

The Phonology and Morphology of the Tanacross Athabaskan Language



UNIVERSITY OF CALIFORNIA
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The Phonology and Morphology of the Tanacross Athabaskan Language

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by

Gary Holton

Committee in charge:

Professor Marianne Mithun, Chairperson

Professor Wallace Chafe

Professor Susanna Cumming

Professor Michael Krauss

August 2000

The dissertation of Gary Holton is approved

Committee Chairperson

August 2000

August 1, 2000

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Gary Holton

2000

VITA

October 12, 1964 — born — Norfolk, Virginia

1986 — B.S., mathematics, University of Alaska Fairbanks

1987 — M.S., mathematics, University of Michigan, Ann Arbor

1997 — M.A., linguistics, University of California, Santa Barbara

APPOINTMENTS

1999 — Assistant Professor of Linguistics, Alaska Native Language Center,
University of Alaska Fairbanks

PUBLICATIONS

1999. Categoriality of property words in a switch-adjective language. *Linguistic Typology* 3(3).341-60.

1997. Grammatical Relations in Tobelo. Unpublished M.A. thesis, University of California, Santa Barbara.

1996. Bibliography of Language and Language Use in North and Central Maluku. (Southeast Asia Paper no. 40). Honolulu: University of Hawaii Center for Southeast Asian Studies.

SELECTED PRESENTATIONS

2000. Tone and intonation in Tanacross. Workshop on Athabaskan Prosody, June 9, Moricetown, B.C.

1999. Remarks on Tanacross tone. Alaska Anthropological Association, April 1-3. Fairbanks, Alaska.

1998. Acoustic correlates of the fortis/lenis distinction in Tanacross fricatives. Athabaskan Language Conference, June 12-14. Calgary, Alberta.

REVIEWS

2000. Review of L. Faltz' *The Navajo Verb*. *Southwest Journal of Linguistics* 19(1).93-6.

1997. Review of René van den Berg's *Studies in Sulawesi Linguistics, part IV*. *Language* 73(2).463-4.

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Tanacross koxt'en 'iin gha

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ABSTRACT

The Phonology and Morphology of the Tanacross Athabaskan Language

by

Gary Holton

This dissertation presents a linguistic description of the phonology and morphology of Tanacross Athabaskan, an endangered language spoken by approximately sixty persons in eastern interior Alaska. There is little extant documentation of Tanacross; hence, this description is based primarily on data gathered from first-hand field work.

Tanacross is typical of the Athabaskan family in its typological characteristics. There is a relatively small phonemic inventory, and most of the phonemic contrasts are neutralized outside the stem-syllable onset position. The lexicon is relatively small, consisting of perhaps six thousand distinct morphemes. Noun morphology is relatively straightforward, with few active morphological processes. In contrast, verb structure is extremely complex, consisting of a possibly discontinuous root morpheme together with a string of inflectional and derivational affixes which combine via an elaborate system of non-concatenative templatic morphology. The verb word may stand alone as entire utterance. Members of other minor word classes tend to be monomorphemic.

Tanacross exhibits several unique properties which distinguish it from neighboring Athabaskan languages and invite further study. Tanacross is unique among the Alaska Athabaskan languages in having high tone as the reflex of Proto-Athabaskan constriction. In addition, more than any other tonal language in Alaska Tanacross has preserved segmental information lost via apocope through an elaborate system of compound tone. Tanacross also has many unique phonetic features, including the loss of suffix vowels and the devoicing of stem-initial fricatives. Tanacross morphology reflects its transitional status between the (historically) conservative languages of the lower Tanana river and the innovative languages of the Tanana and Yukon uplands.

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ABBREVIATIONS

ABL	ablative	L	l-classifier
ALL	allative	M	mode
AREA	areal	NEG	negative
CJ	conjugation	NOM	nominalizer
D	d-classifier	OBJ	object
DISTAL	distal	OPT	optative
DIR	directive	PEG	prothetic peg prefix
EMPH	emphatic	PERF	perfective
FUT	future	PL	plural
GEN	gender	POSS	possessive
H	h-classifier	PP	postposition
HUM.PL	human plural	PRMB	perambulative
IMP	impersonal	PROG	progressive
IMPF	imperfective	RECIP	reciprocal
INCEP	inceptive	RFLX	reflexive
INDEF	indefinite	SG	singular
ITER	iterative	THM	thematic

Chapter 1 Introduction

“The Athapaskan languages, in spite of their essential uniformity in phonetic type and morphology, are richly ramified and we need many more dialectic studies than we have yet had in order to understand the group as a whole... [W]e cannot afford to be without the testimony of all or most of the recoverable dialects.” (Sapir ca. 1932)

“The more closely one looks at it, the more enigmatic and challenging the field of Na-Dene proves to be. It seems fitting to conclude with the hope that fieldwork on the languages involved, and the analysis and publication of the fruits thereof, will come in time.” (Krauss 1969)

1.1 Introduction

This dissertation is intended as a phonological and morphological description of Tanacross, an Athabaskan language of eastern Alaska.¹ In spite of a significant amount of research activity in the 1970's, Tanacross remains one of the most under-documented of the eleven Athabaskan languages of Alaska. It is hoped that this dissertation will represent a first step toward addressing that deficiency.

In many ways the dearth of previous linguistic descriptions of Tanacross is quite understandable, for Tanacross shares many phonological and morphological properties with neighboring languages and with the Athabaskan language family as a whole. Thus many of the observations regarding the structure of Tanacross

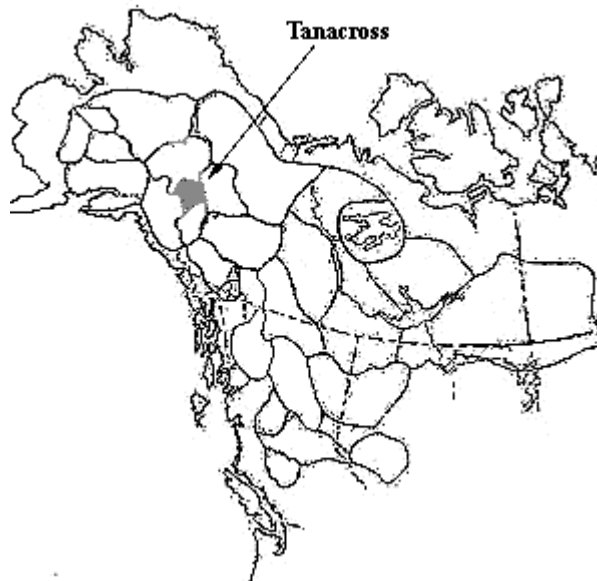
sounds and words could be and in many cases have been made for other Athabaskan languages. Still, given the endangered status of the language, documenting those similarities with other Athabaskan languages should be considered every bit as important as documenting the differences. And there are plenty of the latter. Moreover, these differences in structure and function are all the more interesting in light of the high degree of structural homogeneity across the Athabaskan family. Bearing this point in mind I will present a description of Tanacross which draws heavily on comparative information, noting differences and similarities between Tanacross and neighboring languages where appropriate.

Unfortunately, due to constraints of time and space I have had to limit the coverage here to phonology and morphology, and even those areas are inadequately covered. The phonological description is limited to a cursory phonemic analysis and a phonetic description of those phonemes and their allophones. This is supplemented to some extent by instrumental analysis. I have described the tone system in some detail but only touched on the interaction between tone and intonation. The morphological description is limited largely to a discussion of the word-internal configuration of nouns and verbs. Some other minor word classes are discussed briefly, but syntactic issues are not directly addressed. Beyond phonology and morphology there are of course many more important areas of Tanacross grammar which must await future research.

1.2 The linguistic setting

The word Tanacross has been used to refer both to a village in eastern Alaska and to an ethnolinguistic group. The modern village of Tanacross is accessible by a short access road from the Alaska Highway, and some speakers now reside in the regional center of Tok, located approximately ten miles east of the village on the highway. In addition several speakers now reside in the nearest commercial center of Fairbanks, located two hundred miles downstream from Tanacross village and accessible by all-weather highway. Unless otherwise modified, I use the term Tanacross to refer to a language.²

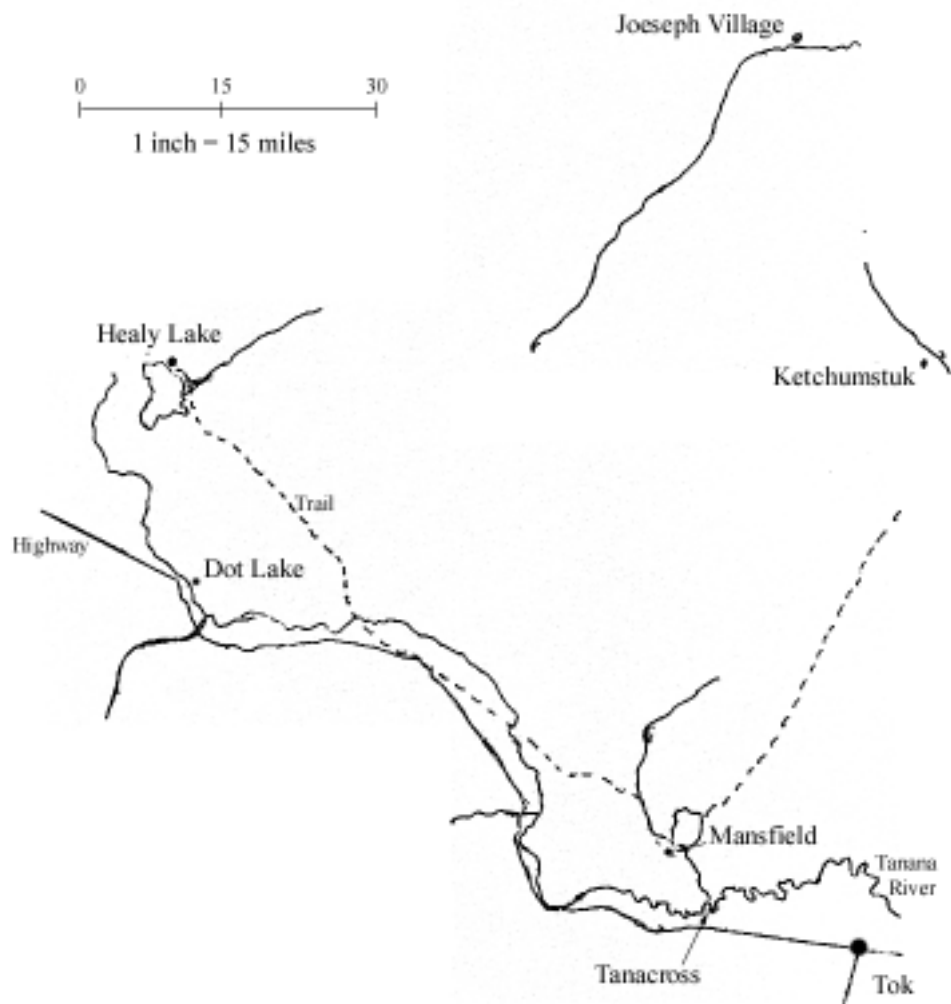
Figure 1.1: The Northern Athabaskan languages (after Krauss & Golla 1981)



Tanacross is the ancestral language of the Mansfield-Ketchumstuk and Healy Lake-Joseph Village bands of Athabaskan people, whose ancestral territory

encompassed an area bounded by the Goodpaster River to the west, the Alaska Range to the south, the Fortymile and Tok Rivers to the east, and the Yukon Uplands to the north.

Figure 1.2: Map of the Tanacross linguistic region (after de Laguna & McClellan 1960)



In the late nineteenth century trading posts were established at Tanana Crossing, a ford along the Eagle Trail, directly across the Tanana River from the present-day village of Tanacross. A telegraph station followed in 1902, and an Episcopal mission in 1909. Both the Mansfield-Ketchumstuk and Healy Lake-Joseph Village bands eventually settled in Tanana Crossing, eventually shortened to Tanacross (McKenna 1959). The village was relocated across the river to its present location in the early 1970's, and most present-day Tanacross speakers live in or near the village of Tanacross.

The name Tanacross has only recently been applied to the language and still has limited currency outside academic circles. Many other logonyms have been used. Wrangell's 1839 wordlist refers to the language as the "Copper River Kolchan", though Wrangell certainly had no notion of the linguistic geography of the Tanacross region. The first extensive ethnographic research in the area was conducted by McKenna in 1929-30, who excludes Tanacross from his map of what he labels as the Upper Tanana region (1959: 16). However, McKenna later appears to lump Tanacross and Upper Tanana together under the label Upper Tanana, noting:

"In considering the Tanana River as a whole, however, the [Tanana] Crossing and Upper Tanana natives should be lumped together, for between the Crossing and Healy River occur a whole series of rapids which today make navigation exceedingly dangerous and in earlier days practically prevented it." (23)

McKenna mistakenly assumes that the Tanana River was a major transportation corridor, when in fact the various Tanacross bands have never had a true riverine culture, having only settled on the Tanana River in the twentieth century. The rapids referred to by McKenna serve as a barrier to salmon migration and remove a major incentive for river settlement (de Laguna & McClellan 1960). In contrast, land travel in this region is relatively easy, and extensive networks of trails connect the villages of the Tanacross region. Many of these trails are still used for hunting access. And at least until the construction of the Alaska Highway in 1942, foot and sled travel between Healy Lake, Mansfield and Ketchumstuk was extremely common (Ellen Demit, p.c.).

Osgood (1936) uses the term Tanana for the entire region of the Tanana River drainage below the Tok River to the confluence of the Tanana and Yukon rivers. Shinen (1958), who recorded a word list from Mary Charlie and Oscar Isaac in Tanacross village, refers to the language as the “Nabesna dialect”, and Shinen’s term was repeated in Hoijer (1963). Nabesna was actually Osgood’s preferred term for Upper Tanana, so Shinen appears to have followed McKenna in lumping Tanacross and Upper Tanana together but adopted Osgood’s logonym. Shinen’s list is clearly of Tanacross, not Upper Tanana origin. De Laguna & McClellan (1960) use the term Tanacross language, but only in a restricted sense referring to the language of Tanacross village proper. Krauss originally included

Tanacross with Lower Tanana, but after a more extensive linguistic survey of the region in the 1960's, he began using the term "Transitional Tanana", recognizing the distinction between Tanacross and the remainder of Tanana (Krauss, p.c.). As the significance of this distinction grew to justify a language rather than dialect boundary, the name Tanacross was applied to the Tanacross linguistic region, appearing for example in Krauss' 1973 survey of the Athabaskan languages. The preferred self-designation for the language is simply "Indian", though "Native Language" is sometimes used in more formal contexts. The term "Athabaskan" is disliked. The indigenous word *neʔaneg*, usually translated as 'our language', is also sometimes heard, though this is likely a neologism.

Tanacross is part of a large language/dialect complex, and the Tanacross linguistic region is bordered by several other closely related Athabaskan languages. To the northwest is Han, spoken in Eagle and across the Canadian border in Dawson and Moosehide. To the east is the language known by the geographic term Upper Tanana, spoken in the villages of Tetlin, Northway, Scottie Creek, Beaver Creek, and (formerly) Chisana. Tanacross and Upper Tanana share a high degree of mutual intelligibility, though the tonal patterns (with the exception of the Tetlin dialect, which is apparently toneless) are reversed. To the south near the headwaters of the Copper River in Mentasta is the Ahtna language. The Mentasta dialect of Ahtna is the most divergent of the four

main Ahtna dialects and shares many lexical and phonological features with Tanacross rather than with the other Ahtna dialects. McKennan remarks:

“The Tanana Crossing people have always been in much closer contact with the Indians of Copper River, the valley of the Tok [River] leading to the easy Mentasta Pass and thence down Slana River to the Copper. The Upper Tanana natives maintain that the Crossing dialect is much more similar to that of the Copper River than is their own.” (23)

Until very recently Lower Tanana was spoken at Salcha (*Saagescheeg*), just west of the Tanacross language area near the mouth of the Salcha river. As might be expected, Salcha shares many features with Healy Lake, the westernmost dialect of Tanacross, though the two are readily distinguished as separate languages (in particular by the presence of high marked tone in Healy Lake). With the passing of the Salcha dialect, the nearest Lower Tanana villages are located more than one hundred miles downstream at Nenana and Minto, and the linguistic boundary between Lower Tanana is now even more distinct.

The Tanacross linguistic region is geographically small by Alaska Athabaskan standards and hence contains little dialectal variation. A small number of phonological features distinguish two major dialects. The Mansfield-Ketchumstuk (MK) dialect of Tanacross was formerly spoken at Mansfield Lake (*dihθâdʔ*) and Ketchumstuk, until those bands combined and later moved to Tanacross village. This is the dialect spoken in Tanacross village and the dialect upon which this study is based. Unless indicated otherwise reference to Tanacross

language should be assumed to mean the MK dialect. A second dialect of Tanacross is spoken at Healy Lake and Dot Lake to the west, and formerly at Joseph Village, and is linguistically distinguished by the retention of schwa suffixes (Krauss 1973a). I refer to this as the Healy Lake (HL) dialect. All HL data are clearly indicated in this study; all other data are from the MK dialect.

1.3 Viability

As with all of the Athabaskan languages of Alaska, Tanacross is extremely endangered. Although most children have passive understanding of simple commands and phrases, most fluent speakers of Tanacross are at least fifty years old. Only among the oldest speakers is Tanacross the language of daily communication. Based on the age of the youngest speakers, Krauss (1997) estimates 65 speakers out of a total population of 220. In spite of the relatively small number of speakers, the percentage of speakers out of the total population is quite high for an Alaska Athabaskan language. Outside Tanacross village proper the percentage is much lower. Although 1990 census figures place the combined populations of Dot Lake and Healy Lake at 117, Kari (p.c.) estimates fewer than four speakers at Healy Lake and perhaps two or three at Dot Lake.

In spite of its small size (population 104) and proximity to predominantly non-native community of Tok, Tanacross maintains its own school, where

Tanacross literacy is sometimes taught. In addition, most households in the village contain at least one fluent Tanacross speaker.

Recently there has been an increase in interest in language revitalization, particularly among middle aged adults. A Tanacross Language Workshop was conducted in 1990, and several training sessions were held at the Yukon Native Language Centre in Whitehorse throughout the 1990's. These training sessions resulted in Native Language teaching certification for at least one speaker. Tanacross language classes are planned at the University of Alaska regional center in Tok.

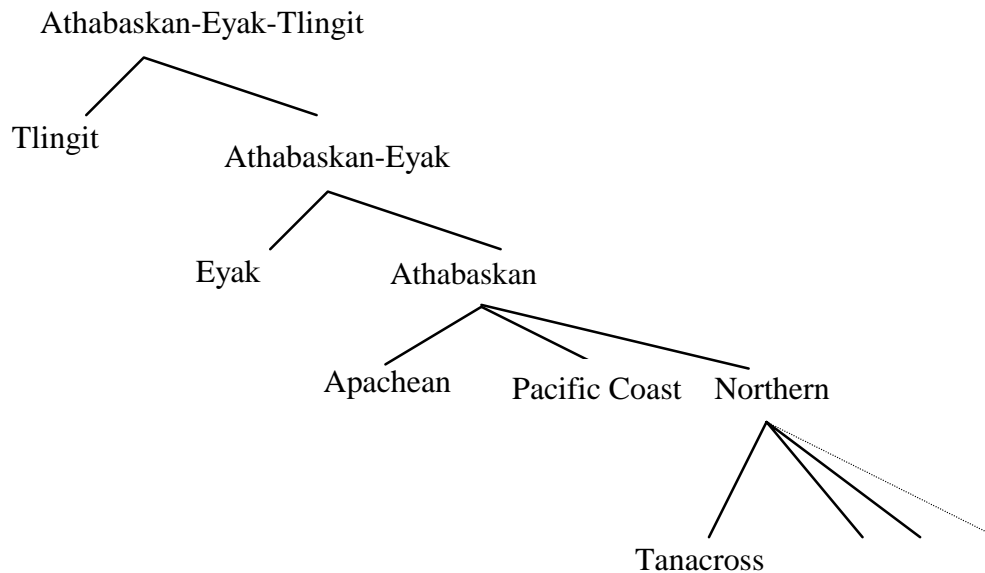
1.4 Genetic affiliation

Tanacross is a member of the Athabaskan family of languages, a well-established genetic grouping whose members occupy three discontinuous areas of North America: the Northern group in northwestern Canada and Alaska, the Pacific Coast in northern California, Oregon, and southern Washington, and the Apachean group in the desert southwest of the continental United States. The seven Apachean languages include Navajo, the largest North American language in terms of number of speakers. Apachean is a very tightly related and well-defined branch (Hoiyer 1938). The Pacific Coast group is much less closely related than Apachean and is perhaps more of a geographic subgroup containing perhaps six languages. Of these only Tolowa and Hupa are still spoken today, and

these only by a handful of speakers. Of the roughly 24 Northern Athabaskan languages, eleven are spoken in Alaska, three of which straddle the border with Canada.

The Northern Athabaskan languages comprise a largely contiguous geographic subgroup whose member languages are spread over a wide area, stretching north nearly to the Arctic Ocean, east to Hudson Bay, and south to approximately the 50th parallel. The Athabaskan languages and coastal Alaskan languages Eyak and Tlingit together form the Athabaskan-Eyak-Tlingit (AET) family.

Figure 1.3: Subgrouping of Athabaskan-Eyak-Tlingit



Sapir (1915) originally proposed including Athabaskan, Tlingit and Haida within a super-family called Na-Dene (Eyak data had been forgotten at the time); however, Sapir's Na-Dene proposal has been fiercely debated ever since (see Krauss 1973b; Pinnow 1976; Dürr & Renner 1995 for summaries of the debate). Arguments for a genetic relationship with Haida are based primarily on morphological similarity rather than regular sound correspondences. Since the work of Levine (1979) the relationship between Haida and Athabaskan-Eyak-Tlingit is very much in doubt. In contrast, ongoing work by Jeff Leer is showing the link with Tlingit to be much stronger than once believed.

Given the available data, it is difficult to discern linguistic subgroups within Northern Athabaskan. Hoijer's (1963) tentative classification proposes seven Northern subgroups, but this classification is severely criticized by Krauss (1973b) for its reliance on very limited data and correspondences between stem-initial consonants. Rice's classification in Goddard (1996) brings more data and improved methodology but still requires an untenable assumption of clear boundaries between languages. Krauss & Golla (1981) maintain that the family-tree model is not appropriate to the subclassification of Northern Athabaskan:

“[I]ntergroup communication has ordinarily been constant, and no Northern Athapaskan language or dialect was ever completely isolated from the others for long. The most important differences among Athapaskan languages are generally the result of areal diffusion of separate innovations from different points of origin, each language—each community—being a unique conglomerate.”
(63)

This is certainly true for the languages of the Tanana River drainages, which form a continuum extending from Lower Tanana in the west (downriver) to Upper Tanana in the east (upriver). Tanacross itself was not defined as a distinct language until the late 1960's (Krauss 1973a). The dialectology of this area has not been completely unraveled, but it is clear that Tanacross of course shares many features with neighboring languages and dialects, especially the Mentasta dialect of Ahtna, the (now extinct) Salcha dialect of Lower Tanana, the Tetlin dialect of Upper Tanana, and the Han language.

However, Tanacross is distinguished most dramatically from neighboring languages by the development of Proto-Athabaskan (PA) constricted vowels into high tone. In contrast, Lower Tanana, Han and Upper Tanana developed low tone, while Ahtna either did not develop or lost tone. The Tanacross tone system remains active in the phonology and morphology of the language. Tanacross shares close linguistic, geographical and social ties with Upper Tanana to the east. In fact, the close social ties which have bound Tanacross with other groups in the upper Tanana drainage area argue for the definition of a Tanana Uplands language and culture area.³ This area would include all groups which have regularly

participated in potlatch ceremonies with Tanacross, including the Upper Tanana of Tetlin, Northway and Beaver Creek; the Han of the vicinity of Eagle, Alaska and Dawson, Yukon; and the Mentasta Ahtna of the Mentasta area. By including Mentasta, I explicitly recognize that it is not accidental that Mentasta is the most divergent dialect of Ahtna and shares many linguistic features with Tanacross and Upper Tanana. Due to extensive multilingualism within the Tanana Uplands area, any study of Tanacross must account for the larger socio-linguistic framework within which Tanacross is embedded.

1.5 Previous research

In addition to the strictly linguistic resources to be discussed below, Isaac (1988) and Simeone (1995) provide important cultural background on the Tanacross community. The former is an oral history told by Chief Andrew Isaac, the last traditional chief of Tanacross. Though much of the text has been translated into English, the translation maintains much of the speech style of the original Tanacross language. The text contains many references to Tanacross flora and fauna, as well as cultural items. Simeone's book is an ethnographic sketch written by an Episcopal lay worker who spent much of the 1970's living in Tanacross village. Ethnographies of the eastern Alaska Athabaskan region, though not specific to Tanacross, can be found in McKennan (1959) and Andrews (1975). De

Laguna & McClellan's (1960) field notes also contain extensive ethnographic information.

1.5.1 Athabaskan linguistics

An enormous body of literature has been devoted to both description and theoretical analysis of Athabaskan languages. Here I will mention only some of the seminal works and those which will have direct bearing on this dissertation.⁴

Modern study of Athabaskan begins with the work of Edward Sapir, whose Athabaskan career arose from a casual encounter with Chasta Costa in 1906, when Sapir was age 22 (Krauss 1986). Sapir went on to conduct first-hand fieldwork in Tsuut'ina, Deg Xinag, Gwich'in, Hupa and Navajo, while also engaging in comparative work.⁵ Other notable early work was conducted by two of Sapir's students, Li and Hoijer (Chipewyan and Apachean, respectively) and by two missionary linguists, Father Jetté on Koyukon (Jetté 1906) and Father Morice on Carrier (Morice 1932). Major grammars have been published recently for Navajo (Young & Morgan 1987), Sarcee (Cook 1984), Hupa (Golla 1970), and Slave (Rice 1989), making Rice's work highly relevant to the description of Tanacross here.

There is a substantial body of northern Athabaskan literature which is relevant to the current work. Rice's (1989) massive grammar of Slave devotes more than five hundred pages to the description of verbal morphology. In addition

to published works, a number of dissertations deal with the topic of Athabaskan verbal morphology. Most notable is Tenenbaum's (1978) study of Nondalton Tanaina. Though somewhat more theory-internal, Randoja's (1990) analysis of Beaver, and McDonough's (1990) analysis of Navajo also provide (indirect) insights into morphological function. Both Axelrod (1990a; 1993) and Thompson (1977) contain excellent sketches of Koyukon verbal morphology.

Within Alaska, linguistic documentation began in earnest in the 1960's with the work of Michael Krauss, joined in 1972 by Jeff Leer and Jim Kari with the formation of the Alaska Native Language Center (ANLC). Krauss and the ANLC staff have compiled a large body of published and unpublished documentation on all eleven Alaska Athabaskan languages, ranging from short wordlists to detailed comparative studies. Especially relevant to the current study are Krauss' monograph on Athabaskan tone (1979), Kari's Ahtna dictionary (1990) and Eliza Jones' Koyukon dictionary (Jones & J tte 2000).

1.5.2 Tanacross linguistics

As noted by Krauss & Golla (1981), the earliest written record by far of the Tanacross language is the "Copper River Kolchan" vocabulary recorded in Wrangell (1839). This list was probably collected at Nuchek in Prince William Sound, but its character is unmistakably Tanacross. Another short (three typescript pages) word list was collected by J.T. Geoghegan (Geoghegan &

Geoghegan 1904). David Shinen (1958) compiled a somewhat longer Tanacross word list from Mary Charlie and Oscar Isaac in Tanacross village, and a portion of this list was later published under the heading “Nabesna” in Hoijer (1963). More substantive documentation of Tanacross began with exploratory fieldwork by Krauss, who first called it “transitional Tanana” (1962). In the early 1970’s Nancy McRoy compiled some textual materials with speaker Mary Charlie (Charlie & McRoy 1972) and a short wordlist containing about 400 items, mostly nouns (McRoy 1973), as well as some basic literacy materials. In the late 1970’s and early 1980’s, Jeff Leer compiled further notes on grammatical paradigms (1982a) and phonological features (1977; 1982b), including the three-way fricative voicing contrast. Marilyn Paul (1978) presents some notes compiled from a class taught by Leer at ANLC. Ron Scollon transcribed and translated a collection of texts from speaker Gaither Paul (G. Paul 1980) using a revised orthography which indicates tone. Kari has compiled a preliminary stem list (1991b) based on information collected from several speakers in the 1980’s, but tone is not marked. Alice Brean has compiled lexical and paradigmatic information (1991). Minoura (1991; 1994) has compiled a short word list and information on tone. In spite of the various sources of lexical documentation, Krauss (p.c.) estimates that only twenty percent of the extant body of lexical information has been documented by linguists.

Recent work on Tanacross has been spearheaded by John Ritter of the Yukon Native Language Center (YNLC) during the past decade. Ritter began a comprehensive study of Tanacross phonology in the early 1990's and developed a practical orthography. Tanacross speakers Irene Solomon and Jerry Isaac have participated in literacy workshops in Tok, Whitehorse and Dawson City, resulting in the production of literacy materials with accompanying cassette tapes (Solomon 1994, 1996; J. Isaac 1997). Solomon & Ritter (1997) provides crucial data for the description of tone phenomena. Additional sound recordings and field notes are available at YNLC. These YNLC materials provide the most rigorous treatment of tonology (tonal morphology) in Tanacross.

1.6 Methodology

Some parts of this description of Tanacross structure apply equally well to other Athabaskan languages, in particular Alaska Athabaskan. Other parts, such as the description of the rich synchronic tone system, are unique to Tanacross.

This description of the Tanacross language is based primarily on data from ongoing field work with speakers of the Tanacross language since 1997. Unless otherwise indicated, examples presented here represent forms which are generally acceptable to most members of the speech community rather than restricted to a particular idiolect. As with any language, there will inevitably be some disagreement as to pronunciation of particular words. No two people speak

exactly alike or use exactly the same pronunciations. In citing Tanacross words and phrases here I do not intend any prescriptive notion of what is right or correct. My only claim is that these examples would be judged acceptable to a majority of the speech community. Many Tanacross speakers were consulted in this study. These include Laura Sanford, Kenneth Thomas, Jerry Isaac, Irene Solomon, Larry Jonathan, Ellen Demit, and many others (see Acknowledgements above).

Field work was conducted in English. Most of the speakers with whom I consulted were raised for at least part of their youth speaking Tanacross but learned English at an early age. Among those I consulted, the latest age at which acquisition of English began was thirteen years. Both elicitation and narration were used to gather Tanacross data.

Data from my own field work is supplemented with information from previous researchers (Kari 1991a, 1991b; Krauss 1962; Leer 1977, 1982a; McRoy 1973; Minoura 1991; Solomon 1994, 1996, 1997). In most cases I have been able to confirm this data through my own field work. Data on the Healy Lake dialect derives entirely from Krauss (1962).

1.7 Organization of this dissertation

This dissertation can be divided into two primary parts: the first deals with the sound system; the second with morphology. However, it is impossible to make a

clean separation between these two parts due to the intricate interaction between Tanacross phonology and morphology. Some morphological features, such as the voicing of stem-initial fricatives in possessed nouns, must necessarily be discussed with the description of fricatives in the chapter on segmental phonology. Similarly, the modification of stem tones in possessed nouns must be referred to in the chapter on tone. I make no apologies for this non-linearity of presentation; it reflects an inherent feature of the Tanacross languages.

In chapter 2 I describe the segmental phonological properties of the sound system, including the phonemic inventory. In chapter 3 I describe phonetic properties, in particular the results of instrumental analyses of laryngeal features of consonant and vowel phonation. Chapter 4 describes nominal morphology. Chapter 5 describes verbal morphology and is much longer than other chapters due to the relative complexity of the Tanacross verb. Finally, various minor word classes such as pronouns, postpositions, adverbs, particles, conjunctions, adjectives, and directionals are discussed in chapter 6. Four appendices are included containing a discussion of the Tanacross practical orthography; a list of mode-subject-classifier paradigms for Tanacross verbs; a sample text with interlinear glosses; and a selected vocabulary list.

Notes to chapter 1

- ¹ The term Athabaskan has a variety of spellings, each with concomitant political implications. The two most common spellings in Alaska are “Athabaskan”, used by the Tanana Chiefs Conference, a regional Native organization, and “Athabaskan”, used by the Alaska Native Language Center. I have standardized to the latter spelling in this document. The term itself is of Cree origin and was applied arbitrarily by Gallatin (1836) after an early survey of the languages (cf. Krauss 1987).
- ² Within Alaska, the term Tanacross Athabaskan is used to refer to the Tanacross language, while the unmodified term Tanacross is used to refer to the village. When used without further modification in this paper, I always intend the term Tanacross to refer to the language.
- ³ There is potential confusion between the term Upper Tanana used to denote a language name and upper Tanana, used to denote the geographic region surrounding the upper section of the Tanana river. Where not ambiguous, I will use lower case “upper” to refer to the geographic area.
- ⁴ Several excellent Athabaskan bibliographies have appeared recently. The most recent can be found in Mithun (1999), which contains an extensive list of materials published through 1998. Rice (1995) contains a selected bibliography, organized by topic. Three recent collections of papers also contain good bibliographies (Cook & Rice 1989; Jelinek et al. 1996; Fernald & Platero 2000). Note that the Alaska Native Language Center maintains an extensive collection containing nearly all published and unpublished Athabaskan materials, including field notes, paper drafts, and manuscripts. Though now somewhat outdated, Krauss and McGary (1980) represents an annotated catalog of that collection.
- ⁵ For an excellent discussion of Sapir’s contribution to Athabaskan linguistics, see Krauss (1986), which also contains an annotated bibliography of Sapir’s Athabaskan work.

Chapter 2 Phonology

In this chapter I describe the segmental phonological properties of the Tanacross sound system. Phonetic properties are described in chapter 3. The analysis presented here is couched within the framework of traditional generative phonology, though the emphasis is much more focused on describing the Tanacross phonological system than framing this system within current theoretical models. Due to the relative homogeneity of Athabaskan sound systems, the phonemic analysis draws not only on Tanacross data but also on previous work in other Athabaskan languages and comparative Athabaskan (Krauss 1964, 1969; Krauss & Golla 1981; Krauss & Leer 1981).

I have attempted to employ standard symbols to distinguish phonemic, phonetic and orthographic transcriptions. Transcriptions enclosed in forward slashes are intended as phonemic transcriptions, while those in square brackets are intended to be phonetic. However, the latter type vary as to the amount of phonetic detail which is present. This should be clear from the context of the particular examples. Orthographic transcriptions, such as those which refer to a secondary source, are usually enclosed in angle brackets. Transcriptions which are not otherwise marked can be considered phonemic. A discussion of the

differences between the Tanacross practical orthography and the phonemic system used here can be found in Appendix A.

2.1 Consonants

The Tanacross consonant inventory shares many properties with that of other Athabaskan languages. There is a three-way distinction between unaspirated, aspirated and ejective stops and affricatives in several places of articulation. Fricatives occur in the same places of articulation as the affricates and additionally in the velar position. Fricatives may occur either voiceless or voiced. In stem-initial position, voiced fricatives occur ‘semi-voiced’. The category of sonorant includes both nasal stops and approximants. Sonorants occur in a much more limited number of places of articulation. The complete phonemic inventory of Tanacross consonants is shown in Table 2.1. Following Athabaskanist conventions, unaspirated stops and affricates are written using the symbol for the corresponding voiced stops, while aspirated stops and affricates are written using the symbol for the corresponding voiceless stops. Thus, the series /d, t, t’/ corresponds to phonetic [t, t^h, t’] in syllable-onset position. Elsewhere, the series /d, t/ corresponds to phonetic [d, t] (ejectives occurs only in onset position). The Americanist symbols /š, ž, č, j, y/ are used to represent palatal consonants [ʃ, ʒ, tʃ^h, tʃ, j] respectively.

Table 2.1: Tanacross consonant inventory

		labial	alveolar	lateral	dental	palatal	velar	glottal	
Obstruents	unaspirated		d	dz	dl	dð	j	g	ʔ
	aspirated		t	ts	tʃ	tθ	č	k	
	ejective		tʼ	tsʼ	tʃʼ	tθʼ	čʼ	kʼ	
Fricatives ¹	voiceless		s	ʃ	θ	š	x	h	
	voiced		z	ʎ	ð	ž	ɣ		
Sonorants	voiceless		ŋ			ɲ			
	voiced	m	n			y			

The classification as to manner of articulation shown above is based on phonological patterning rather than phonetics. Stops and affricates are classified together as obstruents because they pattern together in having a three-way distinction in laryngeal setting. And some phonetic approximants pattern with fricatives in terms of the distribution of voicing.

2.1.1 Evolution of the Tanacross consonant system

Among the Athabaskan languages mergers, splits and shifts of stops and affricates occur as series of consonants sharing the same place of articulation. For example, in Tanacross the entire PA *č and *č^w series have merged to a ts series. That is, PA *j and *j^w have merged to dz; PA *č and *č^w have merged to ts; and PA *čʼ and *č^wʼ have merged to tsʼ. The remaining PA stop and affricate distinctions are essentially preserved. The PA *ts series has shifted to tθ. The PA velar series *k has been fronted to č, and the PA uvular *q series has been slightly fronted to [k].

The PA alveolar lateral affricate series is preserved. The glottal stop patterns with the voiceless unaspirated stops in that it may occur in both onset or coda position in prefixes and stems. The merger of the PA *č and *č^w series is a characteristic which Tanacross shares with Upper Tanana and Ahtna but not with languages to the north and west (including Han, Gwich'in, and Lower Tanana), which preserve the PA *č^w series as retroflex palatal consonants.

2.1.2 Coda voicing distinctions

In this section I discuss the nature of the voicing distinction in stem syllable codas. There are two important and related remarks to be made in this regard, the first regarding the phonetic nature of the voicing distinction and the second regarding the synchronic and diachronic morphological source of the distinction. These issues are discussed in more detail in the following sections, but I provide a unified summary here.

While the precise phonetic characterization of voiced coda consonants in stem syllables varies with manner of articulation, all voiced coda consonants in stem syllables can be characterized as having a released articulation. And in all cases, phonologically voiced codas are fully voiced phonetically. In contrast, phonologically voiceless codas are phonetically voiceless and aspiration is not contrastive. Thus [ɬet], [ɬet^h], and [ɬet̚] are all acceptable pronunciations of /ɬet/ 'smoke'.

The most striking feature of the voiced coda consonants is that the voicing may continue slightly beyond the release of the consonant, yielding a short vocalic segment following the consonant. The duration of this vocalic segment is considerably longer following stop consonants (/d/ and /g/) than following affricates and fricatives. Voiced affricates and fricatives are longer in duration than their voiceless counterparts. In addition, the extent of the voicing following stop release varies considerably across speakers. Krauss' (1962) early work with the Healy Lake dialect reports a very clear vowel following voiced coda stops. This effect is less apparent in modern speakers of the Mansfield dialect. I do not have sufficient data to examine the degree to which this difference in the phonetic quality coda stops is in fact a dialectal feature.

In this dissertation I have chosen to analyze the vocalic segment following voiced coda consonants as a subphonemic phonetic feature of phonologically voiced stops. This analysis follows current practices for other Athabaskan languages (cf. Sharon Hargus & Tuttle 1997), but as noted by Krauss (p.c.) it has the disadvantage of obscuring some important synchronic and diachronic suffixation processes.

To a large extent the voicing contrast in stem-syllable coda consonants is morphologically predictable. In the simplest case, consonants are voiced preceding a vocalic suffix—in particular the possessive suffix *-éʔ* and the

nominalizing suffix *-ε*—and voiceless elsewhere. The suffix vowel is absorbed into the stem syllable, triggering voicing of the coda consonant. This is exemplified below.

(2.1) Realization of voiced coda consonants

$/\text{ʌ}\epsilon\text{t}/ + /é\text{ʔ}/ \rightarrow /-\text{ɫ}\check{\epsilon}\text{d}\text{ʔ}/$ $[-\text{ɫ}\check{\epsilon}\text{d}\text{ʔ}]$, $[-\text{ɫ}\check{\epsilon}\text{d}^\circ\text{ʔ}]$ ‘smoke’ (possessed)
 $/\text{m}\text{ɪ}\text{ʔ}/ + /é\text{ʔ}/ \rightarrow /-\text{m}\check{\text{r}}\text{l}\text{ʔ}/$ $[-\text{m}\check{\text{r}}\text{l}\text{ʔ}]$, $[-\text{m}\check{\text{r}}\text{l}^\circ\text{ʔ}]$ ‘snare’ (possessed)
 $/\text{k}\acute{\text{o}}\text{n}\text{ʔ}/ + /é\text{ʔ}/ \rightarrow /-\text{k}\acute{\text{o}}\text{n}\text{r}\text{ʔ}/$ $[-\text{k}\acute{\text{o}}\text{n}\text{r}\text{ʔ}]$ ‘matches’ (possessed)

In cases where the coda consonant has no voiced counterpart the behavior of the suffix vowel is somewhat different. For example, following a glottal stop the vowel of the vocalic suffix is retained and harmonizes with the stem vowel.²

(2.2) Retention of suffix vowel following glottal stop

$/\text{š}\acute{\text{i}}\text{ʔ}/ + /é\text{ʔ}/ \rightarrow /-\text{š}\acute{\text{i}}\text{ʔ}\acute{\epsilon}\text{ʔ}/$ $[-\text{š}\acute{\text{i}}\text{ʔ}\acute{\epsilon}\text{ʔ}]$ ‘food’ (possessed)

Clearly these two cases are entirely parallel in the morphology of the language, though they receive somewhat different treatment under this analysis.

There is an additional historical dimension to the voicing contrast. Many Tanacross words containing voiced stem-syllable codas are not followed by a synchronic suffix but are reflexes of forms containing a final vowel. This yields final voicing contrasts such as that between *mεŋ* ‘lake’ < PA *wən, and *nun* ‘animal’ < PA *nurnə. The Tanacross voicing contrast clearly derives from a PA contrast between suffixed and unsuffixed forms. This original contrast is potentially obscured by the analysis here. It would of course be equally possible

to instead analyze the coda voicing contrast as a subphonemic feature. Thus, [dend̥iŋ] ‘moose’ could be analyzed as having the underlying form /dɛn̥iŋɛ/ rather than /dɛn̥iŋ/ (note the sequence [nd] is here phonemically /n/). Under this alternate analysis word-final consonants are phonetically voiceless. While this alternate approach might simplify some of the a morphological analysis, I have not adopted this approach in this dissertation.

Finally, note that the voicing distinction also arises in prefix codas, though here the phonemic status of the contrast is more clear. Voiced prefix coda consonants are phonetically similar to voiced stem coda consonants. However, prefix coda consonants may occur voiceless even when followed by a voiced segment. For example, the velar of the human plural prefix *x-* syllabifies as a coda in [xɑːxnittel] ‘they turned around’ yet remains voiceless.

In the next three subsections I describe stops/affricates, fricatives, and sonorants in turn.

2.1.3 Stops and affricates

As in other Athabaskan languages, the Tanacross stop and affricate inventory is dominated by a large number of obstruent places of articulation, each of which may have one of three distinct laryngeal specifications and airstream mechanisms: unaspirated, aspirated, and ejective. The full contrast between unaspirated, aspirated and ejective occurs only in syllable-onset position.

Tanacross ejective consonants do not occur in Tanacross coda syllables, unlike in other Athabaskan languages such as neighboring Ahtna. Thus in coda position only a two-way contrast in phonation of stops and affricates is possible, which is realized phonetically as a voiceless vs. voiced distinction in coda position. The alternation between voiced and voiceless obstruents is to a large degree morphologically conditioned.

2.1.3.1 Stop/affricate series

With the exception of the glottal stop, Tanacross stops and affricates occur in series contrasting unaspirated, aspirated and ejective consonants for each place of articulation. One of the most striking features of the Tanacross consonant inventory is the large number of affricates, all of which may be analyzed as complex segments consisting of a temporal transition which begins from an alveolar place of articulation.³ To each fricative series other than the velar, there is a corresponding alveolar affricate series released into a fricative with the same place of articulation. This statement could apply equally well to the velar series since the pulmonic velar stops are essentially affricates, i.e., [k^x] and [g^y]. Affricate series are thus distinguished by the place of articulation of the fricative portion of the affricate.

Only in the alveolar position is there a contrast between stops and affricates in the same nominal place of articulation. These series differ only

slightly in their articulation. In addition to apical alveolar stop without affrication, there are affricate series corresponding to both laminal and lateral releases. Examples contrasting unaspirated, aspirated and ejective alveolar stops (2.3), alveolar affricates (2.4), and lateral affricates (2.5) are given below.

(2.3) (Apical) alveolar stops

/dâ/	‘should’ (DEONTIC PARTICLE)
/tah/	‘among’
/t’a/	‘wing’

(2.4) (Laminal) alveolar affricates

/-dzi/	‘hearing’
/tsíθ/	‘otter’
/ts’íʔ/	‘to, toward’

(2.5) Lateral (alveolar) affricates

/dlêg/	‘squirrel’
/-tléʔ/	‘friend’
/tl’ur/	‘rope’

In addition to these alveolar stops and affricates from original PA stops and affricates there is also a prenasalized, fully voiced prenasalized alveolar stop [nd] which occurs as an allophone of /n/. This phoneme is discussed with the sonorants in section 2.1.5.1.1 below.

Examples of laminal dental affricates are given below.

(2.6) Dental affricates

/dðeɪ/	‘mountain’
/tθe/	‘rock’
/tθ’éx/	‘sinew’

(2.7) Palatal affricates

/j̥rʒ/	‘camprober (<i>Perisoreous canadensis</i>)’
/čũʒ̥/	‘down feathers’
/čʰox/	‘quill’

Stem-initial unaspirated dental affricates are quite rare. The first example in (2.6) is one of a very few such forms. In stem-final position laminal dental affricates contrast in voicing rather than aspiration and may vary freely with dental fricatives.

(2.8) Stem-final dental affricates varying with fricatives

/ehʒáʔtθ/	[ehʒáʔtθ], [ehʒáʔθ]	‘it’s snowing’
/ndáʔtθ/	[ndáʔtθ], [ndáʔθ]	‘it’s heavy’

In coda position unaspirated obstruents are phonetically voiced and released. As discussed in section 2.1.2 above the voicing may continue beyond the release of the stop.

(2.9) Voicing contrasts in coda stop consonants

/ʔet/	[ʔet]	‘smoke’
/mledʔ/	[mʔedʔ]	‘its smoke’
/kʰôd/	[kʰôdʔ]	‘enough’

The velar series is the only Tanacross obstruent series which does not have an alveolar component. Velar stops are slightly backed following low back vowels, though this level of phonetic detail is usually not transcribed here.

(2.10) Backing of velar stops

/kʰi/	→ [kʰi]	‘birch’
/gari/	→ [gʰari]	‘small’

In syllable-onset position velar stops tend to be heavily affricated. This affrication is not phonemic, as there is no contrast between stops and affricates in velar place of articulation. In spite of the presence of affrication with velar stops there is still a clear contrast between stem-initial velar stops and fricatives.

(2.11) Contrast between stem-initial velar stops and fricatives

/kah/	[k ^x ah]	‘for’
/xah/	[xah]	‘goose’

Affrication of stem-initial velar stops also occurs in neighboring Upper Tanana (Minoura 1994: 166).

2.1.3.2 Glottal stop

Glottal stop differs from the other stops/affricates in that it does not occur as part of a series. I classify it with the unaspirated stops based primarily on its distribution. Glottal stop may occur in both onset and coda position of stem syllables. The glottal stop is also the only segment which may occur as the second member of a complex coda. Glottal stop does not occur as the first member of a complex coda.

(2.12) Phonemic glottal stop in stem onsets and codas

/nekʔɛh/	‘I see it’
/tsáʔ/	‘beaver’
/šlǔŋʔ/	‘my fish’

In prefix syllables the glottal stop may occur in onset or coda position.

(2.13) Phonemic glottal stop in prefix codas

/kɛʔdiʔay/ ‘ladder’ (cf. kɛʔ ‘foot’)

Glottal stop is regularly inserted before vowel-initial words. This rule of glottal stop insertion applies only to underlyingly vocalic segments and not to vocalic allophones such as the vocalic reflex [u-] of the third-person singular possessive prefix /m-/ (see section 2.1.5.1 below). Thus it is possible to have a phonetic contrast between a word-initial sequence of glottal stop plus vowel on the one hand, and vowel-initial word on the other.⁴

(2.14) Contrast between initial vowels with and without glottal stop

/ukah/ [ʔuk^hah] ‘for’ (BENEFACTIVE)
 /mk’áʔ/ [uk’áʔ] ‘his gun’

Glottal stop is also inserted preceding a vowel and following a nominal possessive prefix other than the first, second or third person singular, *š-*, *n-*, or *m-*, respectively. This yields distinctions between singular-possessor possessed forms of stems which are underlyingly vowel-initial, such as *-aʔdeh* ‘older sister’, and those which are underlyingly glottal-initial, such as *-ʔaneg* ‘words, language’. Thus note the contrast between the first-person possessor forms in (2.15ab) and the glottal stop in the first-person plural possessor forms in (2.15cd).

(2.15) Insertion of glottal stop following possessive prefix

- | | | | |
|----|---------------|------------|--------------------|
| a. | /š + aʔdeh/ | [šaʔteh] | ‘my older sister’ |
| b. | /š + ʔaneg/ | [šʔandeg] | ‘my language’ |
| c. | /neʔ + aʔdeh/ | [neʔaʔteh] | ‘our older sister’ |
| d. | /neʔ + ʔaneg/ | [neʔandeg] | ‘our language’ |

Glottal stop is also inserted following the disjunct verb prefix boundary where the disjunct boundary is itself preceded by a vowel. This rule can be written as in (2.16), where the hash (#) represents the disjunct prefix boundary.

(2.16) Disjunct boundary glottal stop insertion rule

$$\emptyset \rightarrow ? / V\#_V$$

For example, in (2.17) the continuative prefix *ná-* is a disjunct prefix of shape CV. When the continuative prefix is immediately followed by the conjunct first-person subject prefix *εg-*, a glottal stop is inserted between the adjacent vowels. When the continuative prefix is immediately followed by the conjunct conjugation prefix *ǰ-*, no glottal stop is inserted.

(2.17) Insertion of glottal stop following disjunct boundary

- | | | | |
|----|---------------------|--|------------------|
| a. | /ná # εgzé'x/ | [náʔεgʂé'x] | 'I am hunting' |
| | (cf. /ná # ǰεgzé'x/ | [náǰεgʂé'x] | 'I was hunting') |
| b. | /sta # i-l-tθet/ | [st ^h aʔiltθ ^h et] | 'he ran away' |

Because the conditioning environment for glottal stop insertion in other than word-initial position depends on a phonological boundary below the word level (namely, the disjunct boundary), phonemic transcription must either represent this boundary or explicitly represent this (sub-phonemic) glottal stop.

2.1.4 Fricatives

Tanacross fricatives occur in six places of articulation, corresponding to all of the places of articulation in which stops occur, with one exception: there is only one

fricative series corresponding to the apical and laminal alveolar stop/affricate series. The lateral, dental, alveolar, palatal, and velar fricatives occur in series containing voiceless and voiced members. The glottal fricative only occurs voiceless and thus does not participate in a voicing alternation. The lateral series is exceptional in that the voiceless alveolar lateral fricative /ɬ/ alternates with a voiced alveolar lateral approximant /l/.⁵ The palatal series is also somewhat exceptional in that the phonemically voiced member never occurs with full phonetic voicing. The alveolar and palatal fricatives are sibilants, in the sense that friction is produced by directing a jet of air at the teeth (cf. Ladefoged & Maddieson 1996: 138). The remaining fricatives are non-sibilant.

The voicing status of the phonemically voiced fricatives differs depending on position. The fully voiced allophone occurs in prefix syllables and in stem (word-final) syllable codas. A ‘semi-voiced’ allophone occurs in stem syllable-onsets. (These ‘semi-voiced’ fricatives are not phonemic.) The phonetic nature of these semi-voiced fricatives is discussed in section 3.1 below. Semi-voiced fricatives are represented phonetically using the symbol for the voiceless fricative together with a diacritic lowered wedge (e.g., [θ̰]).⁶ This notation should be approached with caution, since the diacritic denoting semi-voiced fricative is used with the symbol for the voiceless rather than the voiced fricative.⁷ In the

following two sections I discuss first the places of articulation of the Tanacross fricatives, then the patterning of voicing alternations in fricatives.

2.1.4.1 Place of articulation

In the following subsections I describe each of the Tanacross fricative series. The dental, alveolar and velar fricatives are discussed together. Lateral fricatives are discussed separately because they have some unique properties resulting from the fact that the voiced lateral fricative behaves phonetically like a sonorant. The palatal fricatives are discussed separately because they differ from the other fricatives in the way they participate in morphologically conditioned voicing alterations. The voiced palatal fricative also differs from other voiced fricatives in its diachronic source as a sonorant.

2.1.4.1.1 Dental, alveolar and velar fricatives

The dental, alveolar and velar fricative series each consist of voiceless and voiced variants. In contrast to the laterals, both the voiced and voiceless members of each of these series are phonetically true fricatives. Examples of dental, alveolar, and velar fricatives are given below. Dental fricatives occur in both onsets and codas of stem syllables. Dental fricatives do not occur in prefix syllable codas. In prefix onsets, voiceless dental fricatives are rare outside of incorporated nouns.

(2.18) Tanacross dental fricatives

/-ðá/	‘mouth’
/θaːŋ/	‘sand’
/tsʰiθ/	‘river otter’
/-tsʰεðʔ/	‘thigh’
/diðihdah/	‘I’m sitting down’

Alveolar fricatives are common in stem onsets and codas but relatively infrequent in prefix syllables. Voiced alveolar fricatives do not occur in prefix syllables, and voiceless alveolar fricatives do not occur in prefix syllable codas.

(2.19) Tanacross alveolar fricatives

/seːy/	‘knife’
/mzɛːgʔ/	‘its saliva’
/deːs/	‘shallows’
/jɪːz/	‘camprobber (<i>Perisoreous canadensis</i>)’
/súːrs/	‘robin (<i>Turdus migratrius</i>)’
/sɪntʰeh/	‘you are’
/seːjel/	‘grayling (<i>Thymallus arcticus</i>)’
/stanenišðit/	‘I’m lonesome’

The distribution of velar fricatives is much less restricted than that of alveolar and dental fricatives. Both voiceless and voiced velar fricatives may occur in onsets and codas of stem syllables. Voiceless velar fricatives occur in both onsets and codas of prefix syllables. Voiced velar fricatives are restricted to onset position of prefix syllables.

(2.20) Tanacross velar fricatives

/xah/	‘goose’
/yah/	‘for’
/t’ox/	‘nest’
/tat’oy/	‘paddle’
/mâ’y/	‘shore’
/yihhaʔ/	‘I’m walking along’
/xdéltθ’ih/	‘they’re staying’
/daxdenihxotl/	‘they broke in’

2.1.4.1.2 Lateral fricatives

The voiceless alveolar lateral fricative /ʎ/ pairs phonologically with /l/, a voiced alveolar lateral approximant. Even though the latter is not phonetically a fricative, it patterns phonologically as the voiced counterpart to the voiceless alveolar lateral fricative. Voiceless and voiced lateral fricatives participate in morphologically conditioned voicing alternations. For example, stem-final /ʎ/ is voiced to /l/ in nominalized forms such as that in (2.21).

(2.21) Voicing distinctions in stem-final lateral fricatives

/nač’εʔáʎ/	‘s/he’s eating’
/nač’εʔáʎl/	‘that one who is eating’

The patterning of the voiced lateral approximant with the fricative series is typical of Athabaskan phonology. For example, voiced /l/ also occurs as the voiced variant of the h-classifier (<*ʎ) under application of the classifier voicing rule known as the ‘D-effect’ (see section 5.3.1.2.1). There is also a syllabic variant of the voiced lateral approximant which occurs in some loan words.

(2.22) Loanwords containing syllabic laterals

/d̥r̥l/	[l̥r̥l]	‘tea’
/lsaʔz/	[l̥saʔz]	‘money’

Syllabic laterals do not appear in native vocabulary, where a prothetic vowel is required to form a licit syllable, as in $\text{elge}\dot{\text{y}}$ ‘it is dry’. The syllabic lateral is perhaps better classified as a sonorant, as it does not participate in voicing alternations.

2.1.4.1.3 Glottal fricative

The glottal fricative series contains only one member, the glottal fricative /h/. This phoneme occurs in both onset and coda position in both stem and prefix syllables. It has no voiced variant. The glottal fricative clearly contrasts with the velar fricative, as evidenced by the following minimal pair.

(2.23) Contrast between glottal and velar fricatives

/h̥n̥/	‘creek, small river’
/x̥n̥/	‘quickly’

Some examples of glottal fricative in both stem and prefix syllables are given below.

(2.24) Examples of glottal fricative

/eːdah/	‘she is sitting’
/aːhaːl/	‘she is walking’
/eːhtsːeːy/	‘it’s windy’
/h̥aːhaːlaːʔ/	‘oldsquaw duck’

The glottal fricative does not occur in complex codas.

2.1.4.1.4 Palatal fricative

The palatal fricative series contains the voiceless palatal fricative /š/ and the voiced palatal fricative /ž/. The voiced palatal fricative never occurs phonetically with full voicing, but is always realized as ‘semi-voiced’ [ʒ]. Where other languages exhibit a phonetically fully voiced palatal fricative, Tanacross has the semi-voiced reflex.

The voiced palatal fricative sometimes sounds as if it begins voiceless and transitions to a voiced palatal fricative. It can also sound as if it begins voiceless and transitions to a voiced palatal approximant *y* (thus the spelling <shy> in many older orthographies). However, the voiced fricative contrasts phonologically (and phonetically) with the sequence voiceless palatal fricative plus palatal sonorant.

(2.25) Contrast between /ž/ and /šy/

/ža/	‘sky’
/šyats’eʔ/	‘my daughter (female speaker)’
/myats’eʔ/	‘her daughter’

This contrast is apparent acoustically as well. The waveform of the sequence [šy] in Figure 2.1 shows a clear transition from fricative to approximant, whereas the waveform of the voiced palatal fricative in Figure 2.2 shows no clear segment boundary.

Figure 2.1: Waveform of /šyats'eʔ/ 'my daughter (female speaker)'

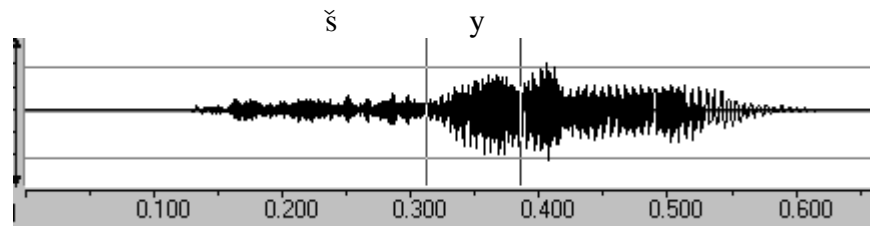
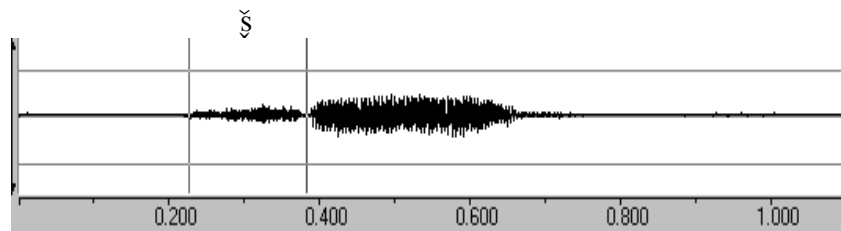


Figure 2.2: Waveform of /ž'a/ [ša] 'sky'



The voiced palatal fricative is clearly a distinct segment; however, the structure of the palatal fricative series is not entirely parallel to that of the other fricative series.

Palatal fricatives differ in several important respects. First, palatal fricatives do not occur stem-finally (though they may occur in prefix syllable codas). More significantly, palatal fricatives do not participate in morphologically conditioned voicing alternations (see section 2.1.4.2.2 below). This asymmetry is explained by the differing sources of the two Tanacross palatal fricatives. The voiceless variant /š/ reflects the merger of PA palatal and velar fricatives, *š and *x, while voiced /ž/ reflects PA *y stem-initially in obstruent closed or open

stems (Krauss & Leer 1981). The remaining fricatives reflect original PA fricatives.

2.1.4.2 Fricative voicing alternations

In other than stem-initial position, voiceless fricatives are always phonetically voiceless, and voiced fricatives are always phonetically fully voiced. Some examples are given below.

(2.26) Stem-final voiced fricatives

[-ts'εðʔ]	'thigh'
[č'iz]	'camprobber (<i>Perisoreous canadensis</i>)'

(2.27) Stem-final voiceless fricatives

[te's]	'shallows'
[t'ox]	'nest'

(2.28) Prefix syllable voiced fricatives

[tiðihtah]	'I'm sitting down'
[ɣihhaʔ]	'I'm walking along'

(2.29) Prefix syllable voiceless fricatives

[ʔišnaʔ]	'I'm drinking'
[tʰat'oɣ]	'paddle'
[xtéltθ'ih]	'they're staying'

In particular, in prefix syllables and in stem syllable codas phonemically voiced fricatives always occur fully voiced. In contrast, stem-initial voiced fricatives are phonetically 'semi-voiced'. Thus, the phonetic realization of voiced fricatives may be different in prefixes and stems, as exemplified below.

(2.30) Phonetic realization of voiced fricative

/ʃinláʔ/	[ʃinɰáʔ]	‘my hand’
/ʃinlats’öʔ/	[ʃinlats’öʔ]	‘my index finger’

The phonetic realizations of stem-initial voiced fricatives are examined further in section 3.1 below.

In addition, with the exception of the palatal place of articulation, voicing is not contrastive for fricatives in stem-initial position. The distribution of voiced and voiceless non-palatal fricatives is phonologically and morphologically conditioned. Because the palatal series behaves somewhat differently, it is discussed separately below.

2.1.4.2.1 Non-palatal alternations

In the lateral, dental, alveolar and velar places the alternation between voiced and voiceless fricatives in stem-initial position is phonologically or morphologically conditioned. In verb stems, phonologically conditioned voiced fricatives are found regularly in stem-initial position following a voiced segment. Voiceless fricatives occur following voiceless segments; the voiced (phonetically ‘semi-voiced’) variant occurs following a voiced segment. Thus, voiceless fricatives occur following the *h*-classifier, which is voiceless, and also following the first singular subject *ih*- and second plural subject *ah*- with \emptyset -classifier. Voiced fricatives occur elsewhere.

(2.31) Alternation between voiceless and voiced stem-initial fricatives

- a. náʔihθɛt
 ná-ʔ-ih-θɛt
 THM-PROG-1SG-stand
 ‘I am standing’
- b. náʔéðɛt
 ná-ʔɛ-ðɛt
 THM-PROG-stand
 ‘s/he is standing’

For verbs which include a classifier morpheme (*d-*, *h-*, or *l-*), which necessarily occurs in immediate pre-stem position, the occurrence of a semi-voiced fricative is then governed by the voicing state of the classifier. Voiceless fricatives occur following the voiceless classifier *h-*. Semi-voiced fricatives occur following voiced classifiers *d-* and *l-*. Notice that semi-voiced fricatives occur following the *d-* classifier even though the *d-* classifier always surfaces as voiceless *t-*.

(2.32) Voiceless stem-initial fricative with h-classifier

náč'ihłóx (h-classifier)
 ná-č'-i-h-łóx
 CONT-INDEF-2SG-H-fish
 ‘you’re fishing’

(2.33) Voiced stem-initial fricatives with voiced classifiers

- a. datzeŷ (d-classifier)
 da-t-zeŷ
 GEN-D-black
 ‘it’s black’
- b. delyos (l-classifier)
 de-l-yos
 THM-L-play
 ‘s/he is playing’

Morphologically conditioned voiced fricatives are found in the possessed forms of nouns, which include a possessive pronominal prefix. Note that most of the possessive prefixes end in a voiced segment, so the morphologically conditioned voiced alternation found in possessed nouns may actually represent an extension of the phonological conditioning by analogy.

(2.34) Possessive paradigm for noun *ʔi* ‘dog’

ʃlɪŋʔ	‘my dog’
ŋlɪŋʔ	‘your dog’
ulɪŋʔ	‘his/her dog’
John ulɪŋʔ	‘John’s dog’
ne:lɪŋʔ	‘our dog’
nuhlɪŋʔ	‘y’all’s dog’
xu:lɪŋʔ	‘their dog’

(2.35) Unpossessed and possessed fricative-initial noun stems

Unpossessed	Possessed	
θɛθ	-ðɛðʔ	‘skin’
se:k	-zɛ:gʔ	‘saliva’
xeɫ	-ɣɛ:lʔ	‘pack’

2.1.4.2.2 Palatal alternations

The palatal fricatives do not participate in the stem-initial voicing alternation. In fact, voiceless and voiced palatal fricatives may even contrast in stem-initial position, whereas for other fricatives such alternations are always phonologically or morphologically conditioned. An example of this contrast is given below.

(2.36) Contrast between voiceless and voiced palatal fricatives in stem-initial position

/ša/ 'for me'
/ža/ 'sky'

The voiced palatal fricative remains semi-voiced regardless of the voicing status of the pre-stem segment. This is true both in verb stems, as in (2.37), and for noun stems, as in (2.38). The verb stem *-žah* 'go, walk' contains a voiced palatal fricative regardless of the preceding subject prefix.

(2.37) Absence of phonologically conditioned voicing alternation in palatal fricatives

- a. *nenihžah*
ne-n-ih-žah
TERM-MODE-1SG-walk
'I went home'
- b. *neninžah*
ne-n-in-žah
TERM-MODE-2SG-walk
'you went home'

The noun stem *šī?* 'food' contains a voiceless palatal fricative which remains voiceless even when preceded by a voiced possessive prefix.

(2.38) Absence of morphologically conditioned voicing alternation in palatal fricatives

- a. *šī?* 'food'
- b. *ušī'* 'his food'

It should be noted that the voiceless palatal fricative is quite rare. Krauss records the following forms with stem-initial voiceless palatal fricative. Forms are cited in Krauss' orthography.

(2.39) Tanacross (MK and HL) voiceless palatal fricative (Krauss 1962)

< PA *x-	šos	'black bear'
	šét	'scar'
	šéθ	'wart' (sometimes šeθ)
	šen	'medicine song'
	šéθ	'hill'
	šír	'food'
	šás	'drum'
	šeze	'drill'
< PA *š-	šír	'I' (related to š- 'my, me')
	šeθ	'summer'

In contrast, the voiced palatal fricative /ž/ is quite common, occurring in many lexical items. Some examples are given below.

(2.40) Tanacross voiced palatal fricative

/žá/	'sky'
/žáʔ/	'louse'
/téžah/	'he left'
/žex/	'house'
/žetθ/	'snow'
/žír/	'in'
/dežen/	'shaman'

The lack of a parallel in voicing alternations between the palatal and other fricative series may be responsible for the innovative strengthening of palatal fricative onsets noted in some modern Tanacross speakers. For example, I have recorded the form čéθ 'wart' where one would expect a voiceless palatal

fricative, < PA **xe**'s (cf. (2.39) above). Strengthening the fricative onset to an affricative effectively removes the problem of the lack of an analogical possessed form, as the affricatives do not exhibit voicing alternation between possessed and unpossessed form. Thus *uč'é'ǰ?* 'his wart'.

2.1.5 Sonorants

The term sonorant as applied to Athabaskan languages includes both approximants and nasal stops. Tanacross has sonorant consonants in three places of articulation: labial, alveolar, and palatal. All three sonorants derive from original PA sonorants. Tanacross sonorants share several phonotactic properties which distinguish them from stops and fricatives. Unlike stops and fricatives, sonorants are always fully voiced in syllable-onset position. In coda position sonorants may contrast in voicing, though this voicing is at least in part morphologically predictable. In fact, it may be more accurate to analyze the alveolar and palatal sonorants as having no voicing contrast at all. With the exception of a few lexicalized forms, voiceless variants occur in word-final position, and voiced variants occur elsewhere. I have chosen here to analyze voiceless sonorants as distinct phonemes for two reasons: (1) consistency with the obstruent analysis; and (2) phonetic validity.

2.1.5.1 Labial sonorant

The Tanacross labial sonorant /m/ has two primary allophones: a voiced bilabial nasal stop and a rounded labio-velar approximant. It occurs as the regular reflex of the PA labio-velar sonorant *w. The labial sonorant has two principal allophones. In environments immediately preceding a vowel, it occurs as a voiced bilabial nasal stop, produced with some rounding of the lips. Elsewhere /m/ occurs as either a high back rounded vowel [u] or as a syllabic rounded labio-velar approximant [w̥]. These latter two forms appear to be in free variation, and I do not distinguish them here.⁸ I have standardized to the vocalic symbol [u] for phonetic transcriptions throughout the remainder of this dissertation. The alternation between the two allophones of the labial sonorant is especially apparent in the third person singular possessive prefix, which occurs as [m-] before a vowel and as [u-] before a consonant. For example, the *u-* form occurs before glottal initial *-ʔat* ‘wife’, and the *m-* form occurs before vowel-initial *-adeh* ‘older sister’. The example in (2.41) compares this behavior with that of the first person singular possessive prefix, which exhibit a parallel alternation, but between syllabic and non-syllabic forms.

(2.41) Alternation in the third person singular possessive prefix

[ʃʔat]	‘my wife’
[uʔat]	‘his wife’
[ʃaʔteh]	‘my older sister’
[maʔteh]	‘his older sister’

The syllabic variant [u] also occurs in a few unanalyzable stems, such as [udzih] (/mdzih/) ‘caribou’. It is traditional within both practical and technical orthographies to distinguish between the [m] and [u] allophones of the labial sonorant, so that while ‘his wife’ in (2.41) could be transcribed phonemically as /mʔat/ it is more customary to transcribe it as <wuʔat>, where the initial consonant serves merely to block the rule of glottal stop insertion. In contrast, it is not customary to write the distinction between the syllabic palatal fricative and the non-syllabic palatal fricative. I will follow both of these customs in broad transcriptions. Some examples of the nasal allophone are given below.

(2.42) Stem-initial *m*-

demeʔ	‘sheep’
k’étmah	‘willow ptarmigan’
emets	‘it’s boiling’

The labial sonorant does not occur in coda position in stem syllables. There are in fact very few PA stems ending in non-nasal sonorants (Krauss & Leer 1981: 79).

In stem-final position PA **-w* is either lost (after full vowels) or reflected as Tanacross /ʏ/, though phonetically much more fronted and labialised, i.e., [ʏ^w]. I know of only one example of this reflex, shown below.

(2.43) Tanacross reflex of stem-final PA **-w*

/ts’ôʏ/	[ts’ôʏ ^w] < PA *č’əw-ə	‘spruce’
---------	------------------------------------	----------

Note that the original PA labial nasal **m* is in Tanacross merged with /n/ (see next section). Unlike the other Tanacross sonorants, /m/ does not occur with a voiceless variant.

2.1.5.1.1 Voiced labial stop

The labial sonorant /m/ has been reported to occur as prenasalized [^mb] or fully oral voiced stop [b] in stem syllables which do not contain a tautosyllabic nasal segment. However, the alternation between [m] and [^mb] (or [b]) is much less regular than that for corresponding allophonic variation of the alveolar sonorant (see section 2.1.5.2 below). Instead, the oral variant of the labial sonorant occurs in free variation with the nasal variant, and the use of the oral variant may be restricted to particular idiolects. With few exceptions, the purely nasal form seems to be preferred in modern speech, though this may represent a recent leveling of an historic alternation. Some older sources report many more instances of oral labials; I discuss these below.

Geoghegan's (1904) Tanacross vocabulary, probably collected in the Healy Lake area, contains at least one instance which may refer to the phoneme /b/ or one of its allophones. The transcription is not terribly reliable, but the occurrence of the form <ava> 'to hurt' is quite interesting. This could possibly be a borrowing from Gwich'in *avaa* 'ouch!', or more likely, an attempt to transcribe a bilabial fricative, e.g., [aβa]. Minoura (1994) lists Upper Tanana [ʔabah] 'ouch'

as the only instance of a full (i.e., not prenasalized) bilabial stop in Upper Tanana. The same form occurs in the Mentasta dialect of Ahtna, though there it behaves as a regular phoneme (Kari 1990). In modern Tanacross the form occurs as [amah] or sometimes [abah] ‘ouch’, though the latter form represent a rare lexicalized instance of fully oral [b].

Scollon records prenasalized labial stops in several Tanacross place names in the speech of Gaither Paul. In (2.44) the form in angled brackets represents Scollon’s transcription; the form in square brackets represents my own phonetic transcription based on Scollon’s orthography.

(2.44) Tanacross place names (Scollon 1979)

<dambeendáag>	[de ^m be ⁿ dág]	‘highest peak above Sheep Creek’
<mbas̩ntsítsíig>	[^m bes̩ ^h ts̩ ^h í ^h rg]	‘Mansfield Hill’

Kari records several instances of bilabial stops in complex nouns.⁹

(2.45) Tanacross bilabial stops (Kari 1991b)

<nach’inbaal saa’>	‘December’
<tth’iitu’ beedz>	‘herring gull’
<tsidaanbiidh>	‘crossbill’

Kari also records several forms in which either labial (oral) stops or labial nasal stops may occur. This may be a case of free variation or variation across speakers.¹⁰

(2.46) Tanacross b/m variation (Kari 1991b)

<taamagh>, <taabagh>	‘shore’
<amah>, <abah>	‘ouch’
<demee>, <debee>	‘sheep’
<ts’elmeet>, <ts’elbeet>	‘arctic loon, common loon’
<delmeedz>, <delbeez>	‘the gold one’
<meth>, <beth>	‘riverbank’

My own data record only the nasal variants of the forms in (2.46), as shown in

(2.47).

(2.47) Tanacross *m*- < PA **w*-

ɛme'dz ‘it’s boiling’

Regardless of the current status of the labial sonorant alternation, it is clear that [b] is not actually an obstruent but rather a voiced variant of the sonorant /m/, occurring in free variation with that segment. It remains phonetically fully voiced and hence distinguished from the other unaspirated obstruents, which are voiceless in onset position.

2.1.5.2 Alveolar nasal

Tanacross has two alveolar nasal phonemes: one voiced and one voiceless. As mentioned above, the voicing contrast derives from a suffixation process in which voiced coda alveolar nasals can be analyzed as underlyingly (or at least historically) intervocalic. There is no voicing contrast in prefix syllables or in stem-initial position.

2.1.5.2.1 Stem-initial and prefixal alveolar nasal

The alveolar sonorant /n/ may occur in both onset and coda position in both stem and prefix syllables. In stem-initial position when no tautosyllabic nasal segment (consonant or vowel) is present, /n/ may be realized as one of several stop-like allophones.

Tanacross /n/ has several historical sources. Original PA *n- is retained in prefixes and in stem-initial position before an original tautosyllabic nasal.

(2.48) Tanacross n- < PA *n-

nûn	‘animal’
č’išnə	‘I’m drinking’ (< PA *-naŋ ^w)

Tanacross stem-initial n- may also derive from PA palatal (oral or nasal) sonorant, again only before an original tautosyllabic nasal.

(2.49) Tanacross n- < PA *y-, *ŋ-

nɛn	‘you’ (< PA *ŋəŋ)
nén	‘back, spine’ (< PA *ye:n)
naʔinðet	‘(you) stand up’ (< PA * ŋ- 2SG)

Finally, stem-initial n- may also derive from PA *h- before original tautosyllabic alveolar nasals.

(2.50) Tanacross n- < PA *h-

-nə < PA *-ha:n

Prefixal *n-* occurs syllabic when no other phonological material is available with which to build a canonical syllable. For example, the second person singular possessive prefix *n-* occurs syllabic before consonant-initial nouns but syllabifies with the initial vowel of vowel initial nouns.

(2.51) Syllabification of alveolar nasal

/n/ + /ʔat/ → [nʔat] ‘your wife’

/n/ + /aʔdeh/ → [naʔdeh] ‘your older sister’

Similar behavior is evident in complex nouns in which *n-* was probably historically a prefix.

(2.52) Syllabic *n-* in complex nouns

[n̩ɛn] ‘meat’

Prefixal *n-* is always voiced in Tanacross. In this respect the behavior of the alveolar nasal in Tanacross differs from that reported for Lower Tanana by Tuttle (1998: 46). In Lower Tanana prefixal *n-* preceding the voiceless *ʔ* classifier (Tanacross *h-*) is either deleted (Minto dialect) or devoiced, with subsequent deletion of the classifier (Salcha dialect). In Tanacross the nasal is deleted with concomitant nasalization of the preceding vowel.

(2.53) Deletion of prefixal nasal: comparison with Lower Tanana

/ði̯htsi/ ‘you made it’ (Tanacross)

/ði̯htsi̯/ ‘you made it’ (Minto)

/ði̯htsi/ ‘you made it’ (Salcha)

In general, Tanacross always retains the feature [+nasal] in the form of nasalization of the preceding vowel when a pre-stem *n-* is deleted (see chapter 5).

When no tautosyllabic nasal segment is present, /n/ is regularly realized as a prenasalized alveolar stop [ʰd], consisting of a nasal onset followed by a fully voiced stop. The stop portion of the segment is always voiced and hence quite different from the unaspirated alveolar stop, which is never voiced in syllable-onsets. That it is a single segment is evidenced by the fact that it occurs in stem-initial position, a locus which does not permit consonant clusters. It is here classified as a sonorant on the basis of its phonological patterning: like /m/ the prenasalized stop may only occur in onset position and always occurs voiced. The situation with the nasal and stopped allophones of alveolar sonorant is in many ways parallel to that with the labial sonorant. However, in the alveolar case the allophonic alternation is entirely regular.

(2.54) Alveolar nasal allophones

/n/ → [ʰd] / +__ V[-nas] C[-nas] (where + signifies a stem boundary)
 [n] / elsewhere

The examples below exemplify this allophonic variation.

(2.55) Allophonic variation between [ʰd] and [n]

/-ne·k/	[-ʰde·k]	‘to swallow’ (root)
/-nɛ·ʔ/	[-nɛ·ʔ]	‘face’

The prenasalized allophone itself varies quite a bit in pronunciation. When preceded by an open syllable, the prenasalized stop usually (though not always) syllabifies as a consonant sequence [nd]. Note that the [d] of this sequence is a true voiced stop, not a voiceless unaspirated stop as in the phoneme /d/.

(2.56) Alveolar prenasalized stop

[ⁿ dʒ]	‘creek’
[yandʒ], [ya ⁿ dʒ]	‘toward the creek, up the creek’

In some cases the prenasalized variant may be pronounced with little perceptible nasal component, yielding a fully voiced oral stop [d].

Tanacross is unique within Alaska in having prenasalized [ⁿd] as a reflex of the PA palatal nasal sonorant *ŋ^w, as in [n^deɬ] ‘axe’ < PA * ŋ^weɬ (Krauss & Leer 1981: 17).¹¹ Surrounding languages exhibit either [n] (Lower Tanana, Upper Tanana, Ahtna) or [d] (Han), though Northern Tutchone is like Tanacross in having the prenasalized stop.

In the remainder of this dissertation I transcribe /n/ phonetically as [ⁿd] or [nd] where appropriate, unless specifically referring to a phonemic transcription enclosed in forward slashes. This practice may lead to potential confusion between the phonemic sequence /nd/, which is phonetically [nt], and the phonetic sequence [nd], which is an allophone of /n/. This is perhaps an unfortunate consequence of the conventional practice of using /d/ rather than /t/ to signify an unaspirated stop, but in any case the distinction should be clear when slashes or square brackets are used.

2.1.5.2.2 Stem-coda alveolar nasal

In codas of stem syllables a contrast has developed between voiced [n] and voiceless [̃n]. This contrast is analogous to the situation with the palatal sonorant discussed in the next section. The voiceless nasal occurs as the reflex of PA sonorants *-n, *-m; the voiced nasal occurs as the reflex of PA *-ŋ. But this contrast is maintained only in simple codas, that is, those without glottal stop appendix or vocalic suffix. When followed by a glottal stop appendix, the alveolar nasal occurs voiced, as shown in (2.57).

(2.57) Voicing comparisons of stem-coda alveolar nasals in complex codas

/kónʔ/ ‘fire’
 /sénʔ/ ‘star’
 /mɛ̃ŋ/ ‘lake’
 /tɛ̃ŋ/ ‘ice’

Voicing contrasts also arise as a result of synchronic morphological processes.

When followed by an underlyingly vocalic suffix -ɛ or -éʔ, stem-final /n/ is also voiced. An example of this contrast is found in the alternation between verbal and nominalized forms, as in (2.58).

(2.58) Voicing distinctions in stem-coda alveolar nasals

/hɛ̃n ɛtɛ̃ŋ/ ‘the river is frozen’
 /hɛ̃n ɛttɛ̃ŋ/ ‘frozen river’

The second form in (2.58) could be analyzed synchronically as containing vocalic suffix -ɛ, which would permit an analysis of the voiceless form as a word-final allophone of /n/. However, voiced [n] also occurs stem-finally in lexicalized

forms which may be historically suffixed but are not synchronically analyzable as containing a vocalic suffix. In this respect Tanacross differs from Lower Tanana, where the /n/ remains intervocalic, followed by a vocalic suffix.

(2.59) Stem-final voiced [n]

tɪkâ'n 'wolf' (cf. Lower Tanana (Minto) *tikani*)
 n̥ɛ'n 'meat' (cf. Lower Tanana (Minto) *nəlæni*)

In the so-called heavy forms (i.e., possessed forms of noun stems—see 4.4.2), stem-final alveolar nasal occurs lengthened. In this case the contrast between voiceless and voiced is neutralized.

The contrast between original (i.e., unsuffixed) voiced and voiceless alveolar nasals is neutralized in suffixed forms, where both occur lengthened.

This length

(2.60) Lengthening of stem-coda alveolar nasal

/š-/ + /kónʔ/ + /-éʔ/ [škónʔ] 'my fire'
 /š-/ + /mɛŋ/ + /-éʔ/ [šmĕnʔ] 'my lake'

Lengthened /n/ is indicated in the practical orthography via doubling of the consonant.

2.1.5.3 Palatal sonorant

The Tanacross palatal sonorant may occur voiced or voiceless. When voiced it is phonetically a palatal approximant (IPA [j], orthographic <y>) articulated with the tongue body held toward the palatal region. When voiceless it varies freely

between a voiceless palatal approximant [j̥] and a voiceless palatal fricative [ç]. Both voiced and voiceless variants are here classified as sonorants based on their distribution: voiced palatal sonorants occur only in other than stem-initial position. In prefixes they are always voiced, reflecting PA *y-. In stem-final position they may be voiced or voiceless, contrasting in ways similar to the alveolar sonorant. The palatal sonorant does not occur in stem-initial position. In stem-initial position the reflex of PA *y- is a voiced palatal fricative /ʒ/, not a sonorant. Thus, the Tanacross sonorant system is somewhat rearranged from that in neighboring Lower Tanana, which preserves stem-initial voiced palatal approximants.¹²

In prefixes /y/ occurs in both onset and coda position, however, with the exception of its occurrence in the third person singular object pronoun *yi-* (discussed in section 5.3.5.2.2) it is quite rare in this position. Examples of /y/ in prefixes are shown below.

(2.61) Palatal sonorants in prefix syllable-onsets

-yats'eʔ	'woman's daughter'
yadime'y	'northern lights'
yinihʔɛh	'he's looking at him'

(2.62) Palatal sonorants in prefix syllable codas

ɬurg eynihθeŋ	'I want fish'
nayneɬʔɛh	'he's looking at him again'

The contrast between voiceless and voiced palatal sonorants in stem-final position is very much parallel to that with alveolar sonorants. The voiceless palatal occurs only in simple codas.

(2.63) Voicing distinctions in stem-final palatal sonorants

elgeŷ	‘it’s white’
elgey	‘the white one’
dêy	‘springtime’
deŷ	‘grouse (<i>Dendragapus canadensis</i>)’

As with the alveolar sonorant, voiced /y/ also occurs stem-finally in forms which are historically suffixed but are now lexicalized with the [+voice] suprafixed. In the Lower Tanana cognates the /y/ remains intervocalic, followed by a vocalic suffix.

(2.64) Stem-final voiced [y]

nihdûy	‘lynx’ (cf. Lower Tanana (Minto) <i>nuduyi</i>)
mehk’â’y	‘gull’

Again like the alveolar sonorant, the stem-final palatal occurs lengthened in heavy stems. In this case the voicing contrast is neutralized. That is both voiceless and voiced stem-final palatal sonorants are lengthened and voiced in the heavy (possessed) form.

(2.65) Lengthening of stem-final palatal sonorant

/š/ + /ʔaŷ/ + /-éʔ/	[šʔăyʔ]	‘my snowshoes’
/š/ + /se’y/ + /-éʔ/	[ššě’yʔ]	‘my knife’

Lengthened /y/ is indicated in the orthography via doubling of the consonant.

2.2 Vowels

The Tanacross vowel system consists of six phonemic vowels. This system represents a reorganization of the PA via a merger of the PA reduced vowels *ə and *α as /ε/, a feature which Tanacross shares with the neighboring Tetlin dialect of Upper Tanana, but not with the more distant Upper Tanana dialects, which preserve all three PA reduced vowels (Minoura 1994: 174). Krauss (1964) reconstructs PA with four ‘full’ vowels and three ‘reduced’ vowels. The Tanacross reflex of the third reduced vowel *v is /o/. The full versus reduced distinction is maintained to some degree in that the Tanacross vowels /o ε/ do not participate in length contrasts and occur in a much more restricted distribution. The Tanacross vowel space can be described phonologically in terms of a tripartite height distinction and a bipartite backness distinction, as shown in Table 2.2.

Table 2.2: Tanacross vowel system

	front	back
high	i	u
mid	e	o
low	ε	a

There is a small degree of allophonic and free variation in some vowels, which I summarize in this paragraph. The high back vowel /u/ is fully rounded and varies little in pronunciation, being generally equivalent to the cardinal value. The mid

back vowel /o/ is only slightly rounded and may occur unrounded as [ɤ], especially preceded an unrounded vowel in a prefix syllable.

(2.66) Roundness of mid back vowel

/lɔχ/	[lɔχ]	‘fishhook’
/lɔʔáhaʔ/	[lɔʔáhaʔ]	‘he’s walking around’

The vowel /ɛ/ is a low front unrounded vowel, much higher than the cardinal value. There is some variation in pronunciation between speakers ranging from [ɛ] to [æ], though this variation is regularized to [ɛ] in my transcription. This vowel is predictably backed to [ɐ] or [a] preceding a velar fricative.

(2.67) Backing of low front vowel /ɛ/

/sɛnʔ/	[sɛnʔ]	‘star’
/sɛχ/	[sɐχ]	‘gaff hook’

The low unrounded vowel /a/ is actually pronounced more like a back vowel as [ɑ], though I do not distinguish these two vowels in my transcriptions. The vowel /i/ is a high front unrounded vowel. It may occur slightly lowered as [ɪ] in closed prefix syllables in which the coda is not occupied by a glottal consonant.

(2.68) Allophones of /i/

/stθiʔ/	[stθ ^h iʔ]	‘my head’
/sint’eh/	[sint’eh]	‘he is’

The mid front unrounded vowel /e/ is pronounced slightly higher and with the lips more spread than the lower mid front vowel /ɛ/.

(2.69) Mid-front vowels

/ʔéɪ/ ‘trap’
 /ʔéɪ/ ‘with’

In closed syllables with glottal fricative or glottal stop codas, the contrast between the two mid-front vowels is neutralized.

Unlike neighboring Upper Tanana, Tanacross preserves PA stem-final consonants, thus there has been no diphthongization of vowels as the result of loss of stem-final consonants. However, the vowels /e/, /a/, and /u/ may occur as the first component of a phonetic diphthong ending in a high front vowel.

(2.70) Tanacross phonetic diphthongs

/gay/	[kai]	‘small’
/čay/	[č ^h ai]	‘woman’s grandchild’
/k’éyʔ/	[k’éiʔ]	‘willow’
/t’éy/	[t’éi]	‘trail’
/tθuy/	[tθ ^h ui]	‘man’s grandchild’

Of these, the diphthong [ei] is by far the most common. However, in all cases these phonetic diphthongs are more profitably analyzed phonemically as true vowels followed by a tautosyllabic palatal approximant [y] (see section 2.1.5.3 above). As noted above syllable-final voiced palatal approximants contrast with voiceless palatal approximants.

(2.71) /-kay/ ‘handle object in open container’ (optative)

/-kaŷ/ ‘handle object in open container’ (imperfective)

The existence of voicing contrasts in stem-final palatal approximants lends further support to the analysis of phonetic diphthongs as sequences of vowel plus approximant rather than as phonemic diphthongs.

2.2.1 Duration

Under certain circumstances vowel length may be phonemically contrastive in Tanacross. There are two primary loci for length contrast, both of which are to a large extent morphologically conditioned. First, certain noun stem syllables may contrast short and long vowels in unpossessed and possessed forms. Second, certain prefix syllables may occur long as the result of deletion of prefix consonants. I will discuss each type of length contrast separately.

The length contrast is possible only with the vowels /i e a u/. The remaining vowels /o ε/ always occur short. This length contrast reflects the PA distinction noted by (Krauss 1964) between full vowels (reflected as Tanacross /i e a u/) and reduced vowels (reflected as Tanacross as /o ε/). In PA reduced vowels are always short, and full vowels are long except before glottal stop or the enclitic *=*he* (Leer 1979: 5). The contrast is maintained in Tanacross, where the reflexes of PA full vowels in stems are long except before a glottal stop or glottal fricative. Full vowels in open or non-glottal closed stems are always long.¹³ Reduced vowels never occur long (and hence cannot occur in open stem syllables).

(2.72) Phonotactically conditioned length contrast in full vowel stems

/gah/ ‘rabbit’
 /k’áʔ/ ‘gun’
 /sa/ ‘sun’
 /ʔaŷ/ ‘snowshoe’

But not all full vowels in stems closed with glottal stop are short. The possessed forms of noun stems containing a full vowel and ending in a glottal stop contain a lengthened vowel. This lengthening occurs as part of a regular process of stem modification which derives possessed forms of nouns (see section 4.4.2 below). An example is shown in (2.73).

(2.73) Morphologically conditioned length contrast in full vowel stems

/k’áʔ/ ‘gun’
 /mk’áʔ/ ‘her gun’

Note that the possessed form in (2.73) may also be pronounced [uk’áʔ^əʔ], with extra-syllabic schwa and no lengthening of the stem vowel. This alternate pronunciation may represent a regularization of the constraint against long vowels preceding glottal stop. A length contrast may also arise between alienably and inalienably possessed forms of open noun stems, which have glottal closed possessed forms (see section 4.4.3.2 below).

(2.74) Length contrast between alienable and inalienable possession (Leer 1982b: 5)

/tu/ ‘water’
 /jêg túʔ/ ‘wine’ (inalienable)
 /štŷʔ/ ‘my water’ (alienable)

Beyond these morphologically conditioned length contrasts there is little evidence for a phonemic length contrast in stem vowels. However, I should stress that this conclusion relies crucially on my analysis of the Tanacross vowel system as consisting of six phonemic vowels. Many of the phonemic distinctions in stem vowels which I have analyzed in terms of vowel quality have been previously analyzed in terms of length. For example, Leer analyzes Tanacross as having a five-vowel system and interprets the distinction between my [teɫ] ‘crane’ and [teɫ] ‘blood’ as a length distinction between [teɫ] and [teɫ], respectively (1982b: 6). There is in fact a phonetic length difference between these two words. However, under my six-vowel analysis this length difference is phonotactically conditioned by the full versus reduced vowel distinction: full vowels occur long in stems unless closed by a glottal stop or glottal fricative. Other examples of a length contrast in stems cited by Leer are also readily handled in terms of vowel quality in a six-vowel analysis. For example, Leer cites the near-minimal pairs [nč^háx] ‘it’s big’ and [sáx] ‘gaff hook’. Under the six-vowel analysis the latter vowel (phonetically closer to [ɐ]) is analyzed as an allophone of the reduced vowel /ɛ/ before velar fricatives. As a reduced vowel it is necessarily short.

I turn now to a discussion of length contrasts in prefix syllables. There are clear cases of contrast between long and short full vowels in both disjunct (proclitic) and conjunct verb prefixes. While vowels in prefix syllables are

underlyingly short, long vowels may arise as a result of deletion of prefix consonants. Thus, long vowels in prefix syllables always correspond to more than one morpheme, a finding which Rice also confirms for Slave (1989: 85). Vowels cannot occur long in closed prefix syllables, so there is much less possibility of length contrast in prefix syllables. There are two common loci for deletion in the Tanacross verb complex, one in the disjunct prefixes and one in the conjunct prefixes. Both of these processes delete the second syllable of a sequence of two open syllables.

(2.75) Deletion in verb prefixes

$$C_1V_1C_2V_2 \rightarrow C_1V_1'$$

Syncopation in the conjunct domain happens commonly with the deletion of conjugation prefixes in forms not containing an inner subject prefix (i.e., forms other than first person singular, second person singular and plural). An example can be found in the rule of γ -vocalization (see section 5.3.3.1.2.1), which delete the [γ -] progressive conjugation prefix, with concomitant lowering of the preceding vowel, in verb forms without inner subject prefix.

(2.76) Length contrast in conjunct prefix syllables

- a. téyihhaʔ
 té- γ -ih-haʔ
 INCEP-PROG-1SG-walk
 ‘I am walking along’

- b. tá'haʔ
 té-ɣ-haʔ
 INCEP-PROG-walk
 'he is walking along'

An example of syncope in the disjunct domain in the deletion of the iterative prefix *na-* when preceded by an open syllable, a phenomenon referred to by Leer as “na-absorption” (1982b: 6). This deletion results in the lengthening of the preceding vowel, as shown in (2.77).

(2.77) Length contrast in disjunct prefix syllables (Leer 1982b: 5)

- a. tayihdlah
 ta-ɣ-ih-dlah
 water-CJ-1SG-handle.plural.objects
 'I put them in the water'
- b. ta'ɣihdlah
 ta-na-ɣ-ih-dlah
 water-ITER-CJ-1SG-handle.plural.objects
 'I put them back in the water'

Although I have not analyzed the duration of prefix syllables instrumentally, there is a clear perceptual difference in length between mono-morphemic and bi-morphemic prefix syllables.

2.2.2 Nasalization

In addition to the six Tanacross oral vowels, there are four nasalized vowels corresponding to the four full vowels /i e a u/, yielding a total of ten phonemic vowels (not including tone distinctions). Nasalized vowels may occur in any

environment except preceding a tautosyllabic nasal consonant. The reduced vowels /ɛ/ and /o/ do not occur nasalized in any environment.

(2.78) Oral versus nasal vowel contrasts

/tsɪɾl/	‘young boy’
/-intsɪ̃/	‘nose’
/-geɥ̃/	‘white’
/-geɥ̃/	‘dry’
/t’aθ/	‘cottonwood’
/-t’ǎʔ/	‘leaf’
/-zɯ̃/	‘good’
/súrs/	‘robin’
/gúθ/	‘fireweed’
/gɯ̃/	‘worm’

In some languages (e.g., Slave; see Rice 1989: 83) it is possible to analyze vowel nasalization as deriving from an underlying sequence of oral vowel plus nasal consonant. In Tanacross nasalization has been phonemicized, and there is a contrast between nasalized vowels and oral-nasal sequences as in (2.79).

(2.79) Nasalized vowels versus oral-nasal sequence

/-nǎ/	‘mother’
/nǎn/	‘this’
/ðektsɪ̃/	‘I made it’
/ðektsɪ̃n/	‘that which I made’

In addition to these phonemic contrasts between nasal vowels and oral-nasal sequences there are synchronic processes of vowel nasalization related to deletion of nasal consonants. In particular, the alveolar nasal of the second person singular subject prefix may be deleted in order to satisfy constraints against complex codas

in prefix syllables. In such cases the nasal feature is retained on the preceding consonant.

(2.80) Pre-stem nasalization rule

$$CVnC]_{\text{stem-boundary}} \rightarrow CV\check{C}$$

This situation most commonly occurs in verbs containing non-zero classifiers, such as the h-classifier verb ‘to fry’ below. Thus there is a contrast in prefix vowel nasalization between *inhat* ‘he is walking’ (\emptyset -classifier) and *ih̄t’éθ* ‘you’re frying’ (h-classifier), the latter of which is illustrated in (2.81).

(2.81) Pre-stem nasalization with second person singular subjects

ɬɔg	ih̄t’éθ
ɬɔg	in-h-t’éθ
fish	2SG-CL-fry
	‘you’re frying fish’

Even in verbs containing the zero classifier there may be alternation between [in] and [ī] in the realization of the second person singular subject prefix. Leer has noted a preference for the oral-nasal sequence preceding alveolar stops and affricates and the nasalized form before fricatives (1982b: 15). There may also be a kind of vowel nasalization harmony; my own data also suggest a preference for the nasalized form preceding a nasalized stem vowel. In all cases speakers agree that both oral and nasal forms are acceptable, suggesting that these variants are in free variation.

2.3 Tone

Tone as described here is a phonological property. Generally, high tone corresponds to raised pitch, and low tone corresponds to lowered pitch. There may be other phonetic correlates of tone as well. Some of these are discussed in section 3.2 below. There are also other sources of pitch variation in Tanacross, in particular intonation. Various non-declarative speech-acts are marked via distinctive intonation contours which affect the phrase-final pitch. Since verb stems often occur in phrase-final position, this has the effect of modifying the pitch realization of the verb stem, often overriding the lexically assigned pitch. The interaction between tone and intonation is discussed further in Holton (2000). In this dissertation I use the term tone only to refer to lexically-assigned tone and tone which derives from lexically-assigned tone via regular tone-spreading processes. By lexically-assigned I mean tone which derives via tonogenesis from PA distinctions in syllable constriction. Pitch deriving from intonation is not marked in the transcriptions.

All Tanacross vowels (and syllabic consonants) bear a tonal specification and may contrast in pitch. Prefix vowels may have either high or low tone. Stem vowels may have one of five tones: low, high, falling, rising or extra-high. While a complete set of minimal pairs contrasting these five tones does not exist, the pattern of tones is a fundamental part of the Tanacross language. Some examples of stem tones are given below.

(2.82) Stem tone contrasts

/tùr/	‘water’ (low tone)
/dúʔ/	‘and, also’ (high tone)
/nûrn/	‘animal’ (falling tone)
/mlǔrgʔ/	‘his fish’ (rising tone)

Among Athabaskan languages, Tanacross is ‘high-marked’ in that Tanacross reflexes of PA constricted syllables are high tone, while reflexes of non-constricted syllables have low tone. The pitch of these underlying tones may be further modified via interaction with phrasal intonation to demarcate various pragmatically-marked structures, such as questions, imperatives, and negation.¹⁴ Tone also interacts with the morphology to demarcate morphological units. And surface pitch realization is modified by an active tonal phonology which allows for re-association of tones from one morpheme to another.

Due to the complex morphology and the relatively long length of words, it can be difficult to locate minimal pairs which exemplify tonal contrasts in Tanacross. That is,. However, the tonal melody resulting from the sequences of tones in a word or phrase is crucial to effective communication and thus carries a significant semantic burden. Indeed, tone is fundamental to understanding Tanacross, just as it is with other tonal Athabaskan languages.

2.3.1 Athabaskan tonogenesis

The study of tone is one of the most interesting aspects of comparative Athabaskan phonology.¹⁵ Not all Athabaskan languages have tone systems, but

among those that do there are two distinct types. One type has high pitch syllables precisely where the other type has cognates with low pitch, and vice versa. The high versus low pitch contrast in modern tonal Athabaskan languages reflects a former distinction between constricted and non-constricted syllables in PA (Krauss 1964). However, the modern languages differ as to whether PA constriction develops into high or low tone or is lost altogether.¹⁶ Tanacross is unique among the Alaska Athabaskan languages in exhibiting high tone as the reflex of PA constriction. Languages like Tanacross are known as ‘high-marked’, while those in which constriction is reflected as low-tone are known as ‘low-marked’. Interestingly, Tanacross is a high-marked isolate: all of the neighboring Athabaskan languages are either low-marked or non-tonal. The high-marked status of Tanacross is particularly conspicuous in comparison with Upper Tanana, with which Tanacross shares a high degree of mutual intelligibility in spite of an opposing or “mirror-image” tone system. In Tanacross “marked” syllables (reflexes of PA constricted syllables) exhibit high tone, whereas in Upper Tanana marked syllables exhibit low tone (cf. Tanacross *té'žáh* vs. Upper Tanana *tè'žáh* ‘he left’).

In Tanacross unmarked syllables are lower in pitch, resulting in a two-way distinction in lexical tone. In addition, compound tones arise in two ways: 1) syncopation of medial consonants in historically bi-syllabic stems, and 2)

suffixation of tonal affixes. Compound tone is discussed in the second subsection below.

While all stem syllables must be underlyingly associated with a tone unit, there is some evidence that prefix syllables may be either high tone, low tone, or toneless.

2.3.2 Level tone

Tanacross is distinguished from neighboring languages by the development of Proto-Athabaskan (PA) constricted vowels into high tone. In contrast, Lower Tanana, Han and Upper Tanana developed low tone, while Ahtna did not develop tone. The PA source for both Tanacross high tone and Upper Tanana low tone has been termed constriction by Leer, but a precise phonetic characterization of this constriction remains elusive (see section 2.3). Contrast between PA constricted and non-constricted vowels is maintained in Tanacross as a tonal contrast. In particular, reflexes of PA stems with final glottal or glottalized sonorant are high-toned in Tanacross, resulting in minimal pairs which contrast in tone.

(2.83) Level tone contrasts

nénʔ ‘land’ < PA *n̥ənʔ

nən ‘you’ < PA *n̥ən

Reflexes of PA constricted syllables are termed “marked”, while reflexes of non-constricted syllables are termed “unmarked”. Thus, Tanacross marked syllables

are high-toned while Upper Tanana marked syllables are low-toned. In most orthographies only the marked tone is overtly indicated. However, evidence from compound tone stems indicates that all stems must be underlyingly specified as either high or low.

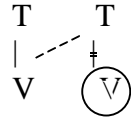
Table 2.3: Examples of Tanacross level tone on nouns

	Low Tone		High Tone
<i>tu</i>	‘water’	<i>tsáʔ</i>	‘beaver’
<i>tθe</i>	‘rock’	<i>léʔs</i>	‘fry bread’
<i>sa</i>	‘sun’	<i>tθ’éx</i>	‘sinew’
<i>seʔk</i>	‘saliva’	<i>t’éʔs</i>	‘charcoal’
<i>tʰuʔ</i>	‘rope’	<i>déyʔ</i>	‘fly’
<i>təy</i>	‘trail’	<i>sénʔ</i>	‘star’
<i>ʔet</i>	‘smoke’	<i>kónʔ</i>	‘fire’
<i>mən</i>	‘lake’		

2.3.3 Compound tone

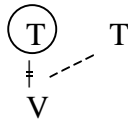
In addition to the level high and low tones which arise directly from PA constricted and non-constricted syllables, Tanacross has compound rising and falling tones whose origin may be traced synchronically or diachronically to sequences of level tones. Tanacross tone, like that in many languages, can be analyzed as operating independently from consonantal and vocalic material on an independent autosegmental tier. When consonantal or vocalic material is deleted via either historical or active phonological processes, the associated tone may remain and re-associate with another tone bearing unit. As in many other Athabaskan tone languages, in Tanacross this re-association occurs leftward.

(2.84) Leftward re-association of delinked tones



Where Tanacross differs from other Athabaskan tone languages is in its treatment of the multiply linked tone bearing unit resulting from the leftward re-association of the tone in (2.84). For example, in Gwich'in multiply linked tone bearing units are not licit, forcing delinking (and later stray erasure) of the first of the two associated tones, as shown in (2.85).¹⁷

(2.85) Delinking of tone from multiply associated tone units (Gwich'in)



Similar tone spread also occurs in languages which preserve both tone bearing units. For example, Lower Tanana (Minto) marked (low) tone associated with possessive suffixes spreads leftward to associated with the stem vowel (Krauss 1996). Original stem tone is delinked, resulting in a leveling of possessed nouns to marked (low) tone. Thus, Minto [tθ'əχ] 'sinew' and [denatθ'əχə?] 'our sinew'.

But the delinking rule in (2.85) does not apply in Tanacross. Instead, Tanacross preserves both tone associations, and sequences of unlike tones are realized as compound tones. A high-low sequence is realized as falling tone; a low-high sequence is realized as rising tone. Thus, Tanacross differs from

languages like Gwich'in and Lower Tanana in that stem tone does not assimilate to a following suffix, but rather is preserved in the form of compound tone.

One locus of compound tones in Tanacross is found in monosyllabic noun stems descended from PA disyllabic stems. Loss of PA medial or final consonants results in a Tanacross monosyllable with multiple tone associations. Where these tones differ, a compound tone arises, either rising (2.86) or falling (2.87).

(2.86) Rising tone on noun stems

- a. x̄ɬ 'raft' < PA *x̄əŋə's
- b. ts'ědʔ 'blanket' < PA *ts'ədiʔ

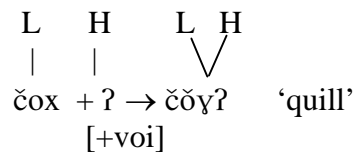
(2.87) Falling tone on noun stems

- dêy 'spring' < PA *daŋ'ə
- mâɣ 'shore' < PA *wa'n'ɣə
- denîg 'moose'
- jîz 'camprobber'
- jêg 'berries'

Compound stem tone may also arise through one of several synchronic morphological processes which derive historically from suffixation but are now realized via suprafixation. PA had several suffixes of shape *V(?), including the nominalizing suffix *-ə, the possessive suffix *-əʔ, and the kin term suffix *-ə. The vowel of these original suffixes is syncopated in Tanacross (though its voicing feature is retained and linked to the stem-final consonant; see section 4.4.2 below). The associated tone then re-associates with the preceding tone bearing unit, as in (2.84). The PA nominal possessive suffix *-əʔ is constricted

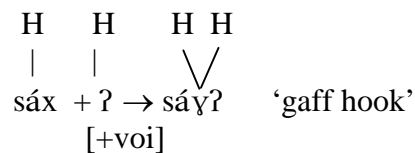
and hence realized as high tone in Tanacross. Thus, Tanacross low tone stems with the possessive suprafix contain a low-high sequence which is realized as rising tone, as shown in (2.88).

(2.88) Rising tone from PA possessive suffix *-əʔ



As shown in (2.89), the possessed form of a high-tone stem remains high, because there is no tonal contour associated with the possessed form.

(2.89) High tone from PA possessive suffix *-əʔ



In both cases the stem tone is essentially retained.

As noted by Ritter (p.c.), compound falling tones arise in an analogous manner, through the affixation of historically low-tone suffixes to high tone stems. In particular, the PA nominalizing suffix *-ə is not constricted and hence realized with low tone. In (2.90) I represent the Tanacross nominalizing suprafix via the feature [+voiced] linked to a low tone. It has no segmental realization.

(2.90) Falling tone from nominalizing suffix PA *-ə

$$\begin{array}{ccc} \text{H} & & \text{L} & & \text{H} & \text{L} \\ | & & | & & \diagdown & / \\ \text{t}'\acute{\epsilon}\theta & + & [+voi] & \rightarrow & \text{t}'\acute{\epsilon}\grave{\delta} \end{array}$$

łurg ekt'acuteepsilonθ	'I fry the fish'
łurg ekt'acuteepsilongraveδ	'the fish which I fry'

As with high tone suffixes, the low tone of the nominalizing suffix has no effect on low tone stems.

(2.91) Low tone from nominalizing suffix PA *-ə

$$\begin{array}{ccc} \text{L} & & \text{L} & & \text{L} & \text{L} \\ | & & | & & \diagdown & / \\ \text{me'ts} & + & [+voi] & \rightarrow & \text{me'dz} \end{array}$$

łurg ekme'ts	'I boil the fish'
łurg ekme'dz	'the fish which I boil'

Although the kin term suffix *-ə is not productive, its presence in the form of a falling tone is readily apparent in a number of Tanacross kin terms. The forms in (2.92) all derive from PA disyllabic forms in which the first syllable is constricted, symbolized here with an apostrophe (cf. Krauss 1977b).

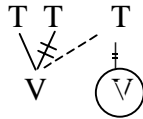
(2.92) Tanacross kin terms with falling tone

/-čâ'y/ 'woman's grandchild' < PA *-kɔ'yə
 /-tsê'y/ 'grandfather' < PA *-čə'yə
 /-tâ'y/ 'father's brother' < PA *-tɔ'yə

As expected, the historic kin term suffix does not change the tone of originally low tone forms, such as Tanacross /-tθuy/ 'man's grandchild' < PA *tsuyə.

It is of course possible for these various processes yielding compound tones to compete with one another. This occurs, for example, in possessed forms of compound tone noun stems such as those in (2.86) and (2.87). In such cases the tone spread process applies in a recursive manner, first to the innermost suffix, then to the outermost suffix. However, triply linked tone bearing units are prohibited, so the second tone spread process applies with delinking as in (2.85). This is represented in (2.93) below.

(2.93) Possessed forms of compound tone stems



Even with this delinking it is still possible to derive a compound tone provided the first tone of the original compound tone differs from the outer suffix tone. Thus, in possessed forms rising tone stems behave as if they were low tone, and falling tone stems behave as if they were high tone.

(2.94) Possessed forms of rising tone stems

/xĩθ/ ‘raft’ /šỹĩθʔ/ ‘my raft’

(2.95) Possessed forms of falling tone stems

/jêg/ ‘berries’ /šjégʔ/ ‘my berries’
 /dlêg/ ‘squirrel’ /šdlégʔ/ ‘my squirrel’

2.3.4 Extra-high tone

An additional level tone arises in verbal negation, indicated in PA via a vocalic suffix. Negative forms employ much the same heavy stem form as do

nominalized forms, though with an additional tone modification, resulting in extra-high tone. This phenomenon has only recently been reported in Tanacross (John Ritter, p.c.). A similar phenomenon is found in the Beaver Creek dialect of Upper Tanana (Minoura 1994). In the examples given below, the double acute accent indicates extra-high tone. The morpheme *k'á* is an obligatory phrasal proclitic which, along with the extra-high tone, marks negation.

(2.96) Tanacross negative morphology (after Solomon 1997)

- a. $\text{eh}\check{\text{z}}\acute{\text{a}}\text{'t}\theta$ ‘it’s snowing’
- b. $\text{k}'\acute{\text{a}} \text{eh}\check{\text{z}}\acute{\text{a}}\text{'d}\check{\text{d}}$ ‘it’s not snowing’

Evidence that this extra-high tone associated with negation is a true lexical tone rather than an intonational pattern comes both from within Tanacross and from comparison with other languages. Crucially, the negative verb form always includes voicing of the stem-final consonant, indicating the presence of a negative morpheme which is suprafixal in nature. This offers the possibility of a negative suprafix which has an associated tone. Further evidence is provided by Lower Tanana, which has a high-rising tone associated with negative suffixes (Tuttle 1998: 159).

(2.97) Comparison with Lower Tanana (Minto) negative morphology

- a. $\text{k}'\acute{\text{a}} \text{n}\acute{\text{e}}\text{k}\check{\text{?}}\acute{\text{e}}\text{'y}$ ‘I did not see it’ (Tanacross)
- b. $\text{n}\acute{\text{e}}\text{t}\check{\text{?}}\text{il}\check{\text{a}}\check{\text{e}}$ ‘I did not see it’ (Lower Tanana)

The pitch on the Lower Tanana negative enclitic =ǎ begins higher than ordinary phrase final pitch and then rises. Tanacross extra-high tone likely has the same origin. The pitch difference may be motivated by the fact that Tanacross has an ordinary rising tone with which the extra-high tone might contrast, whereas Lower Tanana does not.

2.3.5 Tone spread

In addition to the leftward tone spread which gives rise to compound tone (section 2.3.3), there is in Tanacross an additional rightward spreading of high tone onto prefix syllables. This type of tone spread differs in two significant ways (other than its directionality) from the compound tone spreading rule. First, its domain is restricted to prefix syllables; tone does not spread rightward onto stem syllables. Second, only high tone spreads rightward; a high tone prefix following a low tone stem remains high.

When a high tone (or rising tone) precedes a low tone prefix syllable, the high tone generally spreads to the following syllable. This can be formulated autosegmentally as in (2.98) by assuming that unmarked prefix syllables have no associated tone but rather have low tone assigned by default if tone spread does not occur.

(2.98) High tone spread rule



Rightward spreading of high tone is motivated by a constraint which requires all tone bearing units to be linked to a tone.

(2.99) Low tone prefix preceded by low tone stem remains low

sey nekʔeh
 sey n-ek-ʔeh
 knife THM-1SG-see:IMPF
 'I see the knives'

(2.100) Low tone prefix preceded by high tone stem becomes high

łox nékʔeh
 łox n-ek-ʔeh
 fish.hooks THM-1SG-see:IMPF
 'I see the fish hooks'

The domain of tone spread is restricted to prefix syllables; tone does not spread to a low-tone (unmarked) stem syllables.

Tone spread may occur cyclically rightward, but high tone does not spread to a pre-stem syllable which precedes a marked stem syllable (John Ritter, p.c.). Thus in (2.101) tone spread from the high tone postposition *ʔɛʔ* occurs with the unmarked imperfective form of the verb stem 'stay' but not with the marked perfective form.

(2.101) Blocking of tone spread

- a. uʔéł ǫ́ihdah
 u-ʔéł ǫ́-ih-dah
 3S-with CJ-1SG-stay.IMPF
 ‘I’m staying with him’
- b. uʔéł ɣihdáʔ
 u-ʔéł ɣ-ih-dáʔ
 3S-with CJ-1SG-stay.PERF
 ‘I stayed with him’

Falling tone stems also block the spread of high tone to a unmarked pre-stem syllable, as shown in (2.102). The *ná-* continuative morpheme in this example is lexically high toned but does not spread to the pre-stem syllable.

(2.102) Blocking of tone spread with falling tone stems

- léʔts náɣokt’êǫ́
 léʔts ná-ɣo-ek-t’êǫ́
 frybread CONT-OPT-1S-cook:OPT
 ‘I’m gonna make frybread’ (LS 11/11/98)

2.3.6 Inherent low tone

There exist at least two Tanacross prefixes which block the spreading of preceding high tone. These morphemes always surface with low tone and hence can be analyzed as autosegmentally linked to a low tone. The most common example of such a morpheme is the *na-* iterative prefix. This prefix occurs thematically in the example in (2.103). The high tone of the noun *kónʔ* ‘fire’ does not spread to the *na-* prefix of the following verb.¹⁸

(2.103) Blocking of tone spread with iterative *na*-

kónʔ natéyokk'ây
 kónʔ na-té-yo-ek-k'ây
 fire ITER-INCEP-OPT-1SG-make.fire:OPT
 'I'm gonna build a fire'

When the iterative *na*- prefix is deleted via the process of *na*-absorption, the low tone of the iterative prefix is retained and combines with a preceding high tone to form a compound falling tone (see section 2.2.1).

(2.104) Falling tone from *na*-absorption

dets'ên xâ'nett'ax
 dets'ên xá-na-n-et-t'ax
 duck back-ITER-THM-D-fly
 'the duck is flying around' (Solomon 1996: 11)

As in (2.103) the high tone of the prefix *xá*- does not spread to the following prefix after deletion of the *na*- iterative prefix.

2.3.7 Tone summary

All Tanacross syllables are lexically specified for one of four tones: high, low, rising, or falling. High tone develops from PA constricted syllables; low tone develops from PA non-constricted syllables. The existence of compound (rising and falling) tone represents an additional development beyond original tonogenesis; syllables with compound tone are, at least historically, bimorphemic. In addition to these four tones, there is a fifth extra-high tone, marking verbal negation. Compound tones may be analyzed autosegmentally as sequences of level tones. Tonal phonology, including rules of tone spread, requires that stem

syllables be lexically specified for tone, whether high or low. For prefix syllables, in most cases only high tone need be specified; low tone can be assigned by default to syllables which remain toneless after application of tone spread rules. Exceptions include the *na-* iterative prefix and the bound postposition *e-*, which must be lexically specified as low.

2.4 Syllable structure

In this subsection I describe the structure of Tanacross syllables and the phonotactic restrictions on the distribution of segments within the syllable. The Tanacross syllable is fairly rigidly structured, with severe limitations on the occurrence of certain consonants in certain syllable positions. A primary distinction can be made between stem and prefix syllables. The stem syllable is here by definition considered to be the ultimate syllable of any word category. In Tanacross the morphological stem is monosyllabic; hence, the stem syllable minimally contains the stem but may also contain a suffix.¹⁹ The stem syllable permits a much more complex syllable structure and admits a much wider range of phonemic contrast. In contrast, the prefix syllable is relatively simple.

2.4.1 Stem syllables

An additional distinction can be made between ‘light’ and ‘heavy’ stem syllables. These terms are usually abbreviated to ‘light stem’ and ‘heavy stem’, though following my use of the term stem they more accurately refer to the stem syllable

rather than just to the stem itself. Light stems are unaffixed and are either open or have codas which contain a single consonant or at most a sonorant consonant and glottal stop.

(2.105) Light stem syllables

$$\begin{array}{l} C_1V\cdot \\ C_1VC_2 \\ C_1V\cdot C_2 \\ C_1VN? \quad (\text{where } N = [n], [y]) \end{array}$$

The coda is much more restricted than is the onset. The onset C_1 may be filled by any obstruent, any voiceless fricative, a voiced palatal fricative, or a voiced sonorant. The exceptional behavior of the voiced palatal fricative reflects its source in PA *y (see section 2.1.4.1.4 above). In a light stem syllables the consonant C_2 of a simple coda is voiceless. The contrast between unaspirated, aspirated and ejective obstruents is neutralized in this position; obstruents are realized as phonetically voiceless segments.

Heavy stems contain either a synchronic suffix or a fossilized suffix.

Where the suffix remains synchronically separable, heavy stem forms alternate with corresponding light stem forms. Thus a given morphological stem may have both light and heavy forms. In either case the morphology of the suffixation process is highly fusional. The suffix merges with the stem syllable with compensatory lengthening of the nucleus or coda. The possible heavy stem syllable structures are listed in (2.105).

(2.106) Heavy stem syllables

$C_1V\text{?}$
 $C_1VC_2\text{?}$
 $C_1VN\text{?}$ (where N= [n], [y])
 $C_1V\text{?}C_2\text{?}$
 $C_1V\text{?}N\text{?}$ (where N= [n], [y])

As with light stem syllables, the coda of heavy stem syllables is much more restricted than is the onset. The onset C_1 of a heavy stem syllable may be filled by any obstruent, any fricative, or a voiced sonorant. Voiced fricatives are phonetically semi-voiced in onsets of heavy stem syllables. The coda consonant C_2 in a heavy stem syllable is voiced and phonetically lengthened. The coda consonant is always released, and voicing may continue briefly beyond the release. The latter effect is more pronounced for stops than for other segments. For sonorants an additional phonemic length distinction is possible in heavy stem syllable codas. Voiced sonorants may occur phonetically lengthened in heavy stems such as [nû'n] 'animal' or [k'ã'y] 'marmot'. In these cases the 'lengthening' of the coda is analogous to that in [tlæg] 'squirrel' or [telts^hedz] 'mouse'. In addition voiced sonorants may occur phonemically long as in [ukón'ʔ] 'his matches' (compare [kón'ʔ] 'matches').

The rhyme of a stem syllable must consist minimally of a long vowel, or a short vowel plus a consonant. Thus, the minimal Tanacross stem syllable is of the form $C_1V\text{?}$ or $C_1VC_2\text{?}$, examples of which are given below.²⁰

(2.107) Tanacross minimal (light) stem syllables

/ʒa/ 'sky'
/ʒáɾ/ 'louse'

Only the full vowels /i e a u/ may occur long, thus reduced vowels /o/ and /ɛ/ occur only in closed stem syllables. There is a tendency for these vowels to occur long except when followed by a glottal stop or glottal fricative (though some exceptions are noted in section 2.2.1). Thus compare [t^hah] 'among' and [t'aɣ] 'beneath'.

The morphological processes governing the distribution of light and heavy stem syllables are discussed in section 4.4.2 (for nouns) and section 5.5 (for verbs).

2.4.2 Prefix syllables

Prefix syllables are in general much less complex than stem syllables. The minimal prefix syllable consists of a single vowel or a single consonant serving as a syllabic nucleus. Examples of minimal prefix syllables are shown below.

Consonants which may serve as syllable nuclei include [l], [ʃ], [x], [s], [ŋ]. The vowel [u] might also be considered an example of a syllabic consonant when occurring as an allophone of /m/ (see section 2.1.5.1 above). The vowel [i] could be considered a syllabic consonant when it occurs in prefix syllables as an allophone of the third person singular object prefix y-.

(2.108) Examples of minimal prefix syllables

[utsih]	‘caribou’
[inehʔəh]	‘he’s looking at him’
[ʃmɛt]	‘my belly’
[xtek]	‘story, news’
[ʃt ^h aʔiltθ ^h ɛt]	‘he ran away’
[ŋk’áʔ]	‘your gun’

The most common prefix syllable type is CV. The full prefix syllable template is given below.

(2.109) Prefix syllable template

$$(C_1)(C_2)V(\cdot)(C_2)$$

While prefix syllables may occur without onsets, only the vowels /u/ and /i/ may occur in such syllables. Other vowels require a prothetic glottal stop onset, as in [ʔahaʔ] ‘he’s walking along’. In addition, onsetless prefix syllables may only occur word-initially.

The onset of a prefix syllable may be filled by any consonant with the exception of glottal fricative [h], voiceless sonorants [ŋ ʃ], or alveolar and palatal voiced fricatives [z ʒ]. Voiced fricatives are always fully voiced rather than semi-voiced in prefix onset position.²¹ Alveolar stops and sonorants and velar affricates are especially common prefix syllable-onset consonants.

The prefix syllable rhyme consists of a single mora, either a short vowel followed by a coda or a long vowel without a coda. As noted in section 2.2.1 above, long prefix vowels are always bimorphemic, arising as the result of

deletion of prefix consonants. Closed syllables containing long vowels do not occur as prefixes. The overwhelming majority of prefixes contain a front vowel.

2.5 Chapter summary

Like other Athabaskan languages Tanacross has a large inventory of stop and affricate consonants which contrasts three manners of articulation. The fricative inventory is somewhat smaller and contrasts only voiceless and voiced. The sonorant inventory is smaller still, and voicing alternations are largely morphologically determined. The vowel inventory is relatively simple, consisting of six phonemic vowels. With the exception of the merger of PA *ə and *ɑ, the overall structure of the PA vowel system is essentially preserved. To this system Tanacross adds additional contrasts in nasalization, length and tone.

The existence of the six-vowel system appears to simplify the analysis of the Tanacross sound system. By allowing for a sixth phonemic vowel, as in the Tetlin dialect of Upper Tanana, the complexity of the length distinctions is greatly reduced. Distinctions which must be analyzed as length contrasts under a five-vowel analysis can be analyzed as quality contrasts under six-vowel analysis. From a comparative typological perspective it is interesting to note that Tanacross shares the six-vowel system (at least in structure, not quality) with neighboring dialects: Salcha (Lower Tanana) to the west and Tetlin (Upper Tanana) to the east.

Notes to chapter 2

- ¹ The voiced palatal fricative actually never occurs fully voiced phonetically, but is instead consistently realized as [ʃ]. See the discussion of fricative voicing in section 2.1.4 and note 12 below.
- ² Other patterns are also possible. For example, [k'áʔ] 'gun', and [ʃk'áʔ]
- ³ The actual place of articulation varies somewhat from just beneath the alveolar ridge to the postalveolar region.
- ⁴ John Ritter (p.c.) has observed merger of word-initial /u/ and the vocalic allophone [u] of the third-person possessive prefix /m/.
- ⁵ The neighboring Han Athabaskan language lacks the lateral approximant and instead exhibits an alternation between voiceless /ɬ/ and voiced /ɮ/.
- ⁶ The lowered wedge IPA diacritic was chosen because it indicates voicing. However, this symbol fails to capture the dynamic nature of the semi-voiced consonants. A wedge opening rightward might better capture the crescendo voicing transition in these consonants (Krauss, p.c.)
- ⁷ Most orthographies write the semi-voiced fricatives distinctively (usually with an underscore under the voiceless variant), even though they are arguably not phonemic (given access to morphological) information. It would of course be possible to avoid these additional orthographic symbols by simply writing the voiced symbol for the semi-voiced one (e.g., z for ʒ) and noting the morphophonemic rules which predict the occurrence of voiced and semi-voiced variants. This approach has the advantage of capturing the phonological unity of the lenis segments under one symbol. Indeed, older orthographies (e.g., McRoy 1973) do follow such a scheme (though shy is used instead of zh). But the current tendency among practical orthographies is to represent all three phonetic voicing values.
- ⁸ For example, we have [uk'et] or [w̥k'et] 'on it'. The latter pronunciation differs from the former in having a narrower constriction of the lips.
- ⁹ Tone is not transcribed in Kari's data.

- ¹⁰ Kari's vocabulary list includes data from speakers Kenneth Thomas, Sr., Oscar Isaac, Silas Solomon, Andrew Isaac, Alice Brean, and Nellie Probert.
- ¹¹ As Krauss & Leer (1981) point out, the precise phonetic characterization of PA * η^w (or * η_2 , as they refer to it abstractly) is not clear. The labialization is motivated by the existence of two sets of correspondences which could be reconstructed as palatal nasal sonorants. The set to which 'wedge' belongs contains labial forms (e.g., Eyak $w\text{ə}l$).
- ¹² The lack of stem-initial voiced palatal sonorants may be an artifact of the particular phonological analysis presented here. I have classified semi-voiced [ʃ̥], the reflex of stem-initial PA *y-, as a fricative based on its apparent phonological patterning with fortis [ʃ] (see section 2.1.4.1). But the distribution of voicing in the palatal fricatives does not parallel that in the other fricatives. In particular, semi-voiced [ʃ̥] occurs in environments where fortis [ʃ] would be expected. It may be preferable to classify [ʃ̥] as a palatal sonorant, yielding an analysis in which the palatal and alveolar sonorants are more phonologically parallel. Both approaches have their merits, but it is not obvious which is more advantageous. Phonetically, [ʃ̥] clearly shares more with fricatives than with sonorants. It is on this basis that I classify it as a fricative.
- ¹³ In a very few cases a short vowel may occur in an open stem syllable, as in the negative particle *k'á*.
- ¹⁴ The study of the interaction between tone and intonation in Athabaskan languages is in its infancy, though Tuttle's (1998) work with Lower Tanana represents an important effort in this direction. John Ritter (p.c.) has also been investigating intonational phenomena in Tanacross and Upper Tanana.
- ¹⁵ The social history of the study of Athabaskan tone is itself quite riveting. See Krauss (1986; 1979) for details.
- ¹⁶ Secondary tone may also arise in the modern languages from sources other than PA constriction, as is the case with Navajo (Krauss 1979).
- ¹⁷ Tone spread of the form shown here also occurs in languages which preserve both tone bearing units. For example, Lower Tanana (Minto) marked (low) tone associated with possessive suffixes spreads leftward to associated with the stem

vowel (Krauss 1996). Original stem tone is delinked, resulting in a leveling of possessed nouns to marked (low) tone. Thus

- ¹⁸ John Ritter (p.c.) has observed some variation (perhaps idiolectal) in the ability of iterative *na-* to block high-tone spread. For example, *utá? náteda·k* ‘his father is walking around’ is a possible variant of *utá? natéda·k*. Even in the latter case, and in example (2.103) as well, high-tone spread may be additionally blocked by the same rule which prevents spreading to an unmarked syllable which is followed by a marked syllable.
- ¹⁹ In other Athabaskan languages stems may be disyllabic; Tanacross stems are always monosyllabic.
- ²⁰ Some particles such as the negative marker *k’á* do appear to be of shape CV, but these are quite exceptional.
- ²¹ John Ritter (p.c.) reports some free variation between voiced and semi-voiced variants, for example, [minla·č^hetθ] or [minɭa·č^hetθ] ‘his thumb’.

Chapter 3 Two phonetic studies

In this chapter I present the results of two acoustic studies of the Tanacross sound system. The first explores the nature of the voicing distinction in fricatives. The second explores the relationship between tone and phonation. There are of course many other areas of the Tanacross sound system worthy of closer phonetic study; I have chosen to focus here on two areas which seem to play particularly important roles in Tanacross. Each of these areas can be considered an aspect of laryngealization, indicating the important role of this feature in Tanacross. The first deals with laryngeal states during fricative articulation; the second deals with laryngeal state during vowel articulation.¹

3.1 Voicing distinctions in Tanacross fricatives

As noted in section 2.1.4.2, the phonetic realization of voicing in phonemically voiced fricatives varies considerably with the morphological position of the fricative. Voiced fricatives in prefix syllables or in stem syllable codas are consistently voiced. In stem onset position, voiced fricatives may be only partially or sporadically voiced, or even in some cases completely voiceless. While not phonemically distinct, such partially voiced fricatives have been referred to as ‘semi-voiced’ (cf. Leer 1982b; Solomon 1996).

In this section I attempt to characterize the phonetic nature of semi-voiced fricatives. At least in positions other than the lateral, Tanacross semi-voiced fricatives rarely exhibit true semi-voicing, in that they rarely show a clear monotonic transition from a voiceless to voiced state. The lateral series is exceptional in that the voiceless alveolar lateral fricative /ɬ/ alternates with a voiced alveolar lateral approximant /l/.² Quantitative acoustic measurements indicate that Tanacross voiceless fricatives are consistently produced with greater high amplitude noise than their semi-voiced counterparts in stem onset position.

3.1.1 Phonetic correlates of voicing

There are several potential acoustic parameters which may serve to characterize the Tanacross semi-voiced fricatives. One obvious candidate is voicing, which can be readily observed in spectrographic data via a variety of quantitative measures. Other potential parameters are suggested by acoustic studies of languages which possess phonemic contrasts which are not easily accounted for in terms of voicing measures such as voice onset time. Among these languages are those which have been described as having a contrast between ‘fortis’ and ‘lenis’ consonants.

As noted by Jaeger (1983) the fortis/lenis distinction has been used in at least three different senses. Some researchers have used the fortis/lenis distinction to describe the distinction between voiceless aspirated and voiced unaspirated

consonants in languages like English (cf. Jakobson & Halle 1964). However, this type of distinction is much better characterized in terms of voice onset time (Lisker & Abramson 1964). Another type of system which has been characterized in terms of a fortis/lenis distinction is found in languages like Javanese and Korean, but these contrasts have been better explained in terms of laryngeal tension: 'tense' versus 'lax' voice (Catford 1977). A third type of language to which the term fortis/lenis has been applied has contrasts which are not explainable in terms of either voice onset time or laryngeal tension. It is this sense of the term fortis/lenis which appears to be most relevant to the distinction between voiceless and semi-voiced fricatives in Tanacross.

Studies of the fortis/lenis distinction in this third type of language have revealed several articulatory and acoustic factors which may potentially disambiguate fortis and lenis consonants. Lenis consonants tend to be articulated with less force and have more gradual onsets of following vowels. When compared with their fortis counterparts, lenis consonants also tend to be erratically voiced, be of shorter duration, and employ a lower pressure airstream with lower intensity frication. These results are summarized below.

Table 3.1: Phonetic correlates of the fortis/lenis distinction (after Jaeger 1983)

	fortis	lenis
articulatory	greater force of articulators sharper onsets of following vowels	less force of articulators more gradual onsets of following vowels
glottal	voiceless	fluctuate between voiced and voiceless
timing	longer	shorter
pulmonic	greater air pressure higher intensity frication	less air pressure lower intensity frication

In the remainder of this section I examine some potential phonetic correlates of a fortis/lenis distinction in Tanacross fricatives with the intent of gaining a better characterization of semi-voiced fricatives. Quantitative analysis of acoustic data does in fact indicate that Tanacross voiceless fricatives share many of the phonetic correlates of fortis consonants in Table 3.1, while semi-voiced fricatives share many of the phonetic correlates of lenis consonants. This is not to say that the voicing contrast in Tanacross fricatives would be better described in terms of fortis and lenis. But at least this correlation does go some way toward characterizing the phonetic nature of Tanacross semi-voiced fricatives. In particular, Tanacross semi-voiced fricatives are distinguished from voiceless fricatives stem-initially by their shorter duration and lower intensity of frication.

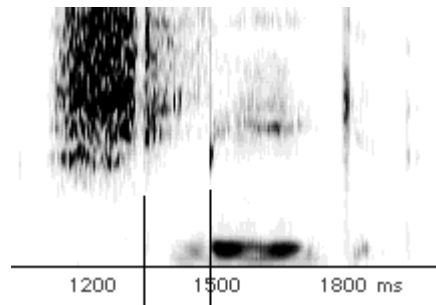
While I have not had the opportunity to investigate potential articulatory correlates, the three acoustic factors in Table 3.1 are readily examined using spectrographic and waveform analyses of digitized recordings. My preliminary investigations indicate that both the glottal and pulmonic factors are relevant to

the distinction between Tanacross voiceless and semi-voiced fricatives. This preliminary study is based on a sample of 226 fricatives from Tanacross speakers Irene Solomon and Jerry Isaac, analyzed using Signalyze and ESPS Waves.³

3.1.1.1 Voicing and spectrographic data

The presence of voicing in a fricative segment is reflected instrumentally in the presence of voicing bars in a wide-band spectrogram. By this gauge phonemically voiceless Tanacross fricatives can be seen to be consistently voiceless. However, qualitative investigation of voicing data for phonemically voiced fricatives reveals that only for the lateral series are stem-initial voiced fricatives consistently realized as semi-voiced. An example is shown in Figure 3.1.

Figure 3.1: Spectrogram of /šl̥iːgʔ/ ‘my dog’



Here the lateral fricative begins without any voicing bars present, i.e., it is phonetically voiceless. The vertical lines demarcate the onset and release of the semi-voiced lateral fricative. Approximately mid-way through the segment,

voicing bars appear, indicating the onset of voicing. This segment is thus truly ‘semi-voiced’: it begins voiceless and transitions to a voiced segment.

However, the voicing behavior is quite different for the other four fricative series. In some cases, a stem-initial dental, alveolar, palatal or velar voiced fricative may begin voiceless and transition to voiced, as in Figure 3.1. But in most cases spectrograms of such fricatives show erratic voice bar patterns or even no voice bars whatsoever. For example, spectrograms of both the voiceless dental fricative in Figure 3.2 and the semi-voiced dental fricative in Figure 3.3 show a complete absence of voice bars. That is, both the voiceless and voiced dental fricatives in these examples are phonetically voiceless.

Figure 3.2: Spectrogram of /náʔihθet/ ‘I am standing’

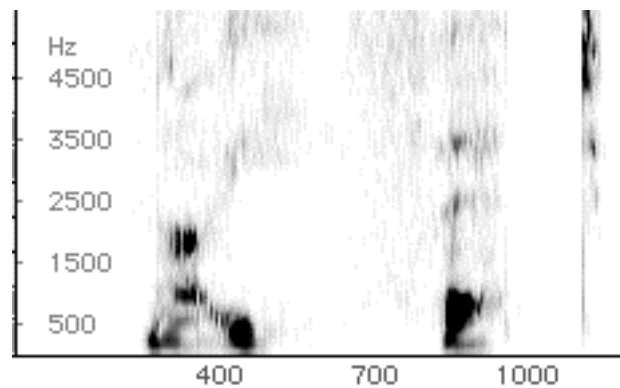
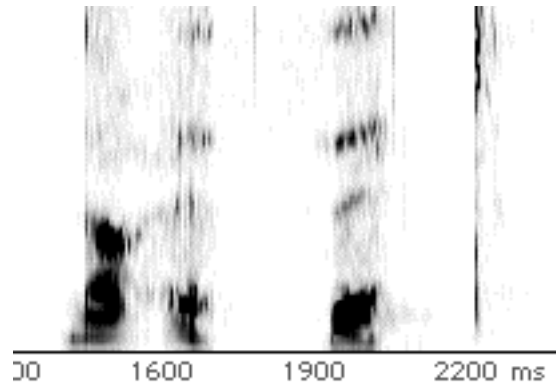
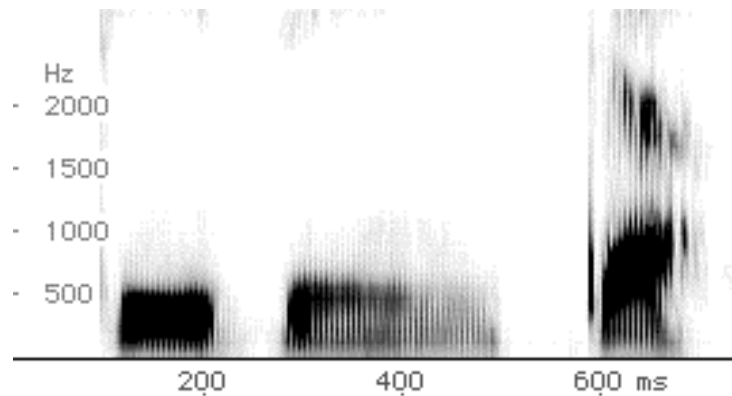


Figure 3.3: Spectrogram of /náʔéðet/ [náʔéθet] ‘s/he is standing’



These two examples can be compared with a spectrogram of a fully voiced dental fricative in a prefix syllable, as shown in Figure 3.4. Here voicing bars are clearly present in the spectrogram throughout the full duration of the segment.

Figure 3.4: Spectrogram of /diðindah/ [tiðintah] ‘you are sitting down’



These examples are not necessarily representative of the sample, but they serve to demonstrate the range of voicing variation which is possible. I now turn to the quantitative analysis of the acoustic data.

3.1.1.2 Quantitative measures of voicing

In order to better quantify these results, I compiled two measures of fricative voicing for each of the stem-initial phonemically voiced fricatives in the sample. The lateral fricative was excluded from these measurements, as it exhibits consistent partial voicing. For each of the remaining fricatives in the sample, I first examined a wide-band spectrogram to see if any voicing bars were present for the duration of the fricative. All of the fricatives in the sample were in intervocalic position, and the edges of the higher formants of the surrounding vowels were used to demarcate the boundaries of the consonant. The resulting measurement was discrete: voicing bars were either present or absent. This measurement thus divided the phonemically voiced fricatives into two classes: phonetically voiceless and phonetically partially voiced. By dividing the number of partially voiced fricatives by the total number of phonemically voiced fricatives for each series, we obtain a percentage which indicates the frequency with which phonemically voiced fricatives can be truly said to be ‘semi-voiced’. These results are shown in Table 3.2.

Table 3.2: Voicing and voice onset time (VOT) of semi-voiced fricatives

	% partially voiced	mean VOT
[θ]	41	-17.8 ms
[ʃ]	47	-31.4
[ʒ]	24	-7.2
[x]	46	-17.8

For each of the four series this frequency is less than half. In other words, more than half of the time semi-voiced fricatives occur without any voice bars present in the segment.

In addition to this discrete measurement of voicing, I also measured voice onset time (VOT). This measurement was somewhat more difficult to operationalize, as voicing in some tokens of voiced fricatives was rather erratic and did not exhibit a monotonic transition from voiceless to voiced. Thus, VOT was measured only for the tokens for which the measurement made sense. VOT is most typically employed as a measure of aspiration, represented as the amount of time elapsed between the release of a consonant and the onset of voicing for a following segment. For our purposes, we expect voicing to begin before the release of the fricative segment, unless the fricative is entirely voiceless. Thus, we expect VOT measurements for phonemically voiced fricatives to be either negative or zero. Smaller (more negative) VOT measures will thus correspond to earlier transition from voiceless to voiced during the articulation of a semi-voiced fricative.

For this measurement the higher formants of the following vowel were used to delineate the temporal boundary of the fricative, and the first voice bar in the fricative was used to mark the beginning of voicing. Completely voiceless fricatives thus have a VOT of zero. For each of the four series VOT

measurements for voiced fricatives were then averaged. The resulting means all indicate a relatively short VOT in the range of -20 ms. The complete results are shown in Table 3.2 above. Since the duration of most voiced fricatives in the sample is on the order of 200 ms, this VOT value does not represent a (qualitatively) significant difference from zero. The VOT measurements thus confirm the discrete measurements of voicing.

Taken together with the discrete measurements of voicing, the VOT measurements indicate that phonemically voiced and voiceless fricatives do not appear to differ significantly with respect to the presence of voice bars. If the presence of voice bars is taken to be an indicator of phonetic voicing, then phonemically voiceless fricatives are always voiceless, but phonemically voiced fricatives in stem-initial position are often voiceless as well. These results are of course somewhat qualitative, but they do indicate that voicing alone is probably not a sufficient parameter with which to distinguish voiced and voiceless fricatives in stem-initial position.

3.1.1.3 Duration

Another potential distinguishing factor which has been suggested is timing. However, duration measurements of the fricatives in the sample indicate that while fully voiced (hence not stem-initial) fricatives are clearly of shorter duration than phonemically voiceless fricatives, duration does not disambiguate

phonemically voiced and voiceless fricatives in stem-initial position. These results are summarized below.

Table 3.3: Mean duration of fricatives in milliseconds

	voiceless	voiced (stem-onset)	voiced (elsewhere)
dental	194	186	79
alveolar	184	212	94
palatal	174	185	—
velar	152	208	88

There is no statistically significant difference in duration between the voiceless and voiced (i.e., semi-voiced) fricatives in stem-onset position.

3.1.1.4 Amplitude and intensity of frication

A clue to the acoustic factors which distinguish voiceless from voiced fricatives in stem-initial position can be found in the higher frequencies of spectrograms such as that in Figure 3.3. There the voiceless fricative exhibits a greater amount of high frequency (>3000 Hz) noise than does the corresponding voiced fricative. This appears to be especially true for θ and x . This observation appears to agree with Jaeger's (1983) findings for Jawoñ, namely, that fortis fricatives are often produced with greater pulmonic force than their lenis counterparts. In other words, fortis fricatives have more friction.

Following Jaeger (1983), the degree of pulmonic force (i.e., frication) can be measured by calculating the amplitude of the signal after subtracting the effects

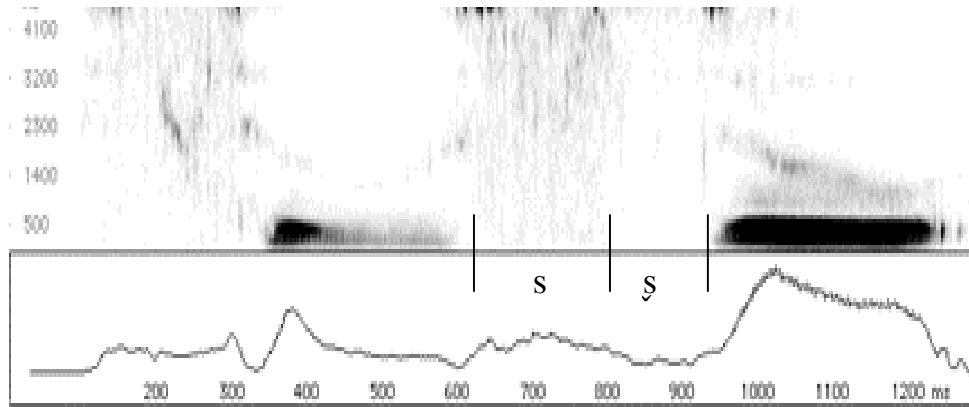
of voicing. Applying a 500 Hz high-pass filter ensures that any contribution to the amplitude from voicing is neutralized. It is then possible to calculate the peak amplitude of the signal over the duration of the fricative. I applied these calculations to each of the stem-initial fricatives in the sample and then computed the mean and standard deviation for each series. I further divided the results by speaker to eliminate the effect of cross-speaker variation. The results are summarized in Table 3.4 below.

Table 3.4: Mean peak amplitude of frication in dB (500 Hz filter, 10 ms window) for fricatives in stem-initial position

	Speaker 1		Speaker 2	
	voiceless	voiced	voiceless	voiced
dental	9.4 ± 1.6	5.8 ± 1.7	8.5 ± 2.4	4.3 ± 1.2
alveolar	15.3 ± 0.4	13.2 ± 1.8	8.6 ± 1.5	6.3 ± 1.5
palatal	15.9 ± 1.7	14.5 ± 0.6	10.2 ± 1.1	9.2 ± 1.4
velar	12.2 ± 2.8	11.7 ± 1.2	11.1 ± 1.7	8.4 ± 1.8

In both speakers there is a clear (though not always statistically significant) difference in amplitude between phonemically voiced and voiceless fricatives in stem-initial position. Figure 3.5 shows a spectrogram and (filtered) amplitude for a voiceless fricative followed by a semi-voiced fricative. The lack of high frequency noise in the semi-voiced fricative is readily apparent in the spectrogram and is paralleled by a lower amplitude.

Figure 3.5: Spectrogram and amplitude for /sʉs zʉ/ [sʉs ʒʉ] ‘nice robin’



In summary, only for the lateral series can we say that the voiced fricative is truly ‘semi-voiced’ in stem-initial position. The semi-voiced lateral fricative begins voiceless and transitions to voiced. Other semi-voiced fricatives exhibit quite a bit of variation in voicing and are no shorter in duration than their voiceless counterparts. However, we can tentatively characterize semi-voiced fricatives in stem-initial position as having lower amplitude frication noise, a characterization which seems to agree with acoustic studies of lenis fricatives in languages which have a fortis/lenis contrast.

3.1.2 Summary

Although Tanacross has sometimes been described as having a three-way voicing contrast in fricatives, it should be emphasized that there is only a two-way phonemic contrast. The semi-voiced variants occur as allophones of the voiced fricatives and are restricted to stem onset position.

The phonetic nature of the Tanacross semi-voiced fricatives is partially obscured by the ad-hoc label ‘semi-voiced’. In some cases, semi-voiced fricatives can be considered to be complex segments which transition from a phonetically voiceless to a phonetically voiced fricative. This is consistently the case with the semi-voiced lateral fricative. However, in many other cases this characterization of semi-voiced fricatives is inappropriate.

The fortis/lenis distinction may not be entirely appropriate to the characterization of voicing distinctions in Tanacross fricatives either; however, at least some of the acoustic parameters which have been associated with the fortis/lenis distinction in languages such as Jawoñ also correlate well with the voiceless versus semi-voiced distinction in Tanacross. In particular, semi-voiced fricatives do appear to contain less high-frequency noise than do their voiceless counterparts. Further investigation of these acoustic parameters may thus help to provide a better understanding of the semi-voiced phenomenon in Tanacross

Moreover, it seems likely that similar semi-voiced phenomena exist in neighboring languages. Minoura reports a “three-way opposition of fricatives in terms of voice” in Upper Tanana Athabaskan (1994:166). And recent field work with Harry David, Jr. suggests that semi-voiced fricatives also exist in the speech of at least some speakers of Han Athabaskan (though in other speakers the semi-voiced distinction is not present (cf. Ridley 1983)). Very probably the semi-

voiced distinction in stem-initial fricatives is an areal phenomenon characteristic of eastern Alaska Athabaskan languages.

3.2 Pitch, tone and phonation

This study of phonation type represents a preliminary examination of the non-pitch related phonetic correlates of tone. The evidence suggests that laryngealization distinctions in vowels may correlate with lexical tone at least as well as does pitch.

3.2.1 Pitch

While there is quite a bit of variability among speakers as to the pitch level corresponding to marked (high) and unmarked (low) tone, for any given speaker the pitch associated with each tone is very steady and consistent. That is, when we compare the tone on marked stems, such as those in the left column of Table 2.3, with those of unmarked stems, such as those in the right column of Table 2.3, we find consistent and statistically significant differences in pitch. Table 3.5 shows the results of such a comparison for one female speaker.

Table 3.5: Mean vowel fundamental frequency for level-tone noun stems (female speaker)

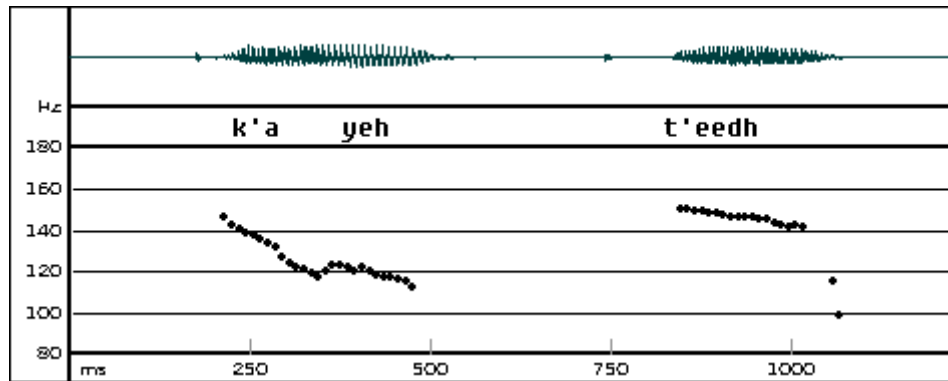
tone	mean F0	s.d.
unmarked	182 Hz	13.0 Hz
marked	221 Hz	14.6 Hz

$t=7.80$, $df=29$, $p<.0001$

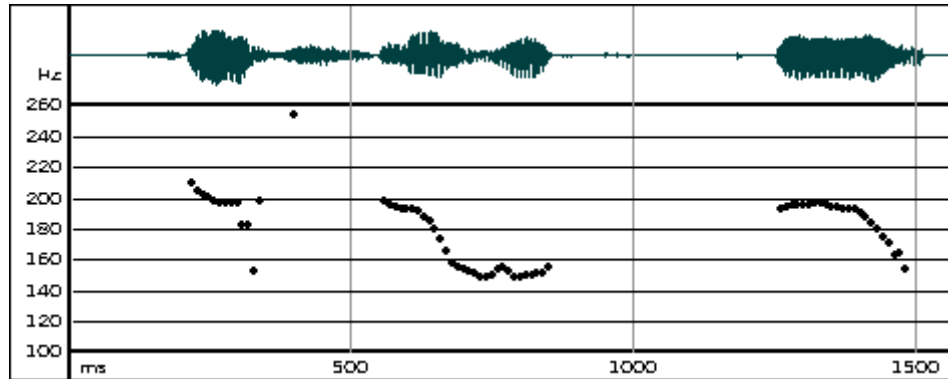
To control for the effects of phrase-final intonation, this sample is comprised of nouns stems elicited in non-phrase final position. The pitches of marked and unmarked stems, as measured by fundamental frequency, are clearly differentiated from each other.

The fundamental frequency of the extra-high tone is on the order of 20-30 Hz higher than that of the ordinary level high tone. The pitch trace in Figure 3.6 is from a male speaker's pronunciation of *k'á yeh't'éð* 'he is not frying it'.

Figure 3.6: Pitch trace showing negative intonation with extra-high tone



A pitch trace of this phrase is shown in Figure 3.7. The pitch clearly falls toward the end of the second syllable of the phrase, remaining low until the onset of the vowel of the final syllable.

Figure 3.7: Pitch trace of *léts náyokt'êð* 'I'm gonna make frybread'

3.2.2 Phonation

In this section I discuss the phonation type correlates of tone in Tanacross. One of the significant unanswered questions regarding Athabaskan tonogenesis concerns the phonetic nature of PA vowel constriction and the extent to which these phonetic properties have been maintained in the modern languages. Kingston (1985) proposes that constricted vowels in PA (or shortly after PA) may have been accompanied by some type of laryngealization and suggests plausible means by which both high and low tone could have developed from this laryngealization. Kingston posits two types of laryngealization, creaky and tense voice, both of which are “produced with a medial compression of the vocal folds which lengthens the closed phase of the glottal cycle and thereby tilts the spectrum up” (Kingston 1985: 42). According to Kingston these two types of laryngealization are each produced with different rates of vocal fold vibration, resulting in differing pitch levels. Under this hypothesis Athabaskan tonogenesis was thus the

result of the “characteristic fundamental frequency supplant[ing] spectral perturbation as the principal feature of constriction” (Kingston 1985: 42).

As Leer (1999) points out, this hypothesis invites the possibility that the phonetic properties of PA constriction may have included both phonation and tone. Were this the case then it would be entirely plausible that some sort of laryngealization feature persists today in the modern Athabaskan languages. Tonogenesis would then result from a restructuring in the salience of one feature over the other. Or as noted by Krauss (p.c., 1998) the highlighting of tonal features over laryngeal features may be an artifact of modern linguistic analysis rather than a reflection of speakers’ psychological reality. In any case, what is interesting about this hypothesis from an instrumental point of view is that such tilting of the spectrum should be detectable as increased energy in higher vowel formants, an easily quantified acoustic parameter.

While the nature of vowel phonation has not been extensively studied in Tanacross, some glottal-final marked (high-tone) syllables are indeed noticeably laryngealized (e.g., *štáʔ* ‘my father’). Preliminary acoustic studies appear to support this impressionistic observation that Tanacross marked syllables have a concomitant creaky voice component as compared to unmarked syllables. Several instrumental techniques have been established to distinguish creaky and modal phonation types. Although phonation is related to the state of the glottis, glottal

activity need not be directly observed in order to infer information about phonation. Several acoustic measures have been shown to be adequate predictors of phonation type. Ladefoged et al. (1988) and Kirk et al. (1993) have examined acoustic techniques in several languages which are known to exhibit a phonemic distinction between creaky and modal voice vowels. In these languages, which include Burmese and Jalapa Mazatec, the existence of creaky phonation is well-established. Minimal pairs differing only in phonation type (rather than, say, vowel quality or pitch) can be found. Thus, one can be relatively certain that acoustic parameters associated with differences between phonemically creaky and modal vowels in these languages are relatively good indicators of phonation type.

Kirk et al. (1993) make two important observations regarding the spectrographic properties of creaky (laryngealized) vowels. First, the formants of creaky vowels tend to be clearer and more crisply delineated than those of modal vowels. Second, creaky vowels tend to have more energy in their higher formants than do modal vowels of the same quality. Both of these properties appear to be associated with Tanacross marked vowels. The plots below show a wide band spectrogram (300 Hz bandwidth filter) for an unmarked (Figure 3.8) and a marked (Figure 3.9) Tanacross noun stem containing the same vowel. Both stems are typical in pitch for their respective markedness categories: the low tone stem *tthee* has an F0 of 174 Hz; the high tone stem *tth'éex* has an F0 of 210 Hz.

Figure 3.8: Wide band spectrograms of unmarked noun /tθe/ ‘rock’

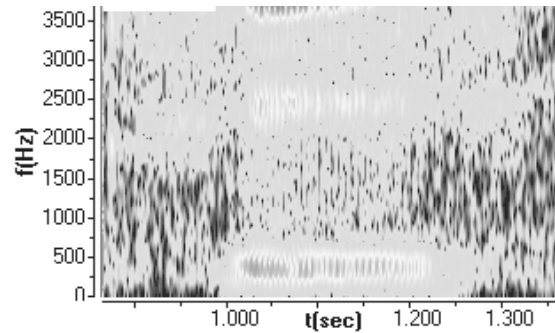
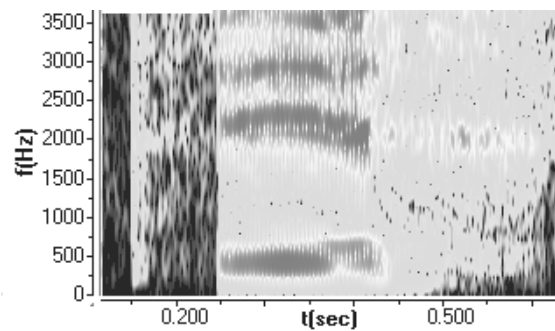


Figure 3.9: Wide band spectrogram of marked noun /tθ'éχ/ ‘sinew’



Several qualitative differences are recognizable in these spectrograms.⁴ Both plots Figure 3.8 and Figure 3.9 show similar formant frequencies, reflecting the similar qualities of the two vowels, both mid front [e]. However, the formant bands in the spectrogram of *tθ'éχ* are less fuzzy than those in *tθe*: In addition, the marked stem shows greater relative amplitude in the higher formants than does the unmarked stem. That is, the relative darkness of the higher formants in comparison to F0 is much greater in the marked stem than in the unmarked stem. All formants appear equally dark in the marked stem, indicating equal energy. But the higher formants in the unmarked stem are significantly lighter than F0. (These

observations may be quantified using power spectra—see below.) Thus, the features associated with the spectrogram of Tanacross marked stem vowels are the same features which have been found to be associated with creaky voice in languages which distinguish creaky vowel phonemically.

In order to quantify these observations of Tanacross spectrographic data, I examined the power spectra of vowels in a short sample of Tanacross noun stems. Each noun stem was elicited in a frame sentence in order to minimize the effects of prosodic intonation contours. A typical frame was something like *jan du?* _____ *sint'eh* 'this is a _____'. For each stem I measured the amplitude of F0 and F1 at the center of the vowel. F0 measurements were made using FFT spectra, and F1 measurements were made using LPC spectra. A statistical t-test was applied to the difference of these measurements (amplitude at F1 less amplitude at F0). In general, this difference is negative or near zero for marked syllables (i.e., more energy in the higher harmonics) and positive for unmarked syllables (i.e., less energy in the higher harmonics). And the two means are statistically disassociated.

Table 3.6: Mean relative amplitude of Tanacross fundamental and first formant (one speaker)

tone	mean Δ amplitude	s.d.
high (marked)	3.4 dB	4.2 dB
low (unmarked)	-1.9 dB	5.5 dB

$t=2.77$, $df=13$, $p<.02$

Some sample power spectra from the data are shown below for unmarked (Figure 3.10–Figure 3.12) and marked (Figure 3.13–Figure 3.15) syllables containing three different vowels. It is important here to compare power spectra for marked and unmarked vowels of similar quality, as the frequency of a vowel formant also affects its intensity.

Figure 3.10: Power spectrum for unmarked noun /tθe/ ‘rock’

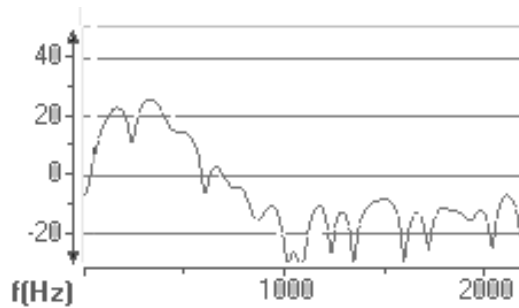


Figure 3.11: Power spectrum for unmarked noun /sa/ ‘sun’

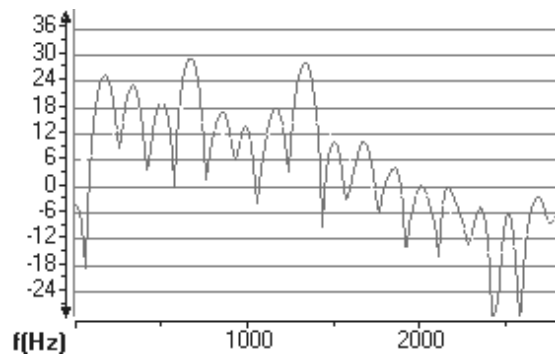


Figure 3.12: Power spectrum for unmarked noun /tɫ'uɫ/ 'rope'

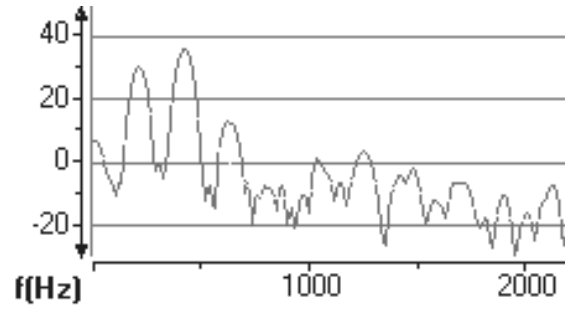


Figure 3.13: Power spectrum for marked noun /tθ'érχ/ 'sinew'

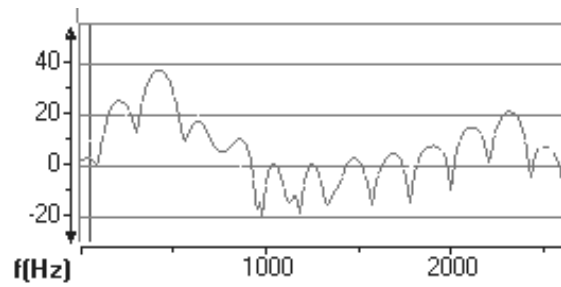


Figure 3.14: Power spectrum for marked noun [-kʰá:n] 'arm'

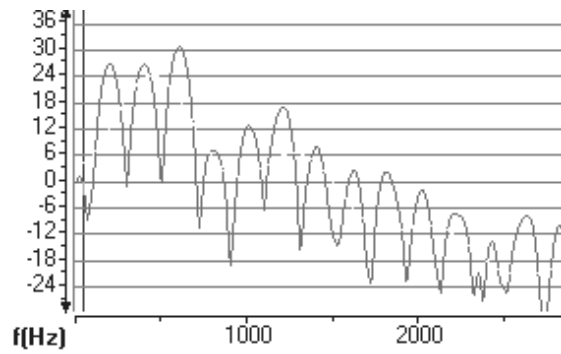
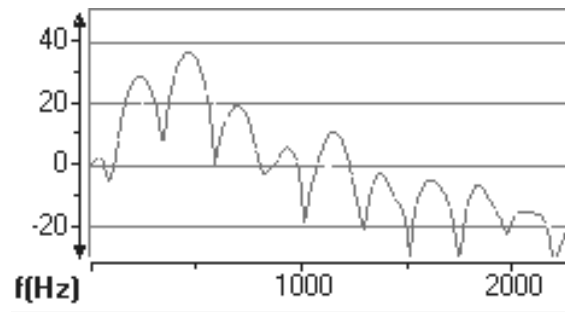


Figure 3.15: Power spectrum for marked noun /-k'úrɨ/ 'roe'



This data indicates that marked syllables do exhibit a significantly greater degree of laryngealization, or creak, than do unmarked syllables. This result is perhaps somewhat surprising, as creak is usually associated with lowered pitch, whereas in Tanacross the high-toned syllables seem to exhibit more creak than the low-tone ones.

The existence of a correlation between marked tone and creaky phonation in Tanacross is at least compatible with the hypothesis that PA constriction involved some sort of creakiness or laryngealization. However, it is of course possible that the observed creak is a synchronic effect unrelated to tone.⁵ This sort of creak can be observed in Navajo vowels in the environment of a glottal stop (Ian Maddieson, p.c.). Even if creak were present in PA constricted syllables, it could well have disappeared once tone became the distinguishing phonemic quality. On the other hand, it is also possible that the functional role of creak lingered on in Tanacross, amplifying and augmenting the role played by tone. In that case the observed creak could be viewed as a vestige of historical

constriction. The strength of the correlation between tone and phonation offers at least circumstantial evidence in favor of lingering creak. It seems unlikely that synchronic creak would develop so fully without a PA source.

3.3 Chapter summary

The results of these studies represent a preliminary step toward the characterization of the phonetic nature of fricative voicing and vowel tone. Laryngealization appears to play an important role in both features. The coverage here is far from complete, and much phonetic investigation of the Tanacross sound system remains to be done. One important area for future research is the behavior of pitch in pragmatically marked structures such as negation and contrastive focus. This is currently the subject of ongoing research by John Ritter (p.c.).

Notes to Chapter 3

- ¹ The instrumental data presented in this chapter are derived from digital recordings made with a Sony TCD-D7 digital audio recorder and Sony ECM-959 microphone. These digital recordings were transferred onto a Dell Pentium III computer via a direct digital cable with a sample rate of 22,050 hertz. Acoustic analysis was performed using the PCQuirer and Speech Analyzer software packages. Some additional acoustic analysis was performed using ESPS Waves on a Sun Sparc workstation and Signalyze on a Macintosh computer.
- ² The neighboring Han Athabaskan language lacks the lateral approximant and instead exhibits an alternation between voiceless /t/ and voiced /ɰ/.
- ³ Data from Jerry Isaac is recorded in Isaac (1997).
- ⁴ The greater amplitude (darkness) of the second plot is attributable to the greater overall loudness in the second word. Each of the dark bands represents a vowel formant, one of the resonant harmonic “overtone” in the vocal cavity. The frequencies of the formants characterize the shape of the vocal cavity and hence the quality of the corresponding vowel.
- ⁵ Thanks to Siri Tuttle for pointing this out.

Chapter 4 Noun morphology

The lexical category of noun in Tanacross can be morphologically delimited as the class of lexemes which may be inflected for possession via possessive prefixes and suffixes. Inflection is in some cases obligatory, as in the case of inalienable nouns. There are also some nouns which do not occur in possessed form but are included in this category because they pattern semantically with other nouns defined on morphological criteria and share similar distributional patterns.

Pronouns might also be considered to fall within the noun category based on distributional criteria, but they are excluded here because they fail to satisfy morphological criteria for nouns. (Pronouns are discussed in section 6.1 below.)

Postpositions may be inflected with pronominal prefixes which are formally identical to possessive prefixes; however, postpositions cannot be inflected with possessive suffixes. Postpositions also differ from nouns in their distributional properties. I follow Rice (1989) in distinguishing postpositions as a separate lexical category (see section 6.4 below).

Nominal morphology is relatively simple in comparison to verbal morphology. Nouns may be inflected for possession, and nouns referring to humans may be optionally marked for plural number. Beyond compounding and nominalization, there is no productive derivational morphology which operates on

nouns. However, both compounds and nominalizations form an extremely rich part of the lexicon, permeating the semantic structure of the language.

The configurational properties of nouns are quite variable. Simple nouns may consist of a single syllable and single morpheme; whereas, complex nouns may consist of several syllables and include derivational morphology. I distinguish here between basic and derived nouns. Basic nouns are usually monomorphemic and monosyllabic but may also be polysyllabic words which are not synchronically analyzable as poly-morphemic.¹ In contrast, derived nouns include overt derivational morphology and are hence poly-morphemic. Derived nouns may include fossilized derivational affixes or may be the products of the productive derivational processes of compounding and nominalization. Derived nouns also include inherently possessed nouns which include possessive suffixes.² In addition to basic and derived nouns, loanwords can be considered a distinct category of noun.

This chapter is organized as follows: section 4.1 describes basic nouns; section 4.2 describes affixed nouns, compounds and nominalization; section 4.3 deals with loanwords; section 4.4 describes the possessive construction and possessive morphology; and section 4.5 describes nominal number.

4.1 Basic nouns

Many Tanacross nouns consist of a single morpheme, and the overwhelming majority of these are monosyllabic. I call these basic nouns. There are a large number of such nouns; I cite only a few examples below. One criterial feature of basic nouns is level tone. Monosyllabic nouns with compound tone necessarily derive from more than one morpheme (at least diachronically).

(4.1) Monosyllabic basic nouns

<i>dɛɬ</i>	‘blood’	<i>k’áʔ</i>	‘gun’
<i>dɛɬ</i>	‘sandhill crane’	<i>jeŷ</i>	‘mittens’
<i>tʉ</i>	‘water’	<i>čɛŋ</i>	‘meadow’
<i>tɛy</i>	‘trail’	<i>čuŷ</i>	‘down feathers’
<i>t’aθ</i>	‘cottonwood’	<i>č’ox</i>	‘quill’
<i>t’és</i>	‘charcoal’	<i>k’éyʔ</i>	‘willow’
<i>dlaʔ</i>	‘moss’	<i>ʔaŷ</i>	‘snowshoe’
<i>tl’ox</i>	‘grass’	<i>ʔek</i>	‘dress’
<i>tl’a’s</i>	‘clam’	<i>ɬet</i>	‘smoke’
<i>dðɛɬ</i>	‘mountain’	<i>ɬi</i>	‘dog’
<i>tθe</i>	‘rock’	<i>sa</i>	‘sun’
<i>tθek</i>	‘caribou fence’	<i>se’k</i>	‘saliva’
<i>tθ’ɛŋ</i>	‘bone’	<i>θiʔ</i>	‘embers’
<i>tθ’éx</i>	‘sinew’	<i>θaŷ</i>	‘sand’
<i>dzeŋ</i>	‘muskrat’	<i>šos</i>	‘bear’
<i>dzé’x</i>	‘pitch’	<i>šen</i>	‘summer’
<i>tsáʔ</i>	‘beaver’	<i>žax</i>	‘house’
<i>tsiθ</i>	‘otter’	<i>žáʔ</i>	‘lice’
<i>ts’ey</i>	‘boat’	<i>xéɬ</i>	‘club’
<i>ts’it</i>	‘porcupine’	<i>xetl</i>	‘sled’
<i>gah</i>	‘rabbit’	<i>mɛŋ</i>	‘lake’
<i>gúθ</i>	‘fireweed’	<i>nénʔ</i>	‘land’
<i>kónʔ</i>	‘fire’	<i>ⁿdu</i>	‘forest’
<i>žeg</i>	‘lie, untruth’		

Many basic nouns may also serve as verb stems with the addition of aspectual suffixes. It has been suggested that basic nouns are fundamental roots from which both nouns and verb may be derived (cf. Sapir 1932; Hoijer 1971).

In addition to monosyllabic basic nouns, there are a fair number of Tanacross basic nouns which consist of more than one syllable. In many cases polysyllabic nouns can be analyzed as the result of derivational affixation, borrowing, compounding, or nominalizations (see below). However, there remains a small residue of polysyllabic nouns which are not analyzable and must be considered basic. Sometimes it is possible to identify component morphemes in these nouns, but it is often not possible to assign specific meanings to these morphemes.

(4.2) Polysyllabic basic nouns

ts'éhxeh	'girl'
dənəh	'man, person'
dəts'ən	'duck'
nondlêd	'white person'
dənîg	'moose'
kəntsîθ	'mocassin'
xáxkeh	'chief'
sejel	'grayling (<i>Thymallus arcticus</i>)'
č'ehtêg	'ruffed grouse (<i>Bonasa umbellus</i>)'
ŋtsiɬ	'flicker (<i>Colaptes auratus</i>)'

There also exist monosyllabic Tanacross nouns which derive historically from polysyllabic nouns. One source of such nouns is in the so called PA 'broken' or polysyllabic stems.

(4.3) Tanacross monosyllabic nouns from PA polysyllabic stems

x̄ɫ̄θ 'raft' < PA *x̄əŋə's
 ts'ədʔ 'blanket' < PA *ts'ədiʔ
 d̄ɛy 'spring' < PA *daŋ'ə
 ts'ôy 'spruce' < PA *č'əw-ə
 jêg 'berry' < PA *
 dlêg 'squirrel' < PA *də-ləG-ə

4.2 Derived nouns

In most cases polysyllabic nouns can be analyzed as derivations from either mono-morphemic nouns or polysyllabic verbs. The derivational processes involved include prefixation, suffixation, compounding, and nominalization. In addition, polysyllabic nouns may arise as the result of borrowing from other languages. I discuss each of these processes in the next four subsections.

4.2.1 Derivational affixes

Some nouns appear to be derived from other noun or verb stems via affixation of the prefix *de-*. This meaning of this prefix is unclear.

(4.4) Nouns prefixed by *de-*

dɛʒa'z	'cow moose'
-ʒa'z	'woman's son'
dɛme'	'Dall sheep (<i>Ovis dalli</i>)'
-ma'	'gray'

Nouns may also be built from a root plus a prefix which is formally identical to an adverbial verb prefix, such as *tθ'í-* 'straight' or *teh-* 'underwater'.

(4.5) Nouns containing adverbial prefixes

- | | | |
|----|----------|-----------------------------|
| a. | tθ'irtúʔ | 'Tanana River, major river' |
| | tθ'i- | 'straight' |
| | tu' | 'water' |
| b. | tehmíʔ | 'fishnet' |
| | teh- | 'underwater' |
| | míʔ | 'snare' |

The noun prefixes discussed above are not synchronically productive, though the corresponding adverbial prefixes are a productive part of the verbal morphology.

In some cases monosyllabic nouns may contain fossilized suffixes. One example in Tanacross is the reflex of the PA instrumental suffix *-ʔ. This suffix may occur on both nouns and verbs.

(4.6) PA instrumental suffix

- | | |
|--------|--|
| tʔ'uʔ | 'rope' (cf. deč'ihtʔ'u' 'I set a snare' < -tʔ'u' 'manipulate fiber') |
| k'ʔʔ | 'birch sap' (cf. k'ʔ' 'birch') |
| nitsiʔ | 'subterranean house' (cf. -tsi' 'make') |

However, this suffix is not synchronically productive in Tanacross. Nouns containing the fossilized instrumental suffix are best analyzed synchronically as mono-morphemic.

4.2.2 Compound nouns

Tanacross nominal compounds are lexicalized, and their meanings are not always predictable from the meanings of their components. Compounds are often not morphologically distinguished from corresponding phrases by formal criteria.

There is no compounding morphology. The first member of a compound may be a phonetically reduced form of the noun. This reduction may involve a change in vowel quality or a loss of final consonant.

(4.7) Reduced forms of compounded nouns

tuʀ	ta-	‘water’
-dzaʀʔ	dza-	‘ear’

(This reduced form is often identical to the incorporating form of the noun; see section 5.4.1 below). However, most nouns do not have special reduced forms. Even among those that do, compounds may be formed with either the full or reduced form with no apparent semantic difference. For example, compounds may be built from either *tuʀ-* or *taʀ-*, meaning ‘water’.

The first element of a nominal compound is in most cases a noun; the second element may be a noun, postposition, adjective, or verb. The most common type of compound is composed of two nouns, each of which may be basic or derived.

4.2.2.1 Noun-noun compounds

Noun-noun compounds may be of two types: possessed or unpossessed.

Possessed compounds are identical in form to a nominal possessive construction (see section 4.4 below). The second member of a possessive compound occurs with possessive morphology, including a possessive suffix and semi-voiced stem-initial fricative where appropriate. The form of the first member of a compound

may be reduced from that usually seen in the free form of the noun, as evident in (4.8cd).

(4.8) Possessed noun-noun compounds

- | | | |
|----|----------------|-------------------|
| a. | turtiʎyéʒʔ | ‘bowl’ |
| | turtiʎ | ‘cup’ |
| | -yéʒʔ | ‘egg’, ‘round’ |
| b. | tačĕnʔ | ‘stand of timber’ |
| | ta | ‘water’ |
| | čĕŋ | ‘meadow’ |
| c. | -dzaʎʔ | ‘earring’ |
| | -dzaʎʔ | ‘ear’ |
| | ʎuʎ | ‘rope’ |
| d. | k’átθéʔ | ‘bullets’ |
| | k’áʔ | ‘gun’ |
| | tθe | ‘rock’ |
| e. | ts’ĕnĭnts’ĭrgʔ | ‘umbilical cord’ |
| | ts’ĕnĭn | ‘child’ |
| | -ts’ĭrgʔ | ‘intestines’ |
| f. | tsiʎuʎʔ | ‘ancestors’ |
| | -tsi | ‘grandfather’ |
| | -ʎuʎ | ? PLURAL ? |

Possessive noun-noun compounds also include those in which the second member is inherently possessed but lacks the possessive suffix, such as some kinship and body part nouns. The presence of possessive morphology may still be detectable in the lenition of stem-initial fricatives. An example is given in (4.9).

(4.9) Possessed noun-noun compounds lacking possessive suffix

taðéθ	‘tent’
ta	‘water’
-ðéθ	‘skin’

Unpossessed noun-noun compounds do not exhibit possessive morphology on the second member of the compound. When the entire compound is possessed, the possessive suffix is present, but initial fricatives of the second member remain fortis.

(4.10) Unpossessed noun-noun compounds

- | | | |
|----|--------------------------|---|
| a. | ketéł | ‘socks’ |
| | -kéʔ | ‘foot’ |
| | téł | ‘foot wrappings’ |
| b. | turtił | ‘cup’ |
| | tu | ‘water’ |
| | tił | ‘container’ |
| c. | tθiʔžúrs | ‘hat’ |
| | -tθiʔ | ‘head’ |
| | žurs | ?perhaps related to ‘furry’ (John Ritter, p.c.) |
| d. | tartlextθ’ák | ‘washbasin’ |
| | tartlex | ‘soap’ |
| | tθ’ák | ‘plate’ |
| e. | kenč’otł | ‘boots’ |
| | -kéʔ | ‘foot’ |
| | č’otł | ?’ |
| f. | k’įts’eý | ‘canoe’ |
| | k’į | ‘birch’ |
| | ts’eý | ‘boat’ |
| g. | tł’a’sk’e | ‘deep pool’ <3.139> ³ |
| | tł’a’s | ‘clam’ |
| | k’e | ‘cavity’ |
| h. | nitsił ⁿ diig | ‘Robertson River’ ⁴ |
| | nitsił | ‘housepit’ |
| | ⁿ di’g | ‘river, creek’ |

Notice that in some cases, such as *tθířúřs* (4.10c), it may not be possible to identify both members of the compound. In other cases, one member of the compound may be an obsolete or rarely used word, such as the noun *nitsiř* ‘house pit’, which is present in the compound place name term *nitsiřⁿdirg* (4.10h) but has been supplanted by the noun *řax* ‘modern house’.

4.2.2.2 Other compounds

Nominal compounds may also include a component which is not a noun. These types of compounds are necessarily unpossessed. Most often the second member of such compounds belongs to one of the major lexical categories of verb or postposition. Noun-postposition compounds are distinguished from nominalized postpositional phrases by the lack of the nominalizing enclitic. Also, noun-postposition compounds may include a noun with reduced form.

(4.11) Noun-postposition compounds

- | | | |
|----|-------------------------------------|--------------|
| a. | ta ⁿ mâ ⁿ γ | ‘riverbank’ |
| | ta ⁿ | ‘water’ |
| | mâ ⁿ γ | ‘edge’ |
| b. | xéłts ⁿ ř | ‘evening’ |
| | xéł | ‘darkness’ |
| | ts ⁿ ř | ‘toward’ |
| c. | xéłt ⁿ a ⁿ γ | ‘afternoon’ |
| | xéł | ‘darkness’ |
| | t ⁿ a ⁿ γ | ‘underneath’ |
| d. | tθířt ⁿ a ⁿ γ | ‘scalp’ |
| | tθíř | ‘head’ |
| | t ⁿ a ⁿ γ | ‘under’ |

- e. tθ'εηk'ét 'cemetery'
 tθ'εη 'bone'
 k'ét 'on', 'place'

Noun-verb compounds are distinguished from nominalized verb phrases (see section 4.2.3.1) by the absence of verb prefix morphology and the absence of nominalizing morphology.

(4.12) Noun-verb compounds

- a. tuðel 'soup'
 tu' 'water'
 -θel 'hot'
- b. tθe'ðel 'steambath' (cf. *tθe' ne'ðel* 'hot rocks')
 tθe' 'rock'
 -ðel 'hot'
- c. xεtł'ı̇ 'sled handlebars'
 xεtł 'sled'
 ı̇ 'classify sticklike object'
- d. ta'gos 'swan (*Cygnus buccinator*)'
 ta' 'water'
 -gos 'drink quicky'
- e. šosze'y 'blackbear' (cf. *šos datze'y* 'a black-colored bear')
 šos 'bear'
 -ze'y 'black'

In addition to these compounds built from major categories, there are a few compounds built from nouns and a minor category word. Compounds which include adjective components are exemplified in (4.13). Noun-adjective compounds are distinguished from phrases by their lexicalization properties, in particular, their unpredictable semantics.

(4.13) Noun-adjective compounds

- | | | |
|----|----------|---------------|
| a. | li'gary | 'puppy' |
| | li' | 'dog' |
| | gary | 'little' |
| b. | lu'rgčox | 'king salmon' |
| | lu'rg | 'fish' |
| | čox | 'big' |

4.2.2.3 Embedding of compounds

Compounding may apply recursively so that one or both members of a compound noun is itself a compound.

(4.14) Compounds based on compounds

- | | | |
|----|--------------|--|
| a. | žaxtθirt'aγ | 'roof' |
| | žax | 'house' |
| | tθirt'aγ | 'scalp' (tθii 'head' + t'aagh 'under') |
| b. | xetlketl'a'd | 'sled runner' |
| | xetl | 'sled' |
| | ketl'a'd | 'sole' (ke' 'foot' + tl'aad 'under') |

4.2.3 Nominalization

Nouns may be derived from verb phrases and postpositional phrases via an extremely productive process of nominalization. Nominalized verbs are sometimes called deverbal nouns, though the morphology of nominalization applies identically to both verb phrases and postpositional phrases. I use the term nominalized verb and nominalized postposition to refer to nouns which are derived from verb phrases and postpositional phrase, respectively, via nominalization.

Nominalizations are morphologically marked via the nominalizing suffix *-e* and are readily distinguished from noun-verb compounds by the fact that the nominalizing suffix attaches to a fully inflected verb phrase. In contrast, noun-verb compounds include only a verb stem (see section 4.2.2.2 above). The vowel of the nominalizing suffix is usually realized as voicing of the preceding stem coda consonant or lengthening of the preceding stem vowel. The low tone of this suffix combines with the tone of the verb stem to yield falling tone on originally high tone verb stems. This is diagrammed in Figure 4.1.

Figure 4.1: Nominalizing suffix tone re-association



For originally compound tone verb stems, only the first tone of the tone sequence matters; the second tone is delinked and deleted. The stem tone changes in the nominalized form are entirely analogous to those in possessed forms (see section 4.4 below), except the tone melody is reversed.

Table 4.1: Stem tone changes in nominalizations

Stem tone	Nominalized tone
L	L
H	HL
LH	L
HL	HL

In most cases the vowel of the nominalizing suffix does not surface but is instead realized as voicing of the stem-final consonant.

(4.15) Voicing of stem-final consonant in nominalized verbs

nɛldzɛ̌y 'it shines'
 nɛldzɛy 'candle, light'

However, following a glottal stop the nominalizing suffix is retained and harmonizes with the preceding vowel.

(4.16) Nominalized forms of stems ending in glottal stop CVʔ

nač'ɛdahʔɛʔ 'he looked at something'
 náč'ɛdahʔɛʔɛ 'watchman'

For open stems and stem ending in a glottal fricative the behavior of the nominalizing suffix depends on whether the stem contains an oral or nasalized vowel. In the first case the nominalized form contains a final y, unless the stem vowel is already a high front vowel. In the second case, the rhyme of the nominalized form contains an oral-nasal sequence.

(4.17) Nominalized forms of open stems (and h-final stems)

keʔdiʔa'y 'ladder' < keʔ 'foot' + -ʔa' 'linear object extends (impf)'
 tehʔa'n 'fishtrap' < teʔh 'underwater'
 + -ʔa' 'handle compact object (impf)'

There are some nouns which appear to be nominalizations but which are difficult to analyze as such synchronically. An example is *tsukɛlahdzeɣ* 'spider', which in form appears to be related to a verb (perhaps *-dzěy* 'shine' ?), but there is no verb *tsukɛlahdzěy*. These nouns may be considered fossilized nominalizations for which no corresponding verb form exists.

Nominalization may be employed very productively as a syntactic device to modify a noun in much the same way as many languages use relative clauses. For expository convenience, this syntactic use of nominalization is discussed in section 5.6.2 below. In addition, non-productive nominalizations may occur as lexicalized nouns, often with unpredictable semantics. For example, voicing of the final lateral of the verb stem *-t'el* 'red' via suffixation of *-ε* may indicate either a syntactic construction modifying a noun form (with predictable semantics) or as a lexicalized form (with unpredictable semantics).

(4.18) Comparison of syntactic and lexical nominalizations

łurg delt'el	'the fish is red' (verb phrase)
łurg delt'el	'the red fish' (syntactic)
łurg del't'el	'salmon' (lexical)

A morphological distinction can be made between nominalizations and verb phrases which are functionally similar to nouns in languages such as English. The former include the nominalizing suffix, while the latter do not. The semantic distinction between nouns and verbs in Tanacross is quite different than in English. In Tanacross verbs are often used to refer to abstract time-stable concepts which in English might be referred to with nouns.

(4.19) Verb phrases sharing semantic properties with nouns

sa' tayinʔa	'solar eclipse'
xáyints'eŷ	'storm'

The forms in (4.19) are morphological verbs, not nominalizations, because they do not contain the nominalizing suffix.⁵

As noted above, nominalizations are formally distinguished from noun-verb compounds by the presence of verb prefix morphology in the nominalization. Only the verb stem participates in noun-verb compounding. Nominalization operates on the entire verb word, including prefixes. In many cases both a nominalization and a noun-verb compound can be derived from a single stem, as in (4.20).

(4.20) Nominalization and compound from root *-t'oɣ*

ta't'oɣʔ	'paddle' < <i>ta-</i> 'water' + <i>-toɣʔ</i> 'fin'
tač'itt'oɣ	'oar' < <i>tač'itt'oɣ</i> 'it is paddled' + <i>-ε</i> NOM

In addition, more than one nominalization may be derived from a single verb stem, as in (4.21).

(4.21) Nominalizations from verb stem *-dze'y* 'shine (of a light other than the sun)'

nɛldzey	'candle'
ɣɛldzey	'moon'

The examples in (4.21) differ only in the conjugation prefix *n-* versus *ɣ-* in the underlying verb form.

4.2.3.1 Verb phrase nominalization

Verb phrase nominalizations may be derived from either intransitive or transitive verbs. The resulting noun refers to one of the arguments of the verb, rather than to the action or state described by the verb.⁶ The referent may be a core argument or a postpositional object. The referent of the nominalization is usually the

absolutive argument, that is, the object of a transitive verb and the subject of an intransitive verb. However, it is also possible for the nominalization to refer to the subject of a transitive verb (ergative argument). Typically, this occurs when the object argument is less involved with the action or situation described by the verb. These objects are often coded with the indefinite object prefix *č'ε-*.

Nominalization is possible for subject and postpositional object argument roles. Nominalization is not possible for the direct object argument role, though these arguments may be nominalized if they are first promoted to subject via passive morphology. In addition, just about any semantic role may serve as the pivot for nominalization. In the next two subsections I give examples of subject and postpositional object nominalization.

4.2.3.1.1 Subject nominalization

Subject nominalizations may be formed from either intransitive or transitive verbs. These subjects may be semantic agents, as in (4.22), or semantic patients, as in (4.23).

(4.22) Nominalization of agent subject of intransitive verb

- a. lɔdɔdɔrtɔn
 lɔdɔ-t-dɛ-í-tɔ-ε
 closing-?-GEN-M-classify.elongated.object-NOM
 ‘door’ *lit: ‘that which closes off’* <4.73>

- b. łédeldôdz
 łét-de-l-dóts-ε
 closing-GEN-CL-pinch-NOM
 ‘scissors’ *lit.* ‘that which pinches together’

(4.23) Nominalization of patient subject of active intransitive

- a. naʔtl’êʔdz
 na-ʔl’éʔts-ε
 THM-blue-NOM
 ‘beads’ *lit.* ‘that which is blue’ <3.1>

Subject nominalizations of transitive verbs usually mark the object of the verb via the indefinite object prefix *č’ε-*.

(4.24) Nominalization of agent subject transitive verb

- nač’εdahʔεʔε
 na-č’ε-d-hʔεʔ-ε
 ITER-INDEF-THM-CL-watch:PERF-NOM
 ‘watchman’ *lit.* ‘one who watches’ <2.35>

While it is not possible to nominalize the direct object of a transitive, object arguments may be nominalized if they are first promoted to subject role via passive morphology. An example of nominalization of the subject of a passive intransitive verb is shown in (4.25).

(4.25) Nominalization of patient subject of passive intransitive

- a. tač’itt’oy
 ta-č’ε-t-t’oy-ε
 water-INDEF-M-CL-paddle:PERF-NOM
 ‘oar’ *lit.* ‘that which is paddled’
- b. súʔts’ítʔâʔy
 suʔ-ts’íʔ-t-ʔá-ε
 finger-to-CL-handle.compact.object-NOM
 ‘thimble’ *lit.* ‘that which is put on the finger’ <2.1>

- c. t'á'xúdlâ'y
 t'a'-xu-dláh-ε
 pocket-AREA-handle.plural.objects-NOM
 'sewing kit' *lit.* 'that which is put in the pocket' <2.1>

The presence of passive morphology in these examples is indicated by the d-classifier (Tanacross [t]) in the underlying verb form.

4.2.3.1.2 Postpositional object nominalization

Nominalizations of postpositional objects usually refer to semantic instrument roles. The postposition may be bound to the verb as a proclitic or unbound as part of an adjunct postpositional phrase. This object is represented in the nominalization by either the third person postpositional object pronoun *u-* or the distal demonstrative pronoun *ʔey*.

(4.26) Postpositional object nominalization

- a. ʔey ʔéʔ xádeldêð
 ʔey ʔéʔ xa-de-l-déθ-ε
 that with through-THM-CL-twist-NOM
 'auger' *lit.* 'that with which something is drilled through' <3.55>
- b. uʔéʔ xuneltθuy
 u-ʔéʔ xu-ne-l-tθux-ε
 3SG-with AREA-GEN-CL-stuff-NOM
 'chinking' *lit.* 'that with which area is stuffed' <4.5>

The examples in (4.26) are typical in that the nominalizations are built on a passive derivation of the verb. The presence of passive morphology is evident in the voicing of the classifier (pre-stem syllable) as *l-* rather than *h-*.

4.2.3.2 Postpositional phrase nominalization

Though verb phrases provide the source for most nominalizations, nominalizations can also be derived from postpositional phrases by the application of the same nominalizing morphology. The object of a nominalized postpositional phrase may be either a complete noun phrase or a postpositional object pronoun. The postposition governs the semantic relationship between the postpositional object and the referent of the nominalization. Postpositional phrase nominalizations are formally distinguished from noun-postposition compounds by the presence of the nominalizing suffix, as evidenced in the modification of the tone of marked tone postpositions and the voicing of the final consonant of the postposition.

(4.27) Postpositional phrase nominalization

ts'ɛn̄n̄ ʔɛ́l
 ts'ɛn̄n̄ ʔɛ́l-ɛ
 child with-NOM
 'placenta' *lit.* 'with the child'

4.3 Loanwords

There are in Tanacross a number nouns whose internal morphological structure is not analyzable because they have been borrowed from English, French or Russian. In many cases these words may not have been borrowed directly from the source language but have come into the language via neighboring Athabaskan languages.

(4.28) Loanwords from English

sugay	'sugar'
sdogen	'stockings'
zay	'rice'
tanes	'turnip' (McRoy 1973)
tediz	'potato' (McRoy 1973)
milik	'milk'

There also exist a few Tanacross nouns of French origin which have probably been borrowed from neighboring languages to the north, such as Gwich'in and Hän, or perhaps directly from Slavey Jargon. The original French masculine article *le* is reflected in Tanacross as an initial syllabic lateral approximant.

(4.29) Loanwords from French

ldr'l	'tea' < <i>le té</i>
lzarz	'money' < <i>l'argent</i>
lsel	'salt' < <i>le sel</i>

The number of Russian loanwords in Tanacross is much fewer than in Ahtna to the south, which had contact with coastal communities through trade.

(4.30) Loanwords from Russian

dáyan	'chief'
galdas	'playing cards'
lesjih	'tobacco'
jelis	'cross'

In addition to borrowing from non-Native languages, Tanacross has borrowed from other Native languages of Alaska. In many cases it is difficult to distinguish between loanwords and cognates. Some examples are given below.

(4.31) Loanwords from other Alaska Native languages

<i>dzenax</i>	‘fermented whitefish in birch basket’ < Sugpiaq [čmaʔaq] (probably via Ahtna <i>dzenaax</i> ‘fermented fish’)
<i>niik’odl</i>	‘Copper River style fermented fish heads’ < Ahtna <i>nelk’ol</i>
<i>tʔankaʔni</i>	‘needle’ < Ahtna <i>tl’ankaani</i>

The original origin of the word *dzenax* is not entirely clear, though Tanacross probably borrowed it from Ahtna. The word *niik’odl* may not actually be a borrowing at all. I have included it here because it refers to a cultural item not available in Tanacross, namely fermented salmon heads (salmon are not found in the Tanacross area). The word *tʔankaʔni* is clearly not Tanacross in origin, as the vowel of the nominalizing suffix is not only retained, but has the quality of the Ahtna nominalizer (i.e., high rather than mid front vowel).

4.4 Possession

Nominal possession is marked on the possessed (head) NP via both a prefix and a suffix. The possessive prefix indexes the person and number of the possessor, though the possessor NP is formally unmarked. A possessor NP may optionally occur as an adjunct to the possessive prefix, immediately preceding the possessive prefix. Two types of possessive suffixes may occur. The alienable possessive suffix reflecting PA *-əʔ is used to mark alienable possession and triggers voicing of stem-final consonants and modification of stem tone. The inalienable possessive suffix reflecting PA *-ʔ is used to mark inalienable possession and triggers modification of stem tone but does not voice stem-final consonants. For

example, the possessive suffix applied to the noun *kentsj̥θ* triggers voicing of the stem-final consonant and modification of the low (unmarked) stem tone to a compound rising tone.

(4.32) Possessive construction

- a. kentsj̥θ ‘moccasin’
- b. ukentsj̥θ̣ ‘her moccasin’
- c. Laura ukentsj̥θ̣ ‘Laura’s moccasin’

The possessive prefix is obligatory. A co-referential NP indexing the possessor may optionally occur as an adjunct immediately preceding the possessed NP.

Possessive constructions containing adjunct NP possessors are in many ways similar to possessive noun-noun compounds (section 4.2.2.1) but are distinguished by the presence of the inflectional prefix.

(4.33) Comparison of possessive compounds and possessive construction

- liγú? ‘dog tooth’
- li uyú? ‘dog’s tooth’

The possessed noun in both the possessive construction and the possessive compound exhibits inflectional properties associated with possession, including lenition of the initial fricative. However, the possessive construction is necessarily inflected with the prefix *u-*, indexing the person and number of the possessor.

4.4.1 Possessive prefixes

The Tanacross possessive prefixes are formally similar to the verbal object prefixes. The complete chart of possessive prefixes is given in Table 4.2 below:

Table 4.2: Pronominal possessive prefixes

person	singular	plural
1	š-	ne'-
2	n-	nuh-
3	u-/m-	xu'-
INDEFINITE		č'ε-
RECIPROCAL		nił-
REFLEXIVE		dε-

The first person singular š- and second person singular n- are syllabic before a consonant. The first person singular possessive prefix assimilates to the alveolar place of articulation preceding alveolar affricates and alveolar fricatives, but not before alveolar sonorants.

(4.34) Assimilation of first person singular possessive prefix

stsʉ	'my grandmother'
sts'és	'my elbow'
sdzǎʔ	'my ear'
szě'yʔ	'my knife'
šnaʔ	'my mother' (no assimilation)

The third person singular occurs as u- before a consonant and as m- before a vowel.

- (4.35) Alternate forms of third person singular possessive prefix compared with first singular prefix

Consonant initial

štθ'íʔ 'his head'

utθ'íʔ 'my head'

Vowel initial

šinláʔ 'my hand'

minláʔ 'his hand'

Singular possessive prefixes block the rule which inserts glottal stop before vowel-initial words. Thus the word /a'ne'g/, when not possessed, occurs with initial glottal stop as [ʔa'nde'g]. When possessed the glottal stop appears only with plural possessors. The examples in (4.36) compare singular and plural possessive prefixes.

- (4.36) Possessive prefixes with vowel-initial nouns

[ša'ndě'gʔ]	'my language'
[na'ndě'gʔ]	'your language'
[ma'ndě'gʔ]	'her language'
[ne'ʔa'ndě'gʔ]	'our language'
[xuh'ʔa'ndě'gʔ]	'your (pl.) language'
[xu'ʔa'ndě'gʔ]	'their language'

The indefinite possessive č'e- is used when the possessor is non-identifiable and occurs as the default possessor for many inalienable nouns.

- (4.37) Indefinite possessive prefix

mintsj̄	'his nose'
č'int̄sj̄	'someone's nose'

As discussed in section 4.4.4 below, certain Tanacross nouns are obligatorily possessed and always occur with a possessor. When such inherently possessed

nouns are used without explicit reference to the possessor, they occur with the indefinite possessive prefix.

(4.38) Indefinite possessive prefix on inherently possessed nouns

č'et'ǎʔ	'leaf'
č'enǎʔ	'mother'

The reflexive prefix *de-* is used to indicate co-reference between a nominal possessor and an argument of the verb. The reflexive possessor prefix may indicate co-reference between the possessor and either the subject or object of the verb.

(4.39) Reflexive possessor *de-*

- a. *de*žax neninžah
 de-žax ne-n-*i*-žah
 RFLX-house down-CJ-PERF-go.sg
 'he's returning to his house'
- b. *de*dzǎʔ ya ninge't
 *de*dzǎʔ ya n-*i*-ge't
 RFLX-ear:POSS through CJ-PERF-pierce
 'she pierced her ear' <2.110>
- c. *de*čoʃ nəktsaat
 de-čoʃ n-εk-tsaat
 RFLX-throat GEN-1SG:H-cut.quickly:IMPF
 'I cut his (animal's) throat' <2.107>

4.4.2 Voicing of initial fricatives

As noted in section 2.1.4 above, the distribution of voiceless and voiced fricatives in stem-initial position is largely governed by phonological and morphological criteria. In particular, voiceless fricatives occur stem-initially in unpossessed

nouns, while voiced (i.e., phonetically semi-voiced) fricatives occur stem-initially in explicitly possessed nouns. This alternation is morphologically conditioned: semi-voiced fricatives occur following both voiceless and voiced possessive prefixes.

(4.40) Voicing of initial fricative in simple nouns

xos -yǒzʔ ‘thorn’

In Slave, which has a similar voicing alternation, the domain of voicing is restricted to simple nouns (Rice 1988). In particular, the voicing rule does not apply to word-initial fricatives in compounds and nominalizations. In Tanacross voicing of initial fricatives applies equally to both simple nouns and complex nouns such as compounds and nominalizations.

(4.41) Lenition of initial fricative in complex nouns

liḡay	-liḡayʔ	‘puppy’	< <i>li</i> ‘dog’ + <i>ḡay</i> ‘small’
—	-luhǒéθ	‘bladder’	< <i>luh</i> ‘urine’ + <i>-ǒéθ</i> ‘skin’ (McRoy 1973)
xost’ǎʔ	-yost’ǎʔ	‘rose’	< <i>xos</i> ‘thorn’ + <i>t’ǎʔ</i> ‘leaf’
—	-yol̥tθ’ǎnʔ	‘femur’	< <i>xol̥</i> ‘leg’ + <i>tθ’ǎn</i> ‘bone’

Voicing of initial fricatives also applies in Tanacross but not Slave to nouns which are reflexes of original PA broken stems.

(4.42) Possession of ‘broken stems’ in Tanacross and Slave

Tanacross	x̥iθ	-y̥iθʔ	‘raft’
Slave	xeniḡ	-xeniḡ	‘raft’ (Rice 1998: 654)

In summary, the internal structure of complex nouns is opaque to Tanacross possessive inflectional morphology.⁷

4.4.3 Possessive suffixes

Tanacross formally distinguishes two types of possessive morphology: alienable and inalienable. Most nouns allow only one of the two types of possessive marking. These two types of possession are distinguished via possessive suffixes. Alienable possession is marked by a vocalic suffix $-éʔ$, and inalienable possession is marked by a non-vocalic suffix $-ʔ$. The latter consists of glottal stop together with high tone. In addition to this morphological distinction between alienable and inalienable possession, there exists a similar but not entirely congruent lexical distinction in inherent possession. Nouns which are inherently possessed may or may not include a possessive suffix, but when they do they always mark possession via the inalienable suffix. Most nouns which are not inherently possessed mark possession via the alienable suffix, though a limited number of not inherently possessed nouns may marked possession via either suffix.

4.4.3.1 Alienable possessive suffix

Alienable possession is marked via a type of stem modification which can be analyzed as a vocalic suffix $-éʔ$, the reflex of the PA $*-əʔ$ suffix. Unlike in neighboring languages such as Lower Tanana, the vowel of this suffix in Tanacross is realized indirectly via voicing and lengthening of stem rhyme. This voicing/lengthening is what distinguishes the alienable possessive suffix from the inalienable possessive suffix.

Since the vowel of the possessive suffix does not surface, the associated high tone delinks and re-associates with the preceding tone bearing unit, that is, the noun stem. This is shown in Figure 4.2.

Figure 4.2: Possessive suffix tone re-association



In contrast to neighboring tonal languages such as Upper Tanana, the stem tone does not subsequently delink. In other words, the stem tone does not assimilate to the marked tone of the possessive suffix. Instead, both stem and suffix tones combine, forming a compound tone when the two tones are dissimilar. The complete set of possessive stem tone changes is listed in the table below.

Table 4.3: Stem tone changes in possessed nouns

Stem tone	Possessed tone
L	LH
H	H
LH	LH
HL	H

When an unpossessed stem contains a compound tone, the possessed form ignores the second tone of the sequence of tones associated with the original stem. Thus only level high and compound rising tones are possible in possessed forms.

(4.43) Possession of noun stems with compound tone

jêg	-jégʔ	‘berry’
xĩθ	-xĩðʔ	‘raft’

The unpossessed and possessed stem forms are sometimes also referred to as a ‘light’ and ‘heavy’ stems, respectively (cf. Leer 1977; Scollon 1978). The term ‘heavy’ refers to the presence of a metrically heavy rhyme in possessed forms. The light/heavy alternation for nouns stems is much simpler than that described for verb stems below. For noun stems ending in an obstruent (other than glottal stop), the heavy form of the stem replaces the final consonant with its voiced counterpart and adds a glottal stop.

(4.44) Possessed forms of nouns ending in voiceless obstruents

łet	-lědʔ	‘smoke’
xetł	-ɣědlʔ	‘sled’
žeθ	-žěđʔ	‘snow’
tsɛts	-tsědzʔ	‘wood’
tθ’ák	-tθ’ágʔ	‘plate’
turtił	-turt’ılʔ	‘cup’
kentsiθ	-kentsiđʔ	‘mocassin’
t’és	-t’ézʔ	‘charcoal’
sák	-záɣʔ	‘gaff hook’

For the most part, unpossessed nouns do not end in voiced obstruents. For those nouns which do, the stem-final consonant in the possessed form remains unchanged and a glottal stop suffix is added. In addition the stem tone is modified as described above.

(4.45) Possessed forms of nouns ending in voiced consonants

łurg	-lǔrgʔ	‘fish’
ld’ıl	-ld’ılʔ	‘tea’
lzaʔz	-lzáʔzʔ	‘money’
ts’ôɣ	-ts’óɣʔ	‘spruce’

In these nouns, a short vocalic segment is often produced preceding the glottal stop in the possessed form of the stem.

(4.46) Vocalization following final voiced stop in heavy stems

/ šlǔrgʔ/ [šlǔrg^(ə)ʔ] ‘my dog’

For noun stems ending in a sonorant consonant (y, yh, n, nh), the possessed forms have a lengthened sonorant (written double in the practical orthography).

(4.47) Possessed stem forms for sonorant-final stems

se·y	-zě·yʔ	‘knife’
θa·y̆	-ðǎ·yʔ	‘sand’
kónʔ	-kónʔ	‘fire’
mɛŋ	-měŋʔ	‘lake’

For noun stems which end in a vowel, the heavy forms have a lengthened stem vowel in addition to final glottal stop. For noun stems which end in a glottal stop, the heavy forms either follow the pattern of the vowel-final stems or occur with an echo vowel following the glottal stop. For some glottal-final nouns both forms of the heavy stem are possible.

(4.48) Possessed stem forms for open and glottal-final stems

tu·	-tǔʔ	‘water’
šíʔ	-šíʔi	‘food’
máʔ	-máʔ, -máʔa	‘dry fish’

For some common nouns the heavy stem form is irregular. These include

(4.49) Irregular possessed stem forms

li· -lírgʔ ‘dog’

4.4.3.2 Inalienable possessive suffix

Inalienable possession is marked by a non-vocalic suffix [-ʔ]. The realization of this suffix is very similar to that of the alienable possessive suffix, except it does not voice or lengthen stem consonants. Stem tone modifications follow the same pattern described for the alienable possessive suffix in section 4.4.3.1 above. The distinction between the alienable and inalienable possessive suffix is most readily apparent with nouns for which both suffixation patterns are possible. However, there exist very few such nouns. An example is given in (4.50) below.

(4.50) Distinctions between alienable and inalienable possession

tuʔ	‘water’ (unpossessed)
jêg túʔ	‘wine’ (inalienably possessed)
štũʔ	‘my water’ (alienably possessed)

Inherently possessed nouns do not exhibit a contrast between possessed and unpossessed forms, so it can be difficult to distinguish whether the inalienable possessive suffix is present in such forms.

4.4.4 Inherently possessed nouns

Certain Tanacross nouns are obligatorily possessed. These nouns do not exhibit an alternation between possessed and unpossessed forms. Most prominent among these inherently possessed nouns are kin terms and most body parts. Inherently possessed nouns may or may not include a possessive suffix. Lack of the possessive suffix is evident in the inherently possessed forms which exhibit low

tone, such as *-naq* ‘mother’. Recall that regardless of underlying stem tone, possessed forms which include a possessive suffix may only surface with high or rising tone (see (2.84) on p. 77). When a possessive suffix is present on an inherently possessed noun it is usually the inalienable suffix, as evidenced by the lack of voicing of the stem-final consonant.

A partial list of Tanacross kinship nouns is given below.

(4.51) Inherently possessed kinship nouns⁸

-naʔ	‘mother’
-kéyʔ	‘husband’
-táʔ	‘father’
-aʔdeh	‘older sister’
-ʔat	‘wife’
-unaʔɣ	‘older brother’
-čɛl	‘younger brother’
-tsêy	‘grandfather’, ‘mother’s brother’
-tsuʔ	‘grandmother’, ‘father’s sister’
-déʔdzʔ	‘younger sister’
-yaʔtsʔíʔ	‘woman’s daughter’
-iʔeʔe	‘man’s daughter’
-leʔ	‘brother-in-law’

To my knowledge, all kinship terms are inherently possessed. In addition, most body part terms are inherently possessed. Some examples are given below.

(4.52) Inherently possessed body part nouns

-γólʔ	‘leg’
-gót	‘knee’
-gánʔ	‘arm’
-nénʔ	‘back’
-γúʔ	‘tooth’
- ⁿ dǎʔγʔ	‘eye’
-mét	‘stomach’
-tsǎdlʔ	‘belly’
-ðeʔgʔ	‘throat’
-tθíʔ	‘head’

Some body part nouns also appear to have an alienable possessive suffix, as in *-ⁿdǎʔγʔ* ‘eye’, which has a voiced final consonant; others appear to have an inalienable possessive suffix, as in *-γúʔ* ‘tooth’, which has a short vowel. Still other body part nouns appear unaffixed, such as *-gót* ‘knee’.

In addition to body part and kinship terms, several other Tanacross nouns are inherently possessed. These include especially nouns which are considered to be inseparable properties of another noun.

(4.53) Other inherently possessed nouns

-žǐʔgʔ	‘shadow’
-tǝʔ	‘friend’
-t’ǎʔ	‘leaf’

Inherently possessed nouns may have an incorporating form (see section 5.4.1 below) which is not possessed and does not include a possessive prefix. For example, the incorporating form of *-ⁿdaʔγʔ* ‘eye’ is *ⁿdaʔx*, which is the form we

would expect if this noun occurred in unpossessed form. However, this word does not occur unpossessed in an unbound form.

(4.54) Unpossessed incorporating form of inherently possessed noun

ⁿdaːx- -ⁿdaːɣʔ ‘eye’

Other body part nouns are not inherently possessed. These include but are not limited to nouns pertaining to body products such as bodily fluids. When these nouns are possessed they occur with the alienable possessive suffix; in particular, stem-final consonants are voiced in the possessive form. Unlike the inherently possessed body part nouns, these nouns may also occur in an unpossessed form.

(4.55) Not inherently possessed body part nouns

deɭ	-deɭʔ	‘blood’
tθʻeŋ	-tθʻɛŋʔ	‘bone’
seːk	-zɛːgʔ	‘saliva’

Inherently possessed nouns may occur without explicit reference to an identifiable possessor. In this case these nouns occur with the indefinite possessive prefix *čʻe-*.

(4.56) Use of indefinite *čʻe-* with inherently possessed nouns

čʻeŋaː	‘mother’, ‘one’s mother’
čʻeðét	‘liver’, ‘one’s liver’

Some inherently possessed nouns may also be alienably possessed. This is indicated by compounding the the possessive prefix to the indefinite possessor prefix.

(4.57) Use of indefinite č'ε- with inherently possessed nouns

č'edlíʔ	'key' lit: 'something [the lock's] key'
šč'edlíʔ	'my key'
? šdlíʔ	'my key' lit: 'the key to me' [as if I were the lock]

4.5 Number

Most nouns are not morphologically marked for number. Noun phrases may be optionally marked for plural number via the plural enclitic =ʔin.

(4.58) Plural enclitic with animate nouns

naʔelzêʔy=ʔin	'hunters'
deneʔy=ʔin	'people'
deneʔy gaʔy=ʔin	'boys' lit: 'little men'
liʔ=ʔin	'dogs'

In modern speech the use of the plural enclitic is restricted to animate nouns.

However, older texts contain many examples of the use of the plural enclitic with inanimate nouns. It is even possible to find examples of the use of the plural enclitic with nouns serving as objects of verbs which require plural object, as with the verb -ʔaʔ 'make plural objects' in (4.58).

(4.59) Plural enclitic with inanimate nouns

k'intθá:k ʔin	t'eʔy	xaʔyʔaʔ
k'intθá:k=ʔin	t'eʔy	x-aʔ-yʔaʔ
basket=PL	also	HUM.PL-M-make.pl
'they also made baskets' (Charlie & McRoy 1972)		

In addition to the plural enclitic, which is fairly productive, there is a less productive plural suffix -y which is restricted to human nouns.

(4.60) Human plural suffix -y

SG	PL	
dəneh	dəney	‘man’
ts’əhxeh	ts’əhxêy	‘woman’

The human plural suffix is not productive and is restricted to a very few common nouns. These nouns with the lexicalized human plural suffix are thus inherently plural. Note that both the human plural suffix and the plural enclitic may co-occur, as shown in (4.58). There is also at least one other noun, *ts’ənîn* ‘children’, which is inherently plural.

But for most nominal referents, no number marking is present on the noun.

If number is marked at all it is on the verb, either via pronominal argument prefixes or lexically via inherently plural verbs. For example, the third person plural prefix *xɛ-* can be used to indicate plural number.

(4.61) Plural subject marked via verbal prefix *xɛ-*

dəneh	xɛlɔs
dəneh	x-dɛ-l-xos
person	3PL-THM-CL-play
	‘they are playing’

First person singular, second person singular and second person plural subjects obligatorily mark number via the inner subject prefixes on the verb (see section 5.3.2 below). Number of non-third person direct object and postpositional object nouns is marked via pronominal prefixes (see section 5.3.5.2 below).

It is also possible for nominal number to be marked on the verb stem itself. Many Tanacross verb stems distinguish either subject or object number lexically. In addition to several verbs of motion, these include classificatory verbs such as those below:

(4.62) Nominal number distinctions in classificatory verb stems

- a. tsets γihtɪʔ
 tsets γ-ih-tɪʔ
 firewood M-1S-handle.sticklike.object
 ‘I’m carrying a piece of firewood’
- b. tsets γihleʔ
 tsets γ-ih-leʔ
 firewood M-1S-handle.plural.object
 ‘I’m carrying some firewood’

And some stative verbs:

(4.63) Nominal number distinctions in stative verb stems

- a. diðihdah
 di-ð-ih-dah
 THM-M-1S-sg.sit
 ‘I’m sitting’
- b. diðéltθ’i
 di-ð-l-tθ’i
 THM-M-CL-pl.sit
 ‘they’re sitting’

Notice in (4.63b) that when a plural stem is used with a third person referent the third person plural marker *xɛ-* is not required.

Some other common verb stems which lexically distinguish number are listed below. The plural verb stem refers to the number of the most closely

affected participant, usually the absolutive argument, i.e., subjects of intransitive verbs (4.64) and objects of transitive verbs (4.65).

(4.64) Intransitive verb which distinguish subject number

	singular	plural
'compact object lies'	Ø-ʔāa	Ø-dlah
'go'	Ø-haʔ	Ø-deʔl
'stand'	na-Ø-θet	na-Ø-deʔk
'fly'	n-Ø-t'ek	n-Ø-deʔl
'run'	l-tθet	Ø-deʔl
'sit, stay'	Ø-daʔ	d-l-tθ'i
'lie prone'	Ø-tɛʔ	h-tɛʔs

(4.65) Transitive verbs which distinguish object number

	singular	plural
'make'	h-tsi	Ø-xaʔ
'kill'	ð-h-xɛʔ	Ø-xaʔ

4.6 Chapter summary

The morphological structure of underived nouns is relatively simple. The overwhelming majority of underived nouns are monosyllabic. In addition, just about any verb can be used nominally via an extremely productive derivational process of nominalization. Complex nouns may also be formed via compounding, especially noun-noun and noun-verb compounding, though this process is less productive than nominalization. Possessive constructions are head-final, and possession is marked via a suffix on the head noun. Possessive suffixes distinguish alienable and inalienable possession. Number is generally not distinguished on nouns, though plural may be optionally marked on nouns

referring to humans via an enclitic. Noun number is much more commonly encoded lexically via verbs which subcategorize for singular or plural arguments.

Notes to chapter 4

- ¹ The concept of basic noun exists throughout Athabaskan. Equivalent terms include ‘primary’ (Morice 1932; Hoijer 1971) and ‘stem noun’ (Rice 1989).
- ² Some inherently possessed nouns, such as kin terms, do not include the possessive suffix, but I include them under the derived category.
- ³ Numbers in angle brackets following example glosses refer to the author’s field notes, available in the Alaska Native Language Center archives.
- ⁴ The Robertson River is a major tributary of the Tanana River, which joins the Tanana from the west approximately halfway between Tanacross and Dot Lake.
- ⁵ Some authors analyze such forms as nominalizations which lack overt nominalizing morphology.
- ⁶ Abstract actions or events are usually referred to using a true verb rather than a nominalization. For example, consider *mexdatdiik*, which means literally ‘she had a miscarriage’ but which is used to refer to the event of ‘miscarriage’. The voiceless final consonant indicates that no nominalizing morphology is present.
- ⁷ Rice formalizes the domain of voicing in Slave in terms of prosodic constituency. Thus, different treatment of possessive inflection in Slave and Tanacross may represent differences in the structure of the minimal word in the two languages. See Rice (1988; 1998) for details.
- ⁸ For more on Athabaskan kinship terminology see Krauss (1977b).

Chapter 5 Verb morphology

The Tanacross verb consists of a mono-syllabic stem and a string of one or more prefixes. Prefix morphemes are generally mono-syllabic but may consist of more than one discontinuous syllable. In this chapter I discuss morphology of the Tanacross verb, focusing on three distinct regions: the conjunct prefixes, the disjunct prefixes, and the verb stem and suffixes.

The verb is the most complex lexical element of Athabaskan grammar and carries much of the functional load of the Athabaskan communicative system. The verb alone may serve as a complete utterance, without additional nominal arguments.

The lexical category of verb in Tanacross can be morphologically delimited as the class of lexemes whose members must be obligatorily inflected for one of four ‘modes’: imperfective, perfective, future and optative. The verb lexeme may consist of a discontinuous string of morphemes, and morpheme order within the verb complex is quite rigid. First singular, second singular, and second plural person are marked on the verb via pronominal prefixes.

5.1 Models of verb structure

Verb structure exhibits a high degree of uniformity across the Athabaskan languages, thus a model of Tanacross verbal morphology is implicitly a model of Athabaskan verbal morphology. In this chapter I follow the templatic model, exemplified in the work of Kari (1976; 1989b; 1990), which assigns each verb morpheme a position within a verb template. This model offers little in the way of explanation for existing prefix order but merely states for each verb prefix (or category of prefix) a position in the template with which it is associated. Recently, several attempts have been made to address the theoretical shortcomings of the templatic model. Some of these alternatives are phonologically driven (cf. Sharon Hargus 1988; Sharon Hargus & Tuttle 1997; McDonough 1990), while others are semantically driven (cf. Rice 2000b). The phonological approach is often successful in predicting morpheme order but fails to explain why morphemes are ordered as they are. The semantic approach can predict underlying prefix order based on semantic principles of scope, but movement rules are required to derive actual surface order so that in effect a template is still required. While both approaches have theoretical merit, the templatic model remains an effective descriptive heuristic, and I employ it here without necessarily endorsing its theoretical implications.

Before beginning a discussion of verb structure, a few remarks regarding Athabaskan linguistic terminology are in order. Verb structure exhibits a high

degree of uniformity across the Athabaskan languages, and out of this uniformity has grown a specialized technical vocabulary for describing Athabaskan verb morphology. While phonological and semantic properties of the verb may vary across languages, structural properties are often shared. Thus, terminology developed for one Athabaskan language has tended to be applied to all languages. Consistency in terminology has greatly facilitated cross-language comparisons but has also contributed to the preservation of opaque and often misleading terms. As we approach an Athabaskan language for which very little descriptive material exists, we are immediately faced with a choice between innovation and conservation with regard to descriptive terminology. To as large an extent as possible I have chosen the latter, believing with Faltz (1998) that terminological innovation complicates access to existing reference materials.

Most of this specialized terminology, while perhaps obscure or inappropriate, will hopefully not be misleading. For example, it is quite obvious that the ‘classifier’ does not have a classificatory function. However, in other areas the differences between standard linguistic terminology and Athabaskan conventions can be more subtle, increasing the likelihood of confusion. This is particularly true of the terminology used to describe the morphological structure of the verb word. The terms ‘root’ and ‘stem’ are used in a highly specialized sense here. Phonologically, the verb root carries primary stress and is the locus of

the greatest amount of phonemic contrast. Semantically, the root usually carries the main meaning of the verb, though in many cases the root itself is meaningless unless accompanied by one or more lexical prefixes. In Tanacross the root is an abstract unit which is not realized in the surface form because the root must occur together with an inflectional mode/aspect suffix which is realized via ablaut of the root.¹ The term ‘stem’ is used to refer to the root together with obligatory mode inflection. (Verb stems thus come in ‘stem sets’, each member of the set corresponding to a particular mode and each set corresponding to a particular aspect — see section 5.5.)

The terms ‘theme’ and ‘base’ are used to refer to what would conventionally be thought of as root and stem, respectively. Thus, the verb theme is a minimal string of morphemes which together with subject and mode/aspect inflection may form a verb word. For a given verb theme, it may be possible to derive several verb ‘bases’ via additional affixation. Those prefixes which occur in all bases derived from a given verb theme are referred to as ‘thematic’ prefixes. In addition, a verb theme may contain a ‘classifier’, which behaves similarly to the thematic prefixes but may have a derivational function as well. The classifier immediately precedes the stem. The meaning of verb themes containing thematic prefixes is often not compositional; rather, meaning can be assigned only to the entire string of thematic prefixes, classifier, and root.

This various terminology is exemplified in (5.1). The root *-ʔeʔ* has the basic meaning ‘see’ or ‘do’, but it only gets the specific meaning ‘see’ when combined with the classifier *h-* and the thematic prefix *n-* to form a verb theme. Finally after inflecting the stem for mode an aspect and adding subject and object inflection it is possible to form the verb word.

(5.1) Example of verb structure terminology

root	<i>-ʔeʔ</i>	‘see, do’
classifier	<i>h-</i>	
thematic	<i>n-</i>	
theme	<i>n-h-ʔeʔ</i>	‘see’
stem	<i>-ʔeʔh</i>	‘see, do’ (imperfective mode, durative aspect)
word	<i>šniʔhʔeʔh</i>	‘you see me’ (<i>i-</i> 2SG SUBJ, <i>š</i> 1SG OBJ)

A more complex example might include inflectional prefix corresponding to conjugation and mode as well. In this example the imperfective mode does not require a conjugation or mode prefix.

5.2 Domains of verb morphology

Verb morphology is primarily prefixing; only two suffixes may attach to the verb stem. Thus the major domains of verb morphology occur to the left of the stem.

Four major domains verb morphology are generally recognized within the Athabaskan verb template: disjunct, conjunct, stem, and suffixal. These domains are outlined in the figure below.

Figure 5.1: Tanacross verb template

DISJUNCT			CONJUNCT						SUFFIX	
adverbial	incorporate	iterative	pronominal	qualifier	conjugation	mode	subject	classifier	stem	negative/ nominalizing

The disjunct domain consists of bound postpositional phrases and adverbials. Disjunct morphemes may be either derivational or lexical but are not usually inflectional. They are less tightly bound to the verb phonologically, and there is less fusion between the disjunct morphemes. Morphemes in the disjunct domain are phonologically verbal proclitics but within Athabaskan linguistics are usually referred to as prefixes, distinguished from true prefixes by the label ‘disjunct prefixes’. The boundary between the disjunct and conjunct domains occurs immediately to the left of the direct object position. This boundary is often referred to as the ‘disjunct boundary’ and is indicated by the hash symbol (#).

The conjunct domain consists primarily of inflectional prefixes but may also include lexical and derivational material. Obligatory pronominal and mode inflection occurs in the conjunct domain, as does some lexical information in the form of thematic prefixes. Derivational material may also occur in the conjunct domain, such as the derivational use of voice/valence prefixes to form causative or passive constructions. Conjunct morphophonology tends to be much more complex and fusional than in the disjunct domain. The ‘disjunct boundary’

between the disjunct and conjunct domains thus plays a significant role in Athabaskan verb morphophonemics.

5.3 Conjunct verb morphemes

The conjunct domain is closest to the verb stem and consists primarily of inflectional and thematic prefixes. These include the classifier, the subject, the mode and conjugation markers, the qualifier prefixes, and the direct object and outer subject prefixes. The conjunct portion of the verb template is repeated in the figure below.

Figure 5.2: Conjunct prefix template

PRONOMINAL	QUALIFIER	CONJUGATION	MODE	SUBJECT	CLASSIFIER
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Conjunct morphemes are tightly bound to the verb stem, and conjunct verb morphology is extremely fusional. Due to the interaction between conjunct morphemes, it is in many cases it is not possible to discuss one conjunct morpheme without reference to another. Thus, there is some overlap in coverage in the subsections below.

5.3.1 Classifier (voice/valence)

The term ‘classifier’ refers to the verb template position immediately preceding the verb stem. One of three prefixes may occur in this position: *d*, *h*, or *l*. This position may also be empty. Because of the morphological alternations possible between the presence and absence of these classifiers, the absence of a classifier

represents a meaningful zero and is usually referred to as a fourth classifier, known as zero-classifier (\emptyset -classifier). The Tanacross *h*-classifier is a reflex of PA * ɬ and is thus sometimes referred to loosely as the barred-*l* classifier. The voiced *l* classifier is a morphologically complex portmanteau morpheme, being the surface reflex of the combined *d* and *h* classifiers.

As is well known in Athabaskan linguistics, the term ‘classifier’ is a gross misnomer, for the classifiers have no classificatory function (Krauss 1969). Recent alternatives to the term classifier include “transitivity indicator” (Kibrik 1993; 1996) and “voice/valence marker” (Rice 2000a). These alternative terms better reflect the derivational function of the classifiers as they affect verbal argument structure. However, the term classifier is deeply entrenched in the literature and is retained here for ease of exposition.

Every verb must be lexically specified as having one or none of these classifiers. It is not possible to assign a specific meaning to a classifier which is present in the underlying lexical form of a verb (though there is a very loose correlation with transitivity). In that sense, the classifiers can be considered part of the thematic verb morphology. Meaning must be assigned to the entire assemblage of verb stem, classifier and other thematic verb prefixes.

The classifiers also participate in extremely productive derivational processes which alter verbal argument structure. These processes are signaled not

by the classifiers themselves, but by changes in the classifier. In other words, while the d-classifier itself has no particular meaning associated with it, when a verb which otherwise occurs with a \emptyset -classifier is used with a d-classifier, this change in classifier is associated with specific semantic and grammatical meaning. So it is the change of classifier, not the classifier itself, to which a meaning can be assigned.

In the following subsections, I discuss first the morphology of the classifiers (section 5.3.1.1) and then their derivational functions (section 5.3.1.2).

5.3.1.1 Morphology of the classifiers

The classifier morpheme may interact phonologically with a preceding subject morpheme or with the initial consonant of the verb stem. However, the underlying form of the classifier always remains recoverable. In this section I discuss only the interaction with the verb stem; interactions between the classifiers and subject prefixes are discussed in section 5.3.2. For each classifier I discuss its morphophonemic properties and cite examples of verbs occurring with that classifier.

5.3.1.1.1 \emptyset -classifier

The \emptyset -classifier has no phonetic reflex; the term \emptyset -classifier is a structural term used to represent the absence of a classifier. The presence of the \emptyset -classifier in a verb word is detectable by the absence of a phonetic segment intervening between

the subject marker and the verb stem and by the existence of a conditioned voicing alternation in stem-initial fricatives following the Ø-classifier. Stem-initial fricatives assimilate the voicing status of the preceding segment. Thus, when no classifier is present, stem-initial fricatives occur voiceless following the first person singular subject prefix *ih-* (5.2a) and voiced (hence semi-voiced) following the second person singular subject prefix *in-* (5.2b).

(5.2) Fricative voicing alternations following Ø-classifier

- a. náʔihθet (voiceless stem-initial fricative)
 ná-ih-θet
 THM-1SG-stand
 ‘I am standing’
- b. náʔinðet (semi-voiced stem-initial fricative)
 ná-ín-ðet
 THM-2SG-stand
 ‘you are standing’

Both intransitive (5.3) and transitive (5.4) verbs occur with the Ø-classifier.

(5.3) Intransitive Ø-classifier verbs

- a. Fairbanks tsʔʔ yíhhaʔ
 Fairbanks tsʔʔ γ-ih-haʔ
 F. to PROG-1SG-sg.go
 ‘I’m on my way to Fairbanks’
- b. e·dlók
 e·dlók
 PROG-laugh
 ‘he’s laughing’
- c. tsʔ·a·dét
 tsʔ·a·dét
 IMP-PROG-pl.go
 ‘we’re going’

- d. ihsax
ihsax
1SG-cry
'I'm crying'

(5.4) Transitive Ø-classifier verbs

- a. nač'ihʔáʔ
na-č'ε-ih-ʔáʔ
ITER-INDEF-1SG-eat
'I'm eating (something)'
- b. yirts'ét
yirts'ét
4OBJ-M-scratch
'he scratched it'
- c. ʔa'ý utl'áγihʔa'
ʔa'ý u-tl'á-γ-ih-ʔa'
snowshoes 3SG-to-CJ-1SG-handle.compact.object:PERF
'I gave him a snowshoe'
- d. k'áʔ nihta'
k'áʔ n-ih-ta'
gun CJ-1SG-handle.sticklike:PERF
'I brought a gun'

5.3.1.1.2 d-classifier

The d-classifier actually never surfaces as phonetic *d-* in Tanacross but is represented here as such because of the voicing effect it has on stem-initial consonants.

The d-classifier triggers voicing of stem-initial fricatives, even though the d-classifier surfaces as phonetically voiceless.

(5.5) Fricative voicing following d-classifier

náʔitðet
 na-ná-in-t-ðet
 ITER-THM-2SG-D-stand
 ‘you are standing again’

The d-classifier merges with a stem-initial glottal fricative to yield a prenasalized alveolar stop. The verb stem meaning ‘singular walks’ occurs with Ø-classifier and initial glottal fricative in (5.6a). However, when this verb stem occurs with the *na-* iterative prefix in (5.6b), the d-classifier is required (see section 5.3.1.2.1 below). The classifier morpheme does not surface but is instead realized as a strengthening of the stem-initial consonant. That is, the *d-* merges with the stem *-haʔk* to yield *-ⁿdaʔk*.

(5.6) Merger of d-classifier and glottal fricative

- a. yihhaʔ
 ɣ-ih-haʔ
 PROG-1SG-walk
 ‘I’m walking along’
- b. taʔmâɣ natíhdaʔk
 taʔmâɣ na-té-ih-d-haʔk
 riverbank ITER-INCEP-1SG-D-walk
 ‘I’m walking along the river bank’ <2.65>

Most verbs with d-classifier are intransitive. Some examples are given below.

(5.7) Intransitive d-classifier verbs

- a. εtnəʔ
 ε-t-nəʔ
 PEG-D-drink
 ‘he is drinking’
- b. detsên εtčot
 detsên ε-t-čot
 duck PEG-D-shed.down.feathers
 ‘the ducks are loosing their feathers’ <4.99>

5.3.1.1.3 h-classifier

The h-classifier is the Tanacross reflex of PA *ɬ-. Except following the first person singular subject prefix, the h-classifier is realized phonetically as h-. The h-classifier merges with the first person singular subject prefix to form the portmanteau prefix εk- (see section 5.3.2.1 below). The h-classifier also affects voicing of stem-initial fricatives, which are consistently voiceless following the h-classifier.

Most h-classifier verbs are transitive, but intransitive h-classifier verbs also occur.

(5.8) Transitive h-classifier verbs

- a. yíhtsiʔ
 yi-h-tsiʔ
 4OBJ-H-make:PERF
 ‘he made it’
- b. ɬuʔg εht’éθ
 ɬuʔg ε-h-t’éθ
 fish PEG-H-fry:IMPF
 ‘he’s frying the fish’

- c. dεčot nektsart
 dε-čot n-εk-tsat
 RFLX-throat GEN-1SG:H-cut.quickly
 ‘I cut its throat’ <2.167>

Intransitive verbs occurring with the l-classifier include several verbs relating to weather phenomena.

(5.9) Intransitive h-classifier weather verbs

- a. εhčə
 ε-h-čə
 PEG-H-rain
 ‘it’s raining’
- b. εhts’eý
 ε-h-ts’eý
 PEG-H-windy
 ‘it’s windy’
- c. εhžátθ
 ε-h-žátθ
 PEG-H-snow
 ‘it’s snowing’

5.3.1.1.4 l-classifier

The l-classifier is both historically and synchronically analyzable as a portmanteau morpheme consisting of both d- and h- classifiers. Historically, d- and h- (PA *l-) could co-occur. Synchronically, we see that the same derivational process which derives d-classifier verbs from Ø-classifier verbs also derives l-classifier verbs from h-classifier verbs. The l-classifier merges with the first person singular subject prefix to form the portmanteau prefix εg- (see section 5.3.2.1 below).

In any case, verbs may occur with lexically specified l-classifier (glossed L below), with no synchronic derivational morphology. Both intransitive and transitive verbs may occur with the l-classifier.

(5.10) Intransitive l-classifier verbs

- a. niljet
 ni-l-jɛt
 THM-L-afraid
 ‘she’s afraid’
- b. ɣɛgtθɛɭ
 ɣ-ɛg-tθɛɭ
 PROG-1SG:L-run
 ‘I’m running’
- c. xuɣɛgtθ’ɛt
 xu-ɣ-ɛg-tθ’ɛt
 AREA-M-1SG:L-moves(non-control)
 ‘I fell down’

(5.11) Transitive l-classifier verbs

- č’ɛldzɛs
 č’ɛ-l-dzɛs
 INDEF-L-dance
 ‘she’s dancing (something)’

Verbs with the l-classifier include a number of intransitive verbs referring to properties.

(5.12) Property words with l-classifier

- a. ɛlkeɣ̆
 ɛlkeɣ̆
 PEG-L-tasty
 ‘it’s tasty’

- b. dɛlgeŷ
 dɛ-l-geŷ
 GEN-L-white
 ‘it’s white’

Many of the color words consist of verbs which occur with the l-classifier.

(5.13) Color term verbs with l-classifier

dɛltʼɛɭ	‘it is red’
dɛltθox	‘it is brown’
dɛldléʼts	‘it is blue’
dɛlgeŷ	‘it is white’

But compare *datzɛŷ* ‘it is black’, which occurs with the d-classifier.

The l-classifier also appears in middle voice constructions as the portmanteau reflex of h- and d-classifiers. Verbs which occur lexically with the h-classifier occur with the l-classifier in middle voice constructions, as described in the following section.

5.3.1.2 Derivational function of the classifiers

In addition to their lexical functions, the classifiers participate in highly productive derivational processes which are marked via changes in the classifier. The exact nature of these functions remains controversial, though many involve a rearrangement of verbal argument structure. This rearrangement has been described in terms of voice and valence (Rice 2000a) and in terms of transitivity (Kibrik 1993; 1996). The classifiers themselves cannot be assigned a particular

In Tanacross the reflexive and several other constructions which may be characterized as middle voice require the derivational use of the d-classifier.

There are also some aspectual prefixes which require the d-classifier. The derivational use of the d-classifier has the effect of voicing the lexical classifier. Regardless of the underlying classifier present in the underived verb, the derived middle voice form always has a voiced (d or l) classifier. The classifier changes associated with middle voice are shown below.

(5.15) Middle voice classifier changes

∅	→	d
d	→	d
h	→	l
l	→	l

The surface form of the classifier in such derived middle voice constructions depends on the original lexically-specified classifier. If a verb theme is lexically specified as having a voiced (*d* or *l*) classifier, the derivational use of the d-classifier is not detectable. If a verb theme is lexically specified as having an h-classifier, the derivational use of the d-classifier is reflected as portmanteau l-classifier. In order to distinguish the d-classifier itself from the morphological operation which voices the classifier, I refer to the latter with a capital letter D-.

Middle voice constructions which require D- include those which affect argument structure and those which affect verb aspect.

5.3.1.2.1.1 Argument-affecting middle voice constructions

A variety of middle voice constructions affect verbal argument structure. Some of these completely remove an argument, as with the passive. Others decrease transitivity by co-indexing two verbal arguments.

5.3.1.2.1.1.1 Passive middle

The passive middle construction, or simply passive, is extremely productive and may apply to nearly all agentive transitive verbs. The term ‘passive’ is potentially misleading, as the Tanacross passive is clearly not a prototypical Indo-European passive. The Tanacross passive suppresses the active subject and requires D-classifier morphology. The passive is a non-promotional construction in that the active object remains coded as the object of the passive verb. The passive is thus more of an impersonal construction which suppresses the subject argument but does not alter the case role of the object argument. It is functionally similar to the English impersonal ‘they’ construction (e.g., ‘they found the body on the beach’). The non-promotional passive is morphologically transitive but semantically intransitive. The object argument of the active verb remains the object of the passive verb. The presence of the D- morpheme in the passive construction is only detectable with verbs whose active forms occur with voiceless classifiers. For example, the verb ‘to shoot’ occurs with h-classifier in the active form (5.16a) and l-classifier in the passive form (5.16b).

not always. In any case the D- morpheme is required. Direct reflexives have co-referential subject and object and occur with the reflexive object pronoun *ʔede-*. The examples in (5.18) compare non-reflexive forms and direct reflexives with the same verb stem.

(5.18) Direct reflexives (with *ʔede-* reflexive prefix)

- a. *šits'ét* (transitive without D-)
š-i-ts'ét
 1SG-M-scratch
 'he scratched me'
- b. *ʔedetts'ét* (reflexive with D-)
ʔede-t-ts'ét
 RFLX-D-scratch
 'he's scratching himself' <4.97>
- c. *šdeðilk'áʔ* (1-classifier transitive)
š-de-ð-i-l-k'áʔ
 1SG-THM-CJ-2SG-L-shoot
 'you shot me' <3.81>
- d. *ʔedeðegk'áʔ* (reflexive with D-)
ʔede-de-ð-eg-k'áʔ
 RFLX-THM-CJ-1SG:L-shoot
 'I shot myself' <3.81>
- e. *ʔedeðegt'ih* (reflexive with D-)
ʔede-ð-eg-t'ih
 RFLX-CJ-1SG:L-classify.fire
 'I burned myself' <3.117>

Indirect reflexives have co-referential subject and postpositional object. The postpositional object is marked by the reflexive postpositional object pronoun *de-*.

(5.19) Indirect reflexives with D-

deɣah yihtsiɾ
 de-ɣah y-i-h-tsiɾ
 RFLX-for 4OBJ-M-H-make:PERF
 'he made it for himself'

The object in a reflexive construction may not always be explicitly marked via the reflexive object pronoun. In these covert reflexives (or middles) the object is understood as being co-referential with the subject.

(5.20) Covert reflexives (middles)

- a. tθ'ák k'éc'ektseɫ (transitive without D-)
 tθ'ák k'é-č'ε-ek-tseɫ
 dishes THM-INDEF-1SG:H-wash
 'I'm washing the dishes' <3.109>
- b. k'éc'egtseɫ (reflexive with D-)
 k'é-č'ε-eg-tseɫ
 THM-INDEF-1SG:L-wash
 'I'm washing (myself)' <3.109>

The D- is not used when the possessor of a postpositional object is co-referential the subject. Instead the possessor is marked by the *de-* possessor prefix (see section 4.4.1).

5.3.1.2.1.1.3 Reciprocal

Reciprocal constructions also require D-. When two or more semantic arguments of a verb act on each other, the object is marked with the reciprocal object pronoun *niɫ-* and the D- occurs.

(5.21) Direct reciprocal with D-

- a. xuniłxnatdeł
 xu-nił-x-n-γ-t-deł
 AREA-RECIP-HUM.PL-THM-CJ-D-pl.go
 ‘they are running together’
lit: ‘they are following each other’ <2.103>
- b. niłxnelʔéʔ
 nił-x-n-l-ʔéʔ
 RECIP-HUM.PL-THM-L-see:PERF
 ‘they saw each other’ <3.141>

The middle voice construction is also used when the subject and postpositional object are co-referential. The object of the postposition is marked by the reciprocal object pronoun *nił-*. This construction is sometimes called an indirect reciprocal.

(5.22) Indirect reciprocal

- a. nɣa tihtziʔ (∅-classifier transitive)
 n-ɣa t-ih-siʔ
 2SG-for THM-1SG-like
 ‘I love you’
- b. niłɣatts’etziʔ (reciprocal with D-)
 nił-ɣa t-ts’ε-t-zíʔ
 RECIP-for THM-1PL-D-like
 ‘we love each other’ <3.53>

5.3.1.2.1.1.4 Incorporated body part

The D- morpheme also occurs when the possessor of an incorporated noun referring to a body part is co-referential with the subject of verb into which the body part noun is incorporated. This can be viewed as a type of middle voice construction.

(5.23) Incorporated body part verbs with D-

ma' na'xnéđišžah
 m-a' na'x-ne-đ-iš-žah
 3SG-for eye-THM-CJ-1SG:D-go
 'I'm staring at him' *lit: 'I'm going with my eye on him'* <4.37>

5.3.1.2.1.1.5 Self-benefactives

Another type of middle voice construction occurs when the beneficiary of an action is co-referent with the subject. Usually the beneficiary is coded as the object of the benefactive postposition *a*, and co-reference is signaled via the use of the reflexive postpositional object pronoun *dε*-. The self-benefactive construction requires the D- morpheme. Thus compare the non-self-benefactive form in (5.24a), which occurs without the D-, with the self-benefactive form in (5.24b), which requires the D-.

(5.24) Comparison of self-benefactive and non-self-benefactive

- a. šíʔ ša' dɨht'éθ
 šíʔ š-a' dɨ-h-t'éθ
 meat 1SG-for GEN-2SG-H-fry:IMPF
 '(you) fry meat for me'
- b. šíʔ da' dεgt'éθ
 šíʔ d-a' d-εg-t'éθ
 meat RFLX-for GEN-1SG:L-fry:IMPF
 'I frying meat for myself' <5.25>

5.3.1.2.1.2 Aspectual middle voice constructions

There are several aspectual verb prefixes which require the D- morphology. These include the iterative prefix, the perambulative prefix and the errative prefix.

Constructions involving these aspectual prefixes differ from the middle voice

constructions described above in that they do not alter the argument structure of the verb. However, following Rice (2000a) it is possible to classify these aspectual constructions as middles based on their relatively low elaboration of events (see Kemmer 1993 for more on this approach to middle voice). All of these constructions refer to complex events, rather than to particular subevents.

5.3.1.2.1.2.1 Iterative

The iterative (ITER) aspect indicates a repeated or returning action, often glossed in English with ‘again’ or ‘back’. This construction is extremely common in Tanacross. The iterative is marked by the disjunct prefix *na-* and requires the D-morpheme. The iterative prefix is discussed further in section 5.4.1 below.

(5.25) Intransitive iterative with D-

- a. ts'eŷ ží naʔatkeʔ
 ts'eŷ ží na-y-it-keʔ
 boat in ITER-PROG-D-travel.by.boat
 ‘he’s coming back (down the river) in a boat’ <3.77>
- b. naʔitžah
 na-i-t-žah
 ITER-M-D-sg.go
 ‘he returned’

Sometimes the iterative prefix may be dropped, resulting in an iterative construction which is marked only by the D- morpheme.

(5.26) Omission of *na-* prefix in iterative construction

- a. á'z níxγitdeɬ
 á'z ní-x-γ-i-t-deɬ
 away:ABL TERM-HUM.PL-CJ-M-D-pl.go
 ‘they came back’
- b. dekey ts'ɣʔ xuxatdeɬ
 de-key ts'ɣʔ xu-x-a-t-deɬ
 RFLX-village to AREA-HUM.PL-CJ-D-pl.go
 ‘they went back to their village’ <5.35>

Note that in Tanacross the D- morpheme may occur with both transitive and intransitive verbs. This is in contrast to some other languages which require the D- only with intransitive verbs (cf. Rice 2000a).

(5.27) Transitive iterative with D-

našneɬʔéʔ
 na-š-n-el-ʔéʔ
 ITER-1SG-THM-L-see:PERF
 ‘he saw me again’ <5.11>

(5.28) Transitive iterative without D-

- a. dí'neðektɬ'u
 dí-na-ne-ð-εk-tɬ'u
 ADV-ITER-THM-M-1SG:H-tie:PERF
 ‘I tied it (dog) up again’
- b. nach'enih'étθ
 na-ch'e-n-ih-'étθ
 ITER-INDEF-M-1SG-step:PERF
 ‘I stepped on it again’

One semantic property which appears to distinguish the transitive iterative constructions without D- from those with D- is the affectedness of the agent argument. With transitive motion verbs the D- appears only when the object is

returned to the source with the subject. Thus the contrast between (5.29) and (5.30). The D- occurs only with the meaning that the object is returning with the agent.

(5.29) Transitive iterative without D-, unaffected agent

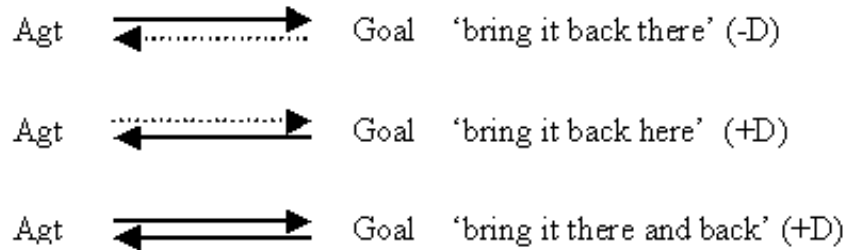
ežeg nīnihʔa'
 ežeg ní-na-n-ih-ʔa'
 there TERM-ITER-M-1SG-handle.cpt.object:PERF
 'I brought it back there'

(5.30) Transitive iterative with D-, affected agent

jah nanišʔa'
 jah na-n-iš-ʔa'
 here ITER-M-1SG:D-handle.cpt.object:PERF
 'I brought it back here'

This semantics of the affected agent parameter can be schematized as in the following diagram (suggested by Krauss, p.c.). The bold arrows represent presence of the object; dashed arrows represent absence of the object. Thus the first situation represents bringing an object to another location, leaving the object there, and then returning to the original location.

Figure 5.3: Representation of transitive iterative



An additional example of the alternation between transitive iterative with and without D- is found in (5.31). The first example (a) is the standard way of saying ‘goodbye’ in Tanacross. It includes the iterative and the D- morpheme. The second example (b) is nearly identical but lacks the D-. It differs from (a) in that there is an expectation that although the speaker will see the hearer again, the hearer will not see the speaker. In other words, the agent (speaker) is less affected in (b) than in (a).

(5.31) Transitive iterative with and without D-

- a. nantnegʒiʔ (with D-)
 na-n-t-n-εg-ʒiʔ
 ITER-2SG-INCP-THM-1SG:L-see:FUT
 ‘I’ll see you again’
- b. nantnekʒiʔ (without D-)
 na-n-t-n-εk-ʒiʔ
 ITER-2SG-INCP-THM-1SG:H-see:FUT
 ‘I’ll see you again [but you won’t see me]’

Similar alternations between transitive iteratives with and without D- have been reported for Koyukon as well (Eliza Jones & Michael Krauss, p.c.).

5.3.1.2.1.2.2 Perambulative

The perambulative (PRMB) aspect indicates an action or activity carried out in a wandering, aimless or directionless manner. The perambulative is marked by either the prefix *ʎo-* or the prefix string *na#t-*. The latter prefix requires the D-marker. It is not clear what governs the choice between the *ʎo-* and *na#t-* prefixes in Tanacross. Cognate prefixes also occur in the Mentasta dialect of Ahtna, where the alternation is conditioned by aspect: *na#t-* occurs in the imperfective and *ʎo-* occurs elsewhere (Kari 1990: 284).

(5.32) Perambulative marked by *ʎo-* (without D-)

ʎóʔá·haʔ
 ʎó-γ·haʔ
 PRMB-PROG-walk
 ‘he’s walking around’

(5.33) Perambulative marked by *na#t-* (with D-)

- a. nayitetluʔk
 na-yi-t-et-luʔk
 PRMB-4OBJ-PRMB-D-drag
 ‘a bear is dragging him around’ <3.109>
- b. nahʔôg nûʔn natelʔés
 nahʔôg nûʔn na-t-el-ʔes
 outside animals PRMB-PRMB-L-animal.walk
 ‘animals are walking around outside’ <3.28>

The perambulative aspect is discussed in more detail in section 5.4.3 below.

5.3.1.2.1.2.3 Errative

The errative (ERR) aspect is marked by the prefix *n-* and requires the D-morpheme. The errative indicates that a mistaken or unintentional action with

h-classifier as a “causativizer” morpheme, though as noted above, many verbs occur lexically with the l-classifier even though they are not causatives.

(5.35) Causative classifier changes

∅	→	h
d	→	h
h	→	h
l	→	h

The causative construction is moderately productive, though many verb stems have a lexicalized alternation between non-causative and causative forms.

Causatives may be derived from both intransitive and transitive verbs.

5.3.1.2.2.1 Causatives of intransitives

Many intransitive verbs can participate in the causative construction. The derived causative verb is transitive. The subject of the causative construction refers to the causer, and the direct object of the causative construction refers to the causee.

Semantically, the causee may be patient or agent. In the causative construction intransitive verbs referring to actions and events generally have the meaning ‘cause Obj to V (action)’ or ‘cause V (event) to happen to Obj’. In each of the following examples a non-causative form is followed by a causative form of the same verb stem.

(5.36) Causatives of active intransitives

- a. i) né'ẓ̌ə'
 n-é'-ẓ̌ə'
 THM-M-grow
 'he grew up' (Ø-classifier)
- ii) neðekẓ̌ə'
 ne-ð-ekẓ̌ə'
 THM-CJ-1SG:H-grow
 'I raised him/her' <3.107>
- b. i) εmets
 ε-me'ts
 PEG-boil
 'it's boiling' (Ø-classifier)
- ii) yihme'ts
 yi-h-me'ts
 4OBJ-H-boil
 'he is boiling it'
- c. i) kónʔ néldzey
 kónʔ n-el-dzey
 fire GEN-L-shine
 'the fire is lit' (l-classifier)
- ii) kónʔ níhdzey
 kónʔ n-in-h-dzey
 fire GEN-2SG-H-shine
 '(you) light the fire' <3.57>
- d. i) e'geŷ
 e'-geŷ
 M-dry
 'it is dry' (Ø-classifier)
- ii) č'eðéθ yókgey
 č'e-ðéθ yo-ek-gey
 INDEF-skin OPT-1SG:H-dry
 'I'm gonna dry the skin' <3.5>

- e. i) tuṛ nadetl'ít
 tuṛ na-de-tl'ít
 water down-GEN-spill
 'water spilled' <5.23> (Ø-classifier)
- ii) tuṛ nadeðihl'ít
 tuṛ na-de-ð-ì- h-tl'ít
 water down-GEN-CJ-2SG-H-spill
 'you spilled the water' <4.37>

Intransitive verbs referring to states may also participate in the causative construction. In the causative construction these verbs are transitive and generally have the meaning 'keep Obj in V (state)'.

(5.37) Causatives of stative intransitives

- a. yindá?
 y-in-dá?
 CJ-M-stay
 'he stayed' (Ø-classifier)
- b. jeý yihdá?
 jeý y-ì-h-dá?
 mittens CJ-M-H-stay
 'he left his mittens' <3.75>

There appears to be no restriction on the semantic role of the causee in the causative construction. Tanacross differs in this respect from other Athabaskan languages which do not permit causatives of agentive intransitive verbs (e.g., Slave, see Rice 2000a).

5.3.1.2.2.2 Causatives of transitives

Transitive verbs may also participate in the causative construction. The resulting causative is transitive. The subject of the causative verb refers to the causer, and

the oblique postpositional object refers to the causee. The referent of the direct object is unchanged.

(5.38) Causatives of transitives

- a. č'ih-ʔáʔ
 č'ε-ih-ʔáʔ
 INDEF-1SG-eat
 'I am eating (something)' (∅-classifier)
- b. me č'ekʔáʔ
 m-e č'ε-εk-ʔáʔ
 3SG-to INDEF-1SG:H-eat
 'I am feeding (something) to him' (h-classifier)
- c. k'éč'εðégtseʔ
 k'é-č'ε-ð-égtseʔ
 THM-INDEF-CJ-1SG:L-wash
 'I'm taking a bath' (l-classifier)
- d. ts'enî'n gary k'éč'εðéktseʔ
 ts'enî'n gary k'é-č'ε-ð-ék-tseʔ
 baby THM-INDEF-CJ-1SG:H-wash
 'I'm giving the baby a bath' (h-classifier)

5.3.1.3 Interaction between middle voice and causative

It is possible for the middle and causative constructions to co-occur. When a middle is built from a causative construction, the resulting verb occurs with the l-classifier. This can be explained as a case of successive derivation. The underlying causative construction requires an h-classifier. The middle requires the D- morpheme, which when applied to a form with the h-classifier results in an l-classifier verb. The example in (5.39) shows this process for a passive built upon a passive construction.

(5.39) Passive of causative

- a. teyišdek (d-classifier)
te-γ-iš-dek
THM-CJ-1SG:D-tired
'I'm tired'
- b. tenyekdek (h-classifier causative)
te-n-γ-ek-dek
THM-2SG-CJ-1SG:H-tired
'I tired you out'
- c. tenyeldek (l-classifier passive of causative)
te-n-γ-el-dek
THM-2SG-CJ-L-tired
'you got tired out'

5.3.1.4 Classifier summary

The general properties of the Tanacross classifiers appear to be much the same as those described for other Athabaskan languages. Every verb is lexically specified for one of four classifier morphemes (including \emptyset) which occur immediately preceding the verb root. Verbs can thus be divided into four classes according to which classifier they occur with. However, these classes have little if any semantic correlates. In Tanacross there is a major phonological distinction between voiced (d- and l-) and voiceless (h-) classifiers. The voiceless h-classifier consistently blocks voicing of stem-initial fricatives.

In addition to their lexical properties, the classifier morphemes function derivationally to mark voice/valence. The d-classifier occurs with transitivity-decreasing middle voice constructions, including passives, reciprocals, reflexives, body-part incorporates, self-benefactives, and the iterative, perambulative and

errative aspectual constructions. The h-classifier occurs with valence-increasing causative constructions.

5.3.2 Subject

Immediately preceding the classifier is the subject position. Morphemes in this position are sometimes referred to as ‘inner subjects’ to distinguish them from other subject-like morphemes occurring in the pronominal position, among the leftmost of the conjunct verb prefixes. However, only the inner subjects are true subject pronominals, obligatorily cross-referencing both person and number of the subject argument.

Three prefixes may occur in this position, corresponding to first person singular, second person singular, and second person plural. Any verb which has a first person singular, second person singular, or second person plural subject argument is obligatorily inflected with one of these subject prefixes. Conversely, verbs which lack a first person singular, second person singular, or second person plural subject argument do not include a prefix in the subject position and are thus said to have \emptyset -subject (see section 5.3.2.4 below).

The subject prefixes combine with the following classifier prefix to form portmanteau subject-classifier prefixes, as shown in Table 5.1.

Table 5.1: Subject-classifier prefixes

		CLASSIFIER			
		∅-	d-	h-	l-
SUBJECT	1SG	ih-	iš-	εk-	εg-
	2SG	in-	it-	ih-	il-
	2PL	ah-	at-	ah-	al-

As with all eleven Alaska Athabaskan languages, Tanacross does not exhibit a reflex of the PA *i'-D first person duoplural subject prefix.² Instead, first person plural is marked via the impersonal prefix *ts'ε-* (see section 5.3.5.1.1 below).

Third person is not marked on the verb, though third plural may be indicated via the human plural number prefix *xε-*.

5.3.2.1 First person singular *ih-*

The first person singular pronominal prefix is *ih-*. This prefix takes on irregular forms preceding non-zero classifiers. As discussed in section 5.3.1.1.3, the first person prefix combines with the *h*-classifier to form the portmanteau *εk* subject-classifier prefix. The origins of this rather odd first person singular form are discussed at length by Krauss (1977a). With the compound *l*-d-classifier the first person singular has the form *εg-*.

(5.40) First person singular subject-classifier prefixes

- a. *ihtsax*
 ih-tsax
 1SG-cry
 'I'm crying'

- b. išna'
 iš-na'
 1SG:D-drink
 'I'm drinking'
- c. ɭʉg ɛkt'ɛθ
 ɭʉg ɛk-t'ɛθ
 fish 1SG:H-fry
 'I'm frying fish'
- d. náʔɛgzéx
 ná-ɛg-zéx
 THM-1SG:L-hunt
 'I'm hunting'

The first person singular prefix blocks voicing of stem-initial fricatives when the stem immediately follows the subject prefix (i.e., with the Ø-classifier).

(5.41) Blocking of fricative voicing with first person singular

ihsʉ
 ih-sʉ
 1SG-fine
 'I'm fine'

5.3.2.2 Second person singular *in-*

The second person singular pronominal prefix is *in-*. The final *n* of the second person singular is absorbed preceding a non-zero classifier. Nasalization is retained preceding the h-classifier but not preceding the voiced (d- and l-) classifiers.

(5.42) Second person singular subject prefix

- a. intsax
 in-tsax
 2SG-cry
 'you're crying' (Ø-classifier)

- b. itna'
in-t-na'
 2SG-D-drink
 'you're drinking' (d-classifier)
- c. łurg iħt'éθ
 łurg **in**-h-t'éθ
 fish 2SG-H-fry
 'you're frying fish' (h-classifier)
- d. náʔilzéx
 ná-**in**-l-zéx
 THM-2SG-L-hunt
 'you're hunting' (l-classifier)

When no classifier is present the second person singular subject prefix consonant-final form of the second person subject prefix may alternate with a long nasalized vowel *ī*-. This is especially true preceding alveolar consonants, as in (5.43).

(5.43) Nasalization of second person singular subject prefix

nts'é t'ɿt'eh
 nts'é t'-ī-t'eh
 what THM-2SG-be
 'how are you?'

Also, *ītsax* 'you're crying' is an acceptable alternate form of (5.42a) above. The following are some additional examples of the second person singular subject prefix with Ø-classifier verbs.

(5.44) Second person singular subject (Ø-classifier)

- a. utθi? ínkɛt
 u-tθi? in-kɛt
 3SG-head-POSS 2SG-pat
 '(you) pat his head!'

- b. náʒinðet
 ná-in-θet
 THM-2SG-stand
 ‘(you) stand up!’

The following are some additional examples of the second person singular subject prefix with non-zero classifier verbs.

(5.45) Second person singular subject (non-zero classifiers)

- a. č’itna’ (d-classifier)
 č’ε-in-t-na’
 INDEF-2SG-D-drink
 ‘you’re drinking’
- b. žax xnihtθux (h-classifier)
 žax x-n-in-h-tθux
 house AREA-M-2SG-H-chink
 ‘you’re chinking the house’
- c. néðilts’εtł (l-classifier)
 né-ð-in-l-ts’εtł
 THM-CJ-2SG-L-shut.eyes
 ‘shut your eyes!’

The second person singular prefix triggers voicing of stem-initial fricatives when the stem immediately follows the subject prefix (i.e., with the Ø-classifier).

(5.46) Fricative voicing with second person singular

inzɥ’
 in-sɥ’
 2SG-fine
 ‘you’re fine’

5.3.2.3 Second person plural *ah-*

The second person plural subject prefix is *ah-*. The consonant of this prefix is deleted before a non-zero classifier. The morphophonemics of this prefix are

entirely parallel to those of the second person singular, except there is no nasalization in preceding the h-classifier.

(5.47) Second person plural subject prefix

- a. ahtsax
ah-tsax
 2PL-cry
 ‘y’all are crying’ (Ø-classifier)
- b. atnaʔ
ah-t-naʔ
 2PL-D-drink
 ‘y’all are drinking’ (d-classifier)
- c. ʔurg ahtʔéθ
 ʔurg **ah**-h-tʔéθ
 fish 2PL-H-fry
 ‘y’all are frying fish’ (h-classifier)
- d. náʔalzéx
 ná-**ah**-l-séx
 THM-2PL-L-hunt
 ‘y’all are hunting’ (l-classifier)

Due to the deletion of the final consonant preceding non-zero classifiers, there is no distinction between Ø-classifier and h-classifier forms with the second person plural subject prefix.

The second person plural prefix blocks voicing of stem-initial fricatives when the stem immediately follows the subject prefix (i.e., with the Ø-classifier).

(5.48) Blocking of fricative voicing with second person plural

ahsʉʰ
 ah-sʉʰ
 2PL-fine
 ‘y’ all are fine’

5.3.2.4 Ø-subject

The absence of an inner subject (first person singular, second person singular, or second person plural) prefix is often referred to in Athabaskan linguistics as a Ø-subject or third person subject. However, there is no morpheme which explicitly cross-references third person singular subject. Third person referents are not obligatorily marked on the verb, and both the impersonal marker *tsʰe-* and the human plural marker *xε-* can co-occur with the Ø-subject. Nor can third person be considered a true morphological zero, in that it does not correspond to a meaningful absence of another morpheme.

However, the concept of Ø-subject serves as a useful heuristic for describing the morphophonemic interaction between conjugation/mode prefixes and the classifier. When no subject prefix is present, the conjugation/mode prefixes occur immediately adjacent to the classifier prefix, which often leads to modifications of the mode prefix. These modifications are most easily described by referring to this absence paradigmatically, thus the label Ø-subject.

The minimal verb word requires two syllables, yet most Tanacross verb stems consist of only a single syllable. When no other conjunct prefixes are present, a prothetic ‘peg’ prefix occurs in subject position in Ø-subject forms.³

(5.49) Prothetic ϵ - with Ø inner subject prefix

Ø-classifier	ϵ -Ø-tsax	‘he’s crying’
d-classifier	ϵ -t-naʔ	‘he’s drinking (object)’
h-classifier	ϵ -h-tsʔeŷ	‘it’s windy’
l-classifier	ϵ -l-kɛŷ	‘it’s sweet’

The Ø-subject may co-occur with outer subject prefixes. Phonologically, there is no difference between the ‘zero’ present before the classifier in third person subjects and that present with outer subjects such as human person plural *xɛ-*.

(5.50) Zero-subject with and without outer subject prefix

- a. ϵ tsax
 ϵ -tsax
 PEG-cry:IMPF
 ‘s/he crys’
- b. xɛtsax
 xɛ-tsax
 HUM.PL-cry:IMPF
 ‘they cry’

Cross-referencing of non-human third person plural subject is also not obligatory.

(5.51) Non-human plural subject not cross-referenced

- a. yaʔθén denîŋ ahʔés
 yaʔθén denîŋ ɣ-h-ʔés
 down.there moose PROG-H-animal.walk:IMPF
 ‘moose are walking around down there’

- b. čɛt'ǎʔ dél̥tθox
 čɛ-t'a-éʔ d-é-l-tθox
 INDEF-leaf-POSS GEN-M-L-yellow
 'the leaves are yellow'

5.3.2.5 Syntactic status of subject prefixes

The syntactic status of subject prefixes is a matter of some debate within Athabaskan linguistics. One point of view represents subjects as agreement, interpreting the lack of co-indexed nominals as instances of pro-drop (cf. Rice & Saxon 1994). An alternate point of view considers the subject prefixes themselves to be arguments of the verb, with co-indexed nominals occurring as adjuncts (cf. Sandoval & Jelinek 1989). It is of course possible that both patterns occur in different members of the language family. The facts of Tanacross appear to be more consistent with the pronominal argument interpretation. While not wishing to argue explicitly for their interpretation, I cite the relevant data below.

In Tanacross there are independent subject pronouns in addition to the subject prefixes. These subject pronouns always have a contrastive or emphatic reading.

(5.52) Independent pronouns with contrastive/emphatic reading

- a. dó' č'ɛ lurg ɛht'éθ
 dó' č'ɛ lurg ɛ-h-t'éθ
 who FOCUS fish PEG-H-cook:IMPF
 'who is it that's cooking the fish?'

- b. šir ekt'éθ
 šir ek-t'éθ
 I 1SG:H-cook:IMPF
 'I'm cooking'

In particular, sentences with two independent pronouns are not possible, since it is not possible to contrastively focus both subject and object arguments. Thus, phrases such as that in (5.53) are not possible.

(5.53) Two independent pronouns not possible

- *šir nén nekʔéh
 šir nén n-ek-ʔéh
 1SG 2SG THM-1SG:H-see'IMPF
 'I see you'

Also, there is no pleonastic subject pronoun in Tanacross. Verbs with impersonal subjects cannot occur with an independent pronoun.

(5.54) No pleonastic subject pronoun

- *dí' ehčə'
 dí' ε-h-čə'
 3SG PEG-H-rain
 *'it's raining', ?? 'he's raining'

Were Tanacross subject prefixes mere agreement markers we would expect forms such as (5.53) and (5.54) to be possible. In contrast, the unacceptability of such forms is readily explained if the subject prefixes themselves are interpreted as pronominal arguments. Addition of an independent pronoun in these contexts is then syntactically redundant and hence unacceptable.

5.3.3 Conjugation and mode

The two prefix positions immediately to the left of the subject prefix together mark mode. The conjugation prefix may have one of three values: n-, ð-, ʁ-. Absence of a conjugation prefix is usually referred to as a Ø- conjugation prefix. The mode prefix may have one of three values: ĩ-, ʁu-, í-, corresponding to perfective, optative, and negative mode, respectively. Absence of a mode prefix, usually denoted by Ø-, corresponds to imperfective mode (though see Sharon Hargus & Tuttle 1997 for an alternate view). Conjugation and mode prefixes are usually tightly fused but in most cases remain synchronically analyzable as two morphemes.

Table 5.2: Conjugation and mode prefixes

conjugation	mode
Ø-	Ø-
n-	ĩ-
ð-	ʁu-
ʁ-	í-

Not all combinations of the conjugation and mode prefixes occur, due to the fact that the optative and negative modes do not distinguish between conjugation markers. The ten conjugation and mode prefix combinations which do occur are list in Table 5.3 below.

Table 5.3: Combinations of conjugation and mode prefixes

conjugation prefix	mode prefix	name of mode
Ø-	Ø-	Ø-imperfective
n-	Ø-	n-imperfective
ð-	Ø-	ð-imperfective
ɣ-	Ø-	progressive/future
Ø-	i-	Ø-stative imperfective
n-	i-	n-perfective/n-stative imperfective
ð-	i-	ð-perfective/ð-stative imperfective
ɣ-	i-	ɣ-perfective
Ø-	ɣu-	optative
Ø-	í-	negative

The conjugation and mode prefixes comprise one of the most complex areas of verb prefix morphology in Athabaskan languages. As used in Athabaskan linguistics, mode is a purely structural term, not to be confused with notional mode. The prefixes occurring in this position include markers of aspect, tense and negation, though Axelrod (1990a) notes that all mode markers can be conceived of as modal, in the sense that they distinguish between realis and irrealis. For the purposes of description, I will continue to use the term mode in the structural sense.

Mode prefixes do in general function to indicate notional mode, though this is not always the case. For example, stative verbs use the perfective mode marker in both imperfective and perfective modes (see section 5.3.3.3). Even within Athabaskan linguistics, the term mode is used in two senses to refer both to structural mode and notional mode.

While it is clear that the conjugation prefix is separable from the mode prefix, it can be difficult to assign a meaning to the conjugation prefix independent of the mode prefix. The choice of conjugation marker is governed by the lexical semantics of the verb, and certain verb prefixes and verb aspects require a particular conjugation marker. In this respect conjugation prefixes do indeed function to demarcate conjugation classes. However, in some cases the choice of conjugation prefix corresponds to an aspectual meaning. Krauss (1969) describes these meanings in PA:

“*ni-* has the marked meaning ‘to a point, completive,’ *ghi-* [Tanacross γ -] has the marked meaning ‘from a point, inceptive,’ and *si-* [Tanacross δ -] is unmarked in this respect, ‘static’.”

The presence of a particular combination of conjugation and mode prefix is reflected maximally in the morphology as a single syllable; sometimes only a single phoneme; and sometimes only via phonological modification of adjacent morphemes. Conjugation and mode prefixes together form what are loosely referred to as modes, denoted by hyphenated labels such as ‘n-imperfective’, referring to the *n-* conjugation marker with the imperfective mode marker (see Table 5.3). It is these (historically) poly-morphemic conjugation-mode prefixes which I discuss in this section.

Mode prefixes by themselves do not encode mode or aspectual information but rather must occur together with a particular form of the verb stem.

Thus, imperfective aspect is doubly marked by an imperfective mode marker and an imperfective form of the stem.⁴ For example, the Tanacross verb meaning ‘to fry’ has an imperfective stem variant *-t’éθ* and a perfective variant *-t’eh*.

Furthermore, for a given verb, different conjugation markers may occur with the imperfective and perfective forms. In the case of ‘to fry’, the imperfective occurs with the \emptyset -conjugation marker, and the perfective occurs with the δ -conjugation marker.

(5.55) Comparison of imperfective and perfective conjugations of ‘to fry’

- a. łurg iħt’éθ
 łurg in-h-t’éθ
 fish 2SG-H-fry:IMPF
 ‘you’re frying the fish’
- b. łurg điħt’eh
 łurg đ-in-h-t’eh
 fish M-2SG-H-fry:PERF
 ‘you fried fish’

The patterning of conjugation markers and aspects for a particular verb is often diagnostic of membership in larger aspectual categories.⁵

With respect to mode morphology, Tanacross verbs can be divided into two major categories: active and stative. As the labels suggest, these categories also reflect differences in lexical aspect. Active verbs refer to events; stative verbs refer to states or properties. Stative verbs are discussed separately as they behave somewhat differently than do active verbs with respect to conjugation and mode marking. In particular, while active verbs use the *i-* perfective mode prefix to

mark the perfective mode, stative verbs use the *i*- prefix in both perfective and imperfective modes. The stative imperfective form is structurally identical to the active perfective form.

5.3.3.1 Imperfective mode

The active imperfective mode denotes an activity which is ongoing and not completed. Speakers most often translate this mode with English present tense.

The imperfective mode is marked by a combination of the imperfective stem variant and the absence of the perfective mode prefix *i*-, treated here as a meaningful zero. In addition, one of the three conjugation prefixes may be present.

5.3.3.1.1 The Ø-imperfective

The Ø- (zero) conjugation marker is by far the most common conjugation marker occurring with the imperfective mode. The Ø-imperfective mode is marked by the absence of both a conjugation prefix and a perfective prefix, thus in most cases, the Ø-imperfective has no phonetic form, regardless of which prefixes precede or follow it. The Ø- conjugation prefix is a true morphological zero, in that it corresponds to the meaningful absence of a conjugation prefix. The phonology of the Ø- conjugation prefix in the imperfective mode is fairly straightforward.

In word-initial position, i.e., when no prefixes precede the conjugation/mode prefix positions, the \emptyset - conjugation prefix has no phonetic form.

(5.56) \emptyset -imperfective in word-initial position followed by subject prefix

ɬʉg ihʔá	‘I eat the fish’
ɬʉg inʔá	‘you eat the fish’
ɬʉg ahʔá	‘y’all eat the fish’

When no inner subject prefix is present, i.e., when the \emptyset -imperfective is immediately followed by a classifier prefix, the peg prefix ε - occurs as the nucleus of the pre-stem syllable, since all verbs require a pre-stem syllable.

(5.57) \emptyset -imperfective in word-initial position followed by classifier prefix

ɬʉg ε ʔá	‘s/he eats the fish’
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When preceded by a disjunct prefix the \emptyset -imperfective has no phonetic form.

(5.58) \emptyset -imperfective following a disjunct prefix

talʔók
ta-l-ʔók
water-L-float
‘he swims’

When preceded by a conjunct prefix the \emptyset -imperfective has no phonetic form.

However, the vowel of the preceding conjunct prefix may be deleted when a subject prefix is present.

(5.59) \emptyset -imperfective following a conjunct prefix

ɬʉg ts’ ε ʔá	‘we eat the fish’
ɬʉg x ε ʔá	‘they eat the fish’

5.3.3.1.2 The γ -imperfective

The γ -imperfective mode is used to form two different aspects: progressive and future. Both require the future mode stem variant. Without the inceptive prefix, the γ -imperfective forms the progressive mode; with the inceptive prefix, the γ -imperfective forms the future mode.

5.3.3.1.2.1 The γ -imperfective progressive

The γ - conjugation marker together with the future mode stem variant forms the progressive mode, signifying an action which is in the process of being carried out, similar to the English present progressive tense. The γ - conjugation prefix is regularly deleted in forms with zero inner subject, undergoing vocalization to a low vowel *a*.

(5.60) Progressive paradigm for \emptyset -ha' 'sg. go'

γ ihhaʔ	'I'm going'
γ inhaʔ	'you're going'
a'haʔ	's/he is going'

(5.61) Progressive paradigm for \emptyset -deʔ 'pl. go'

ts'a'déʔ	'we're going'
γ ahdéʔ	'you guys are going'
xa'déʔ	'they're going'

5.3.3.1.2.2 The γ -imperfective future

When used with the inceptive prefix *te-* (see section 5.3.4.2 below), the γ -conjugation marker and the future stem variant form the future mode. Areally,

Tanacross appears to be at a crossroads with respect to the overt appearance of the γ - conjugation marker in the future mode (John Ritter, p.c.). Languages to the north and east, including Upper Tanana, Han, Tutchone, and Gwich'in, completely lack overt γ - in the imperfective mode, even with the progressive. Compare for example Tanacross *yihhaʔ* 'I am going' (PROG) with Upper Tanana *ihhaʔ*. On the other hand, languages to the west retain the γ - conjugation marker in the imperfective future. For example, consider the Dena'ina example below.

(5.62) Dena'ina γ -imperfective future (Tenebaum 1978: 105)

tyičey
 t- γ e-n- \emptyset -čey
 INCEP-CJ-2S- \emptyset -cry
 'you will cry'

Tanacross also usually lacks the γ - conjugation marker in γ -imperfective future forms. Thus compare the following Tanacross example with the Dena'ina example above.

(5.63) Deletion of Tanacross γ - conjugation marker in future mode

tintseʔ
 t- γ -in-tseʔ
 INCEP-CJ-2SG-cry
 'you will cry'

However, Tanacross forms with and without the γ - may alternate in verbs with non-zero inner subject prefix. Thus, the conjugation marker in the Tanacross γ -imperfective future is unstable, sometimes deleting as in languages to the east and sometimes being retained as in languages to the west. The factors

conditioning this dialectal or idiolectal alternation are not fully understood. When no inner subject prefix is present, the γ - probably always undergoes vocalization $\gamma > a$ as it does in the γ -imperfective progressive. In forms with an inner subject prefix, γ - may or may not be present. For example, at least for some speakers both *utihké't* and *uteyihké't* are acceptable for 'I will buy it'. It appears that the γ - is more likely to be retained when another prefix intervenes between the inceptive *te-* and the conjugation marker, as in the following example.

(5.64) Retention of conjugation marker in γ -imperfective future

č'utde γ iškét
 č'-u-t-de- γ -iš-két
 INDEF-THM-INCEP-THM-CJ-1SG:D-buy:FUT
 'I'll buy something for myself'

In general, there appears to be a preference for forms which lack the γ -. Some example paradigms are given below.

(5.65) Future paradigm for Ø-ha' 'sg. go'

tihhaʔ 'I will go'
 tinhaʔ 'you will go'
 ta'haʔ 's/he will go'

(5.66) Future paradigm for Ø-deʔ 'pl. go'

tsa'dél 'we will go' (ts'ε + t > ts)⁶
 ta'dél 'you guys will go'
 xta'dél 'they will go'

The forms in (5.65) and (5.66) follow the vocalization rule by which $\gamma > a$ following a disjunct Cε prefix; this vowel is subsequently deleted preceding an inner subject prefix (see Leer 1977). The existence of forms which retain the γ -

alongside forms which do not indicate that this vocalization rule is not always obligatory in forms having an inner subject prefix. However, the less conservative forms without the γ - are always possible and I have standardized to those forms in the remainder of this document. A complete description of the constraints on presence of the conjugation marker in the γ -imperfective future must await further study.

5.3.3.2 Perfective mode

The perfective mode denotes an activity which is completed or has a defined endpoint. The perfective mode is marked by a combination of the perfective stem variant and the perfective mode prefix $\dot{\imath}$ - (< PA $*\dot{\imath}$ -). The perfective mode requires one of three non-zero conjugation prefixes: n-, γ , or δ . The \emptyset - conjugation prefix may also occur with the perfective prefix, but only with semantically imperfective stative verbs. Stative verbs are discussed separately in section 5.3.3.3.

The morphology of the perfective mode and the perfective mode prefix is extremely complex. The mode prefix may be entirely absent in some cases, or its presence may be reflected only in the presence of high tone on an adjacent vowel. The general pattern of the conjugation prefixes and the perfective prefix in the perfective mode can be summarized as follows.

The conjugation prefix is deleted following a conjunct prefix. The conjugation prefix is also deleted with zero inner subject and voiced classifiers. With the δ -perfective mode the conjugation prefix is deleted before both voiced and voiceless classifiers with zero inner subject.

The perfective prefix is deleted before an inner subject. With zero inner subject, the perfective prefix is not always present in its full form i -, but some reflex of the perfective prefix is detectable in all perfective mode forms with zero inner subject.

In the subsections below I discuss n -perfective, γ -perfective and δ -perfective modes in turn.

5.3.3.2.1 The n -perfective

The n -perfective mode has a completive or terminative meaning. The n -perfective mode is marked by the n - conjugation prefix, but the presence of the i - perfective prefix is detectable only in a few forms. Only in the zero subject forms with voiceless classifiers is the presence of both the n - conjugation prefix and the i - perfective prefix detectable. All other forms deleted either the conjugation prefix or the mode prefix.

Table 5.4: n-perfective conjugation-mode-subject-classifier prefixes

	Ø-	d-	h-	l-
1SG	nih-	niš-	nek-	neg-
2SG	nin-	nit-	nɪh-	nil-
2PL	nah-	nat-	nah-	nal-
Ø-	nin-	it-	nɪh-	il-

In word-initial position or following a disjunct prefix, the perfective prefix in the n-perfective mode is regularly deleted preceding inner subjects. The portmanteau conjugation-mode prefix with inner subjects is thus *n-*. The examples below show the *n-* conjugation prefix with first person singular inner subject in word-initial position (5.67a) and following the disjunct prefix *né-* (5.67b).

(5.67) Word-initial n-perfective followed by inner subject prefix

- a. nihžah
 n-ɪ-ih-žah
 CJ-PERF-1SG-go:PERF
 ‘I arrived’
- b. nénihžah
 né-n-ɪ-ih-žah
 TERM-CJ-PERF-1SG-go:PERF
 ‘I arrived’

When no inner subject prefix is present, the morphology of the n-perfective mode is somewhat more complex. With voiced (d- and l-) classifiers the conjugation prefix *n-* is deleted, and the mode prefix surfaces as an oral vowel. No nasalization is present. For example, in (5.68) the *n-* conjugation prefix is deleted following the disjunct prefix *na-*, and no nasalization is present on the

perfective mode prefix. Glottal stop is inserted by regular rule since a vowel follows the disjunct boundary.

(5.68) n-perfective with zero-subject, voiced classifier

naʔitʒah (d-classifier)
 na-i-t-žah
 ITER-M-D-sg.go
 ‘he arrived back’

With voiceless (\emptyset - and h-) classifiers both the conjugation prefix and the mode prefix are retained. Preceding the \emptyset -classifier the perfective mode prefix has the form *in-* (5.69a), while preceding the h-classifier the perfective mode prefix has the form *i-* (5.69b).

(5.69) Word-initial n-perfective with zero-subject, voiceless classifier

- a. ninžah (\emptyset -classifier)
 n-i-žah
 CJ-PERF-go:PERF
 ‘he arrived’
- b. ĩr nihte’ (h-classifier)
 ĩr n-i-h-te’
 dog CJ-M-H-handle.animate:PERF
 ‘he arrived with the dog’

5.3.3.2.2 The γ -perfective

The γ -perfective mode denotes the perfective aspect of a punctual or bounded activity with a well-defined beginning and end point. It is marked by the γ -conjugation prefix and the *i-* perfective mode prefix. The behavior of the conjugation and perfective prefixes in the γ -perfective mode parallels that in the

n-perfective mode to a large extent. As with the n-perfective mode, the presence of the *i*- perfective prefix is detectable only in a few forms. However, in contrast to the n-perfective, the *ɣ*- conjugation prefix is detectable (word-initially) in all forms. In zero subject forms with voiced classifiers, the presence of the *ɣ*-conjugation prefix is realized as *ɣ*-vocalization.

Table 5.5: *ɣ*-perfective conjugation-mode-subject-classifier prefixes

	∅-	d-	h-	l-
1SG	ɣih-	ɣiš-	ɣek-	ɣeg-
2SG	ɣin-	ɣit-	ɣih-	ɣil-
2PL	ɣah-	ɣat-	ɣah-	ɣal-
∅-	ɣin-	at-	ɣih-	al-

In word-initial position or following a disjunct prefix, the *ɣ*- conjugation prefix is found in all forms except preceding a voiced classifier with zero inner subject. Preceding a voiced classifier the *i*- perfective prefix is deleted and the *ɣ*-conjugation prefix undergoes ‘vocalization’ to *a*-, as in the *ɣ*-imperfective mode. The perfective prefix is deleted everywhere except immediately preceding a voiceless classifier (i.e., with a voiceless classifier and zero inner subject).

(5.70) *ɣ*-perfective with inner subject prefix

šíʔ ɣihʔáʔtʃ
 šíʔ ɣ-ih-ʔáʔtʃ
 meat CJ-1SG-eat:PERF
 ‘I ate the meat’

When no inner subject prefix is present, the *i*- perfective prefix is retained preceding voiceless classifiers and deleted preceding voiced classifiers. The *ɣ*-

conjugation prefix is retained with voiceless classifiers, and the perfective prefix is realized as *in-* before the \emptyset -classifier and as *i-* before the h-classifier.

(5.71) γ -perfective with zero-subject prefix, voiceless classifier

- a. γ indlok (Ø-classifier)
 γ -in-dlok
 CJ-PERF-laugh
 ‘s/he laughed’
- b. \check{s} udi γ ihké’t (h-classifier)
 \check{s} -u-di- γ -i-h-ké’t
 1SG-THM-THM-CJ-M-H-ask:PERF
 ‘he asked me’
- c. γ ihjet (h-classifier)
 γ -i-h-jet
 CJ-PERF-H-rot
 ‘it rotted’ <2.111>

The perfective prefix is deleted with voiced classifiers, and the γ - conjugation prefix undergoes γ -vocalization, realized as the low vowel *a-*.

(5.72) γ -perfective with zero-subject prefix, voiceless classifier

- \check{c} aldzí’ts (l-classifier)
 \check{c} -a-l-dzí’ts
 INDEF-CJ-L-dance:PERF
 ‘s/he danced’

Following a conjunct prefix, the γ - conjugation marker is regularly deleted in the γ -perfective mode throughout the paradigm. However, the deletion of the γ - conjugation prefix must occur only after γ -vocalization has applied. This is evident in (5.71), where γ -vocalization has occurred following a conjunct prefix.

In voiceless classifier forms γ -vocalization does not apply so the γ -conjugation prefix is not detectable following a conjunct prefix. An example is the perfective paradigm for $\check{c}'\varepsilon\text{-}\emptyset\text{-}\eta\acute{a}t\ddot{t}$ 'to eat' in (5.73), with indefinite object prefix $\check{c}'\varepsilon\text{-}$.⁷ The γ -conjugation prefix occurs only in the final form with human plural subject $\varkappa\varepsilon\text{-}$. In this case the human plural prefix intervenes between the indefinite object prefix $\check{c}'\varepsilon\text{-}$ and the conjugation prefix $\gamma\text{-}$, hence the deletion rule does not apply.

(5.73) Deletion of γ -conjugation prefix following conjunct prefix $\check{c}'\varepsilon\text{-}$

$\check{c}'ih\eta\acute{a}t\ddot{t}$	'I ate'
$\check{c}'in\eta\acute{a}t\ddot{t}$	'you ate'
$\check{c}'in\eta\acute{a}t\ddot{t}$'s/he ate'
$its'in\eta\acute{a}t\ddot{t}$	'we ate'
$\check{c}'ah\eta\acute{a}t\ddot{t}$	'you guys ate'
$\check{c}'\varepsilon\chi in\eta\acute{a}t\ddot{t}$	'they ate'

Furthermore, the perfective mode prefix is present, as *in-*, only in the zero-subject forms, i.e., third person singular, first person plural, and third person plural. Even with these forms the perfective prefix remains only because this verb has a voiceless classifier. As shown in (5.71) the perfective prefix is deleted preceding a voiced (d- or l-) classifier, and deletion of the perfective prefix triggers vocalization, as above.

5.3.3.2.3 The δ -perfective

The morphology of the δ -perfective mode is slightly more complex than that of the n-perfective or γ -perfective. The δ -conjugation prefix is deleted with zero

(5.75) *ǰ*-perfective with zero-subject

- a. łurg eht'éθ
 łurg ε-h-t'éθ
 fish PEG-H-fry:IMPF
 'he fries the fish'
- b. łurg eht'eh
 łurg e-h-t'eh
 fish M-H-fry:PERF
 'he fried the fish'

When the *ǰ*-perfective prefix is preceded by a conjunct qualifier prefix, such as inceptive *te-*, the preceding prefix is marked by a high tone. This high tone is present even in zero inner subject forms where the *ǰ*- conjugation prefix is deleted. (Regular tone-spread processes may then apply to this high tone.)

(5.76) *ǰ*-perfective with inceptive (qualifier) prefix

te-h-tsj̄	'to make' (inceptive perfective)
téǰékt̄sj̄	'I started to make it'
téǰ̄ht̄sj̄	'you started to make it'
téht̄sj̄	'he started to make it'
tséht̄sj̄	'we started to make it'
téǰáht̄sj̄	'y'all started to make it'
xtéht̄sj̄	'they started to make it'

5.3.3.3 Stative verbs

Stative verbs always require the perfective prefix *ǰ-*, regardless of whether they are semantically imperfective or perfective. That is, the formal perfective prefix per se does not itself distinguish ongoing states from states which no longer exist.

Both *e'dah* 'he is sitting' and *yindá?* 'he was sitting' contain the perfective mode prefix (though they have different conjugation prefixes). As with active verbs, the perfective mode prefix may have no surface phonetic realization. Stative verbs also require the formally perfective stem variant in the imperfective mode. Thus, stative imperfective verbs are formally marked as perfective (cf. Krauss & Leer 1981: 41-2).

5.3.3.3.1 Stative imperfective

In the imperfective mode stative verbs may occur with the Ø-, *n*-, or *ǰ*-conjugation markers. The morphology of the stative imperfective mode with the *n*- and *ǰ*-conjugation prefixes is isomorphic with that of the active perfective mode (see section 5.3.3.2 above). Some examples are given below.

(5.77) *ǰ*-stative imperfective

- a. elgeŷ
 e-l-geŷ
 M-L-dry
 'it is dry' (l-classifier)
- b. né'k'εǰ
 n-é'-k'εǰ
 GEN-M-cold
 'it is cold' (Ø-classifier)
- c. diǰihdah
 di-ǰ-ih-dah
 THM-CJ-1SG-sit:IMPF
 'I'm sitting down'

Unlike active verbs, stative verbs may also occur with the *i*- perfective mode prefix and a \emptyset - conjugation prefix. This combination marks the \emptyset -imperfective mode for stative verbs. The \emptyset - conjugation prefix has no phonetic form. The *i*- prefix is deleted preceding an inner subject prefix.

(5.78) \emptyset -stative imperfective with inner subject

- a. uʔihtónʔ
 u-ih-tónʔ
 THM-1SG-*hold*
 ‘I am holding it’
- b. ihzur
 ih-zur
 1SG-*fine*
 ‘I’m fine’

When no inner subject is present, the *i*- prefix is realized as *in-* following a consonant and *n-* following a vowel or in word-initial position.

(5.79) \emptyset -stative imperfective with zero subject

- a. ninzʔr
 n-in-zʔr
 THM-M-*pretty*
 ‘she is pretty’
- b. nzʔr
 n-zʔr
 M-*good*
 ‘it is good’
- c. žax xuntsurɫ
 žax xu-n-tsurɫ-ε
 house AREA-M-small-NOM
 ‘a small house’

- d. jâ'n deneh nčá'x
 jâ'n deneh n-čá'x
 that man M-big
 'that man is tall'

5.3.3.3.2 Stative perfective

In the perfective mode stative verbs require the γ -conjugation marker. The behavior of the γ -stative perfective is similar to that of the γ -perfective mode with active verbs, discussed in section 5.3.3.2.2 above. The perfective prefix is deleted preceding inner subjects, and the conjugation prefix undergoes γ -vocalization preceding voiced classifiers.

(5.80) Stative perfective

- a. diyihda?
 di- γ -ih-da?
 THM-CJ-1SG-sit:PERF
 'I was sitting down'
- b. yuyintón?
 y-u- γ -in-tón?
 4OBJ-THM-CJ-M-hold:PERF
 'he held it'

5.3.3.4 Optative

The optative mode signifies intended or desired action. It is used in hortative and prohibitive constructions and in complements of the verb 'want'. It may also be used to denote an intended but not yet accomplished action and is thus often used in lieu of the inceptive or future. The optative mode may also have a deontic sense, especially when used with the post-verbal deontic particle *dâ*. The optative

mode requires the optative mode prefix $\gamma u-$ and the optative stem variant of the verb. Only the \emptyset -conjugation prefix occurs in the optative mode.

Table 5.7: Optative conjugation-mode-subject-classifier prefixes

	\emptyset -	d-	h-	l-
1SG	$\gamma u h-$	$\gamma u \check{s}-$	$\gamma o k-$	$\gamma o g-$
2SG	$\gamma u n-$	$\gamma u t-$	$\gamma u h-$	$\gamma u l-$
2PL	$\gamma a h-$	$\gamma a t-$	$\gamma a h-$	$\gamma a l-$
\emptyset -	u'-	ut-	uh-	ul-

Preceding non-high vowels, the vowel of the optative mode prefix assimilates in height to the vowel of the inner subject prefix (if present), and the subject prefix vowel is deleted. Preceding high vowels the vowel of the optative prefix is deleted.

(5.81) Optative mode prefix vowel adjustments

$\gamma u + ih \rightarrow \gamma u h-$
 $\gamma u + \epsilon k \rightarrow \gamma o k-$
 $\gamma u + ah \rightarrow \gamma a h-$

The consonant of the optative prefix is deleted in zero-subject forms, though the prefix vowel is retained.

(5.82) Optative mode paradigm (\emptyset -classifier)

\emptyset -tsay	'cry' (optative)
$\gamma u h t s a y$	'I should cry'
$\gamma u n t s a y$	'you should cry'
u'tsay	'he should cry'
ts'u'tsay	'we should cry'
$\gamma a h t s a y$	'y'all should cry'
$x \epsilon ? u t s a y$	'they should cry'

When preceded by a conjunct prefix of the form Cε- the consonant of the optative prefix and the vowel of the preceding prefix are deleted (Leer 1982a).

(5.83) Contraction of optative prefix following conjunct prefix

Cε- + γu- → Cu-

[OPT]

(5.84) Optative mode paradigm with conjunct prefix (1-classifier)

č'ε-l-dzεs	'to dance'
č'ugdzes	'I should dance'
č'uldzεs	'you should dance'
č'uldzεs	'he should dance'
its'uldzεs	'we should dance'
č'al dzεs	'y'all should dance'
č'exul dzεs	'they should dance'

There is no contraction of the optative prefix follow a disjunct Cε- prefix, as shown in (5.85).

(5.85) Optative prefix following disjunct prefix

teγušdek
 te#γu-iš-dek
 THM#OPT-1SG:D-tired
 'I'd be tired'

The optative is also used to code unrealized action and thus often occurs with verbal complements of modality verbs. Some examples are given in (5.86).

(5.86) More examples of optative mode

a.	č'ugdzes	eynihθeη
	č'ε-γu-εg-dzes	ey-n-ih-θeη
	INDEF -OPT-1S:L-dance	THM-THM-1S-want
	'I want to dance'	

- b. ld̥r̥l ts'uhtsey eyt'seninðeŋ
 ld̥r̥l ts'ε-γu-h-tseŋ-ε ey-ts'e-n-in-θeŋ
 tea IMP-OPT-H-make-NOM THM-IMP-THM-M-want
 'we want to make tea' <1.23>

In contrast to other Alaska Athabaskan languages, the Tanacross optative is often used as an immediate future, especially with first-person subject.

(5.87) Optative as an immediate future

- xe' ʔéł č'ogt'êð
 xe' ʔéł č'ε-γu-εg-t'êð
 grease with INDEF-OPT-1SG:L-cook:OPT
 'I'm gonna cook with grease'

5.3.3.5 The *í*-negative

Verbal negation may be marked via as many as three morphological devices. The first two devices are the verb phrase proclitic *k'á=* and the negative suffix *-ε*. In addition, negation is marked via the negative mode prefix *í*- with a \emptyset -conjugation prefix. The negative prefix occurs in the same position as the perfective mode prefix and supplants that prefix even in the perfective (or stative imperfective) mode.

The full form of the *í*- prefix occurs only with active perfective and stative imperfective verbs which lack an inner subject prefix, as in (5.88) and (5.89). The *í*- negative prefix replaces the perfective prefix and always occurs with the \emptyset - conjugation prefix, regardless of which conjugation prefix is present in the corresponding positive form. For example, the verb *u-di-h-két* 'to ask' in

(5.89) requires the γ - conjugation prefix in the perfective mode positive form.

However, in the negative form no conjugation prefix is present, and the i - perfective mode prefix is replaced by the \acute{i} - negative prefix.

(5.88) Negative prefix (stative imperfective verb, zero subject)

- a. deneh n \acute{e}
 deneh n- \acute{e}
 man M-be
 ‘he is a man’
- b. k’á deneh í \acute{e}
 k’á deneh í- \acute{e}
 NEG man NEG-be
 ‘he is not a man’

(5.89) Negative prefix (active perfective verb, zero subject)

- a. šude γ ihké \acute{t}
 š-u-de- γ -i-h-ké \acute{t}
 1SG-THM-THM-CJ-M-H-ask:PERF
 ‘he asked me’
- b. k’á šudíhké \acute{d}
 k’á š-u-di-í-h-ké \acute{t} - ϵ
 NEG 1SG-THM-THM-M-H-ask:PERF-NEG
 ‘he did not ask me’

With active imperfective verbs, or verbs which contain an inner subject prefix, the vowel of the negative prefix does not appear, leaving only the marked tone on the pre-stem syllable (Jeff Leer, p.c.).

(5.90) Negative prefix (stative imperfective verb, non-zero subject)

- k’á deneh áhlé \acute{y}
 k’á deneh ´-ah- \acute{e}
 NEG man NEG-2PL-be
 ‘you are not men’

(5.91) Negative prefix (active imperfective verb, zero subject)

k'á á'háɫ
 k'á ʼ-a-haɫ
 NEG NEG-PROG-sg.go
 'he's not going'

The phonetic realization of the negative prefix can be summarized as follows.

Table 5.8: Realization of the negative prefix

	non-perfective	perfective/ stative imperfective
zero subject	ʼ-	í-
non-zero subject	ʼ-	ʼ-

5.3.3.6 Conjugation and mode: summary

I briefly summarize here the conjugation and mode prefixes. The conjugation and mode prefix positions represent a crucial piece of the inflectional morphology of the Tanacross verb. Mode is marked by one of four prefixes (including Ø-) corresponding to imperfective, perfective, optative and negative. Stative verbs require the formally perfective prefix with both imperfective and perfective stems. In addition, one of four conjugation prefixes (including Ø-) must precede the mode prefix. While the choice of conjugation prefix may carry aspectual meaning, especially for motion verbs, for many verbs the choice of conjugation prefix is governed by the verb aspect or by particular derivational prefixes present in the verb.

5.3.4 Qualifier prefixes

Several aspectual and thematic prefixes may occur immediately preceding the conjugation/mode marker and following the pronominal prefixes. Morphemes in this portion of the prefix template have been referred to as ‘qualifier’ prefixes. Many of these prefixes are aspectual and require particular conjugation markers and stem sets. Others are simply thematic: a lexicalized part of the verb theme. The qualifier position of the prefix template itself has internal structure, as diagramed below.

Figure 5.4: Qualifier (conjunct) prefix template

AREAL xu-	DIRECTIVE u-	INCEPTIVE te-	GENDER t- d-	ERRATIVE n-
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5.3.4.1 Areal *xu-*

The areal prefix *xu-* is used with verbs whose absolutive argument has an areal extent or refers to time, weather or an abstract situation. Such nouns include those referring to geographical features and those referring to houses. The areal prefix is a pronominal argument marker which may reference subjects or objects. While the behavior of the areal prefix is superficially similar to that of the adjectival class/gender agreement prefixes, these two prefix types are not in complementary distribution with each other. The areal may co-occur with an adjectival class prefix. The areal prefix precedes the object pronouns, whereas the gender prefixes follow the object pronouns. The areal prefix behaves similarly to the object

pronouns but differs in two important respects from true object pronouns. First, the areal prefix may refer to subjects or objects, though it never refers to the subject of a transitive verb. Second, the areal prefix co-occurs with nominal referents, whereas the object prefixes occur in complementary distribution with full nominal arguments.

The examples in (5.92) show that the use of the areal prefix is governed by the noun, not the verb theme. Both *ᵀdiḡ* ‘river’ and *dečɛŋ* ‘stick’ can be the subject of the verb *Ø-k’εθ* ‘crooked’, but only ‘river’ requires the areal prefix.

(5.92) Use of the areal prefix *xu-*

- a. ^ᵀdiḡ xuk’εθ
 ^ᵀdiḡ xu-k’εθ
 river AREA-crooked
 ‘the river is crooked’
- b. dečɛŋ εk’εθ
 dečɛŋ ε-k’εθ
 stick PEG-crooked
 ‘the stick is crooked’

Certain nominal subjects and objects require pronominal cross-referencing via the areal prefix. These include nouns referring to houses and those referring to weather.

(5.93) Nouns requiring the areal prefix

- a. žax xunɪhtθux
 žax xu-n-in-h-tθux
 house AREA-CJ-2SG-H-stuff
 ‘you’re chinking the house’ <4.5>

- b. žax xultl'et
 žax xu-l-tl'et
 house AREA-L-tight
 'the house is crowded' *lit: 'the house is tight'*
- c. k'oθ xunle'
 k'oθ xu-n-łe'
 cloud AREA-M-lots
 'it's cloudy' *lit: 'the clouds are many'*

Such 'areal' nouns may also require cross-referencing via the areal prefix when they occur as object of postpositions, as with *key* 'village' in (5.94).

(5.94) Postpositional objects cross-referenced via the areal prefix

dεkey	ts'ǰʔ	xuxatdeł
dε-key	ts'ǰʔ	xu-x-a-t-deł
RFLX-village	to	AREA-HUM.PL-CJ-D-pl.go
'they went back to their village' <5.35>		

5.3.4.2 Inceptive *te-*

The inceptive prefix *te-* signifies an action which is just about to begin or has just begun. Verbs with the inceptive prefix require the *ǰ-* conjugation prefix in both imperfective and perfective modes.

Tanacross differs from other Alaska Athabaskan languages in that the inceptive, rather than the future mode, is the most common way to express future action.

The inceptive prefix is also required by the future mode (see 5.3.3.1.2.2).

(5.95) Inceptive prefix with future mode

natéðεgnek
 na-te-ð-εg-nεk
 CONT-INCEP-CJ-1SG:L-tell.story
 ‘I’m gonna tell a story’ <2.133>

The inceptive prefix may also occur with the perfective mode (necessarily the ð-perfective).

(5.96) Inceptive prefix with perfective mode

a. Mansfield ts’ǰʔ téðihžah
 Mansfield ts’ǰʔ téðihžah
 M. to INCEP-CJ-1SG-go:PERF
 ‘I was about to go to Mansfield’ <2.121>

b. yitéhčεθ
 yi-té-h-čεθ
 4OBJ-INCEP-H-stab
 ‘he was about to stab him’ <2.111>

5.3.4.3 Adjectival class prefixes (gender)

Many verbs include a prefix which indicates the adjectival class of the absolutive argument. Rice refers to cognate prefixes in Slave as ‘adjectival class prefixes’ (1989: 576); Kari refers to cognate prefixes in Ahtna as ‘gender’ (1990).

Tanacross includes two such prefixes: *n-* and *d-*. The prefix *n-* occurs in verb themes referring to descriptive qualities such as size. The prefix *d-* occurs in verb themes referring to colors and tactile qualities. The choice of adjectival class prefix reflects both the semantics of the verb and the class of the absolutive argument, hence the terminological ambiguity between adjectival class prefix and gender prefix. While in some cases the choice of prefix *n-*, *d-*, or \emptyset - is governed

by the verb theme, in many other cases, especially when the verb is sufficiently semantically bleached, the choice of prefix appears to be entirely governed by the nominal argument. The examples in (5.97) compare nouns from three different classes as arguments of the same verb, *Ø-dlah* ‘plural objects in position’.

(5.97) Adjectival class prefixes

θit e'dlah	‘embers are lying there’	(Ø- class)
jêg de'dlah	‘berries are lying there’	(d- class)
kón? né'dlah	‘matches are lying there’	(n- class)

Based on the patterning of nouns with class prefixes in verb themes such as that above, it is possible to determine which class/gender prefix (*n-*, *d-*, or *Ø-*) is associated with each Tanacross noun. I have not compiled extensive documentation of class/gender prefixes; however, I have found no cases for which the gender categorization of a Tanacross noun differs from that of a cognate noun in Ahtna, as represented in Kari (1990). In general the *n-* prefix is used with round objects and liquids; the *d-* prefix is used with natural object such as plants, feathers, and fur. While not all verbs require a gender agreement prefix, the choice of gender prefix is governed by the noun.

(5.98) *n*- gender

tu' nék'edh	'the water is cold'
tu' néðeł	'the water is warm'
tu' nélkónʔ	'the water is hot'
tu' nélγos	'the water is boiling'

(5.99) *d*- gender

dətkét	'it is thick'
dəłgeŷ	'it is white'
č'eγézʔ dé'dlah	'eggs are lying there'

Gender prefixes may also occur with nouns which have been incorporated into the verb.

(5.100) Gender prefixes with incorporated nouns

ⁿ da'xdetdél
ⁿ da'x-x-de-t-dél
eye-HUM.PL-GEN-D-pl.go
'they went looking'

In some cases the gender prefixes have become lexicalized or 'thematicized'. For example, the verb theme meaning 'to pick (berries)' is based on the theme *h-tsey* 'to make' with the *n*- gender prefix corresponding to berries.

(5.101) Lexicalized gender

jêg	nəhtseŷ
jêg	n-eh-tseŷ
berry	THM-H-pick
	's/he is picking berries'

5.3.4.4 Directive *u-*

The directive prefix *u-* signifies an action directed unsuccessfully at an object. It may also have a conative sense, as in an unsuccessful or attempted action. The directive occurs with the *n-* conjugation marker in all modes.

(5.102) Directive *u-*

yunihdék
 y-u-n-i-h-dék
 4OBJ-DIR-CJ-M-CL-shot
 ‘he shot at it (and missed)’

The directive *u-* may also occur thematically, in which case it does not govern the choice of conjugation marker or stem set.

(5.103) Verbs containing *u-* directive prefix

- a. žax uḡihkét
 žax u-ḡ-ih-két
 house THM-CJ-1SG-buy:PERF
 ‘I bought a house’
- b. Larry šurzí?
 Larry š-u-r-zí?
 L. 1SG-THM-name
 ‘my name is Larry’ *lit.* ‘I am called Larry’
- c. uḡihtón?
 u-ih-tón?
 THM-1SG-hold
 ‘I’m holding it’
- d. šudihkét
 š-u-d-ḡ-h-két
 1SG-THM-THM-M-H-ask:PERF
 ‘he asked me’

- e. dayuhnik
 da-y-u-h-nik
 THM-4OBJ-THM-H-catch
 ‘he caught it’

5.3.4.5 Errative *n-*

The errative (ERR) qualifier prefix *n-* marks an accidental, unintended, or mistaken action. Verbs which include this prefix undergo classifier voicing via the D-classifier morpheme, as discussed in section 5.3.1.2.1.2.3 above. Verbs with this prefix also require the *ǰ-* conjugation prefix in the perfective mode.

(5.104) Errative prefix *n-*

- a. č’etnéǰegnek
 č’ε-t-n-ǰ-e-εg-nεk
 INDEF-THM-ERR-CJ-PERF-1SG:L-swallow
 ‘I choked (on something)’
 lit: ‘I swallowed something unintentionally’ <3.139>
- b. néǰiške
 ne-ǰ-iš-ke
 ERR-CJ-1SG:D-step
 ‘I stumbled’ *lit: ‘I stepped incorrectly’* <3.118>

5.3.4.6 Thematic qualifier prefixes

The qualifier zone also include several thematic prefixes. The behavior of these prefixes often differs from that of the conjugation/mode prefixes even when they have the same phonetic form. For example the thematic *n-* prefix in the \emptyset -subject form *neža’* ‘he grew up’ is retained where the *n-* conjugation prefix would be deleted.

(5.105) Thematic *dé-*

tuʀ šdéh-tłaa
 tuʀ š-dé-h-tłaa
 water 1SG-THM-H-crave
 ‘I’m thirsty’

(5.106) Thematic *n-*

- a. šnahdél
 š-n-ah-dél
 1SG-THM-2PL-follow
 ‘y’ all are following me’
- b. šos nekʔeh
 šos n-ek-ʔeh
 bear THM-1SG:H-see:IMPF
 ‘I see a bear’

(5.107) Thematic *ǰ-*

ǰeǰekxɛʔ
 ǰ-ǰ-ek-xɛʔ
 THM-CJ-1SG:H-kill.singular.object
 ‘I killed him’ <3.141>

5.3.5 Pronominal prefixes

The leftmost portion of the conjunct prefix template consists of the pronominal prefixes. The pronominal prefixes include object pronouns, which cross-reference the person and number of the direct object. The object prefixes also include reflexive and reciprocal object prefixes. Also included in this portion of the template are the outer subject prefixes, which cross-reference the number of the subject.

Figure 5.5: Pronominal (conjunct) prefix template

OBJECT	INDEF SUBJ	HUM PL	4OBJ	IMPERSONAL
	č'ε-	xε-	y-	ts'ε-

5.3.5.1 Outer subject

The outer subjects, sometimes called ‘deictic’ subjects, include the impersonal subject *ts'ε-*, human plural subject *xε-*, and the indefinite or unspecified subject marker *č'ε-*. The outer subjects immediately follow any object markers (if present), with the exception of the fourth person object prefix *yi-*, which follows the human plural subject prefix and precedes the impersonal subject prefix. The outer subject prefixes always precede the conjugation and mode markers. In addition, several aspectual morphemes may intervene between the inner and outer subject positions.

Only one outer subject prefix may be present in the verb. Outer subjects differ from inner subjects in several syntactic properties, as discussed in section 5.3.2.5 above. First, they are not obligatory. Second, they cross-reference number but not person. However, the outer subject prefixes do appear to function paradigmatically with the inner subject prefixes, in that outer and inner subject prefixes cannot co-occur in the same verb.

5.3.5.1.1 Impersonal subject *ts'ε-*

The impersonal prefix *ts'ε-* has two primary uses: as a first person plural subject marker and as an impersonal human subject marker. The most common use of

Tanacross *ts'ε-* is as a first person plural subject marker. In Tanacross, as in other Alaska Athabaskan languages, there is no reflex of the Proto-Athabaskan first person duoplural subject prefix *i'-D. Instead, first person plural referents are referenced on the verb via the impersonal subject prefix *ts'ε-*.⁸ As noted by Krauss (p.c.), the use of indefinite *ts'ε-* as a first person plural is analogous to the use of *on* as first person plural in modern spoken French.⁹

(5.108) First person plural use of *ts'ε-*

tsets	deʔúkah	natsehdek	
tsets	deʔúkah	na-ts'e-te-h-dək	
wood	for	ITER-IMP-INCEP-H-pl.go	
'we go out looking for wood' (Charlie & McRoy 1972)			

The impersonal prefix is often used together with the optative mode to form a hortative construction.

(5.109) Hortative use of *ts'ε-*

nežax	ts'íʔ	nats'utdél	
ne-žax	ts'íʔ	na-ts'ε-u-t-dél	
1PL-house	to	ITER-IMP-OPT-D-pl.go	
'let's go home'			

The prefix *ts'ε-* is also used to cross-reference referential indefinite (i.e., non-identifiable) human subjects. This is the 'impersonal' use. In this use *ts'ε-* may index singular or plural referents. The discourse factors conditioning the use of *ts'ε-* are not very well understood at this time.

The impersonal subject prefix contracts with following alveolar stops, as described in (5.110).

(5.110) Contraction rules for impersonal subject prefix

$ts'\epsilon + tV \rightarrow tsV-$

$ts'\epsilon + dV \rightarrow dzV-$

(5.111) Contraction of impersonal subject prefix

tsets	tsa'ddøɛɫ
tsets	ts'ɛ-té-ɣ-ddøɛɫ
firewood	IMP-INCEP-CJ-chop
'we will chop firewood' <2.113>	

5.3.5.1.2 Human plural subject $x\epsilon-$

The prefix $x\epsilon-$ marks human plural subjects, as distinct from non-humans. The human plural subject marker may co-occur with a full nominal argument.

(5.112) Human plural subject $x\epsilon-$

- a. $ts'inke'y \text{ ?in } x\epsilon t\text{ł } \check{z}'r \text{ } d\acute{a}x\gamma ilje\text{ } \check{y}$
 $ts'inke'y=\text{?in } x\epsilon t\text{ł } \check{z}'r \text{ } d\acute{a}-x-\gamma i-l-je\text{ } \check{y}$
 children=PL sled in down-HUM.PL-M-L-slide
 'they children slide down (the hill) in a sled' <4.71>
- b. $k'\hat{o}d \text{ } ni\text{ł}xutdi'k$
 $k'\hat{o}d \text{ } ni\text{ł}-x-u-t-ni'k$
 already RECIPIENT-HUM.PL-THM-D-take
 'they are already married' *lit: 'they already took each other'* <4.85>

Non-human subject, even animate ones, do not occur with the prefix $x\epsilon-$, indicating that this prefix is restricted to human subjects.

(5.113) Non-human subject without *xɛ-*

ya'tθén denî'g ahʔés
 ya'tθén denî'g ɣ-h-ʔés
 down.there moose PROG-H-animal.walk:IMPF
 'moose are walking around down there'

The human plural prefix usually marks third person subjects; however, this morpheme is in general only a marker of number, not person. The Tanacross human plural prefix may refer to first person plural as well.¹⁰

(5.114) Human plural subject with first person reference

šen tah ta'ðéθ t'a'ɣ čih xdéltθ'ix
 šen tah ta'ðéθ t'a'ɣ čih xdéltθ'ix
 summer during tent under also HUM.PL-THM-L-stay:CUST
 'in the summer we also live in tents' (Charlie & McRoy 1972)

The use of the human plural prefix is not obligatory. While elicited examples containing human third person plural subject referents will almost always include the *xɛ-* prefix, it is quite common for the prefix to be omitted in discourse contexts, especially when the number of the subject NP is explicitly marked via the animate noun enclitic =ʔin. An example is given in (5.115).

(5.115) Plural subject not marked by *xɛ-*

xu'ts'inkey=ʔin čih school da'ta'deł
 xu-ts'inkey=ʔin čih school da-t-a-deł
 3PL-kids=PL also school up-INCEP-PROG-pl.go
 'their kids will go back to school' (Charlie & McRoy 1972)

The factors conditioning the use of the human plural prefix are pragmatic and lie beyond the scope of the present description.

5.3.5.1.3 Indefinite/unspecified subject *č'ε-*

The indefinite or unspecified subject prefix *č'ε-* is identical in form to the indefinite object prefix. It is used in situation where the subject is not relevant or topical. The most common use of the indefinite subject prefix is as the subject of a passive construction where the original subject is demoted to the object of a postposition. The indefinite subject follows the same morphophonemic rules as the indefinite object prefix. In particular, it contracts with a following alveolar stop *d-* or *t-* prefix to form *j-* or *č-*, respectively.

(5.116) Indefinite subject prefix

še	jettes
š-e	č'ε-d-et-tes
1SG-PP INDEF-GEN-D-elongated.pokes	
'something (stick) poked me' <4.39>	

5.3.5.2 Direct object pronouns

Objects are cross-referenced via pronominal arguments which occur immediately preceding the outer subject position (if present). With the exception of the third person singular forms, these prefixes are formally identical to the nominal possessive prefixes.

Table 5.9: Direct object pronominal prefixes

person	singular	plural
1	š-	ne-
2	n-	nuh-
3 (with inner subject)	Ø-/m-	xu-
4 (no inner subject)	y-	
INDEFINITE	č'ε-	
REFLEXIVE	ʔede-	
RECIPROCAL	nił-	

The object prefixes occur to the left of the human plural *xε-* and impersonal *ts'ε-* prefixes. Cross-referencing of first and second person object arguments is obligatory. Third person object arguments are not always cross-referenced via an object prefix, and object pronouns do not occur when full NP third person arguments are present.

Some examples of non-third person singular object prefixes are given below.

(5.117) Object prefixes with verb theme *n-h-ʔeh* 'to see'

- a. šniḥʔeh
 š-n-in-h-ʔeh
 1SG-THM-2SG-H-see
 'you see me'
- b. ḡnekʔeh
 n-n-εk-ʔeh
 2SG-THM-1SG:H-see
 'I see you'
- c. xur'ts'eneḥʔeh
 xu-ts'ε-n-h-ʔeh
 3PL-IMP-THM-H-see
 'we see them'

- d. nuhnekʔeh
 nuh-n-εk-ʔeh
 2PL-THM-1SG:H-see
 ‘I see y’ all’
- e. neʔnehʔeh
 neʔ-n-h-ʔeh
 1PL-THM-H-see
 ‘he sees us’
- f. nantnegʔiʔ
 na-n-t-n-εg-ʔiʔ
 ITER-2SG-INCEP-THM-1SG-L-see:FUT
 ‘I’ll see you again’

5.3.5.2.1 Third person singular object Ø-

When the object referent is third person singular, the form of the object prefix varies according to the person of the subject. If an inner subject prefix (i.e., first person singular, second person singular, or second person plural) is present, then the third person object is not cross-referenced on the verb.

(5.118) Third person singular object with non-zero inner subject

- a. ðεðεkxεʔ
 ðε-ð-εk-xεʔ
 THM-CJ-1SG:H-kill.singular.object
 ‘I killed him’ <3.141>
- b. neðεkžəʔ
 ne-ð-εk-žəʔ
 THM-M-1SG:H-grow:PERF
 ‘I raised him/her’ <3.107>

5.3.5.2.2 Fourth person object y-

When no inner subject prefix is present, an alternate form of the third person object prefix is used. Cognates of this third person object prefix y- occur in all

Athabaskan languages and are referred to with a variety of labels, including ‘alternate third person’ (Young & Morgan 1987), ‘obviative pronoun’ (Thompson 1989), and ‘fourth person’ (Rice 1989). I will use the latter term, though this should be understood merely as a formal descriptive label.

When the fourth person object prefix occurs word-initially followed by a consonant, it syllabifies as [i].

(5.119) Vocalic allophone of fourth person object y-

inehʔɛʔ
 y-n-h-ʔɛʔ
 4OBJ-THM-CL-see.PERF
 ‘he saw him’

As with other object pronouns, fourth person y- occurs only when no object NP is present.

(5.120) Examples with and without nominal object NP

šos nɛhʔɛh
 šos n-ɛh-ʔɛh
 bear THM-H-see:IMPF
 ‘he sees a bear’
 * šos inɛkʔɛh

The fourth person object prefix may also occur with an outer subject prefix. The fourth person prefix follows the plural human subject prefix *xɛ-* and precedes the impersonal prefix *ts’ɛ-*.

(5.121) Fourth person y- with outer subject prefix

- a. xeynehʔéʔ
 xE-y-n-h-ʔéʔ
 HUM.PL-4OBJ-THM-H-see:PERF
 ‘they saw him’ <2.69>
- b. its’enehʔéʔ
 i-ts’E-n-eh-ʔéʔ
 4OBJ-IMP-THM-H-see:PERF
 ‘we saw him’

5.3.5.2.3 Indefinite object č’E-

The pronoun č’E- is used for objects which are unknown or non-specific. This pronoun often occurs in verb themes whose argument structures require an object.

Note that the vowel of the indefinite prefix is deleted preceding a non-reduced vowel.

(5.122) Indefinite object prefix

- a. č’ihʔáʔ
 č’E-ihʔáʔ
 INDEF-1S-eat:IMPF
 ‘I’m eating (something)’
- b. č’Eʔáʔ
 č’E-ʔáʔ
 INDEF-eat:IMPF
 ‘he’s eating (something)’

The indefinite object pronoun cannot occur with an overt adjunct nominal object.

(5.123) No indefinite object with overt nominal objects

łurg ihʔáʔ
 łurg ihʔáʔ
 fish 1S-eat:IMPF
 'I'm eating fish'
 *łurg č'eʔáʔ

The indefinite object pronoun also alternates with third and fourth person object prefixes.

(5.124) Comparison of indefinite and third/fourth person object prefixes

- a. č'eʔáʔ
 č'e-ʔáʔ
 INDEF-eat
 'he's eating (something)'
 b. yiʔáʔ
 yi-ʔáʔ
 4OBJ-eat
 'he's eating it'

While the indefinite object pronoun may co-occur with the human plural subject prefix *xε-*, it may not occur with the impersonal subject prefix *ts'e-*. The fourth person object prefix occurs instead.

(5.125) Indefinite object with outer subject prefixes

- a. č'exεʔáʔ
 č'e-xε-ʔáʔ
 INDEF-HUM.PL-eat:IMPF
 'they're eating'

- b. its'εʔáʔ
 i-ts'ε-ʔáʔ
 4OBJ-IMP-eat:IMPF
 ‘we’re eating it’
 *č'ets'εʔáʔ

The indefinite object pronoun contracts with following alveolar stops.

(5.126) Indefinite object contraction rules (Leer 1982a)

č'ε + t → čε
 č'ε + d → jε

(5.127) Contraction of indefinite object pronoun

jeʔihtθ'εk
 č'ε-d-ih-tθ'εk
 INDEF-THM-1SG-hear
 ‘I’m listening (to something)’

5.3.5.2.4 Reflexive *ʔede-* and reciprocal *niʔ-*

Two other prefixes may occur in the direct object position indicating either co-reference between subject and object (reflexive) or a plural subject acting as both subject and object (reciprocal). The reflexive is marked by the prefix *ʔede-*, and the reciprocal is marked by the prefix *niʔ-*. Both of these prefixes require the D-morpheme in the classifier position (see sections 5.3.1.2.1.1.2 and 5.3.1.2.1.1.2). The reflexive may occur with any subject prefix, while the reciprocal requires a plural subject and thus cannot occur with 1SG and 2SG inner subject prefixes. Both the reciprocal and the reflexive occur in the direct object position, that is, they precede the outer subject prefixes.

(5.128) Reflexive *ʔede-/ʔet-/ʔe-*

- a. ʔedeðegk'áʔ
 ʔede-ð-eg-k'áʔ
 RFLX-CJ-1SG:L-shoot:PERF
 'I shot myself'
- b. tu' k'et néʔ ʔetnegʔəh
 tu' k'et néʔ ʔet-n-eg-ʔəh
 water on face RFLX-THM-1SG:L-see:IMPF
 'I see myself in the water' <2.43>

(5.129) Reciprocal *niʔ-*

- a. niʔxənɛlgot
 niʔ-xɛ-n-l-got
 RECIP-HUM.PL-CJ-L-hit:PERF
 'they hit each other' <2.87>
- b. naniʔxnalʔéʔ
 na-niʔ-xɛ-n-ɣ-l-ʔéʔ
 ITER-RECIP-HUM.PL-THM-CL-L-see:PERF
 'they saw each other again' <2.43>

5.3.6 Conjunct prefixes: summary

This concludes the description of the conjunct prefixes. The conjunct prefixes include lexical, inflectional and derivational morphemes, and together with the verb stem form the core of the verb word, to which the preceding disjunct prefixes are attached as satellites. All of the person marking and aspectual marking occurs within the conjunct prefix zone. In the following section I discuss the disjunct prefixes.

5.4 Disjunct verb prefixes

The disjunct verb prefixes occur to the left of the pronominal zone. They are less tightly bound to the verb stem, and there is less fusion across morpheme boundaries in the disjunct zone. The status of the disjunct verb morphemes as bound versus free morphemes remains controversial. Some or all of these morphemes may be better described as independent words or ‘preverbs’.¹¹ However, the disjunct prefixes must at least be considered to occur as part of verbal constructions. The disjunct portion of the prefix template is shown in Figure 5.6.

Figure 5.6: Disjunct prefix template

ADVERBIAL	INCORPORATE	ITERATIVE
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Many descriptions of Athabaskan languages include disjunct prefix positions for ‘bound’ postpositions and postpositional objects as well. While it is true that postpositions may interact phonologically with the verb, and that postpositions occur with verbs in predicate constructions, there is little evidence that postpositions are actually verbal prefixes in Tanacross. I have chosen to classify postpositions as free morphemes, described in section 6.4 below.

5.4.1 Iterative

The iterative prefix *na-* indicates an action which is repeated or reversed. With verbs denoting directional motion it often has the sense ‘returning’ or ‘going

back'. Since very many motions can be conceived of as having already occurred in one direction, this sense of *na-* is extremely frequent (Rice 1989: 731). With non-directional motion verbs, *na-* often has the sense of 'again', as in a repeated action. With transitive verbs *na-* often has the sense of 'another O'.

With most verbs, the iterative prefix requires middle voice, marked by the D-effect on the classifier. Since the D-effect is not detectable with voiced (d- and l-) classifiers, this amounts to saying that the iterative prefix triggers a change from Ø- to d- classifier in Ø-classifier verbs, and a change from h- to l-classifier in h-classifier verbs.

(5.130) Iterative

tθ'itúʔ	ⁿ dīrʔ	ts'eŷ	šír	naŷiškeɫ
tθ'itúʔ	ⁿ dīrʔ	ts'eŷ	šír	naŷiškeɫ
river	downstream	boat	in	ITER-PROG-D:1SG-travel.by.boat
'I'm boating back down the river in a boat' <5.35>				

When the iterative prefix *na-* is preceded by a prefix of the shape CV, the vowel of the iterative prefix deletes and the preceding vowel is lengthened. This phenomenon is sometimes referred to as 'na-absorption' (Leer 1982b).

(5.131) na-absorption

CV + na → CV[·]
 [ITER]

Some examples of na-absorption are given below.

(5.132) Examples of na-absorption

- a. ti'ninda'y
 ti-na-n-in-d-ha'y
 out-ITER-CJ-2SG-D-go
 ‘(you) go back out’ <2.71>
- b. ta'γihdlah
 ta-na-γ-ih-dlah
 water-ITER-CJ-1S-classify.compact.object
 ‘I put them back in the water’ (Leer 1982b: 5)
- c. ne'nihdlah
 ne-na-n-ih-dlah
 TERM-ITER-CJ-1S-classify.compact.object
 ‘I put them back down (there)’

Unlike other low-tone prefixes, the iterative prefix appears to block rightward spreading of a preceding high tone (section 2.3.4).

(5.133) Blocking of tone spread

ya'ndáz	naʔatmeʔ
ya'- ⁿ dáz	na-γ-t-meʔ
DISTAL-across:ABL	ITER-PROG-D-swim
‘he’s swimming back from the other side’	

5.4.2 Incorporated stems

Incorporated stems can be considered a special case of a derivational prefix string.

Most incorporated stems are nouns and usually add an instrumental sense of

‘using N’ or ‘by way of N’ to the verb theme. The form of an incorporated noun is

usually a reduced form of the full noun, as shown in (5.134).

(5.134) Incorporate forms of nouns and verbs

stem	incorporate	
tuʀ	ta-	‘water’
-tsax	tsax-	‘cry’
- ⁿ daʀʔ	ⁿ daʀx-	‘eye’

The number of incorporated nouns is probably quite large; the list presented in this section is certainly not exhaustive. A more detailed study of incorporation (in Koyukon) can be found in Axelrod (1990b).

(5.135) Examples of incorporated stems

- a. ta'haʔ
 ta-ʔ-haʔ
 water-PROG-go
 ‘he’s wading’
- b. tats'ulʔók
 ta-ts'-u-l-ʔók
 water-INDEF.HUM-OPT-L-float
 ‘let’s swim’
- c. tsaxdallaʔ
 tsax-d-ʔ-l-laʔ
 cry-GEN-PROG-L-pl.move
 ‘going around crying’
- d. stsʊʀ ʔah naxetʔtetik
 s-tsʊʀ ʔah na-xetʔ-de-tik
 1SG-grandmother for ITER-sled-GEN-handle.sticklike:CUST
 ‘he would drive the sled for my grandmother’
- e. ⁿdaʀxdetdél
ⁿdaʀx-x-de-t-dél
 eye-HUM.PL-GEN-D-pl.go
 ‘they went looking’
- f. t'á'xúdlah
 t'a'-xu-dlah
 pocket-AREA-handle.plural.object
 ‘s/he put them in the pocket’

5.4.3 Adverbial prefixes

The leftmost verb prefix position consists of lexical morphemes which add an adverbial or manner meaning to the verb. Some adverbial prefixes are lexical (or thematic), in that they occur as a required part of the verb word. However, most adverbial prefixes are derivational, in that they add optional lexical content to a verb. In fact, some of these adverbial prefixes closely resemble root morphemes in that they tend to carry the central meaning of the verb word. In particular, adverbial prefixes are often used with classificatory verb stems which refer only the shape or character of the object being handled; the type of action itself is captured by the adverbial prefix. For example, consider the adverbial prefix *nat'u-* used with the verb stem *-tey̆* 'classify animate object' in the verb *nat'uyéhtey̆* 'he skins it' (see (5.145) below).

Some adverbial prefixes, such as the iterative, are highly productive and may be added to just about any verb. Others are much more restricted and may occur with only a small set of verbs. This variation in productivity is closely correlated with variation between adverbial prefixes having more grammatical meanings (hence higher productivity) and those having more lexical meaning (hence lower productivity).

Some prefixes appearing in the adverbial position are not true morphemes but occur as part of a discontinuous morpheme consisting of lexical material in

the adverbial position as well as one or more conjunct prefix positions. In particular, many adverbial prefixes require a particular classifier morpheme, as with the iterative prefix *na-*, which must occur with a voiced (d- or l-) classifier. For this reason adverbial prefixes are sometimes referred to as ‘prefix strings’ (cf. Kari 1990).

It is possible to further distinguish between aspectual and non-aspectual adverbial prefixes (or prefix strings). Aspectual adverbial prefixes govern the conjugation marker and verb stem aspect of the verb theme to which they apply. Non-aspectual adverbial prefixes do not change conjugation or aspect.

In the remainder of this section I discuss several Tanacross adverbial prefixes, though the reader should be warned that this list is woefully incomplete. Where a particular set of conjugation prefixes is required with a given string, I indicate the imperfective mode and perfective mode conjugation prefixes, respectively, in parentheses. For example, the notation (γ ,n) indicates that a string requires the γ - conjugation prefix in the imperfective mode and the *n*- conjugation prefix in the perfective mode. For consistency in glossing, I have for the most part followed the glossing conventions used by Kari in his Ahtna dictionary (1990, Appendix E).

The adverbial prefix *na-* has the meaning ‘again’, ‘back’ or ‘around’. It does not govern the choice of conjugation pattern, however it does require the D-

morpheme as hence occurs with voiced (d- or l-) classifier. This morpheme is often referred to as the ‘iterative’ prefix. It is one of the most common derivational prefixes in Tanacross. The iterative is discussed in more detail in section 5.3.1.2.1.2.1, in the context of middle voice constructions.

The adverbial prefix string *na#t-*, where *t-* is a qualifier prefix, has the meaning ‘around’. It is often referred to as the perambulative (PRMB) prefix. It requires the perambulative stem aspect, which has the (γ,n) conjugation pattern. It may occur alternately as *!o-* or *!a-*, with no qualifier prefix. In the Mentasta dialect of Ahtna, *na#t-* occurs in the imperfective mode while *!u-* (Tanacross *!o-*) occurs in the other modes (Kari 1990: 292). In Tanacross there appear to be other factors conditioning this alternation. The form *!a-* is a dialectal variant of *!o-*.

(5.136) *na#t-* and *!o-* perambulative

- a. naxeteti'k
 na-xeł-t-ti'k
 PRMB-sled-PRMB-handle.elongated.object
 ‘he was driving the sled around’
- b. !ó?á'hał
 !ó-γ-a'-hał
 PRMB-CJ-M-walk
 ‘he is walking around’
- c. naxtetnek
 na-x-t-et-nek
 PRMB-HUM.PL-PRMB-D-plural.move
 ‘they are moving from place to place’ <5.11>

The adverbial prefix string *xe#u*, where *u-* is a qualifier prefix, and the (ð,ð) conjugation pattern, has the meaning ‘to pass by’.

(5.137) *xe#u-* ‘pass by’

- a. *xeʔužah*
 xe-ʔu-žah
 pass.by-pass.by-walk
 ‘he walked by’ <2.67>
- b. *xenut’ax*
 xe-n-u-t’ax
 pass.by-THM-pass.by-fly:PERF
 ‘a bird flew by’ <2.53>

The adverbial prefix *na-*, together with the (Ø,γ) conjugation pattern, indicates an action carried out in a downward direction.

(5.138) *na-* ‘down’

- a. *dðeł déz naʔaltθet*
 dðeł déz na-ʔa-l-tθet
 hill down down-PROG-L-run
 ‘he came running down the hill’
- b. *tsúgary t’ox naninka’tł*
 tsúgary t’ox na-n-in-ka’tł
 bird next down-M-CJ-collapse
 ‘a bird’s next collapsed (and fell down)’ <5.10>

The adverbial prefix string *dze#če-n-l-*, where *č’ε-* is the indefinite object prefix and *n-* is a qualifier prefix, and *l-* is the the l-classifier, has the meaning of ‘completely’ or ‘until stopped’.

(5.139) *dze#č'ε-n-l-* 'completely, until stopped'

dzeč'εnɛldlok
 dze-č'ε-n-ɛl-dlok
 DZE-INDEF-N-L-laugh
 'he's laughing really hard' (l-classifier) <4.5>

The adverbial prefix *sta-* has the meaning 'away'. It occurs with the (n,n) conjugation pattern.

(5.140) *sta-* 'away'

- a. staʔiltθet
 sta-i-l-tθet
 away-M-L-sg.run
 'he ran away' <2.63>
- b. stašneninžut
 sta-š-ne-n-in-žut
 away-1SG-THM-CJ-M-chase
 'he chased me away'

The adverbial prefix *né-* has the meaning 'down', 'to a point' and signifies an action which is completed, terminative, or taken to a point. It is sometimes referred to as the 'terminative' (TERM) prefix. It occurs with the (n,n) conjugation pattern.

(5.141) *né-* 'down, to a point' (terminative)

- a. k'ahdúʔ déʔ nénihžah
 k'ahdúʔ déʔ né-n-ih-žah
 now just TERM-CJ-1SG-sg.go:IMPF
 'just now I came in' <2.143>
- b. néxunihdeý
 né-xu-n-ɨ-h-deý
 TERM-AREA-CJ-2SG-H-move.hand
 '(you) put it together!' <5.37>

The prefix *ná-* has the meaning ‘keep on’, ‘continue’ and signifies a continued action. It is sometimes referred to as the ‘continuative’ (CONT) prefix. It occurs with the continuative stem variant and the (\emptyset, γ) conjugation pattern. This prefix occurs thematically in many common verb themes.

(5.142) *ná-* ‘continue’

náʔéðet
 ná-ʔε-ðet
 THM-PEG-stand
 ‘he’s standing’

The adverbial prefix *xu-* has the meaning ‘falling down’. It occurs with the (\emptyset, γ) conjugation pattern.

(5.143) *xu-* ‘falling down’

xuʔεgtθ’et
 xu-ʔ-εg-tθ’et
 falling-CJ-1SG:L-animate.moves:PERF
 ‘I fell down running’

The adverbial prefix *k’e-* has the meaning ‘severing’. It occurs with the (n,n) conjugation pattern.

(5.144) *k’e-* ‘severing’

dεčoł k’etneltsart
 dε-čoł k’e-t-n-εl-tsa’t
 RFLX-throat severing-INCEP-CJ-L-cut.quickly
 ‘he was about to cut his (own) throat’ <2.107>

The prefix *nat’u-* has the meaning ‘skinning’ and indicates that an action is being carried in order to remove skin from an animal.

(5.145) *nat'u-* 'skinning'

- a. nat'uryéhteý
 nat'u-y-éh-teý
 skinning-4OBJ-H-handle.animate
 'he's skinning it' <2.107>
- b. nat'urtsa'lé?
 nat'uu-ts'ε-γ-lé?
 skinning-IMP-FUT-handle.plural.objects
 'we will be skinning them' <2.109>

The prefix *niik'a-* has the meaning 'opening'.

(5.146) *niik'a-* 'opening'

- a. na' dínáhtl'a' niik'adinleý
 na' dínáhtl'a' niik'a-d-in-łeý
 this book opening-GEN-2SG-handle.plural.objects
 'you open this book!' <3.11>
- b. niik'ane'ta'
 niik'a-n-e'-ta'
 opening-CJ-M-handle.elongated.object
 'someone opened (the door)' <4.73>

The prefix *nildze-* has the meaning 'separating' and signifies an action which separates an object into two parts.

(5.147) *nildze-* 'separating'

nildzedektsa't
 nildze-d-ek-tsa't
 separating-GEN-1SG:H-cut.quickly
 'I'm cutting it in two' <2.105>

The prefix *te-* has the meaning 'into the water' and indicates an action which results in entry into the water. It requires the (n,n) conjugation pattern.

(5.148) *te-* ‘into the water’

tsáʔ téʔitʒah
 tsáʔ te-n-i-t-žah
 beaver into.water-CJ-M-CL-go:PERF
 ‘a beaver went in the water’ (LS 11/11/98)

The prefix *lda-* (or sometimes *niɫda*) has the meaning ‘closing’ and requires the (n,n) conjugation pattern.

(5.149) *lda-* ‘closing’

ldatdenintəʔ
 lda-t-de-n-in-təʔ
 closing-?-GEN-M-2SG-handle.enlogated.object
 ‘(you) close the door’ <4.73>

The prefix *neɫk’e-* denotes an action which occurs in a ‘down and back’ or ‘zig-zagging motion’. It occurs with the (Ø,ʏ) conjugation pattern.

(5.150) *neɫk’e-* ‘down and back’

- a. Fairbanks ts’ʔ neɫk’exdedéɫ
 Fairbanks ts’ʔ neɫk’e-x-de-déɫ
 F. to down.and.back-HUM.PL-?-pl.go
 ‘they went back to Fairbanks’ <2.143>
- b. neɫk’eʔaʔhaɫ
 neɫk’e-aʔhaɫ
 zig.zag-PROG-sg.walk
 ‘he is walking around (erratically)’ <2.67>

The prefix *xa-* has the meaning ‘turning around’. It is composed of the prefix *xa-* and the iterative prefix *na-*, which combine to form *xa-* via the regular process of *na-* absorption (see section 5.4.1 above). The presence of the iterative prefix requires the D- morpheme.

(5.151) *xa#D-* ‘turning around’

xaˈxnitdeɫ
 xa-na-x-n-i-t-deɫ
 turning-ITERATIVE-HUM.PL-CJ-M-D-pl.go
 ‘they turned around’ <5.35>

5.5 Verb stem

The final syllable of the verb consists of the verb stem and possibly a negative or nominalizing suffix. Neither of these suffixes is syllabic but is instead realized as modification of the stem tone and voicing of the verb stem coda. These two suffixes are discussed in section 5.6 below.

The verb stem itself is itself morphologically complex, composed of a root plus an obligatory inflectional suffix corresponding to imperfective, perfective, optative or future mode. The suffix is realized phonologically via ablaut of the verb root. This notion is formalized by Leer, who defines a root as “an underlying form, from which through regular phonological modification of the vowel nucleus and/or suffixation, the stems of a given stem set or group of stem sets may be derived” (1979: 3). This yields two suffix positions, as shown in Table 5.10.

Table 5.10: Root, stem and suffix template

STEM		SUFFIX
ROOT	SUFFIX	NEG
	IMPF	NOM
	PERF	
	OPT	
	FUT	

Compared to some other Athabaskan languages such as Koyukon (Axelrod 1993), the Tanacross root and mode suffixes are tightly fused and generally not synchronically segmentable. Because mode inflection is obligatory, the root is an abstract ‘archi-morpheme’ which never occurs independent of a mode suffix. It is not always possible to assign a specific meaning to a verb root, since a verb lexeme may consist of a root morpheme together with lexically specified (thematic) prefixes. For example, the imperfective stem variant *-ʔeh* in the verb *nəkʔeh* ‘I see’ is grammatically imperfective but does not have a lexical meaning apart from the thematic prefix *n-*.¹²

The phonological constraints governing the combination of root plus mode suffixes are extremely complex. However, there is strong evidence that the root does play an active role in synchronic verb morphology. In particular, the pattern of mode suffixation for a particular verb participates in an elaborate system of aspect marking. Since it is generally not possible to segment the Tanacross verb stem, it makes sense to refer instead to the set of possible verb stems corresponding to the imperfective, perfective, future and optative forms of a root. This set is referred to as a ‘stem set’. A given verb root may be associated with several stem sets, each corresponding to a different aspect.

While there is a certain amount of synchronic irregularity inherent in the system, it is possible to identify suffixation patterns corresponding to various

aspects. In arguing against irregularity and the concomitant burden of memorization Rice notes that patterns of stem variation are remarkably stable both across idiolects/dialects and across time (1989: 803). Even if memorization is not the barrier which some have claimed it to be, the patterns of stem variation—memorized or computed—play an important role in verbal morphology.

For example, consider the pattern of stem variation which corresponds to the ‘momentaneous’ aspect. This aspect encodes punctual events. For ‘open’ roots, those whose PA antecedents do not end in obstruents (see Leer 1979), several patterns are possible, however, there are several points of regularity among these patterns. In particular, the imperfective stem generally ends in a voiceless sonorant or voiceless glottal fricative. The perfective stem has a nasalized vowel and occurs with low (unmarked) tone. The future stem has a voiceless lateral fricative suffix *-ɬ*. The optative stem is similar to the imperfective stem but carries falling tone and voices the stem-final consonant (*-h* → *-∅*). Some examples are given below.

(5.152) Stem sets for the momentaneous aspect (open root)

IMPF	PERF	FUT	OPT	
-ʔá·ỹ	-ʔq̄·	-ʔaɬ	-ʔâ·y	‘handle compact object’
-ti·h	-tq̄·	-tiɬ	-ti·	‘handle sticklike object’

These momentaneous stem sets can be compared to stem sets for the durative aspect. These stem sets are characterized by high tone on the perfective stem. Some examples are given below.

(5.153) Stem sets for the durative aspect (open root)

IMPF	PERF	FUT	OPT	
-ʔɛh	-ʔɛʔ	-ʔiʔ	-ʔɛʔɛ	‘do, see’
-tsax	-tsɛʔx	-tsax	-tsɛʔx	‘cry’

There are perhaps a dozen different aspects in Tanacross. No single verb appear in all aspects, and most verb roots may occur in only one or two different aspects.¹³

A complete description of the Tanacross aspect system is beyond the scope of this dissertation and remains an important area for future research

5.6 Suffixes

In contrast to the modal suprafixes and suffixes discussed in section 5.5, there remain other verb suprafixes and suffixes which are clearly synchronically separable. These include the negative suffix and the nominalizing suffix. These morphemes are sometimes considered enclitics due to their semantic scope over the entire verb phrase. However, I classify them as suffixes based on the fact that they may only occur on the verb word, not on a word from another category.

5.6.1 Negative suffix

Verb phrase negation is marked both via a verb stem suffix -ɛ and via a phrasal proclitic *kʔá=*. The negative suffix never appears in the surface form but instead

surfaces as voicing of the stem-final consonant. The negative verb stem is thus similar to the possessed form of noun stems but has no final glottal stop.

Voiceless stem-final consonants are voiced in the negative form, and sonorant finals are lengthened. This stem modification—voicing of the stem-final consonant—can be seen historically as the Tanacross reflex of the PA *-heʷ suffix. As noted in section 2.3.4, the negative verb stem also carries a distinct intonation pattern resulting in an extra-high pitch marking on the negated verb stem, as shown in (5.154).

(5.154) Negative suffix with extra-high tone

- a. k'á yíhhá'l
 k'á y-ih-haʷ-ε
 NEG PROG-1SG-sg.go:IMPF-NEG
 'I'm not going'
- b. k'á táhšá'dǔ
 k'á t-y-h-šá'tθ-ε
 NEG INCEP-FUT-H-SNOW:PERF-NEG
 'it's not going to snow'

The extra-high tone occurs only when the verb is in the final position of an intonational phrase. In other positions, the low (unmarked) tone of the negative suffix combines with the original stem tone in a manner analogous to that of the nominalizing suffix -ε, discussed in section 4.2.3 above. Thus, original high-tone stems have falling tone when they occur with the negative suffix in non-intonation final position. An example is the verb *h-šá'tθ* 'to snow', shown in (5.155).

(5.155) Negative suffix without extra-high tone

k'á	íhšâdð	déʔ,	tsa'déʔ
k'á	í-h-šá'tθ-ε	déʔ,	ts'ε-t-γ-déʔ
NEG	NEG-H-snow-NEG	if,	IMP-INCEP-M-pl.go
'if it's not snowing, we'll go' (Solomon 1997)			

In intonation-final position, the extra-high tone neutralizes the stem-tone modification effect of the negative extra-high tone.

5.6.2 Nominalizing suffix

Nominalization was discussed earlier in the context of noun morphology (see section 4.2.3 above); here it is discussed in the context of verb morphology. There is some overlap between these two discussions. Nominalization is formally marked by the verb suffix *-ε*. The nominalizing suffix carries low tone which combines with underlyingly high tone stems to create falling tone stems. The vowel of the nominalizing suffix does not surface but is instead realized in most cases via voicing of the stem-final consonant. For stems ending in glottal fricatives (5.156) or glottal stops (5.157) the behavior of the nominalizing suffix is slightly different.

(5.156) Nominalized forms of stems ending in glottal fricatives (Leer 1982a: 12)

ʔe'dah	'he is sitting'
ʔe'daγ	'the one who is sitting'
inehʔeh	'he sees it'
inehʔe'n	'that which he saw'

(5.157) Nominalized forms of stems ending in glottal stop (Leer 1982a: 12)

nač'enihtl'úʔ	'I'm sewing'
nač'enihtl'úʔu	'that which I'm sewing'
inɪhʔéʔ	'he saw it'
inɪhʔéʔe	'that which he saw'

Some textual examples of the nominalizing suffix are given in (5.158).

(5.158) Examples of nominalization

- a. tur žír č'et'ǎ tada'le'l nekʔəh
 tur žír č'et'ǎ ta-d-γ-ʔeʔ-ε n-εk-ʔəh
 water in INDEF-leaf water-GEN-PROG-pl.obj-NOM THM-1SG-see:IMPF
 'I see leaves floating in the water' <4.115>
- b. dðeʔ ts'eníníʔa'γ éké'
 dðeʔ ts'ε-ní-n-í-ʔa'-ε é-ké'
 hill straight-down-CJ-M-classify.cpt.obj-NOM M-side
 'on the side of a hill that sloped down' (G. Paul 1980: 20)

For more discussion of the nominalizing suffix see section 4.2.3 above.

5.7 Chapter summary

While I have followed the templatic model in the description of Tanacross verb morphology, it should be emphasized that much of the meaning of the verb is not compositional. It is convenient for the purposes of description to consider each prefix (and suffix) position in the verb template independently. But such descriptive convenience should not be allowed to obscure the holistic nature of the verbal morphology. Verb lexemes are often discontinuous, involving lexical material in more than one template position. More crucially, particular morphemes may govern the choice of other affixes, as with the inceptive prefix *te-*, which require the *ǰ-* conjugation prefix, and the iterative prefix *na-*, which

requires the d-classifier. Such selectional restrictions mean that the Tanacross verb is more than a mere collection of morphemes which combine arbitrarily to form a predicate.

Several aspects of verb morphology have not been adequately addressed here. The most notable omission is the topic of verb stem variation, which was discussed in only a cursory manner. Verb stem variation is arguably the most complex facet of verbal morphology and plays an important role in Tanacross grammar as the locus of the interface between verbal morphology and semantics. A complete description of Tanacross verb stem variation must await further study.

Other areas of verbal morphology have been addressed incompletely. These include the adverbial and the incorporate prefixes. While I described the behavior of some of these prefixes, I have not attempted a complete inventory. Such an endeavor might more appropriately be addressed within a study of verbal semantics.

Notes to chapter 5

- ¹ Assigning a phonetic form to the verb root is of necessity somewhat arbitrary since the root does not occur on the surface. Usually some convention is employed for this purpose, such as using the perfective stem form in the most common aspect in which a verb occurs.
- ² Some dialects of Canadian Gwich'in do retain the first person duoplural, though it does not occur in modern Alaskan Gwich'in. See Story (1989) for more on the Athabaskan duoplural.
- ³ Hargus & Tuttle (1997) analyze the Athabaskan 'peg' as a mode prefix, so that the requirement that *ε-* be present in the absence of an inner subject prefix and conjugation-mode prefix can be viewed as a syntactic constraint that all verbs be specified for mode rather than a morphologically-conditioned phonotactic constraint.
- ⁴ Historically, the various stem forms for the different aspects can be analyzed as a combination of a verb root together with an aspectual suffix. In Tanacross it is not always possible to isolate an aspectual suffix from the verb root itself synchronically.
- ⁵ Conjugation and aspectual patterns for a particular verb correlate well with membership in semantically-based lexical subcategories, known as 'verb theme categories'. See Kari (1979) on Ahtna verb theme categories; Axelrod (1993) on Koyukon. The discussion of verb theme categories in Tanacross is beyond the scope of this dissertation.
- ⁶ In the first person plural form the impersonal prefix *ts'e-* contracts with the inceptive prefix *te-* to form *tse-* (Leer 1977).
- ⁷ The indefinite object prefix does not occur with the impersonal subject prefix *ts'e-*; the fourth person object prefix *yi-* occurs instead. See section 5.3.5.2.3.
- ⁸ The first person plural use is also found outside Alaska, where it contrasts with the inner first plural subject prefix (Story 1989).
- ⁹ Tenebaum makes a similar observation (1978: 111)

- ¹⁰ The cognate human plural prefix in Slave is in fact restricted to third person (Rice 2000b: 206).
- ¹¹ Alternately, the disjunct morphemes might be termed ‘clitics’, though these morphemes always attach to the verb word, not to an other element of the verb phrase. The phonological status of the disjunct boundary will not be addressed further here.
- ¹² A given verb root may combine with several different sets of thematic verb prefixes to form several different verb morphemes. It is of course possible to assign a meaning to the verb root as the union of the meanings of the individual verbs built from that root. However, such a meaning is necessarily abstract if the verb root does not occur without thematic prefixes.
- ¹³ Verbs may be categorized as to the range of aspects in which they occur and the primary aspect in which they occur. For more on this approach to verb theme categories, see Kari (1979).

Chapter 6 Minor word classes

In addition to the two major lexical categories of noun and verb, there are a number of minor, closed categories which are differentiated from each other primarily on semantic bases and in some cases also on a morphological basis. With the exception of the directionals, members of the minor word classes are predominantly monomorphemic. The division into distinct word classes presented here is admittedly rather arbitrary, and I do not offer syntactic evidence for these divisions. Thus, the arrangement of this chapter is motivated more by descriptive convenience than by any sort of language-internal division of word classes in Tanacross. The following categories are described here: independent pronouns, postpositions, demonstratives, question words, adverbs, particles, conjunctions, adjectives, and directionals.

6.1 Independent pronouns

Both bound and free (independent) pronouns occur in Tanacross. Bound object pronouns occur as verb prefixes cross-referencing the person and number of the verbal object, as discussed in section 5.3.5.2 above. Bound pronouns also occur as prefixes on postpositions (see section 6.4). Independent pronouns occur as separate words.

Independent pronouns may occur as adjuncts to subjects, objects or nominal possessors. They are not obligatory and always carry a contrastive or emphatic reading. The first and second person independent pronouns are shown in the table below.

Table 6.1: Tanacross independent pronouns

	SG	PL
1	ših/šir	ne'xónʔ
2	nénʔ	nuhxónʔ

(6.1) Examples of independent pronouns

- a. nuhxónʔ xudahnih
 nuhxónʔ xu-d-ah-nih
 2PL AREA-THM-2PL-say
 ‘did you guys say that?’
- b. sùʔʉ ših šdeγʉhk'á
 sùʔʉ ših š-de-γu-_c-h-k'á
 PROHIB 1SG 1SG-THM-OPT-2SG-H-see:PERF
 ‘don’t shoot me’

There are no Tanacross independent pronouns referencing third person, that is, no cognates of Ahtna *yen* and *yene*. Instead, singular proximal demonstrative pronouns are used to refer to third persons, and plural is marked by the human plural enclitic *?in*. An example is given in the following section.

6.2 Demonstratives

A limited set of demonstratives may modify noun phrases, occurring either as pronouns or as determiners. I discuss both uses here as they have the same form.

The four demonstratives are shown in the table below.

Table 6.2: Tanacross demonstratives

	SINGULAR	PLURAL
PROXIMAL	nâ'(n)	ʔeŋ
DISTAL	jâ'(n)	ʔêy

As noted in the previous section, demonstrative pronouns are used to refer to third person human referents. The proximal singular *nâ'n* is used for this purpose.

Plural humans are marked by the proximal singular together with the human plural enclitic *ʔin*, rather than the proximal plural demonstrative *ʔeŋ*. Thus, third person human plural is *nâ'n=ʔin*, as shown in (6.1b).

(6.2) Examples of demonstrative pronouns

- a. stsʉ' ʔêy xeniŋ
 s-tsʉ' ʔêy xε-niŋ
 1SG-grandmother DISTAL HUM.PL-say
 'they said that to my grandma'
- b. nâ'n ʔin xuxteniŋ
 nâ'n ʔin xu-x-niŋ
 PROX PL AREA-HUM.PL-say
 'did you guys say that?'

When demonstratives are used as determiners, they occur in the initial position of the noun phrase.

(6.3) Examples of demonstrative determiners

- a. jâ· mintl'á· di'lé?e utón?
 jâ· m-intl'á· di'lé?e u-tón?
 DISTAL 3SG-hand something THM-hold
 'in that hand he held something' (G. Paul 1980: 40)

- b. nâ'n ts'éhxeh γintsé'x
 nâ'n ts'éhxeh γ-in-tsé'x
 PROX girl CJ-M-cry
 'this girl was crying'

6.3 Question words

Question words are used with content questions (“wh-questions”) to indicate what property is being questioned (time, manner, location, etc.). The Tanacross question words are listed in the table below.

Table 6.3: Question words

dí·	‘what’
dó·	‘who’
ndé·	‘where’
dí·γa(h)	‘why’ (<i>lit.</i> : ‘what for’)
nts'é	‘how’
dé?	‘when’ (future)
dâ?	‘when’ (past)

Question words generally occur phrase-initially. Some examples are given below.

(6.4) Examples of question words

- a. nts'é t'int'eh
 nts'é t'int'eh
 how THM-2SG-be:IMPF
 ‘how are you?’

- b. nts'é nuhsír
 nts'é n-u-h-sír
 how 2SG-THM-H-call
 'what's your name?' *lit: 'how are you called?'*
- c. dó' ńǰhʔɛh
 dó' n-ǰ-h-ʔɛh
 who THM-2SG-H-see:IMPF
 'who do you see?'
- d. dí' ǰǰhme'ts
 dí' ǰ-ǰ-h-me'ts
 what CJ-2SG-H-boil
 'what did you boil?'
- e. ndé' ts'ǰ? ǰínhaʔ
 ndé' ts'ǰ? ǰ-in-haʔ
 where to PROG-2SG-sg.go
 'where are you going?'
- f. ndé' ké'y ts'ɛŋ ninžah
 ndé' ké'y ts'ɛŋ n-in-žah
 where village from CJ-2SG-sg.go
 'what village are you from?'

Note that content interrogatives are further marked via a phrase-final low pitch intonation contour. This has the effect of neutralizing marked stem-tones where these stems occur in phrase-final position. As elsewhere in this dissertation, I have followed the convention of marking only lexical tone and tone which derives from lexical tone via tone-spread processes. Pitch derived from intonation is not marked.

For example, after the application of the appropriate intonation contour (6.4b) above would be pronounced with a final low pitch, in spite of the fact that

the final syllable has a lexically marked high tone. This illustrates stem-tone neutralization in content interrogatives.

6.4 Postpositions

Tanacross postpositions constitute a distinct lexical class of morphemes which can be inflected with pronominal object pronouns. Postpositions head a postpositional phrase and must occur immediately following the noun phrase which they govern. This NP may be a full noun phrase or an object pronoun.

(6.5) Tanacross postpositions

a'	'for' (BENEFACTIVE)
č'áʔ	'away from'
ukah	'for'
ʔéł	'with'
k'edð	'by', 'beside'
k'et	'on'
kah	'for'
kɛʔ	'in quest of'
kónʔteg	'front'
nandirz	'behind'
žir	'in'
t'aɣ	'under'
tah	'in', 'during', 'among'
tɛθ	'over'
ts'ɪʔ	'to'
ɣa/ɣah	'by', 'for', 'through'
ts'ɛŋ	'from'
e	'on', 'against'

In many cases postpositions serve to mark oblique verbal arguments. Some examples are given below.

(6.6) Oblique argument postpositions

- a. Jerry ʔéł ǫíhdah
 Jerry ʔéł ǫ-ih-dah
 J with CJ-1SG-stay:IMPF
 ‘I’m staying with Jerry’
- b. ʔaʔ ʃaʔ ahtseyʔ
 ʔaʔ ʃ-aʔ ʔ-h-tseyʔ
 snowshoe 1SG-for PROG-H-make
 ‘he’s making a snowshoe for me’
- c. tsʔeyʔ ʒiʔ naʔatkeʔ
 tsʔeyʔ ʒiʔ na-ʔ-at-keʔ
 boat in ITER-M-D-go.by.boat
 ‘he’s coming back down the river in a boat’ <3.77>
- d. xuʔyah ničʔenenegʔiʔ
 xuʔ-yah ni-čʔε-ne-n-εg-ʔiʔ
 3PL-by TERM-INDEF-THM-M-1SG-sneak
 ‘I snuck up by them’ <3.121>
- e. yanídáʔa ʔah ʃʔéł naxuldek
 yanídáʔa ʔah ʃ-ʔéł na-x-u-l-dek
 long.ago.times for 1SG-with THM-AREA-OPT-L-tell.story
 ‘you tell me a story about long-ago times’ <3.28>

The argument structure of a Tanacross verb may differ from that in the corresponding English verb. Core direct object arguments in English are often coded as oblique arguments marked by a postposition in the corresponding Tanacross verb. This is the case with the object of the verb ‘love’ in (6.7).

(6.7) Non-prototypical postpositional objects

- tsʔinkeʔ ʔah ihtsʔiʔ
 tsʔinkeʔ ʔah ih-tsʔiʔ
 children for 1SG-love
 ‘I love my kids’ <3.107>

When a postposition immediately precedes a verb, sandhi may affect the phonological boundary between the postposition and the leftmost verb prefix. Thus, postpositions may participate in some regular verb morphophonemic processes. For example, the fourth person object prefix *yi-* occurs as *y-* when preceded by an open syllable and followed by a consonant. As shown in (6.8), this rule applies equally to postpositions of shape CV which precede a fourth person object prefix which is followed by a consonant.

(6.8) Sandhi between postposition and verb

dɛn̄ɪg	ɣaydaldek	
dɛn̄ɪg	ɣa	yi-d-ɣ-l-dɛk
moose	by	4OBJ-THM-M-L-miss.shot
'he (shot and) missed the moose' <3.79>		

Another example of sandhi between postpositions and verb prefixes is found in the process of *na-* absorption. For example, the vowel of the postposition in (6.9) is lengthened and the verb-initial iterative prefix *na-* is deleted. The entire string is pronounced under one intonational contour.

(6.9) *na-*absorption following postposition

mɛč'	ɛkʔáɬ
m-e	na-č'ɛ-ɛk-ʔáɬ
3-PP	ITER-INDEF.OBJ-1S.CL-eat
'I fed it again' (Leer 1982b)	

However, such sandhi processes are not obligatory and may be blocked in careful speech or when the object of the postposition is used contrastively.

In addition to these phonological effects, postpositions may also impose constraints on the choice of conjugation and aspect prefixes. For example, the postposition *ya-* ‘through’ requires the *n-* conjugation prefix in the governing verb.

(6.10) Postposition *ya* ‘through’ with (n,n) conjugation pattern

- a. *yiya* *ninke't*
 yi-ya *n-in-ke't*
 4OBJ-through CJ-M-pierce
 ‘he pierced through it’ <2.111>
- b. *dedzã'ɣʔ* *ya* *ninke't*
 dedzã'ɣʔ *ya* *n-in-ke't*
 RFLX-ear through CJ-M-pierce
 ‘she pierced her ear’ <2.111>

The postposition *ya-* ‘through’ also occurs with the qualifier prefix *d-* and the d-classifier, with the meaning ‘missing’.

(6.11) P-*ya##d-D-* ‘missing P’

- a. *dɛnîg* *unihdek*
 dɛnîg *u-ni-h-dɛk*
 moose CON-GEN-H-miss.shot
 ‘he shot at the moose’ <3.79>
- b. *dɛnîg* *ya* *ydaldek*
 dɛnîg *ya* *yi-d-ɣ-l-dɛk*
 moose through 4OBJ-THM-M-L-miss.shot
 ‘he (shot and) missed the moose’ <3.79>

Thus, both phonologically and morphologically, Tanacross postpositions are intermediate between independent words and verb prefixes. This intermediate status may well reflect an ongoing morphologization of the postpositions in Athabaskan languages. As noted by Tenebaum (1978) with respect to Dena’ina,

“[T]he postpositions as a morphological unit appear to be intermediate between true prefixes and independent particles, perhaps having been free elements at one time and now exhibiting the characteristic rightward movement of Athabaskan morphology, being drawn, like the incorporates, and probably for that matter all of the disjunct prefixes, into the body of the verb, intensifying the morphological ‘squish’ of the prefixes nearest the stem.” (193)

The postpositions could perhaps be considered verb clitics, reflecting their intermediate status between words and verb prefixes. Indeed, many authors consider both postpositions and postpositional object pronouns (discussed below) to be actual verb prefixes occupying the leftmost positions of the verb template.

A postpositional object pronominal prefix may affix to a postposition in lieu of a full NP postpositional object. The postpositional object pronouns are identical in form to the possessive prefixes and direct object prefixes. However, unlike the possessive prefixes, the postpositional object pronouns cannot co-occur with an adjunct noun phrase. Thus, *John ʔéʔ* ‘with John’ but not **John uʔéʔ*, though *uʔéʔ* itself is possible without an adjunct noun phrase, meaning ‘with him/her/it’. The complete list of postpositional object prefixes is given in Table 6.4.

Table 6.4: Postpositional object pronominal prefixes

person	singular	plural
1	š-	ne-
2	n-	nuh-
3	m-/u-	xu-
4	y-	
INDEFINITE	č'e-	
REFLEXIVE	ʔede-	
RECIPROCAL	nił-	

The third person form is used when an inner subject is present in the governing verb. As with the third person singular possessive prefix, the vocalic form occur preceding consonants, while the consonantal form occurs preceding vowels. The fourth person form is used when no inner subject is present in the governing verb.

(6.12) Reciprocal postpositional object

niłya	xaltθeł
nił-ya	x-a-l-tθeł
RECIP-beside	HUM.PL-PROG-L-run
'they are running beside each other' <2.60>	

6.5 Adverbs

Adverbs are uninflected words which express manner, time or intensification.

However, this is not really a semantically defined category, as many verb prefixes also express an adverbial meaning. Adverbs differ from particles in having more of a semantic than pragmatic function. Some examples of adverbs are given in

(6.13).

(6.13) Tanacross adverbs

łot'ê', t'ê'y	'really'
čih	'different', 'also', 'another'
ɣa'léʔ	'maybe'
k'ôd	'enough'
ndlân	'lots'
žéʔ	'only'

A large subcategory of adverbs consists of adverbs referring to time. Examples of time adverbs are given in (6.14).

(6.14) Time adverbs

dáʔa	'previously'
déʔ	'subsequently'
tʔ'án	'after'
tθ'ihthah	'still'
tθ'ih	'yet'
xen	'quickly'
k'ah	'now'
dze'n	'today'

A large number of adverbs of time can be formed using the adverbial particles *dáʔa* 'previously' and *déʔ* 'subsequently'. Some examples are given in (6.15).

(6.15) Examples of time adverbs

- a. k'á déʔ tθ'ihthah níttsí'l
 k'á déʔ tθ'ihthah n-í-t-tsíʔ-ε
 NEG subsequently still THM-NEG-D-ripe-NEG
 'it's still not ripe' <3.31>
- b. tedð dáʔa
 tedð dáʔa
 night previously
 'last night'

- c. k'áhménʔ déʔ
 k'áhménʔ déʔ
 morning subsequently
 'tomorrow morning'
- d. k'ah dúʔ déʔ
 k'ah dúʔ déʔ
 now EMPH subsequently
 'from now on'

6.6 Particles

Particles are uninflected and unstressed words which have a pragmatic function.

The functions encoded by Tanacross particles include modal, emphasis and focus.

Particles which serve a coordinating or subordinating function are discussed separately in section 6.7.

The particle *č'ε* marks the focused element in a focus construction. It occurs following the focused or contrasted noun phrase or pronoun.

(6.16) Focus *č'ε*

- a. ših č'ε ðihda:y
 ših č'ε ð-ih-da:y
 1SG FOCUS CJ-1SG-stay
 'I'm the one who lives here'
- b. dí: č'ε ihme'dz
 dí: č'ε i-h-me'dz
 what FOCUS 2SG-H-boil
 'what is it that you're boiling?'

The modal particles include *súʔ* and *dā*. The particle *súʔ* or its allomorph *súʔu* is used with a second person form of a verb to form a prohibitive construction meaning 'do not'. It usually precedes the verb or verb phrase.

(6.17) Prohibitive sŭʔ

sŭʔ stáʔiltθet
 sŭʔ staʔ-i-l-tθet
 PROHIB away-2SG-L-run
 ‘don’t (you) run away’

The particle *dâ* may follow an optative mode form of a verb to emphasize the deontic sense of the optative mode.

(6.18) Deontic dâ

γundáʔa dâ
 γu-n-dáʔa dâ
 OPT-2SG-stay DEONTIC
 ‘you should stay’

The particle *dúʔ* occurs following a noun or pronoun and has an emphatic or contrastive meaning.

(6.19) emphatic dúʔ

nâ'n dúʔ štáʔ sínt'eh
 nâ'n dúʔ š-táʔ s-ín-t'eh
 this EMPH 1SG-father CJ-M-be
 ‘this is my father’

The negative particle *k'á* occurs as a verb phrase proclitic to mark verbal negation. The use of this morpheme is discussed in section 5.6.1 above.

6.7 Conjunctions

Conjunctions are uninflected words which serve to conjoin two clauses. Many conjunctions are homophonous with postpositions. The particle *ts'ŭʔ*, which is

homophonous with the postposition *ts'ɨʔ* 'to', may be used in ways which are equivalent to English coordination and subordination. The two functions are not differentiated in Tanacross. Some example of the conjunction *ts'ɨʔ* are given in (6.20).

(6.20) Subordinator/coordinator *ts'ɨʔ*

- a. gɥ nɭə' ts'ɨʔ yéʔetdey̆
 gɥ n-ɭə' ts'ɨʔ ye-ʔet-dey̆
 Brush Indian M-be CONJ 4OBJ-D-know
 'he found out that he was a Brush Indian' (G. Paul 1980: 26)
- b. šos nedičeɬ ts'ɨʔ ya'ndá'dz xurnehʔeh
 šos nedičeɬ ts'ɨʔ ya'-dá'dz xur-n-h-ʔeh
 bear sit.back CONJ DISTAL-downstream-ABL 3PL-THM-H-see
 'the bear sat right back and looked up at them' (G. Paul 1980: 4)

The particle *ʔéɬ*, which is homophonous with the postposition *ʔéɬ* 'with', may also have a coordinating function.

(6.21) Coordinator *ʔéɬ*

- | | | | |
|-------------------------------------|--------------------------|-------------------------------|------|
| ey | yardéz | naxatdétɬ | ʔéɬ |
| ey | yardéz | na-x-a-t-détɬ | ʔéɬ |
| that | distant-inland:ABL | ITER-HUM.PL.PROG-D-pl.go:IMPF | CONJ |
| 'they were traveling back down and' | | | |
| Ketchumstuck | níxidétɬ | | |
| Ketchumstuck | ní-x-i-détɬ | | |
| K. | TERM-HUM.PL-M-pl.go:PERF | | |
| 'they arrived at Ketchumstuck' | | | |

The particle *déʔ* is used as a conditional subordinating conjunction. It follows the subordinate clause, and the subordinate clause verb occurs in the optative mode.

(6.22) Conditional *déʔ*

šnuhʔəh déʔ šétníljet
 š-n-u-h-ʔəh déʔ še-t-ni-i-l-jet
 1SG-THM-OPT-H-see CONJ 1SG-INCEP-THM-2SG-L-be.afraid
 ‘if you looked at me you would be afraid’ (G. Paul 1980: 26)

The particle *tl’án* can be used as a temporal subordinating conjunction indicating that the clause preceding the conjunction temporally precedes the clause following the conjunction.

(6.23) Temporal *tl’án*

ey tl’án ey nondlê-d nač’edahéʔəʔ xeyíhtsiʔ
 ey tl’án ey nondlê-d nač’edahéʔəʔ xε-y-ɿ-h-tsiʔ
 that after that whiteman watchman HUM.PL-4OBJ-M-H-make
 ‘after that that whiteman made him a watchman’ <2.33>

It should be noted that the use of coordinating and subordinating conjunctions represents only one method of clause-combining in Tanacross. Another common strategy employed in complex clause constructions is the use of a nominalized verb phrase as an object of a postposition.

(6.24) Alternate clause-combining strategy

na’dóg natihda’g ʔéł
 na’-dóg na-t-ih-da’k-ε ʔéł
 INTRMED-inland:AREA PRMB-PRMB-1SG-sg.go-NOM with
 sú’s t’öyʔ xudεkʔa’
 sú’s t’ox-εʔ xu-d-εk-ʔa’
 robin nest-POSS THM-THM-1SG:H-handle.open.container
 ‘I was walking around back there, and I found a robin’s nest’
 (Charlie & McRoy 1972)

A more thorough discussion of the syntax of clause-combining in Tanacross is beyond the scope of this dissertation.

6.8 Adjectives

Predicative property concepts are expressed in Tanacross via a stative verb.

Attributive property concepts are also usually expressed via verbs, or more precisely via a nominalized verb form. However, there is small class of attributive property concept words referring to size dimension which occur as adjectives.

Attributive adjectives occur following the noun which they modify. Unlike nouns and verbs, Tanacross adjectives cannot be inflected. Adjectives are also differentiated from verbs in that they do not require a prothetic peg prefix.

(6.25) Tanacross adjectives

- a. dɛnɪŋ čox dédɛkk'áʔ
 dɛnɪŋ čox de-ð-ɛk-k'áʔ
 moose big THM-CJ-1SG:H-SHOT
 'I shot a big moose'
- b. tsɪ'l gə'y dɛlɣos
 tsɪ'l gə'y dɛlɣos
 boy small THM-L-play
 'the small boy is playing'

In some cases an uninflected verb stem may be used attributively as an adjective.

For example, compare *deneh ts'eŋ* 'a tall, thin man' with *deneh nts'ek* 'the man is tall and thin'. The latter form is inflected as a verb with the mode prefix *n-*, while the former is uninflected as an adjective. In other cases an entirely different

root is used to express attributive and predicative property concepts. For example, compare the adjective *gay* ‘small’ with the verb *-tsêdl* ‘to be small’.

6.9 Directionals

Tanacross employs directional adverbs which modify motion or location verbs.

The directional system has three structural dimensions, corresponding to distance from the speaker, location relative to the speaker, and motion from the specified location. Directional words are composed structurally of a stem plus a prefix. The directional prefixes distinguish four levels of deixis, from proximal to distal, in addition to an unmarked or ‘neutral’ deixis.

Table 6.5: Directional prefixes

da-	‘near’
na-	‘intermediate’
ya-	‘distant’
yaʔa-	‘more distant’
a-	‘neutral’

The directional stems can be analyzed as consisting of an underlying root plus suffix, though as with noun and verb stem suffixation these underlying directional suffixes have coalesced with the directional root to form a structurally two dimensional system of directional stems. One dimension distinguishes direction; another dimension distinguishes motion with respect to the specified direction.

The motion dimension distinguishes motion with respect to the location specified by the directional root. The four motion categories are allative, ablative,

punctual and areal. The allative and ablative stems indicate direction toward or away from, respectively, the location specified by the root. The areal stems indicate motion in the general area specified by the root, while the punctual stems indicate location at the place specified by the root. The direction dimension has a riverine character which distinguishes two primary axes of upstream versus downstream and away from water (inland) versus toward water. The system does not distinguish inland from vertically above. (Not every possible combination of root plus suffix occurs in my data.) The stems which do occur are listed in Table 6.6.

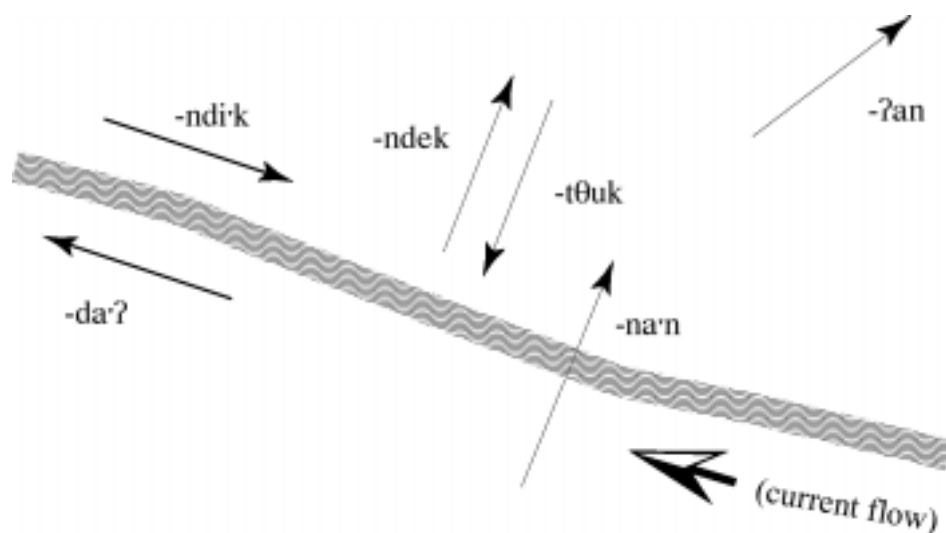
Table 6.6: Directional stems (after Sikorski 1996)

	ALLATIVE	PUNCTUAL	AREAL	ABLATIVE
‘upstream’	- ⁿ déʔe	- ⁿ dé·	- ⁿ díg	- ⁿ đi·dz
‘downstream’	- ⁿ daʔa	- ⁿ dá·		- ⁿ dâ·dz
‘inland’, ‘above’	- ⁿ deg	- ⁿ dég	- ⁿ dóg	- ⁿ dêdz
‘waterward’	-tθénʔ	-tθi·	-tθúg	
‘across’	-ná·nʔ	-ná·n	- ⁿ das	- ⁿ dâz
‘below (vertically)’	-žégʔ	-žé·	-žóg	-žêz
‘away’	-ʔénʔ		-ʔóg	-ʔâz

The function of the various directional stems can be diagrammed as in Figure 6.1.

Only the underlying root forms are listed here; the corresponding suffixed stem forms can be found in Table 6.6 above.

Figure 6.1: Tanacross directional system (roots shown)



Directional stems are never used as objects of postpositions. Instead, the allative or ablative stem forms are used to indicate motion away from or toward the speaker. Directional stems and prefixes may be combined without restriction with concomitant combinatorial semantics. In many cases the directional word serves the same function as a locative postpositional phrase. Some examples are given below.

(6.26) Directionals

- a. yaʔndâʔz tsʔeÿ žiʔ naʔatleʔ
 yaʔ-ⁿdâʔz tsʔeÿ žiʔ naʔatleʔ
 DISTAL-across:ABL boat in ITER-PROG-D-go.by.boat
 ‘he’s coming back (from) across the river in a boat’
- b. naʔžêʔz naʔadaʔ
 naʔ-žêʔz na-a-t-haʔ
 INTERMEDIATE-below:ABL ITER-PROG-D-sg.go
 ‘he’s coming back up (from below)’

(6.28) Lexicalized directionals

- a. nahʔôg
 nah-ʔôg
 INTERMEDIATE-away:AREAL
 ‘outside’
- b. yaʔandaʹ
 yaʔa-ⁿdaʹ
 DISTAL-downstream:PUNCTUAL
 ‘Fairbanks’

The riverine directional system may also be extended to other contexts where no river system is present or relevant to the situation (cf. Taylor 1984). For example, the door of a house is considered to lie ‘toward the water’, while the rear of the house is considered to lie ‘inland’. This orientation of course reflects the custom of building houses with doors facing the water (Leer 1989) but the metaphor has been extended to apply even when houses do not face the water.

(6.29) Directional system applied to a house

aⁿdêdz
 a-ⁿdêdz
 NEUTRAL-inland:ABL
 ‘come forward (toward the front)’ *lit: ‘from inland’*

Similarly, the human body can be considered to be oriented so that the head is ‘above’ and the feet are ‘below’.

(6.30) Directional system applied to a human body

nandóg	štθíʔ	tah	žáʔ	xúnleʹ
na- ⁿ dóg	š-tθíʔ	tah	žáʔ	xu-n-leʹ
INTERMEDIATE-above:AREAL	1SG-head	in	lice	AREAL-M-be

‘I have lice in my hair’ <3.61>

For further discussion of Athabaskan directional systems see Kari (1985; 1989a; 1990) and Leer (1989).

Chapter 7 Summary

In the preceding chapters I have described the present state of knowledge of Tanacross phonology, phonetics, and morphology. Of course, much more work remains to be done to describe the elaborate grammar and sound system of this language more fully. Still, I remain hopeful that I have at least achieved two main goals: synthesizing previous work on Tanacross, and adding some additional data which will contribute to future documentation and understanding of the language. The latter goal is addressed in part also by the appendices which follow, in particular the sample Tanacross text and the sample Tanacross vocabulary. By way of conclusion, in this chapter I summarize some important areas for future research.

While no area of Tanacross linguistics can be considered to be comprehensively documented, the phonology is at least fairly well understood. The recognition of the six-vowel system and the generally sub-phonemic nature of vowel length greatly elucidates the description of the sound system. However, much remains to be known regarding the interaction between lexical tone and intonation. The behavior of tone spread and assimilation is readily explained in isolation, but the ways in which tone spread interacts with prosodic features such as focus and negative intonation remain important topics for future study.

I have presented the results of two short acoustic studies. The first explores the nature of the voicing distinction in stem-initial fricatives. There is clearly a statistically significant difference in acoustic intensity between voiceless and ‘semi-voiced’ fricatives; the next step will be to develop an articulatory characterization of the ‘semi-voiced’ distinction. Articulatory and aerodynamic studies, including airflow and pressure measurements, should be carried out. It is crucial that such studies be undertaken while a relatively large pool of healthy and competent native speakers can be consulted. The second acoustic study addresses the relationship between lexical tone and phonation type. The existence of a correlation between high tone and acoustic correlates of laryngealization warrants further study. This should be a rich area for future investigation, possibly shedding some light on the nature of Athabaskan tonogenesis.

The bulk of this dissertation is devoted to the description of verb morphology, in particular verb prefix morphology, arguably the most complex area of Tanacross morphology. I have described in some detail the morphophonemics of the conjugation and mode prefixes in some of the more common aspects with some of the more common prefix combinations. Additional work will be required in order to provide a comprehensive description of mode-aspect morphology. Note also that the discussion of verb stem variation toward the end of chapter 5 is of a somewhat preliminary nature. A full investigation of

this important phenomenon is surely warranted and should be conducted in conjunction with a complete lexical documentation of the language.

Continued documentation of the Tanacross language will certainly expand its purview beyond sounds and words to include the study of syntax, semantics, and discourse. The aspectual system remains an important topic for future investigation in this realm. Adequate documentation of continuous natural speech across a variety of speech types remains a high priority, and a fuller understanding of the nature of Tanacross will come only by looking at the language in use.

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Appendix A. Tanacross practical orthography

As of this writing there are not many written materials available in the Tanacross language. However, an orthographic standard has developed over the past decade, largely through the work of the John Ritter of the Yukon Native Language Centre (YNLC), and more materials are likely to appear in the coming years. In this appendix I summarize the development of the Tanacross practical orthography and provide a guide to the crucial differences between the practical orthography and the technical orthography used in this dissertation. It is hoped that this discussion will aid speakers and linguists wishing to access existing and future publications in the Tanacross language.

Many different practical orthographies have been used to write Tanacross in pedagogical and linguistic publications. Leer (1982b) recognizes three distinct phases of Tanacross orthography. The first stage is exemplified by Nancy McRoy's work in the early 1970's (cf. McRoy 1973). The second stage is exemplified in the work of Ron Scollon later in the same decade (Scollon 1979; G. Paul 1980). The third stage is exemplified by Leer's work with Alice Brean in the early 1980's. The system employed in Kari's work can be said to represent a fourth stage chronologically, though it is in many ways a hybrid of the second and third stages (Kari 1991b, 1991a). Kari's system incorporates the vowel system

and tri-graph dental affricates (*tth* and *ddh*) of the third stage but does not distinguish semi-voiced fricatives with underscore. A fifth stage of Tanacross orthography is exemplified by publications of the Yukon Native Language Centre (Solomon 1994, 1996; J. Isaac 1997). The YNLC orthography incorporates the stage three changes and adds five types of vowel tone marking. This system is employed in most current Tanacross work, including that presented in this document. The consonant chart is shown below.

Table A.1: Tanacross practical orthography (after Solomon 1996)

Stops/ Affricates	(b)	d	dl	ddh	dz	j	g	'
		t	tl	tth	ts	ch	k	
		t'	tl'	tth'	ts'	ch'	k'	
Fricatives			l	dh	z		gh	
			ł	th	s	sh	x	
			ł	th	s	sh	x	h
Nasals	m	n						
		nh						
	(mb)	nd						
Approximants	w					y		
						yh		

With respect to the fricatives, three distinctions in fricative voicing are recognized. Semi-voiced fricatives (necessarily restricted to stem-initial position) are marked with an underscore to indicate that their pronunciation in this position differs from that of a fully voiced or voiceless fricative. In fact, as discussed in above, these semi-voiced fricatives are actually conditioned allophones of the voiced fricatives, with the exception of the underlyingly voiced palatal fricative,

which always occurs semi-voiced. However, these semi-voiced fricatives are very striking and clear to native speakers, and writing them as distinct segments captures an important and unique feature of the Tanacross sound system (John Ritter, p.c.). The YNLC orthography also recognizes /w/ as a distinct segment from its allophone /m/.

The vowel system of the YNLC orthography is shown in the table below. Five vowel symbols are used to represent six phonemic vowels. Each of five vowel symbols may occur either alone or in a sequence of identical symbols. (Diphthongs are represented as nuclear vowels followed by the approximant <y>, as in <ey> /ei/.)

Table B.1: Tanacross practical orthography -- vowels

ii	uu	i	u
ee	oo	e	o
	aa		a

Sequences of identical vowel symbols usually represent long vowels, but not always. The mid-front vowel /e/ is represented orthographically as <ee>; the lower mid-front vowel /ɛ/ is represented by <e>. For the other vowels the length distinction is in many cases not phonemic. For example, vowels in open stem syllables are almost always long, so there is usually no possibility of a length contrast in this position. Where length is not phonemic, there is a great deal of variation among literate speakers as to the way vowel length is written. In such

cases, there is a customary tendency to write stem vowels double and prefix vowels single. Often this distinction is lexicalized. For example, there is no length contrast in mid-back vowels in closed stems, yet we write <shos> ‘bear’ and <ganhook> ‘dancing stick’.

There is in general no difference in quality between the double and single vowels <uu> and <u> or between <oo> and <o>. Each of these vowels is pronounced similar to its cardinal phonetic value. The vowel <u> represents a high back round vowel. The vowel <o> represents a mid-high back round vowel, somewhat higher than its cardinal value. The doubled version of these symbols have identical phonetic values to their single counterparts. In contrast, the single vowel <i> varies quite a bit in height, ranging from a high front vowel to a mid-high front vowel. Thus compare:

(7.1) Phonetic realizations of <i>

<shthí’>	[ʃtθ ^h iʔ]	‘my head’
<xdéltth’ih>	[xtéltθ’ih]	‘they’re sitting’
<sínt’eh>	[sint’eh]	‘he/she is’
<ihtsax>	[ʔihts ^h ax]	‘I’m crying’

As noted above, the distinction between double <ee> and single <e> almost always corresponds to a quality difference in addition to a potential quantity difference. For example,

(7.2) Phonetic realizations of <e> and <ee>

<seek>	[seːk]	‘saliva’
<-şék>	[-şék]	‘torso’

The vowel <aa> represents a low central unrounded vowel. Its single counterpart <a> may be phonetically identical to <aa> but is also used to represent an allophone of short <e> which occurs before velar fricatives. Thus the vowels in <sén'> and <sáx> are spelled differently even though they are both underlyingly the same phonemic vowel.

Tone is marked on vowels using a diacritic. Low tone syllables are not marked for tone. Only the first of a sequence of orthographic vowels is marked for tone (in contrast to Navajo). Low tone is unmarked. Extra-high tone (see section 2.3.4) is marked with a double acute accent.

(7.3) Tone markings

v	low tone (unmarked)
ṽ	high tone
ṕ	falling tone
ṑ	rising tone
ṑ̂	extra-high tone

Nasalization is marked using the Americanist nasal hook. Both vowels of a vowel sequence are marked with the nasal hook if the vowel is nasalized, e.g., <šnaḡa> 'my mother'.

Glottal stop is not written in word-initial position. Words spelled with an initial vowel actually begin with a glottal stop. To distinguish words which phonetically begin with a vowel, an appropriate sonorant is written preceding the vowel. Thus <yi> for initial /i/ and <wu> for initial /u/. A hyphen is used to

distinguish ejective consonants from sequences of pulmonic stop plus glottal stop.

Thus /nɛkʔɛh/ 'I'm looking' is written as <nɛk-'ɛh>.

Appendix B. Conjugation-mode-subject-classifier paradigms

		∅-impf	γ-impf (fut)	γ-impf (prog)	n-perf	γ-perf	ð-perf	opt
∅-classifier	1SG	ih-	tih-	γih-	nih-	γih-	ðih-	γuh-
	2SG	in-	tin-	γin-	nin-	γin-	ðið-	γun-
	2PL	ah-	tah-	γah-	nah-	γah-	ðah-	γah-
	∅-	ε-	a'-	a'-	nin-	γin-	e'-	u'-
d-classifier	1SG	iš-	tiš-	γiš-	niš-	γiš-	ðiš-	γuš-
	2SG	it-	tit-	γit-	nit-	γit-	ðit-	γut-
	2PL	at-	tat-	γat-	nat-	γat-	ðat-	γat-
	∅-	εt-	at-	at-	it-	it-	et-	ut-
h-classifier	1SG	ek-	tek-	γek-	nək-	γek-	ðek-	γok-
	2SG	ih-	tih-	γih-	nih-	γih-	ðih-	γuh-
	2PL	ah-	tah-	γah-	nah-	γah-	ðah-	γah-
	∅-	eh-	tah-	ah-	nih-	γih-	eh-	uh-
l-classifier	1SG	eg-	tεg-	γεg-	nεg-	γεg-	ðεg-	γog-
	2SG	il-	til-	γil-	nil-	γil-	ðil-	γul-
	2PL	al-	tal-	γal-	nal-	γal-	ðal-	γal-
	∅-	el-	al-	al-	il-	il-	el-	ul-

Appendix C. Text

The following short text was spoken by Laura Sanford of Tok, Alaska and is transcribed here in interlinear format, with morpheme and phrase-level glosses (thanks to Irene Solomon for help with the transcription and glossing). The line breaks correspond to breaks between intonation units, phrases spoken under one coherent intonation contour (see Chafe 1994). The transcription follows the practical orthography outlined in Appendix A. Direct quotes are indicated by small double angle brackets (« »). English words are transcribed in italics. The text is a personal narrative describing an encounter between Laura's grandmother Eva and a white game warden. The total length is 4:39 minutes.

GW001
 shundǎagh',
 sh-undǎagh'
 1SG-older.brother
 my older brother

GW002
 stsɯɯ,
 s-tsɯɯ
 1SG-grandma
 my grandma

GW003

stsʉʉ Eva éʃ,
 s-tsʉʉ éʃ
 1SG-grandma with
 and my grandma Eva

GW004

nahdóg .. *Chicken* xdéltth'í'.
 nah-dóg .. x-dé-l-tth'í'
 INTER-upward:AREAL HUM.PL-THM-L-pl.stay
 were living up around Chicken

GW005

xutah stsʉʉ éʃ éedah.
 xu-tah s-tsʉʉ éʃ ée-dah
 AREA-around 1SG-grandma with M-stay:IMPF
 he was living around there with my grandma

GW006

ey éʃ shundǎagh'.
 ey éʃ sh-undǎagh'.
 those with 1SG-older.brother
 with my older brother

GW007

maybe ten or eleven years old sunǎee le'.
 su-n-ǎee le'
 THM-M-be maybe
 he was maybe ten or eleven years old

GW008

ey éʃ stsʉʉ gha naxettetiik.
 ey éʃ s-tsʉʉ gha na-xetl-t-tiik
 those with 1SG-grandma for ITER-sled-D-handle.elongated
 he was driving the sled for my grandma.

GW009

naa yaadédz naxatdél éł,
 naa yaa-dédz na-x-a-t-dél-e éł
 this DIST-upland:ABL ITER-HUM.PL-PROG-D-pl.go:IMPF-NOM with
 when they were coming back down

GW010

aa ..

aa

HEST

ah

GW011

Ketchumstuk níixitdétł.
 ní-na-x-i-t-détł
 TERM-ITER-HUM.PL-M-D-pl.go:PERF
 they were going back to Ketchumstuck

GW012

ey éł dú',
 ey éł dú'
 those with thus
 and

GW013

xatthén' chenh mǎagh' dú',
 xa-tthén' chenh mǎagh' dú'
 AREA-water:ALL flat edge thus
 down toward the edge of the flat

GW014

nondlêd eedah.
 nondlêd ee-dah.
 whiteman M-stay:IMPF
 a white man was living

GW015

and ..

GW016

aa, ...

aa

HEST

ah

GW017

ey gha tl'áan,

ey gha tl'áan

those for then

and then

GW018

ey gha tl'áan,

ey gha tl'áan

those for then

and then

GW019

aa, ...

aa

HEST

ah

GW020

ey nondlêd xeyé'étdêy dú',

ey nondlêd xe-y-é-et-déyh-e dú'

that whiteman HUM.PL-4OBJ-THM-D-know-NOM and

that whitemen with whom they were acquainted

GW021

nách'edah'é'ë xeyíhtsij .

nách'edah'é'ë xe-y-í-h-tsij

game.warden HUM.PL-4OBJ-M-H-make:PERF

they made him a game warden

GW022

ey éł dú',
 ey éł dú'
 those with and
 and thus

GW023

koxt'eníin xeyniljet ts'ǵ,
 koxt'eníin xe-y-ni-l-jet ts'ǵ
 people HUM.PL-4OBJ-THM-L-afraid CONJ
 the people were afraid of him

GW024

«sǵ'ǵ',
 sǵ'ǵ'
 PROHIB
 don't

GW025

yaatthén' xetǵhahtáan naan ..
 yaa-tthén' xetǵ-gh-ah-táan naan
 DIST-water:ALL sled-PROG-2PL-handle.elongated this
 drive the sled down there

GW026

nxědl' shíi sǵ'ǵ' shí' ghahlêel.
 n-xědl' shíi sǵ'ǵ' shí' gh-ah-lêel
 2SG-sled in PROHIB meat PROG-2PL-handle.plural
 don't carry meat around in your sled

GW027

naatthíi nach'edah'ě'ě éedah há'»
 naa-tthíi nach'edah'ě'ě ée-dah há'
 INTER-water:PUNCT game.warden M-stay because
 because the game warden lives down there»

GW028

stsʉʉ ey xenii .
 s-tsʉʉ ey xe-nii
 1SG-grandma those HUM.PL-say:IMPF
 they told that to my grandma

GW029

ey éł stsʉʉ ,
 ey éł s-tsʉʉ
 those and 1SG-grandma
 and then my grandma (said),

GW030

«eey nuhxón' dú',
 eey nuhxón' dú',
 EXC 2PL thus
 «hey you guys!

GW031

dúigha ch'e shdahné ?
 dúigha ch'e sh-d-ah-né
 why FOC 1SG-THM-2PL-say:PERF
 why are you telling me that?

GW032

dóo nach'edah'é'ẹ ch'e t'adahné' ?»
 dóo nach'edah'é'ẹ ch'e t'a-d-ah-né'
 who game.warden FOC THM-THM-2PL-say:PERF
 who is this game warden you're telling me about?»

GW033

stsʉʉ xu'ehonii.
 s-tsʉʉ xu-eh-nii
 1SG-grandma AREA-H-say:IMPF
 my grandma says that

GW034

ey éł, ...

GW035

naatthíi nach'edah'ě'ě ey shí' nxědl' shíi éedah dé'.
 naa-tthíi nach'edah'ě'ě ey shí' n-xědl' shíi ée-dah dé'
 INTER-water:PUNCT game.warden that meat 2SG-sled in M-sit if
 if that meat is sitting in your sled down there, the game warden,

GW036

nach'edah'ě'ě ey shax xalsen ts'ǵ' nintaht'el sixúnt'eh.»
 nach'edah'ě'ě ey shax xalsen ts'ǵ' ni-n-t-ah-t'et-e si-xu-n-t'eh.»
 game.warden that jail to TERM-2SG-FUT-M-H-send-NOM THM-AREA-M-be
 that game warden will surely send you to jail

GW037

xeyehni t'ot'êey stsų dú' ts'ani'elt'eh ts'ǵ'
 xe-y-eh-nii t'ot'êey stsų dú' ts'a-ni'el-t'eh ts'ǵ'
 HUM.PL-4OBJ-H-say:IMPF even 1SG-grandma thus THM-THM-L-angry CONJ
 they said that to her and then grandma became angry

GW038

«xut'eéy,
 xut'eéy
 okay
 «okay,

GW039

nuhghaatelá' shí' natishhuuth há'.»
 nuhghaatelá' shí' na-t-ish-huuth há'
 none.of.your.business meat PRMB-PRMB-1SG:D-drag because
 it's none of your business that I drag meat around.»

GW040

nii ts'ǵ' shí' dexghindlah
 nii ts'ǵ' shí' de-x-gh-in-dlah
 say CONJ meat into-HUM.PL-CJ-M-handle.plural:PERF
 she said, then put the meat into (the sled)

GW041

tl'áan xaatthén' naxtetdétl.
 tl'áan xaa-tthén' na-x-te-t-détl
 then AREA-water:ALL ITER-HUM.PL-INCEP-D-pl.go:PERF
 then they started back down toward the water.

GW042

ey éł ey,
 ey éł ey,
 those with those
 and

GW043

wuchaay yaa naxetlaatiil.
 wu-chaay y-aa na-xetł-aa-tiil
 3SG-grandson 4OBJ-for ITER-sled-PROG-handle.elongated
 her grandson was driving the sled for her

GW044

ey éł xaatthii ey nondlêd eedaay dú'.
 ey éł xaa-tthii ey nondlêd ee-dah-e dú'
 that CONJ AREA-water:PUNCT that whiteman M-stay-NOM thus
 and down by the water that whiteman was living

GW045

xa'andâadz chenh éxetłxdiiłąą dá'ą tah.
 xa'a-ndâadz chenh é-xetł-x-d-ii-łąą dá'ą tah
 AREA-downstream:ABL flat PP-sled-HUM.PL-THM-M-handle.elong. prev. when
 when they drove out onto the flat from downstream

GW046

ti'iltthet ts'ı'
 ti-i-l-tthet ts'ı'
 out-M-L-run CONJ
 he ran out.

GW047

ey daatthén' telthet.
 ey daa-tthén' te-l-tthet
 that PROX-water:ALL INCEP-L-run
 he started running up from down by the water.

GW048

«Andrew,

GW049

Andrew,

GW050

ašhég' nixetñintiih,
 a-šhég' ni-xetł-n-in-tiih
 NEUT-below:ALL TERM-sled-M-2SG-handle.elongated
 stop the sled down there

GW051

ašhég' nixetñintiih nii.
 a-šhég' ni-xetł-n-in-tiih nii
 NEUT-below:ALL TERM-sled-M-2SG-handle.elongated say
 stop the sled down there», he told him.

GW052

ey éł dú' stsųų, ...
 ey éł dú' s-tsųų
 that with thus 1SG-grandma
 and then my grandma (said),

GW053

aa, ...
 aa
 HEST
 ah

GW054

«sú'ụ maa nixetlghuntâa
 sú'ụ m-aa ni-xetl-ghu-n-tâa
 PROHIB 4OBJ-for TERM-sled-OPT-2SG-handle.elongated
 «Don't stop the sled for him!

GW055

k'á dé maa nixetltintíil xú' dé'
 k'á dé m-aa ni-xetl-t-in-tiil-e xú' dé'
 NEG when 4OBJ-for TERM-sled-INCEP-2SG-handle.elongated-NEG thus when
 you're not going to stop the sled for him

GW056

xetlghintiil,
 xetl-gh-in-tiil
 sled-PROG-2SG-handle.elongated
 you (keep) driving the sled

GW057

sú'ụ maa nixetlghuntâa.»
 sú'ụ maa ni-xetl-ghu-n-tâa
 PROHIB 3OBJ-for TERM-sled-OPT-2SG-handle.elongated
 don't stop the sled for him»

GW058

stsụụ yehnii.
 s-tsụụ y-eh-nii
 1SG-grandma 4OBJ-H-say:IMPF
 grandma tells him.

GW059

and,

GW060

ey t'ot'êey,
 ey t'ot'êey
 those even.though
 even though

GW061

xetł xú' dé' xetłaa*tiil* *and,*
 xetł xú' dé' xetł-aa-*tiil*
 sled thus when sled-PROG-handle.elongated
 the sled, driving the sled,

GW062

ey dú' niljets,
 ey dú' ni-l-jets
 that thus THM-L-afraid
 he got scared,

GW063

stsųų chih k'á ditth'eg ts'ǵ'
 s-tsųų chih k'á di-tth'ek-e ts'ǵ'
 1SG-grandma also NEG THM-listen-NEG CONJ
 and he also didn't listen to grandma,

GW064

xa'adaa nondlêd chih ti'iltthet ts'ǵ'
 xa'a-daa nondlêd chih ti-i-l-tthet ts'ǵ'
 AREA-downstream:PUNCT whiteman also out-M-L-run CONJ
 and that whiteman had run out down there,

GW065

aa, ...
 aa
 HEST
 ah, (saying)

GW066

«ashég' nixetłninti*ih,*
 a-*shég'* ni-xetł-n-in-*tiih*
 NEUT-below:ALL TERM-sled-M-2SG-handle.elongated
 stop the sled down there

GW067

ashég' nixetłnintiĥ,
 a-shég' ni-xetł-n-in-tiĥ
 NEUT-below:ALL TERM-sled-M-2SG-handle.elongated
 stop the sled down there

GW068

naan nxědl' shíi jaxnek-'íil.
 naan n-xědl' shíi ch'e-d-x-n-ek-'íil
 this 2SG-sled in INDEF-THM-AREA-THM-1SG:H-look
 I'm going to look in your sled

GW069

k'á dé' xexetłuteghin'íil,»
 k'á dé' xe-xetł-u-te-gh-in-tiĥ-e
 NEG pass.by-sled-pass.by-INCEP-PROG-2SG-handle.elongated-NEG
 you're not going to pass by me with your sled

GW070

yehné' éł
 y-eh-né' éł
 4OBJ-H-say:PERF CONJ
 he told him.

GW071

niljiits ts'í' nixetłnintaą.
 ni-l-jiits ts'í' ni-xetł-n-in-tąą
 THM-L-afraid CONJ TERM-sled-CJ-M-handle.elongated
 he (Andrew) got scared and stopped the sled

GW072

ey éł stsų dú',
 ey éł s-tsų dú'
 those with 1SG-grandma thus
 and then grandma

GW073

tétth játiil

tétth ch'e-d-a-tiil

cane INDEF-GEN-PROG-handle.elongated

is walking with a cane

GW074

tah xên netétthjatiil.

tah xên ne-tétth-ch'e-d-a-tiil

when quickly up-cane-INDEF-GEN-CJ-handle.elongated

walking up quickly with a cane

GW075

yaa nítétthjetaan

él

y-aa ní-tétth-ch'e-d-taa-e

él

4OBJ-for TERM-cane-INDEF-GEN-CJ-handle.elongated-NOM with

she went up to him with her cane

GW076

aa, ...

aa

HEST

ah

GW077

ey nondlêd dú'

ey nondlêd dú'

that whiteman thus

and when that whiteman

GW078

xetl k'ech'e'ed él

xetl k'e-ch'e-'et-e él

sled THM-INDEF-loosen-NOM with

was going to loosen the sled (cover),

GW079

jaa xên t'eeý stsɯɯ
 jaa xên t'eeý s-tsɯɯ
 that quickly really 1SG-grandma
 all of a sudden grandma

GW080

yinlá' k'ech'ehl'eth ts'ɿ'
 y-inlá' k'e-ch'e-h-t'eth ts'ɿ'
 4OBJ-hand severing-INDEF-H-strike and
 started hitting his hand and

GW081

yithí'	etnelt'eeý	detéddh'	éł
yi-tthí'	et-n-el-t'eeý	de-téddh'	éł
4OBJ-head	INCEP-ERR-L-move.elongated.quickly	REFLX-cane	with

and whipping his head with her cane

GW082

«amaa,
 amaa
 EXC
 ouch!

GW083

amaa,»
 amaa
 EXC
 ouch!

GW084

nii ts'ɿ',
 nii ts'ɿ'
 say CONJ
 he said,

GW085

nondlêd xa'én' tah
 nondlêd xa'én' tah
 whiteman AREA-away:ALL when
 the whiteman went away

GW086

na'atgets tsenh xa'aa taani'itshaay éł
 na-a-t-gets tsenh xa'aa ta-na-ni-i-t-shah-e éł
 ITER-M-D-crawl CONJ out-linear.extends up-ITER-TERM-M-D-sg.go-NOM with
 crawling back up (to his house)

GW087

«sú'ų shxědl' etdeghultsiid,
 sú'ų sh-xědl' et-d-ghu-l-tsiid
 PROHIB 1SG-sled THM-THM-OPT-L- move.hand.quickly:OPT
 «Don't touch my sled

GW088

nts'é gha ch'e nén' dú'
 nts'é gha ch'e nén' dú'
 what for FOC you thus
 why is it that you

GW089

shxědl' etdeniltsed,»
 shxědl' et-d-n-i-l-tset-e
 1sg-sled THM-THM-CJ-2SG-L-move.hand.quickly-NOM
 touched my sled?»

GW090

stsų yéhnii éł,
 s-tsų y-éh-nii éł
 1SG-grandma 4OBJ-H-say:IMPF with
 my grandma told him, and

GW091

«jaa shk'áa' dhéktaa,
 «jaa sh-k'áa' dh-ék-taa
 here 1SG-gun CJ-1SG:H-handle.elongated
 I've got my gun right here

GW092

sixunt'eh.»
 si-xu-n-t'eh
 THM-AREA-M-be
 for sure

GW093

ashég' dé'
 a-shég' dé'
 NEUT-below:ALL thus
 then

GW094

ey nondlêd dú' dinlá' dég' t'íi_hthen ts'í'
 ey nondlêd dú' d-inlá' dég' t'-íi_h-then ts'í'
 that whiteman thus RFLX-hand up THM-M-stand CONJ
 that whiteman put his hand up

GW095

«no, Eva,

GW096

sí'ù,
 sí'ù
 PROHIB
 don't

GW097

shih shdeghúnk'á'a.»
 shih sh-de-ghu-n-k'á'a
 1SG 1SG-THM-OPT-2SG-shoot:OPT
 don't shoot me!

GW098

ena',
 ena'
 EXC
 no

GW099

nii t'ot'êey stsųų dú'.
 nii t'ot'êey s-tsųų dú'
 say even.though 1SG-grandma thus
 he said, and then grandma

GW100

dexědl' shíi ..
 de-xědl' shíi
 RFLX-sled in
 in her sled

GW101

k'á' xaghinshel ts'í' ey
 k'á' xa-gh-in-shel ts'í' ey
 gun out-CJ-M-move.elongated quickly CONJ those
 whips out the gun

GW102

yits'í' teh'aa ts'í'
 yi-ts'í' te-h-'aa ts'í'
 4OBJ-to INCEP-H-linear.extends CONJ
 and pointed it at him

GW103

«njâa t'ey ch'e nexaxdáh'áal
 «njâa t'ey ch'e n-e-xu-x-d-á-h-'áal-e
 there really FOC 2SG-PP-AREA-HUM.PL-THM-M-H-find:FUT-NOM
 right there is where they'll find you

GW104

ashég' nédhínten t'eeý ch'e nexaxdáh'áal,»
 ashég' ne-dh-i-l-tenh t'eeý ch'e n-e-xu-x-d-á-h-'áal-e
 there 2SG-CJ-M-L-freeze really FOC 2SG-PP-AREA-HUM.PL-THM-M-H-find:FUT-NOM
 there where you're frozen is where they'll find you

GW105

yéhnii.
 y-éh-nii
 4OBJ-H-say:impf
 she told him

GW106

xa'andég' tah yalaghìh'aa ts'í na'altthél
 xa'a-ndég' tah ya-la-gh-ì-h-'aa ts'í na-a-l-tthél
 AREA-upland:ALL when up-hand-CJ-M-H-linear.extend CONJ ITER-PROG-L-run
 he went running back up with his hands in the air

GW107

stsüü dú' xut'eeý k'á' ye'udìh'aa.
 s-tsüü dú' xut'eeý k'á' ye-u-d-ìh'aa
 1SG-grandma thus okay gun 4OBJ-DIR-GEN-M-H-linear.extend
 and grandma aimed the gun at him.

GW108

él da'andég' tah kél da'iltthet.
 él da'a-ndég' tah kél da-i-l-tthet
 with PROX-above:ALL when NOISE into-M-L-run
 he ran in (the house) slamming (the door)

GW109

xáxú' nilk'enach'etnettiik ts'í
 xáxú' nilk'e-na-ch'e-t-ne-t-tiik ts'í
 little opening-ITER-INDEF-INCEP-ERR-D-handle.elongated CONJ
 he started to stealthily open something (the door) a little bit

GW116

shundǎagh' chih.

sh-undǎagh' chih.

1SG-older.brother also

also my older brother

GW117

yits'ǵ xél éł éłtɛɛ ts'ǵ

yi-ts'ǵ xél éł el-tɛɛ ts'ǵ

4OBJ-to club with L-handle.animate CONJ

she threatened him with a club, saying

GW118

«nén' dú' ch'e

nén' dú' ch'e

you thus FOC

and you,

GW119

nts'é sǵ'ǵ nixetǵhunɬǵǵ nedihné'

nts'é sǵ'ǵ ni-xetǵ-ghu-n-tǵǵ ne-d-ih-né'

what PROBH TERM-sled-OPT-2SG-handle.elongated 2SG-THM-1SG-say:PERF

didn't I tell you not to drive the sled down there?

GW120

díigha ch'e ashég' nixetnintǵǵ,

díigha ch'e ashég' ni-xetǵ-n-in-tǵǵ,

why FOC NEUT-down:ALL TERM-sled-M-2SG-handle.elongated

why did you drive the sled down there

GW121

ndéddh' xetǵhintiil»,

ndéddh' xetǵ-gh-in-tiil

continue sled-PROG-2SG-handle.elongated

keep going!»

GW122

de _h iig'	ch'e	tach'eh _t 'eth	ts'ɿ'
de- _h iig'	ch'e	ta-ch'e-h-t _h 'eth	ts'ɿ'
RFLX-dog	FOC	up-INDEF-H-strike	CONJ

she beat up the dogs

GW123

«wexwex»	ey	iin	chih	<i>all</i>	xetsax	ts'ɿ'.
wexwex	ey	iin	chih		xe-tsax	ts'ɿ'.
YELP	that	PL	also		HUM.PL-cry	CONJ

They all cried and went «yelp, yelp»

GW124

aa.
aa
HEST
ah

GW125

x_ts'exet_hxghintaa.
x-ts'e-xet_h-x-gh-in-taa
AREA-away-sled-HUM.PL-CJ-M-handle.elongated
and they continued on their way

<<TEXT ENDS>>

Appendix D. Selected vocabulary

This appendix contains a selected list of Tanacross open-class lexical items (i.e., nouns and verbs) organized alphabetically by English gloss. Tanacross words are italicized and are transcribed in the practical orthography (see Appendix A).

Bound forms such as obligatorily possessed nouns are indicated via a hyphen (e.g., *-naaq* ‘mother’). For verbs the theme is given in parentheses followed by a fully inflected verb form. This list is in no way intended to be exhaustive or even representative of the complete Tanacross lexicon. It serves merely to give some idea of the semantic and morphological range of vocabulary items.

Nouns

alder <i>k'ets</i>	awl <i>tthet</i>
ancestors <i>tsiiyuul'</i>	axe <i>chin'ey</i>
animal <i>nûun</i>	babiche <i>ch'ij̥xet</i>
ankle <i>-keechěn'</i>	baby <i>ch'egaay</i>
ant <i>kelahdodz</i>	baby basket <i>k'ij̥ tth'aatl</i>
arm <i>-gáan'</i>	back <i>-nén'</i> (backbone)
arrow <i>tes</i>	<i>-inxǎann'</i> (upper back)
ashes <i>kón'ǐédz'</i> (fire)	bark <i>ch'elaats'eyb</i> (spruce bark)
<i>lts'iis</i> (birch fungus, chew)	<i>ch'elabt'uudz'</i> (outer bark)
aunt <i>-aak'ey</i> (mother's sister)	basket <i>k'intth'áak</i> (also birchbark)
<i>-tsuy̥</i> (father's sister) (also	bat <i>xeltsedz</i>
grandmother)	beads <i>naatl'édz</i>
	beak <i>-dá'</i>
	bear <i>shos</i> (general term)

<i>shos_səy</i> (black bear)	bow <i>ts'ebtj̄j'</i>
<i>ch'eliitthogh'</i> (brown bear)	bowl <i>tutiil_xěez'</i>
beard <i>-daaxá'</i>	box <i>chenbtiil</i>
beaver <i>tsá'</i>	boy <i>tsiil_gaay</i>
bed <i>dahdzet</i> (also meat or fish rack)	brain <i>-tthiixqa'</i>
bee <i>ch'elahdziiid</i>	breast <i>t'úu</i>
beetle <i>tebk'aay</i>	breath <i>shəyhb</i>
belly <i>-mét</i>	brother <i>-undăagh</i> (older brother)
berry <i>jêg</i> (general term)	<i>-chel</i> (younger brother)
<i>naaxay jêg</i> (nagoonberries, frogberries)	brother-in-law <i>-lenb</i> (man's brother- in-law)
<i>danibmaa</i> (silver berry)	<i>-xeh</i> (woman's brother-in-law, man's sister-in-law)
<i>naníhdúuy</i> (high bush cranberry) (also currant)	brush <i>ts'étl</i>
<i>ntl'éet</i> (low bush cranberry)	buckbrush (mountain willow, dwarf birch) <i>huudb</i>
<i>nkáatl</i> (salmonberry)	bucket <i>nadh'aay</i>
<i>dendeyb</i> (bearberries)	bullet <i>k'áatthé'</i>
<i>jîiz ndagh'</i> (bearberries)	burl <i>tth'ek</i>
<i>nitdzij̄j'</i> (blueberries)	butterfly <i>laalêel</i>
<i>naht'êez</i> (blackberries)	button <i>EEK tsöl'</i>
<i>danch'ög'</i> (raspberries)	cache <i>dahtsaa</i>
Big Dipper <i>k'eltaa</i>	calico <i>detl'uun</i>
birch <i>k'ij̄j'</i>	camprobber (grey jay) <i>jîiz</i>
bird <i>tsuugaay</i>	can <i>ch'etiil</i>
bladder <i>-luhthéth</i>	candle <i>neldzeey</i>
blanket <i>ts'éd'</i>	cane <i>tétth</i>
blood <i>del</i>	canoe <i>ts'eyb</i>
blouse <i>ch'ēsék</i>	canvasback <i>ndzel</i>
body (spine) <i>-nenk'á'</i>	caribou <i>wudzih</i> (general term)
bone <i>tth'énb</i>	<i>dek'el</i> (bull caribou)
boots <i>kench'otl</i> (also mukluks)	<i>dets'ig</i> (calf caribou) (also calf moose)
bottom <i>-keetl'aad</i> (also sole)	

cavity <i>k'ee</i>	crane fly <i>tth'êy chox</i>
chair <i>k'etl'aadiidaay</i>	cup <i>tuutiil</i>
charcoal <i>t'ées</i>	dancing stick <i>gaanhook</i>
cheek <i>-intl'aamets</i>	darkness <i>xêl</i>
chest (body part) <i>-dzebchii'</i>	daughter <i>-yaats'e'</i> (woman's)
chewing tobacco <i>lesgih</i>	<i>-tthe'e</i> (man's)
chickadee <i>ts'egqag</i>	day <i>dzeen</i>
chief <i>xaxkeh</i>	den <i>-'enb</i>
child <i>ts'enîin</i>	dentalium <i>ch'enk'ón'</i>
<i>dzuug</i> (favored child)	diaper <i>tth'aatl</i>
children <i>ts'inkeey</i>	dipnet <i>'eth</i>
chin <i>-dâ'</i>	dog <i>lii</i>
chinking <i>wu'êl xuneltthugh</i>	<i>ligaay</i> (puppy)
chips <i>ch'ettheedl'</i>	door <i>ldadîntaan</i>
clam <i>tl'aas</i>	down feather <i>chuyb</i>
clan <i>ch'echeelyu</i> (Fishtail Clan)	dragonfly <i>tthelch'og</i>
<i>ch'aadb</i> (Opposite Clan)	dregs <i>tl'aatlog</i>
<i>alts'iî'</i> <i>dendeey</i> (Rightway Clan)	dress <i>'eek</i> (also coat)
<i>dik'aagiyu</i> (Cottonwood Clan)	drum <i>shaas</i>
<i>niîsaas</i> (Canadian Clan)	<i>ch'elxel</i> ('that which is struck')
<i>taandiidz altsiil</i> (Middle Clan)	dry fish <i>má'</i>
<i>tsesyu</i> (Ochre Clan)	duck <i>dets'en</i> (general term)
<i>naltsiin</i> (Sky Clan)	dung <i>dųųts</i>
clothing <i>ch'êl'</i>	dust <i>léemab</i> (also glacial silt, flour)
cloud <i>k'oth</i>	eagle <i>tuud</i> (bald eagle)
club <i>xêl</i>	<i>ch'eshăan'</i> (golden eagle)
container <i>tiil</i>	ear <i>-dzaagh'</i>
corpse <i>-theg'</i>	earring <i>dzaatl'üül'</i>
cottonwood <i>t'aath</i> (also poplar)	edge <i>mâgh</i>
cradle <i>tth'aatl</i>	elbow <i>-ts'és</i>
cradle moss <i>tth'aatl</i>	embers <i>thiit</i>
crane <i>deel</i>	evening <i>xelts'î'</i>

excrement <i>tsaa'</i>	fishing place <i>-k'eddb</i>
eye <i>-ndäagb'</i>	five <i>álts'êy</i>
eyebrow <i>-nahdaaxá'</i>	fleas <i>-tl'ég'</i>
eyelash <i>-nabts'eh xá'</i>	flesh <i>-tthij'</i>
face <i>-nêe'</i>	floor <i>chenhtéel</i>
fart <i>tl'ét</i>	fly <i>dey'</i>
fat <i>-k'ax</i>	fog <i>ch'ets'étl</i>
<i>ch'echaadz'</i> (rendered fat)	food <i>shí'</i> (also raw meat)
father <i>tá'</i>	foot <i>-ké'</i>
father-in-law <i>-tsêey</i>	foot wrappings <i>tél</i>
feather <i>t'aa</i>	footwear <i>kee</i>
<i>chuyb</i> (down feather)	forehead <i>-intaagez</i>
femented fish <i>dzenax</i> (fermented whitefish in birchbark basket)	forest <i>nduu</i>
<i>nilk'odl</i> (Copper River style fermented fish heads)	fork <i>ch'iigod</i>
femur <i>-xolth'ënn'</i>	four <i>den</i>
fence <i>tthek</i> (Caribou fence)	fox <i>naageddb</i>
file <i>ch'iik'agh</i>	foxtail <i>lii ché'</i> ('dog's tail')
fin <i>t'ogb'</i>	friend <i>-tléé'</i> (also cousin)
finger <i>-inlaats'ogb'</i> (index finger)	frog <i>naaxay</i>
fingernail <i>-inlaagey'</i>	frost <i>sox</i>
fire <i>kón'</i>	frozen <i>tenb</i>
fireweed <i>gúuth</i> (also rhubarb)	frybread <i>leets eet'eeey</i>
fish <i>huug</i>	fungus (black birch) <i>tl'eel</i>
fish cutter <i>meetsel</i> (also ulu)	fur <i>dqá</i>
fish hook <i>lox</i>	gall <i>-tl'ets</i>
fish scales <i>guuth</i>	ghost <i>-ink'aadb'</i>
fish spear <i>tehtl'eyb</i>	gloves <i>laajeyb</i>
fish stringer <i>ch'e'es</i>	goldeneye (duck) <i>tthitkaay</i>
fish tail <i>-chěel'</i>	goose <i>xah</i> (Canadian)
fish trap <i>tedb'aan</i>	<i>dqaxed</i> (white-fronted)
	goose grass <i>xah gúudh'</i>
	goshawk <i>jîiz chox</i>

grandchild <i>-châay</i> (woman's) <i>-tthuuy</i> (man's)	Indian <i>dendeb shub</i>
grandfather <i>-tsêey</i>	intestines <i>-ts'ïg'</i>
grandmother <i>-tsuu</i>	island <i>taanduu</i> ('water forest')
grass <i>l'ox</i>	juice <i>-tû'</i>
grasshopper <i>nahnten gaay</i> ('little thunder')	kidney <i>-ts'edz'</i>
grayling <i>seejel</i>	knee <i>-gót</i>
grease <i>xee</i>	knife <i>seeey</i>
grouse <i>deyh</i> (spruce grouse) <i>ch'ebtêeg</i> (sharp-tailed grouse) <i>tsaa' ts'uug</i> (ruffed grouse)	knot <i>shaas</i>
guest (visitor) <i>soojee</i>	ladder <i>ké'dí'aay</i>
gull <i>mehk'aay</i> (mew gull)	lake <i>menb</i>
gun <i>k'á'</i>	land <i>nén'</i>
hail <i>ch'enhuut</i>	language <i>'aandeg</i>
hair <i>xá'</i>	larynx (Adam's apple) <i>-chöl'</i>
hand <i>-inlá'</i>	leaf <i>ch'et'ǎq'</i>
hat <i>tthúishúus</i>	lie (untruth) <i>shék</i>
head <i>-tthí'</i>	lightning <i>nahnten kónn'</i> ('thunder fire')
headwaters <i>ch'etl'aa</i>	lingcod <i>ts'aan</i>
hearing <i>-dzii</i>	lips <i>-daamel'</i>
heart <i>-dzeey'</i>	lodge (animal) <i>-kéé'</i>
heel <i>-keetel</i>	loon <i>taadziil</i> (common) <i>ts'elmeet</i> (arctic) <i>ttheechagh</i> (red-throated)
hill <i>teyh</i>	louse <i>shá'</i>
hook (gaff) <i>sáx</i>	lungs <i>-dzehdog'</i>
horn <i>ch'edé'</i>	lynx <i>niiduuy</i>
house <i>shax</i>	mallard <i>t'aay chox</i>
housepit <i>nihtsiil</i>	man <i>dendeb</i> (also person) <i>tsiil</i> (young man) <i>ch'etey</i> (old man)
husband <i>-kéy'</i>	Mansfield Hill <i>Mesiin Tsits'i'</i>
ice <i>huu</i> (also glacier) <i>kab</i>	Mansfield Village <i>Dibthâad</i>

marmot <i>k'aay</i>	mushroom <i>ch'eněyy'</i>
marten <i>tsuug</i>	muskrat <i>dzenb</i>
mattress <i>téel</i> (also bedding, rug)	nail <i>ch'etsol</i>
meadow <i>chenb</i> (also flat)	name <i>-uusí'</i>
meat (cooked) <i>nleen</i>	navel <i>-ts'uuk'ee</i>
medicine <i>ch'ondeyb</i>	neck <i>-k'oth</i>
merganser (duck) <i>tsoth</i>	needle <i>tl'anakaan</i> (also sewing)
metal <i>ts'iitsiy</i>	nephew <i>-aaz</i> (man's nephew or niece)
mind <i>-iini'</i>	nest <i>t'ox</i>
mink <i>tehts'uudz</i>	net (fishnet) <i>tebmil</i>
mittens <i>jeyb</i>	night <i>teddb</i>
mocassin <i>kentsiith</i>	Northern lights <i>yadíimeey</i> (aurora borealis)
mold <i>xaa'</i>	nose <i>-intsji</i>
money <i>lsaaz</i>	nostril <i>-ndiig</i>
moon <i>gheldzeey</i>	oar <i>taach'itt'ogb</i>
moose <i>dendîig</i> (general term)	ochre <i>tseyb</i>
<i>deshaaz</i> (cow moose)	old person <i>ch'endeddb'</i>
<i>ninchûun</i> (bull moose)	oldsquaw (duck) <i>hąbaala'</i>
<i>detsîig</i> (calf moose)	one (number) <i>ts'ěhlêg</i>
morning <i>k'ăbmén'</i>	osprey <i>xth'ek</i>
mosquito <i>tth'êy</i>	others <i>xeltthaan</i>
moss <i>dlaat</i> (also alga)	otter <i>ntsîith</i>
mother <i>-naq</i>	outside <i>nab'ög</i>
mountain <i>ddbet</i>	owl <i>mesiin</i> (general term)
mouse <i>cheendedb</i>	pack <i>xeel</i>
<i>teltsêdz</i>	paddle <i>taat'ogb'</i>
moustache <i>-daayaan'</i>	pants <i>-ebtlé'</i>
mouth <i>-tháa</i> (body part)	paper <i>dinabtl'aa</i> (also book)
<i>-cheeg</i> (stream)	partner <i>nehleg</i>
<i>taacheeg</i> (river mouth)	pass (mountain) <i>teth</i>
mouth (of river) <i>taacheeg</i>	
mud <i>leet'ot</i> (also quicksand)	

pelvic bone <i>-k'ittb'énn'</i>	ribs <i>-shaaddb'</i>
pelvis <i>-k'ey'</i>	ring <i>laatth'ax</i>
peninsula <i>ldaa</i>	river <i>hên</i>
people <i>dendeey</i>	river <i>ndiig</i>
<i>koxt'en iin</i>	Robertson River <i>Nitsiil Ndiig</i>
pike (fish) <i>uljaaddb</i>	robin <i>súus</i>
pillow <i>ttbii'aal</i>	rock <i>tthee</i>
pitch <i>dzéex</i>	roe <i>k'uu'</i>
placenta <i>ts'enîin 'êl</i> ('with the child')	rope <i>tl'uut</i>
plant <i>nesheegb</i>	rose <i>xos t'ǫq'</i> ('thorn leave')
plate <i>ttb'áak</i>	rosehip <i>nchuuuth</i>
pocket <i>t'ab</i>	round (object) <i>ch'exǔez'</i> (also egg)
porcupine <i>ts'iit</i>	saliva <i>séek</i>
potato <i>tsaath</i> (Indian Potato)	salmon <i>luug delt'el</i> (sockeye) ('red fish')
<i>teediz</i> (store-bought)	<i>luug chox</i> (king) ('big fish')
preacher <i>ginbii</i>	sand <i>thaayb</i>
ptarmigan <i>k'étmah</i> (willow ptarmigan)	sandbar <i>thaayb téel</i>
<i>ddhel k'aal</i> (rock ptarmigan)	sap (birch) <i>k'iil</i>
pus <i>xeth</i>	saucer <i>ch'akeetl'agh</i>
pussy willow <i>dabligaay</i>	saw <i>ch'iitl'ey</i>
quill <i>ch'ox</i>	scalp <i>-tthiit'aag</i>
quiver <i>k'aath</i>	scar <i>shét</i>
rabbit <i>gab</i>	school <i>xáxdeldiix shax</i>
rack pole <i>dints'eeg</i>	scissors <i>létdeldôdz</i>
raft <i>xǔith</i>	sewing kit <i>t'abhúdlâay</i>
rain <i>chaan</i>	shadow <i>-shiig</i>
rainbow <i>saamíil'</i>	shallows <i>dees</i>
raven <i>taatsaq'</i>	shaman <i>desheh</i>
redpoll <i>dijts ney</i>	shavings <i>ch'esees</i>
relatives <i>-eblaad'</i>	sheep <i>demee</i>
rennet <i>-tsaag'</i>	shin <i>-dzaad'</i>

shoelace <i>kentl'uut</i>	spruce <i>ts'ôgh</i> (general term)
shore <i>taamâgh</i> (also beach)	<i>ts'ôgh tl'eg</i> (white spruce)
shoulder <i>-xeddh'</i>	<i>taatthaay</i> (black spruce)
shrike <i>ÿîz maay</i>	spruce bark <i>ch'elaats'eyb</i>
sinew <i>tth'éex</i>	spruce boughs <i>'ét</i>
sister <i>-aadeh</i> (older sister)	spruce cone <i>ch'elabdzol</i>
<i>-déedz'</i> (younger sister)	spruce needle <i>ét geddh'</i>
sister-in-law <i>-xeb</i>	spruce roots <i>xeyb</i>
skin <i>théth</i>	squirrel <i>dlêg</i> (tree squirrel)
sky <i>shaa</i>	<i>tthel</i> (arctic ground squirrel)
sled <i>xetl</i>	star <i>sén'</i>
sledge (toboggan) <i>meth</i>	steambath <i>tthee thel</i>
sleep <i>met</i>	stick <i>dechenb</i>
smoke <i>let</i>	stinging nettles <i>guu xöz'</i>
smokehouse <i>má' shax</i>	stomach <i>-tsáadl'</i> (human)
snare <i>gaal</i>	<i>-tsaamet</i> (animal)
<i>mít</i>	store <i>ch'utkeet shax</i>
snow <i>shetth</i>	storm <i>xághínts'eyb</i>
snowshoe <i>'aayb</i>	stump <i>ch'aachěnn'</i>
snowshoe footstrap <i>ch'aal</i>	sucker fish <i>tats'abt'ol</i>
soap <i>taatleex</i>	summer <i>sheen</i>
socks <i>keetét</i>	sun <i>saa</i>
son <i>-she'e</i> (man's)	swamp <i>xaalel</i>
<i>-shaas</i> (woman's)	swan <i>taagos</i> (trumpeter swan)
soup <i>tuuthel</i>	swing <i>dahmít</i>
spark <i>kón' ts'íil'</i>	table <i>k'ech'ii'aadl</i>
spider <i>kelahdzeey</i>	taboo <i>injib</i>
spider web <i>kelahdzeey gǎal'</i>	tail <i>-ché'</i>
spirit <i>-shiits</i> (also soul)	Tanana River <i>tth'itú'</i> ('straight water')
spirit <i>shenb</i>	tea <i>ldíil</i>
spoon <i>k'áhtsêdl</i>	teakettle <i>ldíil tiil</i>
spring <i>dêy</i> (season)	

tent *taathéth*
 thigh *-xothchěnn'*
 thimble *sú'ts'ít-âay*
 thorn *xos*
 three *taag*
 throat *-thēeg'*
 thumb *-inlabchétth*
 thunder *nahten*
 tibia *-dzaatth'ěnn'*
 timber *taachěnn'*
 toe *-kelaats'ogh'*
 tongue *-tthuuul'*
 tooth *-x ú'*
 torso *-sék*
 towel *taatleex théth*
 tracks *-k'eh*
 trail *tēy*
 trap *'éel*
 trunk (tree) *-chěnn'*
 turnip *taanes*
 two *ldíikeey*
 umbilical cord *ts'enîin ts'îig'*
 uncle *-ee'eh* (mother's brother)
 -tâay (father's brother)
 urine *tets*
 veins *-ch'ııudh'*
 village *keey*
 vomit *koyh*
 waist *-l'ed*
 warbler *k'elaxwidihtsogh*
 wart *shéeth*
 wash basin *taatleex tth'áak*

water *tuu*
 wave *taatth*
 weasel *nibmaay*
 white person *nondlêed*
 wife *-'aat*
 willow *k'éy'*
 window *sits'enal'iin*
 windpipe *-thııul'*
 wing *-ints'en'*
 winter *xey*
 wolf *tiikâan*
 wolverine *nahtsııth*
 woman *ts'éhxeh*
 ts'est'eeey (old woman)
 womb *-shııi ts'enîin edah*
 wood *tsets*
 woodpecker *chııhttheel*
 ntsiil (flicker)
 worm *guu*

Verbs

afraid (*ni-l-jet*) *niljet* 'he's afraid'
 ask (*O-u-d-h-kéet*) *dıı gha*
 shudeghııhkéet 'why did you
 ask me?'
 bark (dog) (*h-tthee*) *ebtthee* 'it is
 barking'
 be (*t'-Ø-t'eh*) *ntsé t'ınt'eh* 'how are
 you?'
 black (*da-t-sey*) *datsey* 'it's black'
 blue (*d-l-dléets*) *deldléets* 'it is blue'

boil (<i>n-l-xos</i>) <i>tuu nelxos</i> ‘the water is boiling’	crawl (<i>Ø-duuth</i>) <i>xaghibduuth</i> ‘I crawled out’
boil (<i>O-b-meets</i>) <i>ekmeets</i> ‘I’m boiling it’	crawl (<i>d-gets</i>) <i>na’atgets</i> ‘he’s crawling back’
break (<i>d-xótl</i>) <i>detxotl</i> ‘it’s broken’	crooked (<i>G-Ø-k’eth</i>) <i>xuk’eth</i> ‘it’s crooked’
brown (<i>d-l-tthox</i>) <i>deltthox</i> ‘it’s brown’	cry (<i>Ø-tsax</i>) <i>etsax</i> ‘he’s crying’
buy (<i>u-Ø-kéet</i>) <i>ughibkéet</i> ‘I bought it’	cut (slice quickly) (<i>O-b-tsaat</i>) <i>nektsaat</i> ‘I sliced it’
call (name) (<i>O-u-sí</i>) <i>ntsé nusí</i> ‘what’s your name?’	cut (with scissors) (<i>b-dóts</i>) <i>ekdóts</i> ‘I’m cutting it’
care for P (<i>P-k’a-n-b-taq</i>) <i>xuuk’anektab</i> ‘I care for them’	dance (<i>ch’-l-dziits</i>) <i>ch’eldzes</i> ‘she’s dancing’
chase (<i>Ø-shuut</i>) <i>stasbneninshuut</i> ‘he chased me away’	do (<i>t’-d-’e’è</i>) <i>nts’é t’inde’è</i> ‘what are you doing?’
choke (<i>t-n-l-ndek</i>) <i>ch’etnelndek</i> ‘he choked on something’	drag (<i>Ø-huuth</i>) <i>nanishhuuth</i> ‘I’m dragged it back’
chop (<i>Ø-ddbet</i>) <i>ts’aaddbet</i> ‘we’re chopping’	drink (<i>d-naa</i>) <i>tuu etnaa</i> ‘he’s drinking water’
clap (hands) (<i>la-Ø-két</i>) <i>maa la’ibkét</i> ‘I clapping for him’	dry (<i>n-l-geyb</i>) <i>nelgeyb</i> ‘it’s dry’
classify elongated object (<i>Ø-taq</i>) <i>ghibtiil</i> ‘I’m carrying (firewood)’	eat (<i>na-O-Ø-’áatl</i>) <i>nach’ih’aal</i> ‘I am eating’
classify plural object (<i>Ø-dlab</i>) <i>xaghibdlab</i> ‘I took them out’ <i>xats’eleeyb</i> ‘we’re taking them out’	fall (animate move independently) (<i>L-tth’et</i>) <i>xughegtth’et</i> ‘I fell down’
club (<i>ch’-b-tl’eth</i>) <i>xuuch’ebtl’eth</i> ‘he clubbed them’	fall (compact object moves independently) (<i>d-l-ne</i>) <i>xudalne</i> ‘it’s falling’
cold (<i>n-Ø-k’éttb</i>) <i>neek’éttb</i> ‘it’s cold’	fat (<i>l-k’aax</i>) <i>elk’aax</i> ‘he’s fat’
collapse (<i>Ø-kaatl</i>) <i>ninkaatl</i> ‘it collapsed’	find P (<i>P-e-x-d-b-’aq</i>) <i>mexdek-’aq</i> ‘I found it’
cough (<i>d-l-koth</i>) <i>degkoth</i> ‘I’m coughing’	fish (with a hook) (<i>na-ch’e-b-lóx</i>) <i>nach’eklóx</i> ‘I’m fishing’
	float (<i>taa-l-’ók</i>) <i>taaxel’ók</i> ‘they’re floating’

- fly (*n-Ø-t'ak*) *stanet'ak* 'it flew away'
- forget (*xe-l-ndaa*) *xedbegndaa* 'I forgot'
medbegndaa 'I forgot it'
- form (*n-l-k'aas*) *xunenelk'aas* 'he formed that way'
- freeze (*d-ten*) *bên etten* 'the river is frozen'
- fry (*b-t'éb*) *ekt'éeth* 'I'm frying it'
- go (animal) (*b-'és*) *nûun natel'és* 'animals are walking around'
- go (by boat) (*Ø-keel*) *naghishkeel* 'I'm boating back'
- go (one) (*Ø-shab*) *Fairbanks ts'î teeshab* 'he is going to Fairbanks'
ninshab 'he arrived'
- go (several) (*Ø-détl*) *ghabdél* 'you guys are going'
- golden (*G-l-meets*) *elmeets* 'it is golden colored'
- good (*Ø-suu*) *ihsuu* 'I'm well'
sbaa nsuu 'I like it' ('it's good for me')
- grey (*d-l-maa*) *delmaa* 'it's grey'
- grow (*n-Ø-shaa*) *nedbihshaa* 'I grew up'
- handle compact object (*Ø-'aa*)
sbit'á'in'aa 'he gave it to me'
- hard (*G-d-gek*) *detgek* 'it's hard'
- hear P (*P-de-Ø-tth'ek*) *shdintth'ek* 'do you hear me?'
- heavy (*Ø-deeth*) *ndeeth* 'it's heavy'
- hold (*u-Ø-tón*) *u'ibtón* 'I'm holding it'
- hot (*n-Ø-theł*) *neethel* 'it's hot'
- howl (*sha-Ø-'aa*) *tiikâan shaxe'aa* 'the wolves are howling'
- hunt (*l-seek*) *na'elseek* 'he's hunting'
- kill (one) (*dh-b-xeł*) *dhedhekxeł* 'I killed him'
- kiss (*na-O-n-l-ts'ú*) *nanilxenelts'ú* 'they're kissing each other'
- know P (*P-e-t-ndeyb*) *k'á me'ishbey* 'I don't know him'
xe'ishdeyb 'I know'
- large (*G-Ø-chaax*) *nchaax* 'it's large'
- laugh (*Ø-dlók*) *eedlók* 'he's laughing'
- lie (untruth) (*da-t-d-l-shék*)
datdelshék 'he's lying'
- long (*Ø-ndeeth*) *ndeeth* 'it's long'
- love P (*P-gha Ø-sij*) *maa ihsij* 'I love here'
- lower (water) (*d-tsetth*) *tuu natettsetth* 'the water went back down'
- make (one) (*b-tsij*) *yibtsij* 'he made it'
- make (several) (*Ø-xaa*) *k'intth'áak xaaxaa* 'they're making baskets' (also kill several)
- melt (*u-d-Ø-let*) *ta'udelet* 'it (water) melted'
- mend (*b-káa*) *medbekkáa* 'I mended it'

narrow (<i>Ø-ts'éeg</i>) <i>nts'éeg</i> 'it's narrow' (also long)	say ((<i>d</i>)- <i>Ø/b-ní</i>) <i>yehnií</i> 'he says to him'
paddle (<i>taa-ch'-Ø-t'ogb</i>) <i>taach'ih't'ox</i>	<i>yediiní</i> 'he said to him'
pick (berries) (<i>n-b-tsií</i>) <i>jêg nektseyb</i> 'I'm picking berries'	scrape (outer skin) (<i>b-jeeyb</i>) <i>ekjeeyb</i> 'I'm scraping it'
pierce (<i>Ø-geet</i>) <i>yixaninkeet</i> 'he pierced through it'	scratch (<i>Ø-ts'éít</i>) <i>edetts'éít</i> 'he's scratching himself'
play (<i>d-l-xos</i>) <i>xdelxos</i> 'they're playing'	see (<i>O-n-b-éé'</i>) <i>nek-éé'</i> 'I saw it'
point (finger) (<i>P-e-ts'u-Ø-ttheyb</i>) <i>mets'u'ih'ttheyb</i> 'I'm pointing at it'	sew (<i>na-ch'e-n-Ø-tl'ú</i>) <i>nach'enih'tl'ú</i> 'I'm sewing'
poke (<i>O-b-ts'ok</i>) <i>yih't'sok</i> 'he poked it'	sharp (<i>d-b-k'eyb</i>) <i>debk'eyb</i> 'it's sharp'
potlatch (<i>xa-Ø-tíitl</i>) <i>xaxghintíitl</i> 'they made a potlatch'	shed (<i>d-choí</i>) <i>chuuuyb etchot</i> 'it's shedding it's down feathers'
pretty (<i>n-Ø-suu</i>) <i>ninsuu</i> 'she's pretty'	shiver (<i>d-diiyb</i>) <i>detdiiyb</i> 'he's shivering'
rain (<i>b-chaq</i>) <i>ebchaq</i> 'it's raining'	shoot (<i>b-dék</i>) <i>tekdék</i> 'I shot it'
red (<i>d-l-t'el</i>) <i>delt'el</i> 'it's red'	shoot (gun) (<i>d-b-k'ax</i>) <i>dedbekk'ax</i> 'I shot it'
remember (<i>xe-l-ndiik</i>) <i>xegbegndiik</i> 'I remembered'	short (<i>d-k'odl</i>) <i>dink'odl</i> 'it's short'
<i>xe'egndee</i> 'I remember'	shout (<i>Ø-sék</i>) <i>ihsek</i> 'I'm shouting'
render (<i>O-b-chaats</i>) <i>ekchaats</i> 'I'm rendering it'	sick (<i>b-ts'íik</i>) <i>ebts'íik</i> 'he's sick'
roll (<i>l-maath</i>) <i>nakedelmaath</i> 'it's rolling over and over'	sing (<i>ch'-d-Ø-liib</i>) <i>ch'edihliib</i> 'I'm singing'
rot (<i>b-jet</i>) <i>ehjet</i> 'it's rotting'	sit (one) (<i>di-Ø-dah</i>) <i>didbihdab</i> 'I'm sitting'
<i>ghihjet</i> 'it's rotting'	sit (several) (<i>dé-l-tth'ih</i>) <i>xdéltth'ih</i> 'they're sitting'
round (<i>d-xeez</i>) <i>etxeez</i> 'it's round'	sleep (one) (<i>b-téé</i>) <i>ghih'te</i> 'I was sleeping'
run (one) (<i>l-tthet</i>) <i>altthet</i> 'he's running'	<i>dhihtéé</i> 'I'm sleeping'
sad (<i>ts'a-xu-b-déy</i>) <i>ts'axokdéy</i> 'I feel sad'	sleep (several) (<i>b-teets</i>) <i>xghih'teets</i> 'they're sleeping'
	slide (<i>l-jeyb</i>) <i>da'iljeyb</i> 'he's sliding down'

- small (*Ø-tsutl*) *ntsudl* ‘it’s small’
- smell (*b-tsenb*) *let ektsenb* ‘I smell smoke’
- smile (*ts’a-i-n-thenb*) *ts’ayini^hthenb* ‘he’s smiling’
- smoke (*O-d-b-tlenb*) *jebtlenb* ‘he’s smoking’
- smoke (cigarette) (*O-d-b-k’enb*) *jebk’enb* ‘he’s smoking’
- smoke (skin) (*O-d-b-let*) *jeblet* ‘he’s smoking something’
- snare (*Ø-luu*) *yihuu* ‘he snared it’
- snow (*b-sháatth*) *ehshátth* ‘it’s snowing’
- soft (*d-d-tlog*) *dettlog* ‘it’s soft’
- spear (*b-chéth*) *ekchéth*
- spill (water) (*na-d-b-tl’iit*) *tuu nadettl’iit* ‘water is spilling’
nadedbektl’iit ‘I spilled it’
- split (wood) (*nildze-d-b-t’aax*) *nildzedabt’ogh* ‘you guys should split the wood’
- spread (flat object) (*d-mets*) *wuchél’etmets* ‘his clothing is flapping’
- stab (*b-got*) *yihgot* ‘he stabbed it’
- stand (one) (*na-Ø-thet*) *ná’é^hthet* ‘he’s standing’
- stand (several) (*na-Ø-deex*) *nats’udeex* ‘let’s stand’
- stare (*O-l-géets*) *shilgéets* ‘he’s staring at me’
- stay (one) (*Ø-daa*) *eedab* ‘he’s staying’
- step (*O-Ø-é^hth*) *xudbih’é^hth* ‘I stepped on it’
- stiff (*l-k’ets*) *nelk’ets* ‘it’s stiff’
- string (beads) (*G-Ø-’ees*) *ib’ees* ‘I’m stringing it’
- stuff (chinking in a house) (*b-ttbux*) *shax xunelttbux* ‘he’s chinking the house’
- swallow (*O-t-l-ndek*) *tedbegndek* ‘I swallowed it’
- swim (*Ø-mee*) *aameel* ‘he’s swimming’
- take (*u-Ø-ndiik*) *udbihndiik* ‘I took it’
- tan (hide) (*Ø-thaa*) *ghin^hthaa* ‘it’s tanned’
- tasty (*l-keyb*) *elkeyb* ‘it’s tasty’ (also sweet)
- tear (*Ø-ch’el*) *ekch’el* ‘I’m tearing it’
latninch’el ‘it’s torn’
- tear (forcefully) (*Ø-gaatth*) *ghihgaath* ‘I tore it’
- tell story (*xu-l-ndek*) *xutedbegndek* ‘I’m going to tell a story’
- thick (*d-d-kei*) *detket* ‘it’s thick’
- thin (*G-d-lon*) *det-lon* ‘it’s thin’
- tie (*O-G-l-cheth*) *mech’edhekcheth* ‘I tied something to it’
- tie (bind) (*b-tsón*) *mech’enektsón* ‘I bound something to it’
- tight (*l-tl’et*) *eltl’et* ‘it’s tight’
- tired (*te-d-ndek*) *teghishndek* ‘I’m tired’
- travel (*Ø-ndaa*) *stanindaa* ‘he traveled away’
- warm (*Ø-gón*) *xnelgón* ‘it’s warm’

wash (*O-k'e-ch'e-b-tseł*) *ttb'ák*
k'éch'ektseł 'I'm washing the
 dishes'

wet (*b-tseł*) *ehtsel* 'it's wet'

whip (move elongated quickly) (*Ø-*
shel) *xayghinshel* 'he whipped
 it out'

white (*l-geyh*) *elgeyh* 'it's white'

wide (*Ø-teel*) *nteel* 'it's wide'

windy (*b-ts'eyh*) *ebts'eyh* 'it's
 windy'

wipe (*b-két*) *mech'ekkét* 'I'm wiping
 it'