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A PHONOLOGY AND MORPHOLOGY  
OF JEMEZ TOWA

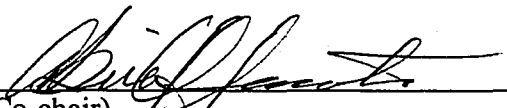
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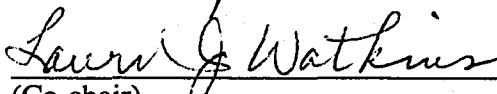
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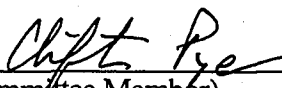
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Diss  
1998  
Y865  
(Archives)

Submitted to the Department of  
Linguistics and the Faculty of the  
Graduate School of the University  
of Kansas in partial fulfillment of  
the requirements for the degree of  
Doctor of Philosophy

  
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Date Defended: 1/22/98

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## ABSTRACT

This is a descriptive study of Jemez (or Towa)—a Native American language of the Kiowa-Tanoan family, spoken at the Pueblo of Jemez in New Mexico. It provides a detailed account of the phonology, noun morphology, and verb morphology. Although the phonological analysis in this work is essentially generative, a phenomenon-oriented approach is used rather than a model-oriented approach. Data contained in this dissertation should be readily accessible and comprehensible to other linguists.

Jemez has a large vowel and consonant inventory. There are 22 vowels, distinguished by vowel length and nasality as well as tongue height and lip rounding. Some of the surface consonants have a limited distribution and are derived from underlying segments. The alternation of various consonants is the most prominent feature of Jemez phonology, and is useful for understanding the morphology, particularly the verbal morphology. The language has four surface tones, derived from three underlying tones.

Just as in other Kiowa-Tanoan languages, Jemez nouns are grouped into four classes on the basis of what is called 'basic number'. The noun classification is reflected in the distribution of the nominal 'inverse-number' suffix and coreferential demonstratives and in the pronominal verbal prefixes which encode grammatical relations.

There are two ways of grouping Jemez verbs: one is according to the criteria of transitivity and stativity, which results in four verb types: transitive active, transitive stative, intransitive active, and intransitive stative. The other is a grouping into morphological classes of verbs, based on the shared inflectional properties. This

classification takes into account the alternations of root-final consonants and tonal patterns in inflected stems, among others.

The dissertation includes a short narrative. It illustrates, in natural discourse, some of the phonological and morphological points, and also gives a glimpse into aspects of Jemez life, both past and present. The appendices include a list of Spanish loanwords and Jemez numerals.

## ACKNOWLEDGEMENTS

This dissertation is finally finished. Its completion has been made possible by the enduring support and assistance I received from many people.

First, I would like to express my deepest gratitude to my Jemez friends, without whose help this project would have been impossible. I will always remember their friendship and hospitality. They treated me like a family member. The people who taught me the language were extremely patient and showed genuine enthusiasm for their language. It was a privilege to work with them.

I am greatly indebted to the co-directors of the dissertation, Professors Akira Yamamoto and Laurel Watkins. They read many earlier drafts of this dissertation carefully and thoroughly. Professor Watkins has spent so much time for me from the beginning of the research. As an authority on the Kiowa-Tanoan language family, she made me realize things which I would not have otherwise. She is responsible for many improvements in my analyses and the overall organization. (Needless to say, all errors are my fault.) Professor Yamamoto was always prompt in providing me with detailed and meticulous comments, which contributed to making this a better dissertation than if it were not for his careful reading. Furthermore, Professor Yamamoto was always there when I struggled and needed help; he provided continual encouragement and unfailing support. Without him, I would not be where I am now. My utmost respect goes to Professor Yamamoto.

I have also received valuable comments from Professors Clifton Pye, Michael Henderson, and ShengLi Feng.

I would like to thank my teachers in the Linguistics Department of the University of Kansas. In addition to Professors Yamamoto, Henderson, and Pye, Professors Frances Ingemann, Kenneth Miner, Keith Percival, and Robert Rankin have

taught me a great deal about linguistics. Mary Haas deserves special recognition: she introduced me to Native American languages when she came to teach at the University of Kansas as a visiting professor.

Kenneth Hale did a pioneering work on the Jemez (Towa) language and has generously made copies of his Jemez grammar notes available to me and other researchers. I find his insight into Jemez even more impressive now than before since I know the language better.

I have also benefited from the discussions I had with Robert Sprott, Randall and Anna Speirs.

The majority writing of this dissertation was done while I was on leave from teaching at Bucknell University. For their support and understanding, I thank my colleagues in the East Asian Studies Department, particularly Paul Noguchi and James Pusey. The College of Arts and Sciences at Bucknell provided me with a fund to help me travel to Kansas for the dissertation defense. For this, I thank Dean Eugenia Gerdes and Associate Dean Mark Padilla.

The fieldwork was made possible by grants from the American Philosophical Society, Wenner-Gren Foundation for Anthropological Research, and Whatcom Museum Society, and by a Summer Fellowship from the University of Kansas. I gratefully acknowledge their financial assistance.

I would also like to thank Betty Jo Miller, Anita Herzfeld, Valeria and Stoian Petrescu, David Lu, and Betty Steffensen for their kindnesses.

Finally, a very special gratitude goes to my parents, Suhachiro and Kinuyo, and to my family, Chutatip and Hideki, who have made many sacrifices to help me complete this project. I dedicate this dissertation to them and to the Jemez people.

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## CHAPTER 1. INTRODUCTION

### 1.1. Jemez Pueblo

Jemez (or Towa) is spoken at Jemez Pueblo, located 38 miles northwest of Albuquerque in north-central New Mexico. It is still a viable language spoken by a little over 2500 people of all ages in the pueblo. Ancestors of the Jemez people lived in several villages in the region until the 17th century, but in the early 18th century, they settled in the present location, which is called /wálati-wa/ (Walatowa) in the language (Sando 1982:42). In 1838, the remaining inhabitants of Pecos Pueblo—located about 20 miles southeast of Santa Fe—moved to Jemez Pueblo (Sando 1982:141).

### 1.2. Jemez and the Kiowa-Tanoan language family

Jemez belongs to the Kiowa-Tanoan language family. It is the only member of the Towa branch of the family. The other branches are Tewa, Tiwa, and Kiowa. Tewa, Tiwa, and Towa are generally grouped as “Tanoan” languages. It was John Powell (1891) who first used the name “Tañoan” to group them. He treated Kiowa as constituting a different family “Kiowan” at the time. J. P. Harrington (1910a) was the first to propose the classification of the Tanoan languages into three branches—Tewa, Tiwa, and Towa. He also noted similarities in vocabulary and sounds between Kiowa and Tanoan languages (Harrington 1910b). The genetic relationship between these groups of languages is well established through the comparative works of Wick Miller (1959), George and Edith Trager (Trager and Trager 1959), Kenneth Hale (1962, 1967), and Laurel Watkins (1977, 1978).

There are still questions regarding the internal relationship of the language family. Some linguists—for instance, Irvine Davis (1959) and George Trager (1967)—suggested that the family had first split into Kiowa and Tanoan. Others hinted

that this might not be the case. Watkins writes that “the label Kiowa-Tanoan reflects an obvious cultural division rather than a linguistic one” (1984:2).<sup>1</sup> (See also Paul Kroskrity (1993:56-57).)

It is not certain if there was any other language in the Towa sub-group. It has been generally assumed that Pecos spoke another dialect of Towa. Harrington wrote that Jemez and Pecos were two dialects of the Towa language:

It was also suggested that the dialects of group B be known as constituting the Towa language, since the term *tôwa*, meaning “native,” is applied by the Jemez and Pecos to their own language. (Harrington 1910a:13)

However, the Jemez historian, Joe Sando, rejects this assumption: “What few words are known of the Pecos language sound more Tewa than Towa” (1982:149).

In this dissertation, I will use the name “Jemez” to refer to the language under investigation.

### 1.3. Previous research on the language and people of Jemez

#### 1.3.1. Linguistic studies

There are not many published works on the Jemez language, and most of these deal with comparison of Kiowa-Tanoan languages. Harrington (1910b) was the first linguist to include Jemez data. He compared the newly obtained Kiowa vocabulary with similar words from Tiwa, Tewa, and Jemez. He did not provide any phonetic guide to the transcription, and although some Jemez words cited there have accent marks, the meanings of the marks are not clear.

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<sup>1</sup>Kiowa is the only Plains Indian tribe in this group. The others all share Pueblo cultural traits. All the Tanoan languages are spoken in New Mexico, and a dialect of Tewa is also spoken in Arizona.

Kenneth Hale collected Jemez data in 1956 and 1957. Some of his data appeared in three published works.<sup>2</sup> Hale (1962) presents evidence from Jemez to support a genetic relationship between Kiowa and Tanoan languages, which was suggested by other researchers, including Harrington (1910b). In this paper, Hale provides sound correspondences between Jemez and Kiowa. In addition, he very briefly mentions similarities in the verbal prefix paradigms and the noun classification systems between the two languages.

Hale (1967) is an attempt to reconstruct the stem-initial consonants and partially the vowels in Proto Kiowa-Tanoan. In the course of reconstruction, he describes morphophonemic consonant ablaut, which appears in all the Kiowa-Tanoan languages. Although it is a historical study, it also contains synchronic data on Jemez phonology, such as tones, stress, and the phonological process which he calls 'depalatalization'.

In Hale (1972), he advocates a more active involvement of American Indians in linguistic research, and by way of illustrating the merit of such an effort, he provides some morphosyntactic data on Jemez, such as passive voice and noun incorporation.

Constance Martin (1964) briefly discusses tones and syllables, and provides a detailed description of Jemez sounds. However, its scope is limited to (classical) phonemics: she derives the consonant and vowel phonemes by checking if particular sounds 'contrast' in analogous environments. She overlooks the fact that some consonants have a very limited but systematic distribution, and as a result, she comes up with more consonant 'phonemes' than necessary.

Beatrice Myers and Hazel Shorey studied Jemez during the 1960's, and Myers wrote a master's thesis on the 'phrase structure' of the language (Myers 1970). She

---

<sup>2</sup>He also summarized his data in his unpublished "Notes on Jemez Grammar" (n.d.), in which he provides concise information about Jemez phonology and morphology. The notes also contain a vocabulary list.



discusses 'Noun Phrase', 'Verb Phrase', 'Location Phrase', and 'Time Phrase', but she tends to describe only the sequence of words in particular phrases without giving adequate morphological information. Like Martin (1964), her phoneme inventory is based on the classical phonemic approach. She does not indicate tones or stress in her phonetic transcription. In addition to the discussion of phrases, Myers provides a vocabulary list and the transcription of three informal talks.

Laurel Watkins presented papers on aspects of Jemez phonology and verbal morphology at linguistic conferences (Watkins 1990a & 1990b).

Robert Sprott's 1992 doctoral dissertation "Jemez Syntax" includes phonological and morphological analysis. Among the morpho-syntactic topics covered are the passive and incorporation. In addition, he provides a detailed analysis of Jemez pronominal prefixes in the framework of relational grammar. The most elaborated part of his work is the interlinear annotation of three biblical stories, as retold in Jemez by a Jemez man. Sprott's phoneme inventory is similar to mine, but there is a considerable difference in our treatments of suprasegmentals. In fact, he did not undertake the analysis of tones.

There are three instrumental studies of Jemez phonetics. Alan Bell (1992) discusses some issues related to Jemez prosody, including tones and stress. Rebecca Heins (1993) provides formant values for the Jemez vowel system. Heins (1994) is an MA thesis on the stop consonants in Jemez.

In addition to the works cited above, I presented at linguistic conferences a series of papers that deal with aspects of Jemez morphology and syntax. In Yumitani (1988a), I first suggested that Jemez actually has four noun classes—three classes of count nouns and one class of mass nouns—just like the other Kiowa-Tanoan

languages.<sup>3</sup> I elaborated on my findings on noun classes in another paper (Yumitani 1988b) by providing three types of evidence: (1) the distribution of the inverse number suffix /-š/; (2) co-referential pronominal prefixes to the verb; and (3) demonstratives. In the same presentation, I provided a list of examples for each of the four noun classes. I also discussed the on-going reanalysis of the suffix /-š/ by Jemez speakers. (See Section 3.4.2 for the details.) Yumitani (1990) provides a general account of noun incorporation in Jemez, and compares it with its Isleta (Southern Tiwa) counterpart.

### 1.3.2. Linguistic data in ethnographic and other studies

Some ethnographic and historical studies contain Jemez vocabulary. Elsie Clews Parsons conducted field work at Jemez Pueblo in 1921 and 1922. Parsons (1925) is an ethnography of the Jemez and includes, among other things, a description of the kinship system, ceremonial life, and personal life. The book contains many Jemez words, some of which are now archaic and are not recognized by present-day Jemez speakers. Parsons' phonetic transcription of Jemez words is probably the best among the three ethnographers cited here. It marked nasalized vowels and glottalized consonants. Her transcription of long vowels, however, is inconsistent, and she did not mark tones at all. Although there are inaccurate transcriptions, her ethnography is noteworthy in that it contains some phonologically and morphologically interesting facts. (See Section 2.3.1.)

Blanche Harper (1929) contains a long vocabulary list (41 pages), arranged according to various categories, including clans, religious terms, numbers, time terms, directions, and relationships. She uses a modified English spelling in transcribing

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<sup>3</sup>Hale mentions two classes of count nouns in his unpublished "Notes on Jemez Grammar." His vocabulary list contains what appear to be mass nouns.

words, and the meanings of some symbols, including an accent mark, are not clear. Many consonants, especially stops, are incorrectly recorded.

Sarah Cook (1930) contains 54 native botanical terms, but there are many inaccurate transcriptions.

Joe Sando (1982) presents the history of Jemez Pueblo, and contains some Jemez personal and place names, written in English spelling, along with their English glosses.

#### 1.4. Fieldwork

Data for this dissertation was collected at various times, mainly in the summer, from 1987 through 1992 and in 1997.

My main consultants were two men and two women. Two of them were in their early 70s and the other two were in their late 60s. In addition, I worked with three other Jemez people—two women in their early 50s and a man around 30 years of age. These seven people were all fluent in English, and the two elder men also knew Spanish reasonably well.

The main differences in speech between the four elders and the younger people are phonological. For example, the younger speakers tend to replace /s/ in some morphemes (e.g. the pronominal prefix /sq-/) with /h/.<sup>4</sup> As for tones, I did not notice any significant difference between the older and younger generations.

Furthermore, the four elder speakers have a larger Jemez vocabulary than the younger people, particularly the youngest male. This point was confirmed by my casual contact with other young Jemez speakers—those in their 20s and 30s. For instance, none of them could count beyond ten in Jemez.

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<sup>4</sup>Sprott (1992) mentions this, too.

The phonological and grammatical descriptions in this work are based almost entirely on data from the four elders. I will note any significant generational differences where relevant.<sup>5</sup>

#### 1.5. Scope of the dissertation

This dissertation deals primarily with Jemez phonology and morphology, but it also includes some syntactic facts. Although it covers all the essential aspects of Jemez phonology and morphology, I will elaborate more on those topics which were not adequately covered in the works of other researchers. There is a detailed account of suprasegmentals and phonological processes (Chapter 2); noun derivation and compounding (Chapter 3); and verb derivation, compounding and inflection (Chapter 4). Finally there is a short text with interlinear glosses (Chapter 5). It is a story told by a Jemez woman about her childhood.

I am not committed to any particular theoretical orientation, though my phonological analysis is essentially generative. In this description of Jemez, I use a phenomenon-oriented approach rather than a model-oriented approach. My goal is to provide a detailed account of some aspects of the structure of the language in such a way that my work is comprehensible and useful for linguists of various theoretical orientations. I hope to make a contribution to a better understanding of the Kiowa-Tanoan language family, in general, and Jemez, in particular.

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<sup>5</sup>Sprott's main consultants were two women in their 40s and a man in his late 30s (Sprott 1992:6). Some of the differences between my description of Jemez and his could be due to the generational differences among the speakers.

## CHAPTER 2. PHONOLOGY

### 2.0. Introduction

This chapter discusses the sound system of Jemez, including consonants and vowels, phonotactics, suprasegmentals, and phonological rules. The language has a complex phonology, and one of its most prominent features is the alternation of various consonants. Some of the consonants have a limited distribution and are derived from underlying segments. This is the rationale for setting up surface and underlying consonants.

Martin (1964) contains a detailed description of Jemez sounds. She uses a non-abstract, classical phonemic approach in her analysis. She does not explain the underlying systematic alternations among segments, some of which are phonologically conditioned, others of which are morphologically conditioned. Her discussion of syllables and tones is also brief, and there is a need for a more detailed account of them.

A more abstract, generativist approach is used in this analysis and description of Jemez phonology in order to explain the underlying regularities. This dissertation employs some notions and formal notations of generative phonology, particularly a version of Lexical Phonology. However, I have tried to include a detailed account of the facts since the data presented here should be accessible to linguists of various theoretical orientations. I have also tried to keep the usage of formalism to a minimum for the same reason.

Two terms and notations require clarification. I use the term 'underlying' representation in the same sense as generative phonologists do, and I indicate the underlying form by enclosing it between slashes //. This level is necessary for capturing morphophonological alternations, which are very common in Jemez. However, my 'surface' representation (or 'surface' forms), enclosed in square brackets

[ ], is not the same as 'surface' (or 'systematic phonetic') representation, as was used in early generative phonology.<sup>1</sup> It is an abstraction from the systematic phonetic representation; that is, not all the phonetic details are represented. Some sounds have 'allophonic' variants: for example, [t<sup>h</sup>] is sometimes pronounced as [t'] in Jemez. (Note that I use square brackets for both the basic and the variant phones.<sup>2</sup> The phonetic symbol for the more common variant is used to refer to the particular 'surface' segment, i.e. [t<sup>h</sup>] in this case.) I have included a discussion of some speech variation, but a detailed analysis of stylistic and other types of variation is beyond the scope of this study.

This surface level of representation is useful for practical reasons, too, that is, for developing an orthography for the language. It is against the speakers' intuition to insist that the letter 'b' should be used instead of 'm' in writing a word because the former is the underlying form of (some occurrences of) the latter.

The surface segments were identified primarily on the basis of whether they contrast on the lexical level, usually by identifying minimal or near-minimal pairs.

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<sup>1</sup>Schane wrote:

However, nearly all generative descriptions to date stop far short of rules providing for fine phonetic detail, and even rules for grossly obvious allophones are frequently not given. . . . because generative phonologists have been concerned primarily with morphophonemics. . . . Since there are so few 'low-level' phonetic rules, it follows that the output of any of these generative phonologies must be a surface representation quite similar to a classical phonemic one. (Schane 1971:519-520)

Lexical Phonology has a sub-module called 'Phonetic Implementation' to deal with this.

<sup>2</sup>Square brackets are also used to represent derived forms which are not necessarily surface forms.

## 2.1. Consonants

### 2.1.1. Surface consonants

The Jemez surface consonant inventory is shown in Table 1. The segments which have a limited distribution and are derived by some phonological rule are enclosed in parentheses in the table. [f] and [r] occur only in loanwords.

Table 1. Jemez surface consonants

|                   | Bilabial | Labiodental | Alveolar | Alveopalatal | Palatal | Palatalized Velar | Velar | Labiovelar | Glottal |
|-------------------|----------|-------------|----------|--------------|---------|-------------------|-------|------------|---------|
| <b>Stops</b>      |          |             |          |              |         |                   |       |            |         |
| Ejectives         | pʔ       |             | tʔ       | (čʔ)         |         | kʔy               | kʔ    |            |         |
| Aspirated         |          |             | (tʰ)     | (čʰ)         |         | kʰy               | kʰ    |            |         |
| Voiceless         | p        |             | t        |              | tʲ      |                   |       | kʷ         | ʔ       |
| Unasp.            |          |             |          |              |         |                   |       |            |         |
| Voiced            | b        |             | d        | (j)          |         | gʲ                | g     |            |         |
| <b>Fricatives</b> |          |             |          |              |         |                   |       |            |         |
| Voiceless         | ɸ        | f           | s        | š            |         |                   |       |            | h       |
| Voiced            |          | v           | z        |              |         |                   |       |            | ɦ       |
| <b>Laterals</b>   |          |             |          |              |         |                   |       |            |         |
|                   |          |             | l        |              |         |                   |       |            |         |
|                   |          |             | (ʔl)     |              |         |                   |       |            |         |
|                   |          |             | (ɬ)      |              |         |                   |       |            |         |
| Flap              |          |             | r        |              |         |                   |       |            |         |
| <b>Nasals</b>     |          |             |          |              |         |                   |       |            |         |
|                   | m        |             | n        |              |         |                   |       |            |         |
|                   | (ʔm)     |             | (ʔn)     |              |         |                   |       |            |         |
| <b>Glides</b>     |          |             |          |              |         |                   |       |            |         |
|                   |          |             |          |              | y       |                   |       | w          |         |
|                   |          |             |          |              | (ʔy)    |                   |       | (ʔw)       |         |

Examples in which the surface consonants occur are as follows:

- (1) [pʷ] [pʷɛ̃] 'mountain'  
 [p] [pɛ̃] 'summer' [pɛ́lá] 'get something'  
 [b] [bɛ́lá] 'bread'  
 [tʷ] [tʷæ̃ʔæ] 'person, Indian' [tʷɪ] 'head'  
 [tʰ] [tʰæ̃ʔó] 'I woke up' [fíɛletʰò] 'hat, head scarf' [fɔ̃tʰò] 'cigarette'  
 [t] [tæ̃ʔæ] 'tea' [tɪ] 'neck' [tɪ] 'shelter, corral' [tótʷá] 'Acoma  
 (person)'  
 [d] [dɪ] 'sleep/impf' [dæ̃tʷæ] 'buzzard'  
 [tʃʷ] [tʃʷɔ̃ʔɪ] 'needle' [fɔ̃tʃʷɑ̃we] 'smoking pipe'  
 [tʃʰ] [tʃʰɔ̃ʔɪ] 'toes' [kʰɪtʃʰɪlɪ] 'white' [tʃʰɔ̃nɔ̃ʔɔ] 'it is difficult'  
 [j] [tɪjɪlɑ] 'I am crying' [jɪlɪtæ] 'close (intr.pf)' [wæ̃kʰẽjɪ] 'plains'  
 [tʷ] [tʷó] 'girl' [tʷɑ̃nɛ̃tʷɪ] 'smell/pf'  
 [kʷ] [kʷɑ̃ʔɑ] 'stone' [kʷó] 'spruce'  
 [kʰ] [kʰó] 'kidney' [kʰɑ̃láɛ] 'yucca basket'  
 [kʰó] 'catch up with someone/pf' [kʰɪ] 'seed, grain'  
 [gʷ] [gʷó] 'cough' [gʷóʔo] 'small cone shell' [gʷɑ] 'reportative particle'  
 [kʷ] [wápekʷeʷyo] 'forehead' [dɪkʷá] 'be lying down'  
 [wɑ̃gɪkʷɑ̃fò] 'rubber plant'  
 [kʰ] [tɪkʰó] 'back (of body)' [nɪ kʰòkʷɑ̃e] 'my older sister'  
 [kʰóle] 'small one'  
 [g] [ɛ̃dɪgóse] 'they (pl) lay down' [fíógè] 'room'  
 [gáɪwe] 'Kiowa' [gɪ] 'fill up (intr.pf)'  
 [kʷ] [kʷé̃sole] 'wage' [kʷæ̃ʔæ] 'rib' [kʷɪ] 'joint' [kʷɑ̃pæ̃] 'doctor'



- (1) [ʔ] [ʔɛ̃] 'blood'
- [ɸ] [ɸɑ̃] 'feather, fur'    [ɸɛ̃] 'roots'    [ɸʷæ̃ʔæ̃] 'fire'    [ɸễʔò] 'something  
burned'
- [f] [fâ·fa] 'alfalfa'
- [v] [vê·la] 'man'
- [s] [sé] 'eye'    [sâ·ʔòmqmq] 'Don't work.'
- [z] [zí] 'handle (of dipper)'    [zâ·ʔòmqmq] 'Don't sing.'
- [ʃ] [ʃí] 'hill'    [tešêʔe] 'I tore it'    [ʔʃilí] 'red'
- [h] [hé] 'axe'    [hí] 'nine, tail'    [hâʔæ̃] 'corn husk'
- [ɦ] [ɦó] 'hole'    [ɦíʔí] 'cottontail rabbit'
- [t̪] [t̪é·qʔq] 'I avoided it'
- [l] [lâ·vo] 'coat'    [t̪í·lê·te] 'I ran'
- [r] [aró] 'rice'    [nqr̪ha] 'orange'
- [m] [m̪te] 'hand'    [m̪í] 'bring/pf'
- [n] [nón̪] 'cottonwood'    [n̪í] 'I'
- [y] [yẫ] 'coyote'
- [w] [wâ·tʔè] 'ear'    [wé·sé] 'spring (of water)'
- [ʔl] [déʔl̪] 'chicken'
- [ʔn] [kʰỹæ̃ʔn̪] 'dog'
- [ʔy] [ɸô·ʔyà] 'weed'
- [ʔw] [wâ·ʔwà] 'arroyo'

In terms of classical phonemics, there appears to be a four-way contrast among stops in Jemez. The presence of [tʰ] especially among the alveolar stops makes the contrast look as if it is four-way. In other places of articulation, however, there are at most three stops: for example, among the palatalized and non-palatalized velar stops,

there is no aspirated vs. (voiceless) unaspirated contrast. Thus the actual contrast among stops is three-way: ejectives, voiceless stops, and voiced stops. [tʰ] is often pronounced as [tʰ]. The voiced stops, [b], [d], [g], are often devoiced in the pronunciation of some speakers.

[tʰ] is a voiceless unaspirated palatal stop. Some speakers pronounce it as a slightly affricated [č] before [i]: e.g. [tʰísæɫæ] ([čísæɫæ]) 'lizard'. Note that [čʰ] is always forcefully articulated, while the variant [č] of [tʰ] is not. ([čʰ] and [č] are derived from underlying /kʰ/ and /kʰ/, respectively, in most cases, and [j] comes from underlying /g/ or /š/.)

The glottal stop [ʔ] can phonetically occur word-initially, intervocalically, and word-finally before a pause. There are some minimal pairs involving words which begin with a glottal stop and words which have an initial [h]: e.g. [ʔɪ] 'blood', [hɪ] 'cedar tree'.<sup>3</sup>

[ɸ] is usually labialized, thus phonetically [ɸʷ]. [f] only occurs in loan words. [s] and [z] have the variants [θ] and [ð], respectively. Their distributions are not clear: e.g. [wé·sé] or [wé·θé] '(water) spring'; [zê'e] or [ðê'e] 'mother'. Furthermore, people of younger generations tend to replace the initial [s] of syllables carrying low tone with [h], e.g. pronominal prefix [hɔ-] (for [sɔ-]), passive imperfective suffix [-aha] (for [-asa]).

[h] appears in root-initial position.

[l] occurs word-initially only in Spanish loanwords.

[ɬ] has a rather limited distribution. It alternates with [h] in some environments, such as after some pronominal prefixes, through a phonological process called 'L-effect': e.g. [qhé·mɪ] 'you (sg) are running away', [mɔlé·mɪ] 'you (du) are running

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<sup>3</sup>In addition to the presence or absence of a glottal stop, there is also a difference in tones. See the discussion in Section 2.3.1.

away;’ [hé·mi] ‘he/she is running away’, [i]hé·mi] ‘they (du) are running away’. (See the discussion of ‘L-effect’ in Section 2.5.1 for the details.)

[r] is a voiced alveolar flap, and occurs only in loanwords from Spanish.

The sonorants [l] , [m] , [n] , [y] , and [w] have glottalized counterparts [ʔl] , [ʔm] , [ʔn] , [ʔy] , and [ʔw] . The segments in the latter set all have a limited distribution, and all but [ʔl] only occur at the beginning of the final syllable of a word, i.e. not at the beginning of a stem. [ʔl] , on the other hand, can occur in the stem-initial position as well as in the last syllable. All these glottalized sonorants are derived from their plain counterparts by phonological rules. (See Section 2.5.3.)

#### 2.1.2. Underlying consonants

Some of the surface consonants only occur in surface forms and are derived from some underlyingly different consonants. They are: [tʰ], [čʔ], [čʰ], [ʃ], [ʈ], [ʔl], [ʔm], [ʔn], [ʔy], and [ʔw], and except for [čʰ], they never occur at the beginning of words.<sup>4</sup> All the underlying consonants of Jemez are given in Table 2.

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<sup>4</sup>[čʰ] occurs word-initially in some loanwords, e.g. [čʰivâ·ti] ‘billy goat’; [čʰí·nʃ] ‘Chinese, curly’, so it is included as /čʰ/ in the underlying consonant inventory.

Table 2. Jemez underlying consonants

|                   | Bilabial | Labiodental | Alveolar | Alveopalatal | Palatal | Palatalized Velar | Velar | Labiovelar | Glottal |
|-------------------|----------|-------------|----------|--------------|---------|-------------------|-------|------------|---------|
| <b>Stops</b>      |          |             |          |              |         |                   |       |            |         |
| Ejectives         | pʰ       |             | tʰ       |              |         | kʰy               | kʰ    |            |         |
| Voiceless         | p        |             | t        | cʰ           | tʰ      | kʰy               | kʰ    | kʷ         | ʔ       |
| Voiced            | b        |             | d        |              |         | gʷ                | g     |            |         |
| <b>Fricatives</b> |          |             |          |              |         |                   |       |            |         |
| Voiceless         | ɸ        | f           | s        | ɬ            |         |                   |       |            | h       |
| Voiced            |          | v           | z        |              |         |                   |       |            | ɦ       |
| <b>Laterals</b>   |          |             |          |              |         |                   |       |            |         |
|                   |          |             | l        |              |         |                   |       |            |         |
| Flap              |          |             | r        |              |         |                   |       |            |         |
| Nasals            | m        |             | n        |              |         |                   |       |            |         |
| Glides            |          |             |          |              | y       |                   |       | w          |         |

The distribution of palatalized and non-palatalized velar stops is generally predictable, but there are some exceptions, so they are treated as separate underlying segments here. (See Section 2.5.8.)

The phonological processes to derive the surface consonants from the underlying consonants are discussed in Section 2.5 (“Consonant alternations and phonological rules”).

## 2.2. Vowels

### 2.2.1. Surface and underlying vowels

Jemez vowels are distinguished according to tongue position (front~back, high~mid~low), length (short~long), and nasality (oral~nasalized). There are twenty-two vowels: six short oral, six long oral, five short nasalized, and five long nasalized vowels. The vowel inventory appears in Table 3, followed by examples.

Table 3. Jemez vowels

|      | Short oral vowels |      | Long oral vowels |      |
|------|-------------------|------|------------------|------|
|      | Front             | Back | Front            | Back |
| High | i                 | ɨ    | iː               | ɨː   |
| Mid  | e                 | o    | eː               | oː   |
| Low  | æ                 | ɑ    | æː               | ɑː   |

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|      | Short nasalized vowels |      | Long nasalized vowels |      |
|------|------------------------|------|-----------------------|------|
|      | Front                  | Back | Front                 | Back |
| High | ɨ̃                     | ɨ̃   | ɨ̃ː                   | ɨ̃ː  |
| Mid  |                        | õ   |                       | õː  |
| Low  | æ̃                     | ɑ̃   | æ̃ː                   | ɑ̃ː  |

- (2)
- |      |                                 |                       |                            |                  |
|------|---------------------------------|-----------------------|----------------------------|------------------|
| [i]  | [ɸi] 'sore'                     | [kʰyɨ] 'seed'         | [tʰɨ] 'arrowhead'          | [ɸiʔi] 'smoking' |
| [e]  | [pé] 'sun'                      | [pê] 'year'           | [tʰê] 'wood, stick'        |                  |
| [æ]  | [pæ̃] 'autumn'                  | [ʔæ̃] 'wash/pf'       | [tʰæ̃ʔæ̃] 'Indian, person' |                  |
|      | [ɸæ̃ʔæ̃] 'fire'                 |                       |                            |                  |
| [ɨ]  | [hɨ̃] 'eight, clothes'          | [tɨ̃] 'neck'          | [sɨ̃] 'seven'              |                  |
|      | [ɸɨ̃ʔɨ̃] ([ɸúʔu]) 'flea, louse' |                       |                            |                  |
| [o]  | [pô] 'fish'                     | [šó] 'home, day'      | [só] 'hunting'             |                  |
|      | [tôʔo] 'mark, painter'          |                       |                            |                  |
| [ɑ]  | [šá] 'break (intr.pf)'          | [tá] 'three'          | [ɸáʔɑ] 'banana'            |                  |
|      | [tʰáʔɑ] 'pinyon tree'           |                       |                            |                  |
| [iː] | [ɸíː] 'night hawk'              | [tešíː] 'I picked it' |                            |                  |

- (2) [e·] [pé·] ‘heart’ [hé·] ‘axe’ [šé·mq] ‘Don’t tear it.’  
 [æ·] [ʔæ·] ‘metate’ [tʔæ·] ‘liver’ [há·] ‘arm’ [há·lq] ‘armband’  
 [i·] [hí·] ‘religion’ [pʔbidæ] ‘ankle’  
 [o·] [šó·] ‘boy’ [hó·lé] ‘dig’ [pó·tʔi] ‘center’  
 [kʔó·we] ‘Laguna (person)’  
 [a·] [há·] ‘cooked corn’ [tá·] ‘flesh’ [pá·yɪ] ‘cloth’  
 [i] [mɪ] ‘go’ [kʰɪ] ‘bring/pf’  
 [æ] [ʔæhele] ‘rung of a ladder’ [φæʔæ] ‘cloud’  
 [ɪ] [hɪ] ‘cedar’ [hɪ] ‘shadow’ [pɪ] ‘bright’ [hɪda] ‘not’  
 [q] [pɔ] ‘mat’ [ʔɔʔq] ‘sweet’ [tɔmɪ] ‘uncle (= mother’s brother)’  
 [q] [ʔwɔ] ‘you (sg)’ [sqpmɪ] ‘we (du) saw them (du/pl)’  
 [i·] [šɪ·] ‘hill’ [mɪ·] ‘bring/pf’  
 [æ·] [kʰæ·] ‘ponderosa pine’ [pæ·] ‘deer’ [ʔæ·tæ] ‘fast’  
 [ɪ·] [hɪ·] ‘nine, tail’ [hɪ·dæ] ‘this’  
 [o·] [kʰó·] ‘tooth’ [pó·] ‘drum, road’ [hó·] ‘leg, bone’  
 [tó·mɪ] ‘town crier’ [kʔɔ·ʔwè] ‘salt’  
 [q·] [mɔ·šiʔlɪ] ‘ball, round object’

The nasalized [ɛ̃] and [ɛ̃·] do not occur in my data.<sup>5</sup> [q] and [q·] are restricted in distribution and occur mostly after a nasal consonant or when the adjacent syllable contains a nasalized vowel. The only words in my data in which [q] or [q·] occur in non-nasalization environments are the Spanish loans [nɔʔha] ‘orange (fruit)’ (< *naranja*); [sqdéyqʔi] ‘Sandia (person)’. I tentatively treat them as underlying vowels /q/ and /q·/ primarily because [q] occurs in pronominal verbal prefixes [q-] and [sq-].

<sup>5</sup>Martin (1964) concurs with the absence of [ɛ̃] and [ɛ̃·].

All short oral vowels, when they occur word-finally, may have a breathy release. Particularly, the high front vowel [i] is often accompanied by [h] or [ç] phonetically when pronounced in isolation: [kʷi] ~ [kʷih] ~ [kʷiç] 'joint'.

[e] is sometimes pronounced with a y off-glide, especially word-medially when the following syllable contains a low vowel: [vêtà] ~ [vêʔtà] 'thigh', [séφà] ~ [séʔφà] 'eyelash'.

[ɨ] is pronounced as a high back rounded vowel [u] after [φ] and [w]: e.g. [φʷúʔu] (</φʔ/) 'flea, louse'. It is pronounced as a centralized unrounded [ɨ] elsewhere.<sup>6</sup>

[o] is pronounced as a mid back vowel [o]. However, two of the speakers I interviewed use a slightly higher vowel after a palatal or palatalized consonant [oʔ] or [u]: e.g. [tʔó] ([tʔóʔ]) 'girl'; [kʰyó] ([kʰyóʔ]) 'kidney'.<sup>7</sup>

[ɑ] has two principal variants, rounded [ɔ] and unrounded [ɑ]. Although the former is more common, their distribution is not clear. This vowel is often followed by a y off-glide when a high vowel occurs in the following syllable: e.g. [φápiʔli] ~ [φáʔpiʔli] 'peach'.

Vowels are nasalized after a nasal consonant, perceptually more so for non-high vowels than for high vowels, and this poses a problem in determining the underlying forms. Phonetically nasalized vowels which occur in words without a nasal consonant, such as [wópiʔli] 'apricot', can be safely treated as underlyingly nasalized. However, nasalized vowels found in a nasalization environment, e.g. [i] in [sélamɨ] 'he/she is running', can be marked as either oral or nasalized in underlying representation because

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<sup>6</sup>Some speakers, particularly male, consistently pronounce it as a rounded vowel in all environments. [u] never contrasts with [ɨ], but it contrasts with [o]: e.g. [φú-seʔlù] 'yucca plant', [φó-lú] 'head-hair'.

<sup>7</sup>Laurel Watkins (personal communication) reports that younger consultants use [u] after [ʃ] and the palatalized velar stops. Sprott's (1992) data also show this distribution.



the contrast between oral and nasalized vowels is neutralized in this environment. The more troublesome case is where a vowel appears to be nasalized as a result of nasality spread from an adjacent syllable: e.g. [ʔíwǫ́] ‘you (sg)’; [sǫ́yǫ́] ‘rain/impf’. I will mark underlying nasalized vowels as nasalized whether or not they are adjacent to nasal consonants.<sup>8</sup>

### 2.2.2. Vowel length

Long vowels can occur in any syllable of a word. (There are some restrictions on the appearance of long vowels with some tones. See Section 2.4.1 for the details.) At the end of words, some long vowels have short variants (e.g. [ǫ́hǫ́] ~ [ǫ́hǫ] ‘backbone, spine’), while others systematically alternate with a short vowel followed by a glottal stop plus another vowel of the same quality (V<sup>ʔ</sup>V). The latter is found before a pause.<sup>9</sup> The tone on the long vowels which exhibit this alternation is either falling or low: e.g. [ǫ́h̄] ~ [ǫ́h̄ʔi] ‘smoking’, [bǫ́dǫ́] ~ [bǫ́dǫ́ʔǫ́] ‘jack rabbit’. The sequences of [V<sup>ʔ</sup>V] and [V<sup>ʔ</sup>V] are analyzed here as long vowels with a falling tone in underlying representation. (See Section 2.4.1 for discussion.)

On the other hand, the long vowels which can be shortened without any apparent pattern are considered to be long with a high tone underlyingly. Such vowels only occur in compounding and incorporation (nouns and verbs). (See Section 2.4.1

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<sup>8</sup>Nasality normally spreads from left to right, but there are isolated cases where it affects preceding syllables. Compare the first vowel in the following two phrases: [hǫ́wǫ́ dǫ́ yǫ́mǫ́mǫ́ʔǫ́] ‘you (sg) used to be quiet’ (uttered in fast speech, underlyingly /howǫ́ dǫ́ yǫ́mǫ́mǫ́ʔǫ́/); [howǫ́ mǫ́dǫ́ yǫ́mǫ́mǫ́ʔǫ́] ‘you (du) used to be quiet’. [o] in [howǫ́] is usually not nasalized (e.g. [howǫ́ ʔǫ́ʔǫ́] ‘it is sweet’); it becomes nasalized only when nasality spreads from the following syllable.

<sup>9</sup>In more careful speech, the glottal stop, occurring in pre-pause position, is normally followed by an ‘echo’ vowel—the vowel preceding the glottal stop is copied after the glottal stop, and is pronounced with a low tone or with no voicing. At a normal rate of speech, on the other hand, there is usually no echo vowel after the glottal stop.

for the relation between tones and vowel length, and Section 2.5.15 for the shortening of long vowels.)

Short vowels with falling tone, except for high nasalized vowels [ī, ī̃], are slightly lengthened when they appear in the initial syllable of polysyllabic words: e.g. [mâ] ‘finger’ ~ [mâ·te] ‘hand’; [pʔê] ‘mountain’ ~ [pʔê·pò] ‘mountain trout’. The lengthening of short vowels with F tone also occurs in phrases (e.g. noun phrases involving a quantifier): e.g. [wî̄ sé] ‘two eyes’ (/wî̄/ ‘two, /sé/ ‘eye’). In this lengthening environment, contrast in vowel length is lost.

### 2.3. Phonotactics

#### 2.3.1. Syllable structure and types

The most common syllable types in Jemez are CV and CVV.<sup>10</sup> Closed syllables ending with a consonant, either [ʃ] or [l], do occur in surface forms, but only word-finally before a pause. All the possible syllable types are shown along with examples in (3).

|     |      |                             |                       |
|-----|------|-----------------------------|-----------------------|
| (3) | V    | [e-] ‘pronominal pfx’       | [q-] ‘pronominal pfx’ |
|     | VV   | [e-] ‘pronominal pfx’       |                       |
|     | CV   | [pé] ‘sun’                  | [kʷâ] ‘medicine’      |
|     | CVV  | [ʔó] ‘branch’               | [pǣ] ‘deer’          |
|     | CVC  | [ɸʃ] ‘buttocks’             | [sɪl] ‘seven’         |
|     |      | [hɪl] ‘eight’               |                       |
|     | CVVC | [hɪ̄ʃ] ‘cottontail rabbits’ | [wí·l] ‘four’         |

<sup>10</sup>In the discussion of the syllable structure, V is used to represent a short vowel, and VV a long vowel. Thus CV refers to an open syllable with a short vowel, while CVV represents an open syllable with a long vowel.

Even when a syllable-final consonant occurs on the surface, there is a tendency toward a CV template in the language, i.e. a tendency toward eliminating a closed syllable in favor of an open syllable. For instance, the ‘inverse’ suffix /-š/ is often omitted from the noun stem, and when it does occur before a verb stem with a pronominal prefix, speakers usually pause slightly between the noun stem and the suffix, and pronounce [š] and the following vowel (i.e. the initial vowel of the pronominal prefix on the verb) as one syllable: e.g. [vê-læ šijí] ‘Men (du) fell off’ < /vê-la-š jil-ší/ (man-inv intr[3du]-fall.sg/pf). In the early 1920’s Elsie Clews Parsons’ (Parsons 1925:70) transcription [ɯwə’ kɪshi semihɯ] ‘your children send’ suggests that the pronominal verbal prefix [i] was already phonetically bound to the inverse number suffix [-sh] in [kɪshi].)

Word-internally, closed syllables are not possible in present-day Jemez, but it appears that there used to be a consonant cluster of word-medial [f] plus a stop consonant in the language: [paɫpa] ‘(term for) September-October’ (Parsons 1925:75).

Although long consonants also occur, they are not contrastive. Voiceless stops, particularly /p/, /t/ and /tʰ/, are lengthened if the preceding vowel is short and stressed: e.g. /ɸítʰimɨ/ [ɸítʰimɨ] ‘weak’; /sípæya/ [sípæya] ‘marry’.<sup>11</sup>

There is a remaining question of whether Jemez has true vowel-initial syllables. What appear to be syllable-initial vowels in some roots start at a low pitch level, the pitch quickly rising as the vowel is pronounced. Often a voiced glottal fricative [fi] is heard before the vowel: e.g. [fiɰpʰæ] ‘yesterday’.<sup>12</sup> [fi] is present at least in root-initial syllables. Hale (1967) points out that in all the Kiowa-Tanoan languages except

<sup>11</sup>The double consonant symbols here indicate long consonants; they do not mean rearticulated geminate consonants.

<sup>12</sup>Laurel Watkins (personal communication) observes a similar low-high tonal pattern on syllable-initial vowels and on vowels which follow an initial voiced consonant, and argues that there is a voiced laryngeal /fi/ at the beginning of what appear to be vowel-initial syllables.





|     |        |                 |                       |
|-----|--------|-----------------|-----------------------|
| (7) | /mɪw/  | [mɪ] ‘see/pf’   | [mɪʔwè] ‘see/psv.pf’  |
|     | /mæ̃s/ | [mæ̃] ‘give/pf’ | [mæ̃sə] ‘give/psv.pf’ |
|     | /hɑp/  | [hɑ] ‘bake/pf’  | [hɑ·pə] ‘give/psv.pf’ |

### 2.3.3. Constraints on sequences of segments

Table 4 gives the CV sequences which never occur in my data or Martin’s (1964:27-28). Note that Martin, in tabulating the data, did not distinguish between short oral and long oral vowels, and between short nasalized and long nasalized vowels, so I had to select a subset of my data to make the comparison. The result is that the vowels in Table 4 are all short vowels (oral or nasalized), and their long equivalents may or may not occur in the given sequences. As we will see in a moment, the difference in vowel length is crucial in Jemez phonology, and short and long vowels should not be treated as the same. Also, since [ɛ] and [ɛ̃] do not occur, they are not included in the table. The symbols enclosed in square brackets refer to those CV sequences which “occur rarely” in Martin’s data (1964:28).

Table 4. Non-occurring (or rare) CV sequences

|                             |                             |                                |                                |                             |                |
|-----------------------------|-----------------------------|--------------------------------|--------------------------------|-----------------------------|----------------|
| [bi]                        | b <sub>i</sub>              | bæ                             | bq                             | bq                          | b <sub>i</sub> |
| č <sub>i</sub>              |                             |                                |                                |                             |                |
| č <sup>ʔ</sup> q            | č <sub>i</sub>              | [č <sup>ʔ</sup> <sub>i</sub> ] |                                |                             |                |
| di                          | [d <sub>i</sub> ]           | dæ                             | dq                             | dq                          | d <sub>i</sub> |
| gæ                          | gq                          | gq                             |                                |                             |                |
| g <sup>ʔ</sup> æ            | g <sup>ʔ</sup> q            | g <sup>ʔ</sup> q               | g <sup>ʔ</sup> <sub>i</sub>    | g <sup>ʔ</sup> <sub>i</sub> |                |
| hq                          |                             |                                |                                |                             |                |
| φ <sub>i</sub>              | φq                          |                                |                                |                             |                |
| ǰq                          | ǰq                          | ǰ <sub>i</sub>                 |                                |                             |                |
| k <sup>h</sup> æ            | k <sup>h</sup> q            |                                |                                |                             |                |
| k <sup>hy</sup> e           | k <sup>hy</sup> q           | k <sup>hy</sup> <sub>i</sub>   |                                |                             |                |
| k <sup>ʔ</sup> q            | k <sup>ʔ</sup> o            | k <sup>ʔ</sup> q               |                                |                             |                |
| k <sup>ʔ</sup> <sub>i</sub> | k <sup>ʔ</sup> q            | k <sup>ʔ</sup> <sub>i</sub>    | [k <sup>ʔ</sup> <sub>i</sub> ] |                             |                |
| k <sup>w</sup> q            | k <sup>w</sup> <sub>i</sub> | k <sup>w</sup> <sub>i</sub>    |                                |                             |                |
| lq                          |                             |                                |                                |                             |                |
| ɬ <sub>i</sub>              | ɬæ                          | ɬq                             |                                |                             |                |
| ne                          |                             |                                |                                |                             |                |
| pi                          | (pq)                        |                                |                                |                             |                |
| p <sup>ʔ</sup> i            | [p <sup>ʔ</sup> æ]          | [p <sup>ʔ</sup> a]             | p <sup>ʔ</sup> q               |                             |                |
| si                          | [s <sub>i</sub> ]           |                                |                                |                             |                |
| šq                          | š <sub>i</sub>              |                                |                                |                             |                |
| t <sub>i</sub>              | [t <sub>i</sub> ]           | tq                             |                                |                             |                |
| t <sup>ʔ</sup> q            | t <sup>ʔ</sup> <sub>i</sub> |                                |                                |                             |                |
| t <sup>ʔ</sup> <sub>i</sub> | t <sup>ʔ</sup> q            |                                |                                |                             |                |
| t <sup>h</sup> <sub>i</sub> | t <sup>h</sup> <sub>i</sub> | t <sup>h</sup> æ               | t <sup>h</sup> q               | t <sup>h</sup> <sub>i</sub> |                |
| [vi]                        | væ                          | vq                             | vq                             |                             |                |
| [wq]                        |                             |                                |                                |                             |                |
| y <sub>i</sub>              |                             |                                |                                |                             |                |
| zi                          | zæ                          | za                             | zq                             | zq                          |                |

[ ] = CVs that rarely occur (Martin)

( ) = CV that occurs as a result of a phonological process (Yumitani)

The most important generalization which we can make from the data is that voiced oral stops [b] and [d] very rarely occur before nasalized vowels. In fact, [b] and [m] are in complementary distribution, as are [d] and [n]: the voiced oral stops occur before oral vowels, while the nasal stops appear before nasalized vowels.<sup>15</sup> The only apparent exceptions are [d̥i] and [d̥ĩ]: e.g. [kʰôd̥ĩ·we] ‘blue jay’, but it will be shown in Section 2.5.2 that the [d] here is derived from underlying /z/.<sup>16</sup> Also, in native Jemez words, [b] and [d] are not common after a nasalized vowel and before the low back vowel [ɑ], except when these consonants occur at the beginning of a second root, as in a compound. (See Section 2.5.2 for a more detailed discussion of the distribution of oral and nasal stops.)

Another distributional regularity is that the short [e] does not occur after palatal or palatalized consonants [tʰ, kʰʸ, kʰʸ, ɡʸ, č, čʰ, ʃ, ʃ̃]. This can be explained in terms of the *e* Raising rule (Section 2.5.11): /e/ is raised to [i] when it follows a palatal(ized) consonant.<sup>17</sup> Note that the long [ẽ] can occur after some (or possibly all) of these consonants: e.g. [kʰʸé̃·] ‘cut, trim’; [kʰʸé̃·pá] ‘frozen (creature, plant)’; [šé̃·] ‘tear/potn’.

On the other hand, [t] and [s] are never followed by [i]. [tĩ] is not found in my data, either, but [t̥ĩ] occurs as a pronominal prefix. As for [s], [sĩ] ([wễ·s̥ĩni] ‘mirror, glass’) is possible, so is [s̥ĩ] ([s̥ĩ·ni] ‘viewer’). However, I do not have any example containing [sĩ].

[ne] is not found in Martin’s data (1964) or in mine. Also, [me] does not occur in native words. The two examples of [me] in my data are of Spanish origin: [mẽlá] ‘syrup’ (< Sp. *malado*); [mễ·sáti] ‘church’ ([mễ·sá] < Sp. *misa* ‘mass’).

<sup>15</sup>This is also the case in Tewa (Hale 1967:113).

<sup>16</sup>Martin gives the following examples (1964:23): [d̥ĩve] ‘splashing’; [d̥ĩ·tʰæ] ‘caught’; [k̥id̥ĩ·ni] ‘grab them!’.

<sup>17</sup>This rule does not apply to the palatal consonant [tʰ] if it occurs stem-initially (i.e. in a stressed position) in a F syllable: e.g. [tʰễ] ‘wood, stick’.



[l] and [ʎ] do not occur within the same root before a nasalized vowel. However, the laterals can readily occur in compounds where /l/ is the final consonant of one of the roots: e.g. [dú·ʃíʎlɔ·] ‘listen (potential)’.

The sequence of [v] and a nasalized vowel is also extremely rare. In fact, [vʎmi] (‘hungry’) is the only example I have.<sup>18</sup> Generally, [v] and [z] are the consonants which occur least frequently (in any position) in my data.<sup>19</sup>

Consonant clusters are not permissible in native Jemez phonology, but they occur in some Spanish loanwords: e.g. [srɔpá] ‘trap’ (< Sp. *trampa*).

## 2.4. Suprasegmentals

### 2.4.1. Surface tones and their distribution

Jemez uses pitch differences for lexical and grammatical contrast. At the surface level, there are four tones: High (H), Low (L), Falling (F), and Mid (M). H is represented by [ˈ] above a vowel, F by [ˆ], M by [˘], and L is unmarked. Phonetically, H and L are level. F has an onset lower in pitch than that for H, and it is followed by a quick drop in pitch. F on a short vowel starts at an even lower pitch than F on a long vowel. M is generally level, but sometimes it has a short downglide. Its onset is perceptually close to that of F.

The distribution of tones relative to positions within words differs between native Jemez words and Spanish loanwords. To summarize the differences: in Spanish loanwords, (a) L tone can occur in an initial syllable in polysyllabic stems; (b) F tone is found in non-initial syllables; (c) a L-tone syllable may be followed by a H-

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<sup>18</sup>The word is sometimes pronounced [vɔ̃mi].

<sup>19</sup>In a small set of verbs, [v] systematically alternates with [p] in inflection: e.g. [gʎpe] ‘bend/pf, potn, inc’, [gʎve] ‘bend/impf’. In the verb for ‘enter’, [z] occurs stem-initially in some inflectional forms (e.g. potential and imperfective), while [ʎ] is found in perfective and imperative stems.

tone syllable; (d) the initial syllable of a lexical stem may or may not be stressed. In the following discussion, some Spanish loanwords are included to illustrate the differences, but only data from native words are considered to describe the surface tonal patterns.

All four surface tones occur in monosyllabic words and affixes (pronominal prefixes and some suffixes), although M tone is very rare.<sup>20</sup> H, F, and L appear on both short and long vowels. M tone is only associated with long vowels.

|     |                       |                                  |                            |
|-----|-----------------------|----------------------------------|----------------------------|
| (8) | H (C <sup>ˈ</sup> V)  | phî 'sore'                      | tá 'three'                 |
|     |                       | háɛ 'modal particle'             |                            |
|     | (C <sup>ˈ</sup> V·)   | phî 'nightingale, govenor'      | tá· 'flesh'                |
|     | F (C <sup>ˈ</sup> V̂) | phî 'buckskin'                  | tâ 'hoe'                   |
|     |                       | mâɛ 'go/pf'                      | tʔê 'stick, wood'          |
|     | (C <sup>ˈ</sup> V̂·)  | phî (phîʔi) 'smoking'          | há· (háʔæ) 'corn husk'     |
|     | M (C <sup>ˈ</sup> V̂) | -tâɛ 'agent/instrumental suffix' |                            |
|     | L (CV)                | ta- 'transitive pfx (1sg/3bas)'  | gʔa 'reportative particle' |

A long vowel with F tone has a variant of a short vowel with F tone followed by a glottal stop and a short vowel of the same quality with L tone, as in [phîʔi] 'smoking' and [háʔæ] 'corn husk'. This variant occurs in pre-pause position, while the long F is found in other environments. L tone normally occurs on a short vowel and is found in pronominal prefixes and some particles.

The occurrence of tones in disyllabic words is much more restricted than in monosyllabic words. Both H and F tones can occur in the initial syllable on a short or

<sup>20</sup>All the examples cited contain a single root (i.e. non-compounds), unless otherwise noted.

long vowel, but M never appears in this position.<sup>21</sup> L tone in the initial syllable occurs only in pronominal prefixes and some particles.<sup>22</sup> F tone on a long vowel in the initial syllable varies phonetically, although a long vowel with F is predominant. For example, words with the FL pattern have the variants ML and MM, e.g. [vê·la] ‘man’ ~ [vè·la] ~ [vè·là]; [tʰò·pì] ‘blue cornmeal mush’ ~ [tʰò·pì].

|     |    |         |   |                                 |
|-----|----|---------|---|---------------------------------|
| (9) | HH | (CVCV)  | bélá ‘bread’  | ʔæmí ‘ant’                      |
|     |    | (CVCV)  | dá·báé ‘board, door’                                  | hò·gí ‘food’                    |
|     |    | (CVCV·) | táétá· ‘thirteen (ten + ‘three)’                      |                                 |
|     |    |         | kʰíʃó· ‘son (child + boy)’                            |                                 |
|     | HM | (CVCV)  | déʔì ‘chicken’  | ʔókʷè ‘nest’                    |
|     |    | (CVCV)  | mí·tʰí ‘six’  | pí·ʔì ‘apple’                   |
|     | HL | (CVCV)  | kʰyæní ‘be tired’                                     | wáhæ ‘skin, hide’               |
|     |    | (CVCV)  | phó·pí ‘brown’  | dá·hí ‘be dark’                 |
|     |    | (CVCV·) | bídæ· (bídæʔæ) ‘jack rabbit’                          |                                 |
|     |    |         | phíʃæ· ‘saddle (buttocks + set)’                      |                                 |
|     |    | (CVCV·) | tí·há· (tí·háʔæ) ‘house’                              | nó·bæ· (nó·bæʔæ) ‘let/pf’       |
|     | FM | (CVCV)  | phòsè ‘nose’  | ʔæʔwè ‘shoulder’                |
|     |    | (CVCV)  | hì·lì ‘pollen’  | wè·tʰè ‘be cold’                |
|     |    | (CVCV·) | tʰê·phæ· (tʰê·phæʔæ) ‘match (stick + fire)’           |                                 |
|     |    |         | kʰyê·pʰò· (kʰyê·pʰòʔo) ‘planting corn (plant + corn)’ |                                 |
|     | FL | (CVCV)  | têlé ‘shoot with a gun/pf’                            | gʷípe ‘bend/pf’                 |
|     |    | (CVCV)  | vê·la ‘man’   | phí·wè ‘flickertail (bird sp.)’ |

<sup>21</sup>Disyllabic prefixes and particles with L tone on each syllable tend to have a slightly higher pitch on the initial syllable than on the second.

<sup>22</sup>The only exception is [ʔéʃæ] ‘midwife’, which is a native Jemez word.



|      |     |  |   |                               |
|------|-----|--|---|-------------------------------|
| (10) | HLL | (C <sup>́</sup> V(·)CV(·)CV)               | ʔpək <sup>hy</sup> i 'girl'                   | tʔæ·mɪŋq 'centipede'          |
|      |     | (C <sup>́</sup> V(·)CV(·)CV·)              | φĩsapæ 'pneumonia'                            | wólebæ· 'pass by/potn'        |
|      | FML | (C <sup>́</sup> V(·)C <sup>̀</sup> V(·)CV) | φâ·tʔita 'tadpole, wart'                      | pâ·tʔabi 'asparagus'          |
|      | FLM | (C <sup>́</sup> V(·)CVC <sup>̀</sup> V)    | tô·dægʔi 'spring (season)'                    | dâ·kʔætʔa 'step, stair'       |
|      | FLL | (C <sup>́</sup> V(·)CVCV)                  | pʔê·kʔele 'Picuris'                           | pâ·tʔabi 'stone fetish'       |
|      | LHL | (CVC <sup>́</sup> CV)                      | gʔiwáeyi 'horse' (< Sp. <i>caballo</i> )      |                               |
|      |     |  | kʔoráeyi 'mailman' (< Sp. <i>correo</i> )     |                               |
|      | LFL | (CVC <sup>́</sup> V(·)CV)                  | nqr̥qha 'orange' (< Sp. <i>naranja</i> )      |                               |
|      |     |  | kʔam̥q·tæ 'bed' (< Sp. <i>cama</i> ?)         |                               |
|      | LLH | (CVCVC <sup>́</sup> )                      | ʔawasé 'sheriff' (< Sp. <i>alguacil</i> )     |                               |
|      |     |  | tɪmqví 'automobile' (< Sp. <i>automóvil</i> ) |                               |
|      |     |  |   | or < Eng. <i>automobile</i> ) |

Long vowels in the final syllable carrying L tone alternate with a short vowel with L tone in some words (e.g. φĩsapæ 'pneumonia') and with [V̥V] in others (e.g. wólebæʔæ 'pass by/potn').

Of the words with four or more syllables, almost all in my data are compounds.<sup>24</sup> They exhibit the same surface tonal patterns found in words with one to three syllables. For example, the initial syllable can carry H or F in native words. H in non-initial syllable occurs only if the preceding syllable carries H tone, e.g. n̥q·n̥íseʔy̥i 'oriole' (n̥q·n̥í 'cottonwood'). M tone typically appears after a F syllable or word-finally on a short vowel, e.g. pʔé·l̥ideʔli 'turkey', w̥â·tʔũšili 'blue' (w̥â·tʔũ 'not ripe'). L tone in non-initial syllables has the least restriction: it can follow a H, F, M or L syllable. However, there are differences between shorter words (i.e. one to three

<sup>24</sup>[k<sup>hy</sup>ɪw̥q̥tʔasa] 'dream/impf' seems to be the only polysyllabic non-compound.

syllables) and long words with four or more syllables. In multi-syllable words, M tone can occur in a non-final syllable after a L syllable, e.g.  $\phi\acute{a}y\grave{a}^{\text{h}}\grave{e}l\grave{a}$  'hell' ( $\phi\acute{a}^{\text{h}}y\grave{a}$  'fire' +  $\grave{e}l\grave{a}$  'place'). In addition, a lowered F tone which starts with M and then drops, can occur in non-initial syllable, e.g.  $t^{\text{h}}f\cdot k^{\text{h}}\text{inj}\grave{m}\grave{a}t\grave{e}$  'pitchfork' ( $\grave{m}\grave{a}t\grave{e}$  'hand'),  $t^{\text{h}}\acute{a}\cdot g^{\text{h}}\text{iwat}\grave{o}\cdot w\grave{a}$  'northwest' ( $t\grave{o}\cdot w\grave{a}$  'north').

To summarize the distribution of surface tones within words:

- (11)
- a. the initial syllable of lexical stems carries either H or F tone;
  - b. H occurs only after a H syllable, never following F;
  - c. F is found only in an initial syllable (except polysyllabic compounds);
  - d. M appears after a F syllable or in a final syllable (except in polysyllabic compounds), and not between H and L;
  - e. L occurs only in a non-initial syllable in native lexical stems, but its distribution is least restricted, i.e. it can occur after H, F, or L.

Finally, the first syllable of lexical stems is more prominent than subsequent syllables, regardless of what tone it carries. This is because the initial syllable is always stressed.<sup>25</sup> In pronominal prefixes, on the other hand, no stress is placed on any syllable.

Almost all the examples cited in this section are single-root stems, and the tonal patterns found in them also occur in compounds (nouns and verbs) and incorporation (nouns and verbs). This fact indicates the existence of some tonal rules. They will be discussed in Section 2.4.3.

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<sup>25</sup>This point is confirmed by Alan Bell's acoustic phonetic study (Bell 1992). He writes that the stress is always placed on the stem-initial syllable and that it is not a property of a H or F tone per se.

#### 2.4.2. Underlying tones

The surface tones can be reduced to three underlying tones—High, Falling, and Low. Most surface Mid tones are derived from underlying F. (See Section 2.4.3 for the details.) The analysis of underlying tones is based on the distribution and contrast of surface tones.<sup>26</sup> Let us first consider pairwise the distribution of surface tones. Both H and L can occur after H in roots. It is not possible to predict what tone (H or L) will occur in the second syllable of disyllabic roots whose initial syllable carries H tone, e.g. [wá·pɪ] ‘nit’, [fó·pɪ] ‘brown’. Thus these two surface tones must be marked underlyingly. H (V̂) and M (V̂) on short vowels must also be marked in underlying representation because they are found after H in disyllabic stems, e.g. [tó·sé] ‘hit/potn’, [tó·sè] ‘hit/pf’. H and F contrast, e.g. [fɪ] ‘sore’, [fɪ] ‘buckskin’, [wé·tʔè] ‘be quiet’, [wê·tʔè] ‘be cold’. It seems that the surface M and L tones must also be distinguished since they occur in minimal pairs, e.g. [kʰɛ̃·nɪ] ‘dog’, [kʰɛ̃·nɪ] ‘tired’, [má·ʃamæ] ‘loan/pf’, [má·ʃamæ] ‘loan/potn, go to borrow/pf’.<sup>27</sup>

On the other hand, surface F and M tones on short vowels do not contrast: they are in complementary distribution. F normally occurs in the initial syllable of lexical stems, while M appears non-initially. When monosyllabic roots with F tone occur as the right-most members in compounds, their tone changes to M in surface representation, e.g. [tʔɪ] ‘head’, [pɛ̃·tʔɪ] ‘deer-dance headpiece (deer + head)’, [tʔè] ‘wood, stick’, [fɛ̃·kʰútʔè] ‘firewood’ (fireplace + wood)’.

Although surface F and L must logically be treated as underlyingly different since M and L contrast, and F and M belong to the same underlying tone, the relationship between these surface tones is not straightforward. They are never found

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<sup>26</sup>In the analysis, only native Jemez words were used, since many Spanish loanwords exhibit different tonal patterns.

<sup>27</sup>See Section 2.5.3 for the relation between tone and glottalization.

in the same position within lexical stems: F occurs in initial syllable where L does not, and L appears in non-initial position where the surface F is not possible. In fact, two of the examples cited earlier to show the contrast between the surface M and L, [má·šamæ] 'loan/pf', [má·šamæ] 'loan/potn', are compounds, containing [mâ] 'give/pf' and [mæ] 'give/potn', respectively. Since surface H is always H underlyingly and the H tone was lowered to L in [má·šamæ] 'loan/potn', the underlying contrast in these examples is between underlying F and H rather than F and L. Although surface F and L do not occur in true minimal pairs, these tones are treated as different underlyingly.

### 2.4.3. Tone rules

The occurrence of tones is not predictable in roots, thus each syllable must be marked with a tone in underlying forms. However, in noun and verb incorporation and compounding, there is a general pattern of tone lowering.<sup>28</sup>

On the basis of data on compounding (nouns and verbs) and incorporation (nouns and verbs), four tone rules have been identified: (a) Non-initial Root H Lowering, (b) L Spread, (c) F to M, and (d) M to L. Almost all the compounds used in the analysis consist of two roots, and very few of three or more roots. While the rightmost member of compound verbs is always a verb root, a noun root in noun compounds may occur as the leftmost, the rightmost, or both. In incorporation, the rightmost root is always a verb root. The tone rules will be discussed in the following sections.

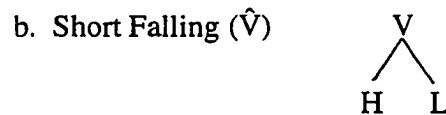
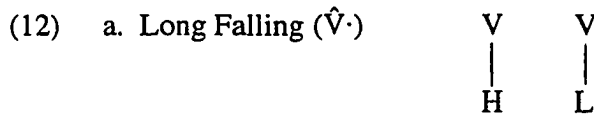
In the following discussion of tone rules, long vowels are treated as VV. Long vowels with H tone are analyzed as VV with HH on the tonal tier, and ones with L tone

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<sup>28</sup>Incorporation and compounding are morphosyntactically different, but there is no phonological evidence for differentiating the two in Jemez.



as VV with LL. Long vowels with F tone are represented as HL with H linked to the first V and L to the second V. Short vowels with F tone are linked to both H and L on the tonal tier.



One advantage of the analysis of F as HL is that it helps explain in simpler terms (i.e. as L Spread) why H tone in a following suffix changes to L in non-compounds, e.g. [ʔ̂·e] ‘sugar’ < /ʔ̂/ ‘be sweet’, /-ʔ̂/ ‘nominalizer suffix’.

#### 2.4.3.1. Non-initial Root H Lowering

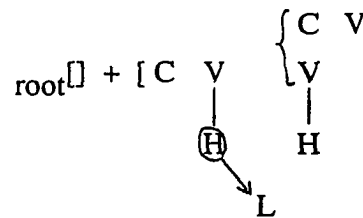
A H tone is normally lowered after the first root in compounds and incorporation, as in (13) below, except when the second root, occurring as the rightmost member of the compound is monosyllabic with a short vowel carrying H tone, as in (14).

- (13) tʔ̂ət̂i ‘toilet’ < /tʔ̂/ ‘excrement’ + /t̂i/ ‘enclosure’  
 ẑŝt̂i ‘snow/pf’ < /ẑi/ ‘ice, snow’ + /ŝt̂i/ ‘rain/pf’  
 kʰŷɪd̂a·b̂æ ‘cradle’ < /kʰŷɪ/ ‘child’ + /d̂a·b̂æ/ ‘board’  
 m̂é·ŝát̂i ‘church’ < /m̂é·ŝá/ ‘mass’ + /t̂i/ ‘enclosure’  
 š̂íláb̂ela ‘corn tortilla’ < /š̂ílá/ ‘round’ + /b̂élá/ ‘bread’  
 t̂ep̂ó·p̂æ ‘I made a drum.’ < /te-p̂ó·p̂æ/ (tr[1sg:3inv]-drum-make/pf)

- (14)  $s\acute{a}\cdot^{\circ}ó$  'wake up/pf' < / $s\acute{a}\cdot$ / 'awake' + / $^{\circ}ó$ / 'become/pf'  
 $k^{\circ}y\acute{a}\cdot k^{hy}í$  'lamb' < / $k^{\circ}y\acute{a}\cdot$ / 'sheep' + / $k^{hy}í$ / 'child, young'  
 $ta\acute{p}\acute{e}m\acute{f}$  'I saw the sun.' < / $ta\text{-}p\acute{e}\text{-}m\acute{f}$ / (tr[1sg:3bas]-sun-see/pf)

The Non-initial Root H Lowering rule is formalized as (15).

- (15) Non-initial Root H Lowering



This rule is blocked from lowering the H tone on the short vowel in monosyllabic roots to L tone. It also creates an input to the L Spread (2.4.3.2) and Long Vowel Shortening (2.5.8) rules. The Non-initial Root H Lowering rule depends on morphological information and applies to similar structural types (i.e. compounding and incorporation), providing support for the theory of Lexical Phonology.

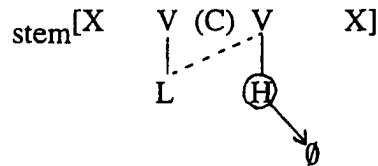
#### 2.4.3.2. L Spread

When the H tone in the first syllable of a non-initial root in a compound is lowered to L, the tone of subsequent syllables also changes to L.

- (16)  $h\acute{e}\cdot t^{\circ}n\acute{i}$  'tomahawk' < / $h\acute{e}\cdot$ / 'axe' + / $s\acute{q}\cdot n\acute{i}$ / 'hammer'  
 $ta\acute{k}^{hy}í\acute{t}^{\circ}e$  'I ate a bean.' < / $ta\text{-}k^{hy}í\text{-}t^{\circ}e$ / (tr[1sg:3bas]-bean-eat/pf)

L Spread (17) changes H tone to L tone after L. This rule can apply iteratively up to the end of the stem until a F tone appears. (See example (23b).) It affects the tone of suffixes, too, as in (18).

(17) L Spread



- (18) ʔô·ʔe ‘sugar’ < /ʔô·-ʔé/ ‘be sweet-nom’  
 tamâʔæ ‘if/when I give/gave it to him’  
 < /ta-mâ-ʔæ/ (tr[1sg:3bas]-give/pf-cond)

2.4.3.3. F to M

Underlying F tone normally surfaces as M in non-stem-initial syllables. This rule does not apply to F in a stem-initial syllable. It applies to compounds and incorporation as well as non-compounds.

- (19) k<sup>h</sup>ʔæ<sup>h</sup>nî ‘dog’ < /k<sup>h</sup>ʔæ<sup>h</sup>nî/  
 ʔæ<sup>h</sup>wè ‘shoulder’ < /ʔæ<sup>h</sup>wè/  
 pá·tî ‘deer-dance headpiece’ < /pá·/ ‘deer’ + /tî/ ‘head’  
 k<sup>ʔ</sup>ʔéláè ‘(blue) sage’ < /k<sup>ʔ</sup>ʔéláè/ ‘Navajo’ + /è/ ‘weed’  
 nò·níse<sup>ʔ</sup>yì ‘oriole’ < /nò·ní/ ‘cottonwood’ + /séyî/ ‘bird’  
 sélamî ‘run/impf’ < /séla-/ ‘run’ + /mî/ ‘go/impf’  
 tahí<sup>h</sup>mæ ‘I gave him clothes.’ < /ta-hí-mæ/ (tr[1sg:3bas]-clothes-give/pf)  
 tibélayætè ‘I threw bread.’ < /ti-béla-yætè/ (tr[1sg:unsp]-bread-throw/pf)

(20) F to M

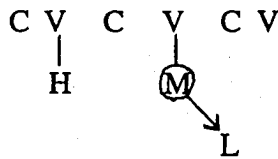
H L → M / [ ]<sub>syllable</sub>[ — ]<sub>syllable</sub>

2.4.3.4. M to L

An underlying F tone in non-stem-initial position, which has been changed to M by the F to M rule, is realized as L, when it is preceded by H and followed by another syllable whose tone is irrelevant. An underlying F in word-final position always surfaces as M.

- (21) délik<sup>h</sup> 'chick' < /délí/ 'chicken' + /k<sup>hy</sup>/ 'child, young'  
 φáya<sup>h</sup>èla 'hell' < /φáyâ/ 'fire' + /èla/ 'place'  
 teg<sup>h</sup>íleh<sup>h</sup> 'I will close it.'  
 < /te-g<sup>h</sup>íle-hí/ (tr[1sg:3inv]-close/potn-fut)  
 délifí 'He killed a chicken.' < /θ-délí-fí/ (tr[3sg:3bas]-chicken-kill/pf)

(22) M to L



2.4.3.5. Sample derivations

Some sample derivations which involve tone rules are provided below.

- (23) a. 'cradle' (child + board)
- |                                       |   |
|---------------------------------------|---|
| $k^{hy}f-d\acute{a}\cdot b\acute{a}e$ | Underlying Representation                 |
| $k^{hy}f-d\acute{a}\cdot b\acute{a}e$ | High Vowel Fronting                       |
| $k^{hy}fda\cdot b\acute{a}e$          | Non-initial Root H Lowering <sup>29</sup> |
| $k^{hy}fda\cdot b\acute{a}e$          | L Spread                                  |
| $k^{hy}fda\cdot b\acute{a}e$          | Surface Representation                    |
- b. 'oriole' (cottonwood + bird)
- |  |                             |
|--|-----------------------------|
| $n\acute{o}\cdot n\acute{i}\cdot s\acute{e}y\acute{f}$ | UR                          |
| $n\acute{o}\cdot n\acute{i}sey\acute{f}$               | Non-initial Root H Lowering |
| $n\acute{o}\cdot n\acute{i}sey\grave{i}$               | F to M                      |
| $n\acute{o}\cdot n\acute{i}se^?y\grave{i}$             | Glottalization              |
| $n\acute{o}\cdot n\acute{i}se^?y\grave{i}$             | SR                          |
- c. 'match' (stick + fire)
- |                            |                    |
|----------------------------|--------------------|
| $t^?e\cdot \phi\acute{a}e$ | UR                 |
| $t^?e\phi\acute{a}e^?a$    | Long Vowel Breakup |
| $t^?e\phi\acute{a}e^?a$    | F to M             |
| $t^?e\phi\acute{a}e^?a$    | UR                 |
- d. 'I will close it.' (tr[1sg:3inv]-close/potn-fut)
- |  |                    |
|--|--------------------|
| $te\cdot g^?f\acute{l}\acute{e}\cdot h\acute{f}$ | UR                 |
| $teg^?f\acute{l}\acute{e}h\acute{f}^?i$          | Long Vowel Breakup |
| $teg^?f\acute{l}\acute{e}h\acute{f}^?i$          | F to M             |
| $teg^?f\acute{l}\acute{e}h\acute{f}^?i$          | M to L             |
| $teg^?f\acute{l}\acute{e}h\acute{f}^?i$          | SR                 |

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<sup>29</sup>The Non-initial Root H Lowering rule affects the first V of the long vowel in the initial syllable of the second root, and then the L tone spread to the second V in this syllable. Due to a notational limitation, this process is not shown in the derived forms. (See also Example (23e).)

- (23) e. 'I asked him to bury it.' (tr[1sg:3bas]-bury/inc-ask/pf)
- |                |                             |
|----------------|-----------------------------|
| ta-gʷíde-zæ·yô | UR                          |
| ta-gʷídezæ·yô  | Non-initial Root H Lowering |
| ta-gʷídezæ·yô  | L Spread                    |
| ta-gʷídezæ·yò  | F to M                      |
| ta-gʷídezæ·ʔyò | Glottalization              |
| tagʷídezæ·ʔyò  | UR                          |
- f. 'I made a drum.' (tr[1sg:3inv]-drum-make/pf)
- |             |                             |
|-------------|-----------------------------|
| te-pô· -pæ· | UR                          |
| te-pô· pæ·  | Non-initial Root H Lowering |
| te-pô· pæ   | Long Vowel Shortening       |
| tepô· pæ    | SR                          |
- g. 'I saw the sun.' (tr[1sg:3bas]-sun-see/pf)
- |          |                             |
|----------|-----------------------------|
| ta-pé·mí | UR                          |
| -----    | Non-initial Root H Lowering |
| tapémí   | SR                          |
- h. 'I ate the bean.' (tr[1sg:3bas]-bean-eat/pf)
- |                            |                             |
|----------------------------|-----------------------------|
| ta-k <sup>hyí</sup> -tʰélé | UR                          |
| ta-k <sup>hyí</sup> tʰelé  | Non-initial Root H Lowering |
| ta-k <sup>hyí</sup> tʰele  | L Spread                    |
| tak <sup>hyí</sup> tʰele   | SR                          |
- i. 'I gave him clothes.' (tr[1sg:3bas]-clothes-give/pf)
- |          |        |
|----------|--------|
| ta-hí·mæ | UR     |
| ta-hémæ  | F to M |
| tahímæ   | SR     |

- (23) j. 'I put down a drum.' (tr[1sg:3inv]-drum-lay.sg/pf)
- te-pó· -kʷâ· UR
- tepó· kʷâʔa Long Vowel Breakup
- tepó· kʷàʔa F to M
- tepó· kʷaʔa M to L
- tepó· kʷaʔa SR

#### 2.4.3.6. Variation in tone rules

One type of variation is found with respect to the Non-initial Root H Lowering rule. A H tone is normally lowered after the initial root, but in a small number of lexical items, lowering can occur after the first syllable of the initial root. This is especially common in noun incorporation.

- (24) a zétabela 'tamale' < /zétá/ 'posole' + /bélá/ 'bread'<sup>30</sup>
- b. kʰýmqmæ 'sell/pf' < /kʰýmá/ 'trade' + /mæ/ 'give/pf'
- c. tibélayætè 'I threw bread.'
- < /ti-béla-yætè/ (tr[1sg:unsp]-bread-throw/pf)
- d. taφælafi 'I killed a bear.'
- < /ta-φélá-fi/ (tr[1sg:3bas]-bear-kill/pf)

Considering that in (24b) and (24d) the H tone in the second syllable of the initial root is lowered when followed by another root beginning with short F, one might set up a tone rule to lower a H to L when it occurs between H and M (i.e. an underlying F). However, HHM (< HH + F) is a common tone sequence in compounds.

<sup>30</sup>cf. [šílábela] 'corn tortilla' < /šílá/ 'round' + /bélá/ 'bread'.

- (25)  $k^{\text{ʔ}}\text{æ}l\text{æ}\phi\text{ò}$  ‘(blue) sage’ <  $/k^{\text{ʔ}}\text{æ}l\text{æ}/$  ‘Navajo’ +  $/\phi\text{ò}/$  ‘weed’  
 $\phi\text{æ}\cdot k^{\text{ʔ}}\text{ú}\text{t}^{\text{ʔ}}\text{è}$  ‘firewood’ <  $/\phi\text{æ}\cdot k^{\text{ʔ}}\text{ú}/$  ‘fireplace’ +  $/\text{t}^{\text{ʔ}}\text{è}/$  ‘wood’

The Non-initial Root H Lowering rule has another type of variation. F tone in non-stem-initial position is normally lowered to M. In a few long compounds consisting of five syllables, F is realized as a lowered F in surface representation.

- (26)  $\text{t}^{\text{ʔ}}\text{í}\cdot k^{\text{ʔ}}\text{in}\text{im}\text{q}\text{te}$  ‘pitchfork’  
 <  $/\text{t}^{\text{ʔ}}\text{í}/$  ‘wheat’ +  $/k^{\text{ʔ}}\text{í}\text{ni}/$  ‘separate/inc’ +  $/\text{m}\text{q}\text{te}/$  ‘hand’  
 $\text{t}^{\text{ʔ}}\text{æ}\cdot g^{\text{ʔ}}\text{i}\text{wat}\text{ò}\cdot \text{wa}$  ‘northwest’ <  $/\text{t}^{\text{ʔ}}\text{æ}\cdot g^{\text{ʔ}}\text{i}\text{wa}/$  ‘west’ +  $/\text{t}\text{ò}\cdot \text{wa}/$  ‘north’  
 $\text{t}^{\text{ʔ}}\text{æ}\cdot y\text{ì}\text{w}\text{q}\text{t}\text{ò}\cdot \text{wa}$  ‘northeast’ <  $/\text{t}^{\text{ʔ}}\text{æ}\cdot y\text{ì}\text{wa}/$  ‘east’ +  $/\text{t}\text{ò}\cdot \text{wa}/$  ‘north’

#### 2.4.3.7. Morphological tone lowering

The second syllable with H tone in disyllabic verb stems is lowered to L before suffixes  $/\text{æ}^{\text{ʔ}}/$  ‘conditional-temporal, admonitive’ and  $/\text{é}^{\text{ʔ}}/$  ‘nominalizer’.

- (27) a.  $\text{q}\text{t}^{\text{h}}\text{æ}^{\text{ʔ}}\text{ò}^{\text{ʔ}}\text{æ}$  ‘when he woke up’  
 <  $/\text{q}\text{-l}\text{-s}\text{æ}^{\text{ʔ}}\text{ó}^{\text{ʔ}}\text{æ}/$  (iben[3sg]-refl/pl-wake.up/pf-cond)  
 b.  $g^{\text{ʔ}}\text{í}\text{d}\text{a}^{\text{ʔ}}\text{æ}$  ‘when he buried it’<sup>31</sup>  
 <  $/\emptyset\text{-g}^{\text{ʔ}}\text{í}\text{d}\text{æ}^{\text{ʔ}}\text{æ}/$  (intr[3bas]-bury/psv.pf-cond)  
 c.  $\text{q}\text{t}^{\text{ʔ}}\text{é}\text{l}\text{e}^{\text{ʔ}}\text{æ}$  ‘if you eat it’ <  $/\text{q}\text{-t}^{\text{ʔ}}\text{é}\text{l}\text{é}^{\text{ʔ}}\text{æ}/$  (tr[2:3bas]-eat/pf-cond)  
 d.  $\text{n}\hat{\text{æ}}\cdot \text{v}\hat{\text{e}}\cdot \text{l}\text{a} \text{d}\hat{\text{a}}\cdot \text{b}\hat{\text{a}}\text{š} \text{e}\text{g}^{\text{ʔ}}\text{l}\text{e}^{\text{ʔ}}\text{e}$  ‘the man who closed the door’  
 <  $/\text{n}\hat{\text{æ}}\cdot \text{v}\hat{\text{e}}\cdot \text{l}\text{a} \text{d}\hat{\text{a}}\cdot \text{b}\hat{\text{a}}\text{é}\text{-š} \text{e}\text{-g}^{\text{ʔ}}\text{l}\text{é}^{\text{ʔ}}\text{é}/$   
 (that man door-inv tr[3sg:3inv]-close/pf-nom)

<sup>31</sup>In addition to the tone lowering, the vowel  $/\text{æ}^{\text{ʔ}}/$  in this syllable changes to  $[\text{a}]$ , too.





- (28) /l/ → [ʔ] (Glottalization)  
 /m/ → [ʔm] (Glottalization)  
 /n/ → [ʔn] (Glottalization)  
 /y/ → [ʔy] (Glottalization)  
 /w/ → [ʔw] (Glottalization)  
 /k<sup>hy</sup>/ → [k<sup>h</sup>] (Velar Stop Depalatalization)  
 /k<sup>ʔy</sup>/ → [k<sup>ʔ</sup>] (Velar Stop Depalatalization)  
 /g<sup>y</sup>/ → [g] (Velar Stop Depalatalization)

(For a detailed discussion of the specific rules and processes: see 2.5.1 on L-effect; 2.5.2 on Oral to Nasal Stop rule; 2.5.3 on Glottalization; 2.5.8 on Velar Stop Depalatalization; 2.5.10 on š-effect.)

#### 2.5.1. L-effect

The most common phonological process in Jemez is what Kenneth Hale calls ‘L-effect’. He proposed the term ‘L-effect’ (or ‘l-effect’) since an ‘l’-quality is added to laryngeal consonants (i.e. /ʔ, h, fi/), which are among the consonants involved in this particular process.<sup>32</sup> It was noted in Section 2.3.2 that some words and morphemes have an underlying final consonant which often does not surface. The syllable-final /l/ triggers the L-effect on the following consonant and produces the surface consonants as given in (29):<sup>33</sup>

<sup>32</sup>The process is summarized on pp. 5-6 of his unpublished “Notes on Jemez Grammar” (n.d.)

<sup>33</sup>The change of /tʔ/ to [t<sup>ʔ</sup>], which Hale mentions in his Jemez grammar notes, is not supported by my data. The verb stem-initial /tʔ/ never changes.

- (29)
- a. /k<sup>hy</sup>/ → [č<sup>h</sup>] / 1 \_\_\_\_
  - b. /k<sup>ʔ</sup>/ → [č<sup>ʔ</sup>]
  - c. /g<sup>ʔ</sup>/ → [ŋ]
  - d. /t<sup>ʔ</sup>/ → [t]
  - e. /s/ → [t<sup>h</sup>]
  - f. /š/ → [ʃ]
  - g. /z/ → [d]
  - h. /ʃ/ → [ʃ]
  - i. /h/ → [h]
  - j. /fi/ → [f]

L-effect operates normally within the word. The most commonly affected segments are the consonants at the beginning of verb stems since some pronominal prefixes contain a final /l/ which marks verb agreement with certain arguments. (/l/ is deleted by the Syllable-Final Consonant Drop rule before the surface form is derived. See Section 2.5.9.)

| (30) | <u>Underlying form</u>    | <u>Surface form</u>     |                             |
|------|---------------------------|-------------------------|-----------------------------|
| a.   | /il-k <sup>hy</sup> æni/  | [ič <sup>h</sup> æni]   | 'They (du) are tired.'      |
| b.   | /il-k <sup>ʔ</sup> á/     | [ič <sup>ʔ</sup> á]     | 'They (du) are lying down.' |
| c.   | /il-g <sup>ʔ</sup> i-yam/ | [ij <sup>ʔ</sup> i-yam] | 'They (du) are crawling.'   |
| d.   | /il-t <sup>ʔ</sup> ó/     | [itó]                   | 'They (du) descended.'      |
| e.   | /il-sélam/                | [it <sup>h</sup> élam]  | 'They (du) are running.'    |
| f.   | /il-ší/                   | [ijí]                   | 'They (du) fell off.'       |
| g.   | /il-zæmi/                 | [idæmi]                 | 'They (du) are going home.' |
| h.   | /il-ʔé/                   | [i <sup>ʔ</sup> lé]     | 'They (du) are sitting.'    |

- (30) i. /ɪl-hó-tʰilæ/ [ɪhó-tʰilæ] ‘They (du) belched.’  
 j. /tɪl-fí/ [tɪf] ‘I killed them (du).’

Incorporated noun stems following an underlying /l/ similarly undergo the L-effect, as in (31b) and (32).

- (31) a. ní· ɪk<sup>hy</sup>ʲʔe ‘I have a child (sg).’  
           ní· ɪ-θ-k<sup>hy</sup>ʲʔe (I iben[1sg]-bas-child-be/stat)  
 b. ní· ɪčɪʲʔe ‘I have children (du/pl).’<sup>34</sup>  
           ní· ɪ-l-k<sup>hy</sup>ʲʔe (I iben[1sg]-inv-child-be/stat)
- (32) ní· kʷi wí š tɪčænɪfɪ̃ ‘I killed two dogs.’<sup>35</sup>  
       ní· kʷil wí-š tɪl-k<sup>hy</sup>ænɪfɪ̃ (I Mod two-inv tr[1sg:3du]-dog-kill/pf)

Thus, within the verb complex, the initial consonant of the verb stem or of the incorporated noun is likely to occur in the L-effect environment.

L-effect can also affect the initial consonant of a verb root in a compound verb if the preceding verb root contains a final /l/: e.g. [vê-ʔl̥ʔq] (</vê-l-ʔq/) ‘think/pf’. In addition, L-effect is found in some nouns which apparently contain a root with a final /l/ which causes the initial consonant of the following morpheme to undergo a change.

- (33) fɪ̃tʰò (/fɪ̃l-só/) ‘cigarette’ (cf. [fɪ̃ʲi] ‘smoking’)  
       fɪ̃čʷa-we (/fɪ̃l-kʷa-we/) ‘smoking pipe’ (cf. [kʷa-we] ‘vessel’)  
       tʰɪ̃čile (/tʰɪ̃l-k<sup>hy</sup>ile/) ‘spoon’ (cf. [tʰɪ̃] ‘gourd’, [k<sup>hy</sup>ile] ‘pouring’)

<sup>34</sup>Actually, there are two more phonological processes involved in this sentence, i.e. depalatalization of velar stops and high vowel fronting. They are discussed in Section 2.5.8 and 2.5.13, respectively.

<sup>35</sup>/t/ in /tɪ/ changes to [tʰ] as a result of applying the š-effect rule. See the discussion in 2.5.10.

- (33) kʷôdî·we (/kʷôl-zí· -we/) ‘blue jay’ (cf. [kʷô] ‘evergreen tree’, [zí·] ‘catch, touch’, and [-we] ‘?’)

L-effect may operate across a word boundary, though very rarely. Sprott (1992:38) writes that in this environment, “speakers seem to have a great deal of freedom as to whether to articulate the /l/ or not.” He notes that other than across clause boundaries and when a ‘phonetically empty’ prefix (i.e. a null prefix), e.g. intransitive prefix with a third person singular S, occurs after /l/, the choice is free (1992:39). Except in the speech of one female speaker, however, L-effect in my data does not take place if the following word begins with a consonant, whether it is a pronominal prefix, a particle, or a lexical stem (noun or verb). If /l/ precedes a vowel-initial pronominal prefix, /l/ always shows up. However, this is an instance of cliticization rather than L-effect.

L-effect changes consonants of various types. The consonants resulting from L-effect can be grouped into three types—(non-glottalized) alveolar stops, alveopalatal affricates, and laterals.

(34) Alveolar stops

- |    |    |   |    |
|----|----|---|----|
| a. | tʷ | → | t  |
| b. | s  | → | tʰ |
| c. | z  | → | d  |

(35) Alveopalatal affricates

- |    |     |   |    |
|----|-----|---|----|
| a. | kʰʷ | → | čʰ |
| b. | kʷ  | → | čʷ |
| c. | gʷ  | → | ǰ  |
| d. | š   | → | ǰ  |

(36) Laterals

- a.       ʔ       →   ʔ̣
- b.       h       →   ɸ
- c.       fi       →   l

The three types of changes (34), (35), and (36), can be formulated as rules (37), (38), and (39), respectively.

(37)

$$\begin{array}{c} \text{C} \\ \left[ \begin{array}{l} + \text{ anterior} \\ + \text{ coronal} \\ - \text{ sonorant} \\ \left\langle \begin{array}{l} + \text{ strident} \\ - \text{ voice} \end{array} \right\rangle \end{array} \right] \end{array} \rightarrow \begin{array}{c} \left[ \begin{array}{l} - \text{ continuant} \\ - \text{ strident} \\ \langle + \text{ spread} \rangle \end{array} \right] / \begin{array}{c} \text{C} \\ \left[ \begin{array}{l} + \text{ lateral} \\ + \text{ voice} \\ - \text{ constricted} \end{array} \right] \end{array} \end{array} \text{---}$$

(38)

$$\begin{array}{c} \text{C} \\ \left[ \begin{array}{l} - \text{ anterior} \\ + \text{ high} \\ - \text{ back} \end{array} \right] \end{array} \rightarrow \begin{array}{c} \left[ \begin{array}{l} + \text{ coronal} \\ + \text{ strident} \\ + \text{ delayed rel} \\ - \text{ continuant} \\ + \text{ voice} \end{array} \right] / \begin{array}{c} \text{C} \\ \left[ \begin{array}{l} + \text{ lateral} \\ + \text{ voice} \\ - \text{ constricted} \end{array} \right] \end{array} \text{---}$$

(39)

$$\begin{array}{c} \text{C} \\ \left[ \begin{array}{c} - \text{ back} \\ + \text{ low} \end{array} \right] \end{array} \rightarrow \begin{array}{c} [+ \text{ lateral}] \end{array} / \begin{array}{c} \text{C} \\ \left[ \begin{array}{c} + \text{ lateral} \\ + \text{ voice} \\ - \text{ constricted} \end{array} \right] \end{array} \text{ ---}$$

## 2.5.2. Nasalization

### 2.5.2.1. Oral and nasal stops

Voiced oral stops [b] and [d], and nasals [m] and [n], are in complementary distribution with respect to the nasality of the following vowel. [b] and [d] do not occur before nasalized vowels, and [m] and [n] always precede nasalized vowels. One apparent exception, [kʷôd̥i·we] 'blue jay', is not really an exception. This word appears to consist of three morphemes: /kʷôl/ 'evergreen tree, /zĩ·/ 'catch, touch', and /-we/ '?'. It appears that the Oral to Nasal Stop rule applies vacuously to form the noun stem /zĩ· we/, and then in compound formation, the L-effect rule applies to the initial consonant of the noun stem. If the rules apply at the same level, we could end up with the wrong output \*[kʷôni·we] because the Oral to Nasal Stop rule can change /d/ to [n] before a nasalized vowel. This example suggests that phonological rules apply at different levels in word formation (as in Lexical Phonology) to derive a correct form.<sup>36</sup>

[b] and [d] are also very rare after nasalized vowels. Stem-internally, [b] and [d] show alternations with [m] and [n], respectively.<sup>37</sup>

<sup>36</sup>The exceptions which Martin (1964:23) mentions, can be explained in the same way. For example, [kid̥i·ni] 'grab them!', can be derived from the underlying /k̥il-zĩ·ni/ (tr[2sg:unsp]-grab/imp).

<sup>37</sup>It may appear that the change of oral stops to nasal stops is caused by the environment of having nasalized vowels on both sides. Actually the conditioner is the following nasalized vowel. This explains why [b] and [d] almost never occur before a nasalized vowel in Jemez. Sometimes this vowel is already nasalized in underlying

- (40) a. ší·bǎe 'stop/psv.pf'  
 b. ší·mǎsa 'stop/psv.impf'
- (41) a. tʰŋ·dǎeʔǎe 'cook/psv.potn'  
 b. tʰŋ·nǎsa 'cook/psv.impf'

(40b) is derived from /ší·bása/, and (41b) from /tʰŋ·dása/.<sup>38</sup>

In compounds, the oral stops do occur as the initial consonants of the second root even if the preceding root ends in a nasalized vowel, e.g. [kʰy[da·bǎe] 'cradle' (lit. 'child' + 'board'); [ɸǎe·dà·hǎ] 'fog' (lit. 'cloud' + 'shadow').

The distributional restriction also does not apply to loanwords, in which [b] and [d] can occur after a nasalized vowel within the same stem, e.g. [tʰǎ·da] 'store' (< Sp. *tienda*).

The domain of the alternation between voiced oral stops and nasals is normally within the same stem, but in the speech of one consultant, /d/ occasionally changes to [n] across a word boundary:

- (42) ʔǎwǎ nǎe· nqsaé·gʷole 'You (sg) can wake him up.'  
 ʔǎwǎ nǎe· da q·sǎe·gʷole (you that/he opt tr[2sg:3bas]-wake.up/potn)

#### 2.5.2.2. Nasalization rules

There are two kinds of nasalization rules. In one, the feature of nasality spreads to a following syllable within the stem, except when the following vowel is /ǎe/ or /ǎe/.

---

representation. Sometimes it becomes nasalized through the process of assimilation when the vowel in the preceding syllable within the same stem is nasalized.

<sup>38</sup>This argument is justified by the presence of some verbs whose passive imperfective form contains voiced oral stops: e.g. [kʰé·bǎeʔǎe] 'feed/psv.potn' ~ [kʰé·basa] 'feed/psv.impf'; [vó·dǎe] 'hide/psv.pf' ~ [vó·dása] 'hide/psv.impf'.



In the other, voiced oral stops /b/ and /d/ nasalize to [m] and [n], respectively, when they occur before any nasalized vowel.

(43) Nasality Spread

$$V \rightarrow [+nasal] / \begin{matrix} V & C & \text{---} \\ [+nasal] & & \text{stem} \end{matrix}$$

(The rule does not apply to the vowel [-back, +low].)

Examples of the Nasality Spread rule are provided in (44).

(44) a. 'you (sg)'

ʔɛwá UR

ʔɛwá Nasality Spread

ʔɛwá SR

b. 'transitive prefix (1du:3inv)<sup>39</sup>

sqpa UR

sqpq Nasality Spread

sqpq SR

---

<sup>39</sup>Nasality spread across a voiceless stop is rather unusual in languages. This particular example is assumed to contain a non-nasal /a/ in underlying form, because in the transitive prefix paradigm, [pq] occurs only after a nasalized vowel (e.g. [sqpq], [mqpq], [qpq]), while [pa] is found after an oral vowel (e.g. [sepa], [bapa], [epa]). Historically /pa/ was probably a separate morpheme, but its meaning is not transparent now.



As was noted earlier, loanwords do not undergo the Nasality Spread rule, e.g. [tʰæ̃·da] ‘store’ (< Sp. *tienda*).

### 2.5.3. Glottalization

As we have already seen, Jemez has both glottalized sonorants and glottalized obstruents (ejectives). The glottalized sonorants, with the exception of [ʔl] which also occurs in non-final syllables, occur only at the beginning of a word-final short syllable carrying an underlying F tone (i.e. surface M) within the same stem (i.e. not root-initially) and are derived from underlyingly non-glottalized sonorants. This consonant alternation occurs in both nouns and verbs. Examples of nouns are shown in (47).

|      |          |            |             |
|------|----------|------------|-------------|
| (47) | déʔl̩    | ‘chicken’  | < /dél̩/    |
|      | kʰʔæ̃ʔn̩ | ‘dog’      | < /kʰʔæ̃n̩/ |
|      | ʔæ̃ʔwè   | ‘shoulder’ | < /ʔæ̃wè/   |

The glottalization of obstruents as well as sonorants occurs systematically in some inflectional stems of verbs. The glottalized consonants are often found in the perfective form, in active or passive voice, the imperative, and the active potential, and their non-glottalized counterparts occur in other forms, including the imperfective. In this case also, glottalization is caused by an underlying F tone in the following word-final syllable.

|      |        |                     |                   |                            |
|------|--------|---------------------|-------------------|----------------------------|
| (48) |        | <u>Imperfective</u> | <u>Perfective</u> |                            |
| a.   | b → pʔ | kʰíbasa             | kʰípʔæ̃           | ‘stand up’ (active)        |
| b.   | d → tʔ | zɪ̃nqsa (/zɪ̃dasa/) | zɪ̃tʔæ̃           | ‘drop’ (passive)           |
| c.   | w → ʔw | fíá·wása            | fíá·ʔwè           | ‘take, carry’<br>(passive) |

|      |    |                     |                     |  |
|------|----|---------------------|---------------------|--|
| (48) |    | <u>Imperfective</u> | <u>Perfective</u>   |  |
|      | d. | y → <sup>ʔ</sup> y  | k <sup>w</sup> é·yì | k <sup>w</sup> é· <sup>ʔ</sup> yò ‘eat’ (active) |
|      | e. | l → <sup>ʔ</sup> l  | dóla <sup>ʔ</sup> ì | dó <sup>ʔ</sup> lè ‘knock down’                  |

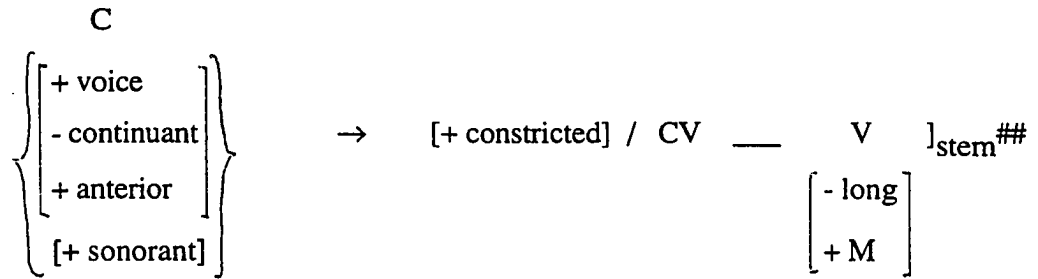
The alternation of glottalized and non-glottalized consonants is also found in a few demonstratives, in which case the glottalized consonant is associated with the inverse number, while its non-glottalized counterpart indicates the basic number.

|      |    |   |  |
|------|----|---|--|
| (49) | a. | nɿ·dæ g <sup>ʔ</sup> ídá                | ‘this pot, these pots/bas (sg/pl)’         |
|      | b. | nɿ·t <sup>ʔ</sup> æ g <sup>ʔ</sup> ídæš | ‘these pots/inv (du)’                      |
| (50) | a. | nɿ·dæ bétapɔ                            | ‘these floor coverings/bas (pl)’           |
|      | b. | nɿ·t <sup>ʔ</sup> æ bétapɔ              | ‘this/these floor covering(s)/inv (sg/du)’ |
| (51) | a. | ɸí·dæ vé·la                             | ‘this man/bas (sg)’                        |
|      | b. | ɸí·t <sup>ʔ</sup> æ vé·læš              | ‘these men/inv (du/pl)’                    |

All the underlying consonants affected by the process of glottalization and the resultant consonants are shown in (52), and the formal rule which accounts for glottalization in nouns and verbs is given in (53). Note that the rule does not apply to root-initial consonants or to voiced velar stop /g/.

|      |    |   |   |                |
|------|----|---|---|----------------|
| (52) | a. | b | → | p <sup>ʔ</sup> |
|      | b. | d | → | t <sup>ʔ</sup> |
|      | c. | w | → | <sup>ʔ</sup> w |
|      | d. | y | → | <sup>ʔ</sup> y |
|      | e. | l | → | <sup>ʔ</sup> l |
|      | f. | m | → | <sup>ʔ</sup> m |
|      | g. | n | → | <sup>ʔ</sup> n |

(53) Glottalization



Glottalization is illustrated in derivations in (54).

(54) a. 'stand up/pf'

|        |                |
|--------|----------------|
| kʷɪbæ  | UR             |
| kʷɪbæ  | F to M         |
| kʷɪpʔæ | Glottalization |
| kʷɪpʔæ | SR             |

b. 'these men/inv (du/pl)'

|              |                    |
|--------------|--------------------|
| fɪɖæ vɛ·la·ʃ | UR                 |
| fɪɖæ vɛ·laʃ  | F to M             |
| fɪɖʔæ vɛ·laʃ | Glottalization     |
| fɪɖʔæ vɛ·læʃ | Low Vowel Fronting |
| fɪɖʔæ vɛ·læʃ | SR                 |

c. 'knock down/pf'

|       |                |
|-------|----------------|
| dólɛ  | UR             |
| dólɛ  | F to M         |
| dóʔlɛ | Glottalization |
| dóʔlɛ | SR             |

(54) d. 'dog'

|               |                |
|---------------|----------------|
| $k^{hy}æ̃ñ$  | UR             |
| $k^{hy}æ̃ñ$  | F to M         |
| $k^{hy}æ̃ʔñ$ | Glottalization |
| $k^{hy}æ̃ʔñ$ | SR             |

#### 2.5.4. Verb-root-final consonant alternation in the imperfective form

There is one more type of alternation which involves medial consonants (i.e. verb-root-final consonant) in some verb stems. The alternating pairs are as follows:

- (55) a. p ~ v  
b. t ~ l  
c. tʰ ~ š

The first consonant in each pair occurs in perfective and other perfective-based forms, while the alternating consonants appear in the imperfective form.<sup>40</sup>

| (56) | <u>Perfective</u> | <u>Imperfective</u> |                      |
|------|-------------------|---------------------|----------------------|
| a.   | gʷipe             | gʷive               | 'bend'               |
|      | šâpe              | šâve                | 'shoot (with arrow)' |
|      | mí·šipe           | mí·šive             | 'rub'                |
| b.   | yâ·tè             | yâ·le               | 'throw'              |
|      | φí·tè             | φí·le               | 'string'             |
|      | ʔê·tè             | ʔê·le               | 'run'                |

<sup>40</sup>Actually, the alternation between [tʰ] and [š] is found in the stem-initial position, too—in the word for 'fall off/pf': [tʰí] and [ší]. The first form occurs when S (i.e. intransitive subject) is plural, while the second one when S is singular or dual (for noun classes I, II, and III). It is not clear whether this particular alternation is systematic since this is the only such example I have. (See Section 4.1.3 for a related discussion.)

|      |                   |                     |              |
|------|-------------------|---------------------|--------------|
| (56) | <u>Perfective</u> | <u>Imperfective</u> |              |
| c.   | tʰâ·nq̄tʰî        | tʰâ·nq̄ši           | 'smell'      |
|      | bʰtʰî             | bʰši                | 'break, cut' |
|      | pʰtʰî             | pʰši                | 'poke'       |

### 2.5.5. Verb-root-initial consonant ablaut

One frequently mentioned “family feature” of Kiowa-Tanoan languages is what Hale (1967:113) describes as “the morphophonemic ablauting of certain verb stem-initial consonants under specific morphosyntactic conditions.” In Jemez, three such conditions are identified: (a) verb compounding and incorporation; (b) nominalization; (c) detransitivization (i.e. formation of intransitive verbs from transitive verbs of similar semantic content such as ‘open/intransitive’ and ‘open/transitive’). The consonants which alternate under these conditions are listed in (57). The first consonant in each pair is the basic one, that is, the one which occurs in environments other than these three.

|      |                 |   |                 |
|------|-----------------|---|-----------------|
| (57) | m               | ~ | p               |
|      | n               | ~ | t               |
|      | tʰ              | ~ | s               |
|      | k <sup>ʔy</sup> | ~ | k <sup>hy</sup> |
|      | fi              | ~ | h               |

Note that not all verbs which contain initial [tʰ] and [m] exhibit the alternation. According to Hale (1967:117), only the [tʰ] and [m] which derive from Proto-Kiowa-Tanoan \*cʰ and \*b, respectively, participate in the ablauting. He mentions two additional consonant alternations, /tʰ/ ~ /t/ and /ʃ/ ~ /k<sup>hy</sup>/, but they are only found in the

examples of verb roots which he cites: /tʰæ· / ~ /tæ·/ ‘to grind’, /ʰæ· / ~ /kʰe· / ‘to bathe’ (1967:117).

Specific examples of consonant alternations under each morphosyntactic condition are provided below.

(58) Verb compounding and incorporation

a. tʰ ~ s

tʰélé ‘eat/pf’

dô· tɔ-Ø-séle-nɔ·bâʰæ (that/he tben[1sg:3sg]-bas-eat/inc-let/pf)

‘I let him eat.’

b. fi ~ h

fi· ‘kill/pf’

phi·yá ta-hi·-zæ·ʰyò (fly tr[1sg:3bas]-kill/inc-ask/pf)

‘I asked him to kill the fly.’

(59) Nominalization

a. tʰ ~ s

tʰó· ‘beat/pf’

gʷí-sɔ·ni (metal-beater) ‘blacksmith’ (cf. /sɔ·ní/ ‘hammer’)

tʰê-sɔ·ni (wood-beater) ‘carpenter’

b. kʰ ~ kʰy

kʰá· ( < /kʰá·/) ‘lay down/pf’

wá·kʰá·-kʰy· (stomach-place it) ‘apron’

c. fi ~ h

fi· ‘kill/pf’

phi·-hi·tʰòš (< /phi·-hi·l-sô·š/) (fire-kill-inv) ‘firefighters

(lit. ‘fire killers’)



(60) Detransitivization

- a. m ~ p  
mɛ́ 'see/pf'  
pɛ́pʷæ 'show up, appear/pf'
- b. fi ~ h  
fiɛ 'open (trans)/pf'  
hiɛ 'open (intrans)/pf'

The ablauting consonants also occur in the incorporative forms of verbs, which are used in negative imperative formation with the morpheme /mɛ́/ 'without'.

(61) Negative imperative.

- a. n ~ t  
nɛ́ 'look for/pf'  
tɛ́we-mɛ́ (look.for-no/without) 'Don't look for it.'
- b. tʰ ~ s  
tʰéɛ 'eat/pf'  
séɛ-mɛ́ (eating-no/without) 'Don't eat.'
- c. kʷ ~ kʰ  
kʷá (</kʷá/) 'lay down/pf'  
kʰá-mɛ́ (laying down-no/without) 'Don't lay it down.'
- d. fi ~ h  
fiá 'take, carry/pf'  
há-mɛ́ (taking-no/without) 'Don't take/carry it.'

Consonant alternations of this type are not predictable since only some consonants which derived from certain consonants in Proto-Kiowa-Tanoan are involved. Thus the words which contain these consonants must be so indicated in the lexicon.<sup>41</sup>

### 2.5.6. Reduplication

Reduplication is used in the formation of the imperfective form of some verbs. The entire CV syllable of a monosyllabic root or the final syllable (CV) of a polysyllabic verb root in a compound is copied and attached to the end of the original root. If the original syllable carries a high tone, the vowel of the reduplicated syllable is lengthened and carries a F tone, but if it carries an underlying falling tone, the vowel of the reduplicated syllable is short with a L tone.

| (62) | <u>Impf root</u>         | <u>Imperfective</u>                                    |  |
|------|--------------------------|--|--|
|      | /há/                     | háha· (/háhâ·/)  | 'bake'                                     |
|      | /mâ/                     | mâma· (/mâma·/)  | 'go'                                       |
|      | /mâ/                     | mâma   | 'give'                                     |
|      | /t'â/                    | t'âta  | 'dry out (intr)'                           |
|      | /t'â/                    | t'â·t'a  | 'seat'                                     |
|      | /pâ/                     | pâpa· (/pâpâ·/)  | 'make'                                     |
|      | /p'â-pâ/                 | p'âpâpâ· (/p'â-pâpâ·/)                                 | 'melt' (cf. /p'â/ 'water')                 |
|      | /k <sup>hy</sup> ĩmq-mâ/ | k <sup>hy</sup> ĩmqmâma· (/k <sup>hy</sup> ĩmq-mâma·/) | 'sell' (cf. /k <sup>hy</sup> ĩmq/ 'trade') |

<sup>41</sup>Note that there is an isolated irregularity in negative imperative formation. Jemez [mĩ] 'see/pf' has cognates in other Kiowa-Tanoan languages (Hale:1967), and it participates in the consonantal ablaut as shown in (60a). We would expect [pĩmq] for 'Don't see it' according to the pattern in (61), but the correct form is [mĩmq]. The consonant alternation between [m] and [p] appears only in detransitivization.

(63) Reduplication

$C_i \quad V_i \quad \rightarrow \quad C_i \quad V_i \quad C_i \quad V_i \quad / \quad \text{vb root}[(CV)_0 \text{ \_\_\_\_\_\_ }]$   
 $\langle H \rangle \quad \quad \quad \langle + \text{ long} \rangle$

2.5.7. y Insertion

[y] is inserted when two vowels which share the same features for height, front-backness, and lip-rounding, but not necessarily length, occur in consecutive roots within a compound across a glottal stop or a voiced glottal fricative.

(64) a. 'get sick/pf' ('sick' + 'become')

$\text{fi}\hat{o}\text{-}^{\text{?}}\acute{o}$  UR  
 $\text{fi}\hat{o}\text{?}y\acute{o}$  y Insertion  
 $\text{fi}\hat{o}\text{-}^{\text{?}}y\acute{o}$  Non-initial Root H Lowering  
 $\text{fi}\hat{o}\text{?}y\acute{o}$  Long Vowel Shortening  
 $\text{fi}\hat{o}\text{?}y\acute{o}$  SR

b. 'drag/pf' ('?' + 'carry')

$w\acute{a}\text{-fi}\acute{a}$  UR  
 $w\acute{a}\text{-fi}y\acute{a}$  y Insertion  
 $w\acute{a}\text{-}y\acute{a}$  Syllable-final Consonant Drop  
 $w\acute{a}\text{-}y\acute{a}$  SR

(65) y Insertion

|   |   |   |   |             |                  |   |             |
|---|---|---|---|-------------|------------------|---|-------------|
| ∅ | → | y | / | V           | C                | — | V           |
|   |   |   |   | [ α high ]  | [ + low ]        |   | [ α high ]  |
|   |   |   |   | [ β low ]   | [ ε voice ]      |   | [ β low ]   |
|   |   |   |   | [ γ back ]  | [ ε continuant ] |   | [ γ back ]  |
|   |   |   |   | [ δ round ] |                  |   | [ δ round ] |

2.5.8. Velar Stop Depalatalization

The distribution of palatalized and non-palatalized velar stops is generally predictable. Palatalized velar stops normally occur at the beginning of a stem-initial syllable, which is always stressed except for some loanwords.<sup>42</sup> The palatalized stops become depalatalized: (a) when the stops are preceded by benefactive prefixes; (b) in ‘small degree’ words; and (c) in loanwords, such as [gáíwe] ‘Kiowa’; [gɑǫé] ‘coffee’; [gáisenq] ‘kitchen’; [kʰɑmâ·tæ] ‘bed’; [kʰô·le] ‘cabbage’. The ‘small degree’ words refer to words such as [kʰóle ʔé] ‘be small’, [kʰô·kʷô·nq] ‘be thin’, [kʰô·tô] ‘be short’, and contrast in meaning with [yæbe ʔé] ‘be big’, [yæ·kʷô·nq] ‘be thick’, [yæ·tô] ‘be long’. (For the details, see Section 3.9 of Chapter 3.)

The occurrence of the non-palatalized velar stops after benefactive prefixes was first noted by Hale (1967:120):

Jemez velar consonants are normally palatalized when they appear initially in stressed stems where the latter are unaccompanied by prefixes . . . . With some exceptions, velars in unstressed stems are depalatalized, e.g., /kʰa/ is [kʰa] in /ʔi·kí·kʰa/ *a child exists for me, I have a child* and /go/ is [go] in /ʔil·kí·go/ . . . . In stressed stems following paradigmatic prefixes, the situation is as follows: velars are palatalized following prefixes of the ‘non-benefactive’ paradigms, and they are depalatalized following ‘benefactive’ prefixes.

<sup>42</sup>There is much variation among my consultants regarding the initial velar stop of nouns incorporated in the verbs. See the discussion on pp 66-68.

His description explains examples like (66) and (67) below. The verb stem with an initial palatalized velar is preceded by an intransitive prefix in (66) but by a benefactive prefix in (67), where the verb stem has a depalatalized velar.

- (66) nĩ· i-kʔá 'I am lying down.' (I intr[1sg]-be.lying.down/stat)  
 (67) nĩ· kʰyæʔnĩ i-Ø-kʔá 'I have a dog.' (I dog iben[1sg]-bas-be.lying.down/stat)

However, there are cases such as (68) where an incorporated noun stem begins with a palatalized velar stop, following a benefactive prefix, or as in (69), where a velar stop occurring in an 'unstressed' stem is palatalized.

- (68) q-kʰyæni-kʔa-ʔe 'his dog'<sup>43</sup> (iben[3sg]-dog-be.lying.down/stat-nom)  
 (69) q-béla-kʔa-ʔe 'his bread' (iben[3sg]-bread-be.lying.down/stat-nom)

Examples of the latter type are too numerous to be considered exceptions. In possessive constructions where the noun is incorporated in the verb, there is a tendency for the depalatalized [kʔ] to occur when the incorporated noun ends with [i], [o], or their long or nasalized equivalents, which are all non-low back vowels, and for the palatalized [kʔʰ] to appear when the preceding vowel is [a], [æ], [e], or their long or nasalized equivalents, which are front or low back vowels.

- (70) a. q-kʰyæni-kʔa-ʔe 'his dog'  
 b. i-tómĩ-kʔa-ʔe 'my uncle (mother's sister)'  
 c. i-kʰít'o-kʔa-ʔe 'my daughter'  
 d. i-kʰô-kʔa-ʔe 'my older sister'  
 e. q-tôʔó·lí-kʔa-ʔe 'grandfather'

---

<sup>43</sup>Only one of my main consultants consistently uses a depalatalized [kʰ] for the incorporated noun in this instance.

- (70) f.     ɿ-čʰɿ-go-ʔe (< /ɿ-l-kʰɿɿ-gʷó-ʔé/) ‘my children’
- (71) a.     q-béla-kʷa-ʔe           ‘his bread’
- b.     q-tí·hæ-·kʷa-ʔe       ‘his house’
- c.     q-sé-kʷa-ʔe           ‘his eye’
- d.     q-hæ-·kʷa-ʔe       ‘his arm’
- e.     ɿ-tátæ-kʷa-ʔe       ‘my dad’

However, an example such as (72) does not fit the pattern.

- (72) q-čʰænɿ-gʷo-ʔe           ‘his dogs (pl)’<sup>44</sup>
- q-l-kʰɿænɿ-gʷó-ʔé       (iben[3sg]-inv-dog-be.lying.down.pl/stat-nom)

In addition, there are cases where the choice of the velar stop varies from one speaker to another.

- (73) q-hó-·kʷa-ʔe ~ q-hó-·kʰa-ʔe       ‘his leg’
- (74) ɿ-kʰɿsó-·kʷa-ʔe ~ ɿ-kʰɿsó-·kʰa-ʔe   ‘my son’

There are more variations among the speakers regarding the initial velar stop of the incorporated nouns than that of the verb stem. For instance, some people use the form [kʰɿænɿ], while others say [kʰænɿ] for ‘dog’ (/kʰɿænɿ/).<sup>45</sup> It is noteworthy that one of the speakers who use [kʰænɿ] in this environment, an older man, consistently uses [kʰ] in other words, too.

- (75) ɿ-kʰô-lamɿ   ‘I am tired.’ (intr[1sg]-be.tired/stat)

<sup>44</sup>/gʷó-/ occurs when the possessed object is plural.

<sup>45</sup>Note that /n/ in /kʰɿænɿ/ ‘dog’ is not glottalized when the word is incorporated in the verb. The underlyingly F tone in the second syllable of the word is lowered to L through the F to M and M to L rules (Section 2.4.3), and the Glottalization rule does not apply to the /n/. Thus the surface form of the word for ‘dog’, when incorporated, is homophonous to [kʰɿænɿ] ‘be tired’.

(76)  $i\text{-k}^h\text{æn}\dot{i}$  'I am tired.' (intr[1sg]-be.tired/stat)

This speaker uses the forms with the palatalized stop,  $[k^{hy}\delta\text{-lami}]$  and  $[k^{hy}\text{æn}\dot{i}]$  after prefixes which do not contain  $[i]$  (e.g.  $[q\text{-}]$  'intransitive prefix for second person singular subject'), or when the prefix is null, as with third person singular subject. This is in agreement with the above-mentioned distribution of velar stops, i.e. the occurrence of palatalized and non-palatalized velar stops is phonetically conditioned: the non-palatalized stops occur after non-low back vowels, and the palatalized stops occur after other vowels.

Both  $[k^h]$  and  $[k^{hy}]$  seem to occur freely before  $[e]$  or  $[e\text{-}]$ .

(77)  $w\text{æ}\cdot k^h\text{e}\cdot\dot{j}i \sim w\text{æ}\cdot k^{hy}\text{e}\cdot\dot{j}i$  'plains'

(78)  $vak^h\text{ê}\cdot k^h\text{e} \sim vak^{hy}\text{ê}\cdot k^{hy}\text{e}$  'Albuquerque'

Thus because their distribution is not entirely predictable, we must treat both palatalized and depalatalized velar stops as separate segments in our underlying consonant inventory for now.

The rule of Velar Stop Depalatalization which applies to velar stops after a benefactive prefix can be formulated as (79).

(79) Velar Stop Depalatalization

$$\begin{array}{c}
 \text{C} \\
 \left[ \begin{array}{l}
 \text{- continuant} \\
 \text{- anterior} \\
 \text{- delayed rel} \\
 \text{+ high} \\
 \text{- back}
 \end{array} \right] \rightarrow [+ \text{back}] / \text{[]}_{\text{Bpfx}} \text{ —}
 \end{array}$$

Some speakers seem to have generalized the Depalatalization rule to any environment in which a non-low back vowel such as /i/ and /o/ occurs before a velar stop, whether or not a benefactive prefix is present. Such a generalized rule can be formulated as (80), and it produces surface forms such as those in (81).

(80) Velar Stop Depalatalization (Generalized)

$$\begin{array}{c}
 \text{C} \\
 \left[ \begin{array}{l}
 \text{- continuant} \\
 \text{- anterior} \\
 \text{- delayed rel} \\
 \text{+ high} \\
 \text{- back}
 \end{array} \right] \rightarrow \text{ [+ back] / V \_\_\_} \\
 \left[ \begin{array}{l}
 \text{+ back} \\
 \text{- low}
 \end{array} \right]
 \end{array}$$

- (81) a. 'I am tired.' (intr[1sg]-be.tired/stat)  
 i-k<sup>hy</sup>ô·lamj UR  
 ik<sup>h</sup>ô·lamj Velar Stop Depalatalization (Generalized)  
 ik<sup>h</sup>ô·lamj SR
- b. 'I am tired.' (intr[1sg]-be.tired/stat)  
 i-k<sup>hy</sup>ænj UR  
 ik<sup>h</sup>ænj Velar Stop Depalatalization (Generalized)  
 ik<sup>h</sup>ænj SR

Similar variation as seen in possessive constructions with an incorporated noun which involves L-effect could be the result of a different order in rule application. The verb stem-initial velar stop becomes depalatalized if the Velar Stop Depalatalization rule applies before noun incorporation in a possessive construction, as in (82a). On the



other hand, if noun incorporation takes place first, then the Depalatalization rule may only apply to the initial consonant of the incorporated noun, in which case, the velar stop may remain palatalized. (See (82b) below.) This suggests that as in the case of L-effect, these phonological and morphological rules may apply at different levels in word formation.

(82) A possible effect of difference in rule application

|    |                |  |
|----|----------------|--|
|    | 'his leg'      | (leg iben[3sg]-bas-be.lying.down/stat-nom) |
| a. | hḳ· q-θ-kʷá-ʔé | UR   |
|    | hḳ· q-kʷáʔé    | Velar Stop Depalatalization                |
|    | q-hḳ·-kʷá-ʔé   | Noun Incorporation                         |
|    | qhḳ·kʷáʔé      | Non-initial Root H Lowering                |
|    | qhḳ·kʷáʔe      | L Spread                                   |
|    | qhḳ·kʷáʔe      | SR   |
| b. | hḳ· q-θ-kʷá-ʔé | UR   |
|    | q-hḳ·-kʷáʔé    | Noun Incorporation                         |
|    | qhḳ·kʷáʔé      | Velar Stop Depalatalization                |
|    | qhḳ·kʷáʔé      | Non-initial Root H Lowering                |
|    | qhḳ·kʷáʔe      | L Spread                                   |
|    | qhḳ·kʷáʔe      | SR   |

2.5.9. Syllable-final Consonant Drop

As was discussed in Section 2.3.2, some syllables may have an underlying syllable-final consonant, but in surface representation, no syllable can end in a consonant except in pre-pause position, where syllable-final [š], and rarely [l], can

occur. This entails that there is no consonant cluster word-medially. The underlying syllable-final consonant is deleted in this environment.

(83) Syllable-final Consonant Drop

$$C \rightarrow \emptyset / \text{---} \left\{ \begin{array}{l} \#\# \\ C \end{array} \right\}$$

(84) a. 'Jemez (sg)' (cf. [hí·mĩš] 'Jemez-du/pl')

- hí·m      UR
- hí·      Syllable-final Consonant Drop
- hí·      SR

b. 'ponderosa pine-pl' (cf. [kʷǎ·nĩš] 'ponderosa pine-sg/du')

- kʷǎ·n      UR
- kʷǎ·      Syllable-final Consonant Drop
- kʷǎ·      SR

c. 'We (du) woke up.' (I-inv iben[1du]-refl/pl-wake.up/pf)

- ní·-š sq-l-sǎ·ʔó      UR
- ní· š sqłtʰǎ·ʔó      L-effect
- ní· štʰqłtʰǎ·ʔó      š-effect
- ní· tʰqtʰǎ·ʔó      Syllable-final Consonant Drop
- ní· tʰqtʰǎ·ʔó      SR

- (84) d. 'They (du) fell off.' (intr[3du]-fall/pf)
- |       |                               |
|-------|-------------------------------|
| ɪl-šɪ | UR                            |
| ɪljɪ  | L-effect                      |
| ɪjɪ   | Syllable-final Consonant Drop |
| ɪjɪ   | SR                            |

#### 2.5.10. š-effect

The š-effect operates mostly across the word boundary. When the inverse /-š/ is suffixed to a noun stem, an independent pronoun, or a demonstrative, the /š/ and the initial consonant of the following word become fused. The only case where it operates word-internally is when a stem suffixed with /-š/ is then followed by the instrumental suffix /-tæ/. It affects only the initial consonant of an unstressed low-tone syllable, typically in particles such as reportative /gʷa/ and pronominal prefixes. Unlike L-effect, it never changes the initial consonant of a verb stem or an incorporated noun stem. The consonant alternations and examples are given in (85) below. The process changes certain consonants to a palatal or palatalized obstruent (with the exception of [tʰ]) and retains the voicing of the original consonants. This process is a result of the reanalysis of word boundaries by Jemez speakers.

| (85)  | <u>Underlying form</u>                        | <u>Surface form</u>                     |
|---|---|---|
| a. /k <sup>hy</sup> / → [č <sup>h</sup> ] <sup>46</sup> /š __ | dô·-š k <sup>hy</sup> α j-l-sæ·ʔó             | dô· čjt <sup>h</sup> æ·ʔó               |
|   | (that/he-inv TA iben[2du]-refl/pl-wake.up/pf) |   |
|   | ‘They (du) woke up.’                          |   |
|   | ʔĩmj-š háæ bæ-k <sup>hy</sup> æwaʔα           | ʔĩmj čæ bæk <sup>hy</sup> æwaʔα         |
|   | (you-inv Q tr[2:1]-like/impf)                 |   |
|   | ‘Do you (du/pl) like me/us?’                  |   |
| b. /gʷ/ → [j]   | dô·-š gʷα ʔĩ el-fiʔ                           | dô· ja ʔĩ elf                           |
|   | (that/he-inv rep self tr[3pl/refl]-kill/pf)   |   |
|   | ‘They (pl) killed themselves, it is said.’    |   |
| c. /t/ → [tʷ]   | ní·tʷæ-š-tæ i-tô·sæ                           | ní·tʷætʷæ itô·sæ                        |
|   | (that-inv-agt intr[1sg]-hit/psv.pf)           |   |
|   | ‘They (du/pl) hit me. (I was hit by them.)’   |   |
| d. /d/ → [j]  | ʔĩmj-š dæ· mæ·                                | ʔĩmj jæ· mæʔæ                           |
|   | (you-inv opt go/potn)                         |   |
|   | ‘You (du/pl) can go.’                         |   |
| e. /s/ → [t <sup>h</sup> ]                                    | ní·-š sq-l-sæ·ʔó                              | ní· t <sup>h</sup> qt <sup>h</sup> æ·ʔó |
|   | (I-inv iben[1du]-refl/pl-wake.up/pf)          |   |
|   | ‘We (du) woke up.’                            |   |

It should be noted that there is some variation among the speakers. The alternations (85a), (85c), and (85e), are found in the speech of all my main consultants, but (85b) and (85d) are observed in only one speaker. The consonants that undergo this process are regrouped as (86) and (87) below.

<sup>46</sup>Note that some surface [h] are derived historically from /k<sup>hy</sup>/, and are affected by the š-effect rule: e.g. [háæ] ‘question particle’ < /k<sup>hy</sup>æ/. Another example of the alternation between /k<sup>hy</sup>/ and [h] is the tense-aspect particle /k<sup>hy</sup>α/.

- (86) a.  $k^{hy} \rightarrow \check{c}^h$   
 b.  $t \rightarrow t^y$   
 c.  $s \rightarrow t^h$
- (87) a.  $g^y \rightarrow \check{j}$   
 b.  $d \rightarrow \check{j}$

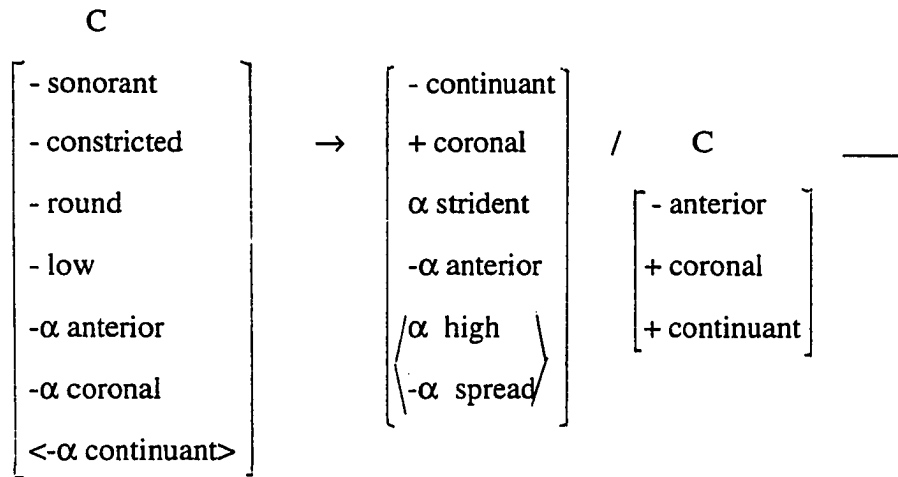
The consonant changes in (86) can be formulated as a phonological rule in (88).

(88) š-effect

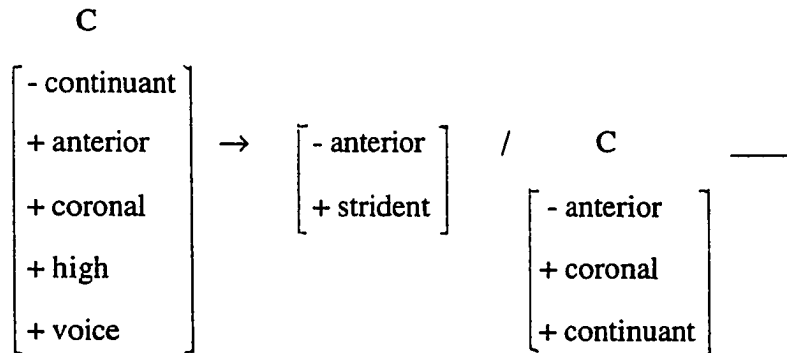
$$\begin{array}{c}
 C \\
 \left[ \begin{array}{l}
 - \text{sonorant} \\
 - \text{voice} \\
 - \text{constricted} \\
 - \text{round} \\
 - \text{low} \\
 -\alpha \text{ anterior} \\
 -\alpha \text{ coronal} \\
 <-\alpha \text{ continuant}>
 \end{array} \right] \rightarrow \left[ \begin{array}{l}
 - \text{continuant} \\
 + \text{coronal} \\
 \alpha \text{ strident} \\
 -\alpha \text{ anterior} \\
 \left\langle \begin{array}{l}
 \alpha \text{ high} \\
 -\alpha \text{ spread}
 \end{array} \right\rangle
 \end{array} \right] / \begin{array}{c}
 C \quad \underline{\quad} \\
 \left[ \begin{array}{l}
 - \text{anterior} \\
 + \text{coronal} \\
 + \text{continuant}
 \end{array} \right]
 \end{array}
 \end{array}$$

The one speaker whose speech exhibits the additional changes in (87) appears to have the rule in (89), which differs from (88) in that it is not specified for the feature [voice], and in addition, the rule (90) which changes the interim segment [d<sup>y</sup>], created by rule (89), to [j].

(89) š-effect (Modified I)



(90) š-effect (Modified II)



Sample derivations are illustrated in (91).

- (91) a. 'They (du) woke up.' (that-inv TA iben[3du]-refl/pl-wake.up/pf)
- |   |                               |
|---|-------------------------------|
| dô· -š k <sup>hy</sup> α j-l-sæ·ʔó            | UR                            |
| dô· š k <sup>hy</sup> α jlt <sup>h</sup> æ·ʔó | L-effect                      |
| dô· š k <sup>hy</sup> jlt <sup>h</sup> æ·ʔó   | Vowel Truncation              |
| dô· ščjlt <sup>h</sup> æ·ʔó                   | š-effect                      |
| dô· čjt <sup>h</sup> æ·ʔó                     | Syllable-final Consonant Drop |
| dô· čjt <sup>h</sup> æ·ʔó                     | SR                            |

- (91) b. 'They (du/pl) hit me. (I was hit by them.)'
- (that/inv-agt intr[1sg]-hit/psv.pf)
- |                     |                               |
|---------------------|-------------------------------|
| ní·t'æ-š-tæ i-tô·sæ | UR                            |
| ní·t'æš-tæ itô·sæ   | F to M                        |
| ní·t'æšt'æ itô·sæ   | š-effect                      |
| ní·t'æt'æ itô·sæ    | Syllable-final Consonant Drop |
| ní·t'æt'æ itô·sæ    | SR                            |
- c. 'We (du) woke up.'
- (I-inv iben[2du]-refl/pl-wake.up/pf)
- |                   |                               |
|-------------------|-------------------------------|
| ní· -š sq-l-sæ·'ó | UR                            |
| ní· š sqłt'æ·'ó   | L-effect                      |
| ní· št'qlt'æ·'ó   | š-effect                      |
| ní· t'qt'æ·'ó     | Syllable-final Consonant Drop |
| ní· t'qt'æ·'ó     | SR                            |
- d. 'You (du/pl) can go.'
- (you-inv opt go/potn)
- |               |                               |
|---------------|-------------------------------|
| ʔimj-š də mâ· | UR                            |
| ʔimjšjæ mâ·   | š-effect (Modified I)         |
| ʔimjæ mâ·     | Syllable-final Consonant Drop |
| ʔimj jæ mâ·æ  | Long Vowel Breakup            |
| ʔimj jæ mâ·æ  | SR                            |

### 2.5.11. *e* Raising

Short unstressed /e/, mostly in pronominal prefixes and inflectional suffixes, changes to [i] when it follows a palatal or palatalized obstruent (t', k<sup>h</sup>, k<sup>ʔ</sup>, g', č, č', j, š) or a nasal (m, n). Short /e/ with F in a stressed syllable is never raised (e.g. [t'ê] 'stick, wood'). Long /e· / is not affected by this rule, as in example (94).

(92) *e* Raising

|   |   |          |   |   |       |
|---|---|----------|---|---|-------|
| V   | → | [+ high] | / | C   | _____ |
| [ - high ]<br>[ - low ]<br>[ - back ]<br>[ - long ] |   |          |   | [ - sonorant ]<br>[ + high ]<br>[ - back ]<br>[ + nasal ] |       |

(93) a. 'They (pl) are tired.' (TA intr[3pl]-be.tired/stat)

|   |                  |
|---|------------------|
| k <sup>hy</sup> α e-k <sup>hy</sup> æ̃nɪ̃ | UR               |
| k <sup>hy</sup> ek <sup>hy</sup> æ̃nɪ̃    | Vowel Truncation |
| k <sup>hy</sup> ik <sup>hy</sup> æ̃nɪ̃    | <i>e</i> Raising |
| k <sup>hy</sup> ik <sup>hy</sup> æ̃nɪ̃    | SR               |

b. 'They (pl) are standing.' (that/he-inv intr[3pl]-stand/impf)

|                         |                  |
|-------------------------|------------------|
| dô·š e-k <sup>w</sup> í | UR               |
| dô·šik <sup>w</sup> í   | <i>e</i> Raising |
| dô·šik <sup>w</sup> í   | SR               |

c. 'I saw women (pl).' (woman-inv tr[1sg:3inv]-see/pf)

|                |                               |
|----------------|-------------------------------|
| ʔó·wá·š te-mɪ̃ | UR                            |
| ʔó·wæš temɪ̃   | Low Vowel Fronting            |
| ʔó·wěš temɪ̃   | æ Raising                     |
| ʔó·wěš t'emɪ̃  | š-effect                      |
| ʔó·wěš t'imɪ̃  | <i>e</i> Raising              |
| ʔó·wé t'imɪ̃   | Syllable-final Consonant Drop |
| ʔó·wé t'imɪ̃   | SR                            |



(93) d. 'stop/pf'

|       |                    |
|-------|--------------------|
| šɪb-ê | UR                 |
| šɪbê  | Nasality Spread    |
| šɪmê  | Oral to Nasal Stop |
| šɪmè  | F to M             |
| šɪʔmè | Glottalization     |
| šɪʔmì | <i>e</i> Raising   |
| šɪʔmì | SR                 |

e. 'drop/pf'

|       |                    |
|-------|--------------------|
| zɪd-ê | UR                 |
| zɪdê  | Nasality Spread    |
| zɪnê  | Oral to Nasal Stop |
| zɪnè  | F to M             |
| zɪʔnè | Glottalization     |
| zɪʔnì | <i>e</i> Raising   |
| zɪʔnì | SR                 |

(94) 'We (pl) are hungry.' (I-inv intr[1pl]-hungry/stat)

|             |                  |
|-------------|------------------|
| nɪ-š e-vɪmì | UR               |
| -----       | <i>e</i> Raising |
| nɪ-š e-vɪmì | SR               |

In the examples in (93), /e/ appears in pronominal prefixes and inflectional suffixes, but the rule of *e* Raising can apply to non-affixes as well. Note that in (95a) the underlying /e/ is raised, while in (95b) the L-effect rule bleeds the *e* Raising rule, leaving /e/ unchanged.

(95) a. 'They (pl) have a fever.' (intr[3pl]-have.fever/stat)

e-tʰélæmj UR  
 etʰflæmj e Raising  
 etʰflæmj SR

b. 'They (du) have a fever.' (intr[3du]-have.fever/stat)

il-tʰélæmj UR  
 iltélæmj L-effect  
 itélæmj Syllable-final Consonant Drop  
 jtélæmj SR

### 2.5.12. æ Raising

Short /æ/ is realized as [e] when it occurs non-stem-initially after /w/, /y/, /tʰ/, /k<sup>hy</sup>/, /gʸ/ or /š/ and before either /š/ or a word boundary.

(96) æ Raising

$$\begin{bmatrix} \text{V} \\ - \text{ back} \\ + \text{ low} \\ + \text{ short} \end{bmatrix} \rightarrow \begin{bmatrix} - \text{ low} \\ - \text{ high} \end{bmatrix} / \text{V} \quad \text{C} \quad \text{---} \quad ]_{\text{stem}} \left\{ \begin{array}{l} \text{š} \\ \text{##} \end{array} \right\}$$

$$\begin{bmatrix} - \text{ back} \\ - \text{ low} \\ + \text{ high} \end{bmatrix}$$

One common environment is when the vowel is followed by the inverse suffix /-š/, as in (97a) through (97c), but that is not always the case, as is seen in example (97d).

- (97) a. 'women-inv (du/pl)'
- |         |   |
|---------|---|
| ʔó·wá-š | UR                                      |
| ʔó·wæš  | Low Vowel Fronting (See Section 2.5.14) |
| ʔó·wéš  | æ Raising                               |
| ʔó·wěš  | SR                                      |
- b. 'snakes-inv (du/pl)'
- |         |   |
|---------|---|
| há·yá-š | UR                                      |
| há·yéš  | Low Vowel Fronting (See Section 2.5.14) |
| há·yéš  | æ Raising                               |
| há·yéš  | SR                                      |
- c. 'mountain lion-inv (du/pl)'
- |         |                    |
|---------|--------------------|
| šæt'á-š | UR                 |
| šæt'æš  | Low Vowel Fronting |
| -----   | e Raising          |
| šæt'eš  | æ Raising          |
| šæt'eš  | SR                 |
- d. 'cow-inv (du/pl)'
- |            |                               |
|------------|-------------------------------|
| wá·g'áša-š | UR                            |
| wá·g'æšæš  | Low Vowel Fronting            |
| wá·g'éšěš  | æ Raising                     |
| wá·g'éšěš  | Syllable-final Consonant Drop |
| wá·g'éše   | SR                            |

In (97d), the rules of Low Vowel Fronting (2.5.14) and æ Raising apply to two occurrences of the underlying /a/ because it meets the structural description. Also, as

example (97c) illustrates, the *e* Raising rule must apply before the *æ* Raising rule. (In this example, *e* Raising applies vacuously to a derived form, causing no change.)

As for the right environment of a word boundary in rule (96), this is often found in the derivation of passive perfective forms.

(98) a. ‘poke-psv pf’

|       |           |
|-------|-----------|
| bítʰæ | UR        |
| bítʰæ | F to M    |
| bítʰe | æ Raising |
| bítʰe | SR        |

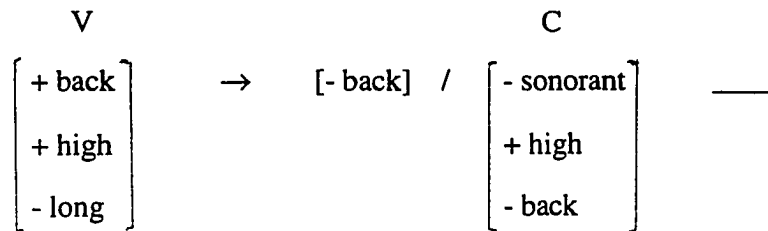
b. ‘lay down-psv pf’

|          |                |
|----------|----------------|
| kʰyâ·wæ  | UR             |
| kʰyâ·wæ  | F to M         |
| kʰyâ·ʔwæ | Glottalization |
| kʰyâ·ʔwè | æ Raising      |
| kʰyâ·ʔwè | SR             |

### 2.5.13. High Vowel Fronting

The short vowels /i/ and /ɨ/ are realized as [i] and [ɨ], respectively, when they occur after a palatal or palatalized obstruent. In (100b), the rule of Velar Stop Depalatalization bleeds the High Vowel Fronting rule, leaving the underlying /ɨ/ intact.

(99) High Vowel Fronting



(100) a. 'child'

|                |                     |
|----------------|---------------------|
| $k^{hy}\xi$    | UR                  |
| $k^{hy}\imath$ | High Vowel Fronting |
| $k^{hy}\imath$ | SR                  |

b. 'my child' (I iben[1sg]-bas-child-be.lying.down.sg/stat-nom)

|   |                             |
|---|-----------------------------|
| $n\imath \cdot \imath - \emptyset - k^{hy}\xi - k^{?y}\acute{a} - ?\acute{e}$ | UR                          |
| $n\imath \cdot \imath k^{hy}\imath k^{?y}\acute{a} ?\acute{e}$                | Non-initial Root H Lowering |
| $n\imath \cdot \imath k^{hy}\imath k^{?y}\acute{a} ?e$                        | L Spread                    |
| $n\imath \cdot \imath k^h\imath k^{?}\acute{a} ?e$                            | Velar Stop Depalatalization |
| $n\imath \cdot \imath k^h\imath k^{?}\acute{a} ?e$                            | SR                          |

The High Vowel Fronting rule which is applied stem-internally, must apply before the Vowel Truncation rule whose domain is a phrasal boundary, as is illustrated in (101). Otherwise, it would create an incorrect form (e.g.  $*[n\imath \cdot k^{hy}\imath m\imath]$ ). (See Section 2.5.17 for the discussion of the Vowel Truncation rule.)

(101) 'I am going.' (I TA intr[1sg]-go/prog)

|  |                     |
|--|---------------------|
| $n\imath \cdot k^{hy}\acute{a} \imath - m\imath$ | UR                  |
| -----  | High Vowel Fronting |
| $n\imath \cdot k^{hy}\imath m\imath$             | Vowel Truncation    |
| $n\imath \cdot k^{hy}\imath m\imath$             | SR                  |

#### 2.5.14. Low Vowel Fronting

The short /a/ changes to [æ] before /š/, unless /š/ is the initial consonant of a following root in a compound (e.g. [wâ·tʰâšili] ‘blue, green’ < /wâ·tʰâ·šili/ ‘not ripe’ + ‘color’).

#### (102) Low Vowel Fronting

$$\begin{array}{c} \text{V} \\ \left[ \begin{array}{l} + \text{ back} \\ + \text{ low} \end{array} \right] \end{array} \rightarrow \left[ - \text{ back} \right] / \text{ \_\_\_\_\_\_ } \text{ š } ]_{\text{stem}}$$

This rule often applies to nouns with the inverse suffix /-š/. It also occurs in the loanword [wá·gʻéše] ‘cow-inv (du/pl)’. (See (97d) for the derivation of this word.)

#### (103) a. ‘men-inv (du/pl)’

|         |                    |
|---------|--------------------|
| vê·la-š | UR                 |
| vê·læš  | Low Vowel Fronting |
| vê·læš  | SR                 |

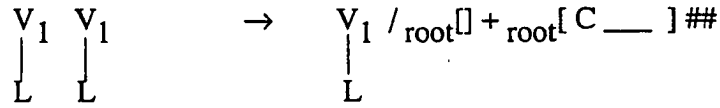
#### b. ‘box-inv (sg/du)’

|            |                    |
|------------|--------------------|
| tʰê·tiba-š | UR                 |
| tʰê·tibæš  | Low Vowel Fronting |
| tʰê·tibæš  | SR                 |

#### 2.5.15. Long Vowel Shortening

Long vowels with underlyingly High tone, especially utterance-finally, are shortened word-finally. This is a lexical rule in the sense that it must apply in the lexicon since it is sensitive to the type of morpheme in which it appears.

(104) Long Vowel Shortening



(105) a. 'war captain' ('forest' + 'leader')

|           |                             |
|-----------|-----------------------------|
| bá·lá·fí· | UR                          |
| bá·lá·fí· | Non-initial Root H Lowering |
| bá·lá·fí  | Long Vowel Shortening       |
| bá·lá·fí  | SR                          |

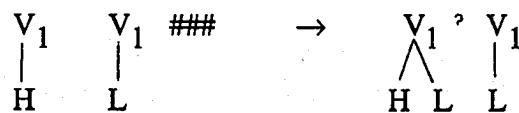
b. 'I made a drum.' (tr[1sg:3inv]-drum-make/pf)

|             |                             |
|-------------|-----------------------------|
| te·pó· -pǎ· | UR                          |
| te·pó· pǎ·  | Non-initial Root H Lowering |
| te·pó· pǎ   | Long Vowel Shortening       |
| te·pó· pǎ   | SR                          |

2.5.16. Long Vowel Breakup

In pre-pause position, long vowels with an underlying Falling tone are broken up into two short vowels of the same quality (tongue position, lip-rounding, orality/nasality) with an intervening glottal stop. The first of the resultant vowels carries a F tone, while the second has a L tone. The second vowel is normally dropped at a fast rate of speech.

(106) Long Vowel Breakup



(107) a. '(ear of) corn'

pʰo· UR

pʰoʷo Long Vowel Breakup

pʰoʷo SR

b. 'rain, lard'

sɸ· UR

sɸʷɸ Long Vowel Breakup

sɸʷɸ SR

c. 'jack rabbit'

bídæ· UR

bídæʷæ Long Vowel Breakup

bídæʷæ F to M

bídæʷæ M to L

bídæʷæ SR

d. 'be kind/stat'

wô· UR

wôʷo Long Vowel Breakup

wôʷo SR

### 2.5.17. Vowel Truncation

When two vowels occur sequentially across a word boundary, one of the vowels is dropped. This process only affects a sequence of a noun or a particle plus a verb-initial pronominal prefix on the following verb. If the first vowel is unstressed, the first of the two vowels is dropped. If the first vowel is stressed, as in lexical stems

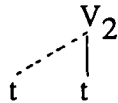
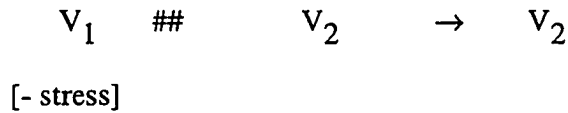


and some particles (e.g. question particle [há]), then it is the second vowel that is deleted. The tones of the two vowels are assigned to the undeleted vowel.

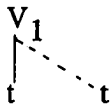
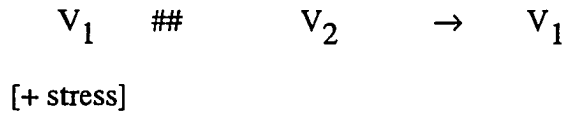
The Vowel Truncation rule consists of two parts: the first part deletes one of the successive vowels; the second assigns both tones to the remaining vowel.

(108) Vowel Truncation

a. The first vowel is unstressed.



b. The first vowel is stressed.



(109) a. 'They (du) went home, I heard.' (they rep intr[3du]-go.home/pf)

- |                 |                               |
|-----------------|-------------------------------|
| dô· g'a ɿl-zæmæ | UR                            |
| dô· g'a ɿldæmæ  | L-effect                      |
| dô· g'a ɿdæmæ   | Syllable-final Consonant Drop |
| dô· g'ɿdæmæ     | Vowel Truncation (a)          |
| dô· g'ɿdæmæ     | SR                            |

- (109) b. 'I am a woman.' (woman intr[1sg]-cop)
- |            |                      |
|------------|----------------------|
| ʔó·wá i·ʔê | UR                   |
| ʔó·wɪ ʔê   | Vowel Truncation (a) |
| ʔó·wɪ ʔê   | SR                   |
- 
- (110) 'Where did you (sg) buy it?' (where Q intr[2sg]-buy/pf)
- |                                 |                      |
|---------------------------------|----------------------|
| tâɛ hâɛ q·k <sup>h</sup> ɪmátʔê | UR                   |
| tâɛ hâɛ q·k <sup>h</sup> ɪmátʔê | F to M               |
| tâɛ hâɛ q·k <sup>h</sup> ɪmátʔê | High Vowel Fronting  |
| tâɛ hâɛ k <sup>h</sup> ɪmátʔê   | Vowel Truncation (b) |
| tâɛ hâɛ k <sup>h</sup> ɪmátʔê   | SR                   |

## 2.5.18. Interaction between phonological and morphological rules

### 2.5.18.1. The domains of rule application

As we have seen, the application of some phonological rules requires morphological information. In turn, some phonological rules must apply before certain morphological processes in order to generate the correct output. Thus there is an interaction between phonological rules and morphological processes, and the theory of Lexical Phonology seems to explain the Jemez data well. In this section, we will briefly survey the domains in which phonological rules apply.

In the formation of simple stems (i.e. non-compounds), the rules in (111) apply. Reduplication is used in deriving the imperfective form of some verbs. It must apply before any other rule (e.g. L-effect) changes the shape of the verb root. The imperfective form of some other verbs involve the change of root-final consonants. The application of the Nasality Spread and Oral to Nasal Stop rules are limited to within the stem.

(111) Simple stem formation

Reduplication

Verb-root-final consonant change in imperfective

Nasality Spread

Oral to Nasal Stop

(112)

*ʔæ/* 'come (impf root)'

Simple stem formation: [*ʔæʔæ*] Reduplication

Affixation: [i] [*ʔæʔæ*] Prefixation

[iʔ*læʔæ*] L-effect

[iʔ*læʔæ*] F to M

[iʔ*læʔæ*] M to L

[iʔ*læʔæ*] Syllable-final Consonant Drop

[iʔ*læʔæ*] 'They (du) come.'

A set of tone and other phonological rules in (113) applies to compounds, including verb stems which incorporate a noun or a verb.

(113) Compounding and incorporation (nouns, verbs)

Non-initial Root H Lowering

L Spread

Long Vowel Shortening

y Insertion

A couple of phonological rules are subject to specific types of prefix or suffix. Velar Stop Depalatalization applies to the stem-initial velar stop when it is preceded by a benefactive prefix. The Low Vowel Fronting rule changes the root-final vowel /a/ to [æ], when it is followed by the inverse-number suffix /-š/.

Some phonological rules apply only across word boundaries: š-effect and Vowel Truncation. In addition, the Long Vowel Breakup rule applies to words in pre-pause position.

#### 2.5.18.2. Lexical and postlexical modules

In Lexical Phonology, some phonological rules apply only in the lexical module, some only in the postlexical module, and some in both. The main difference between the two modules is that the lexical module creates words as the output, so sometimes a rule may require morphological information to derive the correct lexical representation. In the postlexical module, however, supposedly there is no morphological information to determine if a rule can apply. The postlexical module consists of two submodules—a syntactic module and a phonetic implementation module. The phonetic implementation includes, among other things, what are called ‘allophonic rules’ in classical phonemics.

The lexical module in Jemez seems to consist of three levels. Level 1 (simple stem formation) is necessary because some phonological rules must apply within a stem first before the stem is compounded or affixed. Compounding and incorporation are placed in Level 2 since a set of rules including tone rules only applies to compounds. Finally, Level 3 (affixation) consists primarily of rules which operate on affixed stems. Morphological processes do not have to be ordered at the same level, but phonological rules must be ordered. In the model provided below, phonological rules in (a) must apply before those in (b), and (b) before (c), etc. Within each group, the rules can apply in any order. Note that L-effect operates at both Level 2 and Level 3. Also, *e* Raising, Syllable-final Consonant Drop, F to M, and M to L, which are marked with an asterisk \*, apply both lexically and post-lexically.

## Lexical Module

### Level 1: Simple stem formation (derivation, inflectional verb stem)

- a. Reduplication  
Verb-root-final consonant change in imperfective  
Nasality Spread
- b. Oral to Nasal Stop

### Level 2: Compounding and incorporation (nouns, verbs)

- a. L-effect  
y Insertion  
Non-initial Root H Lowering
- b. L Spread
- c. \*F to M
- d. \*M to L  
Long Vowel Shortening
- e. Glottalization

### Level 3: Affixation—pronominal prefixes, suffixes (inverse-number suffix, tense/aspect, clausal)

- a. L-effect  
Velar Stop Depalatalization  
L Spread
- b. Low Vowel Fronting  
\*e Raising  
\*F to M
- c. æ Raising  
\*M to L

- d. High Vowel Fronting
- e. \*Syllable-final Consonant Drop

Postlexical Module

- a. š-effect  
Vowel Truncation
- b. \*e Raising  
\*Syllable-final Consonant Drop  
Long Vowel Breakup
- c. \*F to M
- d. \*M to L
- e. Phonetic Implementation<sup>47</sup>

This model, which sets up levels in rule application, accounts for the ordering of phonological rules necessary for generating correct surface forms.

Finally, we will illustrate how some lexical rules must also apply post-lexically.

(114) Vowel Truncation and e Raising

Vowel Truncation can create the environment (i.e. the preceding palatal obstruent) which causes the vowel /e/ to change to [i], e.g. [k<sup>hy</sup>ik<sup>hy</sup>æni] < /k<sup>hy</sup>α e-k<sup>hy</sup>æni/ 'They (pl) are tired.'

(115) Long Vowel Breakup, F to M, and M to L

In pre-pause position, the Long Vowel Breakup rule breaks up a word-final long vowel with an underlying F tone into two vowels with the tonal sequence

---

<sup>47</sup>Phonetic Implementation rules are not within the scope of this dissertation, but one such rule derives [t'] from [t<sup>h</sup>].

of F and L. If the sequence is preceded by a H tone, the F first changes to M, which is realized as L, e.g. [tezó·híʔí] < /te-zó·-híʔ/ 'I will lift it.'

## CHAPTER 3. NOUN MORPHOLOGY

### 3.0. Introduction

Nouns are one of the two major word classes in Jemez. They participate in an elaborate number-based classification system. Many of them are inflected for number and take an inflectional suffix. The choice of demonstratives is determined by the number and class of nouns. These characteristics define them as the class of nouns. A general introduction to the Jemez noun classification system is given in Section 3.4.1, pronominal prefixes in Section 3.4.2, and demonstratives in Section 3.5.

All the examples in this and the next chapters are surface forms except when the underlying representation is relevant, in which case both the surface and underlying forms are provided. (The underlying forms are enclosed between slashes //.)

### 3.1. Roots and stems

Stems typically consist of a single root (1), a root and a suffix (2), or more than one root (3). Most noun stems contain one to three syllables; disyllabic stems are the most common.

- |     |                                 |   |                           |
|-----|---------------------------------|---|---------------------------|
| (1) | ʔí· 'tongue'                    | φâ 'feather, fur'                               | k <sup>hy</sup> á· 'crow' |
| (2) | ʔŋ·ʔe 'sugar'                   | báetsaʔe 'glue'                                 | (cf. /-ʔé/ 'nominalizer') |
| (3) | ʔíʔæ 'blood'                    | (/ʔí/ 'blood' + /pʔæ/ 'water, liquid')          |                           |
|     | k <sup>hy</sup> ída·bæ 'cradle' | (/k <sup>hy</sup> í/ 'child' + /dá·bæ/ 'board') |                           |

The great majority of noun roots can occur freely.

- |     |            |            |              |
|-----|------------|------------|--------------|
| (4) | pá· 'deer' | pŋ· 'drum' | bélá 'bread' |
|-----|------------|------------|--------------|

There are a few bound roots, some of which are shown in (5).



|     |                            |                           |                          |
|-----|----------------------------|---------------------------|--------------------------|
| (5) | ʔô· - 'foot'               | ʔô·tʔæ 'foot-sg/du'       | ʔô·çì 'toe'              |
|     | tʔô· - 'face'              | tʔô·la 'face'             | tʔô·kʷa 'cheek'          |
|     | tʔé· - 'mouth'             | tʔé·kʷa 'mouth'           | tʔé·kʷo·la 'lips'        |
|     | wé· - 'water'              | wé·sé 'spring (of water)' | wé·gʷí 'wash'            |
|     | -šili 'color'              | ʔšili 'red'               | fî·lišili 'yellow'       |
|     | -bidæ 'round' <sup>1</sup> | kʰʷibidæ 'pea'            | zɪ·bidæ 'hail, snowball' |
|     |                            | pɪ·bidæ 'cotton ball'     |                          |

### 3.2. Derivation

The most common source of derived nouns is verbs. Two main mechanisms derive nouns from verbs: (a) derivation from the incorporative form of verbs, and (b) derivation with a nominalizing suffix. (See Section 4.8.3.5 for the discussion of incorporative forms.)

#### 3.2.1. Derivation from the incorporative form of verbs

Some nouns derived from the incorporative form of verbs do not change their shapes. (See Section 2.5.5.) Phonologically, the tonal patterns in the nouns and verbs are the same in many cases, as in (6), but sometimes the derived nouns have different tones from the original verb stems, as in (7) below.

---

<sup>1</sup>cf. [bɪdó ʔé] 'it is round'.

- (6) só·ní 'hammer' < só·ní 'knock, beat' ~ t'ó· (pf)  
 bípæ 'rake' < bípæ 'gather, collect' ~ bípæ (pf)  
 k"é·šole 'wage' < k"é·šole 'pay' ~ k"é·šo'lè (pf)  
 m̂dæ· 'yeast, baking powder' < m̂dæ· 'be rotten'  
 ~ m̂t'æ (pf)  
 zí· 'handle (of a dipper, skillet)' < zí· 'catch, touch'  
 ~ zí· (pf)
- (7) ĥlé 'key' < ĥle 'open (tr)' ~ ĥlè (pf)  
 b̂t'í 'fork' < b̂t'í 'poke' ~ b̂t'í (pf)

In one case, a bound verb root is used as a noun.

- (8) k<sup>hy</sup>ímq̂ 'vendor, trader' (cf. k<sup>hy</sup>ímq̂t'è 'buy', k<sup>hy</sup>ímqm̂æ 'sell')

### 3.2.2. Nominalizing suffix

There are nouns which are derived by suffixing the nominalizer /-ʔé/ to verbs.

The verbs are mostly stative verbs, but in the case of non-stative verbs, the imperfective form takes the nominalizer.

- (9) ʔ̂e 'sugar' < ʔ̂ 'be sweet'  
 b̂etaŝe 'glue' < b̂etasa 'stick-impf'

### 3.3. Compounds

Compounding is the most common method of noun formation in Jemez. The constituents are mostly nouns and verbs, and the combinations include noun + noun and noun + verb. The noun class membership of compounds, which will be described

in the next section, is identical to that of the rightmost noun in the noun + noun compounds, but it cannot be uniquely determined in the noun + verb compounds.

### 3.3.1. Noun + Noun

Most of the compounds consisting of only nouns are endocentric, with the right-most constituent being the head. In this case, the head is modified in meaning by the preceding noun root or stem, and the meaning of the compound is usually transparent. Most of the noun compounds in my data consist of two morphemes, but there are trimorphemic compounds, too, as shown in (11).

- |      |                         |                    |   |
|------|-------------------------|--------------------|---|
| (10) | tʰæ·ʔi·ʔniš             | 'moccasin'         | (< tʰæ· 'Indian' + ʔi·ʔniš 'shoes')           |
|      | séφà                    | 'eyelash, eyebrow' | (< sé 'eye' + φâ 'hair')                      |
|      | gʷiwáeyiφi·ya           | 'horsefly'         | (< gʷiwáeyi 'horse' + φi·yá 'fly')            |
|      | φhφ                     | 'backbone, spine'  | (< φh 'root, buttocks' + hφ· 'bone')          |
|      | k <sup>hy</sup> í·da·bæ | 'cradle'           | (< k <sup>hy</sup> í 'child' + dá·bæ 'board') |
|      | φâpi·ʔli                | 'peach'            | (< φâ 'hair, fur' + pi·ʔli 'apple')           |
|      | gʷí nφ·ši               | 'washtub'          | (< gʷí 'metal' + nφ·ši 'pot')                 |
| (11) | péφopà                  | 'sunflower'        | (< pé 'sun' + φô 'leaf' + pâ 'flower')        |
|      | ʔíφænapi·               | 'shoelace'         | (< ʔí 'shoe' + φænq '?' + pi· 'thread')       |

Although it is not very common, there are compounds in which the head occurs before the modifying noun root. (See Section 3.8 for the details.)

- |      |                                     |          |  |
|------|-------------------------------------|----------|--|
| (12) | mí·save·la                          | 'tomcat' | (< mí·sá 'cat' + vê·la 'male')   |
|      | k <sup>ʔy</sup> æ·k <sup>hy</sup> í | 'lamb'   | (< k <sup>ʔy</sup> æ· 'sheep' + k <sup>hy</sup> í 'young one, child') <sup>2</sup> |

<sup>2</sup>The underlying form for 'child' is /k<sup>hy</sup>í/. This word occurs as a sort of diminutive ending to many words: e.g. [k<sup>hy</sup>æní·k<sup>hy</sup>í] 'puppy-sg' ~ [k<sup>hy</sup>æní·k<sup>hy</sup>íš] 'puppies-du/pl', [gʷiwáeyik<sup>hy</sup>í] 'colt-sg' ~ [gʷiwáeyik<sup>hy</sup>íš] 'colts-du/pl', [mí·sák<sup>hy</sup>í] 'kitten-sg' ~ [mí·sák<sup>hy</sup>íš]

[gʷiwáeyik<sup>hy</sup>í] 'colt-sg' ~ [gʷiwáeyik<sup>hy</sup>íš] 'colts-du/pl', [mí·sák<sup>hy</sup>í] 'kitten-sg' ~ [mí·sák<sup>hy</sup>íš]

### 3.3.2. Noun + Verb

In Jemez, compounds consisting of a noun and a verb can have either the N + V sequence or the V + N sequence. The former type outnumber the latter in my data, and they are mostly exocentric without a head noun. In N + V, the noun is mostly in a patient relation to the verb. These compounds typically mean ‘someone who does N’ or ‘something to do N’, namely, the noun indicates the agent or the instrument. Note that all the verbs in these compounds are in the incorporative form.

- (13) k<sup>h</sup>á·lápæya ‘basket-maker’ < k<sup>h</sup>á·lá ‘yucca basket’ + pæya ‘make’  
 hó·g<sup>ʷ</sup>i<sup>ʔ</sup>·mq ‘cook’ < hó·g<sup>ʷ</sup>í ‘food’ + <sup>ʔ</sup>·mq ‘do’  
 tʷêsq·nǐ ‘carpenter’ < tʷê ‘wood, stick’ + sǔ·nǐ ‘knock’  
 φæ·hì ‘firefighter’ < φæ ‘fire’ + hǐ ‘kill’  
 φǐšæ ‘saddle’ < φǐ ‘buttocks’ + šæ ‘set down’

More complex compounds containing a noun in a patient relation with the verb—in the form of [N + V] + N—include:

- (14) béléha·tǐ ‘outdoor oven’ (lit. ‘enclosure for baking bread’  
 < bélé ‘bread’ + há· ‘bake’ + -tǐ ‘enclosure’  
 tʷí·k<sup>w</sup>·inǐmǎte ‘pitchfork’ (lit. ‘hand to separate (straw from) wheat’)  
 < tʷí· ‘wheat’ + k<sup>w</sup>·nǐ ‘separate’ + mǎte ‘hand’  
 pʷæšǐtʷí·nǐ ‘drinking dipper’ (lit. ‘dipper to drink water’)  
 < pʷæ ‘water’ + šǐ ‘drink’ + tʷí·nǐ ‘dipper’<sup>3</sup>

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‘kittens-du/pl’, [délík<sup>ʷ</sup>ǐ] ‘chick-sg’ ~ [délík<sup>ʷ</sup>ǐš] ‘chicks-du/pl’. The alternation between the vowels [ǐ] and [ǐ̃] can be largely explained phonetically, but there are some exceptions. (See the discussions in Sections 2.5.8 and 2.5.13.)

<sup>3</sup>This compound has the internal structure of [[pʷæšǐ]tʷí·nǐ]. The phonological evidence for such bracketing is the fact that the vowel in /šǐ/ is shortened, which commonly takes place in the rightmost root in compounds.

Furthermore, the noun may refer to the end result.

- (15) kʷâ·pæya 'adobe' < kʷâ· 'rock' + pæya 'make'  
 (lit. 'rock-made')  
 wé·sɲi 'mirror, glass' < wé·- 'water' + sɲi 'view'

There are yet other semantic types of N + V compounds.

- (16) wækʷakʰyâ· 'apron' < wæ 'stomach' + -kʷa 'around'  
 + kʰyâ· 'set down'  
 ɸɪtʰækʰyidæ 'beetle' < ɸɪ ' (from the) rear' + tʰæ 'dropping,  
 excrement' + kʰyidæ 'roll/psv?'

### 3.3.3. Verb + Noun

In V + N compounds, the semantic relations between the verb and the noun can be grouped into three types: (a) the (stative) verb functions as an 'adjective' to modify the noun (examples in (17) below); (b) the noun is in an actor relation to the verb ('N who/which does X') (18); (c) the noun plays the instrument role ('N for doing X') (19).

- (17) ʔô·pʰæ 'honey' < ʔô· 'be sweet' + pʰæ 'water'  
 wô·hæya 'rattlesnake' < wô· 'be real' + hæya 'snake'  
 wô·pi·ʔli 'apricot' < wô· 'be real' + pi·ʔli 'apple'
- (18) hô·pæʔyɪ 'caterpillar' < hô· 'vomit' + pæʔyɪ 'worm'  
 pʰæ·ɸo· 'popcorn' < pʰæ· 'pop, explode' + ɸo· 'cooked corn'

- (19) tʃiːnɪt̩            ‘plow’ < tʃiːnɪ ‘plow’ + t̩ ‘hoe’  
 p̩ɛnɪʔq̩č̩ɪ        ‘sewing needle’ < p̩ɛnɪ ‘sew’ + ʔq̩č̩ɪ ‘needle’  
 h̩f̩p̩q̩            ‘mattress’ < h̩f̩ ‘sleep’ + p̩q̩ ‘mat’

### 3.4. Number and noun classes

#### 3.4.1. Basic and inverse number

One of the important features shared by Kiowa-Tanoan languages is that nouns are grouped into four classes on the basis of what is called ‘basic number’. In Jemez, the basic number for Class I nouns is singular; that is, when a Class I noun occurs without the suffix /-š/, it indicates singularity. When the suffix is added to the stem, the noun is considered to be dual or plural. Generally speaking, this suffix changes the number of the noun from its basic number to its ‘inverse’, that is, its complementary number. Thus the inverse of singular in Class I nouns is dual and plural.

For Class II nouns, the basic number is plural, so its inverse number is singular and dual. The basic number of Class III nouns is singular and plural, the inverse of which is dual. Class IV nouns are so grouped because they do not occur with the suffix /-š/. This is the distribution of the basic number in Jemez, and interestingly the basic number has exactly the same distribution in Jemez and Rio Grande Tewa (R. Speirs 1986), although the class membership of individual nouns differs among these languages. Other Kiowa-Tanoan languages have different distributions. In Kiowa, the basic number is singular/dual (Class I), dual/plural (Class II), dual (Class III), and no basic/inverse distinction in Class IV nouns (Watkins 1984:79).

The terms ‘inverse number’ and ‘basic number’ were first used by Wonderly, Gibson, and Kirk (1954), in their paper on number in Kiowa:

The suffix {gɔ} is then described as marking the INVERSE (abbreviated inv.) number; i.e. it inverts the basic number to the categories not implicit in the stem. Thus it changes the dual/singular of class I nouns to plural, and the dual/plural basic number of class II to singular. (1954:3)

Since then, the suffix /-gɔ/ in Kiowa and its counterparts in other Kiowa-Tanoan languages have been referred to as the 'inverse suffix' or 'inverse-number suffix' by Kiowa-Tanoanists.

### 3.4.2. Inverse markers

The distribution of the inverse suffix in Jemez is illustrated with examples in Table 5.

Table 5. Noun classes and the distribution of the inverse suffix /-š/

|    | Class I | Class II | Class III | Class IV |
|----|---------|----------|-----------|----------|
|    | 'deer'  | 'drum'   | 'bread'   | 'sugar'  |
| sg | pæ·     | pô·-š    | bélá      | ʔô·ʔe    |
| du | pæ·-š   | pô·-š    | bélæ-š    | ʔô·ʔe    |
| pl | pæ·-š   | pô·      | bélá      | ʔô·ʔe    |

Note that the example for Class III in Table 5 has the stem-final vowel /a/ underlyingly, but it changes to [æ] when followed by /š/: e.g. /bélá-š/ [bélæš] 'bread-inv'. (See the discussion of Low Vowel Fronting in Section 2.5.14.) Other allomorphs of the inverse forms will be discussed in Section 3.4.5.

The problem in identifying the class membership of nouns based on the distribution of the inverse suffix is that the suffix is not always present in the inverse forms. The omission of the suffix is partly explained in terms of its reanalysis by

Jemez speakers. As discussed in Section 2.3.1, when the suffix occurs before a verb with a vowel-initial prefix, speakers tend to pause after the noun stem and pronounce the suffix as if it were part of the verbal prefix: e.g. /pá·-ṣ̌ il-ṣ̌í/ ([pá· ṣ̌íj̣i] 'Deer (du) fell off'. If the prefix begins with a consonant, the inverse suffix fuses with the initial consonant of the following prefix. (See Section 2.5.10 for the details.) This tendency was already present in the early 1920's. (See the discussion of Parson's (1925:70) data in Section 2.3.1.) It seems that Jemez speakers reanalyzed the suffix as part of the following word, thus moving toward the disappearance of the inverse suffix in nouns.

In the absence of an inverse suffix, the class membership of nouns can still be identified by two other agreement patterns. One of them is the pronominal verbal prefix where S and P reflect number and noun class. (See Section 4.6 for the discussion of the syntactic roles S, A, P and B.) The other is demonstratives which agree with nouns in number. The inverse marking in demonstratives will be discussed in Section 3.5.

#### 3.4.2.1. Intransitive agreement

The intransitive third person subject prefixes are shown in Table 6.<sup>4</sup>

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<sup>4</sup>The intransitive prefix encodes S (the sole argument of an intransitive clause), so only the third person S prefixes are given in the table. See Section 4.6.3 for the complete intransitive prefix paradigm.



Table 6. Intransitive third person S prefixes<sup>5</sup>

|    | I   | II     | III    | IV |
|----|-----|--------|--------|----|
| sg | ∅-  | e-     | ∅-     | ∅- |
| du | il- | il-    | il-    | ∅- |
| pl | e-  | ∅-/il- | ∅-/il- | ∅- |

With nouns of Classes I and II, the prefix /e-/ occurs when the noun which corresponds to S is inverse. Dual is /il-/ except in Class IV, where there is no basic/inverse distinction. Nouns in the basic number normally co-occur with a null prefix /∅-/. However, some Class II and III plural nouns take a prefix /il-/, which will be discussed in Section 3.4.3.

- (20) a. pã· ší 'A deer (bas-sg) fell off.' (Class I)  
 b. pã·š jjí 'Deer (inv-du) fell off.'  
 c. pã·š et'í 'Deer (inv-pl) fell off.'<sup>6</sup>
- (21) a. pô·š eší 'A drum (inv-sg) fell off.' (Class II)  
 b. pô·š jjí 'Drums (inv-du) fell off.'  
 c. pô· t'í 'Drums (bas-pl) fell off.'
- (22) a. bélé ší '(A loaf of) bread (bas-sg) fell off.' (Class III)  
 b. béléš jjí '(Loaves of) bread (inv-du) fell off.'  
 c. bélé t'í '(Loaves of) bread (bas-pl) fell off.'
- (23) ?ô·e t'í 'Sugar fell off.' (Class IV)

<sup>5</sup>The /l/ which is part of the dual prefix produces 'L-effect'. (See the discussion in Section 2.5.1.)

<sup>6</sup>The verb for 'fall off' has two number-differentiated forms: /ší/ for singular and dual, and /t'í/ for plural. (See Section 4.1.3 for the details.)

### 3.4.2.2. Transitive agreement

Transitive prefixes also show number agreement for the class and number of the P argument. In the examples which follow, the frame “He/they saw \_\_\_” illustrates how number agreement for P is encoded in the prefixes. Table 7 shows the distribution of transitive prefixes with A (necessarily animate) and a Class I P.

For a few Class I plural nouns, there are plural P prefixes as well as the inverse P prefixes. They are shown in the fourth row in Table 7: /iI-/ , /iI-/ , /eI-/ . The same holds true of plural forms of some Class II and III nouns and appear in Tables 8 and 9, too. The discussion of these plural prefixes is provided in Section 3.4.3.

Table 7. 3 A:3 P transitive prefixes—Class I noun<sup>7</sup>

| <u>A</u>    | 3sg | 3du  | 3pl  |  | Noun<br>(inv sfx) |
|-------------|-----|------|------|--|-------------------|
| P (Class I) |     |      |      |  |                   |
| sg          | ∅-  | q-   | e-   |  |                   |
| du          | i-  | qpq- | epa- |  | -š                |
| inv         | e-  | qpq- | epa- |  | -š                |
| pl          | iI- | iI-  | eI-  |  |                   |

As is seen in the table, the prefixes /i-/ and /e-/ occur when the P noun is inverse and A is singular, but more interestingly, the same set of prefixes appears when the P noun is inverse and A is dual (/qpq-/) or plural (/epa-/). To further illustrate the point, example sentences are given in (24).

<sup>7</sup>The rightmost column in Tables 7 through 9 show the distribution of the inverse suffix /-š/ in P nouns.

- (24) a. pǎ· mǎ 'He saw a deer (bas-sg).'
- b. pǎ·š imǎ 'He saw deer (inv-du).'
- c. pǎ·š emǎ 'He saw deer (inv-pl).'
- d. pǎ· qmǎ 'They (du) saw a deer (bas-sg).'
- e. pǎ·š qpqmǎ 'They (du) saw deer (inv-du/pl).'
- f. pǎ· emǎ 'They (pl) saw a deer (bas-sg).'
- g. pǎ·š epqmǎ 'They (pl) saw deer (inv-du/pl).'

Note that (24e) and (24g) are potentially ambiguous regarding the exact number of P. They can be disambiguated by the use of a quantifier such as a numeral.

- (25) a. wǎ pǎ·š qpqmǎ 'They (du) saw two deer (inv-du).'
- b. tá pǎ·š qpqmǎ 'They (du) saw three deer (inv-pl).'

Table 8 shows third-person A transitive prefixes with a Class II P.

Table 8. 3 A:3 P transitive prefixes—Class II noun

| <u>A</u>            | 3sg | 3du  | 3pl  |  | Noun<br>(inv sfx) |
|---------------------|-----|------|------|--|-------------------|
| <u>P</u> (Class II) |     |      |      |  |                   |
| sg                  | e-  | qpq- | epa- |  | -š                |
| du                  | i-  | qpq- | epa- |  | -š                |
| inv                 | ∅-  | q-   | e-   |  |                   |
| pl                  | il- | il-  | el-  |  |                   |

The same set of prefixes appears again when the P noun is inverse, i.e. singular and dual. Examples in (26) provide a case where A is dual.

- (26) a. pʔɪ pɔ·š qɔqɔmɪ 'They (du) saw one drum (inv-sg).'  
 b. wɪ pɔ·š qɔqɔmɪ 'They (du) saw two drums (inv-du).'  
 c. tá pɔ· qmɪ 'They (du) saw three drums (bas-pl).'

Table 9 shows the transitive prefixes when P is a Class III noun. The inverse-number is dual here, and the same prefixes are used when the P noun is basic number and A is dual or plural. The example sentences in (27) illustrate a case where A is plural.

Table 9. 3 A:3 P transitive prefixes—Class III noun

| <u>A</u>             | 3sg | 3du  | 3pl  |  | Noun<br>(inv sfx) |
|----------------------|-----|------|------|--|-------------------|
| <u>P</u> (Class III) |     |      |      |  |                   |
| sg                   | ∅-  | q-   | e-   |  |                   |
| du                   | i-  | qɔq- | epɔ- |  | -š                |
| inv                  | ∅-  | q-   | e-   |  |                   |
| pl                   | il- | il-  | el-  |  |                   |

- (27) a. pʔɪ bɛlá emɪ 'They (pl) saw a loaf of bread (bas-sg).'  
 b. wɪ bɛláš epamɪ 'They (pl) saw two loafs of bread (inv-du).'  
 c. tá bɛlá emɪ 'They (pl) saw three loafs of bread (bas-pl).'

When P is a Class IV noun, normally only the basic-number prefixes (i.e. / $\emptyset$ -/, /q-/, /e-/) are used. There is no basic/inverse distinction reflected in the transitive prefixes for Class IV nouns. However, a few mass nouns in Class IV occur with both the basic-number and the plural prefixes which also cooccur with some nouns of Classes I, II and III. Considering that Class IV are mass nouns, the term 'plural prefix' may not be totally appropriate, but it is used here to refer to these verbal prefixes. (See the next section for a discussion of the plural prefixes.)

The verbal agreement facts about transitive prefixes are summarized in Table 10.

Table 10. Transitive prefixes by basic/inverse distinction  
(3 A:3 P)

| <u>A</u>     | 3sg           | 3du  | 3pl  |  | Noun<br>(inv sfx) |
|--------------|---------------|------|------|--|-------------------|
| <u>P</u>     |               |      |      |  |                   |
| bas          | $\emptyset$ - | q-   | e-   |  |                   |
| inv (du)     | i-            | qpq- | epa- |  | -š                |
| inv (non-du) | e-            | qpq- | epa- |  | -š                |
| pl           | il-           | il-  | el-  |  |                   |

The pronominal prefixes which show agreement with nouns in the inverse will be referred to as 'inverse prefixes' from here on. Except when the exact number such as singular, dual, or plural, is in question, the term 'inverse prefix' indicates non-dual inverse, i.e., either singular or plural, depending on the noun class.

### 3.4.3. Plurality and verbal agreement

Nouns of Class I, II, and III in the basic number are normally indicated by a null prefix on intransitive verbs. However, some Class II and III nouns can also be indexed with the verbal prefix /il-/ when plural. The difference between (28a) and (28b), and between (29a) and (29b), is that the latter in each pair implies that the boxes fell off all at once. /il-/ seems to occur when the items are perceived as a collection.

- |      |    |                 |                             |             |
|------|----|-----------------|-----------------------------|-------------|
| (28) | a. | tʰê-tiba tʰí    | ‘Boxes (pl) fell off.’      | (Class II)  |
|      |    | tʰê-tiba Ø-tʰí  | (boxes intr[3bas]-fall/pf)  |             |
|      | b. | tʰê-tiba itʰí   | ‘Boxes (pl) fell off.’      |             |
|      |    | tʰê-tiba il-tʰí | (boxes intr[3pl]-fall/pf)   |             |
| (29) | a. | té-hete tʰí     | ‘Shirts (pl) fell off.’     | (Class III) |
|      |    | té-hete Ø-tʰí   | (shirts intr[3bas]-fall/pf) |             |
|      | b. | té-hete itʰí    | ‘Shirts (pl) fell off.’     |             |
|      |    | té-hete il-tʰí  | (shirts intr[3pl]-fall/pf)  |             |

Agreement with the P of transitive prefixes also reveals a plural number category. Table 11 lists the transitive prefixes (A and P arguments) with plural P agreement. Examples in (30) through (32) illustrate nouns in Class I, II and III. In these cases, the nouns again seem to be construed as a collection of things.

Table 11. Transitive prefixes with 3rd person plural P

|          |                    |      |      |
|----------|--------------------|------|------|
| <u>A</u> | 1sg                | du   | pl   |
|          | til-               | sql- | sel- |
| -----    |                    |      |      |
| <u>A</u> | 2sg                | du   | pl   |
|          | k <sup>h</sup> il- | mql- | bal- |
| -----    |                    |      |      |
| <u>A</u> | 3sg                | du   | pl   |
|          | il-                | il-  | el-  |

- (30) dō· k<sup>w</sup>i wōhq imǰ ‘He saw stars (pl).’ (Class I)  
 dō· k<sup>w</sup>il wōhq il-mǰ (that/he Mod stars tr[3sg:3pl]-see/pf)<sup>8</sup>
- (31) k<sup>ʔ</sup>ɪ· imǰ ‘He saw feathers (pl).’ (Class II)  
 k<sup>ʔ</sup>ɪ· il-mǰ (feather tr[3sg:3pl]-see/pf)
- (32) k<sup>ʔ</sup>â· imǰ ‘He saw rocks (pl).’ (Class III)  
 k<sup>ʔ</sup>â· il-mǰ (rocks tr[3sg:3pl]-see/pf)

According to my consultants, the regular inverse prefix /e-/ can also be used in (30), but in (31) and (32), only /il-/ is possible when P is plural.

Examples of nouns which can cooccur with the plural prefixes are provided separately in Sections 3.4.4.1 through 3.4.4.3. Note that some Class IV nouns are also found with these prefixes, although they are mass nouns and do not take the inverse suffix /-š/. (See Section 3.4.4.4 for the details.)

<sup>8</sup>All these plural prefixes contain a final // which only surfaces when it occurs before certain ‘L-effect’ consonants: e.g. [hō· it<sup>h</sup>ǰ ] ‘He chewed bones.’ < /hō· il-sǰ / (bones tr[3sg:3pl]-chew/pf).

### 3.4.4. Noun class membership

We will now look at the membership of nouns in each class.<sup>9</sup>

#### 3.4.4.1. Class I nouns

The basic number of nouns in this class is singular, so the inverse is dual and plural. The class consists mostly of animate nouns, including terms for people, animals, birds and insects. Inanimate nouns in this class include a few plants and heavenly bodies.

#### (33) a. Human:

|                           |                              |                                       |
|---------------------------|------------------------------|---------------------------------------|
| vê·la ‘man’               | ʔó·wá ‘woman’                | ʔípek <sup>hy</sup> i ‘girl’          |
| ʔæk <sup>hy</sup> i ‘boy’ | nó·šipæya ‘potter’           | k <sup>hy</sup> ímq̄ ‘trader, vendor’ |
| hí· ‘Jemez’               | k <sup>ʔ</sup> áelá ‘Navajo’ | wé·hǫ́ ‘corpse’                       |

#### b. Non-human, animate:

|                              |                |                           |
|------------------------------|----------------|---------------------------|
| tô·tʔa ‘buffalo’             | wá·gʔáša ‘cow’ | pǣ· ‘deer’               |
| k <sup>hy</sup> ǣʔnǫ́ ‘dog’ | mǫ́·sá ‘cat’   | k <sup>hy</sup> á· ‘crow’ |
| ʔá·pǫ́la ‘turtle’            | wá·ʔida ‘frog’ | háya ‘snake’              |
| φí·yá ‘fly’                  | ʔǣmǫ́ ‘ant’   | tʔǣ·minq̄ ‘centipede’    |
| hédá ‘grasshopper’           |                | wádeʔlǫ́ ‘egg’            |

<sup>9</sup>There is some disagreement among my main consultants regarding the class membership of some nouns. The nouns are: [zó·lá] ‘cone shell’ (I or II), [ʔæpæk<sup>hy</sup>i] ‘doll’ (Class I or III), [k<sup>ʔ</sup>áʔq̄nq̄k<sup>hy</sup>i] ‘kachina (doll)’ (I or III), [pǣhæle] ‘blanket’ (II or III), [pʔê] ‘mountain’ (II or III), [hō·mitæ] ‘shovel’ (II or III). [zó·lá] ‘cone shell’ could be perceived as either animate or inanimate, and when treated as animate, it must be a member of Class I. [ʔæpæk<sup>hy</sup>i] ‘doll’ and [k<sup>ʔ</sup>áʔq̄nq̄k<sup>hy</sup>i] ‘kachina (doll)’ may be considered Class I because they have humans as models. One reason why [hō·mitæ] ‘shovel’, a compound whose original meaning is a ‘stick to bring out sand’, is treated as Class II may be because [tʔê] ‘stick’ is a member of this class. Only those nouns whose class membership data were elicited from two or more speakers and for which there is no disagreement among the speakers, are given in this section.



(33) c. Plants:

wə̀hæ· ‘pumpkin’ sqdéya ‘watermelon’

d. Heavenly bodies:

pʔæ· ‘moon’ wôhq ‘star’

The following nouns are found with non-inverse plural prefixes.

(34) pʔæ· ‘moon’ wə̀hæ· ‘pumpkin’ wôhq ‘star’

#### 3.4.4.2. Class II nouns

Class II nouns have plural as the basic number, and singular and dual as the inverse. All the nouns are inanimate objects. Terms for tools, plants and body parts are distributed between Classes II and III.

(35) a. Man-made objects:

|                                  |                       |                        |
|----------------------------------|-----------------------|------------------------|
| gʔi·bæ ‘water jar’               | tâ·sa ‘cup’           | vâ·si ‘drinking glass’ |
| bítʔí ‘fork’                     | tʔí· ‘dipper, spoon’  | tʔí·čʔile ‘spoon’      |
| ʔéletæ ‘chair’                   | mæ·sæ ‘table’         | kʔamâ·tæ ‘bed’         |
| séʔlæ ‘broom’                    | kʔyé·tʔise ‘scissors’ | pá·yí ‘cloth’          |
| pí· ‘thread’                     | dá·bá ‘board’         | kʔyí·da·ba ‘cradle’    |
| tʔê·tíba ‘box’                   | bétapò ‘rug’          | tʔâ·kʔyí· ‘ladder’     |
| tʔá· ‘arrow’                     | téletæ ‘gun’          | tʔê ‘stick’            |
| hò·mítæ ‘shovel’                 | hâ·dòlæ ‘wheel’       |                        |
| φí·tʔò ‘smoking pipe, cigarette’ |                       | pò· ‘drum’             |
| nò·to ‘book’                     | tí·ha· ‘house’        | fiéle ‘hat’            |
| wá·kʔæ ‘bridge’                  |                       |                        |

(35) b. Plants:

|                   |               |                       |
|-------------------|---------------|-----------------------|
| pí·ʔlî 'apple'    | tʔæ· 'cactus' | kʷæ· 'ponderosa pine' |
| tʔâ· 'piñon tree' | φô 'leaf'     | φǣ 'root'             |
| pâ 'flower'       |               |                       |

c. Body parts:

|                   |                   |                 |
|-------------------|-------------------|-----------------|
| wâ·tʔê 'ear'      | φôse 'nose'       | hô·bîʔyè 'knee' |
| tʔf 'head'        | φó·lá 'head-hair' | ʔô·ʔnè 'foot'   |
| tʔô 'animal horn' |                   |                 |

Those Class II nouns which are indexed with non-inverse plural prefixes are as follows:

|      |                      |                       |                       |
|------|----------------------|-----------------------|-----------------------|
| (36) | pí·ʔlî 'apple'       | tʔá· 'arrow'          | dá·bá 'board, door'   |
|      | nôto 'book, paper'   | tʔê·tîba 'box'        | tʔæ· 'cactus'         |
|      | ʔéletæ 'chair'       | bítʔí 'fork'          | fiéle 'hat'           |
|      | tí·hâ· 'house'       | φô 'leaf'             | kʷæ· 'ponderosa pine' |
|      | φǣ 'root'            | hô·mitæ 'shovel'      | kʔí· 'feather'        |
|      | pâ 'flower'          | tʔíwé 'onion'         | nqrqha 'orange'       |
|      | kʔé·tʔise 'scissors' | φî·tʔò 'smoking pipe' | tʔí·čile 'spoon'      |
|      | tʔê 'stick'          | pí·(nî) 'thread'      |                       |

There are a few other plant terms which appear to belong to this class, according to some speakers, but at least one speaker uses the inverse intransitive prefix /e-/ for both singular and plural objects, presenting a new paradigm. (Compare this with the prefixes in Table 6.)

- (37) a. pã·læ(š) eší 'A pear (inv-sg) fell off.'  
 b. pã·læ(š) jjí 'Pears (inv-du) fell off.'  
 c. pã·læ(š) et'í 'Pears (inv?-pl) fell off.'

It could be that some Jemez speakers associate word-final [æ] and [e] with the inverse number. The vowel /a/ at the end of noun stems changes to [æ] when followed by the inverse suffix /-š/: e.g. [vê·læ(š)] 'men (du/pl)', [bélæ(š)] 'bread (du)'. [æ] further changes to [e] when it follows [w], [y], or [tʰ]: e.g. [ʔó·wé(š)] 'women', [vó·yé(š)] 'ox', [tô·tʰe(š)] 'buffalo'. However, not all nouns which end in [æ] or [e] are related to inverse. Some words which are mainly of Spanish origin have the stem-final vowel [æ] or [e], regardless of the number, e.g. [salawélæ] 'cherry', [tʰíwé] 'onion'. This may explain why some speakers mark the verbs with the inverse prefix in all three numbers. The number and the limited semantic domains of these nouns do not seem to warrant a fifth noun class.

#### 3.4.4.3. Class III nouns

The basic number for nouns in this class is singular and plural, so the inverse is only dual. There is some overlap in categories of nouns, as reckoned in English terms, between Classes II and III, but Class III includes many terms for clothing, ornaments, and modern objects. (Note that Jemez people use English words for items such as television and radio.) It is also interesting that the word for 'sun' is a Class III noun, but the word for 'moon' is Class I.

- (38) a. Clothing, ornaments:

|                  |                               |               |
|------------------|-------------------------------|---------------|
| ʔí 'shoe'        | nó·nák <sup>hʷ</sup> i 'belt' | wŋ·te 'glove' |
| té·hete 'shirt'  | ŋtʰi 'pants'                  | lã·vo 'coat'  |
| mã·latèse 'ring' |                               |               |

(38) b. Modern objects (English words):

|         |            |              |
|---------|------------|--------------|
| radio   | television | refrigerator |
| tractor |            |              |

c. Other man-made objects:

|                |                |                       |
|----------------|----------------|-----------------------|
| ʔò 'bow'       | tʔnità 'plow'  | naváha 'pocket knife' |
| só·ní 'hammer' | hé· 'ax'       | tʔè· 'match'          |
| vô·tè 'bucket' | φímq 'bag'     | tô·pæ 'pencil'        |
| bélá 'bread'   | tʔipq 'pillow' | tʔæ·da 'store'        |
| zæ· 'song'     | fî·wa 'kiva'   | kʔâ·pæya 'adobe'      |
| pʔq· 'road'    | gʔipq 'bell'   | gʔídá 'pot'           |

d. Plants:

|                       |                 |              |
|-----------------------|-----------------|--------------|
| kʔí 'bean, seed'      | næ·tʔæ 'potato' | φâ· 'banana' |
| pí·bidæ 'cotton ball' |                 |              |

e. Nature:

|          |              |                |
|----------|--------------|----------------|
| pé 'sun' | dâ·pe 'cave' | wâ·wà 'arroyo' |
|----------|--------------|----------------|

f. Body parts:

|           |             |             |
|-----------|-------------|-------------|
| há· 'arm' | pé· 'heart' | mâ 'finger' |
|-----------|-------------|-------------|

g. Others:

tʔkʔa 'village'

The Class III nouns which occur with non-inverse plural prefixes include:

|      |                  |                      |              |
|------|------------------|----------------------|--------------|
| (39) | ʔò 'bow'         | bélá 'bread'         | lâ·vo 'coat' |
|      | φí·í 'pants'     | pí·bidæ 'cottonball' | gʔídá 'pot'  |
|      | kʔâ· 'rock'      | té·hete 'shirt'      | ʔî 'shoe'    |
|      | kʔâ·pæya 'adobe' | wâ·te 'glove'        |              |
|      | kʔí 'seed'       |                      |              |

#### 3.4.4.4. Class IV nouns

All the nouns in Class IV are mass nouns. They do not occur with the inverse suffix.

- |      |                |                              |             |
|------|----------------|------------------------------|-------------|
| (40) | ʔô·ʔe ‘sugar’  | hɬ ‘flour’                   | pʔæ ‘water’ |
|      | dæhæla ‘mud’   | tʔæhæla ‘clay (for pottery)’ |             |
|      | kʔô·pʔæ ‘milk’ | melá ‘syrup’                 | sɬ ‘lard’   |
|      | aró ‘rice’     |                              |             |

All but one noun in this class, only some of which are listed here, are indexed only with the basic-number verbal prefixes, but [hɬ] ‘flour’ occurs with both the basic-number and the non-inverse plural prefixes on verbs. Thus there are two subsets of nouns in the class.

Sprott (1992) recognizes mass nouns as Class IV, but he favors “redefining it on the basis of verbal morphology rather than nominal.” In other words, whether a noun takes the inverse suffix /-š/ should not be the deciding factor (1992:96). His argument is summarized in (41).

- (41) a. Some of what he groups as Class IV nouns appear to show singular/plural distinction in the verbal prefixes—just like nouns of other classes—but not in the nouns themselves (i.e. no inverse suffix): [sɬ·] ‘sand’, [wâ·sq] ‘ice’, [ʔó·lá] ‘hair’, [wóhoʔlə] ‘dough’ (1992:93-94).<sup>10</sup> They can take both the basic-number and the non-inverse plural prefixes.
- b. Other nouns do not show such a number distinction in verbal agreement. They take only one type of prefix: [sɬ·] ‘rain’, [kʔô·ʔwèš] ‘salt’ (inverse prefixes); [tʔí·] ‘grass’ (non-inverse, plural prefixes); [pʔæ] ‘water’, [ʔɬ] ‘blood’.

<sup>10</sup>The phonetic transcription of all the Jemez words cited from his dissertation is mine.

[gaφé] ‘coffee’, [tʰæhæla] ‘clay’ (basic-number prefixes). In addition, they do not occur with the inverse suffix /-š/, with the exception of [kʷŋ·ʷwèš] ‘salt’ (1992:95-96).

c. “Class IV now becomes those nouns that show no distinction between singular and plural in the verbal agreement system; they take one prefix and one prefix only”, i.e. those mentioned in (b) above (1992:96).

My data do not agree with most of the examples Sprott uses in his argument. First, both [wâ·sa] ‘ice’ and [φó·lá] ‘hair’, mentioned in (41a), can take the inverse suffix. They also occur with both the basic- and non-basic-number prefixes: [wâ·sa] ‘ice cube, iceberg’ with the dual prefix (but no inverse prefix) and [φó·lá] with the inverse prefix. [wâ·sa] seems to belong to Class III, and [φó·lá] to Class II. Second, [sŋ·] ‘rain’, mentioned in (41b), takes the inverse suffix, and this and [kʷŋ·ʷwèš] ‘salt’, in also (41b), occur with both the inverse and the non-inverse plural prefixes. Furthermore, [tʰí·] ‘grass’ in (41b) above occurs with both the basic-number and the non-inverse plural prefixes, not just the plural prefix, as Sprott says. What we both agree is that (a) there are nouns which never take the inverse suffix, and (b) while most of these nouns are indexed only with the basic-number prefixes, there are a few which can occur with both the basic-number and the non-inverse plural prefixes. Thus I propose that there is a Class IV which differs from the other noun classes in that its members do not take the inverse nominal suffix, and that Class IV consists of two subclasses: the majority group occurs only with the basic-number verbal prefixes, and the minority with both the basic-number and the plural prefixes. As we have seen

before, in classifying nouns, both the distribution of the inverse suffix and the verbal agreement facts must be considered.<sup>11</sup>

### 3.4.5. Allomorphy in inverse forms

Many nouns have regular, phonologically conditioned inverse forms, but there are some irregular forms. It was noted in Chapter 2 (Section 2.5.14) that the stem-final /a/ fronts to [æ] when it is followed by the inverse suffix /š/.<sup>12</sup> [æ] raises to [e] if it is preceded by /w/, /y/, or /tʰ/. (See Section 2.5.12.)

|      |    |           |                |               |
|------|----|-----------|----------------|---------------|
| (42) | a. | vê·læš    | < /vê·la-š/    | 'men-inv'     |
|      |    | bélæš     | < /bélá-š/     | 'bread-inv'   |
|      | b. | ʔó·wéš    | < /ʔó·wá-š/    | 'women-inv'   |
|      |    | táeʔwèš   | < /táewâ-š/    | 'Tewa-inv'    |
|      | c. | háeyéš    | < /háeyá-š/    | 'snakes-inv'  |
|      |    | kʔâ·pæyeš | < /kʔâ·pæya-š/ | 'adobes-inv'  |
|      | d. | tô·tʰeš   | < /tô·tʰa-š/   | 'buffalo-inv' |
|      |    | wâ·tʰeš   | < /wâ·tʰa-š/   | 'ears-inv'    |

There is also an alternation between [mq] (basic) and [bæ] (inverse), [mq] being derived from the underlying /ba/. As we saw in Section 2.5.2, /b/ nasalizes to [m] before a nasalized vowel. Specifically, /a/ first becomes nasalized when the preceding syllable contains a nasalized vowel, and then the nasalized [q] causes the preceding [b] to change to [m].

<sup>11</sup>In addition, the type of demonstratives which are coreferential to nouns must also be taken into account. (See Section 3.5.)

<sup>12</sup>There are some exceptions to this. The final vowel /a/ of the following words does not change, whether in basic or inverse: [mq·tʰâ] 'thumb', [tʰf·nità] 'plow', [fî·wa] 'kiva', [wâ·ʔwà] 'arroyo', [wâ·pà] 'cattail'. Interestingly, they are all Class III nouns.

|      |   |  |                  |
|------|---|--|------------------|
| (43) | <u>Basic</u>  | <u>Inverse</u>                         |                  |
|      | k <sup>hy</sup> ĩmá (< /k <sup>hy</sup> ĩbá/) )                                     | k <sup>hy</sup> ĩbæš                   | 'trader, vendor' |
|      | hó·g <sup>y</sup> i <sup>?</sup> q·má (< /hó·g <sup>y</sup> i <sup>?</sup> q·ba/) ) | hó·g <sup>y</sup> i <sup>?</sup> q·bæš | 'cook'           |

Another alternation involving the consonant in the stem-final syllable is between [ʔna] (basic) and [tʔæ] (inverse). The consonants [ʔn] and [tʔ] are derived from the underlying /d/. In the basic-number form, the consonant changes to [n] (Nasalization) and then to [ʔn] (Glottalization). In the inverse form, the underlying consonant changes to [tʔ] (Glottalization) since the following vowel [æ] does not become nasalized, thus eliminating the nasalization environment for the change of [d] to [n] to take place. (See Section 2.5.3 for the details.)

|      |                      |                        |        |
|------|----------------------|------------------------|--------|
| (44) | <u>Basic</u>         | <u>Inverse</u>         |        |
|      | ʔŋ·ʔnù (< /ʔŋ·dâ/) ) | ʔŋ·tʔæ (< /ʔŋ·dâ-š/) ) | 'feet' |

In all the examples above, the inverse [-š] occurs immediately after the noun stem. Let us now look at cases of allomorphy which contain an intervening segment (or segments) before the inverse suffix. First, the inverse forms of some nouns end in [mĩ(š)] or [nĩ(š)].

|      |                        |                            |                       |
|------|------------------------|----------------------------|-----------------------|
| (45) | <u>Basic</u>           | <u>Inverse</u>             |                       |
| a.   | hĩ·                    | hĩ·mĩš                     | 'Jemez' (I)           |
| b.   | k <sup>w</sup> æ·      | k <sup>w</sup> æ·nĩš       | 'ponderosa pine' (II) |
| c.   | tʔĩ·                   | tʔĩ·nĩš                    | 'spoon, dipper' (II?) |
| d.   | ʔĩ·                    | ʔĩ·nĩš                     | 'shoe' (III)          |
| e.   | tʔâ·k <sup>hy</sup> ĩ· | tʔâ·k <sup>hy</sup> ĩ·ʔnĩš | 'ladder' (II?)        |



All the examples of this type in my data end in a long nasalized vowel in the basic form, but not all nouns with a long nasalized vowel occur with the extra syllable /mi/ or /ni/ before the inverse suffix /-š/: e.g. [pá·š] ‘deer-inv’, [kʷó·š] ‘teeth-inv’. I treat the /m/ and /n/ after the noun stems in the inverse as the final consonants of the noun roots in underlying representation. Furthermore, [i] in the final syllable of the inverse forms is phonologically derived from the underlying /e/. (See Section 2.5.11.) Thus the underlying forms of the examples in (45) are illustrated in (46) below.

|      |              |                  |
|------|--------------|------------------|
| (46) | <u>Basic</u> | <u>Inverse</u>   |
| a.   | /hí·m/       | /hí·m-é-š/       |
| b.   | /kʷá·n/      | /kʷá·n-é-š/      |
| c.   | /tʷí·n/      | /tʷí·n-é-š/      |
| d.   | /ʔí·n/       | /ʔí·n-é-š/       |
| e.   | /tʷá·kʰyí·n/ | /tʷá·kʰyí·n-é-š/ |

The underlying falling tone on the following vowel causes the preceding /n/ to become glottalized. (See Section 2.5.3 for the discussion of the Glottalization rule.)

The underlying suffix /-e/, whose meaning is not clear, is also found in some nouns which take [le] or [te] in the inverse form. In this case, the noun roots contain a final /l/ or /t/ which only surfaces when /-e/ is added.

|      |              |                |            |
|------|--------------|----------------|------------|
| (47) | <u>Basic</u> | <u>Inverse</u> |            |
| a.   | ʔákʰyí       | ʔákʰyíleš      | ‘boy’ (I)  |
|      | ʔípekʰyí     | ʔípekʰyíleš    | ‘girl’ (I) |
|      | kʰyá·        | kʰyá·léš       | ‘crow’ (I) |

|      |              |                |                      |
|------|--------------|----------------|----------------------|
| (47) | <u>Basic</u> | <u>Inverse</u> |                      |
| b.   | šó·          | šó·teš         | ‘man’ (I)            |
|      | pʷê          | pʷêtèš         | ‘mountain’ (III?)    |
|      | φô           | φôtèš          | ‘leaf’ (III?)        |
|      | ʔô           | ʔôtèš          | ‘leaf, branch’ (II?) |
|      | tʰô          | tʰôtèš         | ‘animal horn’ (II?)  |

Most of the roots of this type are monosyllabic. The inverse forms of only some of these nouns are agreed upon by all my consultants (e.g. [ʔæk<sup>hy</sup>ileš] ‘boys’, [ʔɛpek<sup>hy</sup>ileš] ‘girls’), while other nouns vary from speaker to speaker. For instance, some people use regularly-inflected inverse forms for [k<sup>hy</sup>ú·š] ‘crow’ and [φôš] ‘leaf’. In contrast, all the inverse examples in (45) are used invariably by all my consultants.

Finally, there are nouns whose inverse forms contain [t<sup>h</sup>ò] before the inverse suffix. The noun stems are assumed to have a final underlying /l/, because [t<sup>h</sup>] is otherwise derived from underlying /s/.

|      |              |                       |                 |              |
|------|--------------|-----------------------|-----------------|--------------|
| (48) | <u>Basic</u> | <u>Inverse</u>        |                 |              |
|      | kʷælé        | kʷælé <sup>h</sup> òš | < /kʷælél-sô-š/ | ‘Navajo’ (I) |
|      | fiéle        | fiéle <sup>h</sup> òš | < /fiélel-sô-š/ | ‘hat’ (II)   |
|      | tʰâ·         | tʰâ· <sup>h</sup> òš  | < /tʰâ·l-sô-š/  | ‘piñon’ (II) |

One other word contains [t<sup>h</sup>ò], namely [φî·tʰòš] ‘smoking pipe, cigarette’, but this word never changes in form whether it is basic or inverse. Note that neither [t<sup>h</sup>ò] nor any other suffix-like morphemes which occur in irregular inverse forms are associated with any particular noun class.

### 3.5. Demonstratives

Jemez demonstratives show a four-way spatial distinction. The demonstrative roots are:

- (49)  $\text{hĩ́}$  (near the speaker, 'this')<sup>13</sup>  
 $\text{nĩ́}$  (near the speaker, 'this')  
 $\text{nĩ́/nấ}$  (away from the speaker, visible 'that')  
 $\text{dô}$  (not visible, 'that')

Except for  $/\text{dô}/$ , these roots usually take one of the nominal suffixes,  $/-\text{dæ}/$  (basic) and  $/-\text{t}^2\text{æ}/$  (inverse), depending on the noun class of the referent.  $/\text{hĩ́}/$  and  $/\text{nĩ́}/$  can be suffixed with either  $/-\text{dæ}/$  or  $/-\text{t}^2\text{æ}/$ , but  $/\text{nĩ́}/$  can take only  $/-\text{t}^2\text{æ}/$ .  $/\text{dô}/$  takes the inverse suffix  $/-\text{š}/$  when it is used as an independent third person pronoun and its referent is a noun in the inverse number.

The demonstratives agree with the nouns they modify in number and noun class.  $/-\text{dæ}/$  is suffixed to some of the above-mentioned roots when the noun is in the basic number, while  $/-\text{t}^2\text{æ}/$  appears when the noun is inverse. Table 12 provides the paradigm of the suffixed demonstrative root  $/\text{nĩ́}/$ , by noun classes.<sup>14</sup> (See Section 3.4 for the details of the noun classification system.)

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<sup>13</sup>The semantic difference between  $/\text{hĩ́}/$  and  $/\text{nĩ́}/$  is not clear. The indefinite/interrogative  $/\text{hĩ́nĩ́}/$  'something/what' seems to be derived from the demonstrative root  $/\text{hĩ́}/$ .

<sup>14</sup> $/\text{hĩ́}/$  shows the same distribution as  $/\text{nĩ́}/$  with respect to the basic and inverse suffixes.

Table 12. Demonstrative /nɛ́:/ and nominal suffixes

| Class | I       | II      | III     | IV     |
|-------|---------|---------|---------|--------|
| sg    | nɛ́-dæ  | nɛ́-tʰæ | nɛ́-dæ  | nɛ́-dæ |
| du    | nɛ́-tʰæ | nɛ́-tʰæ | nɛ́-tʰæ | nɛ́-dæ |
| pl    | nɛ́-tʰæ | nɛ́-dæ  | nɛ́-dæ  | nɛ́-dæ |

- (50) a.  $\text{hɛ́-dæ/nɛ́-dæ v\hat{e}\cdot\text{la}}$  'this man (I)'  
 $\text{hɛ́-dæ/nɛ́-dæ v\hat{e}\cdot\text{la}}$  (this-bas man/bas)
- b.  $\text{hɛ́-tʰæ/nɛ́-tʰæ v\hat{e}\cdot\text{læ}\check{s}}$  'these men (du/pl)'  
 $\text{hɛ́-tʰæ/nɛ́-tʰæ v\hat{e}\cdot\text{la}\check{s}}$  (this-inv man-inv)
- (51) a.  $\text{hɛ́-dæ/nɛ́-dæ tʰ\hat{e}\cdot\text{t}\text{ib}\text{a}}$  'these (pl) boxes (II)'  
 $\text{hɛ́-dæ/nɛ́-dæ tʰ\hat{e}\cdot\text{t}\text{ib}\text{a}}$  (this-bas box/bas)
- b.  $\text{hɛ́-tʰæ/nɛ́-tʰæ tʰ\hat{e}\cdot\text{t}\text{ib}\text{æ}\check{s}}$  'this box/these boxes (du)'  
 $\text{hɛ́-tʰæ/nɛ́-tʰæ tʰ\hat{e}\cdot\text{t}\text{ib}\text{a}\check{s}}$  (this-inv box-inv)
- (52) a.  $\text{hɛ́-dæ/nɛ́-dæ b\acute{e}\text{l}\acute{\text{a}}}$  'this/these (pl) bread (III)'  
 $\text{hɛ́-dæ/nɛ́-dæ b\acute{e}\text{l}\acute{\text{a}}}$  (this-bas bread/bas)
- b.  $\text{hɛ́-tʰæ/nɛ́-tʰæ b\acute{e}\text{l}\acute{\text{æ}}\check{s}}$  'these (du) bread'  
 $\text{hɛ́-tʰæ/nɛ́-tʰæ b\acute{e}\text{l}\acute{\text{a}}\check{s}}$  (this-inv bread-inv)
- (53)  $\text{hɛ́-dæ/nɛ́-dæ \text{a}\text{r}\acute{\text{o}}}$  'this rice (IV)'  
 $\text{hɛ́-dæ/nɛ́-dæ \text{a}\text{r}\acute{\text{o}}}$  (this-bas rice/bas)

The demonstrative root /nî:/ has some irregularity in its paradigm, as shown in Table 13. /nî:/ and /nâ:/ are the preferred forms for basic-number referents. /nâ:/ is apparently a suppletive form.<sup>15</sup>

Table 13. Demonstrative /nî:/ and nominal suffixes

| Class | I       | II      | III     | IV  |
|-------|---------|---------|---------|-----|
| sg    | nâ·     | nî'-t'æ | nâ·     | nî· |
| du    | nî'-t'æ | nî'-t'æ | nî'-t'æ |     |
| pl    | nî'-t'æ | nî·     | nî·     |     |

- (54) a. nâ· k<sup>hy</sup>æ?nî ?ilæ hóláe 'That dog (I) is heavy.'  
 nâ· k<sup>hy</sup>ænî ?ilæ Ø-hóláe (that/bas dog/bas much intr[3bas]-  
 heavy/stat)
- b. nî'-t'æ k<sup>hy</sup>æ?nîš ?ilæ jhóláe 'Those dogs (du) are heavy.'  
 nî'-t'æ k<sup>hy</sup>ænî-š ?ilæ jl-hóláe (that-inv dog-inv much intr[3du]-  
 heavy/stat)
- c. nî'-t'æ k<sup>hy</sup>æ?nîš ?ilæ ehóláe 'Those dogs (pl) are heavy.'  
 nî'-t'æ k<sup>hy</sup>ænî-š ?ilæ e-hóláe (that-inv dog-inv much intr[3inv]-  
 heavy/stat)
- (55) a. nî'-t'æ pí·?lîš howa e<sup>?q</sup>?q 'That apple (II) is sweet.'  
 nî'-t'æ pí·lî-š howa e<sup>?q</sup>· (that-inv apple-inv very intr[3inv]-  
 sweet/stat)

<sup>15</sup>One of my elderly consultants sometimes uses /nâ:/ as well as /nî:/ with plural nouns of Classes II and III.



- (58) a. dō·(š) wî béléš-š tǐhá 'I baked those two (loaves of) bread.'  
 (The bread is not in sight)  
 dō·(-š) wî béléš-š tǐl-há (that-(inv) two bread-inv tr[1sg:3du]-  
 bake/pf)
- b. ní·tʰæ wî béléš tǐhá 'I baked those two (loaves of) bread.'  
 (The bread is in sight)  
 ní·tʰæ wî béléš-š tǐl-há (that-(inv) two bread-inv tr[1sg:3du]-  
 bake/pf)

Sometimes the demonstratives, which normally take a nominal suffix, occur without one, but the conditions under which this happens are not clear.

- (59) nǐ· gʷídá 'this pot (III)'  
 nǐ· gʷídá (this pot/bas)
- (60) fǐ· tʰê·tǐba 'these boxes (II-pl)'  
 fǐ· tʰê·tǐba (these box/bas)
- (61) nǐ· dá·bæ ʔflæ ǐjǐ·læ 'Those (du) doors are very expensive.'  
 nǐ· dá·bá-š ʔflæ ǐl-gʷí·læ (that door-inv much intr[3du]-expensive/stat)

### 3.6. Independent personal pronouns

Jemez has independent personal pronouns for first and second person. There are separate forms for second-person singular and dual/plural, like Class I nouns. Both first and second person take the inverse suffix /-š/ for dual and plural. For first person dual and plural, there is an exclusive/inclusive distinction.

Table 14. Independent personal pronouns

|   | sg   | du/pl  |
|---|------|--|
| 1 | ní·  | ní·(-š) (exclusive)<br>ʔí·(-š) (inclusive) <sup>17</sup> |
| 2 | ʔíwá | ʔími(-š)   |

- (62) a. ní·š sékʷa 'our (du) eyes' (addressee excluded)  
 ní·-š sékʷa (our/excl-inv eye)
- a. ʔí·š sékʷa 'our (du) eyes' (addressee included)  
 ʔí·-š sékʷa (our/incl-inv eye)
- (63) a. ʔíwá qpá· 'You (sg) know him.'  
 ʔíwá q-pá· (you/sg tr[2sg:3bas]-know/stat)
- b. ʔími bapá· 'You (du/pl) know him.'  
 ʔími bapá· (you/du/pl tr[2du/pl:3bas]-know/stat)
- (64) ní·š ʔíwá qk<sup>h</sup>áewaʔa 'We (du, excl) like you (sg).'  
 ní·-š ʔíwá q-k<sup>h</sup>áewâ· (we/excl-inv you/sg tr[1du:2sg]-like/impf)

Independent pronouns are often missing. There is usually no ambiguity as to the reference of the arguments of the predicate since they are encoded by the pronominal prefix attached to the verb. (See Section 4.6 of Chapter 4 for pronominal prefixes.)

- (65) k<sup>h</sup>íš e·ʔémî·ʔæ 'when we were small'  
 k<sup>h</sup>í-š e·-ʔê-mî-ʔæ (young/child-inv intr[1pl]-cop/stat-past-cond)

<sup>17</sup>/ʔí·/ is also the root for 'you'.



- (66) qča sepa-k\*ê·yobæ·hî            ‘We would feed them again.’  
 qł k<sup>hy</sup>a sepa-k\*ê·yo-bæ·-hî (again TA tr[1pl:3inv]-feed-iter-fut)
- (67) vak<sup>h</sup>ê·k<sup>h</sup>e háæ qmáæ fiŋ·p<sup>h</sup>æ    ‘Did you go to Albuquerque yesterday?’  
 vak<sup>h</sup>ê·k<sup>h</sup>e háæ q-máæ fiŋ·p<sup>h</sup>æ (Albuquerque Q intr[2sg]-go/pf yesterday)

Demonstratives can function as third-person pronouns occurring alone without an overt head noun. As pronouns, they can take the agent/instrumental suffix /-tæ/, as in (58).

- (68) nâæ· qmŋwì                            ‘Look at that.’  
 nâæ· q-mŋwí (that tr[2sg:3bas]-see/imp)
- (69) fiŋi háæ fiŋ·dæ ʔê                    ‘What is this?’  
 fiŋi háæ fiŋ·dæ Ø-ʔê (what Q this-bas intr[3bas]-be/stat)
- (70) dô·tæ itô·sæ                            ‘He punched me.’  
 dô·-tæ i-tô·sæ (that/he-agt intr[1sg]-punch/psv.pf)

Jemez also has a reflexive /ʔi/ and a reciprocal /p<sup>h</sup>q·k<sup>w</sup>e/. Each can cooccur with a personal pronoun or a demonstrative.

- (71) nî· ʔi timŋ wê·sî·nîʔêwa            ‘I saw myself in the mirror.’  
 nî· ʔi ti-mŋ wê·sî·nî-ʔêwa (I self tr[1sg/refl]-see/pf mirror-in)
- (72) dô· g<sup>h</sup>a ʔi ilŋ                            ‘He killed himself, I heard.’  
 dô· g<sup>h</sup>a ʔi il-fiŋ (he rep self tr[3sg/refl]-kill/pf)
- (73) p<sup>h</sup>q·k<sup>w</sup>e sqmŋ                            ‘We (du) looked at each other.’  
 p<sup>h</sup>q·k<sup>w</sup>e sq-mŋ (each other tr[1du/refl]-look/pf)
- (74) p<sup>h</sup>q·k<sup>w</sup>e ilá·sè                            ‘They (du) bit each other.’  
 p<sup>h</sup>q·k<sup>w</sup>e il-há·sè (each.other tr[3du/refl]-bite/pf)

### 3.7. Possessive

Jemez does not have a separate set of possessive pronouns or affixes.

Possessive-marking involves three main mechanisms: benefactive prefixes (intransitive and transitive), intransitive prefixes, or independent personal pronouns.

#### 3.7.1. Possessive marking by benefactive prefixes

The most common way of asserting possession is by means of intransitive benefactive prefixes.<sup>18</sup> The intransitive benefactive prefixes are typically attached to the copula /ê/ 'be' or the stative verbs of position to indicate a possessor. The possessed objects occurring in such constructions can be animate or inanimate. The example sentences (75) through (77) literally mean 'X (possessed object) is (lying down) for me'. Note that /kʷá/ has a different plural form /gʷó/.<sup>19</sup>

- |      |  |   |
|------|--|---|
| (75) | nɪ·tʰæ tʰhæ·(š) nɪ· ɪʔlê<br>nɪ·tʰæ tʰhâ·(-š) nɪ· ɪ-l-ʔê    | 'That house is mine.'<br>(that-inv house/II(-inv) me iben[1sg]-inv-<br>be/stat)                             |
| (76) | a. nâ· déʔlɪ nɪ· ɪkʷá<br>nâ· délf nɪ· ɪ-∅-kʷá              | 'That chicken is mine.'<br>(that chicken/I me iben[1sg]-bas-<br>be.lying.down (sg/du)/stat)                 |
|      | b. nɪ·tʰæ déʔlɪ(š) nɪ· ɪčʷá<br>nɪ·tʰæ délf(-š) nɪ· ɪ-l-kʷá | 'Those chickens (du) are mine.'<br>(that-inv chicken(-inv) me iben[1sg]-inv-<br>be.lying.down (sg/du)/stat) |

<sup>18</sup>The benefactive prefixes are used primarily to indicate the possessor or the beneficiary of an action. (See Sections 4.6.2 and 4.6.4 for the details.)

<sup>19</sup>The verb-stem-initial velar stops /kʷ/ and /gʷ/, combined with a benefactive prefix, are usually realized as depalatalized velar—[kʰ] and [g], respectively. For the details of the alternation between palatalized and depalatalized velar stops, see Chapter 2, Section 2.5.8.

- (76) c. ní·tʰæ déʰlǎ(š) ní· ǰó· 'Those chickens (pl) are mine.'  
ní·tʰæ délf(-š) ní· ǰ-l-gʷó· (that-inv chicken(-inv) me iben[1sg]-inv  
be.lying.down (pl)/stat)
- (77) a. ní·tʰæ tʰé·tǐbæ(š) ní· ǰčʷa 'That box is mine.'  
'Those boxes (du) are mine.'  
ní·tʰæ tʰé·tǐbæ(-š) ní· ǰ-l-kʷá (that-inv box/II(-inv) me iben[1sg]-inv-  
be.lying.down (sg/du)/stat)
- b. ní· tʰé·tǐba ní· ǰgó· 'Those boxes (pl) are mine.'  
ní· tʰé·tǐba ní· ǰ-Ø-gʷó· (that box/bas me iben[1sg]-bas-  
be.lying.down (pl)/stat)

When a possessive clause functions as an argument, the clause is nominalized with /-ʰé/, as in (78) and (79). The possessed noun of the nominalized clause may be moved out to the right of it, resulting in a construction with an external head: [ ] HEAD, as in (80). The noun or independent personal pronoun which indicates the possessor occurs at the beginning of the nominalized clause.

- (78) ní· ʰqʷe ǰšæʰe tʰí 'My sugar fell off.'  
ní· ʰqʷe ǰ-Ø-šæ-ʰé Ø-tʰí (me sugar/IV iben[1sg]-bas-be.lying.down/stat-  
nom intr[3bas]-fall (pl)/pf)
- (79) John qk<sup>hy</sup>æʰnǰkʰáʰe tamǰ 'I saw John's dog'  
John q-Ø-k<sup>hy</sup>æʰnǰ-kʰá-ʰé ta-mǰ (John iben[3sg]-bas-dog-be.lying.down  
(sg/du)/stat-nom tr[1sg:3bas]-see/pf)
- (80) ní· ǰkʰáʰé béléá ší 'My bread fell off.'  
ní· ǰ-Ø-kʰá-ʰé béléá Ø-ší (me iben[1sg]-bas-be.lying.down(sg/du)/stat-  
nom bread/III intr[3bas]-fall/pf)



Transitive benefactive prefixes with transitive verbs indicate a possessor that is different from the actor, as shown in (86a) and (87a).

- (86) a. ʔfwá ní· fɔ·lá bæʔflé 'You combed my hair.'  
           ʔfwá ní· fɔ·lá bæ-θ-tʔélé (you I hair tben[2:1]-bas-comb/pf)
- b. ʔfwá fɔ·lá qʔflé 'You combed your hair.'  
           ʔfwá fɔ·lá q-tʔélé (You hair tr[2sg:3bas]-comb/pf)
- (87) a. hɔ· tɔ-mí·šipe 'I rubbed his leg.'  
           hɔ· tɔ-θ-mí·šipe (leg tben[1sg:3sg]-bas-rub/pf)
- b. hɔ· tamí·šipe 'I rubbed my leg.'  
           hɔ· ta-mí·šipe (leg tr[1sg:3bas]-rub/pf)

### 3.7.2. Inalienable kin possessive marking by intransitive prefixes

Some kinship terms also function as intransitive verbs. These verbs express the 'be someone's father (mother, etc.)'. The intransitive verbal prefix agrees with the possessor of the kin (i.e. "X" as in "X's Y").

- (88) a. nâ· ní· ipʔæ· 'That is my younger sister.'  
           nâ· ní· i-pʔæ· (that/bas I intr[1sg]-be.someone's.sister/stat)
- b. ní·tʔæš ní· ipʔæ· 'They (those) are my younger sisters.'  
           ní·tʔæ-š ní· i-pʔæ· (that-inv I intr[1sg]-be.someone's.sister/stat)
- c. ní·tʔæš ní· ipʔæ· 'They (those) are our (du) younger sisters.'  
           ní·tʔæ-š ní· i-pʔæ· (that-inv I intr[1du]-be.someone's.sister/stat)
- (89) nâ· dô· tɔ· 'That is his father.'  
           nâ· dô· θ-tɔ· (that/bas he intr[3bas]-be.someone's.father/stat)

Kinship predicates, which take intransitive prefixes, are shown in (90).

|      |       |                  |       |                   |
|------|-------|------------------|-------|-------------------|
| (90) | tó·   | (father)         | zé    | (mother)          |
|      | pʔæ·  | (younger sister) | pê·ti | (younger brother) |
|      | pâ·pi | (older brother)  |       |                   |
|      | pí·   | (husband)        | hô    | (wife)            |

Other kinship terms do not have a predicate function, although there is no clear semantic criterion as to which terms belong to this group. For instance, the possessive of 'older sister' /kʰô/ is expressed by /kʔá/ with an intransitive benefactive prefix, like the non-kin possession discussed in 3.7.1.

(91) ní· ikʰô·kʔaʔe 'my older sister'.

ní· i-∅-kʰô·-kʔá-ʔé

(I iben[1sg]-bas-older.sister-be.lying.down(sg/du)/stat-nom)

In a few instances, the possessives of apparently synonymous kin terms are expressed differently.<sup>20</sup>

- (92) a. nâ· ní· itó· 'That is my father.'  
nâ· ní· i-tó· (that/bas I intr[1sg]-be.someone's.father/stat)
- b. nâ· ní· i-táttá·kʔa 'That is my father.'<sup>21</sup>  
nâ· ní· i-∅-táttá·kʔá (that/bas I iben[1sg]-bas-father-be.lying.down (sg/du)/stat)

Like non-kin possession, clauses with kin predicates may be nominalized to function as an argument of the main clause.

<sup>20</sup>Two compounds, [sítq] 'father-in-law' and [sízè] 'mother-in-law', take the intransitive prefix. (cf. [sí] 'tied, related, married'.)

<sup>21</sup>/táttá/ is usually used as the vocative form for 'father'. The vocative for 'mother' is /fí·yæ/, and this word is also used without reference to any particular mother, a case of alienable possession: e.g. [fí·yæ fíó·ge ʔé] 'A mother is inside'.

- (93) ní itó·ʔé šǎe 'My father came back.'<sup>22</sup>  
 ní· i-tó·-ʔé Ø-šǎe (I intr[1sg]-be.someone's.father/stat-nom intr[3bas]-  
 come.home/pf)
- (94) ʔíwá qzéʔé ʔé 'Your (sg) mother is sitting.'  
 ʔíwá q-zé-ʔé Ø-ʔé (you/sg intr[2sg]-be.someone's.mother/stat-nom  
 intr[3bas]-be.sitting/stat)

If the kin term is inverse (i.e. dual or plural), the inverse suffix /-š/ may be suffixed to the nominalized clause.

- (95) ní· wí ipê·tiʔe(š) tĩmǎ 'I saw my two younger brothers.'  
 ní· wí i-pê·ti-ʔé(-š) tĩ-mǎ  
 (I two intr[1sg] be.someone's.younger.brother/stat-  
 nom(-inv) tr[1sg:3du]-see/pf)

If the possessed kin term is also the possessor of P, both possessive clauses are nominalized.

- (96) ní itó·ʔé qk<sup>hy</sup>ǎnikʔaʔetǎ ihû·sǎe 'I was bitten by my father's dog.'  
 ní i-tó·-ʔé q-Ø-k<sup>hy</sup>ǎnǎ-kʔá-ʔé-tǎ i-hû·sǎe  
 (I intr[1sg]-be.someone's.father/stat-nom iben[3sg]-bas-  
 dog-be.lying.down(sg/du)/stat-nom-agt intr[1sg]-bite/psv.pf)

<sup>22</sup>When /ní·/ 'I' is followed by a verbal prefix /i/ or /ĩ/, the vowel is shortened, thus [ní].

### 3.7.3. Possessive marking of body parts by independent pronouns

A third type of possessive construction involves the placement of the independent personal pronoun before the possessed noun without any affixation.

These are all body-part terms.

- (97) nĩ· sé 'my eye'  
 nĩ· sé-š 'my eyes'  
 nĩ· sék<sup>w</sup>α 'my eye(s)'  
 (98) ʔĩwǫ sé 'your (sg) eye'<sup>23</sup>  
 ʔĩwǫ sék<sup>w</sup>α 'your (sg) eye'  
 (99) nĩ· t'ě·k<sup>w</sup>α 'my mouth'  
 (100) nĩ· mǫte-š 'my hand(s)'  
 (101) nĩ· há· 'my arm'

When the body-part terms occur in sentences (rather than in isolation), however, the possessor tends to be expressed by benefactive prefixes attached to the main verbs.

- (102) sék<sup>w</sup>α bæmfwĩ 'Look at my eye(s).'  
 sé-k<sup>w</sup>α bæ-∅-mfwĩ (eye-at tben[2sg:1sg]-bas-see/imp)  
 (103) há· ʔǫǫnq<sup>ʔ</sup>ĩ 'My arm hurts.'  
 há· ʔ-∅-ʔǫǫnq<sup>ʔ</sup>ĩ (arm iben[1sg]-bas-hurt/impf)  
 (104) mǫ·teš ʔǫǫnq<sup>ʔ</sup>ĩ 'My hands hurt.'  
 mǫ·te-š ʔ-l-ʔǫǫnq<sup>ʔ</sup>ĩ (hand-inv iben[1sg]-inv-hurt/impf)  
 (105) tí há· k<sup>h</sup>q<sup>ʔ</sup>ǫǫnq<sup>ʔ</sup>ĩ 'Does your (sg) neck hurt?'  
 tí há· k<sup>h</sup>q-∅-ʔǫǫnq<sup>ʔ</sup>ĩ (neck Q iben[2sg]-bas-hurt/impf)

<sup>23</sup>/k<sup>w</sup>α/ is a locative nominal suffix meaning 'at'. According to one of my consultants, /sék<sup>w</sup>α/ may be preceded by such independent personal pronouns or demonstratives as /ʔĩ(-š)/ 'our (du/pl, incl)', /ʔĩmj(-š)/ 'you (du/pl)', /nǫ:/ 'that', but /sé(-š)/ cannot.









|       |  |  |                                |
|-------|--|--|--------------------------------|
| (112) | ʔílæbe 'big one' <sup>25</sup>                                 | yábe 'big one'                         | k <sup>h</sup> óle 'small one' |
|       | φít'i 'loose one (as of nails)'                                | tʔwi 'tight one (as of trousers)'      |                                |
|       | vê-la 'old (male)'   | ʔó-wá 'old (female)'                   | tʔi 'old one'                  |
|       | k <sup>h</sup> í 'young one'                                   | tʔi 'new one, fresh one' <sup>26</sup> |                                |
|       | pí 'wet one'   | tʔæle 'dry one'                        |                                |
|       | pʔò 'ripe one'   | pʔæ-se 'unripe one'                    |                                |
|       | dé-yó 'quiet one'  | wé-t'e 'quiet one'                     |                                |
|       | yæbák <sup>w</sup> a 'high one (as of mountains)'              |  |                                |
|       | k <sup>h</sup> óbák <sup>w</sup> a 'low one (as of mountains)' |  |                                |
|       | sé-yómq 'well (good health)'                                   |  |                                |

Note that some of the words can form compound verbs.

|       |         |               |   |
|-------|---------|---------------|---|
| (113) | tʔælepæ | 'dry (tr)'    | (< tʔæle 'dry' + pæ 'make')                 |
|       | tʔælemi | 'be dry'      | (< tʔæle 'dry' + mi 'be')                   |
|       | φít'imí | 'be weak'     | (< φít'i 'loose' + mi 'be')                 |
| (114) | a.      | ní tetʔælepæ  | 'I dried it (e.g. the bark of a tree) out.' |
|       |         |               | 'I emptied it (e.g. a bottle).'             |
|       |         | ní te-tʔælepæ | (I tr[1sg:3inv]-dry/pf)                     |
|       | b.      | dô φít'imí    | 'He is weak (due to old age, illness).'     |
|       |         | dô Ø-φít'imí  | (that/he intr[3bas]-weak/stat)              |

<sup>25</sup>[ʔílæbe], [yábe], and [k<sup>h</sup>óle], compounds containing the roots /ʔílæ/, /yá-/ , /k<sup>h</sup>ó-/ , respectively, are only used when the nouns with which they co-occur are singular or dual. When the nouns are plural or dual, especially plural, the alternative forms of [ʔílæ bí-], [yá- bí-], and [k<sup>h</sup>ó- bí-] occur. /bí-/ is a stative verb, and these alternative forms appear regardless of the class membership of the nouns: e.g. [pæ-š ʔílæ i-bí-] 'The deer (du) are big'. /ʔílæ/ and /yá-/ mean 'large amount, degree', while /k<sup>h</sup>ó-/ mean 'small amount, degree'. They can occur independently to modify nouns or verbs. (See more in Section 3.9.)

<sup>26</sup>Its inverse form is [tʔimíš]: e.g. [mæ-sæ tʔimíš eʔe] 'a new table'.

Furthermore, some words can be compounded to nouns.

- (115) mǝ·save·la 'male cat' (< mǝ·sá 'cat' + vê·la 'male')  
 mǝ·sa<sup>o</sup>·wa 'female cat' (< mǝ·sá 'cat' + <sup>o</sup>·wá 'female')  
 pá·k<sup>hy</sup> 'young deer' (< pá· 'deer' + k<sup>hy</sup> 'young one')  
 t'æt<sup>æ</sup>le 'constipation' (< t'æ 'excrement' + t'æle 'dry one')

In compounds, it is the right-most constituent that is inflected for number. Thus the inverse form for 'male cat' is [mǝ·save·læ(š)], not [mǝ·sæ(š)ve·la]. Compare this with the example in (116).

- (116) t'·hæ·š t'í·š e<sup>ʔ</sup>ê<sup>ʔ</sup>e 'an old house'  
 t'·hâ·š t'í·š e-<sup>ʔ</sup>ê-<sup>ʔ</sup>é (house-inv old-inv intr[3inv]-be/stat-nom)

As shown in (112), there are three words for 'old': [t'í·], [vê·la], and [<sup>ʔ</sup>ó·wá]. As [vê·la] and [<sup>ʔ</sup>ó·wá] also mean 'man, old man' and 'woman, old woman', respectively, the sense 'old man/woman' is conveyed by a nominalized clause, as in (117b) and (118b).<sup>27</sup>

- (117) a. vê·la tamǝ 'I saw a man.'  
 vê·la ta-mǝ (man tr[1sg:3bas]-see/pf)  
 b. vê·la <sup>ʔ</sup>ê<sup>ʔ</sup>e tamǝ 'I saw an old man.'  
 vê·la Ø-<sup>ʔ</sup>ê-<sup>ʔ</sup>é ta-mǝ (old/male intr[3bas]-be/stat-nom tr[1sg:3bas]-  
 see/pf)
- (118) a. <sup>ʔ</sup>ó·wá tamǝ 'I saw a woman.'  
<sup>ʔ</sup>ó·wá ta-mǝ (woman tr[1sg:3bas]-see/pf)

<sup>27</sup>The word [k<sup>hy</sup>í] (/k<sup>hy</sup>í/), too, has such a double meaning, i.e. 'child' and 'young one'.



(121) b. Female items

|             |                                   |
|-------------|-----------------------------------|
| wá·ší       | ‘head-ring’                       |
| gʻí·bæ      | ‘water jar’                       |
| zâya        | ‘manta’                           |
| kʻíbeš      | ‘woven belt’                      |
| tʻímq·sò(š) | ‘cape, woven blanket (for women)’ |

However, there are gender-neutral items, too, such as [bítʻí] ‘fork’ and [mâ·sæ] ‘table’. In this case, the third word for ‘old’, i.e. [tʻí], is used. In addition, there are animals or items with which either [vê·la] or [ʻó·wá] can be used, depending on the natural sex of the animals or the users. They include those in (122).

|       |                      |           |
|-------|----------------------|-----------|
| (122) | pâ·                  | ‘deer’    |
|       | mí·sá                | ‘cat’     |
|       | k <sup>hy</sup> â·nî | ‘dog’     |
|       | gʻíwáyî              | ‘horse’   |
|       | tô·tʻa               | ‘buffalo’ |
|       | té·hete              | ‘shirt’   |

### 3.9. Quantifiers

Quantifiers include numerals, /ʻflæ/ ‘large quantity, amount’, /yâ·/ ‘large quantity, amount’, /k<sup>hy</sup>ó·/ ‘small quantity, amount’, and /šô/ ‘all’. They often occur before the nouns they quantify, as in (123), but can also follow the nouns, too, as in (124).

|          |                                    |                                      |
|----------|------------------------------------|--------------------------------------|
| (123) a. | wíš ʻæk <sup>hy</sup> ileš tǐmí    | ‘I saw two boys.’                    |
|          | wí-š ʻæk <sup>hy</sup> ile-š tǐ-mí | (two-inv boy-inv tr[1sg:3du]-see/pf) |

- (123) b. yǎ· bélé tatʔélé 'I ate a lot of bread.'  
yǎ· bélé ta-tʔélé (many bread tr[3sg:3bas]-see/pf)
- c. kʰó· ʔǫ·ʔe tamǰ 'I saw a little sugar.'  
kʰó· ʔǫ·ʔe ta-mǰ (small.amount sugar tr[3sg:3bas]-see/pf)
- (124) a. tʔǎ· wĩš tǰmǰ 'I saw two Indians.'  
tʔǎ· wĩ-š tǰ-mǰ (Indian two-inv tr[1sg:3du]-see/pf)
- b. ʔǫ·ʔe yǎ· tamǰ 'I saw a lot of sugar.'  
ʔǫ·ʔe yǎ· ta-mǰ (sugar much tr[3sg:3bas]-see/pf)
- c. ʔǫ·ʔe kʰó· tamǰ 'I saw a little sugar.'  
ʔǫ·ʔe kʰó· ta-mǰ (sugar small.amount tr[3sg:3bas]-see/pf)

The quantifier and the modified noun can even be separated by another word, as in (125a) and (125b), or the quantifier can be left stranded after the noun is incorporated in the verb (125c).

- (125) a. hé yǎ· tatʔélé pá·gʷini 'I ate a lot of deer meat.'  
hé yǎ· ta-tʔélé pá·gʷini (int much tr[1sg:3bas]-eat/pf deer.meat)
- b. hé kʰóle tatʔélé pá·gʷini 'I ate a little deer meat.'  
hé kʰóle ta-tʔélé pá·gʷini (int small.amount tr[1sg:3bas]-eat/pf  
deer.meat)
- c. taté·hetepǎ tá 'I made three shirts.'  
ta-té·hete-pǎ tá (tr[1sg:3bas]-shirt-make/pf three)

/ʔíǎ/, /yǎ·/, and /kʰó·/ also modify verbs.

- (126) ʔíǎ sǰ 'It rained a lot.'  
ʔíǎ Ø-sǰ (much intr[3bas]-rain/pf)



These quantifiers form antonymous pairs in which one term means having a large degree of some attribute, and the other a small degree of that attribute, such as ‘long’ ~ ‘short’, ‘heavy’ ~ ‘lightweight’, and ‘deep’ ~ ‘shallow’. In many cases, the words modified by /ʔí-læ/, /yǎ-/ , and /k<sup>h</sup>ó-/ are stative verbs. In (127a), the paired quantifiers precede the verbs in a phrasal collocation. In (127b), on the other hand, the quantifiers are bound to morphemes whose meanings are difficult to determine. /be/ and /le/, for example, do not occur in any other words of this type in my data.

|          |                          |                         |  |                   |
|----------|--------------------------|-------------------------|--|-------------------|
| (127) a. | yǎ· tǒ·                  | ‘long, tall’            | k <sup>h</sup> ó· tǒ·                  | ‘short’           |
|          | yǎ· tʔǎ                  | ‘wide (as of road)’     | k <sup>h</sup> ó· tʔǎ                  | ‘narrow’          |
|          | yǎ· k <sup>w</sup> ǒ·tʔǎ | ‘deep (as of water)’    | k <sup>h</sup> ó· k <sup>w</sup> ǒ·tʔǎ | ‘shallow’         |
|          | yǎ· k <sup>w</sup> ǒ·nǎ  | ‘thick (as of object)’  | k <sup>h</sup> ó· k <sup>w</sup> ǒ·nǎ  | ‘thin’            |
|          | yǎ· ʔédǎ                 | ‘of wide build’         | k <sup>h</sup> ó· ʔédǎ                 | ‘of narrow build’ |
|          | yǎ· hólǎ                 | ‘heavy’                 | k <sup>h</sup> ó· hólǎ                 | ‘lightweight’     |
|          | ʔí-læ gʔí-lǎ             | ‘expensive’             | k <sup>h</sup> ó· gʔí-lǎ               | ‘inexpensive’     |
| b.       | yǎbák <sup>w</sup> ǎ     | ‘high (as of mountain)’ | k <sup>h</sup> óbák <sup>w</sup> ǎ     | ‘low’             |
|          | yǎbe, ʔí-læbe            | ‘big’                   | k <sup>h</sup> óle                     | ‘small’           |

Finally, as was mentioned in Section 2.5.8 of Chapter 2, there is much variation in the word-initial velar stops. Specifically, /k<sup>h</sup>ó-/ can surface as [k<sup>h</sup>ó·] or [k<sup>h</sup>ó·]. All the examples in (127) with this morpheme have the depalatalized variant, so it would appear that [k<sup>h</sup>ó·] (or [k<sup>h</sup>ó]) occurs in all words and phrases semantically related to degree or quantity. However, the palatalized variant occurs consistently in other constructions.

|          |                        |  |
|----------|------------------------|--|
| (128) a. | k <sup>h</sup> ó· ɸǐmǎ | ‘a few sacks’ ([k <sup>h</sup> ó· ɸǐmǎ] is also possible.) |
| b.       | k <sup>h</sup> ó· temǎ | ‘I saw some people.’                                       |

- (128) c. k<sup>hy</sup>ó· 'How many/much?'  
 d. k<sup>hy</sup>ó·?ewa 'What time?'  
 e. k<sup>hy</sup>ólá 'When?'

The class membership of the quantified noun does not predict which variant occurs. However, though the examples are few, we can perhaps say that [k<sup>hy</sup>ó·] is used in questions of quantity, as in (128c) through (128e) above.

### 3.10. Indefinite and interrogative

Many of the indefinite and interrogative words in Jemez are formally the same. A word can be interpreted as an indefinite or as an interrogative depending on the type of sentence in which it occurs and on the context of the utterance. The only difference is that the interrogative forms are usually followed by the interrogative particle /k<sup>hy</sup>áɛ/ ([háɛ]).

#### 3.10.1. Indefinite words

The indefinite words include: /fínɨ/ 'something'<sup>28</sup>; /sél/ 'someone'; and /táɛ/ 'to somewhere'.

- (129) ní· fínɨ tamɨ 'I saw something.'  
 ní· fínɨ ta-mɨ (I something tr[1sg:3bas]-see/pf)
- (130) ní· sé tamɨ 'I saw someone.'  
 ní· sél ta-mɨ (I someone tr[1sg:3bas]-see/pf)
- (131) ní· táɛ imáɛ 'I went somewhere.'  
 ní· táɛ i-máɛ (I somewhere intr[1sg]-go/pf)

<sup>28</sup>This may be a combination of the demonstrative /fíɨ/ 'this' and the suffix /-ni/ (cf. /šó-ni/ 'everything' < /šó/ 'all' + /-ni/).

They can take various suffixes, including plural suffixes /-tol/ and /-el/,<sup>29</sup> negative suffix /-da/, and agent/instrumental suffix /-tæ/.

- (132) *fiñito tamí* 'I saw several (different) things.'  
*fiñi-tol ta-mí* (something-pl tr[1sg:3bas]-see/pf)
- (133) *tætol imáe* 'I went to some (different) places.'  
*tæ-tol i-máe* (somewhere-pl intr[1sg]-go/pf)
- (134) *séda háe qmí* 'Didn't you see anybody?' (Lit. 'Did you see nobody?')  
*sél-da háe q-mí* (anyone-neg Q tr[2sg:3bas]-see/pf)
- (135) *tæda háe qmáe* 'Didn't you go anywhere?' (Lit. 'Did you go nowhere?')  
*tæ-da háe q-máe* (anywhere-neg Q intr[2sg]-go/pf)
- (136) *sétæ i-φō-tæ* 'I was attacked by someone.'  
*sél-tæ i-φō-tæ* (someone-agt intr[1sg]-attack/psv.pf)

### 3.10.2. Interrogative words

The interrogative words include /*fiñi*/ 'something'; /*sél*/ 'someone', /*tæ*/ 'somewhere', /*k<sup>hy</sup>ólá*/ 'when', and /*fié*/ 'how'. They typically occur at the beginning of a sentence if they are immediate constituents of the matrix clause.

- (137) *fiñi háe qk<sup>hy</sup>ímqt'ê* 'What did you buy?'  
*fiñi háe q-k<sup>hy</sup>ímqt'ê* (what/something Q intr[2sg]-buy/pf)
- (138) *sécáe dé?lì k<sup>hy</sup>ímqt'ê* 'Who bought the chicken?'<sup>30</sup>  
*sél háe délf. Ø-k<sup>hy</sup>ímqt'ê* (who/someone Q chicken intr[3sg]-buy/pf)

<sup>29</sup>/sél/ can take /-el/, but not /-tol/. (See example (149).)

<sup>30</sup>/k<sup>hy</sup>/ changes to /č/ after an /l/. See Section 2.5.1 on 'L-effect'.

- (139) *tɛ́hɛ́ déʔlì qkʰyímátʔé* 'Where did you buy the chicken?'<sup>31</sup>  
*tɛ́ hɛ́ délf q-kʰyímátʔé* (where/somewhere Q chicken intr[2sg]-buy/pf)
- (140) *kʰó-lá hɛ́ déʔlì qkʰyímátʔé* 'When did you buy the chicken?'<sup>32</sup>  
*kʰó-lá hɛ́ délf q-kʰyímátʔé* (when Q chicken intr[2sg]-buy/pf)
- (141) *fiéhʔɛ́ nõkʰɿ déʔlì qkʰyímátʔé* 'Why did you buy the chicken?'<sup>33</sup>  
*fié hɛ́ nõkʰɿ délf q-kʰyímátʔé* (how Q ? chicken intr[2sg]-buy/pf)
- (142) *fiéhʔɛ́ déʔlì qhʔlòʔq* 'How did you kill the chicken?'  
*fié hɛ́ délf q-hʔlòʔ* (how Q chicken tr[2sg:3bas]-kill/pf)

As the above examples show, the interrogative words are almost always followed by the question particle [hɛ́] in this position. This is also the case with (143) and (144a) below. However, when the interrogative form occurs in an embedded question, the question particle does not occur. The clause in (144b), which is a direct question, has the interrogative particle /hɛ́/.

- (143) *bæsê-tì fińɿ qkʰyímátʔéʔe* 'Tell me what you bought.'  
*bæ-sê-tì fińɿ q-kʰyímátʔé-ʔé* (tr[2:1]-tell/imp what/something  
intr[2sg]-buy/pf-nom)
- (144) a. *bæsê-tì sél qmɿʔé* 'Tell me who you saw.'  
*bæ-sê-tì sél q-mɿ-ʔé* (tr[2:1]-tell/imp who/someone  
tr[2sg:3bas]-see/pf-nom)

<sup>31</sup>/tɛ́/ is often nasalized when it precedes /hɛ́/.

<sup>32</sup>/kʰó-lá/ is a root, meaning 'a small portion, little, how much'. The meaning of /-lá/ is not clear.

<sup>33</sup>[h] tends to be palatalized after /e/. The question particle [hɛ́] is historically derived from /kʰyɛ́/. In fact, one of my consultants occasionally says [fiékʰyɛ́], instead of [fiéhʔɛ́]. It explains why L-effect takes place, changing [h] to [č], as in example (138), when [h] follows /l/.

- (144) b. bæsê-ti séčǣ qmǫ 'Tell me who you saw.'  
 bæ-sê-ti sél háǣ q-mǫ (tr[2:1]-tell/imp who/someone Q  
 tr[2sg:3bas]-see/pf)

Like the indefinite forms, the interrogative forms may take various suffixes—  
 e.g. /-tǣ/ (agent/instrumental); /-se/ (locative 'from'); /-tol/ or /-el/ (plural); /-vǫwa/  
 ('both').

- (145) sétǣ háǣ yû-le qmǣsǣ 'Who gave you (sg) money?' (Lit. 'By whom  
 were you given money?')  
 sél-tǣ háǣ yû-le q-mǣsǣ (who/someone-agt Q money intr[2sg]-give/psv.pf)
- (146) táse háǣ ʔǣ 'Where did he come from?'  
 tá-se háǣ ʔ-ʔǣ (where/somewhere-from Q intr[3bas]-come/pf)
- (147) fǫnǫ háǣ eʔê 'What kind are they (pl)?'  
 fǫnǫ-tol háǣ e-ʔê (what/something-pl Q intr[3pl]-be/stat)
- (148) tátočǣ qmǣ 'What places did you (sg) go?'  
 tá-tol háǣ q-mǣ (where/somewhere-pl Q intr[2sg]-go/pf)
- (149) séle háǣ eʔê 'Who are they (pl)?'  
 sél-el háǣ e-ʔê (who/someone-pl Q intr[3bas]-be/stat)
- (150) sé-vǫwa háǣ dô-ǫmǣ dô-gǫ 'Who did he go there with?'  
 (Lit. 'He together with whom went there?')  
 sél-vǫwa háǣ dô-ǫ-mǣ dô-gǫ (who/someone-with Q that/he intr[2du]-  
 go/pf there)

Verbs tend to be incorporated or compounded when they occur with [fǫh'ǣ]  
 'how'. In (151) and (152), the incorporative form of transitive verbs combines with  
 transitive /ʔǫ/ 'do something' to form compound verbs, and in (153) and (154), the

perfective form of intransitive verbs is compounded to intransitive /pá/ 'act, behave'.

(See example (142) also.)

- (151) fiéh'ǎ q-páya-?q'q                    'How did you make it?'  
           fié háǎ q-páya-?q'                    (how Q intr[2sg]-make/inc-do/impf)
- (152) fiéh'ǎ qhâ-?q'q                    'How did you take it?'  
           fié háǎ q-hâ-?q'                    (how Q intr[2sg]-take/inc-do/impf)
- (153) fiéh'ǎ q'ǎpa                    'How did you come?'  
           fié háǎ q-?ǎ-pá                    (how Q intr[2sg]-come/pf-do/pf)
- (154) fiéh'ǎ qmǎpá                    'How did you go?'  
           fié háǎ q-mǎ-pá                    (how Q intr[2sg]-go/pf-do/pf)

Since there is no strict distinction between indefinite and interrogative words in Jemez, 'yes-no' questions with an indefinite word and wh-questions are identical in form and can be structurally ambiguous.

- (155) sé háǎ qmǎ                    'Did you see someone?/Who did you see?'  
           sél háǎ q-mǎ                    (someone/who Q tr[2sg:3bas]-see/pf)
- (156) fiǎnǎ háǎ qk<sup>hy</sup>ímát'è                    'Did you buy something?/What did you buy?'  
           fiǎnǎ háǎ q-k<sup>hy</sup>ímát'è                    (something/what Q intr[2sg]-buy/pf)

However, the meaning of the indefinite/interrogative word is often clear from the context. In (157), the sentence means "What is this?"

- (157) fiǎnǎ háǎ fiǎ-dǎ ?è                    'What is this?'  
           fiǎnǎ háǎ fiǎ-dǎ Ø-?è                    (what/something Q this intr[3bas]-be/stat)

## CHAPTER 4. VERB MORPHOLOGY

### 4.0. Introduction

Verbs in Jemez are defined as those words which are inflected for aspect, mood and transitivity and which occur with pronominal prefixes. In addition to words which denote actions and processes, most of the words which would be treated as 'adjectives' in other languages belong to this class. (See Section 3.8 'Noun qualifiers'.)

There are two classes of verbs: transitive and intransitive. Transitive verbs are obligatorily detransitivized (i.e. passivized) under certain syntactic conditions, and this is reflected in the inflectional paradigm and the pronominal prefixes which they take. It is also possible to classify verbs as active or stative. All active verbs have at least five inflected forms, while most stative verbs have just one basic form.

Jemez verbs are quite complex phonologically. Some consonants alternate, and tones and vowel length vary with particular inflectional categories. For this reason, there is a greater coverage of phonological phenomena in this chapter than in the preceding chapter on noun morphology. The discussion of verbs in this chapter centers around three main topics: (a) stem formation (Section 4.1 through 4.4), (b) pronominal prefixes (Section 4.6), and (c) inflection (Section 4.8).

Unless stated otherwise, the citation forms of verbs found in the text (and many examples) of this chapter are the perfective form for active verbs and the basic form for stative verbs. This is necessitated by the fact that the surface forms of Jemez verbs can be very different from the underlying forms due to various phonological processes.

#### 4.1. Stems

##### 4.1.1. Constituents of the verb

The verb may consist of up to six parts: (a) pronominal prefix, (b) negative prefix /wǝ́-/ , (c) incorporated element(s), adverb, noun or verb, (d) verb stem, (e) inflectional suffix(es), and (f) subordinating suffix.<sup>1</sup> The constituents of verbs are schematically shown in (1).

(1) Ppfx-(Neg)-(Adv)-(N)-(V)-Stem-Infl-(Subord)

Of these, only the pronominal prefix, the verb stem and the inflectional suffix(es) are obligatory units, although the prefix and the suffix can be null. Thus the shortest verb is a monosyllabic verb root with zero pronominal prefix and zero inflectional suffix, such as (2).

(2) mǝ́                    ‘He saw it.’  
      ∅-mǝ́                (tr[3sg:3bas]-see/pf)

##### 4.1.2. Verb roots

Most verb stems consist of a single root. The vast majority of verb roots are monosyllabic and end in an underlying consonant, which only surfaces when the root is followed by a non-null inflectional suffix or a subordinating suffix. The possible

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<sup>1</sup>As we will see in the following section, most Jemez verbs contain only one root, but there are verbs consisting of two roots. The term ‘verb stem’ is used to refer to that part of a verb to which an inflectional suffix or a subordinating suffix is attached. Thus /ʃit/ ‘string’ is a verb root and also a verb stem. It is suffixed with /e/ and other inflectional suffixes: e.g. [ʃítè] ‘string (perfective)’, [ʃítì] ‘string (imperative)’. On the other hand, /pʰæpæy/ ‘melt’ is a verb stem but not a root, because it contains two roots: /pʰæ/ ‘water’ and /pæy/ ‘make’. Note, however, the term ‘root’ is used as a cover term for both a root and a stem in the discussion of active-verb inflectional paradigms (Sections 4.8.2 and 4.8.3) since all the verbs mentioned as examples there have a non-compound stem: namely, they contain a single root to which an inflectional suffix is attached.



underlying final consonants are /p, b, t, d, tʰ, s, l, w, y/.<sup>2</sup> Examples of roots which contain these consonants are provided in (3), and some surface forms of the roots in (4).<sup>3</sup>

- |     |         |                       |        |              |
|-----|---------|-----------------------|--------|--------------|
| (3) | /ša·p/  | ‘shoot with an arrow’ | /ʔ·b/  | ‘do, make’   |
|     | /φit/   | ‘string’              | /gʻid/ | ‘bury’       |
|     | /ze·tʰ/ | ‘break (tr)’          | /to·s/ | ‘hit, punch’ |
|     | /fiil/  | ‘open (tr)’           | /še·w/ | ‘tear’       |
|     | /pæ·y/  | ‘make’                |        |              |

- |     |    |         |                           |
|-----|----|---------|---------------------------|
| (4) | a. | šû·pì   | ‘shoot with an arrow/imp’ |
|     | b. | ʔû·pʔæ  | ‘do, make/psv.pf’         |
|     | c. | φíté    | ‘string/potn’             |
|     | d. | gʻídé   | ‘bury/potn’               |
|     | e. | zê·tʰî  | ‘break (tr)/imp’          |
|     | f. | tó·sè   | ‘hit/pf’                  |
|     | g. | fií ʔlè | ‘open/pf’                 |
|     | h. | še·     | ‘tear/potn’               |
|     | i. | pæ·     | ‘make/pf’                 |
|     | j. | pæʔyè   | ‘make/psv pf’             |

<sup>2</sup>Many of these consonants alternate with others. For example, /b/ can surface as [b], [m], or [pʔ]. This fact may give an impression that there are more root-final consonants.

<sup>3</sup>The tone and vowel length of the root differ among inflected forms. I do not specify the tones in the underlying segmental representation of verb roots since the tonal pattern is associated to each inflected stem form. (See Section 4.8.1.2 for the discussion of tones in inflectional forms.)

Most roots can occur alone, followed only by an inflectional suffix, but there are some bound forms which appear only in compound verbs. In (5) the first root in each example never occurs as an independent word.

|     |    |                        |                         |  |
|-----|----|------------------------|-------------------------|--|
| (5) | a. | ʔé·yamì                | ‘walk away/impf’        | [ʔé·ya-] ‘walk’, [mí] ‘go’                 |
|     | b. | sélaʔæ                 | ‘come running/pf’       | [séla-] ‘run’, [ʔæ] ‘come’                 |
|     | c. | šíʔlò·                 | ‘cry/pf’                | [šíl-] ‘cry’, [ʔò·] ‘do’                   |
|     | d. | má·šamæ                | ‘loan/pf’               | [má·ša-] ‘loan’, [mæ] ‘give’               |
|     | e. | k <sup>hy</sup> ímátʔè | ‘buy/pf’                | [k <sup>hy</sup> ímá-] ‘trade’, [ʔè] ‘?’   |
|     | f. | dá·šíʔò·               | ‘listen/pf’             | [dá·ší-] ‘listen’, [ʔò·] ‘do’              |
|     | g. | hí·pæ                  | ‘make someone laugh/pf’ | [hí-l-] ‘laugh’, [pæ·] ‘make’              |
|     | h. | k <sup>hy</sup> ò·mì   | ‘be angry/stat’         | [k <sup>hy</sup> ò·-] ‘angry’, [mí] ‘feel’ |
|     | i. | wá·yá                  | ‘drag/pf’               | [wá·-] ‘pull’, [há] ‘carry’                |

#### 4.1.3. Number-differentiated stems

Some verbs have a pair of different stems whose occurrence is correlated with the number of the S of intransitive verbs or the P of transitive verbs. There are two types: in the first type, there is one form for the singular and dual, and a different form for the plural. All the examples of this type are verbs of position, shown in (6) - (10). The occurrence of different stems is independent of the inflectional categories associated with the cited forms.

|     |    |                    |                     |                      |
|-----|----|--------------------|---------------------|----------------------|
| (6) |    | <u>sg/du</u>       | <u>pl</u>           |                      |
|     | a. | k <sup>ʔy</sup> â· | g <sup>ʔo</sup> ·sè | ‘lay down/pf’        |
|     | b. | k <sup>ʔy</sup> á  | g <sup>ʔo</sup> ·   | ‘be lying down/stat’ |
|     | c. | ʔé                 | g <sup>ʔo</sup> ·   | ‘be sitting/stat’    |

- (6) d. ší tʃí 'fall, drop/pf'<sup>4</sup>  
 e. zɛ̃·ʔnì sô·ʔlè 'drop (tr)/pf'
- (7) a. mɛ̃·sá tak<sup>ʔ</sup>â<sup>ʔ</sup>a 'I put down a cat.'  
 mɛ̃·sá ta-k<sup>ʔ</sup>â· (cat tr[1sg:3bas]-put.down/pf)  
 b. wî mɛ̃·sæš tɛ̃č<sup>ʔ</sup>â<sup>ʔ</sup>a 'I put down two cats.'  
 wî mɛ̃·sá-š tɛ̃l-k<sup>ʔ</sup>â· (two cat-inv tr[1sg:3du]-put.down/pf)  
 c. tá mɛ̃·sæš teg<sup>ʔ</sup>ó·sè 'I put down three cats.'  
 tá mɛ̃·sá-š te-g<sup>ʔ</sup>ó·sê (three cat-inv tr[1sg:3inv]-put.down/pf)
- (8) a. dô· k<sup>ʔ</sup>á 'He is lying down.'  
 dô· Ø-k<sup>ʔ</sup>á (that/he intr[3bas]-be.lying.down/stat)  
 b. dô·š jč<sup>ʔ</sup>á 'They (du) are lying down.'  
 dô·š jɛ̃l-k<sup>ʔ</sup>á (that/he-inv intr[3du]-be.lying.down/stat)  
 c. dô·š eg<sup>ʔ</sup>ó· 'They (pl) are lying down.'  
 dô·š e-g<sup>ʔ</sup>ó· (that/he-inv intr[3inv]-be.lying.down/stat)
- (9) a. dô· ʔé 'He is sitting.'  
 dô· Ø-ʔé (that/he intr[3bas]-be.sitting/stat)  
 b. dô·š j<sup>ʔ</sup>lé 'They (du) are sitting.'  
 dô·š jɛ̃l-ʔé (that/he-inv intr[3du]-be.sitting/stat)  
 c. dô·š eg<sup>ʔ</sup>ó· 'They (pl) are sitting.'  
 dô·š e-g<sup>ʔ</sup>ó· (that/he-inv intr[3inv]-be.sitting/stat)
- (10) a. pɛ̃·ʔlɛ̃š eší 'An apple fell off.'  
 pɛ̃·lɛ̃-š e-ší (apple-inv intr[3inv]-fall/pf)

<sup>4</sup>The alternation between /š/ and /tʃ/ in the verb stems may be a remnant of some phonological process which once existed in the language. Note that in some verb roots, the root-final /š/ occurs in the imperfective form, while /tʃ/ appears in the perfective form. (See Sections 2.5.4 and 4.8.2.3.)

- (10) b. pɪ·ʔlɪʂ ɨjɪ 'Apples (du) fell off.'  
 pɪ·lɪ-ʂ ɨl-ʂɪ (apple-inv intr[3du]-fall/pf)
- c. pɪ·ʔlɪ tʔɪ 'Apples (pl) fell off.'  
 pɪ·lɪ ʈ-tʔɪ (apple intr[3bas]-fall/pf)

In the second type, there is one form for the singular, and another for the dual and plural. The only examples of this type in my data are stative verbs referring to the size of objects. In the forms shown in (11), only [ʔɛ] and [bɪ·] are verbs. [ʔɪlæbe] and [kʰóle] are compound nouns, made up of the quantifiers [ʔɪlæ] and [kʰó], respectively. Another quantifier which denotes a large size, [yæ·], can be used instead of /ʔɪlæ/, thus we have two more forms for 'being big': [yæbe] (sg), [yæ· bɪ·] (du/pl). (See Section 4.5.6 for a further discussion of intransitive stative verbs.)

- | (11) | <u>sg(/du)</u> | <u>du/pl</u> |                 |
|------|----------------|--------------|-----------------|
| a.   | ʔɪlæbe ʔɛ      | ʔɪlæ bɪ·     | 'be big/stat'   |
| b.   | kʰóle ʔɛ       | kʰó· bɪ·     | 'be small/stat' |
- 
- |         |                     |                                       |
|---------|---------------------|---------------------------------------|
| (12) a. | hɪ· ʔɪlæbe ʔɛ       | 'The Jemez person is big.'            |
|         | hɪ·m ʔɪlæbe ʈ-ʔɛ    | (Jemez big intr[3bas]-cop/stat)       |
| b.      | hɪ·mɪʂ ʔɪlæ ɨbɪ·    | 'The Jemez people (du) are big.'      |
|         | hɪ·m-éʂ ʔɪlæ ɨl-bɪ· | (Jemez-inv much intr[3du]-size/stat)  |
| c.      | hɪ·mɪʂ ʔɪlæ ebɪ·    | 'The Jemez people (pl) are big.'      |
|         | hɪ·m-éʂ ʔɪlæ e-bɪ·  | (Jemez-inv much intr[3inv]-size/stat) |
- 
- |         |                           |  |
|---------|---------------------------|--|
| (13) a. | næ· bɛlú kʰóle ʔɛ         | 'That bread is small.'                         |
|         | næ· bɛlú kʰóle ʈ-ʔɛ       | (that bread small intr[3bas]-cop/stat)         |
| b.      | nɪ·tʔæ bɛlæ kʰó· ɨbɪ·     | 'Those (loafs of) bread (du) are small.'       |
|         | nɪ·tʔæ bɛlú-ʂ kʰó· ɨl-bɪ· | (that-inv bread-inv small intr[3du]-size/stat) |

- (13) c.      nî· bélé kʰó· bí·                      ‘Those (loafs of) bread (pl) are small.  
                  nî· bélé kʰó· Ø-bí·                      (that/pl bread small intr[3bas]-size/stat)

As (14) and (15) show, the singular [ʔê] can be used when S is dual, but the plural [bí·] is much more common for the dual S.

- (14)      hí·míš ʔílæbe ʔlê                      ‘The Jemez people (du) are big.’  
                  hí·m-éš ʔílæbe ʔl-ʔê                      (Jemez-inv big intr[3du]-cop/stat)
- (15)      ní·tʔæ bélé kʰóleš ʔlê                      ‘Those (loafs of) bread (du) are small.’  
                  ní·tʔæ bélé-š kʰóle-š ʔl-ʔê                      (that-inv bread-inv small-inv intr[3du]-cop/stat)

The occurrence of number-differentiated verb stems is widespread in North American Indian languages. It is interesting that many languages have different stems for verbs of position such as ‘lie’ and ‘sit’, and for stative verbs such as ‘big’ and ‘small’ (Booker 1982). For a comparative Kiowa-Tanoan perspective, it is particularly striking that in both Jemez and Kiowa, the same forms are used for the verbs ‘be sitting/stat’ and ‘by lying down/stat’ when the subject is plural.<sup>5</sup>

## 4.2. Derivation

### 4.2.1. Detransitive verbs

Jemez has a detransitivizing suffix /-tæ/ (perfective), which is used to derive intransitive verbs mostly from transitive roots. (There are two cases where the detransitives are derived from the intransitive roots, as we will see below.) The morpheme has two phonologically conditioned allomorphs: [-ítæ] occurs with roots which end in /d/ or /l/, and [-tæ] with other roots. Both the transitive verbs and their

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<sup>5</sup>The Kiowa verb stem for ‘be sitting (pl)’ and ‘be lying (pl)’ is /kʔúl/ (Watkins 1984:154).

detransitive counterparts are given in (16). The transitive verbs have two arguments, agent and patient, which are encoded as A and P. In the detransitive verbs, the patient is encoded as S.

| (16) | <u>Roots</u>        | <u>Transitive</u>   | <u>Detransitive</u>  |                     |
|------|---------------------|---------------------|----------------------|---------------------|
| a.   | /dol/               | dó'ɫè               | dólítæ               | 'fall down'         |
| b.   | /g'il/              | g'ílé               | g'ílítæ              | 'close'             |
| c.   | /fiil/              | fi'ɫè               | híítæ                | 'open' <sup>6</sup> |
| d.   | /k <sup>h</sup> id/ | k <sup>h</sup> ít'è | k <sup>h</sup> ídítæ | 'roll'              |
| e.   | /še-l/              | šé'ɫè               | šé·lítæ              | 'turn'              |
| f.   | /ta-l/              | tá'ɫè               | tá·lítæ              | 'break'             |
| g.   | /ʔip/               | ʔípe                | ʔítæ                 | 'sink, drown'       |

All these detransitive verbs take intransitive (or intransitive benefactive) prefixes.

|         |                   |                                |
|---------|-------------------|--------------------------------|
| (17) a. | ní idólítæ        | 'I fell down.'                 |
|         | ní· i-dólítæ      | (I intr[1sg]-fall.down/pf)     |
| b.      | dá·báš eg'ílítæ   | 'The door closed.'             |
|         | dá·bá-š e-g'ílítæ | (door-inv intr[3inv]-close/pf) |

The suffix is also used in two cases where inchoative verbs are derived from stative roots, as in (18).

| (18) | <u>Roots</u>     | <u>Detransitive</u> |             |
|------|------------------|---------------------|-------------|
| a.   | /g'i/ 'be full'  | g'ítæ               | 'get stuck' |
| b.   | /ša/ 'be broken' | šátæ                | 'break'     |

<sup>6</sup> See Section 2.5.5 for root-initial consonantal ablaut.

- (19) há· ʃsátə                    ‘My arm broke.’  
       há· ɿ-∅-sátə                (arm iben[1sg]-bas-break/pf)

Interestingly, the detransitive and inchoative verbs are inflected just like the passive forms of transitive verbs. (See Section 4.8.3 for the discussion of the passive/detransitive paradigm.) Inflected forms of these verbs take the suffixes /-tæ/ ‘perfective’, /-tasa/ ‘imperfective’, and /-tæ/ ‘potential’.

- (20) a.     k<sup>hy</sup>ídítæ                ‘It rolled.’  
           ∅-k<sup>hy</sup>ídítæ                (intr[3bas]-roll/pf)
- b.     šóna<sup>ʔe</sup> k<sup>hy</sup>ídítasa        ‘It always rolls.’  
           šóna<sup>ʔe</sup> ∅-k<sup>hy</sup>ídítâsa    (always intr[3bas]-roll/impf)
- c.     háɿ da k<sup>hy</sup>ídítæ<sup>ʔæ</sup>        ‘Let it roll!’  
           háɿ da ∅-k<sup>hy</sup>ídítæ·        (Mod hor intr[3bas]-roll/potn)

### 4.3. Compounds

Compound verbs may consist of more than one verb root or a noun plus a verb root. Many of the examples given in the following sections belong to the first type, which are some of the more common compound stems in the language.

#### 4.3.1. Causative verbs

Jemez has a small number of lexicalized causative verbs. The language has no productive syntactic process of causativization. The causative verbs end in [pæ] and were historically derived by compounding [pæ·] ‘make’ to other morphemes, such as active verb roots (21), descriptive nouns (22), and nouns (23). (All the examples below are perfective forms.)

- (21) gʷípæ 'fill' (gʷí 'be full')  
kʷípæ 'sharpen' (kʷí 'be sharp')  
šípæ 'make someone cry' (šíl- 'cry')  
hí·pæ 'make someone laugh' (hí·l- 'laugh')  
kʰŷ·pæ 'anger someone' (kʰŷ·- 'angry')
- (22) tʰælepæ 'dry something' (tʰæle 'dry one')  
pʰŷ·pæ 'make something wet' (pʰŷ·yè· 'wet one')  
bípæ 'gather, rake' (bí 'whole thing')
- (23) pʰæpæ 'melt' (pʰæ 'water')  
tô·pæ 'write' (tô· 'mark')

The causative verbs are all transitive. Contrast the transitive verbs (24a) - (27a) with the non-causative (i.e. intransitive) counterparts in (24b) - (27b). The causative verbs are simple transitives with two arguments, which are encoded as A and P in the transitive prefixes. The patient (P) in the transitive sentences corresponds to the S of the intransitive verbs.

- (24) a. tâ·sæ tegʷípæ 'I filled the cup.'  
tâ·sa·š te·gʷípæ (cup-inv tr[1sg:3inv]-fill/pf)
- b. tâ·sæ kʰya egʷí 'The cup is full/filled up.'  
tâ·sa·š kʰya e·gʷí (cup-inv TA intr[3inv]-full/stat)
- (25) a. ní· tašípæ 'I made her cry.'  
ní· ta·šípæ (I tr[1sg:3bas]-make.cry/pf)
- b. šjílqʷ 'She cried.'  
il·šílqʷ (tr[3sg/refl]-cry/pf)
- (26) a. ní· kʰya tatʰælepæ 'I dried it.'  
ní· kʰya ta·tʰælepæ (I TA tr[1sg:3bas]-dry/pf)



- (26) b. tʰæle ʔê 'It is dry.'  
tʰæle Ø-ʔê (dry intr[3bas]-cop/stat)
- (27) a. wâ·sa tapʰæpæ 'I melted ice.'  
wâ·sa ta-pʰæpæ (ice tr[1sg:3bas]-melt/pf)
- b. pʰæ ʔê 'It is water.'  
pʰæ Ø-ʔê (water intr[3bas]-cop/stat)

Not all transitive verbs with a causative meaning, such as 'open' and 'break', which we saw in Section 4.2.1, contain the causative [pæ]. Nor does the verb [pæ·] 'make' occur as a main verb in causative sentences. Jemez speakers tend to use verbs such as [ʔɸ] 'tell' or [zæ·ʔyò] 'tell someone to do' as the main verbs in expressing such causative constructions as 'X made Y do it'.

- (28) a. itá·séh̄i· taʔɸ 'I told him to sit.'  
il-t'á·sé-h̄ɸ ta-ʔɸ (tr[3sg/refl]-seat/potn-fut tr[1sg:3bas]-tell/pf)
- b. \*itá·séh̄i tapæ·  
il-t'á·sé-h̄ɸ ta-pæ· (tr[3sg/refl]-seat/potn-fut tr[1sg:3bas]-make/pf)

#### 4.3.2. Motion verbs

Some bound verb roots denoting manners of movement (29a) or other types of action (29b) can be compounded to /mæ/ 'go' and /ʔæ/ 'come' to derive intransitive motion verbs.

| (29) | <u>Root</u>    | <u>Moving away from (pf)</u> | <u>Moving toward (pf)</u> |
|------|----------------|------------------------------|---------------------------|
| a.   | /e·ya-/ 'walk' | ʔé·yamæ                      | ʔé·yaʔæ                   |
|      | /sela-/ 'run'  | sélamæ                       | sélaʔæ                    |
|      | /šo·la-/ 'fly' | šó·lamæ                      | šó·laʔæ                   |

|      | <u>Root</u>                 | <u>Moving away from (pf)</u>       | <u>Moving toward (pf)</u> |
|------|-----------------------------|------------------------------------|---------------------------|
| (29) |                             |                                    |                           |
|      | b. /so/ 'hunt'              | sô·mæ                              |                           |
|      | /pela/ 'get'                | pélamæ                             | pélaʔæ                    |
|      | /k <sup>hy</sup> ímq/ 'buy' | k <sup>hy</sup> ímqmæ              | k <sup>hy</sup> ímqʔæ     |
|      | /hi:/ 'eat'                 | hí·mæ                              | hí·ʔæ                     |
| (30) | a. dô· ʔé·yamæ              | 'He walked (there).'               |                           |
|      | dô· Ø-ʔé·ya-mæ              | (that/he intr[3bas]-walk-go/pf)    |                           |
|      | b. dô· ʔé·yaʔæ              | 'He walked (here).'                |                           |
|      | dô· Ø-ʔé·ya-ʔæ              | (that/he intr[3bas]-walk-come/pf)  |                           |
| (31) | a. séʔyì šó·lamì            | 'A bird is flying (away).'         |                           |
|      | séyî Ø-šó·la-mî             | (bird intr[3bas]-fly-go/impf)      |                           |
|      | b. séʔyì šó·laʔì            | 'A bird is flying (toward us).'    |                           |
|      | séyî Ø-šó·la-ʔì             | (bird intr[3bas]-fly-come/impf)    |                           |
| (32) | dô·š ìt <sup>h</sup> ô·mæ   | 'They (du) went hunting.'          |                           |
|      | dô·-š ìl-sô·-mæ             | (that/he-inv intr[3du]-hunt-go/pf) |                           |

Some of these bound verb roots can also occur with the existential [ʔê] 'be', too. In this case, the compound verb implies completion of the activity.

|      |                           |   |  |
|------|---------------------------|---|--|
| (33) | a. ek <sup>hy</sup> ímqmæ | 'They went shopping.'                             |  |
|      |                           | (They may or may not have done the shopping.)     |  |
|      | e-k <sup>hy</sup> ímq-mæ  | (intr[3inv]-shopping-go/pf)                       |  |
|      | b. ek <sup>hy</sup> ímqʔe | 'They went shopping.' 'They were (out) shopping.' |  |
|      |                           | (They have already finished shopping.)            |  |
|      | e-k <sup>hy</sup> ímq-ʔê  | (intr[3inv]-shopping-be/stat)                     |  |

- (34) a. ihí·mæ 'I went to eat.' (But I haven't eaten yet.)  
           i-hí·-mæ (intr[1sg]-eating-go/pf)
- b. ihí·ʔè 'I went to eat.' (I ate and came back.)  
           ihí·-ʔè (intr[1sg]-eating-be/stat)

The perfective form of the motion verb 'go' and the progressive form of 'come', can also be used as inflectional auxiliaries to indicate progressive aspect. (See Section 4.8.7.)

#### 4.3.3. Stative verbs

There are a few stative verbs which are the heads of compound stative verbs: [mí·] 'feel', [mí·] 'be', [pé] 'think, feel'. Particularly [mí·] and [mí·] are found in many compounds, only a few of which are listed in (35), with examples in (36)-(39).

- (35) a. fiô·mí 'be sick'                      tʔí·mí 'be lonely, sad'  
           vî·mí 'be hungry'                      k<sup>hy</sup>ô·mí 'be angry'  
           k<sup>hy</sup>æwamí 'like'                      wâ·mí 'want'
- b. k<sup>hy</sup>ô·mí 'be broken, bad'                      sâ·mí 'be a lot of work'  
           tʔælemí 'be dry'                      pʔí·ye·mí 'be wet'
- c. k<sup>hy</sup>ô·pe 'be sad'                      nó·pé 'be inquisitive'

- (36) ní· k<sup>hy</sup>a ivî·mí 'I am hungry.'  
           ní· k<sup>hy</sup>a i-vî·mí (I TA intr[1sg]-hungry/stat)

- (37) howa zæ· ik<sup>hy</sup>æwamí 'I like the song.'  
           howa zæ· i-k<sup>hy</sup>æwamí (very song intr[1sg]-like/stat)

- (38) nâ· hâ· k<sup>hy</sup>ô·mí 'That car is broken.'  
           nâ· hâ· Ø-k<sup>hy</sup>ô·mí (that car intr[3bas]-be.broken/stat)

- (39) ek<sup>hy</sup>ô·pe 'They (pl) are sad.'  
 e-k<sup>hy</sup>ô·pe (intr[3inv]-sad/stat)

Some compound stative verbs have synonymous expressions which consist of a descriptive noun followed by a copula.

- (40) a. t<sup>ʔ</sup>âlemî 'It is dry.'  
 Ø-t<sup>ʔ</sup>âlemî (intr[3bas]-dry/stat)  
 b. t<sup>ʔ</sup>âle k<sup>hy</sup>α ʔê 'It is (a) dry (one).'  
 t<sup>ʔ</sup>âle k<sup>hy</sup>α Ø-ʔê (dry TA intr[3bas]-cop/stat)
- (41) a. p<sup>ʔ</sup>fyê·mî 'It is wet.'  
 Ø-p<sup>ʔ</sup>fyê·mî (intr[3bas]-wet/stat)  
 b. p<sup>ʔ</sup>fyê· k<sup>hy</sup>α ʔê 'It is (a) wet (one).'  
 p<sup>ʔ</sup>fyê· k<sup>hy</sup>α Ø-ʔê (wet TA intr[3bas]-cop/stat)

#### 4.3.4. Other types of compounds

Another common head or main verb in compound verbs is [ʔô] 'do, make', which derives transitive verbs. Examples in (42a) involve bound verb roots, while those in (42b) contain free noun roots.

- (42) a. dá·šíʔô· 'listen to' k<sup>hy</sup>ô·ʔô· 'spoil, break'  
 φínqʔô· 'guard, watch' híʔô· 'smile, laugh'  
 sâ·ʔô· 'work' šíʔô· 'cry'  
 b. hq·gʔiʔô· 'cook' (= food + make)  
 zâ·ʔô· 'sing' (= song + do)

- (43) nô·pæta tit<sup>ʔ</sup>â·ʔôʔô· 'I worked in the field.'  
 nô·pæta til·sâ·ʔô· (field tr[1sg/refl]-work-do/pf)

- (44) dō· ijí'lo'q 'He cried.'  
 dō· il-šil-'q̄· (that/he tr[3sg/refl]-cry-do/pf)
- (45) nǐ· zǎ· tazǎ-'q'q 'I sang a song.'  
 nǐ· zǎ· ta-zǎ-'q̄· (I song tr[1sg:3bas]-sing-do/pf)

[ʔq̄] is productively used with non-Jemez words, typically English words, in forming compounds.

- (46) tívotē'q'q 'I voted.'  
 tǐl-votē-'q̄· (tr[1sg/refl]-vote-do/pf)

The verb [ʔó] 'become, get' is another productive verb that derives many intransitive verbs denoting a change of state.<sup>7</sup>

- (47) dǐ'ʔó 'get sleepy'                      k<sup>hy</sup>ǐ'ʔó 'get lazy'  
 nǒ'ʔó 'finish'                                  p<sup>ʔ</sup>ǎ'ʔó 'melt' (= 'water' + 'become')  
 t'ǐ'ʔó 'get lonely'                              sǎ'ʔó 'wake up'  
 vǐ'ʔó 'get hungry'                              fǐ'ʔóyo 'get sick'
- (48) k<sup>hy</sup>a idǐ'ʔó 'I got sleepy.'  
 k<sup>hy</sup>a i-dǐ'ʔó (TA intr[1sg]-get.sleepy/pf)
- (49) wā·sa k<sup>hy</sup>a p<sup>ʔ</sup>ǎ'ʔó 'The ice melted.'  
 wā·sa k<sup>hy</sup>a ∅-p<sup>ʔ</sup>ǎ'ʔó (ice TA intr[3bas]-melt/pf)
- (50) qǐ'élé'ǎ qfǐ'yo-hǐ'ǐ 'If you eat it, you will get sick.'  
 q-t'élé-'ǎ q-fǐ'yo-hǐ' (tr[2sg:3bas]-eat/pf-cond intr[2sg]-get.sick/potn-fut)

<sup>7</sup>In (47), [nǒ'ʔó] 'finish' and [sǎ'ʔó] 'wake up' occur with intransitive benefactive prefixes. The others take intransitive prefixes.

Finally, the verb [mâɛ] ‘give’ occurs with a couple of bound verb roots which denote the transfer of an object but which do not specify the direction of the transfer. With [mâɛ], A is the source of the transfer and P is the recipient, not the transferred.<sup>8</sup> Contrary to the usual patterns in languages where ‘give’ is ditransitive, /mâɛ/ is a simple transitive.

| (51) | <u>Root</u>                     | <u>Compounds</u>               |                              |
|------|---------------------------------|--------------------------------|------------------------------|
|      | /mq·ša/ ‘loaning’               | má·šamæ                        | ‘loan, lend’                 |
|      |                                 | má·šqʔq̄                       | ‘borrow’                     |
|      | /k <sup>hy</sup> ĩmq/ ‘trading’ | k <sup>hy</sup> ĩmqmæ          | ‘sell’                       |
|      |                                 | k <sup>hy</sup> ĩmqʔq̄         | ‘buy’                        |
|      |                                 | k <sup>hy</sup> ĩmqtʔe         | ‘buy (intr)’                 |
|      |                                 |                                |                              |
| (52) | a.                              | hâ· tamá·šamæ                  | ‘I loaned a car to him.’     |
|      |                                 | hâ· ta-má·šamæ                 | (car tr[1sg:3bas]-loan/pf)   |
|      | b.                              | hâ· tamá·šaʔq̄                 | ‘I borrowed a car from him.’ |
|      |                                 | hâ· ta-má·šaʔq̄                | (car tr[1sg:3bas]-borrow/pf) |
|      | c.                              | hâ· timá·šaʔq̄                 | ‘I borrowed a car.’          |
|      |                                 | hâ· til-má·šaʔq̄               | (car tr[1sg/unsp]-borrow/pf) |
| (53) | a.                              | béla tak <sup>hy</sup> ĩmqmæ   | ‘I sold bread to him.’       |
|      |                                 | béla ta-k <sup>hy</sup> ĩmqmæ  | (bread tr[1sg:3bas]-sell/pf) |
|      | b.                              | béla tak <sup>hy</sup> ĩmqʔq̄  | ‘I bought bread from him.’   |
|      |                                 | béla ta-k <sup>hy</sup> ĩmqʔq̄ | (bread tr[1sg:3bas]-buy/pf)  |
|      | c.                              | béla ik <sup>hy</sup> ĩmqtʔe   | ‘I bought bread.’            |
|      |                                 | béla i-k <sup>hy</sup> ĩmqtʔe  | (bread intr[1sg]-buy/pf)     |

<sup>8</sup>When [ʔq̄] ‘do, make’ is compounded to the verb root, the P refers to the source: e.g. [má·šqʔq̄] ‘borrow’, [k<sup>hy</sup>ĩmqʔq̄] ‘buy’.

#### 4.4. Incorporation

##### 4.4.1. Incorporated nouns

Nouns, verbs, and some adverbs can be incorporated in the verb, and of these, noun incorporation is the most common. Both the P (e.g. patient, theme) of a transitive verb and the S (sole argument) of an intransitive verb can be incorporated.<sup>9</sup> Examples (54b)-(56b) have the P incorporated.<sup>10</sup> (I have not explored the contexts of incorporation for nouns, verbs or adverbs.)

- (54) a. nɨ́· nã· déʔlɨ́ tɔhá 'I baked a chicken for him.'  
nɨ́· nã· délf tɔ-∅-há (I that/he chicken tben[1sg:3sg]-bas-bake/pf)
- b. nɨ́· nã· tɔdéliha 'I baked a chicken for him.'  
nɨ́· nã· tɔ-∅-délf-há (I that/he tben[1sg:3sg]-bas-chicken-bake/pf)
- (55) a. nɨ́· pá· tatêle 'I shot a deer (with a gun).'  
nɨ́· pá· ta-têle (I deer tr[1sg:3bas]-shoot/pf)
- b. nɨ́· tapá·tele 'I shot a deer (with a gun).'  
nɨ́· ta-pá·-têle (I tr[1sg:3bas]-deer-shoot/pf)
- (56) a. nɨ́· wɨ́ déʔlɨ́ tɨlf 'I killed two chickens.'  
nɨ́· wɨ́-š délf tɨl-fiʔ (I two-inv chicken tr[1sg:3du]-kill/pf)
- b. nɨ́· wɨ́ tɨdélifiʔ 'I killed two chickens.'  
nɨ́· wɨ́-š tɨl-délf-fiʔ (I two-inv tr[1sg:3du]-chicken-kill/pf)

S incorporation is illustrated in examples (57b) through (59b).

- (57) a. zɨ́ k<sup>hy</sup>a sýyɨ́ 'Snow is falling.'  
zɨ́ k<sup>hy</sup>a ∅-sýyɨ́ (snow TA intr[3bas]-fall/impf)

<sup>9</sup>Note that only common nouns can be incorporated; proper nouns and pronouns cannot. Also, an S which is animate does not seem to be incorporated.

<sup>10</sup>See Section 4.6 for the discussion of the terms S, P, A and B.

- (57) b. k<sup>h</sup>α zísɿyɿ ‘Snow is falling.’  
k<sup>h</sup>α Ø-zí-sɿyɿ (TA intr[3bas]-snow-fall/impf)
- (58) a. wôhq(š) howa epɿ ‘Stars are (very) bright.’  
wôhq(-š) howa e-pɿ (star(-inv) very intr[3inv]-bright/stat)
- b. howa ewôhqɿ ‘Stars are (very) bright.’  
howa e-wôhq-pɿ (very intr[3inv]-star-bright/stat)
- (59) a. ʔɿwá k<sup>h</sup>qtʔíkʔaʔeš howa esé ‘Your head is (very) hard.’  
ʔɿwá k<sup>h</sup>q-l-tʔí-kʔá-ʔé-š howa e-sé (you iben[2sg]-inv-head-  
be.lying.down/stat-nom-inv very intr[3inv]-hard/stat)
- b. ʔɿwá howa k<sup>h</sup>qtʔise ‘Your head is (very) hard.’  
ʔɿwá howa k<sup>h</sup>q-l-tʔí-sé (you very iben[2sg]-inv-head-hard/stat)

Noun incorporation does not change the valency of the predicate: the pronominal prefix is the same in both incorporated and unincorporated cases. The syntactic roles of A, B and P are encoded in (54), A and P in (55) and (56), S in (57) through (59).

Locative nouns which indicate the goal of a movement or stationary location can also be incorporated.

- (60) ní imâ·tomæ ‘I went to school.’  
ní i-mâ-to-mæ (I intr[1sg]-school-go/pf)
- (61) háɿ qhío·lamɿ ‘Are you going to the plaza?’  
háɿ q-hío-lá-mɿ (Q intr[2sg]-plaza-go/impf)
- (62) itʔá·seʔe ‘I am sitting on a chair.’  
i-tʔá-se-ʔé (intr[1sg]-chair-be.sitting/stat)







- (71) a. ní·š séla howa jk<sup>hy</sup>æwami 'We (du) like running.'  
 ní·š séla howa i-k<sup>hy</sup>æwami (I-inv run very intr[1du]-like/stat)
- b. ní·š howa jsélak<sup>hy</sup>æwami 'We (du) like to run.'  
 ní·š howa i-séla-k<sup>hy</sup>æwami (I-inv very intr[1du]-run-like/stat)
- (72) a. déliŋsele howa i<sup>ʔ</sup>ŋ·mi 'I like eating chickens.'  
 délf·séle howa i<sup>ʔ</sup>ŋ·mi (chicken-eat/inc very intr[1sg]-like/stat)
- b. dé<sup>ʔ</sup>li howa iséle<sup>ʔ</sup>ŋ·mi 'I like to eat chickens.'  
 délf howa i-séle-<sup>ʔ</sup>ŋ·mi (chicken very intr[1sg]-eat/inc-like/stat)

Another stative verb [sé] 'be hard' can also incorporate verbs.

- (73) dá·bæ howa ehŋsele 'The door is (very) hard to open.'  
 dá·bá·š howa e-hŋle-sé (door-inv very intr[3inv]-open/inc-hard/stat)

#### 4.4.3. Incorporated adverbs

Adverb incorporation is much less common than noun and verb incorporation. For instance, manner and time adverbs are almost never incorporated. One exception /bép<sup>ʔ</sup>æ/ 'well' is given below.

- (74) a. ibép<sup>ʔ</sup>æwí· 'I succeeded in running away.' (Lit. 'I ran away well.')
- i-bép<sup>ʔ</sup>æ-wí· (intr[1sg]-well-run.away/pf)
- b. bép<sup>ʔ</sup>æ háŋ qwí· 'Did you succeed in running away?'
- bép<sup>ʔ</sup>æ háŋ q-wí· (well Q intr[2sg]-run.away/pf)

On the other hand, the intensifier /sé/ is obligatorily incorporated.

- (75) ʔlæ iséwóhomi 'I am just happy.'  
 ʔlæ i-sé-wóhomi (much intr[1sg]-just-happy/stat)

- (76) fía· tít<sup>h</sup>ék<sup>w</sup>é·<sup>?</sup>yò      'I ate just now.'  
 fía·l tít-sé-k<sup>w</sup>é·yô      (just now-tr[1sg/refl]-just-eat/pf)

Note that the incorporation of an adverb does not affect the tonal pattern of the verb stem. For example, we would expect [ibép<sup>?</sup>æwi] for (74) if /bép<sup>?</sup>æ/ were the initial stem, but both the tone and length of the vowel in the verb [wí·] remain intact. Also, in (76), [tít<sup>h</sup>ék<sup>w</sup>e·<sup>?</sup>yò] is expected, but again the initial syllable of the verb /k<sup>w</sup>é·yô/ retains the tone it would have without any incorporated morpheme. Apparently, the tone rules which apply to noun and verb incorporation do not apply to adverb incorporation.

#### 4.5. Verb classes

##### 4.5.1. Transitivity

One of the two criteria used in classifying Jemez verbs is transitivity. (The other is stativity, discussed in Section 4.5.2.) Verbs such as [mǣ] 'see' which have active and passive forms, are considered transitive verbs. They take the transitive (or transitive benefactive) prefixes in active sentences, and the intransitive (or intransitive benefactive) prefixes in passive sentences. Verbs which do not have passive forms and occur only with intransitive (or intransitive benefactive) prefixes are classified as intransitive verbs.

##### 4.5.2. Stativity

Transitive and intransitive verbs are each subgrouped into active verbs and stative verbs. The main difference between active and stative verbs is morphological: active verbs have several inflected forms, including separate perfective and imperfective forms, and are inflected according to the active paradigm, except for detransitive verbs



because they have active and passive forms, e.g. [ʔê-tæ] ‘run/psv.pf’), [sâ-ʔpʔæ] ‘work/psv.pf’). (See Section 4.7 for the discussion of verbal agreement and passivization.)

|      |                  |                |                                  |
|------|------------------|----------------|----------------------------------|
| (78) | ʔæčĩʔq̄ ‘sneeze’ | ʔæyɸʔq̄ ‘yawn’ | šĩʔlq̄ ‘cry’                     |
|      | g’óʔq̄ ‘cough’   | ʔæ ‘shout’     | hĩ·hise ‘breathe’                |
|      | hō-tĩʔq̄ ‘snore’ |                | tɸʔq̄ ‘whistle, crow, moo, hoot’ |
|      | séʔq̄ ‘talk’     | ʔê-te ‘run’    | kʰyɸʔq̄ ‘dance’                  |
|      | tôpe ‘stumble’   | vɸ-te ‘jump’   | φætʔè ‘pray’                     |
|      | hĩpæʔq̄ ‘work’   | sâ-ʔq̄ ‘work’  | vê-ʔlq̄ ‘think, concentrate’     |
|      | wæ ‘fight’       |                |                                  |

|      |                      |                                  |
|------|----------------------|----------------------------------|
| (79) | kʰyɸ yô· ijĩʔlq̄ʔq̄  | ‘The child cried loud.’          |
|      | kʰyɸ yô· il-šĩʔq̄ʔq̄ | (child hard tr[3sg/refl]-cry/pf) |

|      |          |                       |
|------|----------|-----------------------|
| (80) | ĩʔlê-te  | ‘He ran.’             |
|      | il-ʔê-te | (tr[3sg/refl]-run/pf) |

|      |                     |                                     |
|------|---------------------|-------------------------------------|
| (81) | hészó·vi tičĩʔa     | ‘I dance every day.’                |
|      | hészó·vi til-kʰyɸʔa | (every.day tr[1sg/refl]-dance/impf) |

|      |                   |                          |
|------|-------------------|--------------------------|
| (82) | nĩ· titʰæ-ʔq̄ʔq̄  | ‘I worked.’              |
|      | nĩ· til-sâ-ʔq̄ʔq̄ | (I tr[1sg/refl]-work/pf) |

Although they take only the reflexive set of transitive prefixes, these reflexive verbs can occur with any transitive benefactive prefix if the beneficiary of the action needs to be indicated, i.e. if the valency is three arguments.

|      |    |                         |                                     |
|------|----|-------------------------|-------------------------------------|
| (83) | a. | nĩ· John tɸtʰæ-ʔq̄ʔq̄   | ‘I worked for John.’                |
|      |    | nĩ· John tɸ-l-sâ-ʔq̄ʔq̄ | (I John tben[1sg:3sg]-refl-work/pf) |

- (83) b. John-tæ i<sup>h</sup>æ<sup>?</sup>q<sup>?</sup>p<sup>?</sup>æ ‘John worked for me.’  
 John-tæ i-l-sæ<sup>?</sup>q<sup>?</sup>bæ (John-agt iben[1sg]-refl-work/psv.pf)

Other transitive verbs can also take reflexive prefixes when there is only one participant who is both A and P, as in the (b) examples in (84) through (87).

- (84) a. dō· k<sup>hy</sup>æ<sup>?</sup>n<sup>?</sup>fi fíf ‘He killed a dog.’  
 dō· k<sup>hy</sup>æ<sup>?</sup>n<sup>?</sup>fi Ø-fíf (that/he dog tr[3sg:3bas]-kill/pf)
- b. dō· ʔ<sub>f</sub> iíf ‘He killed himself.’  
 dō· ʔ<sub>f</sub> il-fíf (he self tr[3sg/refl]-kill/pf)
- (85) a. k<sup>hy</sup>í tak<sup>ʔ</sup>á<sup>?</sup>ɑ ‘I laid down the child.’  
 k<sup>hy</sup>í ta-k<sup>ʔ</sup>á<sup>?</sup>ɑ (child tr[1sg:3bas]-lay.down/pf)
- b. k<sup>hy</sup>í ič<sup>ʔ</sup>á<sup>?</sup>ɑ ‘The child lay down. (= He laid himself down.)’  
 k<sup>hy</sup>í il-k<sup>ʔ</sup>á<sup>?</sup>ɑ (child tr[3sg/refl]-lay.down/pf)
- (86) a. ní· tat<sup>ʔ</sup>á<sup>?</sup>sè ‘I seated him.’  
 ní· ta-t<sup>ʔ</sup>á<sup>?</sup>sè (I tr[1sg:3bas]-seat/pf)
- b. ní· titá<sup>?</sup>sè ‘I sat down. (= I seated myself.)’  
 ní· til-t<sup>ʔ</sup>á<sup>?</sup>sè (I tr[1sg/refl]-seat/pf)
- (87) a. k<sup>hy</sup>æ<sup>?</sup>n<sup>?</sup> tak<sup>w</sup>é<sup>?</sup>yò ‘I fed the dog.’  
 k<sup>hy</sup>æ<sup>?</sup>n<sup>?</sup> ta-k<sup>w</sup>é<sup>?</sup>yò (dog tr[1sg:3bas]-feed/pf)
- b. yæ· tik<sup>w</sup>é<sup>?</sup>yò ‘I ate a lot.’  
 yæ· til-k<sup>w</sup>é<sup>?</sup>yò (much tr[1sg/refl]-feed/pf)

#### 4.5.4. Transitive stative verbs

This is the smallest verb class, consisting of only /pæ/ ‘know (someone)’. It is considered a stative verb because it has only one stem form in the active paradigm.

- (88) a. ní· dō· tãpã· 'I know him.  
           ní· dō· tã-pã· (I that/he tr[1sg:3bas]-know/stat)
- b. dō·tã ipã'yè 'I am known by him. (= He knows me.)'  
       dō·-tã i-pãyé (that/he-agt intr[1sg]-know/psv.pf)

#### 4.5.5. Intransitive active verbs

Almost all verbs of this class can take both the intransitive and the intransitive benefactive prefixes. In (89a) and (90a), the intransitive prefix indicates the person and number of S. In (89b) and (90b), the intransitive benefactive prefix encodes B, the possessor, and P.

- (89) a. ní imã 'I went.'  
           ní· i-mã (I intr[1sg]-go/pf)
- b. ní· k<sup>hy</sup>ã'nì imã 'My dog went.'  
       ní· k<sup>hy</sup>ãñf i-∅-mã (I dog iben[1sg]-bas-go/pf)
- (90) a. bélé ší 'Bread (sg) fell off.'  
           bélé ∅-ší (bread intr[3bas]-fall/pf)
- b. ní· bélé iší 'My bread (sg) fell off.'  
       ní· bélé i-∅-ší (I bread iben[1sg]-bas-fall/pf)

Two verbs, [sã·ʔó] 'wake up' and [nóʔó] 'finish', occur only with intransitive benefactive prefixes.

- (91) k<sup>hy</sup>a qt<sup>h</sup>ã·ʔó 'He woke up.'  
       k<sup>hy</sup>a q-l-sã·ʔó (TA iben[3sg]-refl/pl-wake.up/pf)
- (92) k<sup>hy</sup>a inóʔó 'I finished it.'  
       k<sup>hy</sup>a i-∅-nóʔó (TA iben[1sg]-bas-finish/pf)



The great majority of intransitive active verbs are inflected according to the active paradigm. (See Section 4.8 for the discussion of the inflectional paradigms.) However, there is a small class of verbs which are inflected like passive forms. They are characterized by final /-æ/ in the perfective and /-asa/ in the imperfective. Some examples, all perfective forms, are shown in (93).

- (93) hílítæ ‘open’                      dólítæ ‘fall down’                      ?ítæ ‘sink, drown’  
wô·?yè ‘ascend’                      kʷípʷæ ‘stand up’                      há·?læ ‘sweat’  
šátæ ‘break’                      pʷí·?yè ‘get wet’                      wólebæ ‘pass by’  
kʰýmátʷè ‘buy’                      vó·tʷè ‘lose, get lost’  
tʷá·wè ‘smell’                      tʷæ·tʷè ‘hear’

Some of these, such as [hílítæ] ‘open’, [dólítæ] ‘fall down’, and [ʷítæ] ‘sink, drown’, are derived from transitive roots, as we saw in Section 4.2.1. Others, which include [wô·?yè] ‘ascend’, [há·?læ] ‘sweat’, [wólebæ] ‘pass by’, [vó·tʷè] ‘lose, get lost’, have no transitive counterparts.

- (94) a.      dá·báš ehílítæ                      ‘The door opened.’  
                    dá·bá-š e-hílítæ                      (door-inv intr[3inv]-open/pf)  
b.      dá·báš tefíʷlè                      ‘I opened the door.’  
                    dá·bá-š te-fíʷlè                      (door-inv tr[1sg:3inv]-open/pf)
- (95) ihá·lasa                      ‘I am sweating.’  
i-há·lása                      (intr[1sg]-sweat/impf)

Furthermore, some verbs which are inflected as intransitives, such as [k<sup>hy</sup>ímqtʰè] ‘buy, get’, [vó·tʰè] ‘lose’, [tʰâ·wè] ‘smell’, [tʰâ·tʰè] ‘hear’, while semantically two-place, occur only with intransitive or intransitive benefactive prefixes.<sup>14</sup>

- (96) ní· hâ· vak<sup>hè</sup>·k<sup>hè</sup> ik<sup>hy</sup>ímqtʰè ‘I bought a car in Albuquerque.’  
 ní· hâ· vak<sup>hè</sup>·k<sup>hè</sup> i-k<sup>hy</sup>ímqtʰè (I car Albuquerque intr[1sg]-buy/pf)
- (97) dô· qkʰáʰé pék<sup>hy</sup>í ìvó·tʰè ‘I lost his watch.’  
 dô· q-Ø-kʰáʰé pék<sup>hy</sup>í ì-Ø-vó·tʰè  
 (that/he iben[3sg]-bas-be.lying.down (sg)/stat-nom watch  
 iben[1sg]-bas-lose/pf)

#### 4.5.6. Intransitive stative verbs

Most stems which assert attributes or qualities are intransitive stative verbs.

- (98) howa wôʰq ‘He is (very) kind.’  
 howa Ø-wôʰ (very intr[3bas]-kind/stat)
- (99) háè k<sup>hy</sup>α qk<sup>hy</sup>ænì ‘Are you (sg) tired?’  
 háè k<sup>hy</sup>α q-k<sup>hy</sup>ænì (Q TA intr[2sg]-be.tired/stat)
- (100) ní ql iwóhomì ‘I am also happy.’  
 ní ql i-wóhomì (I also intr[1sg]-happy/stat)

<sup>14</sup>There are also transitive verbs for ‘buy’ and ‘smell’: [k<sup>hy</sup>ímqʰò] ‘buy’, [tʰâ·nètʰi] ‘smell, sniff’. The transitive verb for ‘buy’ is used when the source of the transferred object or the beneficiary of the action needs to be specified: [bélá q-k<sup>hy</sup>ímqʰò] ‘I bought the bread from you’ (bread tr[1:2sg]-buy/pf), [bélá k<sup>h</sup>q-k<sup>hy</sup>ímqʰò] ‘I bought bread for you (sg)’ (bread tben[1:2sg]-buy/pf). The difference between [tʰâ·wè] and [tʰâ·nètʰi] is that the former means that something emits odor, while the latter indicates that one sniffs something/someone’.

The verb [wóhomj] ‘be happy’ in (100) is a compound verb, consisting of [wóho-] ‘happy?’ and [mí:] ‘feel’. All compounds headed by the verbal root [mí:] are intransitive and occur with intransitive or intransitive benefactive prefixes, as in (101).

- (101) ní·tʰæ tʰê·tibæ howa ik<sup>hy</sup>æwamj ‘I like that box.’  
 ní·tʰæ tʰê·tiba-š howa i-k<sup>hy</sup>æwamj (that-inv box-inv very intr[1sg]-like/stat)

Examples of other intransitive stative verbs follow.

- (102) nŋ·šípæya iʔê mŋʔi ‘I used to be a potter.’  
 nŋ·šípæya i-ʔê-mŋʔ (potter intr[1sg]-cop/stat-past)
- (103) wŋpʰæ vak<sup>h</sup>ê·k<sup>h</sup>e j̄j̄ô ‘They (2) have lived in Albuquerque  
 for two months.’  
 wŋpʰæ vak<sup>h</sup>ê·k<sup>h</sup>e j̄l-šô (two-month Albuquerque intr[2du]-live/stat)
- (104) nŋ tʰ·hæ ʔílæ bŋ ‘Those houses (pl) are big.’  
 nŋ tʰ·hâ ʔílæ Ø-bŋ (those house big intr[3bas]-size (pl)/stat)

#### 4.6. Pronominal prefixes

Jemez has four types of pronominal prefixes which show agreement with from one to three arguments: two (A and P) in the transitive prefix, three (A, B, P) in the transitive benefactive, one (S) in the intransitive, and two (B, P) in the intransitive benefactive. In the discussions which follow, I use a modified version of Dixon’s (1994) framework for identifying syntactic roles. The term ‘S’ refers to the sole argument of intransitive verbs (active or stative), which corresponds to such roles as theme, experiencer, and actor. ‘A’ indicates the prototypical agent or the most agent-like argument of transitive verbs, while ‘P’ is used for the prototypical patient or the most patient-like (e.g. theme). ‘B’ (benefactive), which is a core argument in Jemez,

primarily corresponds to the possessor (of P), the beneficiary of an action or affection, or the recipient<sup>15</sup> Locative and instrumental are not encoded in the verbal prefixes.

My data on verbal agreement and prefixes fundamentally agree with Sprott's (1992). However, there are idiosyncracies involving some verbs which he does not mention. For example, some verbs (e.g. the verb for 'giving') take the transitive prefixes to indicate the donor-recipient relation. This and other facts are noted in appropriate sections below.

#### 4.6.1. Transitive prefixes

The transitive prefixes, which encode A and P, occur with two-place transitive verbs. (The entire transitive prefix paradigm appears in Table 15.<sup>16</sup>)

- |       |                  |                                    |
|-------|------------------|------------------------------------|
| (105) | vê·la dé'li fiŋ  | 'A man killed a chicken.'          |
|       | vê·la délf Ø-fiŋ | (man chicken tr[3sg:3bas]-kill/pf) |
| (106) | ní· qmǫ          | 'I saw you (sg).'                  |
|       | ní· q-mǫ         | (I tr[1sg:2sg]-see/pf)             |
| (107) | ní· tofiŋ'ápæ    | 'I made him angry.'                |
|       | ní· ta-fiŋ'ápæ   | (I tr[1sg:3bas]-make.angry/pf)     |

Sprott (1992:87) writes that the transitive prefixes register agreement with only the "ergative" and the "absolutive" (i.e. the A and P of transitive predicates). However, with a few ditransitive verbs, P indicates the recipient rather than the transferred object.

<sup>15</sup>B may indicate some other semantic roles. See Sections 4.6.2 and 4.6.4 for the details.

<sup>16</sup>In Table 15, X indicates the places where the reflexive prefixes occur, which are listed in the last row of the table. There are no transitive prefixes encoding certain A-P relations, such as third person acting on first or second person. They require obligatory passivization and are indicated by the asterisk (\*) in the table.

Table 15. Transitive prefixes

|              |     | A   |      |    | P    |     |     |
|--------------|-----|-----|------|----|------|-----|-----|
|              |     | 1   | 2    | 3  | 1    | 2   | 3   |
|              |     | sg  | sg   | sg | sg   | sg  | sg  |
|              |     | du  | du   | du | du   | du  | du  |
|              |     | pl  | pl   | pl | pl   | pl  | pl  |
| P            | 1   | X   | bæ   | *  | X    | bæ  | *   |
|              | du  | X   | bæ   | *  | X    | bæ  | *   |
|              | pl  | X   | bæ   | *  | X    | bæ  | *   |
| 2            | sg  | q   | X    | *  | X    | X   | *   |
|              | du  | mɔl | X    | *  | X    | X   | *   |
|              | pl  | ba  | X    | *  | X    | X   | *   |
| 3            | bas | ta  | q    | ∅  | mɔ   | q   | e   |
|              | du  | tɪl | ɪl   | ɪl | mɔpa | ɔpa | ɔpa |
|              | inv | te  | ɛ    | ɛ  | mɔpa | ɔpa | ɔpa |
| Reflexive    |     | tɪl | kʰɪl | ɪl | mɔl  | ɪl  | ɛl  |
| Plural P     |     |     |      |    |      |     |     |
| Indefinite P |     |     |      |    |      |     |     |

The verbs include [mâ] ‘give to’, [k<sup>h</sup>ímq̄mà] ‘sell to’, [má·šamà] ‘loan to’, and [mí·] ‘bring to’.<sup>15</sup> In (108) and (109) below, the number of the transferred Class II object, basic [tʰê·tíba] and inverse [tʰê·tíbā], does not have any effect on the prefixes which encode the relation between the donor and the recipient.

- (108) a. tʰê·tíba tamâ ‘I gave him boxes (pl).’  
tʰê·tíba ta-mâ (box tr[1sg:3bas]-give/pf)
- b. tʰê·tíbā tamâ ‘I gave him a box (or two boxes).’  
tʰê·tíba-š ta-mâ (box-inv tr[1sg:3bas]-give/pf)
- c. tʰê·tíba t̄imâ ‘I gave them (du) boxes (pl).’  
tʰê·tíba t̄il-mâ (box tr[1sg:3du]-give/pf)
- d. tʰê·tíbā t̄imâ ‘I gave them (du) a box (or two boxes).’  
tʰê·tíba-š t̄il-mâ (box-inv tr[1sg:3du]-give/pf)
- e. tʰê·tíba temâ ‘I gave them (pl) boxes (pl).’  
tʰê·tíba te-mâ (box tr[1sg:3pl]-give/pf)
- f. tʰê·tíbā temâ ‘I gave them (pl) a box (or two boxes).’  
tʰê·tíba-š te-mâ (box-inv tr[1sg:3pl]-give/pf)
- (109) a. tʰê·tíbā qmâ ‘I gave you (sg) a box.’  
tʰê·tíba-š q-mâ (box-inv tr[1sg:2sg]-give/pf)
- b. wí tʰê·tíbā qmâ ‘I gave you (sg) two boxes.’  
wí tʰê·tíba-š q-mâ (two box-inv tr[1sg:2sg]-give/pf)
- c. yá· tʰê·tíba qmâ ‘I gave you (sg) many boxes.’  
yá· tʰê·tíba q-mâ (many box tr[1sg:2sg]-give/pf)

<sup>15</sup>[k<sup>h</sup>ímq̄mà] ‘sell/pf’ and [má·šamà] ‘loan/pf’ contain the verb root [mâ] ‘give/pf’.

The P argument of these verbs usually indexes the recipient, but with verbs such as [k<sup>h</sup>ʲɪmqʔ̌] ‘buy’ and [mq̌ʂaʔ̌] ‘borrow’, it indexes the animate source.

- (110) a. bélé tʃ<sup>h</sup>ɪmqmæ ‘I sold bread (sg) to them (du).’  
           bélé tʃl-k<sup>h</sup>ɪmqmæ (bread tr[1sg:3du]-sell/pf)
- b. bélé tʃč<sup>h</sup>ɪmqʔ̌ ‘I bought bread (sg) from them (du).’  
           bélé tʃl-k<sup>h</sup>ɪmqʔ̌ (bread tr[1sg:3du]-buy/pf)
- (111) a. hâ temq̌ʂamæ ‘I loaned a car to them (pl).’  
           hâ te-mq̌ʂamæ (car tr[1sg:3pl]-loan/pf)
- b. hâ temq̌ʂaʔ̌ ‘I borrowed a car from them (pl).’  
           hâ te-mq̌ʂaʔ̌ (car tr[1sg:3pl]-borrow/pf)

In Table 15, some prefixes showing dual agreement contain a final /l/. These prefixes actually consist of two morphemes: the first one encodes the A-P relation, and the second indicates that the P is second-person or third-person dual. Note, however, that /l/ does not occur when A is dual or plural and P is third-person dual.

- (112) tʃt<sup>h</sup>ê-te ‘I told them (du).’  
           tʃl-sê-te (tr[1sg:3du]-tell/pf)
- (113) John gʷa fæléʂ ɪlɪ ‘John reportedly killed two bears.’  
           John gʷa fæléʂ-ʂ ɪl-fɪf (John rep bear-inv tr[3sg:3du]-kill/pf)
- (114) bélé tʃčɪmqmæ ‘I sold bread (sg) to them (du).’  
           bélé tʃl-k<sup>h</sup>ɪmqmæ (bread tr[1sg:3du]-sell/pf)

At the bottom of Table 15, there is a series of prefixes which I have tentatively designated “Reflexive, Plural P, Indefinite P.” These prefixes always occur with an underlying final /l/ and they are used in several different ways: (a) reflexive, (b)

reciprocal, (c) unspecified P, and (d) non-human plural P. They may occur with reflexive verbs, as was described in Section 4.5.3.

- (115) *iláeyfʔqʔ* 'He yawned.'  
*il-háeyfʔqʔ* (tr[3sg/refl]-yawn/pf)
- (116) *déʔlî itʔʔa* 'A rooster is crowing.'  
*délî il-tʔʔa* (rooster tr[3sg/refl]-crow/impf)
- (117) *sečʔiʔqʔq* 'We (pl) danced.'  
*sel-kʰyʔiʔqʔ* (tr[1pl/refl]-dance/pf)

Some non-reflexive transitive verbs take these prefixes in a reflexive use.

- (118) *dô ʔʔ ilf* 'He killed himself.'<sup>16</sup>  
*dô ʔʔ il-fî* (he self tr[3sg/refl]-kill/pf)
- (119) *ní sékʷa títʰó* 'I wiped my eye(s).'  
*ní sékʷa tîl-só* (I eyes tr[1sg/refl]-wipe/pf)
- (120) *ní wé-si-niʔéwa tím* 'I saw myself in the mirror.'  
*ní wé-si-niʔéwa tîl-m* (I mirror-in tr[1sg/refl]-see/pf)

The reflexive prefixes are also used in reciprocal constructions.

- (121) *pʔqʷe sqm* 'We (du) looked at each other.'  
*pʔqʷe sq-l-m* (rec tr[1du/refl]-see/pf)
- (122) *pʔqʷe itó-sè* 'They (du) hit each other.'  
*pʔqʷe il-tó-sè* (rec tr[3du/refl]-hit/pf)

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<sup>16</sup>The reflexive word /ʔʔ/ is optional.



Furthermore, these prefixes occur when the P of a transitive verb is unspecified. In the (a) examples below, a basic-number P corresponds to the patient in (123a), to the source of a transferred object in (124a), and to the recipient in (125a). In the (b) examples, on the other hand, P is unspecified in (123b)-(125b), so the ‘Reflexive, Plural P, Indefinite P’ prefix /tɪl-/ occurs.

- (123) a. nɪ́· té·hete tapáenɪ́ʔɪ́      ‘I sewed a shirt.’  
           nɪ́· té·hete ta-páenɪ́ʔ      (I shirt tr[1sg:3bas]-sew/pf)
- b. nɪ́· tɪpáenɪ́ʔɪ́              ‘I sewed.’  
           nɪ́· tɪl-páenɪ́ʔ              (I tr[1sg:unsp]-sew/pf)
- (124) a. nɪ́· nâ· yâ·le tamá·šáʔq̄ʔ      ‘I borrowed money from him.’  
           nɪ́· nâ· yâ·le ta-má·šáʔq̄ʔ      (I that/he money tr[1sg:3bas]-borrow/pf)
- b. nɪ́· yâ·le tɪmá·šáʔq̄ʔ          ‘I borrowed money.’  
           nɪ́· yâ·le tɪl-má·šáʔq̄ʔ          (I that/he tr[1sg:unsp]-borrow/pf)
- (125) a. nɪ́· pʔæ kʰya tekʷé·šoʔlè      ‘I paid them for water.’  
           nɪ́· pʔæ kʰya te-kʷé·šólê      (I water TA tr[1sg:3inv]-pay/pf)
- b. nɪ́· pʔæ kʰya tɪkʷé·šoʔlè      ‘I paid for water.’  
           nɪ́· pʔæ kʰya tɪl-kʷé·šólê      (I water TA tr[1sg:unsp]-pay/pf)

Finally, these prefixes also occur when P corresponds to some plural nouns of Classes I, II, III, as we saw in Section 3.4.

- (126) dō· kʷi wôhq̄ imɪ́      ‘He saw stars (pl).’ (Class I)  
           dō· kʷil wôhq̄ il-mɪ́      (that/he Mod stars tr[3sg:3pl]-see/pf)
- (127) kʰɪ́· imɪ́                      ‘He saw feathers (pl).’ (Class II)  
           kʰɪ́· il-mɪ́                      (feather tr[3sg:3pl]-see/pf)



Table 16. Transitive benefactive prefixes

|          | A   | 1 sg             | du               | pl               | 2 sg | du   | pl   | 3 sg | du  | pl  |
|----------|-----|------------------|------------------|------------------|------|------|------|------|-----|-----|
| <b>B</b> |     |                  |                  |                  |      |      |      |      |     |     |
| 1        | sg  | X                | X                | X                | bæ   | bæ   | bæ   | *    | *   | *   |
|          | du  | X                | X                | X                | bæ   | bæ   | bæ   | *    | *   | *   |
|          | pl  | X                | X                | X                | bæ   | bæ   | bæ   | *    | *   | *   |
| 2        | sg  | k <sup>h</sup> q | k <sup>h</sup> q | k <sup>h</sup> q | X    | X    | X    | *    | *   | *   |
|          | du  | mɔ               | mɔ               | mɔ               | X    | X    | X    | *    | *   | *   |
|          | pl  | ba               | ba               | ba               | X    | X    | X    | *    | *   | *   |
| 3        | bas | tɔ               | sɔ               | se               | ɔ    | mɔ   | ba   | ɔ    | i   | e   |
|          | du  | tɨ               | sɔpa             | sepa             | i    | mɔpa | bapa | i    | ɔpa | epa |
|          | inv | te               | sɔpa             | sepa             | e    | mɔpa | bapa | e    | ɔpa | epa |

Note: Only the first morpheme in each transitive benefactive prefix is shown in the chart. The second morpheme is either /Ø/ or /l/. /Ø/ occurs when P is in the basic number, while /l/ appears when P is inverse, unspecified, or coreferential with A.

See also the examples (134) and (138) below. [nôto] ‘letter’ in (134) is a Class II noun where the inverse number is singular and dual, so there is an underlying /l/ in the prefix.

Most ditransitive verbs, including [yâètè] ‘throw’, [fièsè] ‘hand, pass’, [séfiá] ‘send, mail’, and [nôtopæ] ‘write a letter’, require transitive benefactive prefixes, where B encodes the recipient. Recall, however, that a few ditransitive verbs, such as [mí·] ‘bring to’, [mâæ] ‘give to’, [k<sup>h</sup>yímqmæ] ‘sell to’, [mq·šamæ] ‘loan to’, take the transitive prefixes. (See Section 4.6.1.)

- (133) mǎ·šǐʔlǐ tǔ-yâètè ‘I threw him a ball.’  
 mǎ·šǐlf tǔ-∅-yâètè (ball tben[1sg:3sg]-bas-throw/pf)
- (134) nôto k<sup>h</sup>qt<sup>h</sup>éfiá ‘I sent a letter to you.’  
 nôto k<sup>h</sup>q-l-séfiá (letter tben[1sg:2sg]-inv-send/pf)
- (135) vê-la g<sup>h</sup>ídá topǐt<sup>h</sup>ǐ ‘I showed a pot to a man.’  
 vê-la g<sup>h</sup>ídá tǔ-∅-pǐt<sup>h</sup>ǐ (man pot tben[1sg:3sg]-bas-show/pf)
- (136) nǐ· belagâ·nǐ tǔnǔpǐyǐ ‘I taught English to him.’  
 nǐ· belagâ·nǐ tǔ-∅-nǔpǐyǐ (I English tben[1sg:3sg]-bas-teach/pf)

Note that the transitive benefactive prefixes are not used when the A is coreferential with the B. In this case, the transitive prefixes occur.

- (137) nǐ ʔǐ bélé táhá ‘I baked bread for myself.’  
 nǐ ʔǐ bélé tá-há (I self bread tr[1sg:3bas]-bake/pf)

The transitive benefactive prefixes also occur with the verbs [nǔ·bæ·] ‘let’ and [nǔ·šæ] ‘help’, where the beneficiary of the action is encoded as B.

- (138) tǔnǔ·bæ<sup>h</sup>æ ‘I let him go.’  
 tǔ-∅-nǔ·bæ· (tben[1sg:3sg]-bas-let.go/pf)

- (139) tɔŋó·sæ                    ‘I helped him.’  
 tɔ-∅-nó·sæ                    (tben[1sg:3sg]-bas-help/pf)

Reflexive verbs occur with either the reflexive prefixes (i.e. a subset of the transitive prefixes) or the transitive benefactive prefixes in active sentences, the A being either first or second person. When a transitive benefactive prefix is used, it shows agreement with A, P, which is coreferential to A, and B (i.e. the benefactive), as in (140).

- (140) dô· tɔtʰæ·ʔóʔ            ‘I worked for him.’  
 dô· tɔ-l-sæ·ʔó·                (that/he tben[1sg:3sg]-refl-work/pf)

#### 4.6.3. Intransitive prefixes

The intransitive prefixes encode S, that is, (a) the sole argument of an intransitive verb. Example (143) illustrates the intransitive passive of transitive ‘punch’, where the first-person S corresponds to the P of the active transitive clause. The intransitive prefixes are shown in Table 17.

- (141) iʔé·yamæ                    ‘I walked.’  
 i-ʔé·yamæ                    (intr[1sg]-walk/pf)
- (142) háæ kʰya qkʰyænɿ            ‘Are you tired?’  
 háæ kʰya q-kʰyænɿ            (Q TA intr[2sg]-be.tired/stat)
- (143) nâæ·tæ (ní·) i-tô·sæ            ‘I was punched by him. (= He punched me.)’  
 nâæ·-tæ (ní·) i-tô·sæ            (he-agt (I) intr[1sg]-punch/psv.pf)

Table 17. Intransitive prefixes

| <u>S</u> | 1                | 2   | 3 | I  | II                 | III  | IV |
|----------|------------------|-----|---|----|--------------------|------|----|
| sg       | i                | q   |   | ∅  | e                  | ∅    | ∅  |
| du       | i                | mql |   | il | il                 | il   |    |
| pl       | e. <sup>16</sup> | ba  |   | e  | ∅/il <sup>17</sup> | ∅/il |    |

Some verbs are semantically two-place but morphologically intransitive, such as [k<sup>hy</sup>ímátʔè] ‘buy’, [vó-tʔè] ‘lose’, [tʔâ-tʔè] ‘hear’. In these cases, the intransitive S indexes an experiencer or recipient.

- (144) ik<sup>hy</sup>ímátʔè                      ‘I bought it.’  
           i-k<sup>hy</sup>ímátʔè                    (intr[1sg]-buy/pf)

In Table 17, most prefixes labeled “dual” (du) contain a final /l/. These prefixes consist of two morphemes: the first encodes the person and number of S, and the second indicates that S is dual, either second-person or third-person.

- (145) a.    k<sup>hy</sup>í sélamì                    ‘A child is running.’  
               k<sup>hy</sup>í ∅-sélamî                (child intr[3bas]-run/impf)
- b.    k<sup>hy</sup>íš itʔélamì                ‘Two children are running.’  
               k<sup>hy</sup>í-š il-sélamî            (child-inv intr[3du]-run/impf)
- (146) a.    déʔlî fítæ                        ‘A chicken was killed.’  
               délf ∅-fítæ                    (chicken intr[3bas]-kill/psv.pf)

<sup>16</sup>e-/ is the only pronominal prefix with a long vowel. It does not undergo the e Raising rule, unlike the third-person inverse prefix /e-/.  
<sup>17</sup>See Sections 3.4.2 and 3.4.3 for the discussion of noun classes and number agreement.

- b. wí dé'liš jítæ 'Two chickens were killed.'  
 wí délf-š jil-fítæ (two chicken-inv intr[3du]-kill/psv.pf)

#### 4.6.4. Intransitive benefactive prefixes

The intransitive benefactive prefixes primarily indicate (a) a P and its possessor (B), or (b) a P and the beneficiary of the action or the target of some feeling (B). Just like the transitive and intransitive prefixes, the intransitive benefactive prefixes pair with the transitive benefactive prefixes in voice alternations. A transitive benefactive prefix in an active sentence corresponds to an intransitive benefactive prefix in a passive sentence. (See Section 4.7 for examples of passive sentences.)

The intransitive benefactive prefixes are shown in Table 18. They encode P and B. The first part of the prefix, which shows agreement with B, is followed by the morpheme /Ø/ when P is in the basic number, and by /l/ when P is inverse.

Table 18. Intransitive benefactive prefixes

| <u>B</u> | 1  | 2                | 3 (Class I) |
|----------|----|------------------|-------------|
| sg       | ɨ  | k <sup>h</sup> q | q           |
| du       | sq | m <sup>h</sup> q | i           |
| pl       | se | ba               | e           |

Note: These prefixes are followed by /Ø/ when P is basic, and by /l/ when S is inverse.

Since the possessive use of the prefixes was explained in detail in Section 3.7.1, a few examples are repeated here from that section.

- (147) a. nâ· dé'li ní· ik'á 'That chicken is mine.'  
 nâ· déli ní· i-Ø-k'á  
 (that chicken I iben[1sg]-bas-be.lying.down(sg/du)/stat)
- b. ní·t'æ dé'li(š) ní· ič'á 'Those chickens (du) are mine.'  
 ní·t'æ déli(š) ní· i-l-k'á  
 (that-inv chicken(-inv) I iben[1sg]-inv-be.lying.down(sg/du)/stat)
- (148) ní·t'æ tí·hæ·(š) ní· i'le 'That house is mine.'  
 ní·t'æ tí·hâ·(-š) ní· i-l-'ê (that-inv house(-inv) I iben[1sg]-inv-be/stat)
- (149) ní· ik'á'é bélé ší 'My bread fell off.'  
 ní· i-Ø-k'á-'é bélé Ø-ší  
 (I iben[1sg]-bas-be.lying.down(sg/du)/stat-nom bread intr[3bas]-fall/pf)
- (150) ní· k<sup>hy</sup>æ'nì fiô·mi 'My dog is ill.'  
 ní· k<sup>hy</sup>ænî i-Ø-fiô·mi (I dog iben[1sg]-bas-ill/stat)
- (151) ?íwá t'í howa k<sup>h</sup>qt'é 'You have a hard head.'  
 (Lit. 'Your head is very hard.')
- ?íwá t'í howa k<sup>h</sup>q-l-sé (you/sg head very iben[2sg]-inv-hard/stat)
- (152) nâ· howa ité 'He is (very) kind to me.'  
 nâ· howa i-Ø-té (that/he very iben[1sg]-bas-kind/stat)
- (153) howa iwóhomî 'He is (very) happy for me.'  
 howa i-Ø-wóhomî (very iben[1sg]-bas-happy/stat)

The intransitive benefactive prefixes also seem to be used when the expected A of a transitive clause loses control of the event. Here B indexes the non-controlling agent.



- (154) a. ní· béléá ǰsí 'I dropped bread (sg). (= Bread dropped from me.)'<sup>18</sup>  
 ní· béléá ǰ-Ø-ší (I bread iben[1sg]-bas-fall/pf)
- b. ní· tʼê·tibæ(š) ǰǰí 'I dropped a box. (= A box dropped from me.)'  
 ní· tʼê·tiba(-š) ǰ-l-ší (I box(-inv) iben[1sg]-inv-fall/pf)
- (155) a. nâ· pêk<sup>hy</sup>ǰ qvó·tʼê 'He lost a watch.'  
 nâ· pêk<sup>hy</sup>ǰ q-Ø-vó·tʼê (that/he watch iben[3sg]-bas-get.lost/pf)
- b. nô·to há· k<sup>h</sup>qvó·tʼê 'Did you lose a book?'  
 nô·to há· k<sup>h</sup>q-l-vó·tʼê (book Q iben[2sg]-inv-get.lost/pf)

Two other intransitive active verbs take intransitive benefactive prefixes. Note that the verbs in examples (156) and (157) are both compound verbs containing the verbal root [ʔó] 'become, get'.

- (156) a. q<sup>t</sup>hæ·ʔó 'He woke up.'<sup>19</sup>  
 q-l-sæ·ʔó (iben[3sg]-refl/pl-wake.up/pf)<sup>20</sup>
- b. fi·da qwǰ<sup>t</sup>hæ·ʔó 'He did not wake up.'<sup>21</sup>  
 fi·da q-wǰ-l-sæ·ʔó (neg iben[3sg]-neg-refl/pl-wake.up/pf)
- (157) a. há· k<sup>hy</sup>a k<sup>h</sup>qnó·ʔó 'You finished baking.'  
 há· k<sup>hy</sup>a k<sup>h</sup>q-Ø-nó·ʔó (baking TA iben[2sg]-bas-finish/pf)
- b. k<sup>hy</sup>a ǰhá·nq<sup>o</sup> 'I finished baking.'  
 k<sup>hy</sup>a ǰ-Ø-há·nq<sup>o</sup> (TA iben[1sg]-bas-bake/inc-finish/pf)

<sup>18</sup>cf. [ní ǰk<sup>ʔ</sup>áʔé béléá ší] (/ní· ǰk<sup>ʔ</sup>á-ʔé béléá Ø-ší/ (me ibn[1sg]-be.lying.down(sg/du)/stat-nom bread intr[3bas]-fall/pf)) 'My bread fell off. (I was not holding the bread when it fell.)'

<sup>19</sup>The root /sæ-/ also occurs in the transitive verb [sæ·g<sup>o</sup>ʔlè] 'wake up (pf)'.

<sup>20</sup>It is not possible synchronically to determine the meaning of the 'l' in this verb.

<sup>21</sup>Note the negative prefix /wǰ-/ intervenes between the two parts of the pronominal prefix.

Finally, two stative verbs [pé·ʔlè] ‘remember, think of’ and [nó] ‘be forgetful’, occur with intransitive benefactive prefixes, with B corresponding to the experiencer.

- (158) a.    nɪ́ ɡʻa ɔpé·ʔlè            ‘He is reportedly thinking of me.’  
              nɪ́ ɡʻa ɔ-∅-pé·ʔlè        (I/me rep iben[3sg]-bas-think.of/stat)
- b.    nɪ́ šónaʔe ipé·ʔlè            ‘I always think of him.’  
              nɪ́ šónaʔe i-∅-pé·ʔlè        (I always iben[1sg]-bas-think.of/stat)
- (159) howa inó            ‘I am forgetful.’  
       howa i-∅-nó        (very iben[1sg]-bas-forgetful/stat)

#### 4.7. Passivization

Transitive sentences (i.e. sentences containing a transitive verb) are passivized under certain syntactic conditions. Passivization is obligatory when A is third person, and P is either first person or second person. On the other hand, passivization is not possible when A is first person or second person.<sup>22</sup>

- (160) John-tæ (nɪ́) imɬʔwè            ‘I was seen by John. (= John saw me.)’  
       John-tæ (nɪ́) i-mɬ wè            (John-agt (I) intr[1sg]-see/psv.pf)
- (161) a.    nɪ́ John tamɬ                    ‘I saw John.’  
              nɪ́ John ta-mɬ                    (I John tr[1sg:3bas]-see/pf)
- b.    \*nɪ́-tæ John mɬʔwè            ‘John was seen by me.’  
              nɪ́-tæ John ∅-mɬwè            (I-agt John intr[3bas]-see/psv.pf)

<sup>22</sup>The exception is found in an imperative construction in which the detransitive (i.e. passive) potential form of two transitive verbs takes the intransitive prefix, which shows agreement with the third-person P, acted upon by the second-person A. (See Section 4.8.3.2.)

However, if both A and P are third person, passivization is optional: both (162a) and (162b) are acceptable sentences.

- (162) a.     John Mary m̄ɛ                    ‘John saw Mary.’  
               John Mary Ø-m̄ɛ                (John Mary tr[3sg:3bas]-see/pf)
- b.     John-tæ Mary m̄ɛʔwè         ‘Mary was seen by John.’  
               John-tæ Mary Ø-m̄ɛwè        (John-agt Mary intr[3bas]-see/psv.pf)

Passivization seems to be influenced by factors such as the animacy hierarchy and the topic of the discourse. Hale (1972:107) suggests:

nominal concepts are ranked (from highest to lowest: human, animal, inanimate, abstract) and that the ranking plays an important role in determining whether a sentence will appear in the passive or the active. I suspect, on the basis of very limited data, that the passive is preferred if the patient outranks the actor, the active if the opposite is true.

Sprott (1992), supporting Hale’s hypothesis, refines the hierarchy by including the ‘topic’ as an additional conditioning factor. He proposes that the topic status can be assigned to any non-SAP (‘Speech Act Participant’, i.e. any third-person nominal). While the Jemez equivalent of the sentence “The boy hit the dog” will normally be in the active form with the ‘boy’ as the subject, the sentence could be passivized if “the dog is clearly the protagonist” and receives topic status (Sprott 1992:178).

Two morphological features are involved in passivization. First, in passive sentences, the transitive verb is inflected according to the detransitive (i.e. passive) paradigm. (See Section 4.8.3.) The active sentence in (161a) above contains the active perfective form [m̄ɛ] of the verb ‘see’, while the passive sentence (160) has its passive perfective form [m̄ɛʔwè].

Second, the transitive verb takes transitive prefixes in active sentences, and intransitive prefixes in passive sentences. (See examples (160) and (161A).) The

transitive prefixes encode A and P, whereas the intransitive prefixes show agreement with S only, which corresponds to P of the active clause. Thus passivization, as reflected in the pronominal prefixes, has the effect of reducing the number of arguments by one.

Similarly, the transitive benefactive prefixes (3 arguments) occur in active transitive sentences, while the intransitive benefactive prefixes (2 arguments) are used in passive sentences along with the passive form of verbs. The passivization of verbs with benefactive prefixes depends on the person of A and B. (For the detailed discussion of the benefactive, see Section 4.6.) Passivization must take place if A is third person, and B is either first person or second person. However, passivization is not allowed when A is first person or second person. P does not play any role here although it shows agreement in the second part of the verbal prefix. Example (164) is in the passive voice since A is third person and B is first person.

- (163) ní· nâ· bélé tǫhá            ‘I baked bread for her.’  
          ní· nâ· bélé tǫ-∅-há        (I that/she bread tben[1sg:3sg]-bas-bake/pf)
- (164) nâ·tæ bélé ihâ·pæ            ‘She baked bread for me.’  
          nâ·tæ bélé i-∅-hâ·pæ        (that/she-agt bread iben[1sg]-bas-bake/psv.pf)

More examples of voice alternations, as reflected in benefactive prefixes, are shown in (165) through (169). These examples illustrate clauses with a B argument, either as possessor of P of a transitive verb or as the beneficiary of a transitive event. Whenever A is third-person and B is first-person or second-person, an intransitive benefactive prefix is attached to the passive form of the verb, as in the (b) sentences below.

- (165) a. k<sup>h</sup>æ<sup>?</sup>nɿ tɔ<sup>?</sup>ŋ·p<sup>?</sup>æsè 'I kicked his dog.'  
k<sup>h</sup>æ<sup>?</sup>nɿ tɔ-∅-<sup>?</sup>ŋ·p<sup>?</sup>æsê (dog tben[1sg:3sg]-bas-kick/pf)
- b. nâ·tæ k<sup>h</sup>æ<sup>?</sup>nɿ i<sup>?</sup>ŋ·p<sup>?</sup>æsà 'My dog was kicked by him.'  
(= He kicked my dog.)'  
nâ·tæ k<sup>h</sup>æ<sup>?</sup>nɿ i-∅-<sup>?</sup>ŋ·p<sup>?</sup>æsâ (that/he-agt dog iben[1sg]-bas-  
kick/psv.pf)
- (166) a. nâ· fɔ́·lú tɔt<sup>?</sup>ílé 'I combed his hair.'  
nâ· fɔ́·lú tɔ-∅-t<sup>?</sup>ílé (that/he hair tben[1sg:3sg]-bas-comb/pf)
- b. nâ·tæ fɔ́·lú i<sup>?</sup>t<sup>?</sup>ílæ 'My hair was combed by him.'  
(= He combed my hair.)'  
nâ·tæ fɔ́·lú i-∅-t<sup>?</sup>ílæ (that/he-agt hair iben[1sg]-bas-  
comb/psv.pf)
- (167) a. dɔ· bɛ́·lú tɔhá 'I baked bread for her.'  
dɔ· bɛ́·lú tɔ-∅-há (that/she bread tben[1sg:3sg]-bas-  
bake/pf)
- b. dɔ·tæ bɛ́·lú i<sup>?</sup>hâ·pæ 'She baked bread for me.'  
dɔ·tæ bɛ́·lú i-∅-hâ·pæ (that/she-agt bread iben[1sg]-bas-  
bake/psv.pf)
- (168) a. (nâ·) dú·bæš tɔjílé 'I closed the door for him.'  
(nâ·) dú·bá-š tɔ-l-g<sup>?</sup>ílé ((that/he) door-inv tben[1sg:3sg]-inv-  
close/pf)
- b. (nâ·tæ) dú·bæš i<sup>?</sup>jí<sup>?</sup>læ 'The door was closed (by him) for me.'  
(= He closed the door for me.)'  
(nâ·tæ) dú·bá-š i-l-g<sup>?</sup>ílæ ((that/he-agt) door-inv iben[1sg]-inv-  
close/psv.pf)

- (169) a.    tɔdæ·ʔqʔq            'I sang for him.'  
               tɔ-l-zæ·ʔq̄·            (tben[1sg:3sg]-refl-sing/pf)
- b.    ɨdæ·ʔqpʔæ            'He sang for me.'  
               ɨ-l-zæ·ʔqbæ            (iben[1sg]-refl-sing/psv.pf)

#### 4.8. Inflection

##### 4.8.1. Introduction

##### 4.8.1.1. Inflectional categories

All active verbs have at least one set of perfective, imperfective and potential forms. Transitive verbs have two sets, one for the active voice and one for the passive voice. In addition to perfective, imperfective, and potential, there are imperative and incorporative forms. Thus intransitive active verbs have five inflected forms, while transitive active verbs have eight. This is illustrated in examples (170) and (171).

(170) /šo-l/ 'exit' (intransitive)

|               | <u>Active</u> |
|---------------|---------------|
| perfective    | šô·           |
| imperfective  | šó            |
| potential     | šó·lé         |
| imperative    | šó·lí         |
| incorporative | šó·lé         |



- (176) tí·hæ·(-š) e-phi-ʔæ k<sup>h</sup>qk<sup>w</sup>é·šolehíʔí      ‘If you plaster the house, I’ll pay you.’  
 tí·há·(-š) e-phi-ʔæ k<sup>h</sup>q-Ø-k<sup>w</sup>é·šole-híʔ  
 (house(-inv) tr[2sg:3inv]-plaster/pf-cond tben[1sg:2sg]-bas-  
 pay/potn-fut)

The imperfective represents an action or event as not completed, and it can be interpreted as habitual, durative or progressive.

- (177) tíʔlé·le      ‘I am a runner.’ (Lit. ‘I run.’)  
 tíl-ʔé·le      (tr[1sg/refl]-run/impf)
- (178) nâ·tæ šónaʔe nôto ðnôpiyâsa      ‘He always reads a book for me.’  
 nâ·tæ šónaʔe nôto ð-l-nôpiyâsa  
 (that/he-agt always book iben[1sg]-inv-  
 read/impf)
- (179) nâ· k<sup>hy</sup>íwôʔtʔasa      ‘He is/was dreaming.’  
 nâ· Ø-k<sup>hy</sup>íwôʔtʔâsa      (that/he intr[3bas]-dream/impf)
- (180) ní· k<sup>hy</sup>á·lá tapáepæʔæ      ‘I make yucca baskets.’  
 (or ‘I am making a yucca basket.’)  
 ní· k<sup>hy</sup>á·lá ta-páepæ·      (I yucca.basket tr[1sg:3bas]-make/impf)

The potential form is used in various senses, with the core meaning being that something can happen. The potential may indicate the speaker’s intention of taking an action or giving permission to someone. It is also used in situations where the speaker wants to suggest or propose an action. It can be a polite way of giving a command.



The potential is, in short, a modal category. The verb is usually preceded by the particle /da/ or its variant /dæ/.<sup>23</sup>

- (181) da teséfiá                    'I will send it.'  
           da te-séfiá                    (opt tr[1sg:3inv]-send/potn)
- (182) ní· dimâæ'æ                    'I will go.' (or 'Let me go.')
- ní· da i-mâæ·                    (I opt intr[1sg]-go/potn)
- (183) háæ da mâæ'æ                    'He can go.' (or 'Let him go.')
- háæ da Ø-mâæ·                    (Mod opt intr[3bas]-go/potn)
- (184) dæ 'æ'æ                    'Come.'
- dæ 'æ·                    (opt come/potn)
- (185) hínâæ sqhî'î                    'Let's take it off.'
- hínâæ sq-hî                    (Mod tr[1du:3bas]-take.off/potn)

The imperative form is used in giving a command.

- (186) k'î'lê-tî                    'Run.'
- k'îl-'ê-tî                    (tr[2sg/refl]-run/imp)
- (187) dá·báš eg'ílé                    'Close the door.'
- dá·bá-š e-g'ílé                    (door-inv tr[2sg:3inv]-close/imp)
- (188) hínâæ dé'li qmîwi                    'Look at the chicken.'
- hínâæ délf q-mîwi                    (Mod chicken tr[2sg:3bas]-see/imp)

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<sup>23</sup>/dæ/ is used when the A is second person (i.e. the addressee), while /da/ occurs when the action is taken by either the speaker or some third person. Note that the pronominal verbal prefix beginning with a vowel fuses with /da/, as in example (182), but the pronominal prefix, except for the final /l/, does not appear when /dæ/ is used, as in (184). (See Section 4.10.2.1 for a further discussion of /dæ/.)

Finally, the incorporative form occurs in verb compounding and incorporation (189) as well as in negative commands (190)-(191). As is seen in examples (190) and (191), the incorporative form, when used as a negative imperative, does not occur with any pronominal prefix. [mq] is a variant of /mq-/ 'no, without, out of', which is suffixed to nouns.

- (189) dá·báe howa ehñese 'The door is hard to open.'  
       dá·bá-š howa e-hñe-se (door-inv very intr[3inv]-open/inc-hard/stat)
- (190) t'â·semq 'Don't sit down.'  
       t'â·se-mq· (sit/inc-no)
- (191) k<sup>hy</sup>æ<sup>?</sup>n̄ k<sup>w</sup>é·yomq 'Don't feed the dog.'  
       k<sup>hy</sup>æn̄ k<sup>w</sup>é·yo-mq· (dog feed/inc-no)
- (192) yâ·lemq(·) i<sup>?</sup>ê 'I don't have any money.'  
       yâ·le-mq· i<sup>?</sup>ê (money-without intr[1sg]-cop/stat)

Most stative verbs have one basic form and are treated separately in Section 4.8.5.

#### 4.8.1.2. Inflectional stems

There is considerable irregularity in the active verb inflection. However, most of the transitive verbs in my data can be grouped into nine morphological classes according to the shared inflectional patterns.<sup>24</sup> Two of these, which I call G7 and G10 verbs are rather small classes, consisting of only a few verbs. One of the features

<sup>24</sup>Throughout the discussion on the inflected forms, the verb classes are referred to with the prefix 'G' (for 'group') followed by a number, e.g. 'G7', 'G5-3b'. The classification and numbering of the verbs are first presented in Section 4.8.2.2, and a subset of the data appears in Table 19.

which distinguish them from the other verb classes is that they contain inflectional suffixes such as /-o/ (G7) and /-i/ (G10), whereas verbs of the other classes have /-e/. The details of the morphological classes are provided in the discussion of each inflected form, in Sections 4.8.2 and 4.8.3, and a summary appears in Section 4.8.4.

Transitive verbs have eight inflectional stem forms: five active and three passive forms. Some stems consist of a root plus an inflectional suffix (e.g. perfective suffix, potential suffix), while others are unsuffixed.<sup>25</sup> Each stem, whether suffixed or not, is associated with some prosody (e.g. tonal melody) in the underlying representation. For example, the potential stem form of G6 verbs has the underlying tonal pattern /HF/, e.g. /t'élê/ [t'é'lè] 'eat', and that of G8 verbs has /FF/, e.g. /t'ô·dê/ [t'ô·n] 'beat'. Since the tonal pattern is a property of each inflectional stem, tones are not specified in the roots in the following discussion of verb inflection.

Active verbs are inflected according to two separate paradigms: the active paradigm and the detransitive (i.e. passive) paradigm. The active paradigm is for non-derived intransitive verbs and the active form of transitive verbs. The detransitive paradigm is used for derived intransitive verbs and the passive form of transitive verbs.

## 4.8.2. Active paradigm

### 4.8.2.1. Perfective

The perfective form comes in one of two main types: the unsuffixed verb root, or the root plus a perfective suffix. In all verbs except those of G7 and G10, the perfective suffix is /-e/. The suffix /-o/ occurs in G7 verbs, and /-i/ in G10 verbs. All transitive and some intransitive verb roots have an underlying final consonant which

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<sup>25</sup>All passive stems are suffixed, regardless of verb class.

only surfaces when suffixed. The verbs which appear to contain no final consonant include: [ʔó] ‘grow, become’, [máɛ] ‘go’, [tʔó] ‘descend’, [tʔæ] ‘dry out’, [ʔæ] ‘come’.

The unsuffixed perfective form is found in verb roots with the following underlying consonants: /w/, /y/, /l/, /b/, /d/, /p/, /t/, /tʔ/, /s/.<sup>26</sup> Examples of verbs are given in (193).

| (193) | <u>Root</u> | <u>Perfective</u> |         |
|-------|-------------|-------------------|---------|
|       | /mɨw/       | mɨ                | ‘see’   |
|       | /pæ·y/      | pæ·               | ‘make’  |
|       | /ʃo·l/      | ʃo·               | ‘exit’  |
|       | /ʔɨb/       | ʔɨ                | ‘tell’  |
|       | /tʔo·d/     | tʔo·              | ‘cook’  |
|       | /ha·p/      | há                | ‘bake’  |
|       | /fiit/      | fiɨ               | ‘kill’  |
|       | /ʔæ·tʔ/     | ʔæ                | ‘bathe’ |
|       | /mæ·s/      | mæ                | ‘give’  |

Most of the root-final consonants cannot be used to predict whether a verb root is suffixed or not in the perfective. The only generalization we can make is that all the verb roots with an underlying /w/ or /y/ have unsuffixed perfective forms.<sup>27</sup> The final consonants /w/ and /y/ must be specified with the verb roots because it is not possible to predict which of these consonants occur according to the root vowel. Although only /w/ appears after /i·/, /ɨ/, /ɨ·/, and only /y/ after the vowels /i·/ and /æ·/, both of these

<sup>26</sup>The roots belong to the groups G1, G2, G3, G5-1, G5-2, G9-1, shown in Table 19 (p. 205).

<sup>27</sup>A root-final /y/ occurs in verbs of G7 and G10. [kʔé·ʔyò] ‘feed’, [ʃæ·ʔyò] ‘give birth’, and [zæ·ʔyò] ‘ask (to do)’ belong to the morphological class of G7, and [nôpɨyɨ·ʔi] ‘read, learn’ to G10, to be discussed later.

consonants can follow /a/ and /o/. Roots with final consonants other than /w/ and /y/ occur with or without a perfective suffix.

The perfective stem with the tonal pattern [HH] occurs with G-6 verbs, while [HM] is found with verbs of G5-3a and G5-3b classes. [FL] occurs only with G9-2 verbs.

| (194) | <u>Tones</u> | <u>Root</u> | <u>Perfective</u> |                           |
|-------|--------------|-------------|-------------------|---------------------------|
|       | [HH]         | /tʰel/      | tʰélé             | 'eat'                     |
|       | [HM]         | /fĩl/      | fĩʰlè            | 'open (tr)'               |
|       |              | /ʃĩb/      | ʃĩʰmì            | 'stop' <sup>28</sup>      |
|       |              | /vo·d/      | vó·tʰè            | 'hide'                    |
|       |              | /phĩt/     | phĩtè            | 'string'                  |
|       |              | /ze·tʰ/     | zé·tʰì            | 'break (tr)'              |
|       |              | /tʰa·s/     | tʰá·sè            | 'seat', 'sit down (refl)' |
|       | [FL]         | /tel/       | téle              | 'shoot with a gun'        |
|       |              | /ša·p/      | šâ·pe             | 'shoot with an arrow'     |
|       |              | /p·e·t/     | ʔê·te             | 'run'                     |

The perfective suffixes /-o/ and /-i/ occur only in two small classes of verbs.

/-o/ is found in G7 verbs.

<sup>28</sup>Note that the vowel /e/ in these suffixes is raised to [i] after [tʰ] or nasal consonants [m] and [n]. (See Section 2.5.11 for the discussion of the 'e Raising' rule.) This phonological process eliminates [e] after [m], [n] or their glottalized counterparts. The only exceptions appear in Spanish loanwords. Also, the underlying /d/ may surface as [tʰ] or [ʔn], and /b/ as [pʰ] or [ʔm] in the perfective forms with the suffix [-ê]. (See Section 2.5.3 on 'Glottalization', and Section 2.5.2.2 on 'Nasalization' rules.)

|       |                      |                      |        |
|-------|----------------------|----------------------|--------|
| (195) | <u>Root</u>          | <u>Perfective</u>    |        |
|       | /k <sup>w</sup> e·y/ | k <sup>w</sup> é·ʔyò | ‘feed’ |
|       | /sa·l/               | sá·ʔlò               | ‘pull’ |

Another characteristic of G7 verbs is that the underlying root-final consonant is replaced by /b/ in the passive forms: e.g. [k<sup>w</sup>é·basa] ‘feed/psv.impf’, [sá·basa] ‘pull/psv.impf’.

The suffix /-i-/ occurs in G10 verbs.

|       |             |                   |         |
|-------|-------------|-------------------|---------|
| (196) | <u>Root</u> | <u>Perfective</u> |         |
|       | /pɔ·d/      | pô·nɛ̃·           | ‘slap’  |
|       | /nɔpij/     | nôpijɛ̃·          | ‘teach’ |

#### 4.8.2.2. Potential

Like the perfective, some potential forms consist of the verb root only, while others are suffixed with /-e/. The roots which do not take a suffix end in one of the following consonants: /w/, /y/, /p/, /t/, /tʰ/, /s/. All the /w/-final and /y/-final roots occur without a potential suffix, just like the perfective. However, all roots with a final /l/, /d/ or /b/ occur with a potential suffix in my data.

|       |             |                  |                   |         |
|-------|-------------|------------------|-------------------|---------|
| (197) | <u>Root</u> | <u>Potential</u> | <u>Perfective</u> |         |
| a.    | /mɛ̃w/      | mɛ̃              | mɛ̃               | ‘see’   |
|       | /pæ·y/      | pæ̃·             | pæ̃·              | ‘make’  |
|       | /hɑ·p/      | hɑ̃·             | há                | ‘bake’  |
|       | /fiit/      | fií              | fií               | ‘kill’  |
|       | /ʔæ·tʰ/     | ʔæ̃·             | ʔæ̃               | ‘bathe’ |
|       | /mæ̃s/      | mæ̃              | mæ̃               | ‘give’  |

|       |             |                  |                   |             |
|-------|-------------|------------------|-------------------|-------------|
| (197) | <u>Root</u> | <u>Potential</u> | <u>Perfective</u> |             |
| b.    | /ʔé/        | ʔélé             | ʔé                | 'stay, sit' |
|       | /tʔô·d/     | tʔô·nî           | tʔô·              | 'beat'      |

All the verbs whose perfective form is suffixed, also have a suffix in the potential form. However, most such verbs have perfective and potential forms which differ in tones. The differences are shown in Table 19 which lists the tonal patterns of potential and perfective forms of verbs.<sup>29</sup> Compare verbs of the groups G6, G5-3a, G5-3b, and G7. Of the classes of verbs with suffixed stems, only G9-2 and G10 are identical in the potential and perfective.

In addition, some verbs which do not appear with a suffix in the perfective do take a suffix in the potential, i.e. G5-1, G5-2, G8, and G9-1.

The G7 verbs whose perfective form is suffixed with /-o/ are also suffixed in the potential, [kʷé·yo] 'feed'.

The two verbs in G10 have the same potential and perfective forms. They are grouped as a class since they are the only verbs which take the suffix /-i/ in the perfective and the potential.

|       |             |                  |                   |         |
|-------|-------------|------------------|-------------------|---------|
| (198) | <u>Root</u> | <u>Potential</u> | <u>Perfective</u> |         |
|       | /pô·d/      | pô·nî·           | pô·nî·            | 'slap'  |
|       | /nôpiy/     | nôpiyî·          | nôpiyî·           | 'teach' |

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<sup>29</sup>Verbs which share the same tonal patterns in the potential form are grouped together. Most of the verb groups are divided into subgroups according to the tones in the perfective form. The vast majority of Jemez verbs contain monosyllabic roots. (See Section 4.1.2.) Compound verbs are analyzed according to the head, that is, the rightmost verb root. For example, the verb [hâ·tʔi] 'husk (pf)' contains the verb root /tʔi·y/, which belongs to G3-1.

Table 19. Tonal patterns of potential and perfective forms (Active paradigm)

| Group | Tones                  |                        | Examples              |                     |           | (Final Cons)     |
|-------|------------------------|------------------------|-----------------------|---------------------|-----------|------------------|
|       | Potential              | Perfective             | Potential             | Perfective          |           |                  |
| G1-1  | C <sup>́</sup> V       | C <sup>́</sup> V       | mɛ́                   | mɛ́                 | 'see'     | (w)              |
| G1-2  | C <sup>́</sup> V       | C <sup>́</sup> V̂      | mãɛ                   | mãɛ                 | 'give'    | (s, t)           |
| G2-1  | C <sup>́</sup> V̂      | C <sup>́</sup> V̂      | mí                    | mí                  | 'bring'   | (y)              |
| G2-2  | C <sup>́</sup> V̂      | C <sup>́</sup> V       | fíá                   | fíá                 | 'take'    | (w)              |
| G2-3  | C <sup>́</sup> V̂      | C <sup>́</sup> V̂      | zô                    | zô                  | 'lift'    | (w, y)           |
| G3-1  | C <sup>́</sup> V̂      | C <sup>́</sup> V̂      | pâ                    | pâ                  | 'make'    | (w, y)           |
| G3-2  | C <sup>́</sup> V̂      | C <sup>́</sup> V       | há                    | há                  | 'bake'    | (p, t')          |
| G3-3  | C <sup>́</sup> V̂      | C <sup>́</sup> V       | ʔâ                    | ʔâ                  | 'come'    |                  |
| G4    | C <sup>́</sup> V̂      | C <sup>́</sup> V       | tʔ                    | tʔ                  | 'descend' |                  |
| G5-1  | C <sup>́</sup> (·)C-V̂ | C <sup>́</sup> V       | ʔm-í<br>/ʔb-é/        | ʔ                   | 'tell'    | (b, d, t, l)     |
| G5-2  | C <sup>́</sup> C-V̂    | C <sup>́</sup> V̂      | šô-l-é                | šô                  | 'exit'    | (l)              |
| G5-3a | C <sup>́</sup> (·)C-V̂ | C <sup>́</sup> (·)C-V̂ | g'íd-é                | g'ít'-è<br>/g'íd-ê/ | 'bury'    | (b, d, t, t', l) |
| G5-3b | C <sup>́</sup> C-V̂    | C <sup>́</sup> C-V̂    | t'é-s-é               | t'é-s-è             | 'tie'     | (s)              |
| G6    | C <sup>́</sup> (·)C-V̂ | C <sup>́</sup> (·)C-V̂ | t'é-l-è               | t'é-l-é             | 'eat'     | (l)              |
| G7    | C <sup>́</sup> (·)C-V  | C <sup>́</sup> (·)C-V̂ | k'é-y-o               | k'é-ʔy-d            | 'feed'    | (y, l)           |
| G8    | C <sup>́</sup> C-V̂    | C <sup>́</sup> V̂      | t'ô-ʔn-í<br>/t'ô-d-ê/ | t'ô                 | 'beat'    | (d)              |
| G9-1  | C <sup>́</sup> (·)C-V  | C <sup>́</sup> V       | št-o                  | š                   | 'fall'    | (p, t)           |
| G9-2  | C <sup>́</sup> (·)C-V  | C <sup>́</sup> (·)C-V  | šâ-p-e                | šâ-p-e              | 'shoot'   | (p, t, l)        |
| G10   | C <sup>́</sup> (·)C-V̂ | C <sup>́</sup> (·)C-V̂ | pô-n-í<br>/pô-d-í/    | pô-n-í<br>/pô-d-í/  | 'slap'    | (d, y)           |

Note: The underlying final consonants which can occur in verbs in a given tonal pattern are shown after the English gloss of the example verb. The underlying representation, if very different from the surface representation, is enclosed between slashes.



From the above observations, it can be generalized that all the verbs which occur with a non-null perfective suffix also take a potential suffix.

#### 4.8.2.3. Imperfective

The imperfective form is much more regular than the other inflected forms in the active paradigm. The form is almost possible to predict if we know two things: (a) which underlying final consonant the verb root contains, and (b) whether the root occurs with a suffix in the perfective. The imperfective form can be grouped into five types. Of these, the types (199a) and (199b) are the most common.

- (199) a. Verb root suffixed with /-a<sup>2</sup>i/<sup>30</sup>  
 b. Reduplication of the verb root  
 c. Alternating final consonant of the verb root, plus a suffix  
 d. Verb root suffixed with /-i/  
 e. Irregular forms

The imperfective suffix /-a<sup>2</sup>i/ only occurs, in principle, if the underlying root-final consonant is /w/, /y/, /l/, /b/, or /d/. (There are a few exceptions to this rule, which will be discussed later in connection with reduplication.) The tonal pattern in this type of the imperfective form is normally /FL/.

| (200) | <u>Root</u> | <u>Imperfective</u>  | <u>Perfective</u>  |             |
|-------|-------------|----------------------|--------------------|-------------|
|       | /zo·w/      | zô·wa <sup>2</sup> i | zô·                | 'lift'      |
|       | /pa·y/      | pâ·ya <sup>2</sup> i | pâ·                | 'peel'      |
|       | /fiil/      | fiila <sup>2</sup> i | fi <sup>2</sup> lè | 'open (tr)' |

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<sup>30</sup>This may be related to the inflectional auxiliary /<sup>2</sup>i/ which indicates the progressive aspect. (See Section 4.8.7.)

| (200) | <u>Root</u> | <u>Imperfective</u> | <u>Perfective</u> |        |
|-------|-------------|---------------------|-------------------|--------|
|       | /ʔiḅ/       | ʔiḅdaʔi             | ʔi                | 'tell' |
|       | /vo·d/      | vô·daʔi             | vó·tʔè            | 'hide' |

The imperfective formation by reduplication is found, with some exceptions, in cases where the corresponding perfective form does not end in a root-final /p/, /t/, or /tʔ/ plus perfective suffix. As was explained in Section 2.5.6, the initial consonant and vowel of the verb root is reduplicated, i.e., a syllable with the canonical shape of CV or CV· is added to the root. The tone and vowel length of the added syllable depend on those of the source syllable: if the original syllable carries a H tone, the added syllable contains a long vowel with underlying F tone; if the original syllable has a F tone, the reduplicated syllable has a short vowel with a L tone. Except for verbs in G5-3, the tone of the reduplicated root is the same as that of the perfective stem.

| (201) | <u>Impf root</u> | <u>Imperfective</u> (reduplicated) | <u>Perfective</u> |                  |
|-------|------------------|------------------------------------|-------------------|------------------|
|       | /há/             | háha· (/háhâ·/)                    | há                | 'bake'           |
|       | /mâḁ/            | mâḁmâḁ· (/mâḁmâḁ·/)                | mâḁ               | 'go'             |
|       | /mâḅ/            | mâḅmâḅ (/mâḅmâḅ/)                  | mâḅ               | 'give'           |
|       | /tʔâ/            | tʔâḁtʔâḁ (/tʔâḁtʔâḁ/)              | tʔâ               | 'dry out (intr)' |
|       | /tʔâ·/           | tʔâ·tʔâ (/tʔâ·tʔâ/)                | tʔâ·sè            | 'seat'           |

Sometimes verb roots with a final /w/, /y/, /l/, /b/, or /d/, i.e. the segments which normally occur with /-aʔi/, are reduplicated in the imperfective. These are verbs whose perfective forms have the shape of CV· or CV·CV·: the former syllable type occurs in G3-1 and G8 verbs, while the latter is found in G6.

| (202) <u>Impf root</u> | <u>Imperfective</u> (reduplicated) | <u>Perfective</u> |         |
|------------------------|------------------------------------|-------------------|---------|
| /šĩ/                   | šĩ·šĩ· (/šĩ·šĩ·/)                  | šĩ·               | 'find'  |
| /tʔq̄/                 | tʔq̄·tʔq̄· (/tʔq̄·tʔq̄·/)          | tʔq̄·             | 'beat'  |
| /tʔó/                  | tʔó·tʔó· (/tʔó·tʔó·/)              | tʔó·lé            | 'slice' |

The third type of imperfective formation, which does not have any exceptions, involves the root-final voiceless consonants /p/, /t/, and /tʔ/. The consonants are replaced by [v], [l], and [š], respectively, and the tone of the root syllable carries an F tone in the imperfective form. Note that this medial consonant ablaut is found only in verbs whose perfective form is disyllabic with the suffix /-e/. It does not apply to verbs such as /hɑ·p/ 'bake' (G3-2) or /mæ·s/ 'give' (G1-2), for example.

| (203) <u>Root</u> | <u>Imperfective</u> (consonant ablaut) | <u>Perfective</u> |              |
|-------------------|--|-------------------|--------------|
| /gʔĩp/            | gʔĩve                                  | gʔĩpe             | 'bend'       |
| /fĩt/             | fĩle                                   | fĩtè              | 'string'     |
| /ze·tʔ/           | zê·ši                                  | zé·tʔĩ            | 'break (tr)' |

Some verbs occur with an imperfective suffix /-i/ with the tonal pattern /FL/ in the imperfective stem. They are mostly G7 and G10 verbs. In addition, the vowel /i/ with a High tone is also found in the verb [šó·lĩ] 'exit' (G5-2).

| (204) <u>Root</u> | <u>Imperfective</u> | <u>Perfective</u> |        |
|-------------------|---------------------|-------------------|--------|
| /kʷe·y/           | kʷê·yi              | kʷé·yò            | 'feed' |
| /pɔ·d/            | pô·nĩ               | pô·nĩ·            | 'slap' |

Finally, there are a few verbs which do not conform to any of the above-mentioned patterns. They are listed in (205) below.

| (205) | <u>Root</u> | <u>Imperfective</u> (irregular) | <u>Perfective</u> |            |
|-------|-------------|---------------------------------|-------------------|------------|
|       | /ʔɔ·b/      | ʔá                              | ʔô                | 'do, make' |
|       | /há·s/      | há·weʔi                         | há·sè             | 'bite'     |
|       | /fiit/      | fií                             | fií               | 'kill'     |

Most verbs have a single imperfective form, which may have a habitual, progressive or iterative interpretation depending on the context and the adverb used in the sentence. However, the two basic verbs of motion have separate imperfective and progressive forms.

| (206) | <u>Root</u> | <u>Imperfective</u> (general) | <u>Progressive</u> |        |
|-------|-------------|-------------------------------|--------------------|--------|
|       | /mæ/        | máɛmæ· (/máɛmâ·/)             | mî                 | 'go'   |
|       | /ʔæ/        | ʔáʔæ· (/ʔáʔâ·/)               | ʔí                 | 'come' |

- (207) a. dō· šónaʔe máɛmæ· dō·ge 'He always goes there.'  
dō· šónaʔe Ø-máɛmâ· dō·ge (that/he always intr[3bas]-go/impf there)
- b. k<sup>hy</sup>α mî 'He is going.'  
k<sup>hy</sup>α Ø-mî (TA intr[3bas]-go/prog)
- (208) a. híʔlèwa ʔáʔæ· 'He comes at eight o'clock.'  
híʔ-ʔèwa Ø-ʔáʔæ· (eight-at intr[3bas]-come/impf)
- b. níge· ʔí 'He is coming here.'  
nígê· Ø-ʔí (here intr[3bas]-come/prog)

#### 4.8.2.4. Imperative

The imperative form is the most diverse of all the inflected forms. Six types have been identified.

- (209) a.  $\emptyset$  (unaffixed)  
 b. /-læ/  
 c. /-i/  
 d. /-i/  
 e. /-e/  
 f. Irregular forms

The verb roots which do not occur with a suffix in the imperative form contain either no underlying final consonant or one of the following consonants: /l/, /t/, /s/.

| (210) <u>Root</u> | <u>Imperative</u> |           |
|-------------------|-------------------|-----------|
| /t'o/             | t'ó               | 'descend' |
| /šo·l/            | šó                | 'exit'    |
| /hit/             | hí                | 'kill'    |
| /mæ·s/            | mâ                | 'give'    |

The consonants /l/ and /t/ also occur with a suffix in other types of imperative forms, so they are not useful for predicting the imperative form. However, verb roots with a root-final /s/ never take a suffix in the imperative. This applies particularly to almost all verbs in G5-3b, whose imperative forms have a long vowel with F tone.<sup>31</sup> (See Table 19.)

| (211) <u>Root</u> | <u>Imperative</u> |                         |
|-------------------|-------------------|-------------------------|
| /t'a·s/           | t'â·              | 'seat, sit down (refl)' |
| /t'e·s/           | t'ê·              | 'tie'                   |

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<sup>31</sup>The only exception in this group is /hã·s/ 'bite'. Its imperative form is [hâ·wê·].

In the second type of imperative form, /-læ/ is suffixed to the verb root. Note that almost all verbs in G3-1 contain this suffix.<sup>32</sup>

| (212) <u>Root</u> | <u>Imperative</u> |         |
|-------------------|-------------------|---------|
| /ṣ̌i·l/           | ṣ̌i·læ            | 'pick'  |
| /ʔæ·tʔ/           | ʔæ·læ             | 'bathe' |
| /ṃi·y/           | ṃi·læ            | 'bring' |

The third type, which is most numerous in my data, has the suffix /-i/ and is found in verbs of G2-3, G5-3a, G9-2. The imperative stems of this type have in the final syllable an underlying F tone which surfaces as M. The exceptions, namely an underlying L tone in the last syllable, are G7 verbs, e.g. [k\*ê·yî] 'feed'. The tone of the initial syllable is the same as that of the perfective form of the verb.

| (213) <u>Root</u> | <u>Imperative</u> |              |
|-------------------|-------------------|--------------|
| /ṣ̌ow/            | ṣ̌ô·ʔwî           | 'break (tr)' |
| /pɑ·y/            | pɑ̂·ʔyî           | 'peel'       |
| /fiil/            | fîʔli            | 'open (tr)'  |
| /g'id/            | g'it̂i            | 'bury'       |
| /φit/             | φit̂i             | 'string'     |
| /ze·tʔ/           | zê·tʔî            | 'break (tr)' |
| /g'ip/            | g'ip̂i            | 'bend'       |

Generally speaking, the suffix /-i/ tends to occur with verbs whose perfective forms contain a suffix. The most notable exceptions are G5-3b and G6 verbs.

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<sup>32</sup>/ʔo·w/ 'paint for dance' has the imperative form, [ʔowi].

There are a few verbs whose imperative suffix is /-i/. No pattern for their distribution is identifiable other than that they are all found after root-final /w/.

|       |             |                   |                   |
|-------|-------------|-------------------|-------------------|
| (214) | <u>Root</u> | <u>Imperative</u> |                   |
|       | /fi·w/      | fi·wì             | 'take'            |
|       | /mî·w/      | mî·wì             | 'see'             |
|       | /ʔo·w/      | ʔówi              | 'paint for dance' |

The suffix /-e/ is also found with some verbs. The occurrence of a H tone on the tonal tier, associated with the suffix, i.e. [-é] or [-í], is common in G8 verbs whose root-final consonant is /d/, and in G6 verbs with a final /l/. An underlying F, thus a surface M (i.e. [-è] or [-ì]) is found only in one word in my data, [ʔmì] 'tell', which is not a member of any of the nine morphological classes. (See Section 2.5.11 for the [e]~[i] alternation.)

|       |             |                   |              |
|-------|-------------|-------------------|--------------|
| (215) | <u>Root</u> | <u>Imperative</u> |              |
| a.    | /zi·d/      | zi·ní             | 'catch'      |
|       | /g'il/      | g'ílé             | 'close (tr)' |
| b.    | /ʔib/       | ʔmì               | 'tell'       |

The irregular imperative forms are listed in (216).

|       |             |                   |                      |
|-------|-------------|-------------------|----------------------|
| (216) | <u>Root</u> | <u>Imperative</u> |                      |
|       | /ha·s/      | hâ·wè·            | 'bite' <sup>33</sup> |
|       | /ʔq/        | ʔq                | 'do, make'           |

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<sup>33</sup>Laurel Watkins' Jemez consultants use the regular imperative forms [hâ·wì] 'bite' instead of [hâ·wè·] (Laurel Watkins, personal communication). This may be an instance of generational differences.

The imperative form of 'bite' looks like a passive potential form. (See Section 4.8.3.2 for the discussion of the passive potential.) However, its actual passive potential form is [hâ·sæ·].

- (217) qhâ·wè²e      'Bite it.'  
           q-hâ·wê·      (tr[2sg:3bas]-bite/imp)

There seem to be cases where the passive potential form is used to give a command. See Section 4.8.3.2 for the details.

#### 4.8.2.5. Incorporative

Like other inflected forms in the active paradigm, the incorporative forms may occur with or without a suffix. Several tendencies regarding the occurrence of incorporative suffixes are recognized. First, the unsuffixed incorporative form tends to occur with verbs whose perfective and potential forms are not suffixed. One exception to this is the verb /pæ·y/ 'make' (G3-1) whose incorporative form is [pæya].

| (218) | <u>Root</u> | <u>Incorporative</u> | <u>Perfective</u> | <u>Potential</u> |                          |
|-------|-------------|----------------------|-------------------|------------------|--------------------------|
|       | /p'o/       | ʔó·                  | ʔó                | ʔó·              | 'grow, become'<br>(G2-2) |
|       | /hã·p/      | há·                  | há                | hâ·              | 'bake' (G3-2)            |
|       | /šĩ·y/      | šĩ·                  | šĩ·               | šĩ·              | 'find' (G3-1)            |
|       | /zo·w/      | zó·                  | zô·               | zó·              | 'lift' (G2-3)            |

Second, if the potential form consists of a verb root plus a suffix, the incorporative form, too, is likely to have a suffix. The exceptions include /zo·t/ ~ [zó·] 'enter' (G5-1) and /zĩ·d/ ~ [zĩ·] 'catch' (G8).



| (219) | <u>Root</u> | <u>Potential</u> | <u>Incorporative</u> |                    |
|-------|-------------|------------------|----------------------|--------------------|
|       | /e/         | ʔéle             | ʔéle                 | 'stay, sit' (G5-1) |
|       | /ɨb/        | ʔími             | ʔími                 | 'tell' (G5-1)      |
|       | /ši-t/      | šîto             | šîte                 | 'fall off' (G9-1)  |
|       | /tʔo-d/     | tʔo·nì           | tʔo·nq               | 'cook' (G8)        |
|       | /šo-l/      | šó·lé            | šó·lé                | 'exit' (G5-2)      |

Third, if the verb root ends in an underlying /s/, the incorporative form always contains the suffix /-e/. This is mostly the case with verbs of G5-3b which also take the suffix /-e/ in the perfective and the potential.

| (220) | <u>Root</u> | <u>Incorporative</u> |                |
|-------|-------------|----------------------|----------------|
|       | /mæs/       | mâ·se                | 'give' (G1-2)  |
|       | /ha-s/      | hâ·se                | 'bite' (G5-3b) |
|       | /tʔa-s/     | tʔâ·se               | 'seat' (G5-3b) |

/-e/ is the most common incorporative suffix, as it is for the perfective and the potential. It is normally associated with an underlying L tone on the tonal tier (i.e. /-e/), but very rarely an incorporative form with a final H tone occurs.

| (221) | <u>Root</u> | <u>Incorporative</u> |               |
|-------|-------------|----------------------|---------------|
|       | /šo-l/      | šó·lé                | 'exit' (G5-2) |

G7 and G10 verbs again take different suffixes. The suffix /-o/ occurs with G7 verbs, just as in the perfective and the potential.

| (222) | <u>Root</u> | <u>Potential</u> | <u>Incorporative</u> |             |
|-------|-------------|------------------|----------------------|-------------|
|       | /kʷe-y/     | kʷé·ʔyò          | kʷê·yo               | 'feed' (G7) |
|       | /sa-l/      | sá·lò            | sâ·lo                | 'pull' (G7) |

G10 verbs have the suffix /-i/.

|       |             |                  |                      |        |
|-------|-------------|------------------|----------------------|--------|
| (223) | <u>Root</u> | <u>Potential</u> | <u>Incorporative</u> |        |
|       | /pɔ·d/      | pɔ·nɨ            | pɔ·nɨ                | 'slap' |

Sporadically, the suffix /-a/ is found.

|       |             |                      |                                 |
|-------|-------------|----------------------|---------------------------------|
| (224) | <u>Root</u> | <u>Incorporative</u> |                                 |
|       | /pæ·y/      | pæya                 | 'make' (G3-1)                   |
|       | /tʰɔ·d/     | tʰɔ·nɔ               | 'cook' (G8)                     |
|       | /gʷil/      | gʷila                | 'close (tr)' <sup>34</sup> (G6) |

Incorporation is one of the main environments for verb root-initial consonant ablaut. (See Section 2.5.5.) Some examples of ablauting stems are given in (225).

|       |          |             |                   |                      |            |
|-------|----------|-------------|-------------------|----------------------|------------|
| (225) |          | <u>Root</u> | <u>Perfective</u> | <u>Incorporative</u> |            |
|       | tʰ ~ s   | /tʰɔ·d/     | tʰɔ·              | sɔ·nɨ                | 'beat'     |
|       | kʰ ~ kʰy | /kʰɔ·w/     | kʰɔ·              | kʰyɔ·                | 'lay down' |
|       | n ~ t    | /nɨ·w/      | nɨ·               | tɨwe                 | 'look for' |
|       | fi ~ h   | /hɔ·p/      | hɔ·               | hɔ·                  | 'bake'     |

A few verbs have suppletive incorporative stems, for example, 'bathe' and 'fight' in (226). The situation is more complex for 'enter', however. [tʰɔ] occurs as both the perfective and the imperative forms, while forms with the root [zo·] are found in other stems: e.g. [zɔ·tɨ] (potential), [zɔ·zo] (imperfective).

<sup>34</sup>The verb has two incorporative forms: [gʷila] and [gʷile]. The former is used when a jar or bucket is closed; the latter refers to the closing of a door. [gʷila] may also mean 'locking a horse in a stable or corral', and [gʷile] can apply to the closing of a gate (Laurel Watkins, personal communication).

|       |                   |                      |         |
|-------|-------------------|----------------------|---------|
| (226) | <u>Perfective</u> | <u>Incorporative</u> |         |
|       | ʔæ                | kʰé·                 | ‘bathe’ |
|       | wæ                | hʰ                   | ‘fight’ |
|       | tʔó               | zó·                  | ‘enter’ |

#### 4.8.3. Detransitive paradigm

The detransitive paradigm for inflection applies to two types of verbs: (a) transitive verbs in the passive voice, and (b) detransitive verbs (i.e. derived intransitive verbs) many of which are derived from transitive forms. This paradigm consists of five inflected forms, just like the active paradigm, but only detransitive verbs have all five inflectional categories. Transitive verbs in the passive have only three—perfective, potential, and imperfective.

Unlike the active paradigm, most forms in this paradigm, particularly the perfective, potential and imperfective, have regular shapes. These three forms are predictable from the underlying detransitive (i.e. passive) stem. With most verbs, the root, i.e. the segmental shape of the detransitive stem minus the inflectional suffix is the same as the one used in the active inflection, but there is a difference in the tonal pattern. Detransitive stems with a different final consonant are found in G7 and G10 verbs.

##### 4.8.3.1. Perfective

The detransitive perfective suffix /-æ/ has three tonal variants: [-æ̀], [-æ̂], and [-ǣ]. Because the tone on the suffix cannot be predicted, it is treated here as reflecting the tonal pattern of the detransitive stem: e.g. /FF/, /HF/, /HH/, /HL/, /HLL/. Thus, [-æ̀], which is most common, takes its tone from a final F tone on the tonal tier, [-æ̂]

from a final H, and [-æ] from a final L tone. The final H and L tones are only found with a subset of G5-3a verbs.

| (227) <u>Detr stem tone</u> | <u>Root</u> | <u>Detr Perfective</u> <sup>35</sup> |               |
|-----------------------------|-------------|--------------------------------------|---------------|
| /FF/                        | /tʰq·d/     | tʰq·tʰæ                              | 'beat'        |
|                             | /ʔi·b/      | ʔi·pʰæ                               | 'tell'        |
|                             | /mɿw/       | mɿ·wè                                | 'see'         |
|                             | /pæ·y/      | pæ·yè                                | 'make'        |
|                             | /ʔæ·tʰ/     | ʔæ·tʰè                               | 'bathe, wash' |
| /HF/                        | /gʰil/      | gʰi·læ                               | 'close'       |
|                             | /mæ̃s/      | mæ̃·sæ                               | 'give'        |
| /HH/                        | /gʰid/      | gʰi·dæ                               | 'bury'        |
|                             | /ʃi·b/      | ʃi·bæ                                | 'stop'        |
|                             | /ta·l/      | tá·læ                                | 'chop'        |
| /HL/                        | /pɿb/       | pɿ·bæ                                | 'show up'     |
| /HLL/                       | /woleb/     | wólebæ                               | 'pass by'     |
|                             | /kʰe·šol/   | kʰé·šolæ                             | 'pay'         |

<sup>35</sup>Two phonological rules are involved in the derivation of some of the detransitive perfective forms. /æ/ changes to [e] after /w/, /y/ and /tʰ/ through the æ Raising rule. (This rule also applies to the derivation of the detransitive potential form, discussed in the next section.) The root-final /b/ and /d/, when occurring before [æ], change to [pʰ] and [tʰ], respectively, by the application of the Glottalization rule, which requires the presence of a F tone in the following syllable. (The glottalization is also found in the active perfective form.) Note that a nasalized vowel does not cause these consonants to change to [m] and [n], respectively, when they are followed by the vowel /æ/ of the perfective suffix. (See Sections 2.5.12 (æ Raising), 2.5.3 (Glottalization) and 2.5.2.2 (Nasalization) for the details of the phonological rules.)

#### 4.8.3.2. Potential

The detransitive potential form takes the suffix /-æ/.<sup>36</sup>

| (228) | <u>Root</u> | <u>Detr Potential</u> <sup>37</sup> |               |
|-------|-------------|-------------------------------------|---------------|
|       | /gʷil/      | gʷilæ· (/gʷilæ·/)                   | ‘close’       |
|       | /tʰq·d/     | tʰq·dæ· (/tʰq·dæ·/)                 | ‘beat’        |
|       | /ʔib/       | ʔibæ· (/ʔibæ·/)                     | ‘tell’        |
|       | /mɨw/       | mɨwè· (/mɨwè·/)                     | ‘see’         |
|       | /pæ·y/      | pæ·yè· (/pæ·yè·/)                   | ‘make’        |
|       | /ʔæ·tʰ/     | ʔæ·tʰè· (/ʔæ·tʰè·/)                 | ‘bathe, wash’ |
|       | /gʷid/      | gʷidæ· (/gʷidæ·/)                   | ‘bury’        |
|       | /woleb/     | wolebæ· (/wolebæ·/)                 | ‘pass by’     |

Just as with non-derived intransitive verbs with potential inflection, /dæ/ plus the detransitive potential form is a more common way of expressing a command. (See Section 4.8.2.4.)

|       |               |                         |
|-------|---------------|-------------------------|
| (229) | dæ pʰyeʔe     | ‘Get wet.’              |
|       | dæ pʰyæ·      | (opt get.wet/detr.potn) |
| (230) | dæ kʰɨwɔtʰeʔe | ‘Have a dream.’         |
|       | dæ kʰɨwɔtʰæ·  | (opt dream/detr.potn)   |

The detransitive potential forms of two transitive verbs, i.e. [hâ·sæ·] ‘bite’ and [hâ·pæ·] ‘bake’, are also used in giving a command. In this case, the A is second person (i.e. the person ordered to perform an action), and the P is third person (i.e. the

<sup>36</sup>The vowel /æ·/ is realized as [æʔæ] or [æʰæ] in pre-pause position.

<sup>37</sup>Note that neither the sonorants nor the voiced stops /b/ and /d/ at the end of the root are glottalized before the long /æ·/.



#### 4.8.3.4. Imperative

Only derived intransitive verbs have imperative forms in the detransitive paradigm. Transitive verbs in the passive voice do not. There are three suffixes: /-i/, /-a/, /-æ/.

| (234) | <u>Imp suffix</u> | <u>Root</u> | <u>Detr Imperative</u> |                             |
|-------|-------------------|-------------|------------------------|-----------------------------|
|       | /-i/              | /wɔ̄·y/     | wɔ̄·yî                 | 'ascend, climb'             |
|       |                   | /sɪpæy/     | sɪpæyi                 | 'get married' <sup>38</sup> |
|       | /-a/              | /kʷib/      | kʷiba                  | 'stand up'                  |
|       | /-æ/              | /gʷit/      | gʷitæ                  | 'get stuck'                 |

|       |         |                               |
|-------|---------|-------------------------------|
| (235) | qkʷiba  | 'Stand up.'                   |
|       | q-kʷiba | (intr[2sg]-stand.up/detr.imp) |

#### 4.8.3.5. Incorporative

The incorporative form is the most variant of all the inflected forms in the detransitive paradigm. Three types are recognized: (a) verb root only, (b) verb root plus the suffix /-æ(·)/, (c) irregular forms. Examples (237) - (240) illustrate the incorporative stems in negative imperative constructions.

| (236) | <u>Root</u> | <u>Detr Incorporative</u> |                 |
|-------|-------------|---------------------------|-----------------|
| a.    | /wɔ̄·y/     | wɔ̄·                      | 'ascend, climb' |
| b.    | /woleb/     | wólebæ·                   | 'pass by'       |
|       | /kʰyɪwɔ̄tʰ/ | kʰyɪwɔ̄tʰè·               | 'dream'         |
|       | /hæ·l/      | hæ·læ                     | 'sweat'         |
| c.    | /kʷib/      | kʷite                     | 'stand up'      |

<sup>38</sup>This is a compound verb consisting of /si/ 'be together, partners' and /pæ·y/ 'make'.

- (237) wô·mq            'Don't climb.'  
           wô·-má·        (climb/detr.inc-no)
- (238) wólebæ·mq    'Don't pass by.'  
           wólebæ·-má· (pass.by/detr.inc-no)
- (239) hâ·læmq        'Don't sweat.'  
           hâ·lâ·-má·    (sweat/detr.inc-no)
- (240) pʔ·yèmq        'Don't get wet.'  
           pʔ·yâ·-má·    (get.wet/detr.inc-no)

#### 4.8.4. Morphological classes of verbs

As we have seen, the inflection of Jemez verbs is quite complex; there is much irregularity. It does not seem possible to derive all the inflected forms from a single underlying form. However, most of the transitive verbs in my data fall into nine classes according to their inflectional patterns. The tonal patterns and inflectional properties of verbs in these classes are shown in Table 20. Only the inflected forms in the active paradigm are included, since the inflection in the detransitive paradigm is regular.

In all verbs except those in G7, G8, G9-2, and G10, there is a correspondence in tonal patterns between the active perfective and active potential stems: if one of them carries a H tone in the second syllable of a disyllabic stem or the only syllable of a monosyllabic stem, the other carries a F tone. There is also a connection between the incorporative stem and the perfective and potential stems: if the perfective and potential are unsuffixed, the incorporative, too, is unsuffixed; if suffixed, the incorporative contains the same suffix as the perfective and potential.



Table 20. Morphological classes of verbs

|       | <u>Potn</u> | <u>Pf</u> | <u>Impf</u> | <u>Imp</u> | <u>Inc</u> | <u>Final C</u> |
|-------|-------------|-----------|-------------|------------|------------|----------------|
| G2-3  | CV̂·        | CV̂·      | -aʔi        | -i         | ∅          | w, y           |
| G3-1  | CV̂·        | CV̂·      | R           | -læ        | ∅          | w, y           |
| G5-3a | CV̂(·)C-é   | CV̂(·)C-è | -aʔi        | -i         | -e         | b, d, t, tʔ, l |
| G5-3b | CV̂·C-é     | CV̂·C-è   | R           | ∅          | -e         | s              |
| G6    | CV̂(·)C-è   | CV̂(·)C-é | R           | -e         | -e         | l              |
| G7    | CV̂(·)C-o   | CV̂(·)C-ò | -i          | -i         | -o         | y, l           |
| G8    | CV̂·C-è     | CV̂·      | R           | -e         | ?          | d              |
| G9-2  | CV̂(·)C-e   | CV̂(·)C-e | (C)-e       | -i         | -e         | p, t, l        |
| G10   | CV̂(·)C-ì   | CV̂(·)C-ì | -i          | -e         | -i         | y, d           |

Potn, Pf: The syllable structure and tones of the verb roots are not included for G10 verbs since the two examples in my data are different in the number of syllables.

Impf: 'R' means that these classes have reduplicated forms; '(C)-e' in G9-2 means that the root-final consonant alternates with another consonant in the imperfective.

Imp, Inc: '∅' means that these verbs are unsuffixed. There is irregularity in the incorporative form of G8 verbs, e.g. [zɪ́] 'catch, touch', [sɔ́·nɪ́] 'beat', [tʔɔ́·nɪ́] 'cook'.

Final C = verb root-final consonants

The passive stems (i.e. perfective, potential, imperfective) have the same tonal pattern, except for a small subset of G5-3a verbs.

The verbs in G7 and G10 contain a different consonant (i.e. /b/) in the final syllable of the passive stems: e.g. [kʷé·ʔyò] ‘feed/pf’ ~ [kʷé·pʷæ] ‘feed/psv.pf’, [pô·nɿ] ‘slap/pf’ ~ [pô·pʷæ] ‘slap/psv.pf’. ([nôpìyì] ‘teach/pf’ has two passive perfective forms—[nôpìʔyè] and [nôpìpʷæ]—of which the former is more common.)

It is quite possible that there are more verb classes. Table 19 lists 19 groups, and many of them may turn out to be valid classes. However, only nine of them can be identified as inflectional classes with some certainty. Groups other than these nine contain too few examples or irregularity within them. For instance, there are at least two types found in the imperative forms of G1-1 verbs (e.g. [mɿwi] ‘see’, [šô·wi] ‘break something’) and the incorporative forms of G1-2 verbs (e.g. [mæse] ‘give’, [hɿ] ‘kill’). G2-1 consists of only one verb, [mí] ‘bring (pf/potn)’, in my data.

Sprott (1992) claims that the full paradigm of most verbs can be obtained if we know four stem forms, i.e. active perfective, active imperfective, passive perfective, passive imperfective. He writes that “These four forms must simply be memorized; there is no sure way of getting from one to any of the other three” (1992:144), and he seems to suggest that the other three stems in the active paradigm, i.e. imperative, potential (his ‘optative’), and incorporative (‘negative imperative’), can all be derived from the perfective (1992:148-149). The difference between my conclusions and Sprott’s on verb inflection may be attributed to three factors. First, I have paid close attention to tones and grouped verbs into 19 classes according to the tonal patterns of the potential and perfective stems. Second, I have analyzed systematically the alternation between consonants: e.g. [b] ~ [m] ~ [pʷ], [d] ~ [n] ~ [tʷ], and determined their phonological conditions while setting up a single underlying consonant from

which the other(s) can be derived. Third, I have proposed the analysis that most verbs have an underlying root-final consonant.

My preliminary conclusion on transitive active verb inflection is as follows: to obtain the full paradigm of a verb, we need to have five pieces of information on a verb, (a) the morphological class of the verb, (b) the verb root, (c) the active perfective stem, (d) the detransitive (passive) stem, and (e) the active imperative form. The active potential stem is predictable from the active perfective stem in all but four classes, and three of the the four are small classes. The (active) incorporative stem, at least the segmental shape, of verbs except those in G8, can be predicted from the perfective. The imperfective stem is also predictable if we know the verb root-final consonant and the tonal pattern of the perfective stem, except for verbs in the small classes of G7, G9-2, G10.

Inflection in the detransitive paradigm is regular, and it is possible to derive the perfective, imperfective and potential forms from a single detransitive stem with an underlying tonal pattern, namely, we would not have to list the passive perfective and imperfective forms. The only difference between the passive and active stems is the tonal pattern, and the vast majority of verbs have regular, predictable tones (/FF/ or /HF/) in the passive stem, so if we only know which verbs of G5-3a have anomalous tones, we can obtain the passive paradigm of all transitive verbs. (See Section 4.8.3.1.)

It might even be possible to derive all the inflected stems, including the imperative, from one underlying verb root as long as the class membership of the verb is known. However, we still need to work out the details of verb classes before we can determine the validity of such a claim. A complete paradigm for each of the nine verb classes is provided in Appendix 4 "Transitive verb paradigms."

#### 4.8.5. Stative verbs

##### 4.8.5.1. Introduction

Stative verbs lack a perfective/imperfective opposition altogether, and most of them have only one basic form. The verbs are grouped into three types on the basis of whether they have inflected stems other than the basic one, and if they do, how many. The first type, which consists of only three verbs in my data, have two forms (basic and potential). The second type, which contains four stative verbs, have three (basic, potential, incorporative). The third type is most numerous and has only the basic form. The details of these types are provided in the following sections.

Verbs in the basic form are interpreted as referring to a state or condition which exists at the time of utterance or existed at some reference time in the past. If the sentence does not contain any time adverb or any other tense marker, the tense is indeterminate.

- (241) howa wô'q                    'He is (very) kind.'  
      howa Ø-wô'                    (very intr[3bas]-kind/stat)
- (242) nq·šípæya i'ê                'I am a potter.'  
      nq·šípæya i-?ê                (potter intr[1sg]-cop/stat)
- (243) nī· ʔilæwa vak<sup>h</sup>ê·k<sup>h</sup>e išô     'I (have) lived in Albuquerque for a long time.'  
      nī· ʔilæ-wa vak<sup>h</sup>ê·k<sup>h</sup>e i-šô    (I much-time Albuquerque intr[1sg]-live/stat)
- (244) wâ·mī                        'He wants/wanted it.'  
      Ø-wâ·mī                        (intr[3bas]-want/stat)

To indicate that the state does not exist any more, the inflectional suffixes /-mî/ 'past habitual' and /-?â/ 'unfulfilled' are added to the basic stative form. (See Section 4.8.6 for the inflectional suffixes.)

- (245) wé·fiḿiʔi                    ‘He used to be strong.’  
 Ø·wé·fiḿ·mḿ                    (intr[3bas]-strong/stat-past)
- (246) wé·fiʔæʔæ                    ‘He used to be strong.’  
 Ø·wé·fiʔ·ʔæ                    (intr[3bas]-strong/stat-past)
- (247) nḱ·śipæya iʔēmḱ                    ‘I used to be a potter.’  
 nḱ·śipæya i-ʔē·mḿ                    (potter intr[1sg]-cop/stat-past)
- (248) iwóhomḱʔæʔæ                    ‘I used to be happy.’  
 i-wóhomḱ-ʔæ                    (intr[1sg]-happy/stat-past)

#### 4.8.5.2. Stative verbs with two inflected stems

There are only three verbs of this type in my data. They have separate basic and potential stems. Basic stems are illustrated in (250)-(252).

- | (249) | <u>Basic</u>                | <u>Potential</u> |  |
|-------|-----------------------------|------------------|--|
|       | ʔē                          | ʔé·              | ‘be (copula, existential)’                                 |
|       | nḱ·                         | nḱ·              | ‘be (of ambient conditions, e.g. weather,<br>temperature)’ |
|       | nḱ                          | nḱ·              | ‘be forgetful’   |
| (250) | nḱ·tʔæ dḱ·yó iʔlê           |                  | ‘They (du) are quiet.’                                     |
|       | nḱ·tʔæ dḱ·yó il-ʔē          |                  | (they quiet intr[3du]-cop/stat)                            |
| (251) | tí· k <sup>h</sup> ya nḱʔq  |                  | ‘It is winter.’  |
|       | tí· k <sup>h</sup> ya Ø-nḱ· |                  | (winter TA intr[3bas]-cop/stat)                            |
| (252) | howa inḱ                    |                  | ‘I am forgetful.’  |
|       | howa i-nḱ                   |                  | (very iben[1sg]-forgetful/stat)                            |

The basic form may be inflected with suffixes /-m̂/ and /-ʔ̂/. However, like transitive active verbs, the future suffix /-ĥ/ must be attached to the potential stem.

- (253) bépʔæ iʔé·ĥʔ̂      ‘I will be OK.’  
           bépʔæ i-ʔé·-ĥ      (OK intr[1sg]-cop/potn-fut)
- (254) pʔí·wa kʰa n̂q·ĥʔ̂      ‘It will be different.’  
           pʔí·wa kʰa ∅-n̂q·ĥ      (different TA intr[3bas]-be/potn-fut)

The potential form may also occur with the optative particle /da/ or /dæ/. This construction is often used as a polite way of giving a command.

- (255) há̂ bépʔæ da ʔé·      ‘I hope he will be all right.’  
           há̂ bépʔæ da ∅-ʔé·      (Mod OK opt intr[3bas]-cop/potn)
- (256) pʔí·wa dæ n̂q·      ‘You can be different.’  
           pʔí·wa dæ n̂q·      (different opt cop/potn)
- (257) wé·tʔe dæ ʔé·      ‘You can be quiet.’  
           wé·tʔe dæ ʔé·      (quiet opt cop/potn)

[n̂q·] ‘be forgetful/potn’ is different from the other verbs in that it takes the suffix /-ŝ/ when used with the optative particle /da/ or /dæ/. As we will see in Section 4.8.5.4, this suffix is commonly used with invariant stative stems in ‘optative’ constructions.

- (258) dæ n̂q·soʔo      ‘You can be forgetful.’  
           dæ n̂q·-ŝ      (opt forgetful/potn-Mod)

#### 4.8.5.3. Stative verbs with non-basic /-sé/

The stative verbs of this type are characterized by having three inflectional forms: basic, potential, incorporative. The examples in my data are listed in (259).

| (259) | <u>Basic</u> | <u>Potential</u> | <u>Incorporative</u> |                           |
|-------|--------------|------------------|----------------------|---------------------------|
|       | mí·          | mí·sé            | mî·se                | 'feel'                    |
|       | mí·          | mí·sé            | mî·se                | 'be tainted'              |
|       | pé           | pé·sé            | vê                   | 'think'                   |
|       | bí·          | bí·sé            | bî·se                | 'be a size (large/small)' |

- (260) ní· íbép'æ'ó imí· 'I feel I was raised right.'  
 ní· í-bép'æ-'ó í-mí· (I intr[1sg]-OK-grow/pf intr[1sg]-feel/stat)

- (261) ?ilæ ebí· 'They (pl) are big.'  
 ?ilæ e-bí· (much/big intr[3inv]-size/stat)

The potential form may be followed by the future suffix /-hî·/. It may also occur with the optative particle /da/ or /dæ/.

- (262) nî ipé·séhi·?í 'I will think that way.'  
 nî í-pé·sé-hî· (that.way intr[1sg]-think/potn-fut)
- (263) nî há· da pé·sé 'He can think that way.' 'Let him think that way.'  
 nî há· da Ø-pé·sé (that.way Mod opt intr[3bas]-think/potn)

Note that [se] in the potential form can be omitted when the verb is followed by the future suffix. However, [se] is always present in the optative construction, when the particle /da/ or /dæ/ cooccurs with the verb.

- (264) ?ilæ k<sup>hy</sup>α ebí·(sé)hi·?í 'They (pl) will be big.'  
 ?ilæ k<sup>hy</sup>α e-bí·(sé)-hî· (much/big TA intr[3inv]-size/potn-fut)

- (265) *iḿ̩(sé)h̩́ʔ̩́* 'I will have a smear (on my body).'  
*i-ḿ̩(sé)-h̩́ʔ̩́* (intr[1sg]-be.tainted/potn-fut)

The incorporative form occurs in negative commands and in verb incorporation. Only [vê] 'think' does not contain the suffix [se] in this form.

- (266) *ḿ̩semq* 'Don't get tainted.'  
*ḿ̩se-ḿ̩q̩́* (tainted/inc-no/without)
- (267) *ń̩ vêmq* 'Don't think that way.'  
*ń̩ vê-ḿ̩q̩́* (that.way think/inc-no/without)

/ḿ̩/ 'feel' and /ḿ̩ʔ̩́/ 'be tainted' are common heads of stative compounds. These heads are normally not incorporated but there are exceptions. In (268b) and (269b), the stative verbs are incorporated, but the stative head does not appear. The same holds true of (270b), a negative imperative construction. However, in (271b) and (272b), the stative head does appear in the incorporative form [ḿ̩se].

- (268) a. *ń̩ i-wóhoḿ̩sedæʔ̩́e iẃ̩·ḿ̩* 'I want to be happy.'  
*ń̩ i-wóhoḿ̩se-dæʔ̩́e i-ẃ̩·ḿ̩*  
(I intr[1sg]-happy/potn-comp intr[1sg]-want/stat)
- b. *ń̩ i-wóhoẃ̩·ḿ̩* 'I want to be happy.'  
*ń̩ i-wóho-ẃ̩·ḿ̩* (I intr[1sg]-happy-want/stat)
- (269) a. *ʔ̩́it̩́'iḿ̩sedæʔ̩́e há· qẃ̩·ḿ̩* 'Do you want to be weak?'  
*ʔ̩́it̩́'iḿ̩se-dæʔ̩́e há· q-ẃ̩·ḿ̩* (weak/potn-comp Q intr[2sg]-want/stat)
- b. *há ʔ̩́it̩́'i-ẃ̩·ḿ̩* 'Do you want to be weak?'  
*há q-ʔ̩́it̩́'i-ẃ̩·ḿ̩* (Q intr[2sg]-weak-want/stat)
- (270) a. *k<sup>h̩́</sup>iḿ̩* 'He is lazy.'  
*∅-k<sup>h̩́</sup>iḿ̩* (intr[3bas]-lazy/stat)



- (270) b. k<sup>hy</sup>îmq 'Don't be lazy!'  
k<sup>hy</sup>î-mq̣ (lazy-no/without)
- (271) a. wâ·mî 'He wants it.'  
∅-wâ·mî (intr[3bas]-want/stat)
- b. wâ·mîsemq 'Don't want it!'  
wâ·mîse-mq̣ (want/inc-no/without)
- (272) a. vî·mî 'He is hungry.'  
∅-vî·mî (intr[3bas]-hungry/stat)
- b. vî·mîsemq 'Don't be hungry!'  
vî·mîse-mq̣ (hungry/inc-no/without)

#### 4.8.5.4. Stative verbs with invariant stems

Most stative verbs belong to this type, and they have only the basic stem.

Examples are listed in (273).

- (273) ?â· 'be fast'      ?î·nî· 'be brave'      ?ô· 'be sweet'  
hólâ· 'be of weight (heavy/light)'      k<sup>ʔy</sup>í 'be sharp'  
mâ·nî· 'be slow'      pé 'be sunny'      pî· 'be bright'  
p<sup>ʔ</sup>ô· 'be ripe'      sé 'be hard (as of objects)'  
šô 'live'      tî·se 'be noisy'      t<sup>ʔ</sup>lâ· 'be hot'  
wé·fî· 'be strong'      wê·t<sup>ʔ</sup>è 'be cold'      wé·t<sup>ʔ</sup>q̣ 'be bitter (taste)'  
wô· 'be good, kind'

The basic stem form can be followed by /-mî·/, /-?â·/, and /-hî·/, as with all the other stative verbs.

- (274) howa wô·mîʔî      ‘He used to be kind.’  
           howa Ø-wô·-mîʔî      (very intr[3bas]-kind/stat-past)
- (275) howa wô·hîʔî      ‘He will be kind.’  
           howa Ø-wô·-hîʔî      (very intr[3bas]-kind/stat-fut)

The same basic form also occurs in compounding, including the negative imperative (276) and (277). There is one exception (278): [sé] ‘be hard’ has a different incorporative form [séla].

- (276) hínâḡ máḡnímq      ‘Don’t be slow.’  
           hínâḡ máḡní-máḡ      (Mod slow/stat-no/without)
- (277) dâḡge šômḡ      ‘Don’t live there.’  
           dâḡge šô-máḡ      (there live/stat-no/without)
- (278) sélamḡ      ‘Don’t be hard.’  
           séla-máḡ      (hard/stat-no/without)

Another structural feature of stative verbs of this type is that when used with the optative particle /da/ or /dæ/, the basic form is suffixed with /-sô-/ ‘potential’.

- (279) dæ wé·físoʔo      ‘Be strong.’  
           dæ wé·fí-sôḡ      (opt strong/stat-potn)
- (280) da t̥sesòʔo      ‘Let him be noisy.’  
           da t̥se-sôḡ      (opt noisy/stat-potn)
- (281) dâḡge dæ šôso      ‘Live there.’  
           dâḡge dæ šô-sôḡ      (there opt live/stat-potn)

#### 4.8.6. Inflectional suffixes

##### 4.8.6.1. /-hɛ̃/ 'future'

/-hɛ̃/ is suffixed to the potential form of an active verb or the basic form of most stative verbs. (See Section 4.8.5 'Stative verbs'.) It indicates that an action or event is predicted to happen in the future.<sup>39</sup>

- (282) dá·báə tɛfɛ́lɛ́hɛ̃ʔɛ̃      'I am going to open the door.'  
dá·bá-š tɛ-fɛ́lɛ́-hɛ̃      (door-inv tr[1sg:3inv]-open/potn-fut)
- (283) ʔɛ̃tæ·hɛ̃ʔɛ̃      'It is going to sink.'  
∅-ʔɛ̃tæ-hɛ̃      (intr[3bas]-sink/potn-fut)
- (284) nâ· k<sup>hɪ</sup>æ̃nɪhɛ̃ʔɛ̃      'He will be tired.'  
nâ· ∅-k<sup>hɪ</sup>æ̃nɪ-hɛ̃      (that/he intr[3bas]-be.tired/stat-fut)
- (285) dô·tæ ní í·fɛ̃nqʔɔbâ·hɛ̃      'He is going to watch over me.'<sup>40</sup>  
dô·tæ ní í·fɛ̃nqʔɔbâ-hɛ̃      (that/he-agt I intr[1sg]-watch/psv.potn-fut)

##### 4.8.6.2. /-mɛ̃/ 'past habitual'

This morpheme indicates past habitual and is suffixed to the imperfective form of an active verb or the basic form of a stative verb.

- (286) tapæ·mɛ̃ʔɛ̃      'I used to know him.'  
ta-pæ·mɛ̃      (tr[1sg:3bas]-know/stat-past)
- (287) k<sup>hɪ</sup>æ̃ʔnɛ̃ tak<sup>w</sup>ê·yɪmɛ̃ʔɛ̃      'I used to feed a dog.'  
k<sup>hɪ</sup>æ̃nɛ̃ ta-k<sup>w</sup>ê·yɪ-mɛ̃      (dog tr[1sg:3bas]-feed/impf-past)

<sup>39</sup>Sprott (1992:145) writes that the suffix is added to the perfective form of active verbs, but it is actually suffixed to the potential form. These two stem forms usually differ in tonal patterns.

<sup>40</sup>The vowel of the suffix is often shortened when the preceding syllable contains a long vowel.

- (288) nâ·tæ bélé imâsasamî?î 'She used to give me bread.'  
 nâ·-tæ bélé i-mâsâsa-mî (that/she-agt bread intr[1sg]-give/psv.impf-past)

/-mî/ may occur in an alternative past habitual form [mî?æ], but the difference between the two forms is not clear.<sup>41</sup>

- (289) a. tatô·tomî?î 'I used to hit him.'  
 ta-tô·to-mî (tr[1sg:3bas]-hit/impf-past)  
 b. tatô·tomî?æ 'I used to hit him.'  
 ta-tô·to-mî?æ (tr[1sg:3bas]-hit/impf-past)

#### 4.8.6.3. /-?æ/ 'unfulfilled'

/-?æ/ most commonly means an aborted or unfulfilled action. It is suffixed to the imperfective or the future form of an active verb. When it occurs with the basic form of a stative verb, it indicates that a state or a condition existed in the past.

- (290) k<sup>hy</sup>îwôt'asa?æ?æ 'He was dreaming (but woke up).'  
 Ø-k<sup>hy</sup>îwôt'âsa-?æ (intr[3bas]-dream/impf-unf)  
 (291) imâ·dæ'e tî'î·nî?æ?æ 'I tried to go (but couldn't).'  
 i-mâ·-dæ'e til-?î·dé-?æ (intr[1sg]-go/potn-comp tr[1sg/refl]-try/potn-unf)  
 (292) mǫšî'î iyâ·tæ·hî?æ?æ 'He was going to throw me a ball (but didn't).'  
 mǫšîlî i-Ø-yâ·tæ·-hî-?æ (ball iben[1sg]-bas-throw/psv.potn-fut-unf)  
 (293) ha k'il imâ·hî?æ?æ 'I should have gone.'  
 ha k'il i-mâ·-hî-?æ (TA Mod intr[1sg]-go/potn-fut-unf)

<sup>41</sup>[?æ] in [mî?æ] may be related to another inflectional suffix /-?æ/, to be discussed in the following section.

#### 4.8.6.4. /-bâ·/ ‘iterative’

This suffix, which co-occurs with the imperfective form of an active verb, indicates iterative aspect, i.e. an action is repeated, or emphasizes the on-going process of an action. In (295), /-bâ·/ with the future suffix implies that the action will continue into the future, longer than without the future suffix, as in (294).

- (294) mǫ·šǫ·lǫ da tɔyâ·lebà·æ ‘I will keep throwing a ball to him.’  
 mǫšǫlǫ da tɔ-∅·yâ·le-bâ· (ball opt tben[1sg:3sg]-bas-throw/impf-iter)
- (295) k<sup>hy</sup>ǫ·nǫ tak<sup>w</sup>ê·yǫbâ·hǫ ‘I will keep on feeding the dog.’  
 k<sup>hy</sup>ǫnǫ ta-k<sup>w</sup>ê·yǫ-bâ·-hǫ (dog tr[1sg:3bas]-feed/impf-iter-fut)
- (296) ʔǫtǫbâ·hǫ ‘It is going to be sinking.’  
 ∅-ʔǫtǫ-bâ·-hǫ (intr[3bas]-sink/impf-iter-fut)

#### 4.8.7. Inflectional auxiliaries

The verbs [mǫ] ‘go (pf)’ and [ʔǫ] ‘come (prog)’ also occur as inflectional auxiliaries indicating progressive aspect.<sup>42</sup> They are suffixed to the imperfective form of regular intransitive verbs, i.e. those which are inflected according to the active paradigm, or the potential form of detransitive verbs. Most intransitive and detransitive verbs in the imperfective can have habitual, progressive and durative interpretation. However, the imperfective form of some verbs is interpreted only as non-progressive, and these verbs have a separate form for the progressive which contains one of the inflectional auxiliaries, as illustrated in (297) and (298). These auxiliaries are never used with transitive verbs, for which the imperfective can have both the habitual and progressive interpretation.

<sup>42</sup>Logically the progressive form of ‘go’ would be expected here, but it is the perfective form which occurs as an inflectional auxiliary.

- (297) a. sɪ<sup>ʔ</sup>lewa qɪ<sup>h</sup>æ<sup>ʔ</sup>o 'He wakes up at seven.'  
sɪl-<sup>ʔ</sup>ɛwa q-l-sæ<sup>ʔ</sup>o (seven-o'clock iben[3sg]-refl/pl-wake.up/impf)
- b. k<sup>h</sup>ya qɪ<sup>h</sup>æ<sup>ʔ</sup>o-mæ 'He is waking up.'  
k<sup>h</sup>ya q-l-sæ<sup>ʔ</sup>o-mæ (TA iben[3sg]-refl/pl-wake.up-iaux)
- (298) a. (šóna<sup>e</sup>) ivó<sup>ʔ</sup>tʼasa 'I (always) get lost.'  
(šóna<sup>e</sup>) i-vó<sup>ʔ</sup>tʼâsa ((always) intr[1sg]-get.lost/detr.impf)
- b. k<sup>h</sup>ya ivó<sup>ʔ</sup>tʼe<sup>ʔ</sup>i 'I am getting lost.'  
k<sup>h</sup>ya i-<sup>∅</sup>-vó<sup>ʔ</sup>tʼæ<sup>ʔ</sup>-í (TA intr[1sg]-bas-get.lost/potn-iaux)
- (299) <sup>ʔ</sup>ó-mæ 'It (= the beard) is growing.'  
<sup>∅</sup>-<sup>ʔ</sup>ó-mæ (intr[3bas]-grow/impf-iaux)
- (300) dá-bæš eg<sup>ʔ</sup>ílitæ-mæ 'The door is closing.'  
dá-bá-š e-g<sup>ʔ</sup>ílitæ-mæ (door-inv intr[3inv]-close/detr.potn-iaux)
- (301) tʼê-tibæš ep<sup>ʔ</sup>íyē-mæ 'The box is getting wet.'  
tʼê-tiba-š e-p<sup>ʔ</sup>íyē-mæ (box-inv intr[3inv]-get.wet/detr.potn-iaux)
- (302) yæbe k<sup>h</sup>ya <sup>ʔ</sup>ó<sup>ʔ</sup>í 'He is getting bigger.'  
yæbe k<sup>h</sup>ya <sup>∅</sup>-<sup>ʔ</sup>ó<sup>ʔ</sup>-í (big TA intr[3bas]-grow/impf-iaux)
- (303) k<sup>h</sup>ya idí<sup>ʔ</sup>o<sup>ʔ</sup>i 'I am getting sleepy.'  
k<sup>h</sup>ya i-dí<sup>ʔ</sup>o<sup>ʔ</sup>-í (TA intr[1sg]-get.sleepy/impf-iaux)
- (304) pí<sup>ʔ</sup>líš ep<sup>ʔ</sup>ó<sup>ʔ</sup>p<sup>ʔ</sup>o<sup>ʔ</sup>i 'The apple is ripening.'  
pí<sup>ʔ</sup>lí-š e-p<sup>ʔ</sup>ó<sup>ʔ</sup>p<sup>ʔ</sup>o<sup>ʔ</sup>-í (apple-inv intr[3inv]-ripen/impf-iaux)

These auxiliaries both emphasize progression but /mæ/ implies that the process indicated by the verb is closer to the end point.

- (305) a. inó<sup>ʔ</sup>o<sup>ʔ</sup>i 'I am finishing.'  
i-<sup>∅</sup>-nó<sup>ʔ</sup>o<sup>ʔ</sup>-í (iben[1sg]-bas-finish/impf-iaux)



change of the underlying vowel /æ/ in the stem-final syllable. The suffix /ʔæ/ has a tone-lowering effect on disyllabic verb stems: the H tone of the final syllable of the verb is changed to L, as shown in (311) and (312). (See Section 2.4.3.7 for morphological tone lowering.)

- (311) hédæ qgʻídaʔæ            ‘Watch out! He might bury you.’  
           hédæ q-gʻída-ʔæ        (adm intr[2sg]-bury/psv.pf-adm)

An underlying stem-final /æ/ is changed to [ɑ], when followed by the admonitive suffix.

- (312) hédæ qvó·tʻɑʔæ           ‘Watch out! You might get lost.’  
           hédæ q-vó·tʻæ-ʔæ        (adm intr[2sg]-get.lost/detr.pf-adm)

The change of the verb-stem final vowel, caused by the admonitive suffix may result in the nasalization of the verb-root final consonant (/d/ or /b/). As was noted in Section 2.5.2 of Chapter 2, the nasalized vowel in the preceding syllable causes [ɑ] to be nasalized within the same stem, but not [æ].

- (313) hédæ qpô·mqʔæ           ‘Watch out! He might slap you.’  
           hédæ q-pô·bæ-ʔæ        (adm intr[2sg]-slap/psv.pf-adm)
- (314) hédæ qzî·nqʔæ           ‘Watch out! He might catch you.’  
           hédæ q-zî·dæ-ʔæ        (adm intr[2sg]-catch/psv.pf-adm)

Sometimes /l/ appears before the suffix /-ʔæ/. This happens not only when the verb ends in an underlying final /l/, as in (310), but also when the final consonant is /d/ or /t/.



- (315) hédǎe k<sup>hy</sup>ʔlǎe            ‘Watch out! He might bring it.’  
           hédǎe Ø-k<sup>hy</sup>ʔd-ʔǎe        (adm tr[3sg:3bas]-bring/pf-adm)
- (316) hédǎe ezǐʔlǎe            ‘Watch out! He might catch it.’  
           hédǎe e-zǐʔd-ʔǎe        (adm tr[3sg:3inv]-catch/pf-adm)
- (317) hédǎe qšǐʔlǎe            ‘Watch out! You might fall off.’<sup>44</sup>  
           hédǎe q-šǐʔt-ʔǎe        (adm intr[2sg]-fall/pf-adm)

This process appears to be generalized to cases where the verb ends in a consonant other than /l/, /d/, and /t/. This generalization may be due to the fact that many verb roots whose vowel is /i/ or /i:/ end in [ʔlǎe] when they occur with the admonitive suffix.

- (318) hédǎe mǐʔlǎe            ‘Watch out! He might bring it.’  
           hédǎe Ø-mǐʔy-ʔǎe        (adm tr[3sg:3bas]-bring/pf-adm)
- (319) hédǎe šǐʔlǎe            ‘Watch out! He might find it.’<sup>45</sup>  
           hédǎe Ø-šǐʔy-ʔǎe        (adm tr[3sg:3bas]-find/pf-adm)

The phonological issues involved in the admonitive construction are the same for the subordinating marker /-ʔǎe/ (Section 4.9.1) and the nominalizer /-ʔé/ (Section 4.9.2).

#### 4.9. Subordinating markers

##### 4.9.1. /-ʔǎe/ ‘conditional-temporal’

/-ʔǎe/ is a conditional-temporal suffix, meaning ‘*if* or *when* something happens’.

It is most commonly suffixed to the perfective or imperfective form of the verb, but it can also occur on the future stem (i.e. the potential form plus /-hǐʔ/).

<sup>44</sup>This is a unique case of /t/ which may be realized as [l] because of the preceding non-nasalized vowel.

<sup>45</sup>Some people say [šǐʔǎe].

- (320) qɾ'élé'æ qfiô·yohĩ'ĩ 'If you eat it, you will get sick.'  
 q-t'élé-'æ q-fiô-yo-hĩ (tr[2sg:3bas]-eat-cond intr[2sg]-  
 get.sick/potn-fut)
- (321) dô· 'æ'æ hó·g'í tamáhi'ĩ 'If he comes, I will give him food.'  
 dô· Ø-'æ-'æ hó·g'í ta-má-hĩ (that/he intr[3bas]-come/pf-cond food  
 tr[1sg:3bas]-give/potn-fut)
- (322) dô· ičĩ'qhi'æ bélé tamáhi'ĩ 'If he dances, I will give him bread.'  
 dô· il-k'hy'q-hĩ-'æ bélé ta-má-hĩ (that/he tr[3sg/refl]-dance/potn-fut-cond  
 bread tr[1sg:3bas]-give/potn-fut)
- (323) wóhomĩ'æ tɔt'hæ'q·hĩ 'If he is happy, I will work for him.'  
 Ø-wóhomĩ-'æ tɔ-l-sæ'q·hĩ (intr[3bas]-happy/stat-cond tben[1sg:3sg]-refl-  
 work/potn-fut)
- (324) ní· k<sup>hy</sup>ɑ izæmi'æ John tamĩ 'When I was going home, I saw John.'  
 ní· k<sup>hy</sup>ɑ i-zæ-mi-'æ John ta-mĩ  
 (I TA intr[1sg]-home-go/prog-cond John tr[1sg:3bas]-see/pf)
- (325) ihâ·sa'æ tiĩ'ɾlɔ'q 'When he bit me, I cried.'  
 i-hâ·sæ-'æ til-š'ɾlɔ (intr[1sg]-bite/psv.pf-cond tr[1sg/refl]-cry/pf)

#### 4.9.2. /-'é/ 'nominalizer'

The suffix /-'é/ has two main functions: (a) to mark a relative clause, (326)-(329), and (b) to mark the complement of a verb of thinking or saying, (330)-(332), such as [pé'ɾè] 'remember', [nôpenò] 'know', [pé] 'think', [nôpek<sup>hy</sup>ó] 'ask (if)'.

- (326) nâ· vê·la tapæ· dá·báš eg'íle'e 'I know the man who closed the door.'  
 nâ· vê·la ta-pæ· dá·bá-š e-g'ílé-'é  
 (that man tr[1sg:3bas]-know/stat door-inv tr[3sg:3inv]-close/pf-nom)

- (327) pɿ<sup>ʔ</sup>lɿ nɿ ik<sup>hy</sup>imqɿ<sup>ʔ</sup>a<sup>ʔ</sup>e k<sup>wi</sup> k<sup>hy</sup>a ek<sup>hy</sup>ɔpa 'The apple that I bought is spoiled.'  
 pɿ<sup>ʔ</sup>lɿ nɿ i-k<sup>hy</sup>imqɿ<sup>ʔ</sup>æ-<sup>ʔ</sup>é k<sup>wi</sup>l k<sup>hy</sup>a e-k<sup>hy</sup>ɔpa  
 (apple I intr[1sg]-buy/detr.pf-nom Mod TA intr[3inv]-be.spoiled/stat)
- (328) nɿ<sup>ʔ</sup> wɿ ipê-ti<sup>ʔ</sup>eš tɿmɿ 'I saw my two younger brothers.'  
 nɿ<sup>ʔ</sup> wɿ i-pê-ti-<sup>ʔ</sup>é-š tɿ-mɿ  
 (I two intr[1sg]-be.someone's.younger.brother-nom-inv tr[1sg:3du]-see/pf)
- (329) nɿ<sup>ʔ</sup> nâ<sup>ʔ</sup> vê-la tapâ<sup>ʔ</sup> fi<sup>ʔ</sup>p<sup>ʔ</sup>æ šâ<sup>ʔ</sup>lé 'I know the man who arrived yesterday.'  
 nɿ<sup>ʔ</sup> nâ<sup>ʔ</sup> vê-la ta-pâ<sup>ʔ</sup> fi<sup>ʔ</sup>p<sup>ʔ</sup>æ Ø-šâ<sup>ʔ</sup>l-<sup>ʔ</sup>é  
 (I that man tr[1sg:3bas]-know/stat yesterday intr[3bas]-arrive/pf-nom)
- (330) há<sup>ʔ</sup> k<sup>ʔ</sup>qé<sup>ʔ</sup>lè hâ qmá<sup>ʔ</sup>šamâ<sup>ʔ</sup>e 'Do you remember that I loaned  
 a car to you?  
 há<sup>ʔ</sup> k<sup>ʔ</sup>q-Ø-pélè hâ q-má<sup>ʔ</sup>šamâ<sup>ʔ</sup>-<sup>ʔ</sup>é (Q iben[2sg]-bas-remember/stat car  
 tr[1sg:2sg]-loan/pf-nom)<sup>46</sup>
- (331) nɿ<sup>ʔ</sup> nò ipé John ihébâ<sup>ʔ</sup>he<sup>ʔ</sup>lê<sup>ʔ</sup>le<sup>ʔ</sup>e 'I think that John runs fast.'  
 nɿ<sup>ʔ</sup> nò i-pé John i-hé-bâ<sup>ʔ</sup>he-l<sup>ʔ</sup>ê<sup>ʔ</sup>le<sup>ʔ</sup>-<sup>ʔ</sup>é  
 (I thus intr[1sg]-think/stat John tr[3sg/refl]-int-fast-refl-run/impf-nom)
- (332) mɿwà<sup>ʔ</sup>mɿ<sup>ʔ</sup>e tanòpek<sup>hy</sup>ó<sup>ʔ</sup> 'I asked him if he wanted to go.'  
 Ø-mɿ-wà<sup>ʔ</sup>mɿ-<sup>ʔ</sup>é ta-nòpek<sup>hy</sup>ó<sup>ʔ</sup> (intr[3bas]-go/inc-want/stat-nom  
 tr[1sg:3bas]-ask/pf)

#### 4.9.3. Complementizers

There are three complementizers: /-dâ<sup>ʔ</sup>e/, /-dâ<sup>ʔ</sup>ni/, and /-dâ<sup>ʔ</sup>k<sup>ʔ</sup>e/. They consist of two morphemes, the first of which is /dæ/.

<sup>46</sup>Note that the vowel /æ/ does not change to [ɑ] if it occurs in a monosyllabic verb root before the suffix /-<sup>ʔ</sup>é/. /má<sup>ʔ</sup>šamâ<sup>ʔ</sup>/ 'loan' is a compound verb containing the root /mâ<sup>ʔ</sup>/ 'give'.

4.9.3.1. /-dâʔe/ ‘directive complementizer’

Like the nominalizer /-ʔé/, /-dâʔe/ also marks the complement of a verb, but the verbs whose complements take this suffix primarily indicate the intention or desire of the S or A of the verb. The verbs of this type include [nô·bæ·], ‘let (someone do)’, [zâ·ʔyò], ‘tell (someone to do)’, [wâ·mî], ‘want (someone to do)’, [nôpekʔó·], ‘ask (someone to do)’, [ʔʔnî], ‘try (to do)’, and [nôpîyî], ‘teach (someone to do)’. The complementizer is suffixed to the perfective or potential form of the subordinate verb, of which the latter is more common with this suffix. This may be because the desired action has not taken place yet, thus the potential form may be preferred. However, if the action has already been completed, the perfective form can also be used, as in (334).

- (333) ní· tɔnô·bæ· zó·té·dâʔe      ‘I let him come in.’  
 ní· tɔ-∅-nô·bæ· ∅-zó·té·dâʔe  
 (I tben[1sg:3sg]-bas-let/pf intr[3bas]-enter/potn-comp)
- (334) ní· tɔnô·bæ· kʔibæ·dâʔe      ‘I let him stand (up).’  
 ní· tɔ-∅-nô·bæ· ∅-kʔibæ·dâʔe  
 (I tben[1sg:3sg]-bas-let/pf intr[3bas]-stand/detr.pf-comp)
- (335) ʔíwá qmæ·dâʔe iwâ·mî      ‘I want you to go.’  
 ʔíwá q-mæ·dâʔe i-wâ·mî  
 (you/sg intr[2sg]-go/potn-comp intr[1sg]-want/stat)
- (336) tíʔlí·ʔnî bélé· tɔhâ·dâʔe ní·dæ      ‘I tried to bake bread for this person.’  
 tíl-ʔí·nê bélé· tɔ-∅-hâ·dâʔe ní·dæ  
 (tr[1sg/refl]-try/pf bread tben[1sg:3sg]-bas-bake/potn-comp this.one)

- (337) qnôpîyî t'ê-tibæ epæ-dæ'e 'Teach him (how) to make a box.'  
 q-nôpîyî t'ê-tiba-š e-pæ--dæ'e  
 (tr[2sg:3bas]-teach/imp box-inv tr[3sg:3inv]-make/potn-comp)

The S or A of the complement clause need not differ from that of the main clause, as in (343).

- (338) ʔwá kʰl'le-tedæ'e hæ qwâ·mî 'Do you want to run?'  
 ʔwá kʰil-ʔê-te-dæ'e hæ q-wâ·mî  
 (you/sg tr[2sg/refl]-run/potn-comp Q intr[2sg]-want/stat)

Complements of verbs of speaking do not take the suffix /dæ'e/. Indirect speech (339a) or quoted speech (339b) is unmarked.

- (339) a. qhæ·ʔohî taʔî 'I told him to wake up.'  
 q-l-sæ·ʔo-hî taʔî (iben[3sg]-refl/pl-wake up/potn-fut  
 tr[1sg:3bas]-tell/pf)
- b. dæ t'æ·ʔo taʔî 'I told him to wake up.'  
 (Lit. 'I told him, 'Wake up!')
- dæ l-sæ·ʔo taʔî (opt refl/pl-wake.up/potn tr[1sg:3bas]-tell/pf)

#### 4.9.3.2. /-dænî/ 'locative complementizer'

This complex suffix is probably related to the locative suffix /-nî/ 'place (where something takes place)' which is illustrated in (340).

- (340) kʰa it'ohî ʔwá q'ênî 'I am going down to where you are.'  
 kʰa i-t'ô-hî ʔwá q-ʔê-nî  
 (TA intr[1sg]-go.down/potn-fut you/sg intr[2sg]-be/stat-loc)

The complement clause marked by /-dâni/ is suffixed to the perfective or potential form of the subordinate verb. It usually indicates the purpose of an action conveyed by the verb of the main clause, which is often [ʔâ] ‘come’ or [mâ] ‘go’.

- (341) ní qmîdâni iʔâ ‘I came (in order) to see you.’  
 ní q-mî-dâni i-ʔâ (I tr[1sg:2sg]-see/potn-comp intr[1sg]-come/pf)
- (342) ní pʔé·lí bídæ· tazî·nîdâni imâ  
 ‘I went to the mountain (in order) to catch a rabbit.’  
 ní pʔé·lí bídæ· ta-zî·de-dâni i-mâ  
 (I mountain rabbit tr[1sg:3bas]-catch/potn-comp intr[1sg]-go/pf)

Like the example in (339b), a future form with /-hî/ can be used in a clause that is juxtaposed to the clause expressing motion, as in (343b).

- (343) a. dô·gi mî idæ·ʔdâni ‘He is going there to sing.’  
 dô·gi Ø-mî il-zæ·ʔ-dâni  
 (there intr[3bas]-go/prog tr[3sg/refl]-sing/potn-comp)
- b. dô·gi mî idæ·ʔhîʔî ‘He is going there to sing.’  
 dô·gi Ø-mî il-zæ·ʔ-hî  
 (there intr[3bas]-go/prog tr[3sg/refl]-sing/potn-fut)

#### 4.9.3.3. /-dâk<sup>h</sup>e/ ‘purposive complementizer’

Another complex suffix /-dâk<sup>h</sup>e/ also indicates the purpose of an action. The difference is that the sentence which contains /-dâni/ means something like ‘X went/came to a place to do something’. The implication of location is lacking in /-dâk<sup>h</sup>e/.

- (344) sek<sup>w</sup>é·yodæk<sup>h</sup>e e·<sup>ʔ</sup>æ                    ‘We came to eat.’  
           sel-k<sup>w</sup>é·yo-dæk<sup>h</sup>e e-<sup>ʔ</sup>æ                    (tr[1pl/refl]-feed/potn-comp intr[1pl]-come/pf)

#### 4.10. Particles

This section presents some of the more commonly used particles. Since the meanings of these particles are not well understood, only a general context of use is discussed.

##### 4.10.1. Tense-aspectual particle

###### 4.10.1.1. /k<sup>hy</sup>a/

/k<sup>hy</sup>a/ is a tense-aspect particle which can be used with active or stative verbs. It may occur with the perfective, the imperfective (and progressive) or the future of active verbs.

- (345) k<sup>hy</sup>a q<sup>t</sup>hæ·<sup>ʔ</sup>ó                    ‘He is awake. (= He has waken up.)’  
           k<sup>hy</sup>a q-l-sæ·<sup>ʔ</sup>ó                    (TA iben[3sg]-refl/pl-wake.up/pf)
- (346) hɪ<sup>ʔ</sup>lèwa k<sup>hy</sup>a išó·lí            ‘I leave at eight o’clock.’  
           hɪl-<sup>ʔ</sup>èwa k<sup>hy</sup>a i-šó·lí            (eight-o’clock TA intr[1sg]-exit/impf)
- (347) k<sup>hy</sup>a tawá·ya                    ‘I am dragging it.’  
           k<sup>hy</sup>a ta-wá·ya                    (TA tr[1sg:3bas]-drag/impf)
- (348) dô· k<sup>hy</sup>a ʔí                    ‘He is coming.’  
           dô· k<sup>hy</sup>a Ø-ʔí                    (that/he TA intr[3bas]-come/prog)
- (349) k<sup>hy</sup>a išó·léhɪ<sup>ʔ</sup>ɪ                ‘I am going out. (= I will go out.)’  
           k<sup>hy</sup>a i-šó·lé-hɪ<sup>ʔ</sup>ɪ                (TA intr[1sg]-exit/potn-fut)

/k<sup>hy</sup>a/ is found with the basic form or the future of stative verbs.

- (350) k<sup>h</sup>a hô·mî            'It is dirty.'  
           k<sup>h</sup>a Ø-hô·mî        (TA intr[3bas]-dirty/stat)
- (351) k<sup>h</sup>a tá·mîsehî<sup>?</sup>î        'He will be fat.'  
           k<sup>h</sup>a Ø-tá·mîse-hî      (TA intr[3bas]-fat/potn-fut)

The particle also occurs following /da/. In this case, the verb is in the potential.

- (352) da k<sup>h</sup>a imâ<sup>?</sup>æ        'I will go then.'  
                                   (I first refused to go, but then changed my mind.)  
           da k<sup>h</sup>a i-mâ<sup>?</sup>æ        (opt TA intr[1sg]-go/potn)

#### 4.10.2. Modal particles

##### 4.10.2.1. /da/, /dæ/

/da/ and /dæ/ are used in hortative and optative constructions, which includes the potential form of active verbs or the basic or potential form of stative verbs. While /da/ occurs when the S or A of the verb is first or third person, /dæ/ only appears with the second person S or A.

- (353) háæ bélé da tat<sup>?</sup>é<sup>?</sup>lè    'I will eat the bread.' 'Let me eat the bread.'  
           háæ bélé da ta-t<sup>?</sup>é<sup>?</sup>lè (Mod bread opt tr[1sg:3bas]-eat/potn)
- (354) da mâ<sup>?</sup>æ                'He can go.' 'Let him go.'  
           da Ø-mâ<sup>?</sup>æ            (opt intr[3bas]-go/potn)
- (355) dæ má<sup>?</sup>ní                'You can be slow.'  
           dæ má<sup>?</sup>ní            (opt slow/stat)

/dæ/ plus the potential form of a verb can be used as an indirect command, most commonly with intransitive verbs.



- (356) *dæ mæʔæ* 'Go.' (or 'You can go.')
- dæ mæ·* (opt go/potn)
- (357) *dæ tá·sé* 'Sit down.' (or 'You can sit down.')
- dæ l-tʰá·sé* (opt refl-seat/potn)

Note that although the first part of the pronominal prefix does not appear after the particle /*dæ*/, the morpheme /*l*/ is still present.

- (358) *dæ tʰæ·ʔo* 'Wake up.' (or 'You can wake up.')
- dæ l-sæ·ʔo* (opt refl/pl-wake.up/potn)

#### 4.10.2.2. /*kʷil*/

/*kʷil*/ is most commonly used with the perfective, active or passive, but it is also found to occur when the verb is in the future plus /-ʔæ·/, which expresses the speaker's wish that something had happened.

- (359) *næ·tæ kʷi kʰyá·láš ipæʔyè* 'She made a basket for me.'
- næ·tæ kʷil kʰyá·láš-š i-l-pæyê*
- (that/she-agt Mod basket-inv iben[1sg]-inv-make/psv.pf)
- (360) *há kʷil imæ·híʔæʔæ* 'I should have gone.'
- há kʷil i-mæ·híʔæ·* (? Mod intr[1sg]-go/potn-fut-unf)

/*kʷil*/ seems to convey inference, indeterminacy (of object, place, or time), or some distance in time.

- (361) a. *ní· kʷi híñi tamí* 'I saw something.' (I do not know what it is.)
- ní· kʷil híñi ta-mí* (I Mod something tr[1sg:3bas]-see/pf)

- (361) b. ní· fińĩ tamǫ́ 'I saw something.' (I know what it is.)  
 ní· fińĩ ta-mǫ́ (I something tr[1sg:3bas]-see/pf)
- (362) a. dô· kʷi tǣ máę 'He went somewhere.' (I infer because he is not  
 here. I do not know where it is.)  
 dô· kʷil tǣ Ø-mǣ (that/he Mod somewhere intr[3bas]-go/pf)
- b. dô· tǣ máę 'He went somewhere.' (I know where it is.)  
 dô· tǣ Ø-mǣ (that/he somewhere intr[3bas]-go/pf)
- (363) bélé kʷi ší 'The bread fell off.'  
 (I infer from the bread on the floor.)  
 bélé kʷil Ø-ší (bread Mod intr[3bas]-fall/pf)

Compare (363) with (364) and (365).

- (364) bélé kʰya ší 'The bread fell off (just now).' (I witnessed it.)  
 bélé kʰya Ø-ší (bread TA intr[3bas]-fall/pf)
- (365) bélé kʷi kʰya ší 'The bread fell off.' (I infer.)  
 bélé kʷil kʰya Ø-ší (bread Mod TA intr[3bas]-fall/pf)

#### 4.10.2.3. /há/

/há/, which is homophonous with the question particle /há/, is commonly found in commands, and sometimes together with the particle /da/ or /dæ/ and the potential form of the verb.

- (366) háę da qʰǣʰo 'He can wake up.'  
 háę da q-l-sǣʰo (Mod opt iben[3sg]-refl/pl-wake up/potn)
- (367) háę dǣ mǣʰǣ 'You can go.'  
 háę dǣ mǣ· (Mod opt go/potn)

#### 4.10.2.4. /hínǎe/

/hínǎe/ also appears in commands. According to one of my consultants, /hínǎe/ means something like ‘Will you . . .?’ However, /hínǎe/ can also occur with a first-person S or A.

(368) hínǎe bélé qhá·lǎe ‘Bake bread.’ (‘Will you bake bread?’)

hínǎe bélé q·há·lǎe (Mod bread tr[2sg:3bas]-bake/imp)

(369) hínǎe tíʔlê·te ‘Let me run.’

hínǎe tíl·ʔê·te (Mod tr[1sg/refl]-run/imp)

#### 4.10.2.5. /hédǎe/

/hédǎe/ is typically found in admonitive construction with the subordinating suffix /-ʔǎe/. (See Section 4.8.8 for examples.)

#### 4.10.2.6. /dakʷil/

/dakʷil/, which appears to consist of the particles /da/ and /kʷil/, means ‘maybe’.

(370) howa dakʷi wé·fíʔ ‘He may be strong.’

howa dakʷil Ø·wé·fíʔ (very maybe intr[3bas]-strong/stat)

(371) dakʷi kʰyíwópa ‘Maybe he dreamed.’

dakʷil Ø·kʰyíwópa (maybe intr[3bas]-dream/impf?)

### 4.10.3. Other particles

#### 4.10.3.1. /gʷa/

/gʷa/ is used to report what the speaker heard.

- (372) Mary gʻɑ John bɛ́lá qhá ‘(I heard) Mary baked bread for John.’  
 Mary gʻɑ John bɛ́lá q-θ-há (Mary rep John bread tben[3sg:3sg]-bas-  
 bake/pf)

4.10.3.2. /ql/

/ql/ can mean ‘also’ or ‘still’. It occurs with both active and stative verbs.

- (373) vɸʷwè tʻê·tɪbæ q sqpɸæ· ‘We both also made a box.’  
 vɸʷwè tʻê·tɪbæ-š ql sqpɸ-pæ· (both box-inv also tr[1du:3inv]-make/pf)
- (374) ql iwé·fiɸ ‘We are still strong/healthy.’  
 ql i-wé·fiɸ (still intr[1du]-strong/stat)

## CHAPTER 5. TEXT

### 5.0. Introduction

The following text is a personal narrative told by one of my older consultants about her childhood. The text serves two purposes: (a) it illustrates, in natural discourse, some of the phonological and morphological points discussed in the preceding chapters; (b) it gives a glimpse into aspects of Jemez life, both past and present.

After transcribing the text from the tape, I checked my transcription with the same speaker. During the second session, she explained details and helped to refine the translation, and in addition, she sometimes made corrections to her original. All the changes are noted in Section 5.1.4.

Each line is marked with a number enclosed in parentheses in order to make it easy to relate the text to the translation, the interlinear gloss, and the notes. Each line represents a single clause or a main clause and an embedded clause. A comma indicates places where the speaker paused.

### 5.1. "About my childhood"

#### 5.1.1. Text

- (1) k<sup>hy</sup>še<sup>ʔ</sup>ē·mī<sup>ʔ</sup>æ, etolepá·mī<sup>ʔ</sup>e, tit<sup>h</sup>é<sup>ʔ</sup>qhì,
- (2) šó·nì k<sup>hy</sup>ip<sup>ʔ</sup>ō<sup>ʔ</sup>æ, pē dak<sup>w</sup>i dæt<sup>h</sup>hì· nì, fietolepá· tō<sup>ʔ</sup>ó·lì <sup>ʔ</sup>inì <sup>ʔ</sup>ó·lì sepanóšæšæ<sup>ʔ</sup>,
- (3) dō· tʰí<sup>ʔ</sup>í q·, dé<sup>ʔ</sup>lì <sup>ʔ</sup>ik<sup>h</sup>a pésete šq<sup>ʔ</sup>lê·mì,
- (4) dō· hía·lì het<sup>h</sup>ék<sup>w</sup>é·yo<sup>ʔ</sup>æ, k<sup>h</sup>epélam<sup>h</sup>hì,
- (5) nōpæta fō·<sup>ʔ</sup>yà sedō·<sup>ʔ</sup>e pésete k<sup>hy</sup>a hepafî·hì<sup>ʔ</sup>ì,
- (6) nì dō· dé<sup>ʔ</sup>lì ča hínì <sup>ʔ</sup>æyí ek<sup>w</sup>é·yo<sup>ʔ</sup>e <sup>ʔ</sup>æ· ha·,
- (7) k<sup>hy</sup>inìhì <sup>ʔ</sup>ik<sup>h</sup>a, dō· hepamæmæ ek<sup>w</sup>é·yodæ<sup>ʔ</sup>e,

- (8) ʔikʰa· ní· kʰemæ·tomɪ̄ʔlæ· hù·, fínito pʰ·ʔlì ʔikʰa· ʔí·vá· kʰipʔò·hì· dō·  
hetʰélefiã·æ· kʰemæ·tomɪ̄hì̄ʔì̄ ,
- (9) ní· h̄ɪ̄mqkʔi· kʰeʔæʔæ· ʔò·væ· nõ ,
- (10) ôça· sepakʷ·ê·yobæ·hì̄ ,
- (11) šónqʔe· fietolepá·
- (12) kʰólada· ew̄hédí·go
- (13) šónqʔe· fietolem̄ɸwa·,
- (14) ha· q· fí̄da· hewí̄dí·go·senq̄bæyàsa
- (15) gʷa·, ʔlæ· dækʰȳʔo· kʰya· dæ· dí·kʰaʔæ·, dæ· ʔm̄ham̄ī·,
- (16) ʔikʰa·, dō· séyæla· fínito· čipʔòʔæ· pʔò· kʰipʔòʔæ· ha· q·, dōgitolehæ·tʰifí·wáha  
ʔikʰa· séyæla·šíʔeh̄ī·,
- (17) kʰyówa· kʰyigʷó·ʔæ· ha· híní· séyæla· ča· hepatʰé·séhī· ní· ha· kʰya· hepaʔítéh̄ī·,
- (18) ní· ʔæ·kʷa· kʰya· hepaʔó·m̄h̄ī· etʰæ·dænī ,
- (19) ní· pʔhatʷo· pʔò· howa· yæ·toleʔlólóʔæ· dá·h̄īʔæ·, tohelæ·tʰítʰīʔ·,
- (20) pʔhatʷo· pʔæ· p̄īʔæ·, dá·h̄īʔæ· eh̄æ·tʰimæm̄æ·,
- (21) tovæ· fí̄da· pʔæ·p̄īʔæ· ha· híní· dō· l̄q̄pala· heʔæ·yaʔī
- (22) do· ʔh̄ænī· dō· nõp̄īʔetæ· kʰya· helæ·tʰibæ·h̄ī·,
- (23) fietolepá·m̄īʔ· šónqʔe·,
- (24) šó·nī ʔlæ· h̄īʔam̄ī·
- (25) t̄òʔó·lí· dakʷi· ve· hóweʔí·nīm̄ī· ní· tá·,
- (26) pʰ·ʔlì· ní· ʔí·vá· ní· sqdéye· bæló·n̄e· šó·nī· eʔlóló·m̄ī·,
- (27) kʷæʔla· híní· dō·nīto· hémq̄· ha· nõ·,
- (28) kʷæʔleʔéʔeča· híní· hé·, hēsæ·tæʔq̄· kʰyīʔé· héyâ·letæʔq̄·,
- (29) ní· tá· do· t̄òʔó·lí· šikʷ·é·ʔeʔæ· híní· dō· fínitoleʔlólóʔé· tæ· fínitolekʰȳím̄átʷasam̄ī·,  
fínitolepéyimīʔe· h̄ó·gʷí·,
- (30) kʷæʔla· híní· dō·nito· m̄q̄· ha· nõ·,

- (31) pʔí·wa kʰya nŋ̄·  
 (32) pʔí·wa kʰê·ʔeya kʰya seʔá· kʰæʔlà,  
 (33) šó·nɿ̄ kʰya hekʰé·šolaʔi  
 (34) pʔæ· toča hekʰé·šolaʔi ,  
 (35) nɿ̄· kʰyĩšeʔê·mɿ̄ʔæ fiɿ̄da nŋ̄ wɿ̄nŋ̄·nŋ̄·  
 (36) pʔí·wa nŋ̄·nŋ̄·,  
 (37) ʔæ ha ʔíle·bépʔæʔo ʔŋ̄ e·mɿ̄,  
 (38) šó·nɿ̄ senŋ̄·mɿ̄ fietolepá·mɿ̄ʔe

### 5.1.2. English translation

- (1) I'm going to talk about what we used to do when we were still small
- (2) What we did when everything was ripe in what you would call 'summer' was to help our grandpa and grandma (i.e. my Mom's mother)
- (3) My other grandma (i.e. my Dad's mother) used to have chickens and pigs
- (4) In the morning, as soon as we ate, we would go to get things done
- (5) We would take to the pigs the weeds that we pulled out in the garden
- (6) The chickens were feeding outside
- (7) We gave them the corn to eat
- (8) When were going to school—the apples and grapes were ripening—we would take them (i.e. the apples and grapes) and eat them on our way to school
- (9) In the afternoon, when we came back, we did the same thing
- (10) We would feed them (i.e. the chickens and pigs) again
- (11) We were always doing something
- (12) We never lay down
- (13) We were always busy, moving around
- (14) Also, they (i.e. grandpa and grandma) would not let us lie down

- (15) They used to tell you that when you lay down, you would get really lazy
- (16) When the chilies and other things were ripe, and when the corn was ripe, they would take us to places to husk the corn and pick the chilies
- (17) After the chilies were there for some time, we would tie them and then string them
- (18) We would take them outside so that they would get dry
- (19) Sometimes when they had much more corn, we husked them even at night
- (20) Sometimes when the moon was bright, we went to husk the corn at night
- (21) If the moon was not bright, we lit a lamp
- (22) With the light that lit up the area, we would keep husking the corn
- (23) We were always doing something
- (24) There was plenty of everything
- (25) Grandpas (i.e. all old men) were very busy at that time
- (26) They used to raise apples, grapes, watermelons, and muskmelons—everything
- (27) We don't have any of those things now
- (28) Young people today are just working for money
- (29) When grandpas were still living, they bought whatever they needed and food with whatever they raised
- (30) They don't have those things (i.e. melons, grapes, etc.) now
- (31) It's different
- (32) We live a different life now
- (33) We pay for everything
- (34) We pay even for water
- (35) When we were small, it wasn't like that
- (36) It was different
- (37) But we thought we were brought up right
- (38) We saw everything—what they used to do



### 5.1.3. Interlinear gloss

In each of the sentences presented below, the first line corresponds to the surface representation and the second to the underlying representation with morpheme boundaries marked. The third line is the English gloss.

- (1)  $k^{hy}šeʔê·mîʔæ$   $fietolepá·mîʔe$   
 $k^{hy}š-š$   $e·ʔê·mîʔ-ʔæ$   $fié·tol$   
 small/child-inv intr[1pl]-cop/stat-past-cond what/something-pl
- $títʰéʔqhî·$
- $e·-pá·-mîʔ-ʔé$   $tíl-séʔq·-hîʔ$   
 intr[1pl]-do/impf-past-nom tr[1sg/refl]-talk/potn-fut
- (2)  $šó·nî$   $k^{hy}ipʔôʔæ$   $pê$   $dakʷi$   $dætîhî·$   
 $šó·nî$   $k^{hy}a$   $e-pʔô-ʔæ$   $pê$   $dakʷil$   $dæ$   $tî-hîʔ$   
 everything TA intr[3pl]-ripe/stat-cond summer maybe opt say/potn-fut
- $nî$   $fietolepá·$   $tôʔó·lí$   $ʔmî$   $ʔó·lí$   
 $nî$   $fié·tol$   $e·-pá·$   $tôʔó·lí$   $ʔmî$   $ʔó·lí$   
 then what/something-pl intr[1pl]-do/impf grandfather and grandmother
- $sepanóšæšæʔ$   
 $sepa-∅-nóšæšæ·$   
 tben[1pl:3pl]-bas-help/impf
- (3)  $dô·$   $tʰítʰí$   $q·$   $déʔî$   $ʔikʰa$   $pése$   $šqʰlê·mî·$   
 $dô·$   $tʰítʰí$   $qí$   $délí(-š)$   $ʔikʰa$   $pése$   $-š$   $q-l-ʔê·mîʔ$   
 that grandmother also chicken(-inv) and pig-inv iben[3sg]-inv-be/stat-past

- (4) dō· fiá·lí het<sup>h</sup>ék<sup>w</sup>é·yo<sup>?</sup>æ k<sup>h</sup>epélam<sup>h</sup>h̄  
 dō· fiá·lí sel·sé·k<sup>w</sup>é·yo<sup>?</sup>æ k<sup>h</sup>ya e·pélam<sup>h</sup>l̄-h̄  
 that morning tr[1pl/refl]-feed-cond TA intr[1pl]-go.get/prog-fut
- (5) nōpæta φō·<sup>?</sup>yà sedō·<sup>?</sup>e pésete k<sup>h</sup>ya  
 nōpæ-ta φō·yâ sel·zô·-<sup>?</sup>é pésete(-š) k<sup>h</sup>ya  
 field-loc weed tr[1pl:3pl]-pull.out/pf-nom pig(-inv) TA  
 hepafiâ·h̄<sup>?</sup>ĩ  
 sepa-fiâ·h̄  
 tr[3pl:3inv]-take/potn-fut
- (6) n̄i dō· dé<sup>?</sup>l̄i ča h̄in̄i <sup>?</sup>æȳĩ ek<sup>w</sup>é·yo<sup>?</sup>e <sup>?</sup>æ· ha·  
 n̄i dō· délf̄-š k<sup>h</sup>ya h̄in̄i <sup>?</sup>æȳĩ e-k<sup>w</sup>é·yo<sup>?</sup>-<sup>?</sup>é <sup>?</sup>æ· ha·  
 and that chicken-inv TA Mod outside tr[3pl/refl]-feed-nom ? TA?
- (7) k<sup>h</sup>ȳin̄ihi <sup>?</sup>ik<sup>h</sup>a· dō· hepamâemæ ek<sup>w</sup>é·yodæ<sup>?</sup>e  
 k<sup>h</sup>ȳin̄ihi <sup>?</sup>ik<sup>h</sup>a· dō· sepa-mâemæ e-k<sup>w</sup>é·yo-dâ<sup>?</sup>e  
 corn and that tr[1pl:3inv]-give/impf tr[3pl/refl]-feed-comp
- (8) <sup>?</sup>ik<sup>h</sup>a· n̄i· k<sup>h</sup>emâe·tom̄i<sup>?</sup>læ h̄a· fián̄ito pí·<sup>?</sup>l̄i  
<sup>?</sup>ik<sup>h</sup>a n̄i·(-š) k<sup>h</sup>ya e·mâe·to-m̄i<sup>?</sup>l-<sup>?</sup>æ h̄a· fián̄i-tol pí·lf̄-š  
 and I(-inv) TA intr[1pl]-school-go/prog-cond TA? something-pl apple-inv  
<sup>?</sup>ik<sup>h</sup>a· <sup>?</sup>ĩ·vá k<sup>h</sup>yp<sup>?</sup>ô·h̄i dō· het<sup>h</sup>élefiã<sup>?</sup>æ·  
<sup>?</sup>ik<sup>h</sup>a <sup>?</sup>ĩ·vá k<sup>h</sup>ya e-p<sup>?</sup>ô·h̄i dō· sel·séle-fiã-<sup>?</sup>æ  
 and grapes TA intr[3inv]-ripe/stat-fut that tr[1pl/indef]-eat-take-cond



(15) gʷa ʔɪlæ dækʰɪʔo kʰa də dɪkʰaʔæ  
 gʷa ʔɪlæ də kʰɪʔo kʰa də dɪkʰa-ʔæ  
 rep much opt get lazy/pf TA opt lie.down/pf-cond

də ʔɪmahamɪ  
 də ʔɪbasa-mɪ  
 opt tell/psv.impf-past

(16) ʔikʰa dō séyæɬə ɸinɪto ʧipʰoʔæ  
 ʔikʰa dō séyæɬə(-ʃ) ɸinɪ-tol kʰa e-pʰo-ʔæ  
 and that chili(-inv) something-pl TA intr[3inv]-ripe/stat-cond

pʰo kʰipʰoʔæ ha q  
 pʰo(-ʃ) kʰa e-pʰo-ʔæ ha ql  
 corn(-inv) TA intr[3inv]-ripe/stat-cond ? also

dôgɪtolehâ-tʰiɸiá-wáha ʔikʰa séyæɬəʃiʔehɪ  
 dôgi-tol e-hâ-tʰi-ɸiá-wása ʔikʰa Ø-séyæɬə-ʃi-ʔé-hɪ  
 there-pl intr[1pl]-(corn)husk-take/psv.impf and intr[3bas]-chili-pick-  
 be/potn-fut

(17) kʰówa kʰigʷoʔæ ha hɪnɪ séyæɬə  
 kʰówa kʰa e-gʷo-ʔæ ha hɪnɪ séyæɬə-ʃ  
 some.time TA intr[3inv]-be.lying down (pl)/stat-cond ? Mod chili-inv

ča hepətʰé-séhɪ ní ha kʰa hepəɸítéhɪ  
 kʰa sepa-tʰé-sé-hɪ ní(-ʃ) ha kʰa sepa-ɸíté-hɪ  
 TA tr[1pl:3inv]-tie/potn-fut we(-inv) ? TA tr[1pl:3inv]-string/potn-fut

(18) ni ʔæ·kʷa kʰya hepaʔó·mǫhǫ· etʔæ·dæni  
 ni ʔæ·kʷa kʰya sepa-ʔó·mǫ-hǫ· e-tʔæ·-dæni  
 and outside TA tr[1pl:3inv]-take.out/potn-fut intr[3inv]-dry/potn-comp

(19) ni pʔhatʷo pʔô howa yæ·toleʔlóʔæ  
 ni pʔsatʷo pʔô(-š) howa yæ·-tol e-l-ʔô-ʔæ  
 and sometimes corn(-inv) very many-pl intr[3inv]-grow/pf-cond

dá·hǫʔæ tohelæ·tʔitʔʔ

dá·hǫ-ʔæ to sel-hæ·tʔitʔʔ

dark/stat-cond even tr[1pl:3pl]-(-corn)husk/impf

(20) pʔhatʷo pʔæ· pǫʔæ dá·hǫʔæ  
 pʔsatʷo pʔæ· Ø-pǫʔæ dá·hǫ-ʔæ  
 sometimes moon intr[3bas]-be.bright/stat-cond be.dark/stat-cond

ehæ·tʔimæmæ·

e--hæ·tʔi-mæmæ·

intr[3pl]-husk-go/impf

(21) tovæ hǫda pʔæ·pǫʔæ ha hǫní dô· lâpala  
 tovæ hǫda Ø-pʔæ·-pǫʔæ ha hǫní dô· lâpala  
 if not intr[3bas]-moon-be.bright/stat-cond ? Mod that lamp

heφæ·yaʔi

se-φæ·yaʔi

tr[1pl:3bas]-light/impf

(22) do· fæni̯ dō· nŏpĩʔetæ k<sup>hy</sup>a  
 dō· fæni̯ dō· Ø-nŏpĩʔé-tæ k<sup>hy</sup>a  
 that light that tr[3sg:3bas]-brighten-nom-instr TA

helæ·tʻibæ·hĩ̯  
 sel-hæ·tʻi-bæ·-hĩ̯  
 tr[1pl:unsp]-husk-iter-fut

(23) fietolepá·mĩʔ šónqʔe  
 fié-tol e·-pá·-mĩ̯ šónqʔe  
 something-pl intr[1pl]-do/impf-past always

(24) šó·ni̯ ʔílæ hĩ̯ʔamĩ̯  
 šó·ni̯ ʔílæ Ø-hĩ̯ʔa-mĩ̯  
 everything much intr[3bas]-be.enough/stat-past

(25) tŏʔó·lí dakʷi ve hóweʔʔni̯mĩ̯ ni̯ táe  
 tŏʔó·lí(-š) dakʷil ve howa e-ʔʔni̯-mĩ̯ ni̯ táe  
 grandfather(-inv) maybe ? very intr[3inv]-be.busy/stat-past that time

(26) pʔí·ʔlĩ̯ ni̯ ʔí·vá ni̯ sqdéye bæłŏ·ne̯ šó·ni̯  
 pʔí·lí(-š) ni̯ ʔí·vá ni̯ sqdéya-š bæłŏ·ne̯ šó·ni̯  
 apple(-inv) and grapes and watermelon-inv muskmelon everything  
 eʔlŏ·mĩ̯  
 e-l-ʔŏ·-mĩ̯  
 iben[3pl]-inv-grow/impf-past

- (27) kʷæla híní dō·n̄to hémq̄· ha n̄·  
 kʷæla híní dō·n̄-tol hé-mq̄· kʰya Ø-n̄·  
 now Mod that.thing-inv int-without TA intr[3bas]-be/stat
- (28) kʷæleʔêʔeča híní hé· hésâ·tæʔq̄  
 kʷæla e-ʔê-ʔé-š kʰya híní hé· sé-sâ·-tæʔq̄  
 now intr[3inv]-be/stat-nom-inv TA Mod ? int-work-for
- kʰyʔê héyâ·letæʔq̄  
 kʰya e-ʔê sé-yâ·le-tæʔq̄  
 TA intr[3inv]-be/stat int-money-for
- (29) n̄i tæ do· tōʔó·lí šikʷê·ʔeʔæ híní dō·  
 n̄i tæ dō· tōʔó·lí-š e-kʷê·ʔe-ʔæ híní dō·  
 that time that grandfather-inv intr[3inv]-be alive/stat-cond Mod that
- fín̄itoleʔlóʔé tæ· fín̄itolekʰyím̄tʰasam̄i  
 fín̄i-tol e-l-ʔó-ʔé tæ· fín̄i-tol  
 something-pl iben[3pl]-inv-grow/pf-nom with (that) something-pl
- fín̄itolepéyimiʔe hó·gʻí  
 e-kʰyím̄tʰâsa-m̄f fín̄i-tol e-péyimi-ʔé hó·gʻí  
 intr[3inv]-buy/detr.impf-past something-pl intr[3inv]-need/stat-nom food
- (30) kʷæla híní dō·n̄to mq̄· ha n̄·  
 kʷæla híní dō·n̄-tol mq̄· kʰya Ø-n̄·  
 now Mod that.thing-pl without TA intr[3bas]-be/stat

- (31) pʔí·wa k<sup>h</sup>a nŋ̌  
 pʔí·wa k<sup>h</sup>a Ø-nŋ̌  
 different TA intr[3bas]-be/stat
- (32) pʔí·wa k<sup>w</sup>ê·ʔeya k<sup>h</sup>a seʔá· k<sup>w</sup>æla  
 pʔí·wa k<sup>w</sup>ê·ʔeya k<sup>h</sup>a se-ʔá· k<sup>w</sup>æla  
 different life TA tr[1pl:3bas]-do/impf now
- (33) šó·nɿ̌ k<sup>h</sup>a hek<sup>w</sup>é·šolaʔi  
 šó·nɿ̌ k<sup>h</sup>a sel-k<sup>w</sup>é·šolaʔi  
 everything TA tr[1pl:unsp]-pay/impf
- (34) pʔæ̌· toča hek<sup>w</sup>é·šolaʔi  
 pʔæ̌ tol k<sup>h</sup>a sel-k<sup>w</sup>é·šolaʔi  
 water even TA tr[1pl:unsp]-pay/impf
- (35) ní· k<sup>h</sup>yĩseʔê·mɿ̌ʔæ fɿ̌da nŋ̌  
 ní·(-š) k<sup>h</sup>yĩš e·-ʔê·mɿ̌-ʔæ fɿ̌da nŋ̌  
 we(-inv) small-inv intr[1pl]-cop/stat-past-cond not like.that  
 wɿ̌nŋ̌·nŋ̌  
 Ø-wɿ̌-nŋ̌·-nŋ̌  
 intr[3bas]-not-place-be/stat
- (36) pʔí·wa nŋ̌·nŋ̌  
 pʔí·wa Ø-nŋ̌·-nŋ̌  
 different intr[3bas]-place-be/stat



(37) ʔæ ha ʔile·bépʔæʔo ʔo e·mí·  
 ʔæ kʰa ʔilæ e·bépʔæ·ʔó ʔo e·mí·  
 but TA much intr[1pl]-well-grow/pf ? intr[1pl]-feel/stat

(38) šó·nĭ senó·mĭ fietolepá·mĭʔe  
 šó·nĭ se·nó·mĭ fié·tol e·pá·mĭ·ʔé  
 everything tr[1pl:3bas]-place-see/pf something-pl intr[3inv]-do/impf-past-

nom

#### 5.1.4. Notes

(1) [kʰi] means ‘young one, small one’ or ‘child’. Note the inverse suffix is added since the word has a plural referent here. In the original recorded version, the speaker said [etolepá·ʔé] ‘what we did’. She later changed it to [etolepá·mĭʔe] ‘what we used to do’.

(2) The Jemez kinship system does not distinguish one’s grandfathers by the parental lineage; there is just one term for ‘grandfather’, [tôʔó·lí]. However, there are two terms for one’s grandmother, [ʔó·lí] ‘mother’s mother’ and [tʰítʰí] ‘father’s mother’.

(3) The Jemez word for ‘pig’, [pési·te] or [pésete], was probably borrowed from (Mexican) Spanish—*pizote* ‘red coati’ which is originally from Nahuatl *pitzotl* ‘pig, dirty’ (Santamaría, Francisco J. 1983. Diccionario de Mejicanismos. Mexico: Editorial Porrúa).

(4) Note that the transitive prefix [se-] is pronounced with an [h] here. The change of [s] to [h] is common even among older people. (This change also occurs in the prefix [sepa-]. See Sentence (5).) My older consultants are well aware of this, and even when they first use an [h] during data elicitation, they always ‘correct’ it and say

the same thing with an [s]. This sort of 'self-correction' is not found among younger speakers. Note also that the L-effect operates not only on the initial consonant of a verb stem but also on that of the intensifier /sé/. (See sentence (12).)

(6) The exact meaning of [ʔæ· ha·] is not clear. The speaker says that it indicates the end of the sentence.

(7) [k<sup>hy</sup>ĩñhi] means 'corn off the cob'. (cf. [k<sup>hy</sup>ĩñi] 'corn stalk'.) By [dô·] in this sentence, the speaker means other produces such as wheat and oats.

(8) [mæ·to] 'school' comes from Spanish *maestro*. The vowel of the temporal-conditional marker [-ʔæ] (in [het<sup>h</sup>élefiãʔæ·]) is lengthened and followed by a short pause. Such vowel lengthening is quite common in pre-pause position.

(12) In the recorded version, the speaker inserted [ʔe·] (plus a pause) after [k<sup>hy</sup>ólada]. When I checked with her later, she simply ignored it. [mɸwa] is a stative verb meaning 'be busy' in the sense that people were always moving the body to do work.

(14) The verb [dɸgo·se] is incorporated in the verb stem [nóɸbæyúsa], resulting in a change in the tone and vowel length of the stem. In the recorded version, [g<sup>h</sup>á·] (reportative), followed by a pause, was present after [nóɸbæyúsa].

(15) The reportative marker [g<sup>h</sup>á] is used here to report what the grandparents used to say. The change of [s] to [h] is found in the imperfective suffix in [ʔɸmaha]. Another example is [há·wáha] in (16).

(16) This sentence contains examples of verb incorporation in [hæ·t<sup>h</sup>ífiá·wáha] 'take for corn-husking' and of noun incorporation in [séyæɸlæšɸi] 'chili-picking'.

(17) In the recorded version, the speaker said [heɸaɸí . . . . ɸɸle], but she later changed it to [heɸaɸítéhɸi]. The chilies need to be kept and dried outside for a few

days before being tied; otherwise they will break when tied. This process is explained in (18).

(19) In the original version, the initial consonant of the prefix [se-] in [tohefæ·t'it'it'] is pronounced with an [h] after [to], but when checked later, the speaker alternated between [l] and [h].

(21) The noun [p'æ·] 'moon' is incorporated in the verb, causing a tone change in the verb stem. In the recorded version, the speaker inserted [fínɨ] 'something, what' after [dô·] as she looked for the right word. [lâpala] is a loanword from Spanish. As noted in Section 2.3.2, no native Jemez words begin with [l].

(23) In the recorded version, the speaker said [šó·nɨ fietolepá·mɨ' šónq'e]. As we listened to the tape later, she said that she had meant to say [šónq'e] 'always' instead of [šó·nɨ] 'everything'.

(24) This sentence contains three Spanish loanwords: [ʔí·vá] 'grapes' (*uva*), [sqdéya] 'watermelon' (*sandía*), and [bælô·ne] 'muskmelon' (*melónes*). This and other Jemez speakers pronounce the inverse form for the word for 'watermelon' with a final [e] (i.e. [sqdéye]).

(27) Another consonant alternation, [k<sup>hy</sup>] to [h] (in the particle [ha]), is seen here. (See also sentences (30) and (37) below.) The question particle [há] may have contained an initial [k<sup>hy</sup>] in the past. Another consultant occasionally says [fíék<sup>hy</sup>á] 'how', instead of [fíéh'á]. This possibility is also supported by the existence of the interrogative word [séčá] 'who'. The word consists of /sél/ 'who, someone' and the question particle, and exhibits an apparent case of L-effect. (/k<sup>hy</sup>/ changes to [č] after an underlying /l/.)

(28) [k<sup>w</sup>æle'ê'e(š)] literally means '(ones who) are now', and refers specifically to today's young people in the sentence.

(29) There is a very brief pause before the instrumental marker [tæ̃], which is normally suffixed to a noun.

(37) [mĩ̃] 'feel', which often occurs in compound stative verbs, is used as a main verb here.

(38) [epá·mĩ̃'e] 'what they used to do', as the speaker means it here, includes things such as dances that they used to do but do not do any longer.

## APPENDIX 1. ABBREVIATIONS

|        |                          |      |                              |
|--------|--------------------------|------|------------------------------|
| act    | active                   | Mod  | modal particle               |
| adm    | admonitive               | neg  | negative                     |
| agt    | agent                    | obj  | object                       |
| asp    | aspect                   | opt  | optative                     |
| aux    | auxiliary                | potn | potential                    |
| bas    | basic number             | prog | progressive                  |
| ben    | benefactive              | psv  | passive                      |
| comp   | complementizer           | pf   | perfective                   |
| cond   | conditional-temporal     | pl   | plural                       |
| conj   | conjunction              | poss | possessive                   |
| cop    | copula                   | px   | prefix                       |
| dem    | demonstrative            | ppfx | pronominal prefix            |
| detr   | detransitive             | Q    | question marker              |
| du     | dual                     | rec  | reciprocal                   |
| excl   | exclusive                | rep  | reportative                  |
| fut    | future                   | refl | reflexive                    |
| hor    | hortative                | sg   | singular                     |
| iaux   | inflectional auxiliary   | stat | stative                      |
| iben   | intransitive benefactive | sub  | subordinator                 |
| imp    | imperative               | subj | subject                      |
| impf   | imperfective             | sfx  | suffix                       |
| inc    | incorporative            | stat | stative                      |
| incl   | inclusive                | TA   | tense-aspect particle        |
| indef  | indefinite               | tben | transitive benefactive       |
| instr  | instrumental             | tr   | transitive                   |
| int    | intensifier              | unf  | unfulfilled                  |
| interr | interrogative            | unsp | unspecified                  |
| intr   | intransitive             | vb   | verb                         |
| inv    | inverse number           |      |                              |
| iter   | iterative                | S    | subject of intransitive verb |
| loc    | locative                 | A    | subject of transitive verb   |

|     |                           |
|-----|---------------------------|
| P   | object of transitive verb |
| B   | beneficiary—dative        |
| H   | High tone (´)             |
| L   | Low tone (unmarked)       |
| F   | Falling tone (^)          |
| M   | Mid tone (˘)              |
| C   | Consonant                 |
| V   | Vowel                     |
| +   | morpheme boundary         |
| ##  | word boundary             |
| ### | pause                     |

APPENDIX 2. A LIST OF SPANISH LOANWORDS IN JEMEZ

| <u>Jemez</u> | <u>Spanish</u> | <u>English gloss</u>                              |
|--------------|----------------|---|
| ʔalagú·nq    | laguna         | lagoon  |
| ʔalawê·ta    | a la huerta    | garden  |
| ʔavâ·nĭ      | avena          | oats  |
| ʔaró         | arroz          | rice  |
| ʔasâ·té      | aceite         | oil (for machine, car)                            |
| ʔawasé       | alguacil       | sheriff, someone with authority with<br>the law   |
| ʔí·vâe       | uva            | grape   |
| bælô·ne      | melón(es)      | muskmelon   |
| bâto         | mate           | flat  |
| belegâ·nĭ    | americano      | white man, English, loan word(s)<br>from English" |
| bí·lí        | burro          | burro, donkey                                     |
| čivâ·ti      | chivato        | Billy goat  |
| čí·nĭ        | chino          | Chinese (person); curly                           |
| dĭ·se        | dulce          | candy   |
| ɸâ·          | Juan           | John  |
| ɸé·vé        | jueves         | Thursday  |
| fâ·fa        | alfalfa        | alfalfa   |
| gaɸé         | café           | coffee  |
| giwâ·yi      | caballo        | horse   |
| girâ·yi      | correo         | mailman   |
| gĭsenq       | cocina         | kitchen   |

|                         |                             |   |
|-------------------------|-----------------------------|---|
| hapaní                  | japonés                     | Japanese (person)                                     |
| havó                    | jabón                       | soap  |
| k <sup>h</sup> amq̄·tæ  | cama                        | bed   |
| k <sup>h</sup> ô·le     | col(es)                     | cabbage   |
| k <sup>h</sup> yæt'ila  | Castilla                    | Mexican, Spanish-speaking person,<br>Spanish language |
| k <sup>w</sup> î tæ     | cuenta                      | bead, necklace  |
| lâpara                  | lámpara                     | lamp  |
| lâ·vo                   | leva 'frock coat' (Am. Sp.) | coat, jacket  |
| leçû·k <sup>h</sup> a   | lechuga                     | lettuce   |
| lí·ní                   | lunes                       | Monday  |
| mqték <sup>h</sup> í·ya | mantequilla                 | butter  |
| mqtêla                  | bastilla 'hem'?             | skirt   |
| má·k <sup>h</sup> inq   | máquina                     | machine   |
| má·té                   | martes                      | Tuesday   |
| mâ·sæ (mâ·sa)           |                             | mesa table  |
| mâ·to                   | maestro                     | teacher, school                                       |
| mêlá                    | melado                      | syrup   |
| mê·sá                   | misa                        | mass  |
| mí·gile                 | miércoles                   | Wednesday   |
| mîlâ·ti                 | mulato                      | black (person)  |
| mî·sá                   | moza 'girl'?                | cat   |
| nqr̄ha                  | naranja                     | orange (fruit)  |
| nqváha                  | navaja                      | pocket knife  |
| pâ·ha                   | paja                        | straw   |
| pá·k <sup>w</sup> a     | pascua                      | feast   |



|               |                             |                            |
|---------------|-----------------------------|----------------------------|
| pá·yí         | pañó                        | cloth                      |
| pâ·læ         | pera                        | pear                       |
| pési·te       | pizote 'red coati'          | pig                        |
|               | (C. Amer., Mex. Sp.)        |                            |
| polí          | policía (from Eng. police?) | policeman (in uniform)     |
| potá          | portal                      | porch                      |
| salawélæ      | ciruela                     | cherry (tree), plum (tree) |
| sá·vola       | sábado                      | Saturday                   |
| sâ·læ         | seda                        | silk                       |
| sô·pa         | sopa                        | bread pudding              |
| srqpa         | trampa                      | trap                       |
| tâ·sæ (tâ·sa) | taza                        | cup, dish                  |
| tâ·           | té                          | (wild) tea                 |
| tenî·te       | teniente                    | lieutenant                 |
| té·hede       | tejido                      | shirt                      |
| tîmqví        | automóvil (Sp)?             | car                        |
| títa·se       | totache (Mex. Sp.)          | priest, minister           |
| tomq̄·te      | tomate                      | tomato                     |
| tomîgi        | domingo                     | Sunday, week               |
| tó·ló         | toro                        | bull                       |
| t'â·da        | tienda                      | store                      |
| t'í·çile      | cuchara (?)                 | (table)spoon               |
| vak'hê·k'e    | Albuquerque                 | Albuquerque                |
| vatâ·ye       | botella                     | bottle, jar                |
| vâ·si         | vaso                        | drinking glass             |
| vâ·ga         | vega                        | meadow, pasture            |

|        |          |        |
|--------|----------|--------|
| vetúnq | ventana  | window |
| vê·nị  | vino     | wine   |
| wậ·te  | guante   | glove  |
| yâ·le  | real(es) | money  |
| yé·nị  | viernes  | Friday |
| yôš    | dios     | god    |

### APPENDIX 3. DISTINCTIVE FEATURES

#### Vowels

|             | i | e | æ | ɪ | o | ɑ |
|-------------|---|---|---|---|---|---|
| consonantal | - | - | - | - | - | - |
| sonorant    | + | + | + | + | + | + |
| high        | + | - | - | + | - | - |
| low         | - | - | + | - | - | + |
| back        | - | - | - | + | + | + |
| round       | - | - | - | - | + | + |
| long        | - | - | - | - | - | - |
| nasal       | - | - | - | - | - | - |

|             | iː | eː | æː | ɪː | oː | ɑː |
|-------------|----|----|----|----|----|----|
| consonantal | -  | -  | -  | -  | -  | -  |
| sonorant    | +  | +  | +  | +  | +  | +  |
| high        | +  | -  | -  | +  | -  | -  |
| low         | -  | -  | +  | -  | -  | +  |
| back        | -  | -  | -  | +  | +  | +  |
| round       | -  | -  | -  | -  | +  | +  |
| long        | +  | +  | +  | +  | +  | +  |
| nasal       | -  | -  | -  | -  | -  | -  |

|             | ɪ | æ | ɨ | ɔ | ɒ |
|-------------|---|---|---|---|---|
| consonantal | - | - | - | - | - |
| sonorant    | + | + | + | + | + |
| high        | + | - | + | - | - |
| low         | - | + | - | - | + |
| back        | - | - | + | + | + |
| round       | - | - | - | + | + |
| long        | - | - | - | - | - |
| nasal       | + | + | + | + | + |

|             | ɪ̃ | æ̃ | ɨ̃ | ɔ̃ | ɒ̃ |
|-------------|----|----|----|----|----|
| consonantal | -  | -  | -  | -  | -  |
| sonorant    | +  | +  | +  | +  | +  |
| high        | +  | -  | +  | -  | -  |
| low         | -  | +  | -  | -  | +  |
| back        | -  | -  | +  | +  | +  |
| round       | -  | -  | -  | +  | +  |
| long        | +  | +  | +  | +  | +  |
| nasal       | +  | +  | +  | +  | +  |

## Consonants

|                 | p | b | p <sup>ʰ</sup> | t | t <sup>h</sup> | d | t <sup>ʰ</sup> |
|-----------------|---|---|----------------|---|----------------|---|----------------|
| consonantal     | + | + | +              | + | +              | + | +              |
| sonorant        | - | - | -              | - | -              | - | -              |
| high            | - | - | -              | - | -              | - | -              |
| back            | - | - | -              | - | -              | - | -              |
| low             | - | - | -              | - | -              | - | -              |
| anterior        | + | + | +              | + | +              | + | +              |
| coronal         | - | - | -              | + | +              | + | +              |
| voice           | - | + | -              | - | -              | + | -              |
| continuant      | - | - | -              | - | -              | - | -              |
| nasal           | - | - | -              | - | -              | - | -              |
| strident        | - | - | -              | - | -              | - | -              |
| delayed release | - | - | -              | - | -              | - | -              |
| round           | - | - | -              | - | -              | - | -              |
| lateral         |   |   |                |   |                |   |                |
| spread          | - |   | -              | - | +              |   | -              |
| constricted     | - | - | +              | - | -              | - | +              |

|                 | t <sup>y</sup> | k <sup>hy</sup> | k <sup>h</sup> | g <sup>y</sup> | g | k <sup>2y</sup> | k <sup>2</sup> |
|-----------------|----------------|-----------------|----------------|----------------|---|-----------------|----------------|
| consonantal     | +              | +               | +              | +              | + | +               | +              |
| sonorant        | -              | -               | -              | -              | - | -               | -              |
| high            | +              | +               | +              | +              | + | +               | +              |
| back            | -              | -               | +              | -              | + | -               | +              |
| low             | -              | -               | -              | -              | - | -               | -              |
| anterior        | +              | -               | -              | -              | - | -               | -              |
| coronal         | +              | -               | -              | -              | - | -               | -              |
| voice           | -              | -               | -              | +              | + | -               | -              |
| continuant      | -              | -               | -              | -              | - | -               | -              |
| nasal           | -              | -               | -              | -              | - | -               | -              |
| strident        | -              | -               | -              | -              | - | -               | -              |
| delayed release | -              | -               | -              | -              | - | -               | -              |
| round           | -              | -               | -              | -              | - | -               | -              |
| lateral         |                |                 |                |                |   |                 |                |
| spread          | -              | +               | +              |                |   | -               | -              |
| constricted     | -              | -               | -              | -              | - | +               | +              |

|                 | č <sup>h</sup> | ǰ | čʔ | k <sup>w</sup> | ʔ | ϕ | f |
|-----------------|----------------|---|----|----------------|---|---|---|
| consonantal     | +              | + | +  | +              | + | + | + |
| sonorant        | -              | - | -  | -              | - | - | - |
| high            | +              | + | +  | +              | - | - | - |
| back            | -              | - | -  | +              | - | - | - |
| low             | -              | - | -  | -              | + | - | - |
| anterior        | -              | - | -  | -              | - | + | + |
| coronal         | +              | + | +  | -              | - | - | - |
| voice           | -              | + | -  | -              | - | - | - |
| continuant      | -              | - | -  | -              | - | + | + |
| nasal           | -              | - | -  | -              | - | - | - |
| strident        | +              | + | +  | -              | - | - | + |
| delayed release | +              | + | +  | -              | - |   |   |
| round           | -              | - | -  | +              | - | - | - |
| lateral         |                |   |    |                |   |   |   |
| spread          | +              |   |    | -              |   |   |   |
| constricted     | -              | - | +  | -              | + |   |   |

|                 | v | s | z | ʒ | h | ɦ | l |
|-----------------|---|---|---|---|---|---|---|
| consonantal     | + | + | + | + | + | + | + |
| sonorant        | - | - | - | - | - | - | + |
| high            | - | - | - | + | - | - | - |
| back            | - | - | - | - | - | - | - |
| low             | - | - | - | - | + | + | - |
| anterior        | + | + | + | - | - | - | + |
| coronal         | - | + | + | + | - | - | + |
| voice           | + | - | + | - | - | + | + |
| continuant      | + | + | + | + | + | + | + |
| nasal           | - | - | - | - | - | - | - |
| strident        | + | + | + | + | - | - | - |
| delayed release |   |   |   |   |   |   |   |
| round           | - | - | - | - | - | - | - |
| lateral         |   |   |   |   |   |   | + |
| spread          |   |   |   |   | + | + |   |
| constricted     |   |   |   |   |   |   | - |



|                 | ʔl | ɬ | r | m | ʔm | n | ʔn |
|-----------------|----|---|---|---|----|---|----|
| consonantal     | +  | + | + | + | +  | + | +  |
| sonorant        | +  | + | + | + | +  | + | +  |
| high            | -  | - | - | - | -  | - | -  |
| back            | -  | - | - | - | -  | - | -  |
| low             | -  | - | - | - | -  | - | -  |
| anterior        | +  | + | + | + | +  | + | +  |
| coronal         | +  | + | + | - | -  | + | +  |
| voice           | +  | - | + | + | +  | + | +  |
| continuant      | +  | + | + | - | -  | - | -  |
| nasal           | -  | - | - | + | +  | + | +  |
| strident        | -  | - | - | - | -  | - | -  |
| delayed release |    |   |   | - | -  | - | -  |
| round           | -  | - | - | - | -  | - | -  |
| lateral         | +  | + | - |   |    |   |    |
| spread          |    |   |   |   |    |   |    |
| constricted     | +  | - |   | - | +  | - | +  |

|                 | y | <sup>2</sup> y | w | <sup>2</sup> w |
|-----------------|---|----------------|---|----------------|
| consonantal     | - | -              | - | -              |
| sonorant        | + | +              | + | +              |
| high            | + | +              | + | +              |
| back            | - | -              | + | +              |
| low             | - | -              | - | -              |
| anterior        | - | -              | - | -              |
| coronal         | - | -              | - | -              |
| voice           | + | +              | + | +              |
| continuant      | + | +              | + | +              |
| nasal           | - | -              | - | -              |
| strident        | - | -              | - | -              |
| delayed release |   |                |   |                |
| round           | - | -              | + | +              |
| lateral         |   |                |   |                |
| spread          |   |                |   |                |
| constricted     | - | +              | - | +              |

APPENDIX 4. TRANSITIVE VERB PARADIGMS

| Verb  | Active  |        |         |        | Passive (Detransitive) |          |         |          |
|-------|---------|--------|---------|--------|------------------------|----------|---------|----------|
|       | Potn    | Pf     | Impf    | Imp    | Inc                    | Potn     | Pf      | Impf     |
| G2-3  | 'lift'  | zò·    | zò·wá'í | zò·'wì | zò·                    | zò·wè·   | zò·'wè  | zò·wàsa  |
| G3-1  | 'make'  | pá·    | páepæ·  | páelæ  | páya                   | páeyè·   | pá'ye   | páeyàsa  |
| G5-3a | 'bury'  | gídé   | gídá'í  | gít'í  | gíde                   | gídæ·    | gídæ    | gídása   |
| G5-3b | 'tie'   | r'é·sé | r'é·r'e | r'é·   | sé·se                  | r'é·sà·  | r'é·sà  | r'é·sàsa |
| G6    | 'eat'   | r'é'lè | r'é·r'e | r'élé  | séle                   | r'é'læ·  | r'é'læ  | r'é'làsa |
| G7    | 'feed'  | k'é·yo | k'é·yò  | k'é·yi | k'é·yo                 | k'é·bæ·  | k'é·p'æ | k'é·basa |
| G8    | 'beat'  | r'ò·nì | r'ò·f'ò | r'ò·nì | sò·nì                  | r'ò·f'æ· | r'ò·dæ  | r'ò·nàsa |
| G9-2  | 'shoot' | šà·pe  | šà·ve   | šà·pì  | šà·pe                  | šà·pæ·   | šà·pæ   | šà·pàsa  |
| G10   | 'slap'  | pò·nì· | pò·nì·  | pò·nì· | pò·nì·                 | pò·bà·   | pò·p'æ  | pò·màsa  |

APPENDIX 5. INTRANSITIVE VERB PARADIGMS

|           | <u>Potn</u> | <u>Pf</u> | <u>Impf</u> | <u>Imp</u> | <u>Inc</u> | <u>Prog</u> |
|-----------|-------------|-----------|-------------|------------|------------|-------------|
| 'come'    | 'æ·         | 'æ        | 'æ?'æ·      | -          | 'ɿ         | 'ɿ          |
| 'go'      | mæ·         | mæ        | mæmæ·       | -          | mɿ         | mɿ          |
| 'exit'    | šo·lé       | šo·       | šo·lí       | šo         | šo·lé      | -           |
| 'descend' | t'ó         | t'ó       | t'ó-t'ó     | t'ó        | t'ó        | -           |
| 'ascend'  | wô·yé·      | wô·'yé    | wô·yása     | wô·yi      | wô·        | -           |

APPENDIX 6. JEMEZ NUMERALS

|    |                           |     |                         |
|----|---------------------------|-----|-------------------------|
| 1  | pʔí                       | 41  | wí·tɪkʷa táepʔí         |
| 2  | wí(š)                     | 50  | pʔí·tʰokʷa táe          |
| 3  | tá                        | 60  | mí·tʰikʷa táe           |
| 4  | wí·(l)                    | 70  | sɪlawì·kʷa táe          |
| 5  | pʔí·tʰo                   | 80  | hɪlawì·kʷa táe          |
| 6  | mí·tʰi                    | 90  | hɪnqwi·kʷa táe          |
| 7  | sí                        | 100 | tænqwi·kʷa táe          |
| 8  | hí                        | 101 | tænqwi·kʷa táepʔí       |
| 9  | hí                        | 120 | tænqwi·kʷa wí táe       |
| 10 | táe                       | 200 | wí táenqwi·kʷa táe      |
| 11 | táepʔí                    | 300 | tá·sele táenqwi·kʷa táe |
| 12 | táewi(š)                  |     |                         |
| 13 | táetá·                    |     |                         |
| 14 | táewi·                    |     |                         |
| 15 | táepʔí·tʰo                |     |                         |
| 16 | táemí·tʰi                 |     |                         |
| 17 | táesì                     |     |                         |
| 18 | táehí                     |     |                         |
| 19 | táehí·                    |     |                         |
| 20 | wí táe                    |     |                         |
| 21 | wí táepʔí                 |     |                         |
| 30 | tá·sele táe [tá·hile táe] |     |                         |
| 31 | tá·sele táepʔí            |     |                         |
| 40 | wí·tɪkʷa táe              |     |                         |

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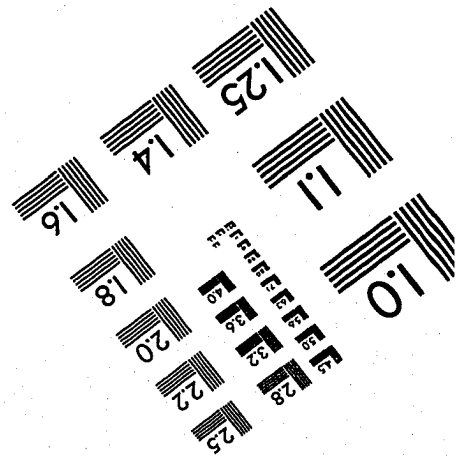
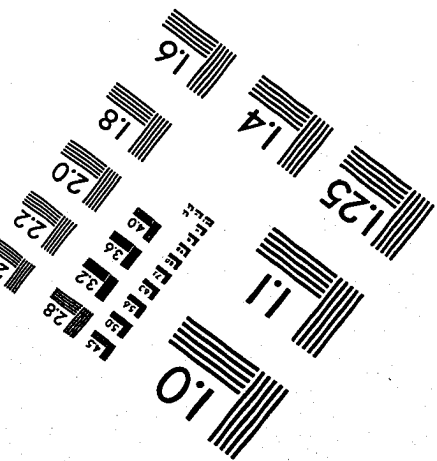
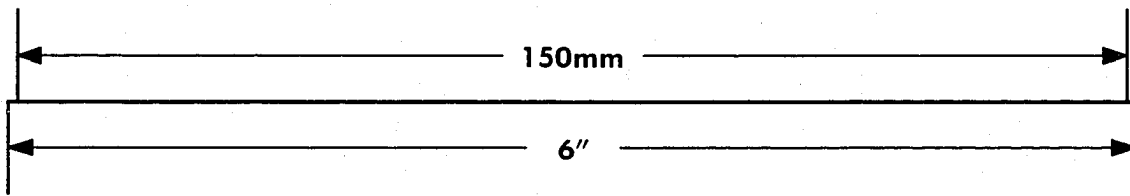
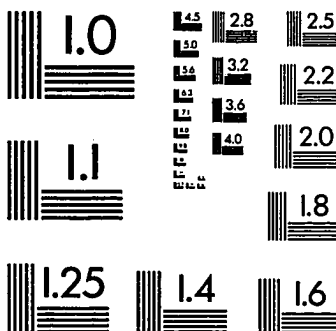
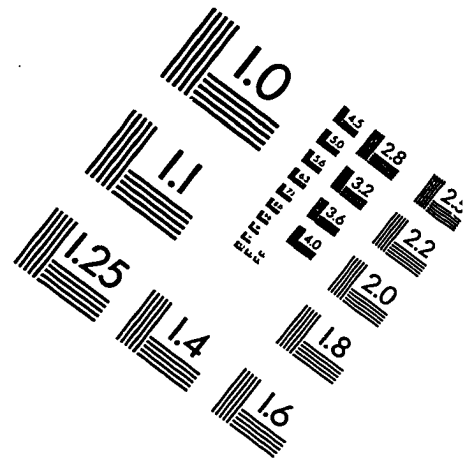
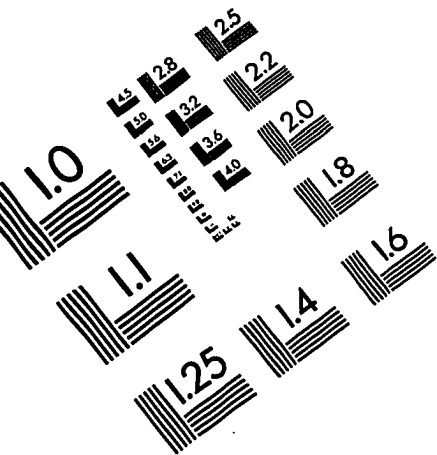
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