

## Athapaskan: a Structural Overview

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### Article abstract

In this structural overview, I will focus on the morphology with a brief discussion of phonology and syntax for the reason that Athapaskan, as a "polysynthetic" language, has a very complex morphological structure of the verb. In terms of the number of segments, Athapaskan is one of the richest in the inventory of the consonants, which include three series of obstruents (plain, aspirated, and glottalized). Particularly rich is the inventory of affricates, which include, for most Athapaskan languages, three sets (dental, lateral, and palatal). The major lexical categories include verbs, nouns, and postpositions. Minor categories include deictic-demonstratives, numerals, locatives, adverbials, etc. Nouns and postpositions are morphologically identical in that they inflect with the same set of personal prefixes, marking a possessor for nouns and object for postpositions. But nouns and postpositions are different syntactically because only nouns function as a subject or direct object, whereas postpositions play other syntactic functions often incorporated into the verb. The verb morphology is characterized by a complex prefix structure as well as stem variation marking not only tense /aspect I mode, but also such other features as number and what are known to be the characteristics of the so-called 'classificatory' verbs. Athapaskan verbs are known for more or less a dozen prefix positions, although not all of these positions are filled for a particular verb. The classificatory verb system, which includes half a dozen or more alternating stems, is the most interesting and intriguing morphosemantic characteristic of the Athapaskan language, which would be particularly interesting to interpreters and translators. The syntactic structures involving the third and fourth person pronominal prefixes have been the most lively theoretical issue. Athapaskan is a verb-final language and a verb alone often represents a sentence. Typically the subject noun phrase and verb phrase are the first and last constituents of the sentence where other constituents, e.g. adverb, a postpositional phrase (indirect object) and direct object noun phrase occur between these two constituents. Relative clause and direct I indirect discourse are the best known noun phrase and verb phrase complementations, whereas topicalization and extraposition are the two best known movement rules in Athapaskan.

## **SECTION 2**

# ATHAPASKAN: A STRUCTURAL OVERVIEW

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## **Résumé**

*Au cours de ce survol structurel, je parlerai surtout de la morphologie et discuterai brièvement de la phonologie et de la syntaxe, parce que l'athapaskan, en tant que langue « polysynthétique », possède une structure morphologique du verbe très complexe. En terme de nombre de segments, l'athapaskan est une des langues les plus riches quant à son inventaire de consonnes, lequel inclut trois séries d'obstruants : ordinaire, aspiré et glottal. L'inventaire des affriquées est particulièrement riche, incluant entre autres, pour la majorité des langues athapaskanes, trois ensembles : dental, latéral et palatal. Les catégories majeures incluent les verbes, les noms et les postpositions. Les catégories mineures incluent, quant à elles, les démonstratifs, numériques, locatifs, adverbiaux, etc. Les noms et les postpositions sont morphologiquement identiques, au sens où ils infléchissent le même groupe de préfixes personnels, marquant le possesseur pour les noms et, l'objet pour les postpositions. Mais les noms et les postpositions diffèrent au niveau syntaxique, parce que seulement les noms peuvent être sujet ou complément d'objet direct, alors que les postpositions jouent d'autres rôles syntaxiques, souvent incorporés au verbe. La morphologie du verbe est caractérisée par une structure complexe du préfixe, aussi bien que par une variation du radical indiquant non seulement le temps, l'aspect ou le mode, mais également d'autres particularités, comme le nombre et ce qui est reconnu comme étant la caractéristique des verbes surnommés verbes « classificatoires ». Les verbes en athapaskan comptent environ une douzaine de positions « préfixes » ; cependant, chacune de ces positions n'est pas nécessairement comblée pour un verbe particulier. Le système du verbe classificatoire, qui inclut une demi-douzaine ou plus de radicaux alternatifs, est la caractéristique la plus intéressante et la plus intrigante, intéressante particulièrement pour les traducteurs et les interprètes. Les structures syntaxiques impliquant les préfixes pronominaux de la troisième et de la quatrième personne se sont avérés les enjeux théoriques les plus vivifiants. L'athapaskan est une langue à verbe final, et un verbe seul représente souvent une phrase complète. De façon typique, la locution-nom sujet et la locution-verbe sont les premiers et derniers constituants de la phrase dans laquelle, par exemple, l'adverbe, une locution postpositionnelle (le complément d'objet indirect) et la locution complément d'objet direct se retrouvent entre ces deux constituants. La clause relative et le discours direct-indirect sont les locutions-noms et les locutions-verbes compléments les mieux connus ; par contre, l'actualisation et l'extra-position sont les deux règles du mouvement les plus connues de l'athapaskan.*

## **Abstract**

*In this structural overview, I will focus on the morphology with a brief discussion of phonology and syntax for the reason that Athapaskan, as a "polysynthetic" language, has a very complex morphological structure of the verb. In terms of the number of segments, Athapaskan is one of the richest in the inventory of the consonants, which include three series of obstruents (plain, aspirated, and glottalized). Particularly rich is the inventory of affricates, which include, for most Athapaskan languages, three sets (dental, lateral, and palatal). The major lexical categories include verbs, nouns, and postpositions. Minor categories include deictic-demonstratives, numerals, locatives, adverbials, etc. Nouns and postpositions are morphologically identical in that they inflect with the same set of personal prefixes, marking*

a possessor for nouns and object for postpositions. But nouns and postpositions are different syntactically because only nouns function as a subject or direct object, whereas postpositions play other syntactic functions often incorporated into the verb. The verb morphology is characterized by a complex prefix structure as well as stem variation marking not only tense/aspect/mode, but also such other features as number and what are known to be the characteristics of the so-called 'classificatory' verbs. Athapaskan verbs are known for more or less a dozen prefix positions, although not all of these positions are filled for a particular verb. The classificatory verb system, which includes half a dozen or more alternating stems, is the most interesting and intriguing morphosemantic characteristic of the Athapaskan language, which would be particularly interesting to interpreters and translators. The syntactic structures involving the third and fourth person pronominal prefixes have been the most lively theoretical issue. Athapaskan is a verb-final language and a verb alone often represents a sentence. Typically the subject noun phrase and verb phrase are the first and last constituents of the sentence where other constituents, e.g. adverb, a postpositional phrase (indirect object) and direct object noun phrase occur between these two constituents. Relative clause and direct/indirect discourse are the best known noun phrase and verb phrase complementations, whereas topicalization and extraposition are the two best known movement rules in Athapaskan.

In this brief structural overview, I will deal with some salient aspects of phonology, morphology, and syntax with a focus on morphology and particularly that of the verb whose complex structure has been the primary concern of Athapaskan students. The structural characteristics and examples are drawn from Northern Athapaskan from which the term "Dene" originates and with which I am most familiar.

Dene is known to have a rich inventory of consonants, particularly coronal affricates. As shown in Table 1, the core consonantal system of Chipewyan consists of five series of obstruents in seven sets (2, 3, 4, 5, 6, 7, 8).

**Table 1: Chipewyan Consonants**

	1	2	3	4	5	6	7	8	9
(I) Plain	b	d	dl	dð(ddh)	dz	dj(j)	g	gw	
(II) Aspirated		t	tɬ	tθ(tth)	ts	tc(ch)	k	kw	
(III) Glottalized		tʰ	tɬʰ	tθʰ(tthʰ)	tsʰ	tcʰ(chʰ)	kʰ	kwʰ	ʔ
(IV) Voiceless			ɬ	θ(th)	s	c(sh)	x	xw	h
(V) Voiced			l	ð(dh)	z	y	ɣ(gh)	ɣw(w)	
(VI) Nasal		m			n				
(VII) Trill			r						

1 = labial, 2 = dental, 3 = lateral, 4 = interdental, 5 = alveolar,  
6 = alveopalatal, 7 = velar, 8 = labio-velar, 9 = glottal.

The plain obstruents (I) are usually unvoiced, but in intervocalic position they may be fully voiced. Orthographic symbols that are different from phonemic symbols are given in parentheses. With the exception of w, the labiovelars (set 8) are preserved only in conservative speech.

While other languages have more or fewer sets of obstruents, all have contrasts among the three series (plain, aspirated, and glottalized). In many (if not all) languages, each pair of voiceless and voiced continuants alternate both morphophonemically as well as morphologically to mark aspect/mode categories. The best known morphophonemic rule involving consonants is the so-called "d-effect" by which **d** and the stem-initial consonants coalesce (e.g.  $d + 2 \rightarrow tʰ$ ,  $d + l \rightarrow dl$ ,  $d + \gamma \rightarrow g$ ).

Chipewyan has five full vowels which are either oral or nasal, and one reduced vowel (schwa) which has no nasal counterpart.

Table 2: Chipewyan Vowels

Oral				Nasal		
i		u		ĩ		ũ
e		ə (ë) o		ɛ		ɔ
	a			ɛ̃		ɔ̃

Five vowel qualities consist of the most common system which derives from Proto-Athapaskan which had four full and three reduced vowels as reconstructed by Krauss (1963). While some languages have only oral vowels, nasal vowels are derivable from a sequence of a vowel and a tautosyllabic *n* in many languages, which is a rule that has existed since Proto-Athapaskan.

Like nasal vowels, tone has developed via “suprasegmentalization” of a stem-final ʔ or a secondary articulation of glottal constriction. This feature gave rise to high tone (“high-marked”) in some languages (*e.g.* Chipewyan, Slave) or low tone (“low-marked”) in others (*e.g.* Dogrib, Navajo). While the origin of tone is well established, its status, especially the relationship to (tautosyllabic) consonants, as well as tonomorphophonemics in many languages, is not well described.

The Athapaskan syllable structure is basically CV(C) where a special status for pre-consonantal *s*, *ʔ* and nasal is recognized. In stem syllables, there is virtually no restriction for the distribution of consonants in the onset position, but only a few may occur as a coda. On the other hand, in prefix syllables, (which is CV), only a few consonants may occur as an onset. In the languages which have reduced vowels (v) as well as full vowels (V), Cv has also been recognized as a syllable in the existing literature. This, I believe, does not reflect the speaker’s intuition. What has been recognized in the existing literature as Cv is pronounced either as CV (by tensing the lax vowel) or CvC by ambisyllafying the initial consonant of the following syllable, *e.g.* *sə-tá* → *se.tá* or *sət.tá* ‘my father’ (chipewyan). There is no Cv in absolute final position and such a syllable in the existing analyses is more likely an error for Cvh.

Inflectional (major) categories include verbs, nouns, and postpositions. Other (minor) categories that do not inflect include numerals, deictic-demonstratives, and other particles. There are three formally similar sets of pronominal prefixes that occur in the major categories. The subject and direct object prefixes occur in nouns (N) and postpositions (P). Therefore, morphologically N and P are identical, although they are different syntactically because only N may function as a subject or direct object. The person, number, and other grammatical categories, including (+/-human, +/-definite, etc.) are marked as exemplified by the Sarcee N/P paradigms given below.

## (1) Sarcee Noun/Postposition Paradigms

(I) Noun		(II) Postposition	
- <i>tsì</i>	‘head’	<i>ts’ì</i>	‘towards’
a. <i>sí-tsì</i>	‘my head’	<i>sí-ts’ì</i>	‘towards me’
b. <i>ní-tsì</i>	‘your head’	<i>ní-ts’ì</i>	‘towards you’
c. <i>mí-tsì</i>	‘his/her head’	<i>mí-ts’ì</i>	‘towards him/her’
d. <i>náhi-tsì</i>	‘our/your(pl) head’	<i>náhi-ts’ì</i>	‘towards us/you (pl)’
e. <i>gími-tsì</i>	‘their head’	<i>gími-ts’ì</i>	‘towards them’
f. <i>yí-tsì</i>	‘the other’s head’	<i>yí-ts’ì</i>	‘towards the other’
g. <i>ʔí-tsì</i>	‘its (animal’s) head’	<i>ʔí-ts’ì</i>	‘towards something’
h. <i>gú-tsì</i>	‘someone(s) head’	<i>gú-ts’ì</i>	‘towards someone(s)’
i. <i>dí-tsì</i>	‘one’s own head’	<i>dí-ts’ì</i>	‘towards oneself’
j. <i>ʔáti-tsì</i>	‘each other’s head’	<i>ʔáti-ts’ì</i>	‘towards each other’

There are two ways in which the Athapaskan verbs are traditionally analyzed. At a more concrete level, the verb is viewed as a configuration of a stem preceded by an ordered set of more or less ten inflectional and derivational prefixes, some of which may be phonologically zero. One of the simplest verb paradigms of Chipewyan given below illustrates this point. The verb stem 'to sing' is represented by *-jën*. There are four classifiers (1, 1, d,  $\emptyset$ ) which occur immediately preceding the stem, and the verb given below happens to have the zero classifier. While *ghe-* and *wa-* (conjugation markers) mark the perfective and optative paradigms respectively, the conjugation marker for the imperfective paradigm is zero. Subjects are marked by *s-* '1sg', *ne-* '2sg', *i(d)-* '1dp', (duoplural) *uh-* '2dp', and *he-* '3dp', but 3sg is unmarked (*i.e.* zero) where *h* (e)- is epenthetic.

(2) Chipewyan Verb Paradigms: 'to sing'

	Imperfective 'sing'	Perfective 'have sung'	Optative 'will / wish to sing'
	Imp	Perf	Opt
1 sg	<i>hesjën</i>	<i>ghesjën</i>	<i>wasjën</i>
2 sg	<i>nejën</i>	<i>ghijën</i>	<i>wujën</i>
3 sg	<i>hejën</i>	<i>ghejën</i>	<i>wajën</i>
1 dp	<i>hijën</i>	<i>ghijën</i>	<i>wújën</i>
2 dp	<i>huhjën</i>	<i>ghuhjën</i>	<i>wuhjën</i>
3 dp	<i>hehejën</i>	<i>heghejën</i>	<i>hewajën</i>
Indef	<i>ts'ejën</i>	<i>ts'eghejën</i>	<i>ts'ewajën</i>

At a more abstract level, the verb has two levels of derivation: (1) root and (2) theme. The theme consists of a root plus a classifier with or without one or more thematic (derivational) prefixes, including an incorporated noun root, verb root, or postposition. The verb theme 'to sing' then can be represented by root *-yën* (*cf.* *shën* 'song' (N) where *sh* is *vl.* counterpart of *y*) and classifier *d-*, (*i.e.* *d + yën*  $\rightarrow$  *jën*). The process of lexical derivation is further illustrated by Chipewyan examples given below. The three verbs in (3) share the same root *-dhër*. This root (R) plus zero classifier (C) and thematic prefix (theme) *ná-* represent an intransitive verb theme 'to stay/live' (3a). The same theme is further modified by an incorporated postposition *ye-k'e* 'him-on' in (3b) which means literally 'he stays on top of him'. The same root along with an additional thematic prefix and the l-classifier represents a transitive theme as shown in (3c).

- (3) a. *ná- $\emptyset$ -dhër*  $\rightarrow$  *nádhër* '3sg lives / stays'  
 theme-C-R  
 b. *ye-k'e-ná- $\emptyset$ -dhër*  $\rightarrow$  *yek'enádhër* '3sg fights 4p'  
 4p-on-theme-C-R  
*cf. ye-ghq-nádhër* '3sg stays around 4p (s/he bothers him/her)'  
 c. *ha-ná-ye-i-l-dhër*  $\rightarrow$  *hanáyíldhër* '3sg owns an animal'  
 theme-theme-4p-perf-C-R 's/he has it living'

This particular root is used for singular or dual subject/object, and there is an alternating root that is marked for plural subject/object. The verbs in (4) have exactly the same structure as those in (3) except the root.

- (4) a. *ná- $\emptyset$ -dé*  $\rightarrow$  *nádé* '3pl live / stay'  
 theme-C-R  
 b. *ye-k'e-ná- $\emptyset$ -dé*  $\rightarrow$  *yek'enádé* '3pl fight 4p'  
*cf. ye-ghq-ná-dé* '3pl stay around 4p (they bother him/her)'  
 c. *ha-ná-ye-i-l-dé*  $\rightarrow$  *hanáyíldé* '3pl own animals  
 s/he has them living'

The root suppletion for the number category shown above is one aspect of the root alternative in the Athapaskan verb morphology. More interesting are the so-called classificatory verbs that exist in four types of themes; one set of neuter (stative) themes and three sets of motion (active) themes where each set of themes involves up to a dozen alternating roots. The nine motion themes, each represented by a root and classifier, exemplify a set of classificatory verbs of Chipewyan. The choice of a particular theme is in part determined by the category of the object noun. Notice that all of the nine themes are translatable into one English verb ‘to pick up.’ The classifier of the verbs in (5) is either zero (which is ignored) or **l. ha** is an enclitic marking a tense/mode category.

- (5) Classificatory verb (‘3sg will pick it up’)
- |                     |                          |                                      |
|---------------------|--------------------------|--------------------------------------|
| a. Round/solid      | <i>niyeri-ʔá ha</i>      | ‘s/he will pick it up’ (e.g. a rock) |
| b. Animate          | <i>niyeri-t-tí ha</i>    | (e.g. a dog)                         |
| c. Long, Slender    | <i>niyeri-tj-ha</i>      | (e.g. a stick)                       |
| d. Fabric-like      | <i>niyeri-t-tšuth ha</i> | (e.g. a shirt)                       |
| e. In a plate       | <i>niyeri-ká ha</i>      |                                      |
| f. In a pail        | <i>niyeri-t-í ha</i>     |                                      |
| g. Grain-like       | <i>niyeri-dzah ha</i>    |                                      |
| h. Mushy            | <i>niyeri-tté ha</i>     |                                      |
| i. Plural/rope-like | <i>niyeri-le ha</i>      | ‘s/he’ll pick them/a rope up’        |

A verb alone may represent a sentence in Athapaskan where subject and object as well as tense/mode categories are marked by affixes (and enclitics). The basic word order is S(ubject), O(bject), and V(erb) where S and/or O is represented by an independent noun phrase, e.g. (from Chipewyan),

- (6) a. *nátsēr*. ‘s/he/it is strong’  
 b. *lidí nátsēr* ‘the tea is strong’  
 c. *ts’ákui lidí hedq* ‘the old woman drinks tea’  
 old-woman tea 3sg-drink

A noun phrase may be represented by a noun (*ts’ákui* ‘old woman’) as in (6c), which may be modified by a demonstrative (or numeral) which precedes as in N (7a) and/or by a particle (7b) and/or a relative clause (7c-d), e.g.

- (7) a. *dēri ts’ákui lidí hedq* ‘**this** old woman drinks tea’  
 b. *dēri ts’ákui lidí ta hedq* ‘this old lady drinks **a lot of** tea’  
 c. *ts’ákui lidí nátsēr hedq* ‘the old lady drinks **strong** tea’  
 d. *lidí thittsj hedq* ‘s/he drinks the tea **that I made**’

The verb may be modified by one or more enclitics (8a-c), and the prepositional phrase usually occurs immediately preceding the verb (8d), e.g.

- (8) a. *hejën ha* ‘he will sing’  
 b. *hejën ha hūle* ‘he will **not** sing’  
 c. *hejën hútó* ‘the old woman might sing’  
 d. *ts’ákui neba jejën hútó* ‘the old woman might sing **for you**’

The complement clause of NP normally occurs to the right of the head noun (7c-d), and the complement of VP normally occurs to the left of the main verb (9a). For this reason a

sentence like (9b) is potentially ambiguous since the embedded clause can be either a VP complement or NP complement.

- (9) a. (Sarcee) *ʔisjin siyínizin* 's/he wants me to sing'  
I-sing he-wants-me
- b. (Chipewyan) *dēne nezɔ hejēn*  
man 3sg-be-good 3sg-sing  
'the man **who is good** is singing'  
'the man is singing **well**'

Two NP's may be conjoined by a particle that follows each NP, e.g.

- (10) a. (Chipewyan) *sq chu na chu lidí he(he)dq*  
my-mom too your-mom too tea they-drink  
'my mom and your mom drink tea'
- b. (Dogrib) *semɔ lidí taxò ligawhi taxò edɔ*  
my-mother tea or coffee or 3sg-drink  
'my mother drinks tea or coffee'

When two clauses are conjoined, the first is structurally like a PP because most conjoining particles are morphologically postpositions, e.g.

- (11) a. (Dogrib)  
*sòmba tɔ dèhno t'à winiì*  
money lots he-won **because** he's-happy  
'because he won a lot of money, he is happy'  
cf. *ʔeyi t' à winiì* 'because of **that** he is happy'
- b. (Sarcee)  
*ʔáá...ʔisni ʔ-i-ihílà xáyìt ɔt-là*  
yes 3sg-says-N-with 3sg-runs-out  
'saying..."yes..." she rushed out'  
cf. *dítòd dób ʔihílà ʔáàsni-là*  
own-father own-mother **with** 3sg-told  
'she told her (own) father and mother'

The basic word order (S O (PP)V) may be altered primarily by two rules, one that moves a constituent to the beginning (topicalization) and another that moves a PP (N + P or pro-P) to the end of the sentence, e.g.

- (12) a. (Dogrib)  
*ʔeyi ts'èko tli kàyido* 'a dog bit that woman'  
O S V  
that woman dog 3sg-bit
- b. (Dogrib)  
*ayi ts'èko yeghɔ shètɪ* 'what is the woman eating?'  
O(wh) S PP V  
what woman it-of 3sg-eat
- c. (Chipewyan)  
*dēneyu atɔ gheket, nu ts'én*  
S adv V N P  
young man still 3sg-paddles island to  
'the man is still paddling towards the island'



- d. (Chipewyan)
- |                |                |               |            |
|----------------|----------------|---------------|------------|
| <i>ts'ákuí</i> | <i>yełtsi,</i> | <i>dechën</i> | <i>t'á</i> |
| S              | V              | N             | P          |
| old-woman      | 3sg-made       | wood          | with       |
- 'the old woman made it, with wood'

The following Chipewyan text written by Mary Jane Kasyon of Black Lake, Saskatchewan, contains five sentences. The subject of sentence (a), *dëneyu* is modified by *Joe hulye*. Two clauses are conjoined by *kólú* in (b). The third sentence appears to contain two PP's headed by *ʔá* (<— *t'a*) and *ts'ën*. But what precedes *ʔá* is a verb rather than a noun. Sentence (d) contains three clauses. Again, the first clause looks like a PP because of *hét* (cf. *set* 'with me', *net* 'with you', etc.). The enclitic *u* in *nıya-u* is most commonly used in conjoining coordinate clauses. In the last sentence, the complement of the main verb *ʔajá* 'it happened' is *bekué bér niʔa* 'he brought meat home'. The PP *ʔeyi ʔá* in this sentence and *ananıte ʔá* of sentence (c) may be treated as having the same structure where *ananıte* is a nominal (zero) derived from a verb.

## (13) Chipewyan text

- a. *łáh yanłzi dëneyu Joe hulye náłzé ni.*  
 Once long-ago young-man Joe-called he-hunted past  
 'Once upon a time a young man named Joe was hunting.'
- b. *Taghe dziné dzıghelza kólú dódı hıńı.*  
 three day he-hunted but nothing he-got  
 For three days he hunted, but he caught nothing.
- c. *Ananıte ʔá bekué ts'ën nahéja ni.*  
 he-gave-up because his-home to he-went past.  
 'Having given up he was returning home.'
- d. *Hotié nahéja hét denie ghq nıya-u*  
 just he-left then/with moose upon he-came-and  
 'As he was on his way home, he came upon a moose,  
*teghıyıttther ni.*  
 he-killed-it past  
 and he killed it.'
- e. *ʔeyi ʔá bekué bér niʔa ʔaja.*  
 that because his-home meat he-brought it-happened  
 'That is why he was able to bring meat home.'