THE SCOPE OF THE VERBAL SUFFIX OF ASPECT IN ATHAPASKAN

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1.0 INTRODUCTION

Recent research (Cutler, Hawkins & Gilligan 1985) on the morphological universals evidenced by the languages of the world has shown that while languages may or may not make use of prefixes, almost[1] all languages made significant use of suffixes, and languages typologically similar to Athapaskan, i.e., having OV word order and postpositions, are particularly inclined to make very extensive (in many cases, exclusive) use of suffixes. Indeed, a survey of over 350 languages found it to be an exceptionless universal that "(10) if a language has NP + Po, MOOD affixes on V (if any) are suffixed" (Cutler, Hawkins & Gilligan 1985:729). Yet suffixes are rarely mentioned in the Athapaskan literature, and then primarily in the context of nouns.[2]

Nevertheless, the Athapaskan languages do have suffixes, and it is the purpose of this paper to show that the Athapaskan languages have a verbal suffix which could be seen as satisfying the morphology universal given above. It is perhaps not surprising that so little attention has been paid to suffixes in Athapaskan. First, the number of suffixes in any Athapaskan language pales in comparison with the vast inventories of prefixes present in all the languages of the family. Furthermore, the relative ordering of the prefixes presents a problem unparalleled in the suffixes. Secondly, phonological change in some of the better known Athapaskan languages, in particular a restriction on the segments allowed in syllable codas, has made it difficult to determine which suffix is present in any given situation. In Slave, for example, "syllable-final neutralization of stem-finals to [h] and loss of certain stem-finals has led to a situation where patterns of stem variation are rather obscure" (Rice 1989:803). Thus, although Athapaskanists have recognized since the time of Sapir's 1915 paper "The Na-Dene languages, a preliminary report" (Hardy 1979:40) that in a certain sense every verb stem consists of a root and suffix,[3] in Athapaskan circles it is common to deal with the stem as a single unit and to speak of co-occurrence relations between given prefixes and given stems, rather than trying to relate the occurrence of prefixes with suffixes.

One notable exception to this practise is that of James Kari, who while sometimes using the term *stem* to refer to the combination of the verb root plus first possible suffix, always includes a explicit statement of the verbal suffix involved in his more detailed derivations of Ahtna verbs. He is aided in this by the fact that the Alaskan Athapaskan languages are phonologically more conservative than the languages of other branches and have had less simplification in syllable codas than most other languages of the family, which results in the verbal suffixes being more easily recognizable. This greater visibility (and regularity in occurrence) of the verbal suffixes provides greater internal evidence motivating a synchronic analysis of the verb stem into root and suffix than can be found in those Athapaskan languages with a more innovative phonology (Rice 1989:950). For this reason, our discussion of the Athapaskan verb suffixes will focus in Section 2 on the Ahtna verb complex, whereby both the form of the suffixes and their co-occurrence with other affixes will be discussed. At this point, cognates of the Ahtna verbal suffixes found in other Athapaskan languages, their form and function, will also be discussed.

While the cataloguing of the Athapaskan verb affixes and the discovery of their relative order is a task whose importance and size is not to be underestimated, some are of the opinion that if the study of the Athapaskan languages is to further our understanding of language per se, it is not sufficient to stipulate the ordering and co-occurrence of the affixes in a template. Rather, it is necessary to show how the principles of universal grammar manifest themselves in the Athapaskan languages. In Section 3, we will thus examine a proposal first presented in Speas (1990) and further developed in Speas (1991) and Rice (1990a), which argues for a syntactic treatment of the Athapaskan verb complex and shows that such a treatment can explain the ordering of Athapaskan verb prefixes in terms of principles applying to all languages, i.e., in terms of universal rather than language-specific principles.

In Section 4 we will take the analysis presented in Section 3 a step farther. It will be shown that the same facts which argue in favour of a syntactic treatment of the prefix complex also argue in favour of a syntactic rather than lexical treatment of the stem. If, however, the verbal suffix of aspect is recognized as a functional category in its own right, it must also be explained how it relates to the other categories. In particular, it must be explained why it alone among the functional categories incorporated into the Athapaskan verb complex follows the root. Some alternative answers to this question will be examined.

2.0 VERBAL SUFFIXES IN AHTNA AND OTHER ATHAPASKAN LANGUAGES

While there is a great amount of regularity across the Athapaskan languages in terms of the various affixes used and their functions, and there is agreement among Athapaskanists as to the categories present in general terms, there is less agreement when it comes to specifics. This is partly a result of terminological confusion, as is particularly well documented in Kari (1989), who, for example, shows that some 41 different terms have been used to describe the prefixes in what Kari calls the "qualifier zone" and that from one to nine positions have been identified in this zone depending on the researcher and language concerned. On the other hand, while variation among the Athapaskan languages with respect to the number of prefix positions is probably not as great as the various analyses might suggest -- Kari (1989: 449) estimates that "if the inventory of affixes and the numbering and labelling of the positions is treated as in Ahtna, most Athapaskan languages will probably have twenty or more linearly ordered prefix positions" -- there are clearly some real differences. Kari himself states (1989: 449) that "Koyukon, for example, has at least two or three more positions than does Ahtna".

2.1 The verbal affixes of Ahtna

Kari (1990:40/41 (Table 9)) gives the chart of the Ahtna verbal affix positions as follows:

(1)

PP	obj	Der/Them					Pronominal					
11		10		9	8	7	6			5		
A	B	C	B	A				F	E	D	C	B	A
3pS2	pob		der/th		iter	dist	inc	th	#	3y	dob	1p	indf	th	3pS1
k	s			ta	na	n	ta	x		b	y/O	ts'	c'	y	k
	n			O			da			k	s				
	nu		ni+	c'a			bes			c'	n				
	...	gha+	s+	ta			...				...				

Qualifier						Conjugation					
4						3				2	[1
F	E	D	C	B	A	D	C	B	A		
ar/qual	con	icp	qual	qual	qual	trn	spn	mode	prf	subj	clas
ko	u	t	d	n	gh	i	z/s	O	O	es	O
k				O				n	n	i	ł
					z			gh		oh	D
Stem								gho		O	l

0	-1	-2	-3	-4
root	vsf1	vsf2	vsf3	vsf4
CV(V)C	O	(h)e	(y)i	xu
CV(V)(R)(')	ł		nen	dze'
	n		ne	tah
	x		den	dah
	s			
	s			
	t			
	'			

It may be that the 32 positions represented here are, as Cook (1984:125) suggests, overdifferentiated. After all, there are eight null morphemes represented, whose presence is often debatable, some morphemes having different positions within the same zone can never simultaneously occur in the same word, and even Kari (1989) gives one less position than Kari (1990)! Nevertheless, while there is variation among the Athapaskan languages, sometimes even within the dialects of a single language,[4] as to the ordering of affixes within zones, there is general agreement among the languages as to which zones are represented and what order they occur in, with some categories (among them, the incorporated stem and the negative marker) being represented in some languages and not others. There are also differences in the ordering of the disjunct prefixes (in particular, those given as positions 7, 8 and 9 in the above chart) both among the languages and within the languages;[5] Rice (1990b) provides a thorough discussion and explanation of this variability in terms of scopal ordering of the morphemes, but a discussion of this proposal is beyond the scope of this paper.[6]

2.2 The Ahtna suffixes: true suffixes or enclitics?

In the chart of the Ahtna verb complex presented above in (1), there are four suffix positions given. It is, however, important to consider the question of whether these are all indeed suffixes needing to be accounted for in a description of the verb word, or are some of them merely enclitics, i.e., syntactically independent morphemes which are phonologically tacked onto the verb complex. While Kari does not speak of clitics in Ahtna, Leer (1979:38) does explicitly state that "the negative *+(h)e [Kari's vsf2] and the relativizers [Kari's vsf3 and vsf4] are here classified not as suffixes but as enclitics". But just how should suffixes be distinguished from enclitics? Although the definition of a clitic is hardly straightforward, that proposed by Zwicky and Pullum (1983), seems to be the most commonly accepted one. According to Zwicky and Pullum (1983:504), "morphophonological idiosyncrasies are more characteristic of affixed words than of clitic groups." With a few exceptions,[7] vsf3 and vsf4 do not interact with other morphemes. The vsf2 morpheme does inter-

act with the preceding morpheme, triggering voicing[8] of an underlying (non-glottalized)[9] obstruent[10] immediately preceding it, as in *i'eɬ ts'etniige* 'He doesn't know it' (theme: P+'eɬ ts'#D+niic+O+e; cf. *kones* 'he is alive, awake', theme: ko+O+niic+O), where vsf2 both prevents word-final spirantization of underlying (front velar stop) |c| to s,[11] and triggers deaspiration of |c| to g,[12] but this is hardly enough to disqualify it as an enclitic. Such phonological interaction between a clitic and its host is far from rare, occurring in many languages, such as Portuguese, where the encliticization of object pronouns to the verb "triggers certain allomorphic changes both in the pronouns themselves and in the word to which they attach" (Spencer 1991:363), although it seldom impedes the distinction of a clitic from its host. This certainly cannot be said of vsf1, however, whose presence, particularly when occurring with obstruent-closed stems, is often only indirectly detectable. A second criterion proposed by Zwicky and Pullum is selectivity. Clitics, they claim, "can exhibit a low degree of selection with respect to their hosts, while affixes exhibit a high degree of selection with respect to their stems" (Zwicky and Pullum 1983:503). In Ahtna, the vsf2, vsf3 and vsf4 morphemes may all attach to any verb, and vsf3 and vsf4 can also attach to stems of other categories; the Ahtna numeral *taa* 'three', for example, may combine with the plural human suffix (vsf3) *-ne* to produce *taane* 'three people', with the non-human suffix (vsf3) *-(y)i* to produce *taa'i* 'three things', with the temporal (vsf3) suffix *-de(n)* to produce *taade* 'three times' and with the general area (vsf4) suffix *-xu* to produce *taaxu* 'three ways'. The vsf1 morphemes, however, show a number of co-occurrence restrictions, as described below. A third criterion proposed is that of idiosyncracy. Zwicky and Pullum (1983:504) state that "semantic idiosyncrasies are more characteristic of affixed words than of clitic groups". While the Ahtna vsf2, vsf3 and vsf4 morphemes have a clear and consistent interpretation, it is often difficult to determine what the semantic contribution of the vsf1 morpheme to any given verb precisely is. Together, this seems quite strong evidence that whereas the vsf1 morphemes are indeed true inflectional suffixes, the vsf2, vsf3 and vsf4 morphemes are enclitics, whereby it must be noted that the vsf2 morpheme exhibits behaviour which is less typical of clitics than is that of the vsf3 and vsf4 morphemes. The remainder of this paper will thus focus on the form and function of the vsf1 morphemes, leaving the enclitics to be discussed at another time.

2.3.0 Relations between the Ahtna vsf1 and the verbal prefixes

Two kinds of verbal aspect are considered to be represented in the Athapaskan verb. The one kind, traditionally called **mode**, represents such aspects/modes/tenses as imperfective, perfective, future and optative, while the other, traditionally called **aspect**, represents such aspects as durative, momentaneous, persistive and semelfactive. Morphemes representing the former are found in zones 3 and -1 of (1), while morphemes representing the latter are found in zone 4. Each verb requires a particular conjugation pattern, i.e., it is lexically marked to co-occur with a set of conjugation markers for the imperfective, perfective, future, optative and perfective-negative.

2.3.1 Co-occurrence between the vsf1 and mode prefixes

In all the Athapaskan languages, verb roots and derivational affixes combine idiosycratically as polymorphemic lexical items to represent specific meanings. To these groupings, called verb themes, are added aspectual and conjugation markers to derive the verb bases, and each verb base is associated with a conjugation pattern, which determines which inflectional affixes will be added. Each Ahtna verb theme is associated with a set of conjugation patterns, each of which consists of a set of markers (specific morphemes associated with the modes imperfect, perfect, future and optative) which are used in the expression of the various (secondary) aspects. Kari (1990:56) iden-

tifies 14 conjugation patterns, of which six are used only with the neuter aspect, while the other eight are used with the other aspects. The different conjugation patterns are not used to an equal extent. Pattern 1, which has the same manifestation as Pattern 9, is associated with the largest number of different aspects, being used with the gh-momentaneous, durative, customary, durative-continuative, persistive, gh-reversative, onomatopoetic, directive and consecutive aspects. Pattern 2 is used with just two aspects, and pattern 3 is used with three. The other patterns are less used, most with just one aspect each.

Each conjugation pattern consists of four conjugation "types". Kari (1990:55 (Table 13)) identifies 24 conjugation types, combinations of prefixes and suffixes, in Ahtna from which the conjugation patterns are made up. Although many conjugation types can be labelled in terms of the mode prefix required, almost all require the presence of a non-null suffix. This will be taken to be indicative of the non-marginal status of vsf1 in Ahtna.

2.3.2 Co-occurrence between the vsf1 and aspect prefixes

It is clear that there are co-occurrence restrictions between conjugation/mode prefixes and vsf1 morphemes. There also seem to be some co-occurrence restrictions between aspect prefixes and vsf1 morphemes. Such restrictions are well known in Athapaskan, although often presented as the set of restrictions on the co-occurrence of aspects and verb stems. For Ahtna, Kari (1990:663/664 (Table 16)) has worked out the co-occurrence restrictions between the use of specific aspects and the presence of given vsf1 morphemes. Aside from obvious conditioning effect of the coda element, which Leer (1979) shows to be pervasive throughout Athapaskan, two things are of particular interest here. First, some aspects clearly subcategorize for a specific suffix; the semelfactive for some kind of obstruent, the consecutive for vowel reduction (typically indicative of a following consonant cluster in the proto-language), the directive for vowel lengthening (which although not obviously a suffixal process, may have originated through affixation), the neuter and onomatopoetic for -n, the reversative and persistive for -x and the repetitive for -s. On the other hand, certain modes are also consistently associated with vsf1 morphemes, such as the Perfective with -n, the Perfective negative with -ɬ, and the Future with -x and -ɬ.

2.3.3 The content of the vsf1 morphemes

In Ahtna, each vsf1 morpheme regularly cooccurs with a position 3 prefix to constitute the conjugation types exemplified discussed above. This would seem to imply that the vsf1 morphemes, like the position 3 prefixes, have the role of defining verb conjugation in Ahtna. Now it is known that the position 3 prefixes of the Athapaskan languages also have other functions or, as Rice and Hargus (1989) have argued, are intimately associated in a phonological blend typical of inflectional morphemes with morphemes having other functions. These functions have given rise to these morphemes being called modal prefixes or primary aspect prefixes, and indeed both morphemes representing mode[13] (optative in Ahtna and Slave) and morphemes representing aspect (perfective in Ahtna and Slave, imperfective as well in Slave) are found in this position. Navajo also has a morpheme representing future tense in this position, which Speas (1991) uses as evidence supporting her claim that this category is comparable to the Tense category in other languages. This array of properties may at first seem irreconcilable, but the system can be seen to reflect a primary opposition between the two modes of realis (indicative) and irrealis, with perfective representing realis and (ptative irrealis in Ahtna. In Slave and Navajo, a secondary opposition between specifed and unspecified point in time is added, with perfective and future representing a specified point in time

and imperfective and optative representing an unspecified point in time. If then the vsf1 morphemes are identified with the position 3 prefixes not only as conjugation markers but also as markers of mode, otherwise known as MOOD, the morphological universal (10) found by Cutler, Hawkins and Gilligan (1985:729) can be said to hold for Athapaskan, as these NP + Po languages will have MOOD affixes suffixed on V -- they will also have MOOD affixes prefixed on V, but that does not contradict any discovered language universal, and affixal bracketting may be rare among the languages of the world, but is not unknown.

2.4 The verbal suffixes from a historical perspective

It is these regularities in Ahtna and other Athapaskan languages which have enabled Jeff Leer (1979) to reconstruct the Proto-Athapaskan verbal suffixes and assign them meanings as follows: *-ỹ (perfective), *-ɬ (progressive, negative perfective), *-x̣ (reversative), *-k (repetitive-customary), *-x (semelfactive non-perfective), *-t (semelfactive perfective), *-ts' (? [very rare]). Leer also considers many PA stems to have ended in a glottal stop, but he considers the glottal stop to be part of the root rather than a suffix. Kari (1990:70) considers the vsf1 morpheme -' to be a "perfective, distributive suffix; attaches to CVV roots in the neuter perfective and optative, durative perfective, transitional perfective; the distributive imperfective, future, and optative; and the momentaneous optative". The perfective suffix *-ỹ has come into Ahtna as -n, but can only be seen as such with open stems. When suffixed to closed stems, its presence is seen in the lack of spirantization of the root-final obstruent as in *nak* 'endure', for which the perfective form ends in k and imperfective, future and optative forms end in x (Kari 1990:294). The suffix *-ɬ has been retained in Ahtna as the "progressive/future/perfective-negative suffix" (Kari 1990:262) without change. It is one of the most visible of the verbal suffixes, being retained after open roots and after closed roots ending in *t (where *t is dropped before *-ɬ); in Koyukon, it is retained after all closed roots as *-tɬ*, as in Koyukon *'astɬ* 'a few go' (Leer 1979:45), which corresponds to Ahtna *'as* (Kari 1990: 79). Sarcee also retains *-ɬ after some obstruent-closed stems although with irregularity due to phoneme merger, and Hupa suffixes -'ɬ to closed roots, which Leer (1979:45) sees as "a late addition by analogy with open roots." The suffix *-x̣ has been retained without change[14] in Ahtna as the marker of reversative aspect (also appearing in the persistive, transitional, durative-customary and neuter-customary stem sets) and is found overtly only with open roots. Both the *-k and *-x suffixes have also survived in Ahtna, but with a change in phonetic form and limitation of function. Both these front velars shifted to *s* in Ahtna, which is why two -s vsf1 morphemes appear in (1); Kari (1990:447) defines the first as the customary suffix, and the second as the momentaneous imperfective suffix (also occurring in the imperfective of the perambulative aspect). In Ahtna (and Tanaina), both of these suffixes drop after obstruent-closed roots, but *-k appears after some obstruent-closed stems in other Athapaskan languages, coalescing with stem-final *t to *k in Koyukon, Sarcee and Navajo and metathesizing with root-final *ɬ in Koyukon to produce *xtɬ* (Leer 1979:48). The *-t suffix survives in Ahtna in *s-* transitional perfectives such as *yunest'iit* 'he fell in love with her', but is uncommon and found only with open roots. In Sarcee, however, it remains in common use as the semelfactive perfective suffix, even appearing after root-final (fricative) obstruents as in *tȃst* 'to spot' and *gȗɬt* 'to hit with a fist' (Cook 1984:235).

3.0 A HIERARCHICAL ORDERING OF THE ATHAPASKAN VERB COMPLEX

The Athapaskan verb complex has long posed a problem for the theory of morphology because of its placement of inflectional morphemes between derivational morphemes and the root: this would seem to be a violation of the Lexical Integrity Hypothesis, which states that constituent-

structure processes -- in which inflectional morphemes participate -- cannot look inside the internal structure of a word. The processes of concatenative and non-concatenative morphology adequate to describe most other languages of the world seem inadequate here, which has lead some researchers such as Hargus (1986, 1988) and Rice (1985, 1989) to posit a templatic morphology for Athapaskan. This model allows the syntax to access the slots in which the inflectional morphemes has been placed, regardless of their position within the word. Thus, Kari (1990) "generates" an Ahtna verb starting with a lexically derived template in which some slots are initially filled to define the basic meaning of the verb being generated (the root, classifier and, as needed, thematic prefixes); this Kari calls the verb theme. Next derivational elements (aspectual prefixes, "gender" markers, incorporated objects) are added in their appropriate slots, which may be before or between the elements already specified, to form the verb base. Finally, the inflectional elements (subject, object markers) are added to get the underlying form. To this items of the "post-flectional lexicon" (markers of relativization and nominalization) are added and phonological rules applied to produce the phonetic form.[15] The process is exemplified in figure (2).

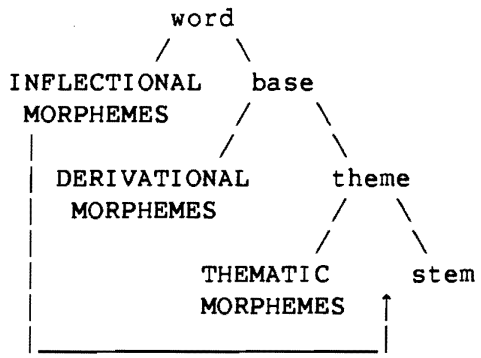
The template model, however, has a number of disadvantages. It marks the Athapaskan languages as exceptional among the languages of the world, does not have a good mechanism (*pace* Spenc-

er 1991) for expressing the kind of word-internal dependencies between non-adjacent morphemes found in the Athapaskan verb complex, is unable to explain variability in the position of some prefixes, in particular the distributive and iterative prefixes (positions 8 and 9 respectively in figure (1)), and it is unable to account for some important generalizations noted by Speas. Thus, an alternative has been sought in a syntactic approach to the Athapaskan verb complex.

3.1 A syntactic approach to Athapaskan verb morphology: infixation

For the past decade[16] Margaret Speas has consistently argued that Navajo (and probably also the other Athapaskan languages) can be dealt with in terms of the same model and the same principles as all other languages of the world. While proponents of the templatic model have argued that only a template could account for the access of the syntax to inflectional morphemes which are between derivational morphemes and the verb stem, Speas (1990) has claimed that at D-structure, where syntax interacts with the lexicon, the inflectional affixes are indeed outside of the derivational ones, as shown in (3) (Speas 1990:253 (figure 85)), and then move into the position betwen the derivational morphemes and the stem:

(3)



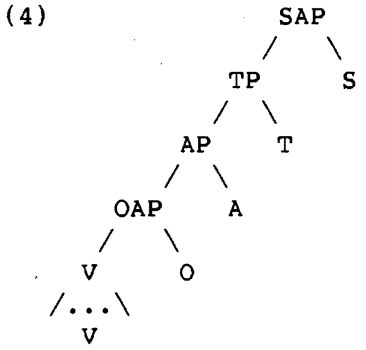
But deriving the Navajo verb complex from a morphosyntactic structure as in (3) would seem to violate the Mirror Principle proposed by Baker (1985, 1989) and Gerdts (1981), stated as "Morphological derivations must reflect syntactic structure (and vice versa)"[17] (Baker 1989:13) unless the ordering of inflectional and derivational morphemes is not a morphological, but rather a phonological derivation. In other words, Navajo (and other Athapaskan languages) could be seen as respecting the Mirror Principle if their inflectional morphemes were in fact infixes whose environment for insertion is phonologically rather than syntactically defined. Precisely this is what Speas claimed. Speas follows Wright (1983) in assuming that in Navajo "conjunct prefixes are underlying consonants and disjunct prefixes are open syllables" (Speas 1990:257). Rice (1990a) makes a similar although not so radical claim for Slave, noting that "in general, [Slave conjunct morphemes] have a uniform phonological form, C, with an epenthetic vowel, ... This contrasts with the disjunct morphemes, which are CV, CVC, CVCV, and CVCVC in form" (Rice 1990a: 20).[18] This is also true of Ahtna, although Ahtna also has a number of disjunct morphemes with the form C, which cannot constitute a prosodic word by themselves. But while there are apparent exceptions to these generalizations, such as the Navajo conjunct prefixes *ho*, *o* (mode prefix), and *'a* (deictic subject) and the Slave and Ahtna prefixes *u*[19] and *ah/oh*, Ken Hale's suggestion (Speas 1990:284), according to which the Navajo "exceptions" should be analysed as having the underlying forms *hwi*, *wi* and *'i* respectively, seems very promising.[20] In a templatic model, this phonological distinction between disjunct and conjunct morphemes is mere coincidence, while Speas' proposed

using these facts to define a phonological framework for the insertion of the inflectional morphemes. Thus, given the choice between the infixation model, which accounts for the phonological facts observed and claims that the Athapaskan languages obey the morphological universals observed in other languages of the world, and the templatic model, which ignores these phonological facts and violates the morphological universals, it is indeed "in the interest of maintaining a restrictive theory of morphological typology" to adopt the infixation model presented in Speas (1990).

3.2.0 Another approach to Athapaskan morphology: functional categories

In addition to the infixation model and the templatic model, a third choice has been provided. Pollock (1989) and Chomsky (1989) have argued that morphemes representing semantic categories such as agreement, tense and aspect are hierarchically ordered under INFL with each category having a functional head dominating its own phrase. The similarity in the order of the functional categories found by them and others has given rise to the claim that the underlying order may be the same in all languages,[21] even if not all languages represent all categories. Chomsky (1989) proposes for English and French the basic order of functional categories: [Subject Agreement [Tense [Object Agreement [Verb]]]]. Further work on Greek (Rivero 1990), Finnish (Mitchell 1989) and Basque (Laka 1988) has shown that languages will order an aspect marker between the tense marker and the Object Agreement marker and they will order a voice marker[22] between the Object Agreement marker and the Verb stem, giving us the universal order [SAG [T [ASP [OAG [VOICE [verb]]]]]]. Dismissing the disjunct prefixes as proclitics, as was suggested as early as Cook (1984:124) and thoroughly discussed in Rice (1990a),[23] Speas looks at the conjunct prefixes of Navajo and finds four functional categories represented and occurring in the order: OAG ASP T SAG [verb]. Surprisingly (and unexplicably, if we were to adopt the template model for Athapaskan), these categories are represented in the same order as in all other languages ... although in the opposite order and with the verb stem at the "wrong" end of the chain. Since the Athapaskan languages are right-headed, unlike the left-headed languages examined earlier in this model, it is not surprising that the categories appear in the opposite order to that found in European languages, nor does it imply a difference in hierarchical ordering, shown in (9) taken from Speas (1991:190, figure 15), given the standard assumptions of X-bar theory Speas is operating under. What is, however, surprising, is that the verb stem is found adjacent to the Subject marker rather than the Direct Object marker.

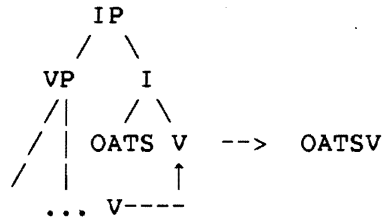
(4)



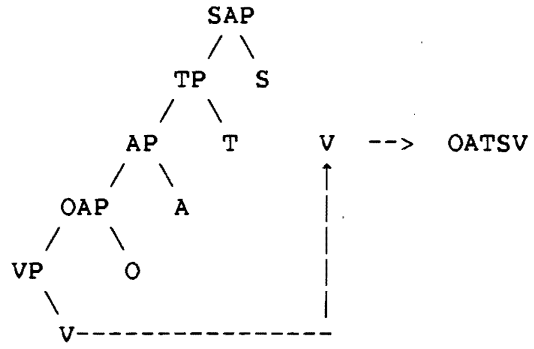
3.2.1 Reconfiguring the Athapaskan functional categories

Starting from the assumption that the Athapaskan languages, or at least Navajo, have structures parallel to those of other languages and that agreement is a local configurational phenomenon, Speas examines the possibilities within Incorporation Theory and finds six logically possible derivations in which the verb stem would follow the functional heads, which are the following:

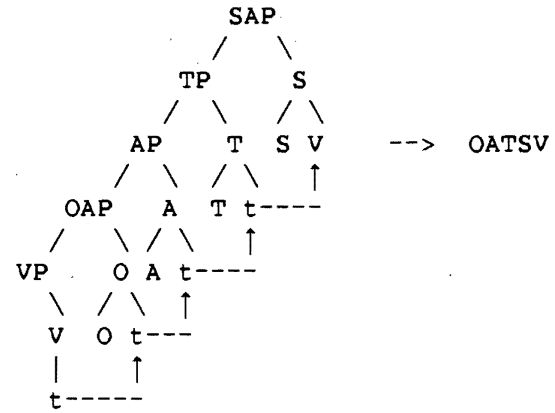
(5) Heads final; INFL forming in the lexicon; V-raising over INFL (Speas 1991:190)



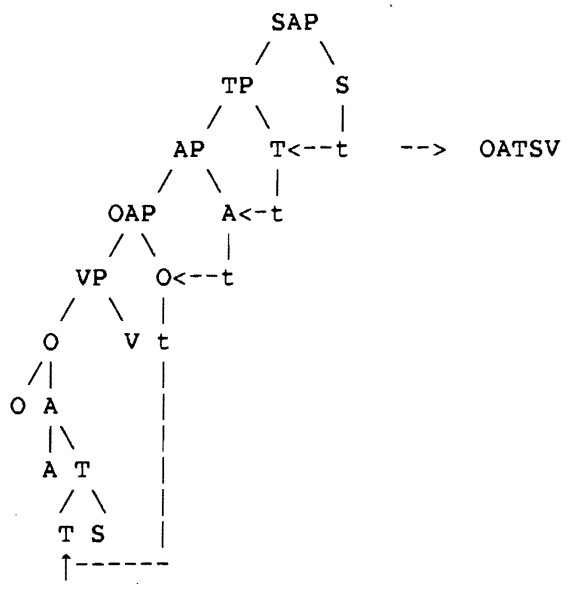
(6) Heads final; fell swoop movement; string-vacuous affix raising (Speas 1991:191)



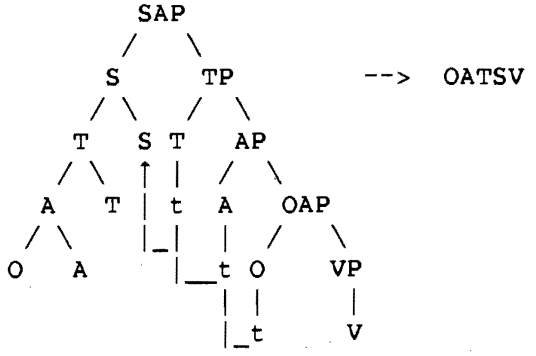
(7) Heads final; successive cyclic movement of V; string-vacuous raising of others (Speas 1991:191)



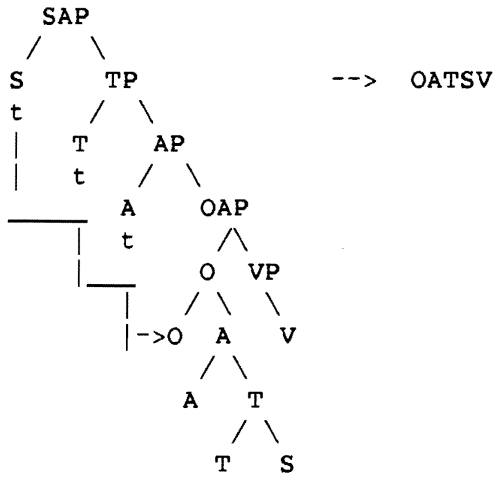
(8) Heads final; string-vacuous INFL lowering; hopping over verb stems (Speas 1991:192)



(9) Functional heads initial; affix raising of INFL, suffixation of verb stem (Speas 1991:193)



(10) Functional heads initial; affix lowering of INFL, suffixation of verb stem (Speas 1991:193)



These derivations all involve a number of assumptions which are somewhat controversial. First, Speas assumes that direct object prefixes and deictic subject prefix together constitute the category of Object Agreement following Sandoval & Jelinek (1989) and Willie (1989), who argued that the deictic subjects actually represent patients (and thus are, in a sense, direct object markers). Also, the existence of the Tense node in Athapaskan is disputable. Although Speas considers the mode prefixes to be "the closest Navajo analogue of Tense", she herself cautions that "it is incorrect to assume that they translate precisely as tenses into English" (Speas 1991:189). However, not all categories of the universal hierarchy need be represented in a given language -- in the analysis of Chomsky and Pollock, for example, neither English nor French represent Aspect or Voice in the verb complex. Thus, an alternative to Speas' analysis might argue that Tense is not represented in Athapaskan at all and that the mode prefixes represent a subcategory of Aspect,[24] as proposed by Rice (1990a); this would seem to reflect the facts of the Athapaskan verbal system somewhat more directly. Furthermore, Speas is ignoring the disjunct prefixes, which she assumes to be clitics, "for the sake of simplicity" (Speas 1991:188). While her assumption that these prefixes are in fact clitics is well supported in the Athapaskanist literature, it is questionable whether this alone justifies leaving them aside from consideration in an analysis of Athapaskan verbal morphology which is, essentially, a syntactic one. Since adverbial elements, in particular the iterative and distributive morphemes, and incorporated direct objects (in Northern Athapaskan languages -- Navajo does not incorporate objects into the verb) seem to have scope over verbs, it would seem reasonable for them to appear above the verb root in D-structure, which is what Rice (1990a:24) proposes. This aspect of the theory clearly needs more discussion.

3.2.2 The best configuration

Speas examines each of the six configuration presented above to determine its suitabilty as a proper representation of Navajo verbal morphology. The derivation presented in figure (5) is rejected by Speas on the grounds that "if the inflectional elements are put together in the Lexicon, there is no way for the syntax to have access to their hierachical arrangement without making reference to the internal structure of a word" (Speas 1991:195). Since the reason for proposing a syntactic analysis of the Athapaskan verb complex was to allow syntax access to the inflectional elements, Speas quite rightly concludes that such a derivation would be self-defeating.

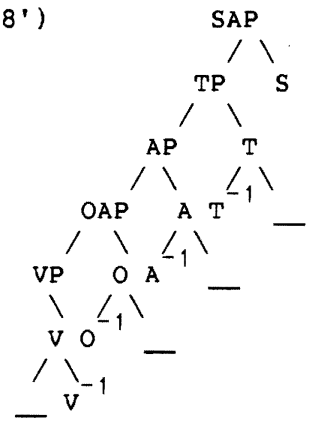
The derivation presented in figure (6) is the one adopted by Rice (1990a, 1991) and refined by her to differentiate all the conjunct prefixes as well as include the disjunct morphemes. A basic assumption being made here is that it is possible to move the verb stem in one fell swoop past all the functional categories without violating the ECP. Baker and Hale (1990) have claimed that this is indeed so, on the grounds that functional heads do not block antecendent government by lexical heads. Since the raised V is still the closest lexical head to the trace it should be able to properly govern it. Speas (1991), however, rejects this approach, citing Li (1990) who has argued that movement in the verb must be restricted. Li shows that verb incorporation occurs only out of a bare VP complement and not out of a tensed clause. This is only relevant, however, if Athapaskan has tensed clauses. Speas clearly feels it does, but as argued above, it could be said that Athapaskan languages mark Aspect but not Tense: in such a case, perhaps the derivation presented in (6) is indeed an appropriate one. Since it is unlikely that Li's proposal, mentioned (Li 1990: footnote 19) as having being adopted by Hale & Keyser (1988), was not taken into consideration in Baker & Hale (1990), it seems possible that its effects are not as far-reaching as Speas understands them to be.

In the derivation represented in (7), the verb moves cyclically from head to head and leaves a trace at each step but does not bring the host with it to the next step. Following up on a suggestion in Baker (1989) that traces are not allowed to occur within a word, Rizzi and Roberts (1989) have argued that 'excorporation' (moving on from an incorporated position without taking the host along) is disallowed in substitution, i.e., movement which takes place to satisfy a morphological subcategorization frame; in other cases, adjunction is involved and excorporation is allowed. Since the Athapaskan prefixes are all bound morphemes, any movement to one of the functional head positions is substitution and excorporation is not allowed. Thus, the derivation in (7) is not possible.

Unlike Sandoval & Jelinek (1989) and Willie (1989), Speas considers Navajo NPs to be arguments of the verb. Since they do not bear overt Case marking and occur in a rigid order, she assumes "that they receive structural Case, and that the object is within the projection of Object Agr, while the subject is an immediate daughter of Subject AgrP" (1991:197). Given these assumptions, it should not be possible to raise the verb stem to the position of Subject Agr, as in (9), "because then the verb + INFL complex would precede the direct object" (Speas 1991:197). If, however, one were to accept the view of Hale (1983) and others that all argument positions are satisfied within the Athapaskan verb and that Athapaskan NPs are actually adjuncts, Speas' objection does not hold.[25]

Refining the Rizzi-Roberts theory of substitution, Speas proposes that the operation of substitution be restricted to those cases of moving into an available position. From this follows that in Navajo substitution must involve the head being lowered onto a morpheme within that head's subcategorization frame; Speas considers the fact that the OAGR morpheme does not occur on intransitive verbs to provide evidence that this hypothesis is correct. Thus, the D-structure of (8) with the morphological subcategorization positions added looks like (8').

(8')



From this, it is clear that in (8) the inflectional morphemes follow their syntactic complement but precede their morphological complement. Speas suggests, citing evidence from Basque and Dutch, that the projection of morphological subcategorization frames obeys X-Bar theory. If she is correct, (8) is not an admissable representation of Athapaskan verbal morphology.

Thus, (10) remains the representation of Athapaskan verb morphology not eliminated,[26] and it is this representation which Speas accepts in her 1991 paper. In this derivation, the functional heads are to the left of their complements, which seems odd for a language with postpositions and a "rather rigidly SOV" word order. Nevertheless, this is Speas' claim, and Speas (1991) provides various pieces of evidence from Navajo which seem best analysed by saying that in this language, functional heads precede their complements, while lexical heads follow their complements. While some of these (the lexical character of COMP, the position of the negation particles, the content-question particle and the focus particle) may not have counterparts in all the Athapaskan languages, the argument that the pronominal element co-occurring with postpositions is an agreement morpheme which always precedes its complement is certainly applicable throughout Athapaskan.

This derivation, unlike the rejected ones, does not allow movement past functional categories. Rather, it requires the incorporation through adjunction of the functional categories in accordance with X-bar theory (i.e., both syntactic and morphological complements must be on the same side of the head) to build up the complex of functional categories, effectively reversing their order. Speas therefore concludes that this is the only permissable derivation for the surface form of the Navajo verb complex, and since there is only one possible derivation, the Affix Consistency Constraint, given in Speas (1991:186-187) as "If af[fix] subcategorizes for XP in syntax, then af is adjacent to X at PF", is not required as a specific condition on the Grammar.

In this section it has been shown that of the six derivations for the Navajo verb complex consistent with the Universal D-structure presented in section 3.2.0 and some version of the Affix Consistency Condition, only one (10) is permitted given Speas' additional constraints. Each of the other derivations are rejected on the basis of a single criterion, which, particularly in the case of (6) and (8), may warrant further examination.

4.0 THE POSITION OF THE VERBAL (VSF1) SUFFIXES IN THE AHTNA VERB COMPLEX

In the syntactic analyses of the Athapaskan verb complex presented above, the verbal suffixes (as opposed to the verbal enclitics, as discussed in section 2.2) are considered to be combined with the root in the lexicon. It will be argued here that while such as analysis may provide an adequate description of the observable phenomena in Slave or even Navajo, it is inadequate for an analysis of the Ahtna verb complex.

4.1 Verbal suffixes, like conjunct prefixes, are functional categories

In defining the conjunct prefixes of Slave as functional categories, Rice (1990a) provides a number of characteristics for each conjunct prefix which define them as inflectional morphemes. The verbal suffixes of Ahtna share two of three defining properties of the conjugation morphemes. First, the choice of both the conjugation marker and the verbal suffix is determined by secondary (and primary) aspectual material. "Since they do not obey strict locality, a property of lexical operations, this suggests that they are inflectional, and thus syntactic, as syntactic operations can depend on material outside of their immediate domain" (Rice 1990a:17). Second, both the conjugation prefixes and the verbal suffixes are obligatory in Ahtna.[27] The verbal suffix does not share the third characteristic which defines the conjugation prefix as an inflectional morpheme, but this is easily explained: the verbal suffixes do not combine with adjacent inflectional morphemes to form portmanteau morphemes quite simply because they are not adjacent to other inflectional morphemes. In addition, the verbal suffixes share the canonical form of the conjunct prefixes (C) rather than that of the disjunct prefixes (CV(C)(V)). Thus, the verbal suffixes are like conjunct prefixes which have somewhat got behind, rather than in front of, the root.

4.2 Positioning the verbal suffix

One approach to positioning the verbal suffix in the verbal complex, that implied in the analyses of Speas and Rice, is to say that this functional category combines with the root in the lexicon to form the stem, which then in turn syntactically combines with the other functional categories. This is merely the same approach used in (5) for the verb complex as a whole, and it must be rejected for the same reason. Once the verbal suffix is combined with the root in the lexicon, it is no longer accessible to the syntax, and it becomes impossible to describe the co-occurrence relations of the verbal suffix with the mode and aspect prefixes in a principled manner.

There are various approaches which do allow the verbal suffix to be treated as a functional category, however. One approach might be to posit the position of the verbal suffix to be the inflectional category closest to the verb root at D-structure and have it adjoin to the root before movement occurs. This proposal is, however, problematic for the derivations presented. First, the rule seems rather ad hoc. More importantly, if Speas is correct in assuming that morphological subcategorization frames respect X-Bar theory, any lowering analysis would have the same problem as derivation (8) does. Furthermore, such a proposal would be in violation of the observed scopal properties of the verbal suffix. Since the verbal suffix is functionally equivalent to the conjugation marker (= Tense), which is said to have scope over secondary aspect (= Aspect), it too must have scope over secondary aspect and be placed above it.

An alternative might be to posit the verbal suffix as the highest functional category, which would give it scope over secondary aspect as desirable (and over the subject, not so desirable), and

have the root move into a position immediately preceding this morpheme. How this could be done in a principled manner is, however, not at all clear and could indeed be taken as an indication that this model is insufficiently restrictive.

A third alternative is to assume that the verbal suffix is located in a place appropriate to its scopal properties and is merely specified lexically to attach to the opposite side of the morpheme (cluster) being incorporated or to which it is incorporated as are the other functional categories. This would produce the desired results, but would not be allowed if morphological subcategorization frames obey X-Bar theory. Whether this is proper evidence that morphological subcategorization is subject to different conditions than syntactic subcategorization is perhaps a topic worthy of further study.

5.0 CONCLUSION

In this paper, the (innermost) verbal suffix in Ahtna, its forms, function, co-occurrence restrictions and its underlying position have been examined.

A detailed comparison of this suffix with what Kari (1990) claims to be the other verbal suffixes of Ahtna strongly suggests that this is indeed a true suffix, a suffix such as those characterized by Zwicky and Pullum (1983) as representing an inflectional category, while the other verbal "suffixes" are, in fact, merely enclitics.

It has been shown that in Ahtna, and perhaps other Athapaskan languages, this suffix, usually grouped together with the root to form the verbal stem, in fact represents a functional category closely correlating with, and restricted in its co-occurrence by, the conjugational/mode prefix and, to a lesser extent, the (secondary) aspect prefixes. Indeed, if the verbal suffix is taken to co-represent MOOD in the Athapaskan verb together with the mode prefix, a morphological universal can be shown to be satisfied by the Athapaskan languages. A difference in canonical form has been observed between the disjunct prefixes, claimed by Speas and Rice to be derivational morphemes appearing as proclitics, and the conjunct prefixes, claimed to be inflectional morphemes. It is surely not a coincidence that among the suffixes there is a similar difference in canonical form and suffixal status between the innermost suffix, having (like the conjunct prefixes) the canonical form C, and representing a functional category, and the other verbal enclitics of Ahtna which (like the disjunct prefixes) have the canonical form CV and represent lexical categories.

Given these observations, the proposals of Speas and Rice for a syntactic analysis of the Navajo and Slave verb complex, while in themselves very promising and certainly superior to the templatic model, are inadequate for a description of the Ahtna, since they do not accommodate a position for the functional category represented by the verbal suffix. A number of means for accommodating the presence of the verbal suffix as an independant functional category in Athapaskan can be proposed. The most promising of these has the verbal suffix placed within the string of conjunct affixes, which however would be disallowed if the same principles which apply in syntax are said to apply in morphology as well. Further study is required before a definite conclusion can be reached in this matter.

NOTES

1 Among the languages surveyed by Greenberg (Cutler, Hawkins & Gilligan 1985:728), one

made exclusive use of prefixes. This one language, however, was typologically very different from any Athapaskan language, having VO word order and prepositions.

2 It seems significant that Athapaskan languages do agree with the other of the two "exceptionless universals" of morphology proposed by Cutler, Hawkins and Gilligan and relevant to a discussion of Athapaskan, namely "(6) If a language has NP + Po or SOV, NOMINALIZING affixes on N (if any) are suffixed" (Cutler, Hawkins and Gilligan 1985:729).

3 There is some disagreement among Athapaskanists as to whether a suffix is present in all verb stems. Kari assumes that all Ahtna verbs have a suffix, but most other Athapaskanists seem to feel that while a suffix may be present, it is not obligatory in all cases. This will be discussed further in Section 2.

4 Kari (1989:443) notes that Ahtna dialects differ with respect to the order of zone 5 prefixes, resulting in Central, Western and Lower Ahtna having the form *hk'etnaan* 'they are drinking' corresponding to the Mentasta Ahtna form *k'qetnaan*.

5 Kari (1990:40), for example, notes with respect to Ahtna that "in two of fifteen relevant examples, the order of iterative and distributive is reversed", and Hargus (1988) shows that the iterative morpheme of Sekani may appear in any of three positions with respect to the distributive morpheme and an incorporated stem.

6 Rice's arguments for ordering the disjunct prefixes according to their scope at D-structure follow from the view of Athapaskan verb structure presented in Rice (1990a), which will be discussed in Section 3.

7 The vsf2 suffix leaves only voicing as evidence of its presence when followed by the vsf3 morpheme and the vsf3 morpheme *-(y)i* deletes when followed by the possessive suffix *-e'*, as in *tl'ogh t'aaze'* 'his scythe' (< tl'ogh t'aas+i+e'; cf. *tl'ogh t'aasi* 'scythe [literally: that which cuts grass]') (Kari 1990:669). Since these effects could be due to of a phonological rule, they will not be taken as evidence that the Ahtna vsf3 and vsf4 morphemes are anything other than typical clitics.

8 In Ahtna, the graphemes p, t, tl, ts, c and k represent aspirated voiceless stops and affricates, while b, d, dl, dz, g, and gg represent unaspirated voiceless stops and affricates. Syllable-final stops are always unaspirated although written as aspirated stops (Rice, p.c.), so the apparent change in the voicing/aspiration of a stop with the addition of the vocalic suffix *-e* is merely a illusion resulting from a syllable-final stop becoming syllable-initial. Nevertheless, the addition of vsf2 does induce a real phonetic change, voicing, in fricatives.

9 Glottalization prevents deaspiration of an aspirated stop/affricate followed by vsf2 as shown by examples such as *'ele yidzaek'e* 'he didn't caulk it' (Kari 1990:678). Glottalization does not, however, block the (deglottalization and) deaspiration of glottalized stops/affricates when they are followed by the possessive suffix, as can be seen by comparing the negative form *t'aats'e* (t'aats'+e) 'did not cut' with the relative possessed form *t'aadze'* (< t'aats'+(y)i+e') (Kari 1990:667-668). This difference might lie in the glottalization associated with the vowel of the possessive suffix; Ahtna may not allow two adjacent segments both to be glottalized.

10 Other factors also affect the phonological outcome of adding the vsf2 morpheme, but to dis-

cuss them would be beyond the scope of this paper. Fricatives, for example, are voiced before vsf2 only if also preceded by a long vowel, as can be seen by comparing *t'aaze* (< t'aas+e) 'was not cutting' with *t'ase* (< t'as+e) 'will not cut' (Kari 1990:667), the glottal stop (') is not affected by the addition of vsf2 and the n suffix disappears without trace when followed by vsf2.

11 Kari lists the form of this suffix as *-s*. However, since the word-final spirantization of an aspirated stop and the deaspiration of a voiceless stop intervocalically are both processes commonly observed, the underlying form of this morpheme is more likely *-k* (as proposed for Proto-Athapaskan in Leer 1979), rather than the *-s* < **-g* proposed by Kari (1990:447).

12 Unlike the deletion of vsf2 before vsf3 and vsf4, the voicing of an obstruent before vsf2 seems less likely to be the effect of an general phonological process; Ahtna has intervocalic voiceless/aspirated obstruents. There are, however, other contexts for voicing/deaspiration in Ahtna, such as preceding the possessive suffix *-e'*, as in *tl'uule'* 'his rope' (< tl'uuɬ + e') (Kari 1990:37). Also, Kari treats many stem-inital obstruents as voiced obstruents which "become voiceless when in word-initial position or when incorporated into the verb" (Kari 1990:36); presumably, these could also be treated as voiceless segments which become voiced in a variety of contexts.

13 Rice, who prefers the term "primary aspect", says (1990a:5) that "*mode* is a misnomer which is used for convenience in much of the recent Athapaskan literature", since "imperfective and perfective are aspectual rather than modal" (p.c.). While this is true, in contrast to future and optative, imperfective and perfective do represent a mode, the **indicative** mode.

14 Despite appearances, the phonetic value of this suffix has also remained unchanged. The grapheme *x* represents a uvular fricative in Ahtna, the rare (*x having mostly shifted to *s* in Ahtna) velar fricative being represented as *yh*.

15 The full range of processes used in the generation of a Ahtna verb is given in Kari's figure 2 (Kari 1990:39), of which figure (2) is here an abbreviated version.

16 Spencer (1991:213) suggests that "template morphology may be with us to stay", but he may not have been familiar with Speas' recent work as only her 1984 MITPWPL paper on Athapaskan verb morphology is listed in his bibliography.

17 Speas (1991) examines the nature of the Mirror Principle and shows with evidence from Navajo that the Mirror Principle follows from Incorporation Theory, but only if three general principles of Grammar are assumed, namely (Speas 1991:210): (a) All heads, functional and lexical, project minimality barriers for antecedent government of X^0 traces. (b) 'Excorporation' can only be from adjoined positions. (c) Projection of morphological subcategorization frames obeys X-Bar theory.

18 Although the disjunct prefixes may seem a very heterogeneous group, Rice (1990a:32) points out that what they have in common is the fact that each disjunct prefix can constitute a prosodic foot.

19 This morpheme is apparently cognate with the Navajo prefix *o*. It is interesting to note, however, that while this, the conative aspectual marker, occurs immediately preceding (most of)

the qualifier morphemes in Ahtna (Kari 1990:40/41) and Slave (Rice 1989:599-601), leading it to be grouped together with them, in Navajo this morpheme is grouped together with the mode prefixes of position 7 (Speas 1990:205).

20 In Navajo, the epenthetic vowel is *i*, while in Slave it is *e*.

21 While recognizing that Pollock (1989) quite explicitly stated that the scope order assumed for French and English was probably not universal, Speas (1991:185) feels that "Chomsky's work and subsequent investigations of diverse languages seem to be converging on an order that recurs in language after language."

22 Although the verbal classifier of Athapaskan is sometimes thought of as a voice marker, it has a number of other functions as well and combines idiocyncratically with verb roots to produce various bases. For this reason, it is perhaps best to assume that it is lexically derived and/or is not the same kind of object as the voice marker in other languages.

23 Rice (1990a) argues that the disjunct prefixes (in Navajo and Slave, but perhaps not Ahtna) can all be characterized as constituting a prosodic foot and have access to the full phonology of the language (conjunct prefixes are much more limited in their phonology). The disjunct prefixes each form a phonological unit distinct from the conjunct prefixes, in addition to being functionally distinct -- unlike the conjunct prefixes, which represent functional categories, the disjunct prefixes all seem to represent lexical categories -- as argued in Rice (1991), and are thus clearly more independent than the conjunct prefixes. Thus, while they are admittedly less independent than some other morphemes whose status as clitics is not questioned, there seems to be good reason to call them clitics.

24 In fact, in matching verbal categories represented in various languages with the categories of the universal hierarchy, Speas (1991:185) equates **mood**, which, as has been argued above, is what the mode prefixes primarily represent, with **aspect** (with respect to Basque).

25 Accepting Hale's view of Athapaskan languages as non-configurational is, however, problematic. First, a non-configurational language typically hat it has free word order, whereas all the Athapaskan languages have strict SOV word order; the non-configurationality analysis has no explanation for the rigid word order of Athapaskan. Second, Saxon (1986, 1989) has provided convincing evidence that at least Dogrib and Slave are configurational, since in these languages (a) pronominal inflection corresponding to each argument is not obligatory, (b) not all lexical NPs corresponding to arguments are optional, (c) lexical NP arguments do not behave like adjuncts for the purposes of extraction and (d) noun incorporation is possible. If Navajo can be shown to be configurational, it seems preferable to analyse all Athapaskan languages as configurational rather than claim that some languages of this family are configurational but not others.

26 Speas (1991:197) notes that the derivations in (8), (9) and (10) all violate a strict version of the Affix Consistency Constraint, as in all three derivations, O subcategorizes for VP but is not adjacent to V in the surface string. Speas, however, takes this not as evidence for the inadequacy of these representations, but as evidence "that the correct version of the Affix Consistency Constraint must be one which refers to some condition on the syntactic representation rather than to the surface string" (Speas 1991:197).

27 Since stem variation is used to define verbal conjugations in all Athapaskan languages, it might be said that in an abstract sense, the use of verbal suffixes is required in all Athapaskan languages. In all but the Alaskan Athapaskan languages, however, phonological modification of syllable codas has so thoroughly eroded all signs of the verbal suffixes, particularly with roots originally having a consonantal coda, there is little motivation for the positing of verbal suffixes with all verb forms in a synchronic analysis of the verb system.

BIBLIOGRAPHY

Baker, Mark (1985) The Mirror Principle and Morphosyntactic Explanation. *Linguistic Inquiry* 16, 373-415.

Baker, Mark (1989) *Incorporation; a Theory of Grammatical Function Changing.* Chicago: University of Chicago Press.

Baker, Mark and Ken Hale (1990) Relativized minimality and pronoun incorporation. *Linguistic Inquiry* 21 (2), 289-297.

Chomsky, Noam (1989) Some Notes on Economy of Derivation and Representation. *MIT Working Papers in Linguistics* 10, 43-74.

Cook, Eung-Do (1984) *A Sarcee Grammar.* Vancouver: University of British Columbia.

Cutler, Anne, John A. Hawkins, and Gary Gilligan (1985) The suffixing preference: a processing explanation. *Linguistics* 23, 723-758.

Gerdts, Donna (1981) Object and absolutive in Halkomelem Salish. Ph.D. dissertation, University of California, San Diego.

Hale, Ken (1983) Warlpiri and the Grammar of Non-Configurational Languages. *Natural Language and Linguistic Theory* 1, 5-47.

Hale, Ken and S. J. Keyser (1988) On some syntactic rules in the lexicon. ms, MIT, Cambridge, Massachusetts.

Hardy, Frank Wilton (1979) Navajo aspectual verb stem variation. Ph.D. dissertation, University of New Mexico.

Hargus, Sharon (1986) Phonological evidence for prefixation in Navajo verbal morphology, in *Proceedings of the West Coast Conference on Formal Linguistics* 5, 53-67.

Hargus, Sharon (1988) *The Lexical Phonology of Sekani.* New York: Garland.

Kari, James (1989) Affix positions and zones in the Athapaskan verb complex: Ahtna and Navajo. *International Journal of American Linguistics* 55. 424-454.

Kari, James (1990) *Ahtna Athabaskan Dictionary.* Fairbanks: Alaska Native Language Center.

Laka, Itziar (1988) Configurational heads in inflectional morphology: The structure of inflected forms in Basque. ms, MIT, Cambridge, Massachusetts.

Leer, Jeff (1979) *Proto-Athabaskan Verb Stem Variation. Part One: Phonology*. Fairbanks: Alaska Native Language Center.

Li, Yafei (1990) X^0-binding and Verb Incorporation. *Linguistic Inquiry* 21. 399-426.

Mitchell, Erika (1989) Evidence from Finnish for Pollock's theory of IP. *Linguistic Inquiry* 20.

Pollock, Jean-Yves (1989) Verb Movement, Universal Grammar and the Structure of IP. *Linguistic Inquiry* 20. 365-424.

Rice, Keren (1985) On the placement of inflection. *Linguistic Inquiry* 16. 155-161.

Rice, Keren (1989) *A Grammar of Slave*. Berlin: Mouton de Gruyter.

Rice, Keren (1990a) The structure of the Slave (Northern Athapaskan) verb. Paper presented at the workshop on Lexical Phonology, University of Washington.

Rice, Keren (1990b) Predicting the order of the disjunct morphemes in the Athapaskan languages. Paper presented at the Athapaskan Linguistics Conference.

Rice, Keren (1991) On deriving rule domains: the Athapaskan case. *Proceedings of the West Coast Conference on Formal Linguistics* 10.

Rice, Keren and Sharon Hargus (1989) Conjugation and Mode in Athapaskan Languages: Evidence for Two Positions. In *Athapaskan Linguistics; Current Perspectives on a Language Family*, Eung-Do Cook and Keren D. Rice, eds., pp. 265-315. Berlin: Mouton de Gruyter.

Rivero, M.L. (1990) The location of nonactive voice in Albanian and Modern Greek. *Linguistic Inquiry* 21(1), 135-145.

Rizzi, Rizzi and Ian Roberts (1989) Complex Inversion in French. *Probus* 1. 1-30.

Sandoval, Merton and Eloise Jelinek (1989) The bi-Construction and Pronominal Arguments in Apachean. In *Athapaskan Linguistics; Current Perspectives on a Language Family*, Eung-Do Cook and Keren D. Rice, eds., pp. 335-377. Berlin: Mouton de Gruyter.

Saxon, Leslie (1986) The syntax of pronouns in Dogrib. Ph.D. dissertation, University of California, San Diego.

Saxon, Leslie (1989) Lexical versus Syntactic Projection: The Configurationality of Slave. In *Athapaskan Linguistics; Current Perspectives on a Language Family*, Eung-Do Cook and Keren D. Rice, eds., pp. 379-406. Berlin: Mouton de Gruyter.

Speas, Margaret (1990) *Phrase Structure in Natural Language*. Dordrecht: Kluwer.

Speas, Peggy (1991) Functional heads and the Mirror Principle. *Lingua* 84. 181-214.

Spencer, Andrew (1991) *Morphological Theory; An introduction to word structure in generative grammar.* Oxford: Basil Blackwell.

Willie, MaryAnn (1989) Why There is Nothing Missing in Navajo Relative Clauses. In *Athapaskan Linguistics; Current Perspectives on a Language Family*, Eung-Do Cook and Keren D. Rice, eds., pp. 407-437. Berlin: Mouton de Gruyter.

Wright, Martha (1983) The CV skeleton and verb-prefix phonology in Navajo, *Proceedings of NELS* 14, 461-477.

Zwicky, A. and Geoffrey Pullum (1983) Inflection versus cliticization: English n't. *Language* 59. 502-13.