

# Segmenting and glossing Tlingit

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## Abstract

Tlingit is a language with a fairly complex morphology. The morphology and morphophonology of the verb is particularly difficult. This paper is a quick guide to segmenting and glossing for people working with unanalyzed Tlingit data.

## Contents

<b>Contents</b>	<b>1</b>
1 Orthographies . . . . .	1
2 Nouns . . . . .	2
3 Verbs . . . . .	3
3.1 Verb theme . . . . .	4
3.2 Classifiers . . . . .	5
3.3 Stem variation . . . . .	6
3.4 Conjugation class . . . . .	13
3.5 Modes . . . . .	14
3.5.1 Non-imperfective modes . . . . .	15
3.5.2 Imperfective modes . . . . .	17
3.6 Theme categories . . . . .	20
3.6.1 Motion verbs . . . . .	20
4 Abbreviations . . . . .	25

## 1. ORTHOGRAPHIES

The Tlingit community actively uses three orthographies: the Coastal (or Revised Popular) orthography, the Email orthography, and the YNLC (or Inland) orthography. The salient differences are the representation of the uvulars and the representation of vowels. The following examples give a few words in the three orthographies.

- (1) a. gaach káa teet t'ooch' néex' l'éiw áa tléikw hít  
 b. ghaach kháa teet t'ooch' néexh' l'éiw áa tléikhw hít  
 c. ghàch khâ tìt t'ùch' nìxh' P'èw â tlèkhw hít  
 mat man wave charcoal marble sand lake berry house

The Email orthography is the easiest to type. It does not require any unusual symbols, the acute accent being easily available on most operating systems. The Coastal orthography is preferred in linguistic and anthropological publications because it is the dominant orthography in print. The YNLC orthography is generally only found in publications from the Yukon Native Language Centre, but is also used by Tlingits from the Yukon alongside some use of the Coastal orthography.

In all three orthographies the apostrophe should be the symbol ' which is U+02BC Modifier Letter Apostrophe. The Unicode specification defines this as a character that acts like an ordinary letter rather than as punctuation. The plain apostrophe ' which is U+0027 Apostrophe can be used as a substitute, but this is defined by Unicode as a kind of punctuation rather than a letter. The closing single quote ' which is U+2019 Right Single Quotation Mark should never be used as part of a word, though it is acceptable as a quotation mark.

Because all the Tlingit orthographies use the apostrophe as graphemes, and because the usual shapes of apostrophes are similar to or identical with quotation marks, I have recommended the use of guillemets for quoted speech in published Tlingit. Double guillemets « and » are preferred, as in North American use of the double quotes “ and ” for first levels of quotation. Single guillemets ‹ and › can be used for second level quotations.

- (2) «‹Tléil ux̄sateen› yóo yaawaḱaa» ax̄ een has akaawaneek.  
 They told me “He said ‘I didn’t see it’”.

High quality typography should include a thin space ( $\frac{1}{5}$  or  $\frac{1}{6}$  em, U+2009 Thin Space) between the guillemets and the enclosed text, « like so ». The example above uses an even thinner space, the hair space (U+200A Hair Space) that is a bit narrower than the thin space, «like so».<sup>1</sup> A full space can be used as well. In plain text files the guillemets should be written flush with the enclosed text, «like so». As with British English and Canadian conventions, punctuation should be placed outside the quotation unless it is actually part of the quotation. The Tlingit name for a guillemet is *t'aawáḱ x'oosí* 'goose's feet' or *gaaxw x'oosí* 'duck's feet'.

## 2. NOUNS

Nouns are of two types, alienable and inalienable. Inalienable nouns must be possessed, whereas alienable nouns can occur without possessors. Inalienable status is indicated using an en-dash – at the beginning of the inalienable noun when giving a citation form, e.g. *-tláa* 'mother', *-jín* 'hand/arm', *-jee* 'possession'. Alienable nouns are given without a preceding en-dash, e.g. *x'úx* 'paper, letter, book', *hít* 'house, building', *aan* 'town, land, country', *yéil* 'raven'. As with English, proper names are capitalized, e.g. *Yéil* 'Raven', *Sheet'ká* 'Sitka', *Dikée Aanḱáawu* 'God' (lit. 'Above Noble').

Prefixes and suffixes are represented with hyphens, as is usual for most morphological representations. There are no noun prefixes, but there are a number of suffixes such as *-k'* DIM 'diminutive' and *-x'* PL 'plural' as well as a variety of postpositions.

1. See <http://www.cs.tut.fi/~jkorpela/chars/spaces.html> for a short discussion of Unicode's inventory of space characters and how they are meant to be used.

The possessive suffix has several allomorphs: *-í, -ú, -i, -u, -yí, -wú, -yi, -wu*. The underlying form is generally given as either *-í* or as *-yí*, with the latter using *y* to indicate the appearance of either *y* or *w*.<sup>2</sup> This implies an analysis where high tone is the default and low tone is an alternation. There are verb suffixes, particularly the relative clause suffix *-i REL* that are always low tone, so using *-í* with high tone as the underlying representation helps distinguish the alternating (polar) tone from suffixes like the relative that do not alternate.

There are a number of enclitics that appear with nouns. These elements do not occur on their own, but speakers generally sense that they are separate words, hence their analysis as enclitics. Leer tends to analyze more elements as clitics than other linguists, so each element should be tested for its independence as a word. The most common noun enclitics are plurals, the human collective plural *=hás* that occurs with a variety of nouns having human referents, and the plural *=yán* that occurs with several kinship terms. These must be distinguished from the homophonous independent third person pronoun *hás* and the nouns *yán* ‘hemlock (tree)’<sup>3</sup> and *yán* ‘shore’.

Nouns can be compounded morphologically or syntactically. Morphological compounding forms a single noun from multiple nouns. Syntactic compounding forms noun phrases from a string of independent nouns. Morphological compounding is usually accompanied by changes in the tone and length of vowels in the non-head nouns. Thus the nouns *héen* ‘(fresh) water’, *-tú* ‘inside’, and *eech* ‘boulder’ are compounded to form *hintu.eech* ‘reef, underwater boulder’. The high tone on *héen* and *tú* is lost, and the long vowel of *héen* becomes short. The noun *eech* is the head noun of the compound, and so retains its original length and tone where the other nouns are reduced to short and low. Reduction of non-head nouns is apparently not universal in morphological compounds, so that some words like *aasdaagoodlí* ‘burl’ – which is composed of *aas* ‘tree’, *-daa* ‘around’, *gootl* ‘lump’, and the possessive suffix *-í* – does not exhibit reduction of the nouns *aas* and *-daa*. That example also demonstrates that some compounds are internally a kind of possessive construction.

Numerals are not nouns. They sometimes appear in noun positions, but more often they are modifiers of nouns or of verbs. At their most basic, numerals have a bare form: *tléix* ‘one’, *déix* ‘two’, *nás’k* ‘three’, *daax’oon* ‘four’, etc. There are a few suffixes that appear on numerals: *-náx* ‘human’, *-dahéen* ‘time, repetition’, *-gáa* ‘each, distributive’. With these suffixes, some of the numerals have a reduced form: *tléináx* ‘one (human)’, *daxdahéen* ‘twice’. Other numerals do not change, but may have an epenthetic vowel inserted between the numeral and the suffix: *nás’gigáa* ‘three at a time’, *daax’oonínáx* ‘four (human)’. Some of the numeral suffixes can be combined: *gooshúkqaanáx* ‘nine people at a time’.

### 3. VERBS

Verbs are morphologically the most complex part of speech in Tlingit. Segmenting verbs is not easy. I routinely use two depths of glossing to represent verbs. The shallower depth represents the grammatical categories expressed in the verb without indicating most segmentation. It is meant for linguists who are not Tlingit experts.

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2. In Tongass Tlingit the consonant inserted before the possessive suffix is actually *y* /u/, which is why Jeff Leer assumed that the underlying form has *y* in it. But Tongass inserts *y* and never *y* anywhere a nonlabialized epenthetic consonant is needed, so in fact *y* is predictable in that dialect. In Northern Tlingit both *y* and *w* are the epenthetic consonants, and so are predictable.
  3. Specifically the western hemlock, *Tsuga heterophylla* (Rafinesque) Sargent 1898.

- (3) yeejaag-í                      xwasiteen  
 it.PFV.you.SG.kill-SUB it.PFV.I.see  
 'I saw that you killed it'

The object precedes the subject, and between these the tense-mood-aspect categories are given, and then the meaning of the verb appears at the end. The categories that can be segmented out as separate morphemes are separated by periods, like.so. The categories that are portmanteaux within a particular marking, but which can be expressed individually in the metalanguage are separated by centre dots (interpuncts), like.so. Thus 'you-SG' means that there are two categories, a second person and a singular, but these cannot be segmented apart from each other in the underlying morphology. One can think of the gloss as having two levels, a lower level represented by units separated by centre dots, and a higher level represented by units separated by periods: [[it] . [PFV] . [[you] · [SG]] . kill].

The deeper depth of glossing accompanies a complete segmentation of the verb. Every morpheme is indicated, with the verb root given a short English equivalent, and the classifier represented as a bundle of three morphological features  $CL[\pm D, S, \pm I]$  where  $S = \{\emptyset, s, l, sh\}$ . The verb root is preceded by a root symbol  $\sqrt{\quad}$  so that it can be easily located within the string of affixes.

- (4) yeejaagí    xwasiteen  
 $\emptyset$ -yü-i- $\emptyset$ - $\sqrt{jak}$ -h-í                                       $\emptyset$ -yü-xa-si- $\sqrt{tin}$ -h  
 3.O-PFV-2SG.S-CL[-D,  $\emptyset$ , -I]- $\sqrt{kill}$ -VAR-SUB    3.O-PFV-1SG.S-CL[-D, s, +I]- $\sqrt{see}$ -VAR  
 it.PFV.you.SG.kill-SUB                                      it.PFV.I.see  
 'I saw that you killed it'

This representation assumes that the reader knows quite a bit about how Tlingit verbs work. Notably, there is an obvious mismatch between the representation of the categories as in 'it.PFV.I.see' and the morphology as in '3.O-PFV-1SG.S-CL[-D, s, +I]- $\sqrt{see}$ -VAR'. What is 'VAR'? What does 'CL[-D, s, +I]-' mean? I will sketch the basic properties and meanings of these elements below.

### 3.1. VERB THEME

The VERB THEME is the lexical entry of the verb. This is a conventional term in Na-Dene linguistics, used for Eyak and the Dene (Athabaskan) languages as well as Tlingit. Different linguists have used different representations of the verb theme. Notably, the representations of verb themes in Naish & Story's verb dictionary (1973) lack a number of lexically specified properties, of which they were unaware. My verb theme representation is compact and contains nearly all of the lexically specified information, but it can be hard to interpret for those unfamiliar with Tlingit verbs.

- (5)  $O$ - $S$ - $CL[-D, \emptyset]$ - $\sqrt{xa}$  ( $\emptyset$ ; -' Act) 'S eat O'

The verb theme given above is that for the verb 'to eat'. The first part of the theme, ' $O$ - $S$ - $CL[-D, \emptyset]$ - $\sqrt{xa}$ ', is the morphological sketch of the verb. This particular example says that the verb is transitive taking a subject ' $S$ ' and an object ' $O$ '. The verb also has the [-D] and [ $\emptyset$ ] features in the classifier (sec. 3.2), and the verb root  $\sqrt{xa}$  'eat'. The part in parentheses after the morphological sketch is the VERB EPHEMERA. In this case it shows that the verb theme is a member of the  $\emptyset$ -conjugation class (sec. 3.4), and that it has an active imperfective (sec. 3.5) with the -' stem (sec. 3.3). The part at the end in quotation marks is the schematic translation into English. This may contain other information, such as a restriction to a particular type of object, or a particular type of subject. More complex verb themes include additional lexically specified morphology, usually either incorporated nouns or preverbs or both.

	[-D]		[+D]	
	[-I]	[+I]	[-I]	[+I]
[∅]	∅-	yə-	da-	di-
[s]	sa-	si-	s-	dzi-
[l]	la-	li-	l-	dli-
[sh]	sha-	shi-	sh-	ji-

Table 1: Classifier prefixes.

### 3.2. CLASSIFIERS

In Tlingit, like in other Na-Dene languages, verbal categories are often represented by a constellation of morphemes rather than by individual morphemes. These constellations are spread across the verb, occurring in multiple positions. I use a layered representation to show how this works. Using the main clause verb *xwasiteen* ‘I saw it’ above, my layered representation shows how the perfective mode is instantiated by several different morphemes.

(6) <i>theme</i>	O-	S-	CL[-D]	CL[s]	√tin
	OBJ	SUBJ	NMID	TR	‘see’
<i>subject</i>		x̄a-			
		1SG.S			
<i>object</i>	∅-				
	3.O				
<i>perfective</i>	yə-		CL[+I]	-h	
	PFV		REAL	VAR	
<i>linear</i>	∅- yə- x̄a-		CL[-D, s, +I]-	√tin -h	
<i>output</i>			x̄wasiteen		
			‘I saw it’		

One thing that becomes clear from this representation is that the classifier, in this example a single morpheme *si-*, is composed of three distinct features that are introduced by different parts of the morphology. The lexical entry of the verb – the verb theme – contains two feature specifications for the classifier: [-D] and [s]. The perfective mode contains a different feature specification for the classifier: [+I].

The CLASSIFIER is made of three distinct features. They are almost representable as individual segments, but not quite. Table 1 gives the complete inventory of classifiers in Tlingit. There are three dimensions in this table, representing the three orthogonal features of the classifier. The D component and I component are both binary. The S component (from ‘series’) is quaternary, having four possible values. The feature names are based on their phonological tendencies, but as can be seen none of the dimensions is entirely consistent with a particular inventory of segments.

In the simplest possible terms, the D component represents middle voice as [+D] and non-middle voice otherwise, and the I component indicates realis and/or stativeness when [+I]. The S component is a bit more tricky, in that in some verbs it alternates for transitivity or causativity, but

<i>Stem var. suffix</i>	$\sqrt{\text{CVC}}$	$\sqrt{\text{CVC}'}$	$\sqrt{\text{CV}'\text{C}}$	$\sqrt{\text{CV}}$	$\sqrt{\text{CV}^{\text{h}}}$
<i>-h</i>	$\text{C}\dot{\text{V}}:\text{C}$	$\text{C}\dot{\text{V}}:\text{C}'$	$\text{C}\dot{\text{V}}:\text{C}$	$\text{C}\dot{\text{V}}:$	$\text{C}\dot{\text{V}}:$
imperative				$\text{C}\dot{\text{V}}$	$\text{C}\dot{\text{V}}$
<i>-j̣</i>	$\text{C}\dot{\text{V}}\text{C}$	$\text{C}\dot{\text{V}}\text{C}'$	$\text{C}\dot{\text{V}}\text{C}$	$\text{C}\dot{\text{V}}:$	$\text{C}\dot{\text{V}}:$
$\emptyset$ -conj. habitual				$\text{C}\dot{\text{V}}:-\text{j̣}-\text{ch}$	$\text{C}\dot{\text{V}}:-\text{j̣}-\text{ch}$
non- $\emptyset$ habitual				$\text{C}\dot{\text{V}}':-\text{ch}$	$\text{C}\dot{\text{V}}':-\text{ch}$
<i>-:</i>	$\text{C}\dot{\text{V}}:\text{C}$	$\text{C}\dot{\text{V}}:\text{C}'$	$\text{C}\dot{\text{V}}:\text{C}$	$\text{C}\dot{\text{V}}:$	$\text{C}\dot{\text{V}}:$
<i>-'</i>	—	—	—	$\text{C}\dot{\text{V}}$	$\text{C}\dot{\text{V}}$
auxiliary				$\text{C}\dot{\text{V}}:=\dots$	$\text{C}\dot{\text{V}}:=\dots$
prohib.-opt. <i>-ḳ</i>				$\text{C}\dot{\text{V}}:-\text{ḳ}$	$\text{C}\dot{\text{V}}:-\text{ḳ}$
decessive <i>-een</i>				$\text{C}\dot{\text{V}}:\text{j̣}-\text{een}$	$\text{C}\dot{\text{V}}:\text{j̣}-\text{een}$
other <i>-i.../-ee...</i>				$\text{C}\dot{\text{V}}:\text{j̣}-\text{i}...$	$\text{C}\dot{\text{V}}:\text{j̣}-\text{i}...$
<i>-n</i>	$\text{C}\dot{\text{V}}\text{C}$	$\text{C}\dot{\text{V}}\text{C}'$	$\text{C}\dot{\text{V}}\text{C}$	$\text{C}\dot{\text{V}}':-\text{n}$	$\text{C}\dot{\text{V}}':-\text{n}$
$-X \in \{-k, -x, -ch, \dots\}$	$\text{C}\dot{\text{V}}\text{C}-X$	$\text{C}\dot{\text{V}}\text{C}'-X$	$\text{C}\dot{\text{V}}\text{C}-X$	$\text{C}\dot{\text{V}}':-X$	$\text{C}\dot{\text{V}}':-X$
<i>-kw-t</i>				$\text{C}\dot{\text{V}}-\text{kw}-\text{t}$	$\text{C}\dot{\text{V}}-\text{kw}-\text{t}$

Table 2: Stem variation system in Northern Tlingit.

in other verbs it is used as part of the noun classification system, and finally some of its occurrences seem to be largely arbitrary. The S component and D component are lexically specified as part of the verb theme, but may be replaced by additional morphology. The I component is never lexically specified, and always occurs as part of mode marking and other inflectional processes.

### 3.3. STEM VARIATION

The STEM VARIATION suffix glossed VAR is a suffix that appears on nearly every verb form. It is a meaningless abstract element used to keep track of the paradigm of stems that are found in various conjugations of a verb. Stem variation is predictable in Tlingit, though it is a fairly opaque morphophonological process with no obvious justifications from general phonological principles. The inventory of stems and the stem variation classes represented by the stem variation suffixes is given in table 2 for Northern Tlingit and in table 3 for Tongass Tlingit.

Consider the verb ‘to eat’ with the root  $\sqrt{\text{x}a}$ .

- (7) a.  $\text{xwaaxáa}$   
 $\emptyset\text{-j̣u-xa-j̣a-}\sqrt{\text{x}a}\text{-j̣}$   
 3.O-PFV-1SG.S-CL[-D,  $\emptyset$ , +I]- $\sqrt{\text{eat}}$ -VAR  
 it.PFV.I.eat  
 ‘I ate it’
- b.  $\text{tléil xwaxá}$   
 $\text{tléil } \emptyset\text{-j̣u-xa-}\emptyset\text{-}\sqrt{\text{x}a}\text{'}$   
 NEG 3.O-PFV-1SG.S-CL[-D,  $\emptyset$ , -I]- $\sqrt{\text{eat}}$ -VAR  
 not it.IRR.PFV.I.eat  
 ‘I didn’t eat it’

<i>Stem var. suffix</i>	$\sqrt{\text{CVC}}$	$\sqrt{\text{CVC}'}$	$\sqrt{\text{CV}^{\text{?}}\text{C}}$	$\sqrt{\text{CV}}$	$\sqrt{\text{CV}^{\text{h}}}$
<i>-h</i>	$\text{CV}^{\text{h}}\text{C}$	$\text{CV}^{\text{?}}\text{C}'$	$\text{CV}^{\text{?}}\text{C}$	$\text{CV}^{\text{h}}$	$\text{CV}^{\text{h}}$
imperative				$\text{CV}$	$\text{CV}$
<i>-j̥</i>	$\text{CVC}$	$\text{CVC}'$	$\text{CVC}$	$\text{CV}:$	$\text{CV}:$
$\emptyset$ -conj. habitual				$\text{CV}:-\text{j̥}-\text{ch}$	$\text{CV}:-\text{j̥}-\text{ch}$
non- $\emptyset$ habitual				$\text{C}\ddot{\text{V}}:-\text{ch}$	$\text{C}\ddot{\text{V}}:-\text{ch}$
<i>-:</i>	$\text{CV}:\text{C}$	$\text{CV}:\text{C}'$	$\text{CV}^{\text{?}}\text{C}$	$\text{CV}:$	$\text{CV}:$
<i>-'</i>	—	—	—	$\text{CV}$	$\text{CV}$
auxiliary				$\text{CV}:=\dots$	$\text{CV}:=\dots$
prohib.-opt. <i>-k̥</i>				$\text{CV}:-\text{k̥}$	$\text{CV}:-\text{k̥}$
decessive <i>-eehn</i>				$\text{CV}^{\text{?}}\text{j̥}-\text{eehn}$	$\text{CV}^{\text{?}}\text{j̥}-\text{eehn}$
other <i>-i.../-ee...</i>				$\text{CV}^{\text{h}}\text{j̥}-\text{i}...$	$\text{CV}^{\text{h}}\text{j̥}-\text{i}...$
<i>-n</i>	$\text{CVC}$	$\text{CVC}'$	$\text{CVC}$	$\text{C}\ddot{\text{V}}:-\text{n}$	$\text{C}\ddot{\text{V}}:-\text{n}$
<i>-X</i> $\in \{-k, -\text{x̥}, -\text{ch}, \dots\}$	$\text{CVC}-\text{X}$	$\text{CVC}'-\text{X}$	$\text{CVC}-\text{X}$	$\text{C}\ddot{\text{V}}:-\text{X}$	$\text{C}\ddot{\text{V}}^{\text{h}}-\text{X}$
<i>-kw-t</i>				$\text{CV}-\text{kw}-\text{t}$	$\text{CV}-\text{kw}-\text{t}$

Table 3: Stem variation system in Tongass Tlingit.

c.  $\text{k̥wax}\underline{\text{áa}}$  $\emptyset$ -ga-w-ga-x̥a- $\emptyset$ - $\sqrt{\text{x̥a}}:-$ 3.O-GCNJ-IRR-GMOD-1SG.S-CL[-D, $\emptyset$ ,-I]- $\sqrt{\text{eat}}$ -VAR

it.FUT.I.eat

'I will eat it'

d. tléil  $\text{k̥wax}\underline{\text{aa}}$ tléil  $\emptyset$ -ga-w-ga-x̥a- $\emptyset$ - $\sqrt{\text{x̥a}}-\text{h}$ NEG 3.O-GCNJ-IRR-GMOD-1SG.S-CL[-D, $\emptyset$ ,-I]- $\sqrt{\text{eat}}$ -VAR

not it.IRR.FUT.I.eat

'I won't eat it'

The stems are, in order,  $-\text{x̥áa}$ ,  $-\text{x̥á}$ ,  $-\text{x̥áa}$ , and  $-\text{x̥aa}$ . Compare these stems with the following examples of the verb 'to kill' using the verb root  $\sqrt{\text{jak}}$  'kill'.

(8) a.  $\text{x̥waaj}\underline{\text{ák}}$  $\emptyset$ -j̥u-x̥a-j̥a- $\sqrt{\text{jak}}-\text{j̥}$ 3.O-PFV-1SG.S-CL[-D, $\emptyset$ ,+I]- $\sqrt{\text{kill}}$ -VAR

it.PFV.I.kill

'I killed it'

b. tléil  $\text{x̥waja}\underline{\text{ak}}$ tléil  $\emptyset$ -j̥u-x̥a- $\emptyset$ - $\sqrt{\text{jak}}-\text{h}$ NEG 3.O-PFV-1SG.S-CL[-D, $\emptyset$ ,-I]- $\sqrt{\text{kill}}$ -VAR

not it.IRR.PFV.I.kill

'I didn't kill it'

- c. **kkwajáak**  
 0-ga-w-ga-xa-0-√jak-:  
 3.O-GCNJ-IRR-GMOD-1SG.S-CL[-D,0,-I]-√kill-VAR  
 it.FUT.I.kill  
 'I will kill it'
- d. **tléil kkwajaak**  
 tléil 0-ga-w-ga-xa-0-√jak-h  
 NEG 3.O-GCNJ-IRR-GMOD-1SG.S-CL[-D,0,-I]-√kill-VAR  
 not it.IRR.FUT.I.kill  
 'I won't kill it'

These stems are *-ják*, *-jaak*, *-jáak*, and *-jaaĸ*. We can see that the verb stem varies in length and tone across the modes, and this variation is different for different shapes of verb roots. The full paradigm of stem variation for the root  $\sqrt{xa}$  'eat' is given below.

- (9) a.  $\sqrt{xa} + -h \rightarrow -\underline{x}aa$   
 b.  $\sqrt{xa} + -\ddot{y} \rightarrow -\underline{x}áa$   
 c.  $\sqrt{xa} + -: \rightarrow -\underline{x}áa$   
 d.  $\sqrt{xa} + -' \rightarrow -\underline{x}á$   
 e.  $\sqrt{xa} + -n \rightarrow -\underline{x}éin$   
 f.  $\sqrt{xa} + -x \rightarrow -\underline{x}éix$

The verb root  $\sqrt{xa}$  'eat' given above is an OPEN ROOT ( $\sqrt{CV}$ ), one that ends in a vowel. Tlingit has another class of roots called CLOSED ROOTS ( $\sqrt{CVC}$ ), those verb roots which end in a consonant. The root  $\sqrt{jak}$  'kill' is a typical example of a closed root. Compare this closed root's stem variation paradigm to that given above for the open root  $\sqrt{xa}$ .

- (10) a.  $\sqrt{jak} + -h \rightarrow -\underline{j}aa\bar{k}$   
 b.  $\sqrt{jak} + -\ddot{y} \rightarrow -\underline{j}á\bar{k}$   
 c.  $\sqrt{jak} + -: \rightarrow -\underline{j}áa\bar{k}$   
 d.  $\sqrt{jak} + -' \rightarrow$  (none)  
 e.  $\sqrt{jak} + -n \rightarrow -\underline{j}á\bar{k}$   
 f.  $\sqrt{jak} + -x \rightarrow -\underline{j}á\bar{k}x$

The differences from the open root are that the *-ÿ*, *-n*, and *-x* stems have entirely different forms between the two verb root shapes. In addition the closed root  $\sqrt{jak}$  does not have a *-'* stem, a fact which applies to all closed roots.

The *-x* stem is only one exponent of a larger class of similarly shaped stems. I represent this larger class as the abstract suffix *-X* where  $X \in \{-k, -x, -ch, -t, -x', -t', -s', -l'\}$ . All of these suffixes have the same suprasegmental effects on roots, and all have visible segments associated with them in the stem. Their meanings are somewhat varied, but they all generally have something to do with repetition or pluractionality, and I will discuss them later in the context of the mode system.

The division between open ( $\sqrt{CV}$ ) and closed ( $\sqrt{CVC}$ ) roots described above is the basic distinction in the stem variation system. But not all roots in either category behave identically, so that there are subdivisions within each of the two categories. Compare the following stem paradigm of the root  $\sqrt{tl'ak}$  'wet surface' with the one given for  $\sqrt{jak}$  'kill' previously.



- (11) a.  $\sqrt{tl'ak'} + -h \rightarrow -tl'áak', *-tl'aak'$   
 b.  $\sqrt{tl'ak'} + -\ddot{y} \rightarrow -tl'ák'$   
 c.  $\sqrt{tl'ak'} + -: \rightarrow -tl'áak'$   
 d.  $\sqrt{tl'ak'} + -' \rightarrow$  (none)  
 e.  $\sqrt{tl'ak'} + -n \rightarrow -tl'ák'$   
 f.  $\sqrt{tl'ak'} + -\underline{x} \rightarrow -tl'ák\underline{x}$

The difference between this paradigm and that of  $\sqrt{jak}$  'kill' is noted in bold. The *-h* stem for  $\sqrt{jak}$  'kill' is *-jaak* with a long vowel and low tone. The *-h* stem for  $\sqrt{tl'ak'}$  'wet surface' is however *-tl'áak'* with high tone instead. The environmental difference between them is the final ejective consonant, so that any closed root with an ejective in the coda has high tone for the *-h* stem rather than low tone. These are called EJECTIVE CLOSED ROOTS ( $\sqrt{CVC}$ ) to distinguish them from PLAIN CLOSED ROOTS ( $\sqrt{CVC}$ ).

There are also a few roots that do not have ejective coda consonants but behave as though they had a covert ejective consonant at the end. The following stem variation paradigm illustrates the verb root  $\sqrt{tsu'w}$  'move pl. stick ends'.

- (12) a.  $\sqrt{tsu'w} + -h \rightarrow -tsóow, *-tsoow$   
 b.  $\sqrt{tsu'w} + -\ddot{y} \rightarrow -tsúw$   
 c.  $\sqrt{tsu'w} + -: \rightarrow -tsóow$   
 d.  $\sqrt{tsu'w} + -' \rightarrow$  (none)  
 e.  $\sqrt{tsu'w} + -n \rightarrow -tsúw$   
 f.  $\sqrt{tsu'w} + -\underline{x} \rightarrow -tsúw\underline{x}$

In most of the paradigm the stem appears to be a perfectly ordinary plain closed root ( $\sqrt{CVC}$ ), but with the *-h* stem it instead acts like an ejective closed root ( $\sqrt{CVC}$ ) despite the lack of an ejective coda consonant. This mysterious behaviour can be clarified by looking at the now extinct Tongass dialect of Tlingit. Instead of having a tone system, Tongass Tlingit has laryngealized vowels that probably represent the basis of tonogenesis in other Tlingit dialects. The four possibilities in Tongass Tlingit are plain  $V$  /V/, long  $VV$  /V:/, fading (aspirated)  $VVh$  /V<sup>h</sup>/, and glottalized  $VV'$  /V<sup>ʔ</sup>/.<sup>4</sup> The fading vowel in Tongass Tlingit generally corresponds with a long vowel with low tone in Northern Tlingit, and the glottalized vowel corresponds with a long vowel with high tone. The long vowel of Tongass Tlingit corresponds with a long high tone vowel in Northern Tlingit when it occurs in a stressed position such as in a verb stem, and otherwise it corresponds with a Northern Tlingit long low tone vowel. If we look at the paradigms of  $\sqrt{jak}$  'kill' and  $\sqrt{tsu'w}$  'move pl. stick ends' in Tongass Tlingit we see a clearer picture emerge.

- (13) a.  $\sqrt{jak} + -h \rightarrow -jaah\underline{k} \quad /-tʃa^h\underline{q}/$   
 b.  $\sqrt{jak} + -\ddot{y} \rightarrow -j\underline{ak} \quad /-tʃa\underline{q}/$   
 c.  $\sqrt{jak} + -: \rightarrow -ja\underline{ak} \quad /-tʃa:q/$   
 d.  $\sqrt{jak} + -' \rightarrow$  (none)  
 e.  $\sqrt{jak} + -n \rightarrow -j\underline{ak} \quad /-tʃa\underline{q}/$   
 f.  $\sqrt{jak} + -\underline{x} \rightarrow -j\underline{ak}\underline{x} \quad /-tʃa\underline{q}\underline{x}/$

4. Leer used orthographic  $VV'$  for fading versus  $VV$  for glottalized vowels. I use  $VVh$  for fading instead because it is more visually distinct from  $VV'$ . Coda *h* is impossible in Tlingit, so this is unambiguous.

- (14) a.  $\sqrt{tsu'w} + -h \rightarrow -tsoo'w, *-tsoohw$   $/-ts^hu^?w/, */-ts^hu^hw/$   
 b.  $\sqrt{tsu'w} + -\ddot{y} \rightarrow -tsuw$   $/-ts^huw/$   
 c.  $\sqrt{tsu'w} + -: \rightarrow -tsoow$   $/-ts^hu:w/$   
 d.  $\sqrt{tsu'w} + -' \rightarrow$  (none)  
 e.  $\sqrt{tsu'w} + -n \rightarrow -tsuw$   $/-ts^huw/$   
 f.  $\sqrt{tsu'w} + -\underline{x} \rightarrow -tsuw\underline{x}$   $/-ts^huw\underline{\chi}/$

In Tongass Tlingit the closed plain root  $\sqrt{jak}$  with  $-h$  gives a fading vowel in the stem  $-jaahk$ , but with  $\sqrt{tsu'w}$  and  $-h$  a glottalized stem  $-tsoo'w$  results instead. For this reason the class of roots like  $\sqrt{tsu'w}$  are termed GLOTTALIZED CLOSED ROOTS ( $\sqrt{CV'C}$ ), with the postvocalic apostrophe indicating their glottalized status in Tongass Tlingit. This apostrophe is also a hint that the  $-h$  class of stem will have high tone rather than low with such roots in Northern Tlingit.

The open root class likewise has a subdivision based on differences in stem variation paradigms. The following examples demonstrate the paradigms of the open roots  $\sqrt{xa}$  'eat' and  $\sqrt{l'a^h}$  'suck'.

- (15) a.  $\sqrt{xa} + -h \rightarrow -\underline{x}aa$   
 b.  $\sqrt{xa} + -\ddot{y} \rightarrow -\underline{x}\acute{a}a$   
 c.  $\sqrt{xa} + -: \rightarrow -\underline{x}\acute{a}a$   
 d.  $\sqrt{xa} + -' \rightarrow -\underline{x}\acute{a}$   
 e.  $\sqrt{xa} + -n \rightarrow -\underline{x}\acute{e}in$   
 f.  $\sqrt{xa} + -\underline{x} \rightarrow -\underline{x}\acute{e}i\underline{x}$
- (16) a.  $\sqrt{l'a^h} + -h \rightarrow -l'aa$   
 b.  $\sqrt{l'a^h} + -\ddot{y} \rightarrow -l'\acute{a}a$   
 c.  $\sqrt{l'a^h} + -: \rightarrow -l'\acute{a}a$   
 d.  $\sqrt{l'a^h} + -' \rightarrow -l'\acute{a}$   
 e.  $\sqrt{l'a^h} + -n \rightarrow -l'\acute{e}in$   
 f.  $\sqrt{l'a^h} + -\underline{x} \rightarrow -l'eix, *-l'\acute{e}i\underline{x}$

The root  $\sqrt{l'a^h}$  has a long vowel with low tone in the  $-\underline{x}$  stem, unlike the root  $\sqrt{xa}$  'eat' seen previously which has a long vowel with high tone. Once again this variation is slightly more clear in Tongass Tlingit. The following examples compare the same two roots with their Tongass Tlingit paradigms.

- (17) Tongass Tlingit
- a.  $\sqrt{xa} + -h \rightarrow -\underline{x}aah$   $/-\underline{\chi}a^h/$   
 b.  $\sqrt{xa} + -\ddot{y} \rightarrow -\underline{x}aa$   $/-\underline{\chi}a:/$   
 c.  $\sqrt{xa} + -: \rightarrow -\underline{x}aa$   $/-\underline{\chi}a:/$   
 d.  $\sqrt{xa} + -' \rightarrow -\underline{x}a$   $/-\underline{\chi}a/$   
 e.  $\sqrt{xa} + -n \rightarrow -\underline{x}ein$   $/-\underline{\chi}e:n/$   
 f.  $\sqrt{xa} + -\underline{x} \rightarrow -\underline{x}eix$   $/-\underline{\chi}e:\underline{\chi}/$
- (18) Tongass Tlingit
- a.  $\sqrt{l'a^h} + -h \rightarrow -l'aah$   $/-l'a^h/$   
 b.  $\sqrt{l'a^h} + -\ddot{y} \rightarrow -l'aa$   $/-l'a:/$   
 c.  $\sqrt{l'a^h} + -: \rightarrow -l'aa$   $/-l'a:/$   
 d.  $\sqrt{l'a^h} + -' \rightarrow -l'a$   $/-l'a/$   
 e.  $\sqrt{l'a^h} + -n \rightarrow -l'ain$   $/-l'e:n/$   
 f.  $\sqrt{l'a^h} + -\underline{x} \rightarrow -l'eih\underline{x}, *-l'eix$   $/-l'e^h\underline{\chi}/, */-l'e:\underline{\chi}/$

The root  $\sqrt{xa}$  ‘eat’ with  $-x$  has the stem  $-xeix$  with a long vowel, but the root  $\sqrt{l'a^h}$  ‘suck’ with  $-x$  has the stem  $-l'eihx$  with a fading vowel. For this reason, roots like  $\sqrt{l'a^h}$  are called FADING OPEN ROOTS ( $\sqrt{CV^h}$ ) in contrast with PLAIN OPEN ROOTS ( $\sqrt{CV}$ ) like  $\sqrt{xa}$ .

One stem variation suffix whose representation I have not explained is  $-j̃$ . This results in long high tone vowels in open roots, and short high tone vowels in closed roots. The segment  $j̃$  only surfaces in one obscure part of the verb paradigm. Given an open root, when the verb occurs in the habitual mode a suffix  $-ch$  appears. If the verb theme is of the  $\emptyset$ -conjugation (see section 3.4) then the resulting stem is  $-C\acute{V}j̃ch$ , otherwise it is  $-C\acute{V}i:ch$ . The following example demonstrates the open roots  $\sqrt{ta}$  ‘boil’,  $\sqrt{l'a^h}$  ‘suck’,  $\sqrt{ku}$  ‘know’, and  $\sqrt{dzu^h}$  ‘throw’, each of which occurs in a verb theme of the  $\emptyset$ -conjugation class (see section 3.4).

- (19) a.  $\sqrt{ta}$  +  $-j̃$  +  $-ch$  →  $-táaych$  / $-t^h\acute{a}:j̃tʃ/$   
 b.  $\sqrt{l'a^h}$  +  $-j̃$  +  $-ch$  →  $-l'áaych$  / $-l^h\acute{a}:j̃tʃ/$   
 c.  $\sqrt{ku}$  +  $-j̃$  +  $-ch$  →  $-kóowch$  / $-k^{wh}ú:wʃ/$   
 d.  $\sqrt{dzu^h}$  +  $-j̃$  +  $-ch$  →  $-dzóowch$  / $-tsú:wʃ/$

The verb root  $\sqrt{ta}$  ‘boil’ combined with the stem variation suffix  $-j̃$  and the habitual suffix  $-ch$  gives a verb stem  $-táaych$ . Likewise the root  $\sqrt{ku}$  ‘know’ combined with  $-j̃$  and  $-ch$  gives a verb stem  $-kóowch$ . The alternation between  $y$  and  $w$  depending on rounding is characteristic for the now extinct phoneme  $j̃$  / $u/$  as noted earlier. Otherwise the stem is high and long, which is the same shape found with other  $-j̃$  stems. It could be argued that not all stems labeled as  $-j̃$  are of that class, with only those that explicitly feature a  $j̃$  segment  $-y$  or  $w$  – to be members of the  $-j̃$  stem variation class. I have maintained Jeff Leer’s assignments to the  $-j̃$  class, however. Now compare the Tongass Tlingit counterparts, where  $j̃$  actually does appear rather than  $y$ .

- (20) Tongass Tlingit  
 a.  $\sqrt{ta}$  +  $-j̃$  +  $-ch$  →  $-taaj̃ch$  / $-t^h\acute{a}:uʃtʃ/$   
 b.  $\sqrt{l'a^h}$  +  $-j̃$  +  $-ch$  →  $-l'aaaj̃ch$  / $-l^h\acute{a}:uʃtʃ/$   
 c.  $\sqrt{ku}$  +  $-j̃$  +  $-ch$  →  $-koowch$  / $-k^{wh}u:wʃ/$   
 d.  $\sqrt{dzu^h}$  +  $-j̃$  +  $-ch$  →  $-dzoowch$  / $-tsu:wʃ/$

The  $-'$  stem only occurs with open roots, as was previously shown. So far its only exponent has been a  $C\acute{V}$  syllable, one with a short vowel and high tone. It has a few other surface shapes that arise when combined with other verbal suffixes and enclitics. With any of the enclitic auxiliaries like habitual  $=nooch$  or conditional  $=núknee$ , the  $-'$  stem is long rather than short.

- (21) a.  $\sqrt{ta}$  +  $-'$  →  $-tá$   
 b.  $\sqrt{l'a^h}$  +  $-'$  →  $-l'á$   
 c.  $\sqrt{ku}$  +  $-'$  →  $-kú$   
 d.  $\sqrt{dzu^h}$  +  $-'$  →  $-dzú$
- (22) a.  $\sqrt{ta}$  +  $-'$  +  $=nooch$  →  $-táa=nooch$   
 b.  $\sqrt{l'a^h}$  +  $-'$  +  $=nooch$  →  $-l'áa=nooch$   
 c.  $\sqrt{ku}$  +  $-'$  +  $=nooch$  →  $-kóo=nooch$   
 d.  $\sqrt{dzu^h}$  +  $-'$  +  $=nooch$  →  $-dzóo=nooch$

With the prohibitive-optative suffix  $-k̄$  after the stem, the  $-'$  stem is long and high just like with the auxiliaries.

- (23) a.  $\sqrt{ta}$  +-' + -k → -táak  
 b.  $\sqrt{t'a^h}$  +-' + -k → -l'áak  
 c.  $\sqrt{ku}$  +-' + -k → -kóok  
 d.  $\sqrt{dzu^h}$  +-' + -k → -dzóok

With the decessive *-een* suffix, the *-'* stem is long and high and an epenthetic *y* (either *y* or *w*) is inserted between the stem and the suffix. Note that for some Northern Tlingit speakers the decessive suffix is regularly pronounced short rather than long, but this does not change the stem.

- (24) a.  $\sqrt{ta}$  +-' + -een → -táayeen  
 b.  $\sqrt{t'a^h}$  +-' + -een → -l'áayeen  
 c.  $\sqrt{ku}$  +-' + -een → -kóowoon  
 d.  $\sqrt{dzu^h}$  +-' + -een → -dzóowoon

It is the combination of the decessive suffix with an open stem that justifies the label of *-'*. In Tongass Tlingit the stem appears as glottalized when followed by the decessive *-eehn* /-i<sup>h</sup>n/ suffix.

- (25) Tongass Tlingit  
 a.  $\sqrt{ta}$  +-' → -ta /-t<sup>h</sup>a/  
 b.  $\sqrt{t'a^h}$  +-' → -l'a /-t<sup>h</sup>a'  
 c.  $\sqrt{ku}$  +-' → -ku /-k<sup>hw</sup>u/  
 d.  $\sqrt{dzu^h}$  +-' → -dzu /-tsu/  
 (26) Tongass Tlingit  
 a.  $\sqrt{ta}$  +-' + -eehn → -taa'yeehn /-t<sup>h</sup>a<sup>?</sup>u<sup>i</sup>h<sup>n</sup>/  
 b.  $\sqrt{t'a^h}$  +-' + -eehn → -l'aa'yeehn /-t<sup>h</sup>a<sup>?</sup>u<sup>i</sup>h<sup>n</sup>/  
 c.  $\sqrt{ku}$  +-' + -eehn → -koo'woohn /-k<sup>hw</sup>u<sup>?</sup>wu<sup>h</sup>n/  
 d.  $\sqrt{dzu^h}$  +-' + -eehn → -dzoo'woohn /-tsu<sup>?</sup>wu<sup>h</sup>n/

Where the *-'* stem is otherwise long and high in Northern Tlingit, it is long in Tongass Tlingit.

- (27) Tongass Tlingit  
 a.  $\sqrt{ta}$  +-' + -k → -taak /-t<sup>h</sup>a:q/  
 b.  $\sqrt{t'a^h}$  +-' + -k → -l'aak /-t<sup>h</sup>a':q/  
 c.  $\sqrt{ku}$  +-' + -k → -kook /-k<sup>hw</sup>u:q/  
 d.  $\sqrt{dzu^h}$  +-' + -k → -dzook /-tsu:q/

Finally, the *-'* stem appears as long and low when followed by any other suffix that begins with *-í* or *-ée*, such as the subordinate clause suffix. The counterpart in Tongass Tlingit has a fading vowel.

- (28) Northern Tlingit  
 a.  $\sqrt{ta}$  +-' + -í → -taayí  
 b.  $\sqrt{t'a^h}$  +-' + -í → -l'aayí  
 c.  $\sqrt{ku}$  +-' + -í → -koowú  
 d.  $\sqrt{dzu^h}$  +-' + -í → -dzoowú  
 (29) Tongass Tlingit  
 a.  $\sqrt{ta}$  +-' + -ee → -taahyee /-t<sup>h</sup>a<sup>h</sup>u<sup>i</sup>:/  
 b.  $\sqrt{t'a^h}$  +-' + -ee → -l'aahyee /-t<sup>h</sup>a<sup>h</sup>u<sup>i</sup>:/  
 c.  $\sqrt{ku}$  +-' + -ee → -koohwoo /-k<sup>hw</sup>u<sup>h</sup>wu:/  
 d.  $\sqrt{dzu^h}$  +-' + -ee → -dzoohwoo /-tsu<sup>h</sup>wu: /

There are a number of roots that fall outside of the open versus closed dichotomy. Such roots also fall outside of the stem variation system generally because they do not exhibit any phonological differences in contexts where stem variation would be expected. These exceptional roots are called **INVARIABLE ROOTS** because they have the same form in every context. I represent invariable roots with a diacritic, a superscript saltire cross at the end of the verb root –  $\sqrt{chán}^x$  ‘stink’,  $\sqrt{sátk}^x$  ‘quick’ – and leave variable roots unmarked because they are far more common –  $\sqrt{tin}$  ‘see’,  $\sqrt{xa}$  ‘eat’. Leer does the opposite, marking the more common variable roots with an asterisk at the end:  $\sqrt{chán}$ ,  $\sqrt{sátk}$  but  $\sqrt{tin}^*$ ,  $\sqrt{xa}^*$ . Edwards follows him, but uses a tilde instead:  $\sqrt{chán}$ ,  $\sqrt{sátk}$  but  $\sqrt{tin}\sim$ ,  $\sqrt{xa}\sim$ . My reversal of the marking practice reduces the occurrence of diacritics that I find distracting.

Invariable roots can be subdivided on the basis of their phonological shape, though this is not entirely necessary given that there is no stem variation possible. Invariable open roots may occur with either low or high tone, but always have a long vowel. In Tongass Tlingit the invariable open roots that have high tone in Northern Tlingit correspond to roots with either long or glottalized vowels, given the unbalanced correspondences between the dialects. There are also invariable closed roots which always have a short vowel and also high tone in Northern Tlingit due to mandatory high tone for short vowels in stressed position. Roots with disyllabic codas are always invariable, and always occur with a short vowel. Disyllabic roots are also always invariable, and may or may not have a coda in the second syllable.

The following list summarizes the root classes in Tlingit, including the variable roots and the invariable roots.

- variable roots
  - open roots
    - $\sqrt{CV}$  — plain open root
    - $\sqrt{CV}^h$  — fading open root
  - closed roots
    - $\sqrt{CVC}$  — plain closed root
    - $\sqrt{CVC}'$  — ejective closed root
    - $\sqrt{CVC}$  — glottalized closed root
- invariable roots
  - $\sqrt{CV}^{:x}$  — invariable high open root
    - $\sqrt{CV}^{:x}$  — Tongass invariable long open root
    - $\sqrt{CV}^{x}$  — Tongass invariable glottalized open root
  - $\sqrt{CV}^{\sim{:x}}$  — invariable low open root (Tongass  $\sqrt{CV}^{h{:x}}$  invariable fading open)
  - $\sqrt{CVC}^x$  — invariable closed root
  - $\sqrt{CVC}^x$  — complex coda root
  - $\sqrt{CVCV(C)}^x$  — disyllabic root

### 3.4. CONJUGATION CLASS

All verbs belong to one of the four conjugation classes  $\{\emptyset, na, ga, ga\}$ . These conjugation classes do not have any particular meanings, but they are lexically specified and are realized in various ways as part of the mode marking (section 3.5). The canonical locus of conjugation class marking is in the imperative mode. Imperatives are constructed with the conjugation class prefix, the imperative flavour of the *-h* stem, and in the case of a second person singular ‘you (sg.)’ the subject is  $\emptyset$ - rather than *i*- except when the classifier has [+D].

- (30) a.  $\underline{xá}$  !  $\emptyset$ -conjugation  
 $\emptyset$ - $\emptyset$ - $\emptyset$ - $\emptyset$ - $\sqrt{xá}$ -h  
 3.O-ZCNJ-2SG.S-CL[-D, $\emptyset$ ,-I]- $\sqrt{\text{eat}}$ -VAR  
 it.IMP.you.SG.eat  
 'eat it!'
- b. **na.óos'** ! *na*-conjugation  
 $\emptyset$ -**na**- $\emptyset$ - $\emptyset$ - $\sqrt{\text{us'}}$ -h  
 3.O-NCNJ-2SG.S-CL[-D, $\emptyset$ ,-I]- $\sqrt{\text{wash}}$ -VAR  
 it.IMP.you.SG.wash  
 'wash it!'
- c. **galagú** ! *ga*-conjugation  
 $\emptyset$ -**ga**- $\emptyset$ -la- $\sqrt{\text{gu}}$ -h  
 3.O-GCNJ-2SG.S-CL[-D,l,-I]- $\sqrt{\text{wipe}}$ -VAR  
 it.IMP.you.SG.wipe  
 'wipe it!'
- d. **gashí** ! *ga*-conjugation  
 $\emptyset$ -**ga**- $\emptyset$ - $\emptyset$ - $\sqrt{\text{shi}}$ -h  
 3.O-GCNJ-2SG.S-CL[-D, $\emptyset$ ,-I]- $\sqrt{\text{sing}}$ -VAR  
 'sing it!'

It is important to keep in mind that the conjugation prefixes  $\{\emptyset, na-, ga-, ga-\}$  are not identical with the conjugation classes  $\{\emptyset, na, ga, ga\}$ . The conjugation prefixes are used in some modes for marking things that are not dependent on the verb's conjugation class. The canonical example is the progressive imperfective, where every verb occurs with *na-* no matter what its conjugation class is. Conversely, modes may represent conjugation class using elements other than the conjugation class prefixes. So the progressive form of a  $\emptyset$ -conjugation or *na*-conjugation verb will have the preverb *yaa*= 'along', but the progressive form of a *ga*-conjugation verb instead has *yei*= 'down' and that of a *ga*-conjugation verb instead has *kei*= 'up'.

### 3.5. MODES

Modes are the tense-mood-aspect categories in Tlingit. They are all composed of morphemes in the +7 – +4 range of positions in the verb template, as well as the I component of the classifier, and a stem variation suffix. Some modes contain more morphology beyond these three elements.

The addition of a mode, along with person marking, forms a conjugated verb that can be used in a sentence. As such, the modes are dependent on verbs for their realization, and verbs are dependent on modes to be utterable. There is no infinitive form of a verb in Tlingit, so that every verb that can be uttered must be marked with a mode.

The most basic distinction among the modes is between the imperfective and non-imperfective modes. The imperfective modes describe situations that are centred around the reference time which is usually 'now' but may be shifted in narratives, descriptions of past events, etc. The non-imperfective modes are not generally centred around the reference time, instead describing times in the past or future.

Most modes have irrealis counterparts that appear when the verb is negated, as well as sometimes when the verb is dubitative. Most irrealis forms of the modes have an irrealis prefix *u-*, but in

<i>Mode</i>	<i>Preverb</i>		<i>TAM</i>	<i>Clf.</i>	<i>Root</i>	<i>Var.</i>	<i>Suff.</i>
	+17	+7 - +4	+1	0	-1	-3 - -6	
perfective $\emptyset$ -conj.			ÿu-	[+1]		-ÿ	
irrealis closed root			u-ÿu-	[-1]		-h	
irrealis open root			u-ÿu-	[-1]		-'	
perfective non- $\emptyset$ -conj.			ÿu-	[+1]		-h	
irrealis			u-ÿu-	[-1]		-h	
realizational (finally the case)			CNJ-	[+1]		-:	
habitual (usually, always)							
$\emptyset$ -conj. closed root			u- $\emptyset$ -	[-1]	√CVC	-h	-ch
$\emptyset$ -conj. closed root			u- $\emptyset$ -	[-1]	√CVC	-ÿ	-ch
$\emptyset$ -conj. open root			u- $\emptyset$ -	[-1]	√CV	-ÿ	-ch
non- $\emptyset$ -conj.			CNJ-	[-1]			-ch
future	PVB=	ga-w-ga-		[-1]		-:	
irrealis	PVB=	ga-w-ga-		[-1]		-h	
potential (may, can, possible)		u-CNJ-ga-		[+1]		-h	
$\emptyset$ -ÿ-conj.		u-CNJ-ga-		[+1]		-ÿ	
imperative non- $\emptyset$ -conj.		CNJ-		[-1]		-h	
$\emptyset$ -conj. closed root			$\emptyset$ -	[-1]	√CVC	-ÿ	
$\emptyset$ -conj. closed root	DIR=		$\emptyset$ -	[-1]	√CVC	-h	
$\emptyset$ -conj. open root			$\emptyset$ -	[-1]	√CV	-h	
$\emptyset$ -ÿ-conj. open root			$\emptyset$ -	[-1]	√CV	-ÿ	
hortative (should, might, let's)		CNJ-ga-		[-1]		-h	(-i)
$\emptyset$ -ÿ-conj. open root		CNJ-ga-		[-1]	√CV	-ÿ	(-i)
admonitive (lest)		u-CNJ-		[-1]		-:	
conditional (if)		CNJ-		[-1]		-n	-i
contingent (whenever)		CNJ-ga-		[-1]		-n	-in
consecutive (following)		CNJ-		[-1]		-:	

Table 4: Non-imperfective modes

some like the perfective this usually disappears on the surface, and in others like the future there is an existing irrealis prefix *w-* that blocks the appearance of the *u-* prefix.

Where the non-imperfective modes generally only have a few forms (see table 4, p. 15), the imperfective modes come in a bewildering variety of forms (tables 5 and 6 on pp. 18 and 19). I will discuss the non-imperfective modes first, then detail some of the properties of the imperfective modes.

### 3.5.1. NON-IMPERFECTIVE MODES

One of the simplest and most commonly encountered modes is the perfective. As its name implies, it describes a situation in the past. Perfectives are generally constructed using the perfective prefix *ÿu-*, [+1] in the classifier, and either one of the *-ÿ* or *-h* stem variation suffixes. The choice of *-ÿ* or *-h* is dependent on the verb's conjugation class, with  $\emptyset$ -conjugation verbs using the *-ÿ* stem in the perfective mode and verbs in the other three *na-*, *ga-*, and *ga-* conjugation classes using the *-h* stem in

the perfective mode instead. Note that this selection of stem variation is independent of the shape of the root, with the stem variation phenomenon specifying the particular instantiation of stem shape and the mode simply making reference to one of the stem variation suffixes.

- (31) a.  $\underline{x}waa\underline{x}áa$   
 $\emptyset$ - $\dot{y}u$ - $\underline{x}a$ - $\dot{y}a$ - $\sqrt{\underline{x}a}$ - $\dot{y}$   
 3.O-PFV-1SG.S-CL[-D, $\emptyset$ ,+I]- $\sqrt{\text{eat}}$ -VAR  
 it.PFV.I.eat  
 'I ate it'  
 theme:  $O$ - $S$ - $CL$ [-D, $\emptyset$ ]- $\sqrt{\underline{x}a}$  ( $\emptyset$ ; -' Act) 'S eat O'
- b.  $\underline{x}waaataa$   
 $\dot{y}u$ - $\underline{x}a$ - $\dot{y}a$ - $\sqrt{ta^h}$ - $h$   
 PFV-1SG.S-CL[-D, $\emptyset$ ,+I]- $\sqrt{\text{sleep}}$ -VAR  
 PFV.I.sleep  
 'I slept'  
 theme:  $S$ - $CL$ [-D, $\emptyset$ ]- $\sqrt{ta^h}$  ( $na$ ; -' Act) 'S sleep'

The irrealis form of the perfective mode does not distinguish between conjugation classes. With open roots the stem variation suffix is always -', and with closed roots it is always - $h$ .

- (32) a.  $tléil \underline{x}waxá$   
 $tléil \emptyset$ - $u$ - $\dot{y}u$ - $\underline{x}a$ - $\emptyset$ - $\sqrt{\underline{x}a}$ -'  
 NEG 3.O-IRR-PFV-1SG.S-CL[-D, $\emptyset$ ,-I]- $\sqrt{\text{eat}}$ -VAR  
 not it.IRR-PFV.I.eat  
 'I didn't eat it'  
 theme:  $O$ - $S$ - $CL$ [-D, $\emptyset$ ]- $\sqrt{\underline{x}a}$  ( $\emptyset$ ; -' Act) 'S eat O'
- b.  $tléil \underline{x}watá$   
 $tléil u$ - $\dot{y}u$ - $\underline{x}a$ - $\emptyset$ - $\sqrt{ta^h}$ -'  
 NEG IRR-PFV-1SG.S-CL[-D, $\emptyset$ ,-I]- $\sqrt{\text{sleep}}$ -VAR  
 not IRR-PFV.I.sleep  
 'I didn't sleep'  
 theme:  $S$ - $CL$ [-D, $\emptyset$ ]- $\sqrt{ta^h}$  ( $na$ ; -' Act) 'S sleep'
- c.  $tléil \underline{x}wajaak$   
 $tléil \emptyset$ - $u$ - $\dot{y}u$ - $\underline{x}a$ - $\emptyset$ - $\sqrt{jak}$ - $h$   
 NEG 3.O-IRR-PFV-1SG.S-CL[-D, $\emptyset$ ,-I]- $\sqrt{\text{kill}}$ -VAR  
 not it.IRR-PFV.I.kill  
 'I didn't kill it'  
 theme:  $O$ - $S$ - $CL$ [-D, $\emptyset$ ]- $\sqrt{jak}$  ( $\emptyset$ ; Evt) 'S kill O'
- d.  $tléil \underline{x}wa.óos'$   
 $tléil \emptyset$ - $u$ - $\dot{y}u$ - $\underline{x}a$ - $\emptyset$ - $\sqrt{us'}$ - $h$   
 NEG 3.O-IRR-PFV-1SG.S-CL[-D, $\emptyset$ ,-I]- $\sqrt{\text{wash}}$ -VAR  
 not it.IRR-PFV.I.wash  
 'I didn't wash it'  
 theme:  $O$ - $S$ - $CL$ [-D, $\emptyset$ ]- $\sqrt{us'}$  ( $na$ ; - $kw$  Act) 'S wash O'

The other non-imperfective modes are similar. Those modes where the conjugation class prefix is selected by the verb theme's conjugation class are given with a *CNJ*- prefix, whereas for the future



only *ga-* is given. The *ga-* modality prefix appears in the future as well as in the potential, hortative, and contingent modes, and this *ga-* should be distinguished from the *ga-* conjugation prefix that precedes it.

The  $\emptyset$ -conjugation form of the perfective mode has an unusual wrinkle that occurs with third person arguments. The third person subject and third person object are  $\emptyset$ -, not marked with a surface morpheme. If we look at a non- $\emptyset$ -conjugation verb we find that the perfective *yü-* prefix occurs as in most perfectives.

- (33) wootsáakw  
 $\emptyset$ -yü-yä-√tsáakw\*  
 3.O-PFV-CL[-D,  $\emptyset$ , +I]-√lasting  
 it.PFV.long-lasting  
 'it was long lasting'  
 theme: O-CL[-D,  $\emptyset$ ]-√la (*ga*; Inv Stv) 'O be long lasting'

But with a  $\emptyset$ -conjugation verb, if the classifier has [ $\emptyset$ ] and the argument is third person then a different perfective prefix appears, the  $\emptyset$ -conjugation perfective *u-* ZPFV.

- (34) uwatáa  
 $\emptyset$ -u-yä-√ta-ỹ  
 3.O-ZPFV-CL[-D,  $\emptyset$ , +I]-√fat·NHUM-VAR  
 'it (animal) is fat'  
 theme: O-CL[-D,  $\emptyset$ ]-√sak ( $\emptyset$ ; -? Stv) 'O (nonhuman) be fat'

This relates to another phenomenon involving third person marking, the three-on-three object prefix. When both subject and object are third person, then the subject is  $\emptyset$ - but the object is *a-* instead of  $\emptyset$ -. The *a-* is then the three-on-three object.

- (35) aawagwaal  
 a-yü- $\emptyset$ -yā-√gwal-h  
 3.O-PFV-3.S-CL[-D,  $\emptyset$ , +I]-√beat-VAR  
 'she beat/pounded it'  
 theme: O-S-CL[-D,  $\emptyset$ ]-√gwal (*ga*; - Act) 'S beat, pound, punch O'

It is not always the case that *u-* appears with  $\emptyset$ -conjugation verbs. Transitive  $\emptyset$ -conjugation verbs generally seem to have *yü-* rather than *u-*. This means that the combination of *a-* 3.O and *u-* ZPFV and *yä-* CL[-D,  $\emptyset$ , +I] does not occur.

- (36) a. aawaják  
 a-yü- $\emptyset$ -yā-√jak-ỹ  
 3.O-PFV-3.S-CL[-D,  $\emptyset$ , +I]-√kill-VAR  
 it.PFV.he.kill  
 'he killed it'  
 b.\*oowaják

### 3.5.2. IMPERFECTIVE MODES

The imperfective modes can be split into stative and non-stative subgroups. The stative imperfectives all occur with [+I] in the classifier in their realis forms. This distinguishes them from most of the non-stative imperfectives which have [-I] in their realis forms instead. The imperfectives are further subdivided on the basis of their stem variation suffixes. Leer ascribed particular meanings

<i>Imperfective type</i>	<i>Preverb</i>		<i>TAM</i>	<i>Clf.</i>	<i>Root</i>	<i>Var.</i>	<i>Suff.</i>
	+17	+7 - +4	+1		0	-1	-3 - -6
- <i>ỵ</i> stative (default)			∅-	[+I]		- <i>ỵ</i>	
irrealis closed root			u-∅-	[-I]	√CVC	- <i>ỵ</i>	
irrealis open root			u-∅-	[-I]	√CV	-'	
- <i>h</i> stative (perception, cognition, existence)			∅-	[+I]		- <i>h</i>	
irrealis closed root			u-∅-	[-I]	√CVC	- <i>h</i>	
irrealis open root			u-∅-	[-I]	√CV	-'	
- <i>r</i> stative (possession, perception, cognition)			∅-	[+I]		- <i>r</i>	
irrealis			u-∅-	[-I]		- <i>h</i>	
- <i>n</i> stative (only 'many')			∅-	[+I]		- <i>n</i>	
irrealis			u-∅-	[-I]		- <i>h</i>	
- <i>kw</i> stative (only 'muddy')			∅-	[+I]			- <i>kw</i>
irrealis			u-∅-	[-I]			- <i>kw</i>
invariable stative			∅-	[+I]			
irrealis			u-∅-	[-I]			
- <i>h</i> extensional stative			CNJ-	[+I]		- <i>h</i>	
irrealis			u-CNJ-	[-I]		- <i>h</i>	
- <i>ỵ</i> extensional stative			CNJ-	[+I]		- <i>ỵ</i>	
irrealis			u-CNJ-	[-I]		-'	
- <i>k</i> multipositional stative							
realis closed root			CNJ-	[+I]	√CVC		- <i>k</i>
realis open root			CNJ-	[+I]	√CV		- <i>kw</i> t
irrealis closed root			u-CNJ-	[-I]	√CVC		- <i>k</i>
irrealis open root			u-CNJ-	[-I]	√CV		- <i>kw</i> t

Table 5: Imperfective mode: Stative imperfective types

to the individual imperfectives, so that for example *-h* stative imperfectives are associated with verbs of perception, cognition, and existence. These meanings should only be taken as rough heuristics rather than reliable semantic facts, however.

The extensional statives are specialized forms that describe motions viewed as states extended across a space. The canonical example is the motion verb *O-CL[-D,∅]-√da* (Mot) 'O flow' which has an extensional stative *O-CL[-D,∅]-√da* (*na*; *-h* Ext Stv) 'O flow' that describes e.g. a river's flow as being in an extended state. The multipositional stative imperfectives are likewise fairly uncommon specialized forms that describe motions viewed as states in multiple positions. The usual example is *O-CL[-D,∅]-√da* (*na*; *-kw-t* MPos Stv) 'O (water) lie along in a line' that describes e.g. puddles of water being scattered along in some direction.

The non-stative imperfectives are divided into active, positional, repetitive, and progressive imperfectives. Active imperfectives denote activities, and are fairly common. Positional imperfectives

<i>Imperfective type</i>	<i>Preverb</i>		<i>TAM</i>	<i>Clf.</i>	<i>Root</i>	<i>Var.</i>	<i>Suff.</i>	
	+17	+7 - +4	+1	0	-1	-3 - -6		
-: active/positional (production, oral; situated) irrealis			∅-	[-I]		-:		
			u-∅-	[-I]		-h		
-h active/repetitive (process, manipulation) irrealis			∅-	[-I]		-h		
			u-∅-	[-I]		-h		
-' active/positional (production, oral; sleep) irrealis			∅-	[-I]		-'		
			u-∅-	[-I]		-'		
-n active/positional (grab, guard; default) irrealis			∅-	[-I]		-n		
			u-∅-	[-I]		-n		
-X active/repetitive (-s', -l', -t, -x', -t' -x, -ch, -k) irrealis			∅-	[-I]				-X
			u-∅-	[-I]				-X
[+I]-...-k active/repetitive (alternating series) irrealis			∅-	[+I]				-k
			u-∅-	[-I]				-k
yoo=[+I]-...-k active/repetitive (alt'g, oscill'g) irrealis	yoo=		∅-	[+I]				-k
	yoo=		u-∅-	[-I]				-k
progressive (going along doing) irrealis	PVB=		na-	[-I]		-n		
	PVB=	u-na-		[-I]		-n		

Table 6: Imperfective mode: Non-stative imperfective types

are found with particular verbs that only occur in the imperfective, and which denote position or spatial orientation. Repetitive imperfectives are forms that can be found with a wide variety of verbs. The repetitive perfective of most verbs can be predicted from its conjugation class, mostly those that use *-x*, *-ch*, or *-k*. Some repetitive imperfectives are lexically specified, particularly those that use the *-s'*, *-l'*, *-t*, *-x'*, and *-t'* suffixes (all being of the *-X* class of stem variation). Finally the progressive imperfective is available for every verb, and denotes a progressive aspect that may include concomitant motion in a lateral direction.

Leer makes a distinction between primary and secondary imperfectives, based on whether an imperfective is derived, or is instead a basic part of the verb's lexical specification. A PRIMARY IMPERFECTIVE is lexically specified as part of the verb theme. A SECONDARY IMPERFECTIVE is any other imperfective form, including repetitives and progressives. Some verbs have more than one primary imperfective for various reasons. Other verbs lack primary imperfectives entirely, as described more in section 3.6 below.

Repetitive imperfectives are generally predictable from the verb theme's conjugation class. The *∅*-conjugation class generally gives a repetitive imperfective with the *-x* repetitive suffix and [-I] in the classifier. The *na*-conjugation gives one with the *yoo=* ALT 'alternating' preverb, [+I] in the classifier, and the *-k* repetitive suffix. The *ga*-conjugation gives a repetitive imperfective with the *yei=* 'down' preverb, [-I] in the classifier, and the *-ch* repetitive suffix. The *ga*-conjugation similarly gives a repetitive imperfective with the *kei=* 'up' preverb, [-I] in the classifier, and the *-ch* repetitive suffix. The inventory of conjugation class-determined repetitive imperfectives is shown in table 7.

Conj. Class	Preverb	Classifier	Suffix	Example
∅		[-I]	-x	<i>as.éex</i> 'he cooks it'
na	<i>yoo=</i>	[+I]	-k	<i>yoo ayal'únk</i> 'he hunts it'
ga	<i>yei=</i>	[-I]	-ch	<i>yei algwéich</i> 'he wipes it'
ga	<i>kei=</i>	[-I]	-ch	<i>kei latsínch</i> 'he gets strong'

Table 7: Conjugation class and repetitive imperfectives. Adapted from Edwards 2009: 26.

### 3.6. THEME CATEGORIES

The variety of imperfectives serve to divide up the verb theme lexicon into several classes that are called **THEME CATEGORIES**. The following list gives all of the theme categories:

- stative — primary stative imperfective
- active — primary active imperfective
- positional — primary positional imperfective
- eventive — no primary imperfective
- motion — no primary imperfective, conjugation class derived

Stative verbs have stative imperfectives as their primary imperfective form, active verbs have active imperfectives as their primary imperfective form, and so forth. The positional verbs are unusual in that they only occur in the imperfective mode, so that for example a future or perfective positional is impossible. The eventive verbs denote accomplishments (e.g. 'cough', 'shoot', 'knock'), and consequently they lack primary imperfectives, though they can have secondary imperfectives (repetitive, progressive). The motion verbs denote motion, and are special in a number of ways so they are described in detail section 3.6.1 below.

#### 3.6.1. MOTION VERBS

Motion verbs describe various kinds of motion. They are unique among all the theme categories in that motion verbs do not inherently belong to a particular conjugation class. Instead, motion verbs are unspecified for conjugation class and must be derived into one. The canonical motion verb is *S-CL[-D,∅]-√gut* (Mot) 'S (sg.) go (by foot)'. Compare the following examples of this verb.

- (37) a. *yú aant x̄waagút*  
*yú aan-t ȳu-x̄a-ÿa-√gut-ÿ*  
 DIST TOWN-PNCT PFV-1SG.S-CL[-D,∅,+I]-√go·SG-VAR  
 that town-to PFV·TEL.I.go·SG  
 'I went to that town', 'I arrived at that town'
- b. *yú aandé x̄waagoot*  
*yú aan-dé ȳu-x̄a-ÿa-√gut-h*  
 DIST TOWN-ALL PFV-1SG.S-CL[-D,∅,+I]-√go·SG-VAR  
 that town-toward PFV·ATEL.I.go·SG  
 'I went toward that town', \*'I arrived at that town'

The form in (37a) has the punctual postposition *-t* 'at a point, to a point, around a point' on the end of the DP *yú aan* 'that town'. The perfective stem is *-ÿ*. If we check the list of non-imperfective

modes in table 4 we find that this entails that the verb is a member of the  $\emptyset$ -conjugation class. The form in (37b) in contrast has the allative postposition *-dé* ‘to, toward’ on the end of the same DP. The perfective stem is *-h*, which entails that the verb is a member of one of the *na-*, *ga-*, or *ga-* conjugation classes.

Another difference between the forms in (37) is in their shallow glosses. The form in (37a) says that it is ‘PFV·TEL’ whereas (37b) says that it is ‘PFV·ATEL’. This means that the former is telic, whereas the latter is atelic. We can see this reflected in the translations, where ‘arrived’ is a permitted reading of the telic form but not of the atelic form.

The central issue here is that the same verb *S-CL[-D,  $\emptyset$ ]- $\sqrt{gut}$*  (Mot) ‘S (sg.) go (by foot)’ is appearing in multiple conjugation classes. The form in (37a) is  $\emptyset$ -conjugation whereas the form in (37b) is *na*-conjugation. The basic principle to take from this is that a motion verb can occur in multiple conjugation classes rather than being restricted to a single conjugation class. The lexical entry of a motion verb is not specified for conjugation class. Instead, the motion verb is derived into one using one of the many motion derivations.

A MOTION DERIVATION is a derivational unit composed of a goal, direction, or other manner along with a conjugation class assignment. Goals are usually expressed as PPs, and direction and manner are usually expressed with preverbs, though there is some overlap. Every motion derivation belongs to a particular conjugation class, and the derived motion verb then also belongs to that conjugation class. An extensive inventory of  $\emptyset$ -conjugation motion derivations is given in tables 8 and 9, with the other conjugation classes represented in table 10.

The two motion derivations that were used in (37) are *N-{t,x,dé}* ( $\emptyset$ ) ‘to a point N’ that appears in table 8 and *N-dé* (*na*) ‘toward N’ that appears in table 10. The representation *N-{t,x,dé}* indicates that the postposition is selected from the set  $\{-t, -x, -dé\}$  depending on the particular mode. For the perfective mode the punctual *-t* ‘to a point’ is used as seen in (37a). The future mode uses the allative *-dé* ‘toward’, and the repetitive imperfective uses *-x* ‘repeatedly at’, as seen in (38) below.

- (38) a. yú aant x̄waagút perfective  
 yú aan-t ȳu-x̄a-ȳa- $\sqrt{gut}$ -ȳ  
 DIST TOWN-PNCT PFV-1SG.S-CL[-D,  $\emptyset$ , +I]- $\sqrt{go}$ -SG-VAR  
 that town-to PFV·TEL.I.go-SG  
 ‘I went to that town’, ‘I arrived at that town’
- b. yú aandé k̄kwagóot future  
 yú aan-t ga-w-ga-x̄a- $\emptyset$ - $\sqrt{gut}$ -:  
 DIST TOWN-PNCT GCNJ-IRR-GMOD-1SG.S-CL[-D,  $\emptyset$ , -I]- $\sqrt{go}$ -SG-VAR  
 that town-toward FUT.I.go-SG  
 ‘I will go to that town’
- c. yú aanx̄ x̄agoot repetitive imperfective  
 yú aan-x̄  $\emptyset$ -x̄a- $\emptyset$ - $\sqrt{gut}$ -h  
 MDST TOWN-PERT ZCNJ-1SG.S-CL[-D,  $\emptyset$ , -I]- $\sqrt{go}$ -SG-VAR  
 that town-to REP-IMPV.I.go-SG  
 ‘I go to that town repeatedly’

As can be seen in the last of the three forms above, the repetitive imperfective does not have the repetitive *-x̄* suffix as expected from the  $\emptyset$ -conjugation class. Instead it has the *-h* stem variation

<i>Cls.</i>	<i>Derivation</i>	<i>Meaning</i>
	with <i>-h</i> repetitive imperfective	motion toward terminus
∅	N- $\{t, x, dé\}$	arriving at N, coming to N
∅	$\dot{y}an = \sim \dot{y}ax = \sim \dot{y}ánde =$	moving ashore, to rest, completing
∅	N- $x' \dot{y}an = \sim \dots$	coming to rest at N
∅	N- $náx \dot{y}an = \sim \dots$	moving across N, to other side of N
∅	$\dot{y}an = \sim \dots + k'i-$	setting up, erecting
∅	$\dot{y}an = \sim \dots + sha-$	setting up, leaning against
∅	$kux = \sim kuxx = \sim kúxde =$	moving aground, into shallow water
∅	$neil(t) = \sim neilx = \sim neildé =$	moving inside, coming home
∅	N- $x' neil(t) = \sim \dots$	moving inside house at N
∅	$haat = \sim haax = \sim haa(n)dé =$	coming here
∅	$yóo-\{t, x, de\} =$	going away, going off somewhere
	with <i>-ch</i> repetitive imperfective	motion toward area
∅	$kei =$	moving up
∅	$ux = kei =$	moving out of control, blindly, amiss
∅	N- $x' é-x' kei =$	catching up with N
∅	$yei =$	disembark, exit boat or other vehicle
∅	$yee\bar{k}_S \sim \dot{y}eik_N \sim eeh\bar{k}_T =$	moving down to shore
∅	$héeni = \dot{y}eik = \dots$	moving down into water
∅	$daak =$	moving up from shore, back from open
∅	$dáagi = daak =$	moving further up from shore
∅	$k\acute{w}áakx = daak =$	moving by mistake, wrongly
∅	$daak =$	seaward, out into open, falling from sky
∅	$kux = \sim kúxde = [+D]-$	reverting, returning
∅	N- $x' kux = [+D]-$	reverting, returning to N

Table 8: Some  $\emptyset$ -conjugation class derivation strings for motion themes.

suffix, as is specified in table 8. Motion derivations specify repetitive imperfectives that are not necessarily the same as those normally predicted by the conjugation class, another property that makes motion verbs distinct from all the other theme categories. For this reason, the motion derivations are fully written out with both their conjugation class and their repetitive imperfective in their verb ephemera:  $N-\{t, x, dé\}$  ( $\emptyset$ ; *-h* Rep) ‘to a point N’.

There are morphological overlaps in the motion derivations. We have already seen that the punctual postposition *-t* is used in the  $N-\{t, x, dé\}$  ( $\emptyset$ ; *-h* Rep) ‘to a point N’ motion derivation. The same suffix also appears in the  $N-t$  (*na*; —) ‘around N’ motion derivation that belongs to the *na*-conjugation class. The ‘—’ indicates that this derivation does not specify a repetitive imperfective, and consequently any derived motion verb will lack a repetitive imperfective. The punctual *-t* postposition appears throughout the mode paradigm of this verb rather than only in a few modes, as shown below.

<i>Cls.</i>	<i>Derivation</i>	<i>Meaning</i>
with $\bar{x}$ repetitive imperfective — motion confined to a location		
∅	N- $x'$	coming near N
∅	N- $\bar{y}á'$	coming up to N
∅	N <i>gunayá'</i>	separating from N
∅	N <i>jishá'</i>	getting ahead of N
∅	<i>gági=</i>	emerging, coming out into open
∅	<i>dáagi=</i>	coming out of water
∅	<i>héeni=</i>	going into water
∅	<i>gunayéi~gunéi=</i>	beginning
∅	N- $\bar{x}$	moving in place at N, while stuck at N
∅	N- $x'$ $\bar{y}ax=$	turning over by N
∅	$\acute{a}'=\bar{y}ax=$	turning over
∅	<i>shú'</i> $=\bar{y}ax=$	turning over end by end
∅	$\bar{y}etx\sim\bar{y}edax_T=$	starting, taking off, picking up
with <i>yoo</i> =[+I]-...- <i>k</i> repetitive imperfective — oscillating motion		
∅	<i>yoo=</i>	moving back and forth, to and fro
∅	$\bar{y}an=yoo=$	moving up and down (from surface)
with $\bar{y}a-oo-$ ~ $\bar{y}aa=$ and <i>-ch</i> repetitive imperfective — oblique unbounded motion		
∅	N- $\bar{x}$ $\bar{y}a-oo-$ ~ $\bar{y}aa=$	moving obliquely, circuitously along N
∅	N <i>daa-x</i> ...	circling around N
∅	N- <i>dé</i> $\bar{y}a-oo-$ ~ $\bar{y}aa=$	moving obliquely, circuitously toward N
∅	<i>hé-dé</i> ...	moving over that way, aside, out of the way
∅	N- <i>dáx</i> $\bar{y}a-oo-$ ~ $\bar{y}aa=$	moving obliquely, circuitously away from N
∅	N <i>jikaa-dáx</i> ...	getting out of N's way
∅	N- <i>náx</i> $\bar{y}a-oo-$ ~ $\bar{y}aa=$	moving obliquely, circuitously along N
∅	N- $x'$ $\bar{y}a-oo-$ ~ $\bar{y}aa=$	moving obliquely, circuitously at N
∅	N <i>daséi-x'</i> ...	exchanging places with N
with N- $\bar{x}$ <i>sha-yá-oo-</i> and <i>-ch</i> repetitive imperfective — hanging		
∅	N- $\bar{x}$ <i>sha-yá-oo-</i>	hanging up at N
∅	$\bar{y}ax=sha-yá-oo-$	hanging up
with <i>a-yá-oo</i> -[+D]- and $\bar{x}$ repetitive imperfective — revertive motion		
∅	<i>a-yá-oo</i> -[+D]-	reverting, turning back

Table 9: More  $\emptyset$ -conjugation class derivation strings for motion themes.

<i>Cls.</i>	<i>Derivation</i>	<i>Meaning</i>
with <i>yoo</i> =[+I]-...- <i>k</i> repetitive imperfective — unbounded directed motion		
na	—	moving along, lateral, horizontal
na	N- <i>x̄</i>	moving along N
na	N- <i>dé</i>	moving toward N
na	N- <i>dáx̄</i>	moving away from N
na	N- <i>náx̄</i>	moving by way of, through N
na	<i>yux̄</i> =	moving out of house
na	N- <i>x'</i> <i>yux̄</i> =	moving out of house at N
na	N- <i>nák</i>	leaving N behind
na	N- <i>gáa</i>	going for (to obtain) N
without imperfective — unbounded undirected motion		
na	N- <i>t</i>	moving around N
na	N <i>áa</i>	moving around
with - <i>ch</i> repetitive imperfective — downward motion		
ga	—	falling (intransitive uncontrolled themes), downward
ga	<i>yaa</i> =	moving down (no <i>yaa</i> = with <i>yei</i> =)
ga	<i>yaax̄</i> =	embarking, getting into boat, vehicle
ga	<i>yana<sup>x̄</sup></i> =	moving down into ground
ga	N- <i>x̄</i>	moving down along N
ga	<i>héen-x̄</i> =	moving into water
ga	<i>káx̄ sha-</i>	falling over, prone
ga	N- <i>náx̄</i>	moving down by way of, through N
with - <i>ch</i> repetitive imperfective — initiatory motion		
ga	—	starting off, picking up, upward
ga	N- <i>dáx̄</i>	starting off or picking up from N
without imperfective — wrongly		
ga	<i>kut</i> =	going astray, getting lost

Table 10: *na-*, *ga-* & *ga-*conjugation class derivation strings for motion themes.



- (39) a. yú aant x̄waagoot perfective  
 yú aan-t ȳu-x̄a-ȳa-√gut-h  
 DIST TOWN-PNCT PFV-1SG.S-CL[-D,∅,+I]-√go·SG-VAR  
 that town-around PFV·TEL.I.go·SG  
 ‘I went around that town’
- b. yú aant k̄kwagóot future  
 yú aan-t ga-w-ga-x̄a-∅-√gut-:  
 DIST TOWN-PNCT GCNJ-IRR-GMOD-1SG.S-CL[-D,∅,-I]-√go·SG-VAR  
 that town-around FUT·TEL.I.go·SG  
 ‘I will go around that town’
- c. yú aant naḁagútch habitual  
 yú aan-t na-x̄a-∅-√gut-ch  
 DIST TOWN-PNCT ZHAB-ZCNJ-1SG.S-CL[-D,∅,-I]-√go·SG-HAB  
 ‘I always go around that town’

This incidentally demonstrates that the meaning of the punctual postposition *-t* is not entirely internal, but must be partly determined from the conjugation class of the verb. With a  $\emptyset$ -conjugation motion verb the punctual *-t* means ‘to a point’ with a telic denotation, but with a *na*-conjugation motion verb the punctual *-t* means ‘around a point’ with an atelic denotation. Likewise with positional imperfectives the punctual *-t* means ‘at a point’ with no motion involved. The name ‘punctual’ then refers to the point-like position associated with *-t*, but leaves open whether this is a destination, a locus of movement, or a position. The same sort of semantic diversity can be found with several of the other postpositions such as the pertingent *-x̄* and locative *-x’*.

#### 4. ABBREVIATIONS

The following abbreviations and symbols are taken from my dissertation, with a few of the more obscure ones omitted.

√	verb root
<i>o-</i>	prefix
<i>-o</i>	suffix
<i>-o</i>	obligatory attachment (inalienable noun, verb stem, etc.)
<i>o=</i>	proclitic
<i>=o</i>	enclitic
<i>#o</i>	word-initial boundary
<i>o#</i>	word-final boundary
1	first person
2	second person
3	third person
ABL	ablative <i>-dáx̄</i>
ACT	active
ADES	adessive <i>-gáa</i>
ALB	alienable
ALL	allative <i>-dé</i>
ALT	alternating <i>yoo=</i>

#### 4. Abbreviations

ANIM	animate
AREAL	areal <i>ku-</i> , <i>kú</i>
ATEL	atelic
BASE	meaningless base = <i>ee</i> for postposition attachment
CAUS	causative
CL	classifier: CL[D, S, I]; D = [ $\pm$ D], S = [ $\{\emptyset, s, l, sh\}$ ], I = [ $\pm$ I]
CNJ	conjugation class
COMPV	comparative
CONTR	contrastive
DEC	decessive <i>-ín</i> , = <i>yéeyi</i>
DEM	demonstrative
DET	determiner
DEPRV	deprivative
DIM	diminutive <i>-k'</i> , = <i>sáani</i>
DIST	distal <i>yú</i> (cf. proximal PROX)
DISTB	distributive
DUB	dubitative
ERG	ergative <i>-ch</i>
EVT	eventive
EXT	extentional
FOC	'focus' particle
FUT	future
GCNJ	<i>ga</i> -conjugation class prefix
ḠCNJ	<i>ga</i> -conjugation class prefix
ḠMOD	<i>ga</i> -modality prefix
H	human
HAB	habitual
HEAD	head
HSFC	horizontal surface <i>-ká</i> , <i>ka-</i>
HUM	human
IMPFV	imperfective
IND	indefinite
INAM	inanimate
INALB	inalienable
IRR	irrealis <i>u-</i> , <i>w-</i> , <i>oo-</i>
INSTR	instrumental <i>-n</i> , = <i>een</i> , = <i>teen</i> ~ = <i>tin</i> , <i>-ch</i>
INTR	intransitive (classifier S component)
LOC	locative <i>-x'</i> , <i>-'</i>
LOCP	locative predicate <i>-ú</i>
MDST	mesiodistal <i>wé</i> (cf. distal)
MENT	mental <i>yaa=</i> ( $\neq$ <i>yaa=</i> 'along')
MID	middle voice (classifier [ $\pm$ D])
MOD	modality
MPRX	mesioproximal <i>hé</i> (cf. proximal)
N	nonhuman

#### 4. Abbreviations

NAME	untranslated name
NCNJ	<i>na</i> -conjugation class prefix
NEG	negative
NHUM	nonhuman
NMID	non-middle voice (classifier [-D])
O	object
OBJ	object
OBL	oblique <i>-k'</i>
OBV	obviate (cf. proximate PRX)
OLOC	obsolete locative suffix <i>-k</i>
PART	partitive
PERL	perlative <i>-náx</i>
PERT	pertingent <i>-x</i>
PFV	perfective <i>yü-</i>
PL	plural
PLACE	untranslated placename
PNCT	punctual <i>-t</i>
POS	positional
POT	potential mode
PROX	proximal <i>yá</i> (cf. distal DIST)
PRX	proximate (cf. obviate OBV)
PSS	possessive
PVB	preverb (unspecified)
Q	Q particle <i>sá</i>
REAL	realis
REL	relativizer <i>-i</i> , relative clause
REP	repetitive
RFLX	reflexive
S	subject
SBEN	self-benefactive <i>ga-</i>
SG	singular
STV	stative
SUB	subordinator <i>-í</i> , subordinate clause
SUBJ	subject
TEL	telic
TR	transitive (classifier S component)
UNKN	morpheme with unknown function
TERM	terminative
VAL	valency
VAR	verb stem variation
VSFC	vertical surface, face <i>-yá, yá-</i>
YN	yes/no particle <i>gé ~ gí</i>
ZCNJ	$\emptyset$ -conjugation class prefix
ZPFV	$\emptyset$ -conjugation class perfective <i>u-</i>