddity follows from inverse person agreement and from the KT distinction between Dative and Patient (see section 5).

4.   Direction and inverse person.   The constraints enumerated in the preceding section conform strikingly to the empathy (or animacy) hierarchy characteristic of languages with a direct/inverse system for verb agreement or case marking. The direct/inverse type is well known in Algonquian languages, but DeLancey's (1981) explanations for split ergativity have made it clear that such systems are more widespread than previously recognized. Whistler (1985), in a detailed examination of inversion in Nootkan, was the first to suggest that the Tanoan languages could be analyzed in terms of direction rather than voice. More recently, reports in Givón (1994) have revealed hitherto unidentified direction systems, both in the Americas and elsewhere.

In a typical direction system, the person showing agreement on the verb depends on its position in the now well-established empathy hierarchy (SAP > 3rd pronouns > human > animate > natural force > inanimate). DeLancey (1981) argues that a principle fundamentally different from that of voice is involved in direction systems. Cast in cognitive terms, direction has to do with the match between the natural viewpoint, that is, the perspective from which the speaker represents an event, and natural attention flow, the starting point of the event, which is normally the agent in transitive clauses. When the two coincide, that is, when the agent (starting point) is also an SAP (viewpoint), agreement and case marking are direct. When the two do not coincide, e.g. when the agent (starting point) is a non-SAP (viewpoint), the construction is inverse.

In linguistic terms, direct is unmarked. Inverse, however, usually requires some special morphosyntax. In particular, agreement is with the participant ranking highest on the empathy hierarchy regardless of semantic role; case-marking is typically on the non-SAP transitive agent (or ergative). A further key distinction between passive voice and inverse is that inverse constructions remain formally transitive.

A reconsideration of KT passives as inverse constructions has important implications for earlier historical stages and for understanding how Tiwa and Towa appear to differ so dramatically from Tewa and Kiowa. In "passivizing" Tiwa and Towa, agreement quite consistently reflects the empathy hierarchy, registering 2 > 1 > 3 independent of case role (see examples in (14)). The cutoff for case marking falls at the most common cross-linguistic point setting off SAP from everything else. Where these languages diverge from the direct/inverse norm is in having intransitive verbs in clauses with inverse agreement.

The evidence for a direction system in the languages that do not exhibit the erstwhile passive, Tewa and Kiowa, is clear concerning agreement and transitive verb morphology but equivocal on case-marking.

5.   Agreement.   In order to establish whether agreement in the fused KT clitics reflect the principles of a direction system, we must be clear about what categories are relevant and how they can be identified (9).   Formally, there are three grammatical roles which can be registered in KT pronominal clitics (in addition to the sole participant in an intransitive clause).   (1) The Agent of transitive or ditransitive verbs is animate (or personified inanimate) and reflects the animate number categories singular, dual and plural. (2) The Dative is also a specifically animate category which subsumes all the non-agentive animate roles in clauses with at least two arguments (possessors, recipients, beneficiaries, and experiencers). When number is relevant, the Dative also reflects the animate number distinctions

singular, dual and plural. (3) The <u>Patient</u> is a strictly third person category which is indeterminate with respect to animacy and which distinguishes the classificatory number classes of KT (singular, dual, inanimate plural and inverse number [not person]).

(9)   Mapping of semantic roles to agreement categories

agt   exp   ben/poss   recip   anim.goal   pat/theme   inan.goal/dir   loc   instr
                                                    P

<u>Agent</u>   <u>Dative</u>   <u>Patient</u>   (oblique)
                                                    (3 only)
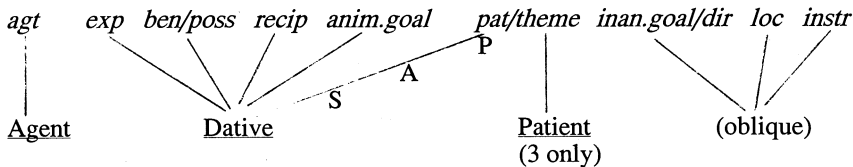
The initial consonant in the clitic indexes one of the two animate categories, Agent or Dative, for person and number. The remaining elements encode in complex and less well understood ways the identity of the other animate argument and the number of the Patient. The most important point is that even though the English translation of a transitive clause might contain two animate participants which would normally be the semantic agent and patient, in KT the animate non-agent is formally a <u>Dative</u>. Failure to pay attention to this distinction results in all manner of unnecessary confusion.

The general template for the agreement clitics as well as the cognate status of at least the initial consonant is illustrated in (10) with a first person singular Agent and a third singular. The left-most element in the prefix is t in Tiwa and Towa, d in Tewa and Kiowa, tentatively reconstructed *d 'first person singular.' A comparison of the Towa and Kiowa clitics, where mergers have not eliminated some of the patient numbers, reveals the very close agreement in several features which can be found in other languages as well. These include nasal for dual number, a final dental (*l in Towa, *d in Kiowa, n in Tewa) for non-singular Patient, and vowels reflecting different numbers. The reconstructibility of the clitic system is not in doubt, even if many of the details remain tentative for the moment.

(10)		Is	Towa	RGT	Kiowa (*d)
1sgAgt:	sgP	ti	tà	dó	gyà
	duP		tį-l		nèn
	plP	bi	tį̄-l		gyàt
	invP	te	tè		dé

In simple transitive clauses with two SAP's, the the leftmost position in the clitic registers one of the SAP's, but the languages differ as to which one, depending on the number of the Agent and Dative (patient). In (11), when the Dative is second person dual, all languages index the Dative, but when the Agent and Dative are both singular, Tiwa (Ta and Is) and Towa index the second person Dative (a labial), but Tewa and Kiowa index the first person Agent (Tewa d).

(11)   I/we saw you-du   you-sg saw me

Ta	mòpén-	mù	mây-	mù
Is	men-	mu-ban	bey-	mu-ban
To	mą̀-	mį́	bæ̀-	mį́
Te	wæ̀n-	mû?	dí-	mû?
Ki	mɔ́-	bǫ́:	ę́-	bǫ́:

Ditransitive clauses, illustrated in (12-13), again index the 2nd singular Dative (k/g) in the initial consonant. The third argument of the ditransitive clause is the obligatorily third person Patient.

(12)

	Ta	Is	To	RGT	Ki
1Agt:2sgDat:sgP	kǫ́	ka	ką̀	wîn	gyá
duP					nén
plP	kǫ́w	kow			yán
invP	kôm	kam			gɔ́

(13) To a.   ní: į́wą́ bélá ką̀-há
                (I you bread 1sgA:sgP:2sgD-bake.pf)
                I baked some bread for you.
      Ki b.   cę̀: gyá-ǫ́:
                (horse 1sgA:sgP:2sgD-give.pf)
                I gave you a horse.

6. Partial reconstruction of pronominal clitics.   Tentative reconstructions of the initial segment, *d 'first person', *g 'second person singular', *b 'second person non-singular' and *ø 'third person' are quite solid. There seems to be a preference for second person marking across the family, implying an expansion of the SAP portion of the empathy hierarchy as 2 > 1 > 3, especially when the participants are non-singular. Bulleted examples are those in which the initial consonant registers the Dative.

(14)   Reconstructed person (AGT or DAT) morphemes

*d   1st person singular

	Taos	Isleta	Towa	RGT	Kiowa	
1sg.reflex	tǫ̀	te	tì-L	dé:	dè	
1sgA:sgP	tì	ti	tà	dó	gya	<*d
1sgA:3sgD:P	tǫ̀	ta	tą̀	dôn		
• 2,3sg:1D:P				dîn	né	

*g   2nd person singular

2sgD:P	kǫ́	ka	ką̀		gyá	
• 1A:2sgD:P	kǫ́	ka		gæ̀n	gyá	<*g

*b	2nd person non-singular					
	2du.intr	mòn	mén	mà-L		mà
	2pl.intr	mò	ma	bà		bà
	2plA:P	mó	má	bà	bîn	bá
•	1A:2plD:P	mòpí	ma	bà	wê:	bó
	2A:1D:P	môm	men	bæ̀		bâ:

*ø	3rd person					
	3sg.intr	ø	ø	ø	(nà)	ø
	3sgA:sgP	ø	ø	ø	(ì)	ø
•	2,3sg:3sgD:P	ò	a	à	ó:	á
	3du.intr	òn	in	ɨ̀-L		è̜

The extremely close agreement in clitics and the reconstructibility of the initial consonant is evident from the preceding examples. The bulleted cases further support the hypothesis explored here that agreement was based on a direction system, in which the position of person on the empathy hierarchy predicts agreement independent of case role. Given such fundamental congruence in agreement, it should be possible to find the paths that lead to both the Tiwa/Towa and Tewa/Kiowa synchronic patterns. Two observations suggest a possible scenario for the divergence. First, in Kiowa there is no distinct intransitive dative paradigm; the clitics registering a Dative occur in both intransitive and ditransitive clauses. Examples with intransitive verbs (2c) and with a transitive verb (3c), both registering a first person Dative, are repeated here for comparison.

(15) = (2c), (3c)

(2c)	Ki	yá̜-pʰátkyá	I have finished.
		((2,3sgA):1sgD:plP-finish.pf)	
		kút yá̜-dɔ́:	They are my books.
		(books (2,3sgA):1sgD:plP-be)	
(3c)	Ki	kút yá̜-tʰɔ́n	He found my books.
		(books (2,3sgA):1sgD:plP-find.pf)	

The second observation is that in Tiwa and Towa a fair number of clitics in the ditransitive paradigm are identical to those in the intransitive dative paradigm. If we were to ignore case marking and so-called passive verb morphology in Towa, we find exactly the distribution occurring in Kiowa of clitics registering a first person Dative, repeating for comparison (2b) and (3b).

(16) = (2b), (3b)

(2b)	To	té:dè kyā ɨ̀-vé:tǣ	My shirt faded.
		(shirt perf 1sgD:sgP-fade.pf)	
		kyā ɨ̀-nó?ó	I have finished.
		(perf 1sgD:sgP-finish.pf)	
(3b)	To	ní: næ̜̀:-tæ̜̀ dél'ɨ̀ ɨ̀-t̂êl'ǣ	He ate my chicken.
		(I that-agt chicken 1sgD:sgP-eat.pass.pf)	

A sampling of these isomorphisms is shown in (17) with the multiple glosses listed together on the left. In other words, the Taos clitic kǫ́ (or Is ka, To kà̧ , Ki gyá̧) occurs in a ditransitive clause with a first person Agent and second person Dative plus Patient (e.g., I gave you a dog) as well as in an intransitive clause with a second person Dative plus Patient (e.g., your dog is sick). Each set in (17) illustrates both the identity of clitics across paradigms and the cognate status of at least the initial consonant. The check indicates that within Tiwa only that language uses that clitic for an intransitive dative.

(17) Isomorphisms in ditransitive and dative intransitive SAP clitics

		Taos	Isleta	Towa	Kiowa
a.	1A:2sgD:(P) 2sgD:(P)	kǫ́	ka	kà̧	gyá
b.	1A:2duD:(P) 2sg/duA:3duD: 2duD:(P)	mòpén-	mim √	mà	mɔ́
c.	1A:2plD:(P) 2plA:3D:(P) 2plD:(P)	mòpí-	mam (mim) √	bà	bɔ́
d.	2(pl)A:1sgD:(P) 2plD:(P)	mò- √	ben/men	bæ̀	
e.	2sgA:3sgD:(P) 3sgA:3sgD:(P) 3sgD:(P)	ò	a	à̧	á

By virtue of the hierarchy based principles of agreement in a direction system, whenever a SAP was a Dative in a ditransitive clause, there was a good likelihood that the resulting clitic would be identical to a corresponding Dative- indexing intransitive dative clitic. A plausible scenario is that this formal identityled speakers to interpret such a ditransitive clitic as one indexing only a Dative and a Patient. In that case, the clause was reanalyzed as intransitive. The subsequent recruiting of intransitive verb morphology and case-marked agents would then bring the surface syntax into line with the reanalyzed intransitivity. Of course, the assumption is that speakers "know" the meanings of initial b, d, and g, that these clitic elements have semantic value and are not just meaningless contrastive units.

7. Agentive Case.   Comparison of the agentive (and instrumental) suffix reveals that it is not cognate across subgroups (18). Given differences in distribution as well as form, it is plausible to argue that these suffixes developed independently albeit along a universal trajectory, in which something like "initial cause" is the common thread, as discussed by DeLancey and others. Tiwa -pa/-ba, Towa -tæ̧:, and Tewa -di should probably be considered to have developed somewhat independently of each other.

(18)

	T I W A			T O W A	T E W A	K I O W A
	Ta	Pi	Is	To	Te	Ki
agent	---	-pa	-ba	-tǽ:	-di	---
instrum	-ba	-pa	-ba	-tǽ:	-di	-dò

Considered in light of the non-passive analysis developed here, the frequencies associated with the direct/inverse opposition in connected discourse are borne out in the Tanoan languages. A small sample count of the case-marked NP's in so-called "passive" clauses reveals that they do not correspond to the frequencies reported for passives in narrative material (e.g., Givón 1979:59 for English) where agentless passives are by far the most frequent. Instead, in two Picuris narrative texts (Harrington and Roberts 1928) with specific and referential participants, the case-marked Agent is in fact more frequently present. The total number of passive clauses is small (barely 3%), but of those clauses, fully 80% have an overt case-marked agent NP.

(19)

	n clauses	n passives	n NP-agt	% NP-agt
Cricket & Coyote	112	9	8	
Wolf & Woman	40	6	4	
Total:	512	15	12	80%

In Tewa, on the other hand, the distribution of -di is unlike that of -pa for Isleta or of -tǽ: for Towa. R. Speirs (n.d.) has described the distribution of NP-di in Rio Grande Tewa as obligatory for all persons, including first and second person independent pronouns (prohibited in Tiwa and Towa), whenever there is both an Agent and an animate Patient or Dative. In other words, agent marking cooccurs with pronominal clitics identified comparatively as those which in general register the Dative in the initial consonant of the clitic, a pattern that coincides in part with the distribution in Tiwa and Towa. Thus, (20a-b) illustrate NP-di agents with clitics indexing first person Agent or Dative. In addition, -di marks agents of simple transitive clauses with third person patients if the patient is animate (20c).

(20)   Obligatory NP-di (RG Tewa)

a.   nà:-dì ì sèn dó-mû?   I saw the man.
      (I-agt def man 1sgA:P-see.pf)
b.   ì sèn-dì nà: dí-mû?   the man saw me
      (def man-agt I 2,3A:1D-see.pf)
c.   ì sèn-dì ì è?nú ó:-mû?   'the man saw the boy'
      (def man-agt def boy 3A:3sg.anP-see.pf)

The suffix -di is prohibited, however, when the patient of a simple transitive clause is inanimate (21a) or if a third person Agent and third person Patient are indexed by i-, the simple transitive 3Agt:Pat clitic (21b-c). The picture is complex and shows some variability across speakers, but it is clearly dependent both on animacy and the role (Dative or Patient) of the person indexed in the prefix.

(21)   Prohibited NP-di (RG Tewa)

a.   nà: ì kʼù: dó-mûʔ   I saw the rock
       (I def rock 1sgA:P-see.pf)

b.   ì sèn ì èʔnú ì-mûʔ   the man saw the boy
       (def man def boy 3sgA:sgP-see.pf)

c.   ì sèn ì kʼù: ì-mûʔ   the man saw the rock
       (def man def rock 3sgA:sgP-see.pf)

8. Verb derivation. The existence of alternating active/transitive and passive/intransitive forms for nearly all transitive verbs in Tiwa and Towa would seem to be strong support for an earlier stage of passives in proto-KT. Most work on Tiwa has identified the passive form as stem plus CV suffix, allomorphs being only partially phonologically conditioned. Under this analysis, it is difficult to see any analogs to the passive suffix in the other subgroups. However, a comparison of all verbal forms reveals that (a) historically speaking, the suffix should be considered to consist of only the vowel and (b) the vocalic suffix appears to be cognate across the subgroups. Examples of cognate verbs (22) establish the comparability of the stem-internal C, those that have been treated as suffix-initial in Tiwa. The leftmost form is the perfective (active); following the slash, only the Isleta and Towa forms are passive.

(22) | MAKE, FIX | LOOK, SEE | FEED, GIVE | BREAK |
|---|---|---|---|
| Ta | pà / pàyì (neg) | mù / mùmì (neg) | mékì | tʰî / tʰɨwọ̀ (neg) |
| Is | pe / pečе | mu / muče | miki / mike | |
| To | pǽ: / pǽý͞e | mɨ́ / mɨ́ẃ͞e | mǽ / mǽsǽ | šó / šóẃ͞e |
| Te | pà: | mûʔ / pụ̀wǽ (abl) | mǽgì | θá: |
| K | --- | bọ́: / bọ́:mɔ̂: (neg) | *má:gè   tʰêm | |

Looking for plausible analogs to a vocalic suffix with derivational function, we find in Kiowa a large class of disyllabic stems which show (along with tonal changes) vowel alternations -ɔ̀ 'perfective transitive' and -á 'perfective intransitive', illustrated in (23a). In Towa (23b), we also see non-derived intransitive verbs in which the vowels of the perfective are identical to the suffix of passive perfectives. The case is clinched when Frantz (1995) says that in S. Tiwa the inchoatives of some transitive stems are the same as the passive of those stems. (24) lists the intransitive suffixes, for which a low front vowel would be the plausible reconstruction.

(23)   Verb derivation

Ki	a.	dé-hâ:pɔ̀	[trans]	I picked/raised it up
		è-há:pá	[intr]	it rose up
To	b.	ì-wọ̀ýe͞	[intr]	I climbed (cf. make.pass)
		è-vétǽ	[intr]	it faded (cf. give.pass)

(24)   Intransitive verbal suffix

Ta	Pi	Is	To	Ki
-a	-ia	-e	-æ	*-ia

Taken by itself, the diachronic development of the verb morphology could be interpreted in the way some would argue as passive originally and broadening function to intransitive. But taken together with the rest of the picture, especially the pronominal clitics, the evidence favors an original intransitive function which was recruited to mark the inverse constructions that were reinterpreted as having reduced valency.

9. Conclusion.   First, to summarize the diachronic stages, there is ample evidence that proto-KT (or a slightly earlier stage) was a direction system, preferentially indexing participants constrained by an empathy hierarchy of the form 2 > 1 > 3. Because of a relatively large number of isomorphisms across ditransitive and intransitive dative paradigms, possibly encouraged by the loss of some patient number distinctions, speakers reanalyzed transitive clauses with Dative indexing clitics as intransitive. Recruiting of intransitive verb morphology in Tiwa and Towa for these reanalyzed verbs created a more transparent relationship between the underlying semantics and the surface morphosyntax. Finally, once the apparent intransitive status of former constructions was reinforced (by verb morphology and case-marked agents), Tiwa and Towa extended the principle to simple transitive clauses as well, so that 3 on 1 and 3 on 2 were obligatorily encoded as intransitive too. The result synchronically is a morphosyntax that looks passive-like by European standards but which clearly retains the signs of its origin as a direction system.

The pitfalls in comparative morphosyntax are numerous and vexing (Campbell and Mithun 1980). Not the least of the dangers in studying less well described languages is the trap of existing synchronic analyses. Even when the research on which comparative reconstruction is based has been careful and thorough, a different theoretical lens may produce a quite different set of "facts" needing explanation. Two such cases characterize attempts to discern the Kiowa-Tanoan past. The more general one was a central focus of this paper, namely the reexamination of the traditional analysis of passives in light of more recent functionally and cognitively based treatments of split ergativity. The other is embedded in the analysis of the KT clitics. Only by recognizing the fundamental distinction in KT between third person Patient versus the strictly animate Dative is it possible to see the logic of the system. The reason for the gap in types of passives (raised in section 3) is now clear: there is no passive counterpart to "Calvin and Associates designed the building" because the English direct object (the building) is a Patient in KT terms but the origin of so-called passives lies in Dative agreement. Even those cases of (optional) 3 on 3 passives in Tiwa and Towa show third person Dative agreement.

Avoiding the pitfalls usually brings progress, but progress is also made when both formal and functional analysis are brought to bear on comparative questions. Whether this historical scenario proves correct in all details or not, it rests on the traditional comparative analysis of morphemes, with both phonological and semantic content, as much as it depends on understanding the distribution and

functions of the morphemes in linguistic contexts.

Notes

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