UNIVERSITY OF CALIFORNIA
Santa Barbara

Productive Reduplication in Barbareño Chumash

A Thesis submitted in partial satisfaction
of the requirements for the degree of

Master of Arts

in

Linguistics

by

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Professor Marianne Mithun
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June 1995
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is approved:

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Committee Chairperson

June 1995
First I give sincere thanks to the members of my committee, Carol Cesaretti (Chair), Marianne Witten, and Wallace Chafe, for their guidance, patience, and invaluable comments on earlier drafts of this thesis. I am especially grateful to Carol Cesaretti for being supremely helpful and patient while guiding me in my understanding of phonology in general and Bararemi replication in particular.

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1995

My work on Bararemi Ch'ilo has been made possible by grant MMD94-11158 from the National Science Foundation. Marianne Witten is the principal investigator of this grant. I am deeply grateful to her for her ongoing support and encouragement, and for giving me the opportunity to work with her on Bararemi grammar and discourse.

I am grateful to the Santa Barbara Museum of Natural History for kindly providing the microfilm of J. F. Harrington's manuscript materials, and thereby making this study possible.

I wish to thank Tayneel Ong and Yousufdele Bahaya for helping the Ch'ilo character feet.

I give special thanks to my parents for their encouragement and support.

Finally, words cannot express my appreciation for J. F. Harrington and his immense contribution to the study of American Indian languages. This thesis is hereby dedicated to him.

iii
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Finally, words cannot express my appreciation for J. P. Harrington and his immense contribution to the study of American Indian languages. This thesis is humbly dedicated to him.
ABSTRACT

Productive Reduplication in Barbareño Chumash

by

Suzanne Maria Wash

This thesis is a study of the productive patterns of reduplication in Barbareño Chumash, using the theoretical frameworks of Prosodic Morphology and Lexical Phonology.

In the preliminary part of this study I survey the kinds of reduplication that occur in Barbareño. I use several criteria to show that this language has both lexical and productive reduplication. I establish that there are seven types of lexical reduplication and five types of productive reduplication. In a precursory analysis, I classify the five types of productive reduplication according to the segmental form of the reduplicative copy. Then, within the frameworks of Prosodic Morphology and Lexical Phonology, I discuss issues and details about syllable structure and word-building in Barbareño that are pertinent to the phonology of productive reduplication. In the latter part of this study I give an analysis for each of the five types of productive reduplication, using the frameworks mentioned above. From these analyses, I am able to establish that the five types of productive reduplication fall under a unified, prosodic characterization: the template for the reduplicative copy is a bimoraic syllable, prefixed to the base.
TABLE OF CONTENTS

Acknowledgments ........................................ iv
Abstract .................................................... v
List of Abbreviations .................................... ix
List of Figures .......................................... x

1. Introduction .......................................... 1
  1.1 Geography and linguistic affiliation .......... 1
  1.2 Sources ............................................. 1
  1.3 Previous studies on Chumash reduplication ... 2
  1.4 Organization of the thesis ...................... 3

2. Description of the data ............................ 6
  2.1 The database ........................................ 6
  2.2 Reduplication in Barbareño .................... 7
  2.2.1 Reduplication defined ......................... 7
  2.2.2 Lexical vs. productive reduplication ....... 8
  2.2.3 Types of lexical reduplication in Barbareño .. 9
    2.2.3.1 CVC lexical reduplication ................ 9
    2.2.3.2 Wuluwul lexical reduplication ............ 10
    2.2.3.3 Bisyllabic lexical reduplication .......... 10
    2.2.3.4 Medial lexical reduplication ............. 11
    2.2.3.5 CV lexical reduplication .................. 11
    2.2.3.6 -VC lexical reduplication ................ 12
    2.2.3.7 Idiosyncratic lexical reduplication ...... 12
    2.2.4 Productive reduplication in Barbareño .. 14
2.2.4.1 Types of productive reduplication .......... 17
2.2.4.1.1 Type One productive reduplication .......... 17
2.2.4.1.2 Type Two productive reduplication .......... 21
2.2.4.1.3 Type Three productive reduplication ....... 24
2.2.4.1.4 Type Four productive reduplication ......... 25
2.2.4.1.5 Type Five productive reduplication ......... 27
2.2.4.2 Problematic cases ......................... 28

3. Theoretical orientation .......................... 35
3.0 Introduction .................................... 35
3.1 Prosodic Morphology ............................. 35
3.1.1 Prosodic Morphology in Barbareño Chumash ..... 37
3.1.1.1 Barbareño syllable structure ................. 37
3.1.1.1.1 Syllable onset restrictions ................ 38
3.1.1.1.2 Syllable coda restrictions ................ 47
3.1.1.1.3 The status of consonants that are glottalized or aspirated .................. 51
3.1.1.1.3.1 Glottalized or aspirated consonants as clusters: evidence from the onset position ....................... 52
3.1.1.1.3.2 Glottalized or aspirated consonants as clusters: evidence from the coda position ....................... 56
3.1.1.1.3.3 Glottalized or aspirated consonants as single segments ......................... 63
3.1.1.1.3.4 The representation of glottalized or aspirated consonants in this thesis ..... 65
3.1.1.2 Syllabification, stress, and syllable weight 68
3.1.1.2.1 Other factors of predictable stress ....... 72
3.1.1.2.2 Syllabification of clusters in which one member is a glottal consonant .......... 73
3.1.1.2.3 Syllabification of extraprosodic consonants 75
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>first person</td>
</tr>
<tr>
<td>10</td>
<td>first person object</td>
</tr>
<tr>
<td>2</td>
<td>second person</td>
</tr>
<tr>
<td>20</td>
<td>second person object</td>
</tr>
<tr>
<td>3</td>
<td>third person</td>
</tr>
<tr>
<td>APPL</td>
<td>applicative</td>
</tr>
<tr>
<td>ART</td>
<td>article</td>
</tr>
<tr>
<td>ASSOC</td>
<td>associative</td>
</tr>
<tr>
<td>CA</td>
<td>causative</td>
</tr>
<tr>
<td>conj.</td>
<td>conjunction</td>
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<tr>
<td>DES</td>
<td>desiderative</td>
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<tr>
<td>DIR</td>
<td>directional</td>
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<tr>
<td>DIS</td>
<td>distal</td>
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<tr>
<td>DU</td>
<td>dual</td>
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<tr>
<td>EM</td>
<td>emphatic</td>
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<tr>
<td>FUT</td>
<td>future</td>
</tr>
<tr>
<td>GL</td>
<td>goal/applicative</td>
</tr>
<tr>
<td>HAB</td>
<td>habitual</td>
</tr>
<tr>
<td>HI</td>
<td>connective morpheme hi</td>
</tr>
<tr>
<td>?I</td>
<td>connective morpheme ?i</td>
</tr>
<tr>
<td>I</td>
<td>Ineseño Chumash</td>
</tr>
<tr>
<td>IDF</td>
<td>indefinite</td>
</tr>
<tr>
<td>IP</td>
<td>imperfective</td>
</tr>
<tr>
<td>INSTR</td>
<td>instrumental</td>
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<tr>
<td>KA</td>
<td>morpheme ka</td>
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<tr>
<td>LOC</td>
<td>locative</td>
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<tr>
<td>N</td>
<td>negative</td>
</tr>
<tr>
<td>NM</td>
<td>nominalizer/stative</td>
</tr>
<tr>
<td>NFST</td>
<td>noun past</td>
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<tr>
<td>PL</td>
<td>plural</td>
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<tr>
<td>PLO</td>
<td>plural object</td>
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<tr>
<td>PST</td>
<td>past</td>
</tr>
<tr>
<td>PRX</td>
<td>proximal</td>
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<tr>
<td>R</td>
<td>reduplication</td>
</tr>
<tr>
<td>RFL</td>
<td>reflexive</td>
</tr>
<tr>
<td>RM</td>
<td>remote</td>
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<tr>
<td>RP</td>
<td>repetitive</td>
</tr>
<tr>
<td>Span.</td>
<td>Spanish</td>
</tr>
<tr>
<td>TR</td>
<td>transitive</td>
</tr>
</tbody>
</table>

LIST OF ABBREVIATIONS
LIST OF FIGURES

Figure 3.1 Obligatory Onset Constraint .................. 38
Figure 3.2 Glottal Epenthesis I ......................... 40
Figure 3.3 Glottal Epenthesis II ......................... 42
Figure 3.4 Complex Onset Constraint .................... 42
Figure 3.5 [+cg]-Onset Constraint ...................... 46
Figure 3.6 Optional Coda Constraint .................... 47
Figure 3.7 Complex Coda Constraint .................... 48
Figure 3.8 [+cg]-Delink .................................. 50
Figure 3.9 Glottalized/aspirated consonant .............. 66
Figure 3.10 Cluster with glottal consonant .............. 66
Figure 3.11 Root Node Reduction ........................ 67
Figure 4.1. Clash Deletion ............................... 133
Chapter 1
Introduction

1.1 Geography and linguistic affiliation.
Barbareño is a member of the Chumash family of languages. These languages were originally spoken in the territory of the Chumash, which extended along the southern California coast from the area of Malibu to just north of San Luis Obispo. It stretched inward to Tejon Pass at the southern end of the San Joaquin valley. Chumash territory also included the Santa Barbara channel islands: Anacapa (largely uninhabited), Santa Cruz, Santa Rosa, and San Miguel. There are six major, distinct linguistic groups attested in Chumash (Klar 1977, 1981): Obispeño, Ineseño, Barbareño, Ventureño, Purisimeño, and Cruzeño. These can be classified into three larger groups: Northern Chumash (Obispeño), Central Chumash (Ineseño, Barbareño, Ventureño, Purisimeño) and Island Chumash (Cruzeño).¹

1.2 Sources.
The data in this study comes primarily from one source: John F. Harrington’s manuscript materials of linguistic and ethnographic work among the Chumash (Kraus Microfilm Edition, volume three). From 1913 until his death in 1961, Harrington worked with five of the last known speakers of Barbareño: Luisa Ignacio, Juliana Ignacio, Juan de Jesus Justo, Lucrecia Garcia, and Mary Yee. Mary Yee, the last speaker of Barbareño, died in 1965. All speakers were bilingual in Barbareño and Spanish; Mary Yee was also fluent in English. In addition, Lucrecia Garcia and (especially) Mary Yee were able to read and write in Barbareño. The data used in my study is from the
texts and grammatical notes (recorded by Harrington on paper) from Mary Yee. Forms from other speakers will be cited when necessary.

During the time of his fieldwork, Harrington recorded languages on paper, wax cylinders, and aluminum discs. Convenient tools such as magnetic tape recorders were not available until late in his career. Despite this, Harrington used a detailed phonetic transcription when writing down a language, and did not write phonemically. The general consensus among linguists who know Harrington's work is that he had an extraordinarily acute ear for phonetic detail (Callaghan 1975, 1976). Thus Harrington's written recordings of American Indian languages are valued by present-day linguists for their accuracy and reliability.

The second source of data is from the tape recordings made by Madison S. Beeler, who worked with Yee in a series of field trips from 1954 through 1961. There are many more reduplicative forms in Harrington's corpus than in Beeler's tapes. I will give both Harrington's form and the form on Beeler's tape (for the same given word) only if the form on tape differs from the form in Harrington's transcription. In such a case, the form on tape will be accompanied by the notation '[Beeler tape]'..

1.3 Previous studies on Chumash reduplication.

Reduplication in the Chumash languages has been discussed in two published papers: Barbareño Chumash Grammar: A Farrago (Beeler 1976) and Reduplication in Chumash (Applegate 1976), the latter treating Ineseño (Applegate's data on Ineseño is originally from the unpublished fieldnotes of J. P. Harrington.) Formal treatment of an Ineseño Chumash reduplication pattern (from Applegate 1976) is given
in McCarthy and Prince (1986). Turning to unpublished manuscripts, Applegate's dissertation (1972) has a section on reduplication, which is essentially summarized in Applegate (1976). Barbareño reduplication is treated in Beeler's *Topics in Barbareño Chumash Grammar* (1970). The reduplication data and description in that manuscript is the same as that given in Beeler (1976). Finally, a brief discussion of productive Barbareño reduplication is given in Wash (1992), which is essentially a descriptive overview of the patterns which are given formal analysis and explanation in this thesis.

1.4 Organization of the thesis.

This thesis is arranged in the following way. In the next chapter, I give a description of the reduplication data to be analyzed. This discussion also includes a description of the kinds of reduplication data that will not be analyzed. In Chapter 3 I present the theoretical assumptions to be used in analyzing the reduplication data. I interweave the discussion of the theories with facts about Barbareño phonology that are pertinent to the analysis of productive reduplication in the following chapter. In Chapter 4, I analyze what I have recognized as the five types of productive reduplication in Barbareño. Finally, I conclude this study in Chapter 5.
NOTES FOR CHAPTER 1:

1. Island Chumash also includes Roseño, a poorly attested dialect of Santa Rosa Island.

2. The following orthographic substitutions have been made where applicable:

<table>
<thead>
<tr>
<th>Harrington:</th>
<th>This thesis:</th>
</tr>
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<tbody>
<tr>
<td>e</td>
<td>i</td>
</tr>
<tr>
<td>j</td>
<td>y</td>
</tr>
<tr>
<td>K</td>
<td>q</td>
</tr>
<tr>
<td>q</td>
<td>x</td>
</tr>
<tr>
<td>x</td>
<td>x or h (depending upon the underlying form of the word)</td>
</tr>
<tr>
<td>ts</td>
<td>c</td>
</tr>
<tr>
<td>t's</td>
<td>č</td>
</tr>
<tr>
<td>t's'</td>
<td>č</td>
</tr>
<tr>
<td>s</td>
<td>h</td>
</tr>
<tr>
<td>aspiration: (ʃ')</td>
<td>h</td>
</tr>
</tbody>
</table>

For example:
- pʃ' -> ph
- t's' -> čh
- s' -> sh

Glottalized obstruents as written by Harrington (e.g., ʃ, ɬ, ɬ, ɭ) are transcribed here as tʃ, qʃ, and qʃ respectively. That is, glottalized obstruents are written with the glottal stop following the obstruent. Glottalized sonorants as written by Harrington (e.g., ɨ, ɯ, ɬ) are written with the glottal stop preceding the sonorant, (e.g., ʔw, ʔm, and ʔl respectively). In examples with derivations, however, a glottal stop suffix may be shown as following the sonorant. In cases where Root Node Reduction is being illustrated, glottalization will be written over the consonant, e.g., ʃ and ɨ. These changes are mechanical and for the most part reflect the standard orthography used in (post-Harrington) Chumash research. As discussed in Chapter 3 however, these changes also reflect my decision to treat glottalized and aspirated consonants as underlying consonant clusters.

Harrington's phonetic diacritics and accentuation are not included in the examples except where necessary. However, I have provided an appendix which gives his transcription for the examples in this thesis. The reel and frame number for each example is included. Harrington often recorded the same word in different ways—even within the same text. This can make it difficult to determine which 'Harrington' version would be truly representative. For example, the reduplicated form of ku 'person', appears variously as:
For the sake of simplicity, reduplicated forms such as the above will be rendered as kuhkú¿ in this thesis. The representation of final emphatic glottalization is further discussed in Chapter Two.

Chapter 2

Description of the Data

2.1 The database.

As mentioned in Chapter 1, my data comes from two sources. The Harrington data is primarily taken from microfilm reel $59$ (708 frames). This reel consists of roughly 250 narrative texts from Mary Yee (recorded by hand, on paper). I have given all of these narratives an interlinear, morpheme-by-morpheme analysis. Additional reduplicative forms are taken from reels $60$ (narrative texts) and $33$ (grammatical notes). The texts are primarily ethnographic accounts. It should be noted however that there are five and a half more reels of texts from Mary Yee, amounting to nearly 5,000 frames. Thus my data is taken from roughly 20% of the total corpus of Yee texts and notes.

For the purpose of consistency I will assume that all of the data from Harrington was recorded correctly, and that any aberration reflects something other than error. Thus my analysis will not assume 'error in recording' as an (ad hoc) explanation for why a given form might not fit a general pattern. Further issues concerning Harrington’s transcription will be addressed as needed.

The reduplicative forms on Beeler’s tapes are from the paradigms he elicited from Mary Yee, recorded on tapes 1 (side A) and 4 (side B). There are 120 examples (with some duplications) from these paradigms, most of which exemplify the productive patterns discussed in 2.2.4. In Chapter 3, the words in the examples are attested on one or more of Beeler’s tapes as well as in the Harrington corpus. Some of these words are heard in list intonation,
others are heard in elicited sentences, or in narrative texts that Yee was reading aloud. Since much of what is on tape is carefully read material, Yee's enunciation might not fully reflect the intonation or syllabification of natural speech.

Finally, forms (from slipfiles) from the earlier speakers will be cited when necessary for comparison with Yee's forms. However, since the data comes primarily from one speaker, Mary Yee, the generalizations drawn from this data are not extended to the speech of the earlier speakers.

2.2 Reduplication in Barbarano.

In this section, the term 'reduplication' as used in this thesis is defined in 2.2.1. Then, the distinction between lexicalized and productive reduplication forms is given in 2.2.2. The types of lexicalized reduplications are illustrated in 2.2.3. Finally, in 2.2.4 I illustrate what I have recognized as the five types of productive reduplication in Barbarano. This part includes a brief discussion of problematic cases that will not be included in the analysis.

2.2.1 Reduplication defined.

I use the term reduplication following Marantz (1982), in which reduplication is identified as

... a morphological process relating a base form of a morpheme or stem to a derived form that may be analyzed as being constructed from the base form via the affixation (or infixation) of phonemic material which is necessarily identical in whole or in part to the phonemic content of the base form (1982:437).
For example, the simplex or baseform *taniw 'baby; embryo' reduplicates as *tanta?niw 'babies; offspring' ((2.62)). The reduplicated or derived form, *tanta?niw, is constructed from the base form (*taniw), a glottal affix, and a prefixed copy of the first three melodies, *tan-.

2.2.2 Lexical vs. productive reduplication.

Barbareño has two main types of reduplication: lexical and productive. Both types are found throughout the corpus. To identify a lexical reduplication I use three criteria. First, no simplex forms are attested for these reduplications. For example, the lexical reduplication *kik?i 'thing' does not have an attested simplex form *ki. Second, lexical reduplications can often themselves be productively reduplicated in the same way that other words can. For example, *kik?i 'thing' --* kihkik?i 'things' ((2.97)). Finally, I consider reduplications of idiosyncratic form to be lexical, even if they have an attested simplex. One of the most commonly occurring idiosyncratic reduplications is *ʔiʔiʔv 'man' --* ?iʔviʔiʔv 'men' ((2.36)).

Productive reduplication has patterns that occur regularly. This type of reduplication always has a simplex. Also, productively reduplicated forms cannot themselves be reduplicated again. For example, the reduplication *tanta?niw is not itself reduplicated as *tanta?niw. Productive reduplication appears throughout the native lexicon and loanwords. In nouns it sometimes marks a distributive plural, and sometimes a collective plural; however, reduplication is not an inflectional plural, since in texts one can easily find plural referents not marked by a reduplicated form. In
verbs, reduplication signifies an iterative, distributive, intensive or continuing action/state. However, reduplication is not necessarily the only strategy to mark these concepts. I will describe the types of forms found in productive reduplication after I give an overview of lexical reduplication patterns below.

2.2.3 Types of lexical reduplication in Barbareño.

Applegate (1976) identifies six reduplication patterns for Ineseño: CVC, wuluwul, bisyllabic, medial, CV, and -VC. All six of these patterns also exist in Barbareño, but only one (Applegate’s ‘CVC’) is productive as well as lexical. The remaining five patterns have only lexical status for Barbareño. Following these patterns I give examples of a seventh category of lexical reduplication which I call idiosyncratic. Comparisons to Ineseño (abbreviated ‘I.’) are given where helpful.

2.2.3.1 CVC lexical reduplication.

Lexical CVC reduplication is seen mainly with words which have a root of the shape CVC. The CVC sequence is prefixed according to Applegate (1976). Beeler (1976) analyzes total reduplication of a CVC sequence as ‘terminal’ or suffixal reduplication. No simplex forms have been attested in the Harrington corpus. Some examples are given below:

CVC:

(2.1) kopkop ‘toad’
(2.2) ghapghap ‘to be thin
   khapkhap
(2.3) meymey ‘to be tender or soft’
2.4) xulxul 'to be heavy'

2.5) lewlew (name of a mythical creature)

2.6) suluplup? (Chumash name for Pyramid Peak)

2.2.3.2 Wuluwul lexical reduplication.

In wuluwul reduplication, a vowel is repeated between a CVC sequence and its copy. Beeler lists this as a pattern of 'terminal reduplication' (1976:260), but gives no simplex form for this type, nor have I come across any simplex forms in the Harrington corpus.

wuluwul: a constituent of the second constituent of a medial cluster.

2.7) tukutuk 'mourning dove'

2.8) wulu?wul 'lobster; crawfish'

2.9) wolowol 'to get drunk'

2.10) wele?wel 'wild pigeon'

2.11) nava?nav 'razor clam'

2.12) I. nox 'to be big, large'

2.13) noxonox [same meaning] because tipp'd or tilted

2.2.3.3 Bisyllabic lexical reduplication.

The bisyllabic pattern is restricted to verbs. According to Applegate, it is 'limited to stems of the form CVCVC, in which the final consonant is dropped in the initial sequence' (1976:274). Beeler (1976) does not mention this pattern. In the Harrington corpus this pattern rarely occurs. No true simplex forms have been found by lexical replication.

bisyllabic: if pattern involves the full reduplication of a CV

2.13) kowokowon 'to be tilting or leaning'
(2.14) welewelen ‘to be swaying’
       (cf. swelen ‘earthquake’)
(2.15) oxnowonowon ‘(flame) to burn’
(2.16) šuŋolyooqoyooqon ‘to shake up well’
(2.17) I. aqutivowoŋ [meaning not given]
       aqutivowoŋoŋoŋ ‘it is very crooked’

2.2.3.4 Medial lexical reduplication.

Applegate describes medial reduplication as the reduplication of a medial consonant (or the second consonant of a medial cluster). The vowel which follows the consonant is also reduplicated. Beeler (1976) describes this as a form of verb derivation but does not include it as a reduplication type. No simplex forms have been found in the Harrington corpus for this type of reduplication, though it is widespread.

medial:

(2.18) kowowon ‘to be or become tipped or tilted’
(2.19) axwiwik ‘to be dry; become dry’
(2.20) wexteten ‘to be wide, broad’
(2.21) ašnitatan ‘to smash’
(2.22) mololon ‘saliva, spittle’
(2.23) I. mixin ‘to be hungry’
       mixin [same meaning]

2.2.3.5 CV lexical reduplication

The CV pattern involves the full reduplication of a CV sequence (Applegate 1976:276). Beeler (1976:259) refers to this as a pattern of ‘terminal reduplication’ that forms nouns, though it is
not claimed that every case is a pattern of terminal reduplication.
No simplex forms have been found. Unlike
CV:

(2.24)  kiki
      'thing, what'
(2.25)  no?no
      'very, much'
(2.26)  ne?ne
      'grandmother'
(2.27)  mo?mov
      'jimson weed'
(2.28)  kiki?
      'cactus'
(2.29)  pope?o
      'to hurt'

2.2.3.6 -VC lexical reduplication.

Applegate's last reduplication pattern, -VC, involves 'the
reduplication of a final vowel and consonant' (1976:277). In Beeler
(1976:260) this is given as a 'terminal reduplication' pattern. No
simplex forms have been found.

-VC:

(2.30)  takak
      'quail'
(2.31)  raxpi?lit
      'root'
(2.32)  j?zi?k
      'younger sibling'
(2.33)  ronok?ok?
      'lizard sp.'
(2.34)  egenen
      'to be in excess'
(2.35)  xonon
      'to rob, steal'

2.2.3.7 Idiosyncratic lexical reduplication.

Finally, the seventh category of lexical reduplication
is the large number of words and phrases that in the corpus
involves idiosyncratic forms. Harrington referred to such forms as
'irregular reduplication' (33:0584) or 'irregular doublings'
(33:0432). There are very few tokens of this type in the corpus. An
idiosyncratic reduplication is one in which the reduplication pattern is unique to one word or a small group of words. Unlike other lexical reduplications, the idiosyncratic type has a simplex form (but for one exception). Also, the idiosyncratic type does not match any of the other lexical patterns described above.

### Idiosyncratic:

1. **(2.36)** ʔihiya
   - *ʔihiya* (many) to be long
2. **(2.37)** ʔihay
   - *ʔihay* man
3. **(2.38)** ʔholo
   - *ʔholo* to be good; to be nice
4. **(2.39)** ʔihowil
   - *ʔihowil* to talk
5. **(2.40)** ʔachalalane
   - *ʔachalalane* to shout, holler
6. **(2.41)** ʔačaqčaq
   - *ʔačaqčaq* to be square

Unlike the other categories of lexical reduplication, idiosyncratic reduplications do not undergo any special treatment in the analysis that accounts for their idiosyncratic reduplication. For example, one does not find in the corpus a form such as *ʔayʔiʔiʔiʔiʔiʔ* for *ʔiʔiʔiʔiʔiʔ* for ‘men’, or *ʔhoʔoʔoʔoʔoʔoʔ* for a reduplication of ‘better; best’. However, simplex forms for some of the above
idiosyncratic reduplications can undergo reduplication via the productive pattern as well. For example, čho 'to be good' may reduplicate as čhočho? 'many to be good' ((2.90)), and tipawil 'to talk' may reduplicate as tipawil 'to be talking (speaker unknown)' ((2.53)). These and other types of productive reduplication will be discussed below in 2.2.4. The above seven categories are the only patterns of lexical reduplication found in the corpus. I now turn to the patterns of productive reduplication.

2.2.4 Productive reduplication in Barbareño.

Phonologically, productive reduplication involves prefixing a copy to the root or stem. This copy is usually a (C)(C)VCC- shape, as seen above in tanta?niw and kihkik?i?.

Both Beeler (1976) and Applegate (1976) state that reduplicated nouns take final glottalization (i.e., glottalization on the final syllable of the stem), and that verbs do not. This can be seen for example in the -?n- in tanta?niw, and by the final glottal stop in kihkik?i?. The position that this final glottalization takes, however, is variable. For example, it may appear on the onset or on the coda of the final syllable, as seen in tip 'bush' -> tiptip or tipawil 'chaparral; woods' ((2.69)). Or, it may appear on both the onset and coda, as in tiptip? and in kim 'after' -> kimk?i?m 'modern-day (people)' ((2.58)). The mechanism behind the location of this glottalization has yet to be explored. What is important is that, while Applegate and Beeler consider final glottalization to be inherent to the reduplication process, I analyze the glottalization as morphological, being the result of an emphatic glottal clitic. According to Harrington (33:0273 and elsewhere), this glottalization
is used for emphasis, and I refer to it as an 'emphatic clitic' in Barbareño Chumash.

In its most productive usage, the clitic marks the emphatic (and sometimes contrastive) usage of a noun, verb or particle, as well as the imperative form of a verb. The clitic takes the form of glottalization on the final syllable, and may be accompanied by vocalic creakiness, emphatic stress (indicated by a macron, '¨'), falling intonation (indicated by a 'µ'), and vowel lengthening.

Below are pairs of words with and without the glottal clitic: both reduplications and simplex forms. This is discussed further in

(2.42) ʔanagipnas 'to be) beautiful; fine'
        ʔanagipnā̀ s 'to be of) such fineness'
(2.43) suumōwon that is 'to sweeten' from the kind that occurs in
        suumo?wān: 'to sweeten a lot'
(2.44) ʔuʔliŋ to make in 'to grasp' if the final syllable, it neither
        ʔuʔliŋŋ gives us 'grasp it' context to the vowel of that
(2.45) tāniw appears as 'baby'
        tāniw nā̀s 'baby' (mentioned in contrast
        to another baby)
(2.46) kām 'after'
        kām: 'long afterward'

Final glottalization in the above pairs and in nominal reduplications is discussed below. In Chapter 3 and 4, reduplication functions as an intensifier, in that the glottalized form of a verb with reduplicative stress such glottalization occurs in the member of each pair has a more emphatic or intensive meaning. Its pragmatic function is not as marked in reduplication, however. This suggests that its occurrence in reduplication is more lexicalized than it is in other parts of speech. Like the examples in (2.42 -
2.46), falling intonation and emphatic stress in reduplication often occur in the final syllable as a result of the glottal clitic, and may subsequently lengthen the vowel. In this regard, *tip* 'bush' is recorded variously as *tītīp?, tītī-p?, tītī?q-p*, and *tītī?q-p?* 'chaparral; woods'. On the other hand, emphatic glottalization might not appear in a nominal reduplication, for example *?eneg* [*?ē-neq*] 'woman' → *?ē?neneq* [*?ehē-neq*] 'women' ((2.71)). Unless otherwise noted, I will not include stress and length when citing examples, since these are generally predictable qualities in both the underlying word ((2.71)), and also occur most often in the reduplications and simplex forms. This is discussed further in Chapter 3.

Some verbs, when reduplicated, take a kind of final glottalization that is different from the kind that occurs in reduplicated nouns. Final glottalization in reduplicated verbs always appears only in the coda of the final syllable. It neither lengthens nor gives emphatic intonation to the vowel of that syllable. It appears to have a stativizing or nominalizing function. For example, *smoč* 'it is colored' → *smočsmoč* 'it is of different colors' ((2.49)), and *expeč* 'he sings' → *sexexpeč* '[you hear] him singing' ((2.78)). In any case, final glottalization on the stem in reduplicated words is not considered here as part of the phonology of reduplication that will need to be accounted for in the types of productive reduplication featured below. In Chapters 3 and 4, however, I will demonstrate where such glottalization occurs in the lexical and postlexical stages of word derivation.
2.2.4.1 Types of productive reduplication.

Barbareño productive reduplication can be categorized into five types of patterns. Some words show more than one pattern of reduplication.

2.2.4.1.1 Type One productive reduplication.

In Type One productive reduplication, the prefixed syllable is a copy of the first (C)V(C− sequence of the stem. Beeler referred to this as initial reduplication which prefixes 'the sequence CVC− of the underlying word' (1976:257). This type occurs most often in the database. Some examples are given below:

(2.47) \[\text{idip} \]
\[\text{idipidip} \] 'to say'
\[\text{to be saying}'\]

(2.48) \[\text{hik} \]
\[\text{hikhik} \] 'to do'
\[\text{to be doing}'\]

(2.49) \[\text{moč} \]
\[\text{močmoč} \] 'color; to be colored'
\[\text{to be of different colors}'\]

(2.50) \[\text{tuhy} \]
\[\text{tuhtuhy} \] 'to rain'
\[\text{to be raining}'\]

(2.51) \[\text{napay} \]
\[\text{napnapay} \] 'to climb; rise'
\[\text{to be climbing}'\]

(2.52) \[\text{xinči} \]
\[\text{xinxinči} \] '(many) to be bad'
\[\text{to be bad}'\]

(2.53) \[\text{tipaisal} \]
\[\text{tiptipaisal} \] '(unknown person) to be talking'
\[\text{to talk}'\]

(2.54) \[\text{lesexál} \]
\[\text{leleslexál} \] 'to be weeding'
\[\text{to weed}'\]
(2.55) kɔili?nan 'to do...more and more'
   kɔilkɔili?nan [redup]
(2.56) yuxwowon 'to be high'
   yuxyuxwowon '(many) to be high'
(2.57) ?ap 'house'
   ?ap.?ap? (plural)
(2.58) kım 'after'
   kimkî?m 'modern-day (people)' [cf. Type One
(2.59) noxä 'nose; point of land'
   noxmo?xä 'noses; points of land'
(2.60) xšap 'rattlesnake'
   xšapxšap? (plural)
(2.61) mweyi 'wharf' < Spanish muelle'
   mweymwe?y (plural)
(2.62) taniw 'baby; embryo; child'
   tanta?niw [cf. (2.125)]
(2.63) c?ovni 'other, different'
   c?oyc?ovni? 'others'
(2.64) klawä 'piece; broken'
   klawka?vaš [cf. (2.99)] 'pieces'
(2.65) č?alavaš 'trail, road'
   č?alč?ala?vaš [cf. (2.119)] (plural)
(2.66) šukekeš 'planted crop'
   šukšukek?eš 'planted crops of various kinds'
(2.67) kawayu 'horse' < Spanish caballo
   kawkawa?yu? (plural)
Examples (2.70-2.73) represent a sub-type of Type One reduplication. The stem-initial ʔ- in the reduplicated form has syllabified homogeneously with the final consonant of the copy, and the two together serve as the onset of the stem. Some base forms have two reduplications, one in which the stem-initial ʔ-syllabifies separately, and another in which it does not, as seen below:

(2.70) ʔagliʔw is transcribed 'language; word'
- ʔa.ʔagliʔw

(2.71) ʔeneq initial consonant 'woman'
- ʔe.ʔeneq

(2.72) ʔinyu realized as a root 'Indian' < Spanish indio, and wrote ʔin.ʔinyu?
- ʔi.ʔinyu?

(2.73) ʔaliʔaw root and the ʔ-'sun, day' are not syllabically aligned in copy form as days', as discussed in Chapter 3, as Harrington's comments, in addition to his transcription practices (with regard to Yee's speech only), suggest that the
reduplicated forms in examples (2.70) – (2.73) have the boundary after the initial syllable as I have indicated. First, if a consonant such as ñ was medial and glottalized, Harrington wrote it as ın [hn]. But if the glottal stop was articulated separately from such a consonant, Harrington often took pains to show that it was not a simultaneous articulation. For example, in two different texts, the word ʰẹ́nɨpόloˈmól ‘the mountains’ (< ʰẹ́- ‘PRX’ nɨpόloˈmól ‘mountain’) appears. The word is transcribed differently in these two instances, as shown in (2.74a,b):

(2.74)

a. ʰẹ́nɨpόloˈmʊl
   (59:0391)

   ‘the mountains’

b. ʰẹ́nɨpόloˈmʊl
   (59:0100)

   ‘the mountains’

In (a) the word is transcribed such that the initial consonant of nɨpόloˈmıl is glottalized ([hn], written by Harrington as ın). In (b), however, the initial consonant of nɨpόloˈmıl is not written as glottalized. In fact, Harrington explicitly noted that the consonant was not glottalized. He drew an arrow to the consonant, ñ, and wrote ‘not ın’ (59:0100). From Harrington’s comment, I assume that the initial consonant in nɨpόloˈmıl (in (b)) is not glottalized, and that the glottal stop and the following ñ are not simultaneously articulated, as happens in (a). As discussed in Chapter 3, an intervocalic, glottalized consonant is a syllable onset. Hence, when Harrington transcribes Yee’s reduplicated form of ʰɨɲʉ ‘Indian’ as ..htonɨɲʉ · ʔ (59:0594) in one instance and as ..hɨɲɨɲʉ · ʔ (59:0069) in another, it is assumed that the final consonant of the copy and
the stem-initial glottal stop in ..\textit{in-\textgamma\textnu.}\? are heterogeneously syllabified, but homogeneously syllabified in the form ..\textit{in\textnu\textgamma}:?.

In fact, it was Harrington's usual practice to use a hyphen, and sometimes a period (see for example (2.149b) in the appendix) to separate what would otherwise look like an ambiguous syllable boundary.\footnote{8} Glottalized consonants occur throughout the Barbareño lexicon. Thus it is not surprising that Harrington usually put a hyphen between the copy and stem when the stem was \textgamma-initial (see (2.75) - (2.87), among others, in the appendix). For the most part, Harrington was meticulous in recording whether or not the final consonant of the copy and the stem-initial \textgamma- constituted separate articulations, as in ..\textit{in-\textgamma\textnu.}\? above, or whether both consonants had merged into a single, glottalized articulation, as seen with the \textgamma- in ..\textit{in\textnu\textgamma}:?. As would be expected, it was rare for Harrington to use a hyphen between the copy and stem when the stem-initial consonant was something other than \textgamma.- It simply was not necessary to show, for example, that the medial sequence -\textit{pn}- in \textit{napnapay} ((2.51)) was heterogeneously articulated, so Harrington did not bother to put a hyphen or period between the copy and stem in such cases. The foregoing discussion also applies to forms found in Type Two reduplication, to which I now turn.

\textsection{2.2.4.1.2 Type Two productive reduplication.}

In Type Two productive reduplication, the copy is vowel initial (VC-) and the stem appears with \textgamma-. Beeler describes this pattern such that [?VC?VC-] results from a vowel-initial simplex (1976:257). The members of this type are mostly verbs that are underlyingly vowel-initial, as seen below:

\begin{center}

<table>
<thead>
<tr>
<th>Derived Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>\textit{spikin}</td>
</tr>
<tr>
<td>\textit{spikinhir}</td>
</tr>
<tr>
<td>\textit{spikinhiri}</td>
</tr>
</tbody>
</table>

\end{center}
(2.75) atikuy
   at.?atikuy
   'to face; look in a direction'
   [redup]

(2.76) iwawan
   iw.?iwawan
   'to cut'
   'to be cutting'

(2.77) elevep
   el.?elevep
   'to go along, travel along'
   [redup]
   '(the act is) lasting'

(2.78) expeč
   ex?expeč?
   'to sing'
   'to be singing'

(2.79) uniyiv
   un.?uniyiv
   'to be necessary; to look for; to miss someone'
   'to be looking for (something)'

(2.80) ušuvey
   uš?ušuvey
   'to change; be different'
   '(many) to be different'

The copy in a reduplicative form can vary between a VC- and ?VC- shape. When it follows a consonant it is VC-, but it appears as ?VC- when it follows a vowel or when it is word-initial, as seen below:

(2.81) ahaš
   kahaš
   ?ah?ahaš
   kah?ahaš
   not *k?ah?ahaš
   'to drink'
   'spirit' (underived root)
   'my spirit' (derived word)
   'spirits' (derived word)
   'my spirits' (derived word)
   'to be drinking'

(2.82) api-
   sipay?apitayašnipit
   siyiša?ap?apixoyoyon
   '(refers to quick movements)'
   'they go stepping'
   'they sort of fly off'

22
Examples (2.85-2.87) represent a sub-type of Type Two reduplication. This sub-type is the same as the sub-type of Type One reduplication in that the stem-initial ʔ- in the reduplicated form has syllabified homogeneously with the final consonant of the copy, and the two together serve as the onset of the stem. Also, like the sub-type of Type One, some base forms have two reduplications, one in which the stem-initial ʔ- syllabifies separately, and another in which it does not, as seen below:

(2.85) agmil
    agmil
    ag.ʔagmil
    a.ʔagmil
    'to drink'
    'to be drinking'
    'to be drinking'

(2.86) egwel
    egwel
    eg.ʔegwel
    e.ʔegwel
    'to make'
    'to be making'
    'to be making'

(2.87) itaq
    itaq
    it.ʔitaq
    i.tʔitaq
    'to hear; listen; understand'
    'to be listening'
    'same meaning'
2.2.4.1.3 Type Three productive reduplication.

In Type Three productive reduplication, the coda of the prefixed copy is -h. Beeler's description of this pattern is that 'monosyllabic nouns with final vowel show CVhCV? ' (1976:258). Some examples of Type Three productive reduplication are seen below:

(2.88) ku
     'person; Indian'

kuh?u?
     (plural)

(2.89) she
     'bone'

shehshe?
     'bones; vertebrae'

(2.90) cho
     'to be good'

chohcho?
     '(many) to be good'

(2.91) tu?
     'ear'

tuht?u?
     (plural)

(2.92) ya?
     'arrow'

yah?ya?
     (plural)

(2.93) we?
     'to sleep, be asleep'

wehwe?
     'to be dozing off'

(2.94) na?
     'to go'

nahna?
     [redup]

(2.95) ?oč?
     'to be wet, get wet'

?oh?oč?
     'to be getting wet'

(2.96) kek
     '(plant) to grow, come up'

kehkek?
     '(plant) to be growing'

(2.97) kik?i
     'thing; what'

kikhkik?i?
     'things' (plural)

(2.98) tinus
     'to call, name'

tihthinus
     [redup]
(2.99) klawañ
klakhklawañ
[cf. (2.64)]
'piece; broken'

(2.100) liówik
libliówik
[cf. (2.116)]
'in the middle; between'
'between (various things)'

(2.101) wihhatatan
wihwihhatatañniñ̄
(resultative suffix -niñ̄)
'pieces'
'to destroy, take apart'

(2.102) luñ̄egeleñ̄
luñ̄luñ̄egeleñ̄
'shape'
'verious designs'

(2.103) togoñ̄loḡ
sohsohoñ̄loḡ
(round; knob)
'to keep rounding off'

2.2.4.1.4 Type Four productive reduplication.

In Type Four productive reduplication, the copy can be (C)(C)Vc-, but the coda is not glottalized or aspirated, even though the analogous segment in the simplex form is glottalized or aspirated. Beeler (1976) does not mention this pattern. Some examples of Type Four productive reduplication are given below:

(2.104) wot?
wotñ̄wotñ̄
'chief; captain; rich person'

(2.105) ?elñ̄
?elñ̄ñ̄
'necklace'

(2.106) poñ̄n
ponpnñ̄n
'tree; stick; wood; board'

(2.107) gñ̄ory
(gñ̄oryñ̄ory)
'olivella'

(quantities of) olivella'
(2.108) t?e?m "palm of hand; bottom of foot" (plural)
(2.109) čti?n "dog" (plural)
(2.110) spe?y "flower" (plural)
(2.111) ič?ič "younger sibling" (plural)
(2.112) nuk?a "where; when" (plural)
(2.113) pak?a "one" (plural)
(2.114) pic?e?/pic?e?/picp?e? "one by one" (plural)
(2.115) lu?nan "to grow" (the first consonant is й-.
(2.116) li?vik "in the middle; between" (frequently
(2.117) q?i?mi (pl.) "beach snail"
(2.118) snaq?il "flint" (plural)
(2.119) ič?alavaš "one's own trail or track" (plural)
(2.120) wig?ele?ni? "chisel" (noun)
(2.121) wiqwig?elen "to chisel (continuously)" (plural)
Underlying aspiration is rare in Barbareño. Only three examples of reduplications were found in which the simplex consonant (analogous to the one in the copy) was aspirated. These are given below:

(2.121) tahu
    taktahu 'to carry'
    taktahu 'to be carrying'

(2.122) ičaxi 'enemy' ocy
    ič:ičaxi? (plural)

(2.123) ?apa?niā 'village, rancheria'
    ?apa?niā (plural) 'sea of driftwood'

(2.124) cweq 'grass'
    cweq? 'quantities of) grass'

(2.125) čtaniw 'to be small'
    čtaniw 'many to be small'
    čtaniw 'many to be small'
    čtaniw 'many to be small'
    čtaniw [cf. (2.62)]

(2.126) spax 'skin; hide'
    spax?æ?x (plural)

2.2.4.1.5 Type Five productive reduplication. willow trees

In Type Five productive reduplication, the simplex forms typically have an onset cluster in which the first consonant is s-, š-, s-, or š-. These consonants are not retained on the stem in the reduplicated form. They are retained in the copy, however. Beesler describes this pattern such that it is most frequently 'C1C2VC3C3VC3-', but occasionally the basic noun retains the original words to involve indication rather than proliferation. In Chapter 7, cluster C1C2VC3C1C2VC3-' (1976:258). Some examples are given below:

I agree that these involve proliferation:

(2.124) cweq 'grass'
    cweq? 'quantities of) grass'

(2.125) čtaniw 'to be small'
    čtaniw 'many to be small'
    čtaniw 'many to be small'
    čtaniw 'many to be small'
    čtaniw [cf. (2.62)]

(2.126) spax 'skin; hide'
    spax?æ?x (plural)
(2.127) sgap
   sgapg?ap?
   'leaf, feather'
   (plural)

(2.128) stapan
   staptap?an
   '(quantities of) round tule'
   " " [Beeler tape]

(2.129) stuk
   stukt?uk?
   'wooden bowl'
   (plural)

(2.130) stumun
   stumtu?mu?n
   '(bird) egg'
   (plural)

(2.131) šnipag?
   šnipnip?ag?
   '(quantities of) driftwood'

(2.132) štavit
   štayta?vit
   'willow, willow trees'

(2.133) saxkhit
   sax?axkhít?
   'wind; (wind) to blow'
   'winds'

(2.134) sulkuw
   sul. ?ulku?w
   'night'
   (plural) [Beeler tape]

The reduplications in Type Five productive reduplication appear to involve infixation rather than prefixation. In Chapter 4 I argue that these involve prefixation.

2.2.4.2 Problematic cases.

In the corpus there are ten forms for which I am unable to give an analysis at this time. For the most part the reason is that:

1) the underlying form of the simplex is unclear; and/or

2) there are various, non-consistent reduplicative forms given for the simplex. The following are examples of what will be excluded from analysis:

28
(2.135) \( \?\text{uwu}\?\text{mu} \) ‘food’

Reduplicative forms:

\( \text{uw}\?\text{uwu}\?\text{mu}? \) (plural)
\( \text{?uw}\?\text{uwu}\?\text{mu}? \)
\( \text{?uh}\?\text{uwu}\?\text{mu}? \)

(2.136) \( \?\text{wi}\?\text{w} \) ‘bird’

Reduplicative forms:

\( \text{\?wi}\?\text{wi}\?\text{w} \) (plural)
\( \text{\?wi}\?\text{\?wi}\?\text{w} \)
\( \text{\?wi}\?\text{\?wi}\?\text{w} \)
\( \text{\?wi}\?\text{\?wi}\?\text{w} \)

(2.137) \( \text{hulu}\?\text{ya} \) ‘finger; toe’

Reduplicative forms:

\( \text{hulhul}\?\text{u} \) (plural)
\( \text{hul}\?\text{hul}\?\text{ya}? \)
\( \text{hulhulhul}\?\text{ya} \) (plural)
\( \text{hul}\?\text{\?u} \?\text{ya}? \)
\( \text{xulxul}\?\text{ya}? \)

(2.138) \( \text{xax} \) ‘to be big; return’

Reduplicative forms:

\( \text{xaxax} \) ‘(many) to be big’
\( \text{xaxa}\?\text{x} \)
\( \text{xaxa}\?\text{a}\?\text{x} \)
\( \text{xaxaxa}\?\text{x} \)
(2.139) iʔlokʔin
  iʔlokʔič
  iǝkʔič
  iʔlogʔin
  iloqʔin

  'to cut down, chop'
  "
  "partial"
  "a number of"
  "a number of"

  Reduplicative forms: In search for the variation in the
  iʔliʔloqʔič
  ŋiʔ. iʔlokʔin
  kulkulaʔlaʔm

  kuʔlalam analyses in Chapter 4 'creek, arroyo'
  quʔlalam

  There are five reduplicative forms that will
  be presented for the analysis (plural) box 4. These are given
  below:

(2.140) ?onokʔok?
  ?onokʔok
  ?onokʔog?

  'lizard sp.'
  " breathe
  " breathed

  Reduplicative forms:
  ?on. ?onokʔog?
  ιʔ. ?nonokʔok?

  (plural)
  " is breathing

(2.141) kukwapi
  kukwapi

  'to turn back, return'
  'to be returning'

(2.142) riʔnaniʔ
  riʔnaʔniʔ

  'custom; to be the custom'
  "
  "

  You can look at:
  (plural)

  you are them (the way)
(2.144) t?o

Reduplicative forms:

\begin{align*}
  \text{t?oht?o?} & \quad \text{(plural)} \\
toht?o? & \quad \text{""}
\end{align*}

My analysis is unable to account for the variation in the above examples at this time. Since so few examples are problematic, however, they do not affect the general conclusion in this chapter that there are five types of productive reduplication. These five types will be analyzed in Chapter 4.

Additionally, there are five reduplicative forms that will present a challenge for the analysis in Chapter 4. These are given below:

(2.145) kalaš

\begin{align*}
a. & \quad \text{skalaš} \\
& \quad s-kalaš \\
& \quad 3\text{-breathe} \\
\text{b.} & \quad \text{skalkalaš} \\
& \quad s-kal-kalaš \\
& \quad 3\text{-R.}-\text{breathe} \\
\text{c.} & \quad k^h\text{-alk}\text{-kalaš} \\
& \quad k-kal-kalaš \\
& \quad 1\text{-R.}-\text{breathe}
\end{align*}

(2.146) kutiy

\begin{align*}
a. & \quad \text{pkutiywun} \\
p-kutiy-wun & \quad \text{2-see -PLO}
\end{align*}

\text{31}
b. ḫutiyāšā
   k-ḵutiy-šā
   l-see -RFL

'I saw myself [in the mirror]'  

(2.147) paš
a. špāš
   g-paš
   3-vomit
   'he vomited'

b. špašpašā
   g-paš-paš -?
   3-R. -vomit-NM
   'he is vomiting'

c. p-ašpašā?
   p-paš-paš -?
   p-R. -vomit-NM
   'you (sg.) are vomiting'

(2.148) su?nan
a. psu?nan
   p-su?nan
   2-continue

b. ṣu?naṣu?nan
   g-sun-su?nan
   3-R. -continue
   'he would continue'

(2.149) ṣutowič
a. ṣalsaṭutowič
   ṣal-sa?ṭutowič
   NM -FUT-soon
   'to be quick; soon'
   'it would be soon'
b. šutšutowic

g-šut-šutowic
3-R. be.quick

'he was very quick [in entering the house]'
NOTES FOR CHAPTER 2:

1. Where a reel and frame number is given, the citation form will be, e.g., '(59:0708)', which reads 'reel 59, frame 708'.

2. It is not clear to me whether simplex forms such as nox cited in Applegate (1976) are hypothesized simplex forms, or whether they are actual, attested forms in the Ineseño corpus.

3. The convention '[redup]' is used whenever the exact meaning of the reduplicated form is uncertain.

4. See also Ono, Wash, and Mithun (1994) for treatment of this phenomenon. The discussion regarding final emphatic glottalization in Barbareño originated from this thesis while it was in progress.

5. Harrington (as noted in 60:0555) uses a macron (' ') over a vowel (which may or may not also be marked for falling intonation) for emphatic stress in his transcription system. I will use this convention for the examples under discussion.

6. There are many similarities between productive reduplication in Barbareño and in Ineseño. For a description of productive reduplication in Ineseño, see Applegate (1976:278-283).

7. In a form such as ?ipo, a period is used to clarify a syllable boundary.

8. Not all instances of a hyphen or period were meant to elucidate a syllable boundary; hyphens were also used when a word had to be split at the end of a margin, and periods were usually used to mark the end of a sentence. While Harrington was not 100% consistent in the use of hyphens in his transcription system, he was nonetheless consistent enough to allow a well-founded basis for my interpretation.

9. In the Harrington corpus, this simplex form has so far been attested only for Luisa Ignacio.

10. The accent in CVhCV? is meant to be grave. Beeler (1970:18) gives CVhCV?.

Basically similar, and has the Template [none].

The Template Satisfaction Condition holds that the [none] contents of the template must be satisfied, and this is achieved through the application of general, universal and language-specific generalizations and principles (1976:23).
Chapter 3  

Theoretical Orientation

3.0 Introduction  
My analysis of Barbareño Chumash reduplication relies upon principles from Prosodic Morphology (McCarthy and Prince 1986, 1988, 1990) and Lexical Phonology (Kiparsky 1982, 1985). I discuss these theories in turn in sections 3.1 and 3.2, using both to illustrate general, but pertinent, characteristics of Barbareño phonology. These characteristics have important consequences for productive reduplication, as I show in Chapter 4.

3.1 Prosodic Morphology
The theory of Prosodic Morphology developed by McCarthy and Prince (1986, 1988, 1990) has three basic premises: the Prosodic Morphology Hypothesis, the Template Satisfaction Condition, and the Prosodic Circumscription of Domains. The latter is not relevant to the study and will not be further discussed.

The Prosodic Morphology Hypothesis holds that the template is defined in terms of prosodic units such as the mora (\(\mu\)), syllable (\(\sigma\)), foot (\(F\)), and prosodic word (\(W\)) (McCarthy and Prince 1990:209). For example, as seen in 3.1.1.1 below, the Barbareño syllable is maximally bimoraic, and has the template \([\mu\mu]\sigma\). The Template Satisfaction Condition holds that the requirements of the template must be satisfied, and this is achieved through the principles of prosody, universal and language-specific (McCarthy and Prince 1990:209). According to Itô (1989:218-221) there are four basic, universal prosodic principles and parameters...
assumed in most works on prosodic phonology/morphology: Maximal, Directionality, Prosodic Licensing, and Extraprosodiciy. 

Maximality requires the association of as many phonological elements as possible with a prosodic unit, so long as these elements are available and can be associated without violating any constraints. For example, as seen in 3.1.1, the maximal Barbareño syllable is bimoraic and has a complex onset (of two consonant melodies).

The Directionality parameter holds that phonological elements are associated directionally, i.e., left to right or right to left. In reduplication, for example, the melody for the copy is mapped to the template in a left to right direction if the copy is a prefix, and right to left if the copy is a suffix (McCarthy and Prince 1986:11).

Prosodic Licensing requires that, during syllabification, all phonological elements be associated to higher prosodic structure. For example, (non-onset) segments are associated to mora, mora to syllables, syllables to feet, etc. Phonological elements that are not prosodically licensed are eliminated by Stray Erasure, and thus are not phonetically realized (Itô 1988). As seen in 3.1.1 and elsewhere, in certain environments [ +constricted] (hereafter abbreviated [ +cg] ) is not prosodically licensed. When [ +cg] is no longer prosodically licensed, it is stray erased and is thus not phonetically realized. Syllable structure are discussed in these...
a higher prosodic structure. Thus one finds that edges of words may have complex codas, and complex onsets of a kind not found word-internally. As shown in 3.1.1, this is also the case for Barbareño Chumash. Other terms such as extrametricality (Hayes 1981), invisibility (Poser 1984), and extratonality (Pulleyblank 1986) also refer to the fact that material located on the periphery of a domain often exhibits different behavior than non-peripheral material. But as its onset, it will be seen that there are twoaphatic rules

3.1.1 Prosodic Morphology in Barbareño Chumash

The prosodic characteristics of the phonology and morphology of Barbareño are discussed in two parts. The first part (3.1.1.1) treats Barbareño syllable structure in some detail. The second part (3.1.1.2) looks at the interaction among syllabification, stress, and syllable weight in Barbareño discussed in turn below.

First, a syllable must have an onset. This is expressed as the

3.1.1.1 Barbareño syllable structure.

The Barbareño syllable is maximally bimoraic: [µµ], with an onset that does not exceed two consonants. The first mora is a vowel; the second mora is maximally one consonant. Minimally, the syllable must have a single onset and a mora. Syllabification is shown following the stages in Hayes (1989): the vocalic mora projects a syllable; onset adjunction then occurs; finally the coda, if there is one, receives a mora via Weight by Position.

The details of syllable structure are discussed in three parts. The first two parts discuss rules and constraints affecting the onset and coda positions respectively. The third part examines the way in which consonants that are glottalized or aspirated pattern sometimes as a cluster and sometimes as a single segment. A
set of examples is given to illustrate each constraint. In the examples, syllable boundaries are indicated by a '.

3.1.1.1 Syllable onset restrictions.

Barbareño has three onset constraints, all of which must apply in the lexical phonology. First there is the Obligatory Onset Constraint that requires a syllable to have at least one consonant as its onset. It will be seen that there are two epenthesis rules that insert an onset to an otherwise degenerate syllable: Glottal Epenthesis I and Glottal Epenthesis II. Next is the Complex Onset Constraint, which allows no more than two consonants in onset position. Finally, Barbareño has the [+cg]-Onset Constraint which prohibits glottalization of a sonorant that does not follow a vowel. These rules and constraints are discussed in turn below.

First, a syllable must have an onset. This is expressed as the Obligatory Onset Constraint in Figure 3.1:

```
@ [V
```

The prefix is a vowel or is vowel-final. That is Figure 3.1. Obligatory Onset Constraint.

The onset is in bold type in the following examples:

(3.1) mu 'person; Indian'
(3.2) ni 'flame; fire'
(3.3) wo go 'hard tar; asphalt'
(3.4) mu hu 'owl sp.'
(3.5) mu ku mi 'to bring home, to bring'

38
(3.6) po.če.yi

'lizard sp.'

(3.7) ku.wa.ya.pi

'to turn back, to return'

A form that is vowel-initial receives an onset from a prefix during syllabification, for example:

(3.8) oxonowonowon

'(flame) to burn'

sox.no.wo.no.won

'(the flame) burned'

s-oxonowonowon

3-flame.to.burn

Glottal stop epenthesis is described by the rule,

(3.9) uš?itap

'to mix, mix in'

puš.ri.ta.pin

'you mix with [tallow]'

p-š?itap-in

2-mix -INSTR

(3.10) aqmil

'sag.mil

'to drink'

3-drink

If the prefix is a vowel or is vowel-final, then an epenthetic glottal stop serves as a default onset. As seen below, the epenthetic glottal stop is in bold type:

This rule characterizes glottal stops (\{\-

(3.11) se.7ox.no.wo.no.won.waš

'(the flame) died down'

s-e-oxonowonowon

3-N-flame.to.burn-PST

\(aš\)

(3.12) siy.su.7uš.?i.tapš

'they mixed (them)

[into their food]'

s-iy-su-uš?itap-\(a\)

3-PL-CA-mix.in -IP
The observation that Barbareño syllables must have an onset was first noted by Harrington:

A syllable always begins with any consonant. If it begins with a vowel, the vowel is started with a "hard attack" (33:0230).

Glottal stop epenthesis is described by the rule, Glottal Epenthesis I, shown in Figure 3.2 below:

![Figure 3.2. Glottal Epenthesis I.](image)

This rule characterizes glottal stop ([+cg]) epenthesis in a syllable. First, it may only be inserted as an onset in a syllable that does not otherwise have an onset. Second, the 'Level 1' stipulation means that this rule cannot apply at Level 1 of the lexical phonology. The explicit application of this rule is demonstrated in section 3.2.

Also in keeping with the Obligatory Onset Constraint, if a
vowel-final form takes a suffix that is vowel-initial, then the suffix receives an epenthetic \( h \) as an onset, for example:

(3.14) \( \text{ti} \quad \text{'name' (noun)} \)

\[ \text{histiwa˘} \quad \text{'what his name was'} \]

\[ \text{hi-\text{g-ti} \quad \text{--iwa˘} \quad \text{HI-3-name-NPST} } \]

(3.15) \( \text{pu} \quad \text{'hand; branch'} \)

\[ \text{spuhu˘c} \quad \text{'(a tree) has a lot of branches'} \]

\[ \text{g-pu} \quad \text{-VČ} \quad 3\text{-branch-characteristic.of} \]

(3.16) \( \text{xìvi} \quad \text{'to lie'} \)

\[ \text{sxìwiha˘s} \quad \text{'he would pitch lies'} \]

\[ \text{g-xìvi-ag} \quad \text{Figure 3.2. Glottal Epenthesis II.} \]

\[ 3\text{-lie -RP} \]

According to this rule, \( \text{hi} \) (\( \text{test\text{-2}} \)) may be inserted into the It is rare for \{-cg\} to occur in this position, and it poset of such positions of a syllable. This rule is much more general only occurs with the noun past suffix \(-\text{iwa˘}, \) as seen above. The latter rule restricts \{-cg\} below:

epenthetic to onset position, and applies only after level 1 in the lexical phonology. The explicit application of both Glottal

(3.17) \( \text{ xo?ni} \quad \text{‘mother'} \)

\[ \text{k xo?ni.?i \text{-~iwa˘}} \quad \text{‘my late (deceased) mother'} \]

\[ \text{k xo?ni \quad \text{-iwa˘} \quad \text{1-mother-NPST} } \]

\[ \text{Complex words are permissible. A syllable may have up to two } \]

\[ \text{Complex words are permissible. This is expressed as the Complex mode. This is expressed as the Complex mode.} \]

Nouns that take \( ? \) instead of \( h \) with \(-\text{iwa˘} \) do not seem to belong to a separate semantic class. As in (3.17) for example, the noun in (3.18) refers to a family member:
(3.18) ?a?mi

'sister, older brother'

g?-a?mi

3-older sister-NPST

Gottlal fricative epenthesis is characterized by the following rule shown in Figure 3.3 below:

\[
\begin{align*}
\sigma &\quad \text{('sin')}
\end{align*}
\]

\[
\begin{align*}
\mu &\quad \text{('sin')}
\end{align*}
\]

\[
\begin{align*}
\text{[-sprd]} &\quad \text{('sin')}
\end{align*}
\]

Figure 3.3. Glottal Epenthesis II.

According to this rule, [h] ([+spread]) may be inserted into the onset or coda position of a syllable. This rule is much more general than Glottal Epenthesis I, since the latter rule restricts [+cg] epenthesis to onset position, and applies only after Level 1 in the lexical phonology. The explicit application of both Glottal Epenthesis I and II will be shown in 3.2.*

Complex onsets are permissible. A syllable may have up to two consonants in an onset. This is expressed as the Complex Onset Constraint in Figure 3.4 below:

\[
\begin{align*}
\sigma &\quad \text{('sin')}
\end{align*}
\]

Figure 3.4. Complex Onset Constraint.
Only one exception has been found: kṣṭapin ‘yesterday’, which has three consonants in its onset. Complex onsets appear word-initially, and word-medially when there is a tri-consonantal cluster. The most common complex onsets involve a cluster in which a sibilant [s, š, c, č] is followed by a non-sibilant consonant. These clusters are in bold type in the examples below:

(3.19) skam
'wing; fin'
(3.20) sloc
'hole'
(3.21) sna.m?il
'flint'
(3.22) spil
'pitch; wax type'
(3.23) sta.pan
'round tule'
(3.24) sve.len
'earthquake'
(3.25) svep
'(cactus) leaf'
(3.26) šni.pag?
'driftwood'
(3.27) šta.vit
'willow'
(3.28) oweg
'grass'
(3.29) čtaniw
'to be small'
(3.30) čti?n
'dog'

In another type of onset cluster that often appears, the second member is a liquid or glide, while the first is a (non-sibilant) obstruent, as seen below:

(3.31) kla.waš
'piece; broken'
(3.32) kwe.lu
'(tanned) hide’ < Span. cuero
(3.33) glo.wowon
'to be short’, etc.
(3.34) ple?
'to perish'
(3.35) tra.aki.lál  
'to shear sheep'  
< Span. trasguilar

(3.36) xwapäh  
'nettle plant'

I will later argue in 3.1.1.1.3 that a third licit type of complex onset exists, e.g., kʔ-, kh-, tʔ-, ŭh-, etc., in which an obstruent is followed by a glottal stop or a glottal fricative. These clusters will be shown to occur word-initially and word-medially, with the same conditions on distribution as other clusters.

Medial clusters may consist of up to three consonants. The first member syllabifies as a coda, and the remaining two members syllabify as a complex onset. All such onsets are of the same type as those shown above, in which the first member is a sibilant [s, ŭ] and/or the second member is a liquid [l] or glide [y, w]. (The affricates [c, ŭ] have not been attested in an onset cluster word-medially.) These three-member clusters are in bold type in the examples below:

(3.37) sag.prəun  
'breeze'

(3.38) xal.glaw  
'to fly down'

(3.39) og.spo.io.lon  
'to slap yell'

(3.40) po.lo.powo.yon  
'to be corded or twisted'

(3.41) ag.保姆  
'to make a sound'

(3.42) ag.štuš.tom  
'to like (the taste of); to be palatable'

(3.43) wom.štuʔš  
'wealth'

(3.44) ag.šwalaw  
'to like, love, want'

(3.45) sex.šwey  
'to melt (trans)'
(3.46) ?en.xweg 'adolescent girl'

Otherwise, as Harrington noted (33:0230), in an intervocalic cluster of two consonants, the consonants syllabify to different syllables in careful speech, as shown below:

(3.47) tap.liʔl 'to go into'
(3.48) ?on.woʔn 'hair; head hair'
(3.49) is.lu.ku.mel 'privilege,'
(3.50) usʔis.mon 'to gather'
(3.51) nas.pe.gʔen.waʔ 'finally, at last'
(3.52) es.geč 'to ask'
(3.53) as.ti.pil 'to be thick'
(3.54) ?iʔ.koʔm 'two'
(3.55) waʔ.lik 'to appear'
(3.56) waʔ.naʔ.yiʔ 'tomorrow'
(3.57) xu.nuʔ.piv 'to be afraid of'
(3.58) šu.quʔ.tay 'light; flashlight'
(3.59) ?a.tiʔ.win 'charmstone'
(3.60) ne.neč.waʔ 'deceased grandmother'
(3.61) wiʔ.ta.ni.wun 'to break into pieces'

Certain onset clusters appear word-initially only, where extraprosodic consonants are allowed. These clusters would be illicit otherwise: they either could not occur in a medial three-member cluster, or do not follow the other patterns established above. These clusters are in bold type in the words below. Some are shown with corresponding examples of medial distribution:

Figure 3.5. (+ο)-Onset Constraint.
Although (3.63) kāta.pin has a three-member cluster, the latter two members, ĕt, form an acceptable onset. Thus only the initial k- is extraprosodic.

Finally, there is an onset constraint in the lexicon that prohibits a glottal stop + sonorant sequence (e.g., ʔW) in word-initial position, or following a closed syllable. This is the [+cg]-Onset Constraint, as shown in Figure 3.5 below:

Figure 3.5. [+cg]-Onset Constraint.
For example, one does not find in the lexicon a form such as *ʔwayan (word-initial glottal stop + sonorant) or *teq.ʔmey (glottal stop + sonorant after closed syllable). As will be seen in 3.2, clitics like emphatic glottalization (ʔʔ) are added in the postlexical component, where the [+cg]-Onset Constraint and other lexical constraints are relaxed. This is why forms such as (2.42) ʔanaqipʔnāʾs ‘(to be of) such fineness’ can occur.

3.1.1.1.2 Syllable coda restrictions.

Barbareño has two coda constraints. First there is the Optional Coda Constraint that allows (but does not require) a coda. Next is the Complex Coda Constraint, which prohibits complex codas in a non-word-final syllable. Finally, Barbareño has a rule, [+cg]-Delink, which delinks glottalization when it occurs in coda position before a morpheme boundary. The two constraints and the delinking rule are discussed in turn below.

As stated in 3.1.1.3, the optional coda constraint allows a coda to appear in any syllable that does not end with a consonant. The complex coda constraint prohibits complex codas in the second tone in the syllable. Thus only one consonant can be the preceding coda.

Only one exception to the constraint has been found in the language:

![Figure 3.6. Optional Coda Constraint.](image)

The examples below show words with and without a coda.

The coda is in bold type:

(3.75) ku ‘person; Indian'
(3.76) xāp ‘rock, stone'
(3.77) wo.go  
'hard tar; asphalt'

(3.78) saq.nip  
'to answer'

(3.79) ?a.gi.wo  
'star'

(3.80) yun.teq.p?ey  
'to stick to (by heat)'

Complex codas, in which more than one consonant shares the coda position, do not occur in non-final syllables. This constraint is given in Figure 3.7 below:

```
     * σ ______________________
            |                   |
             |                   |
             H                   
           ________________
              |            |
            c          c     | Syllable |
```

Figure 3.7. Complex Coda Constraint.

As stated in 3.1.1.1, the maximal Barbareño syllable is bimoraic (with a complex onset of two consonants). The constraint in Figure 3.7 prevents two consonants from sharing the second mora in the syllable. Thus only one consonant can be the (moraic) coda.

Only one exception to this constraint has been found in the lexicon:

(3.81) ags.pha§  
'to smoke'

ags.pha  [Beeler tape; same meaning]

However, some word-final set occur only with a coda in a consonant clusters are allowed, that complex codas can occur. Such complex
cadas consist of two consonants. A striking pattern is that the
final consonants attested in such clusters are mostly sibilants
[s, ʃ, ç], and all are coronals [s, ʃ, ç, t]. The coda clusters are given
in bold type in the examples below:

(3.82) tup.mekè ‘child’
(3.83) u.ti.kukè ‘to stub the toe’ [?] does not appear
(3.84) ki.kikè ‘to be alone’ cannot remain associated
(3.85) saq.ni.k?ulè ‘to be sad’ boundary. A glottal stop
(3.86) xwapè ‘nettle plant’
(3.87) nogè ‘head’ for this is given in Figure
(3.88) a.paç.kawè ‘unexpectedly’
(3.89) noxè ‘nose’
(3.90) saq.pa?la.mavè ‘to be terrible’
(3.91) qa.sévt ‘oil’ < Span. aceite

The third and final restriction on syllable codas concerns the
glottal stop. The glottal stop is often found word-finally, as in
the words below.

Figure 3.6. (–og)–Collan.

(3.92) vi? ‘to go home’
(3.93) go? ‘dog; pet’
(3.94) an.ti? ‘to meet; to catch’
(3.95) wi.Šu.tip.še? ‘to knock down’

However, a non-word-final [?] occurs only with a sonorant in an
intervocalic cluster. This is discussed more fully in the following
section, but a couple of examples are given here to illustrate:

49
(3.96) ʔaʔ. win
(to boil (tr.))
(fast speech: ʔaʔ. win)

(3.97) hoʔ. wo
'still; yet'
(fast speech: hoʔ. wo)

to sleep with; lay up with

In words such as ʔaʔ. win and hoʔ. wo above, where [ʔ] occurs in coda position, it is significant that the coda [ʔ] does not appear at a morpheme boundary. In Barbareño, [ʔ] cannot remain associated to a coda that occurs before a morpheme boundary. A glottal stop that is associated to a coda that occurs before a morpheme boundary gets delinked from the mora. The rule for this is given in Figure 3.8 below:

\[ \text{Morpheme} \]

Figure 3.8. [+cg]-Delink.

No instances exist of a final glottal fricative [h] have been found to occur, except in reduplication, where [ʔ] does not appear. This can be seen in words that have a final glottal stop. The [ʔ] is lost in coda position before a suffix, as seen in (b) of the examples below: detail in Chapter 4.

(3.98) antiʔ
(to meet; to catch)
a. kantiʔ
'I met him'

k-antiʔ

l-meet

of constituents that are glottalized or aspirated,10 in
(3.99) a. siyalishwe?
   'they sleep with [a man]'

   s-iy-alishwe?
   3-PL-sleep.with

b. siv.sii.li.?a.lii.wewun
   'they wanted to sleep
   with them'

   s-iy-sili-alishwe?
   -wun
   3-PL-DES -sleep.with-PLO

(3.100) a. sivaxi?i?ihi?
   'they eat too much'

   s-iy-axi?i?ihi?
   3-PL-eat.too.much

b. siv.axi?i?ihi.waŋ
   'they ate too much'

   3-PL-eat.too.much-PST

No instances of a syllable- or word-final glottal fricative [h] have been found to occur, except in reduplication, where [h]
serves as a default coda of the copy. As will be seen, this is
accomplished via the rule Glottal Epenthesis II in Figure 3.3. This
is discussed in detail in Chapter 4.

3.1.1.3 The status of consonants that are glottalized
or aspirated.

A significant issue in Barbareño syllable structure concerns
the status of consonants that are glottalized or aspirated, in
particular whether such consonants should be analyzed as one segment (e.g., ṭ, ḥ, ḵh) or as a cluster of two segments (e.g., ʔw, kʔ, kh).

Evidence from the distribution of these consonants in Barbareño syllable structure calls for an analysis of these as two segments rather than one. The primary justification for this position is that glottalized or aspirated consonants have nearly the same distribution patterns as consonant clusters. Thus they can be analyzed as a cluster consisting of a glottal stop [ʔ] and another consonant, or as a glottal fricative [h] and another consonant. In sections 3.1.1.1.3.1 and 3.1.1.1.3.2 respectively, I show that these clusters are subject to the same onset and coda constraints that apply to consonant clusters in general.

This evidence notwithstanding, in section 3.1.1.1.3.3 I discuss a way in which such consonants behave as single segments.

Finally, in 3.1.1.1.3.4, I discuss how I will represent these consonants in my analysis.

3.1.1.1.3.1 Glottalized or aspirated consonants as clusters: evidence from the onset position.

First, as discussed in 3.1.1.1.1, a syllable onset may consist of up to two consonants: σ [CC]. In the lexicon, an onset cluster appears word-initially, and medially when part of a tri-consonantal cluster. As seen below, a glottalized or aspirated consonant always appears alone in onset position. It patterns as an onset cluster in that it has filled the onset slot to the maximum limit of two consonants, and thus it cannot appear with any additional consonant in the onset position. For this reason, I consider an obstructent + glottal sequence to be a licit onset cluster type, both
word-initially and word-medially. Below are examples for word-
initial position:

(3.101) c?i.no.won 'hill'
(3.102) č?a.la.yaš 'trail, road, highway'  
coexisting clusters
(3.103) k?ay.ké 'because; for'
(3.104) p?i.weč 'to be valuable, worth more, expensive'

It should be stressed again that what is important to notice
about examples (3.101-103) is that, whether the glottalized or
aspirated sound occurs word-initially, as in (3.101) c?i.no.won, or
word-medially, as in (3.103) k?ay.ké, the glottalized or aspirated
consonant always occurs alone. Not in the way it is to say, in the lexical
component of Barbarafo, one never finds a form such as *č?ila.yaš or
č?i.la.yaš, in which a glottalized or aspirated consonant occurs
when a glottalized or aspirated consonant appears with another
consonant in a medial cluster, the consonants pattern like usual
when that would be possible and are combined to form a larger,
tri-consonantal clusters, in that one member syllabifies as a coda
and the other two members syllabify as an onset. The obstruent +
consonant in a medial cluster, as seen below:

As noted, glottalized or aspirated consonants in the

glottal sequence always syllabifies as the complex onset in a medial
cluster in onset position. This distribution supports the view that
such consonant clusters pattern as consonant clusters in Barbarafo, and this
are best analyzed as such. If these consonants are analyzed as a
single segment, however, this distribution is exceptional and
would be accounted for by idiosyncratic constraints. For example, see
(3.111) in.c?i.yi.won 'to glisten, sparkle'
(3.112) sig.c?i? 'rainclouds'
(3.113) saš.kraš 'coyote'
(3.114) yun.teg.p?ay 'to stick to (by heat)'
(3.115) ax.t?a.tax '(water, etc.) to be cold'
(3.116) ?an.čhum 'money'

53
(3.117) vix.khit
' to awake'
(3.118) khap.khap
' to be thin'
(3.119) uš.qhal
{' to be open'

Glottal + sonorant sequences do not appear in medial onset clusters as seen above, because such an environment is prohibited by the [+cg]-Onset Constraint, as explained in 3.1.1.1.1.

It should be stressed again that what is important to notice about examples (3.101-119) is that, whether the glottalized or aspirated onset occurs word-initially, as in (3.105) g?i.win, or word-medially, as in (3.118) khap.khap, the glottalized or aspirated consonant always occurs alone. That is to say, in the lexical component of Barbareño, one never finds a form such as *g?li.win or *khap.skhap, in which a glottalized or aspirated consonant occurs with another consonant in onset position. A form such as *qli.win or *khap.skap would be possible in the lexicon, however, since gl and sk are licit onset types that do not exceed two consonants.

As noted, glottalized or aspirated consonants always occur alone in onset position. This distribution supports the view that such consonants pattern as consonant clusters in Barbareño, and thus are best analyzed as such. If these consonants are analyzed as a single segment, however, then this distribution is exceptional and must be accounted for by idiosyncratic constraints. For example, one would have to posit a constraint that prohibits glottalized or aspirated consonants from forming onset clusters with other consonants, because clusters such as *hl-, *ghl-, *sk-, or *skh- do not occur in the lexicon. One would also need a constraint that prohibits such 'single segments' from becoming a coda in a non-final...
syllable, to account for the fact that codas as seen in *tub- or *tuph- are unattested. Secondly, aspirated consonants in loanwords, which are true, single segments, can appear with another consonant in an onset cluster, as seen below:\textsuperscript{11}

(3.120) p\textsuperscript{b}le.qa.l\textit{el} indicates a 'dish rag' < Span. fregador

(3.121) p\textsuperscript{b}lo.len.ti.nu indicates 'Florentino' < Span. aspirated patterns (varies with flolentimu)

The phonology of loanwords thus differs from the phonology of native vocabulary in this respect. Not seen as codas in non-word-final position.

A second way in which glottalized consonants pattern as clusters is seen in intervocalic syllabification. In 3.1.1.1.1, it was shown that an intervocalic cluster of two consonants tends to syllabify to different syllables during careful or slow speech. Likewise, as heard in careful speech, the glottal stop and sonorant members that make up a medial cluster syllabify to different syllables. The glottal stop syllabifies as a coda and the sonorant syllabifies as an onset, as seen below:

(3.122) te\? leg? is thus not 'tail'ally realized. In the examples
(3.123) ma.la? me < Sw. 'any; whatever; somehow'
(3.124) sxa? min 'ocean'
(3.125) ka? ne\? č 'like; as; same'
(3.126) no? no 'very; much';/retreat'
(3.127) ?a? way 'moon'

55
Clusters consisting of an obstruent and glottal consonant pattern differently than clusters consisting of a glottal stop and a sonorant in this regard. This fact will be examined in a later discussion.

3.1.1.1.3.2 Glottalized or aspirated consonants as clusters: evidence from the coda position.

Finally, consonants that are glottalized or aspirated pattern as a cluster in that, as with all other clusters, they are subject to the Complex Coda Constraint (discussed in 3.1.1.1.2), which prohibits non-word-final coda clusters. Thus, obstruent + glottal pairs such as kʔ or ph do not occur as codas in non-word-final position. Exceptions to this constraint are rare in the Barbareño lexicon.

The effect of the Complex Coda Constraint is seen when words that have a final glottalized consonant take a suffix. Since such consonants pattern as a cluster, one of the consonants must delete. If the glottal stop is a moraic coda, then the rule [+cg]-Delink will delink it from the mora. If it is extraprosodic, as in (3.128) and (3.133), then once it is put in medial position it would be deleted via Stray Erasure anyway, since it cannot associate to a prosodic unit and is thus not phonetically realized. In the examples below, the glottal stop is lost from coda position:

(3.128) ?apʔičʔ ‘to refuse’
a. siyʔapʔičʔ ‘they refuse/refused’
   s-iwʔapʔičʔ 3-PL-refuse

56
b. si?va.p?iš.waš  ‘they refused’
   s-iy-?ap?iš?-waš  3-PL-refuse -PST

(3.129) taqwa?y  ‘to be surprised’
   a. samsutaqwa?y  ‘they surprised [a stranger]’
      s-am -su-taqwa?y  3-IDF-CA-be.surprised
   b. na sam su taqwa.waš  ‘when they suprised [a stranger]’
      na -s-am -su-taqwa?y -waš  when-3-IDF-CA-be.surprised-PST

(3.130) aqli?l  ‘to be visible, be seen; appear’
   a. saqli?l  ‘(its brightness) is seen’
      s-aqli?l  3-be.seen
   b. k?e saqli.l.waš  ‘and it was visible’
      k?e-s-aqli?l -waš  and-3-be.visible-PST

(3.131) to?o?n  ‘to lie down; go to bed’
   a. kiyto?o?n  ‘we go to bed [early]’
      k-iy-to?o?n  1-PL-go.to.bed
   b. hul.to.?on.waš  ‘the one which was lying [at his feet]’
      hu-l -to?o?n -waš  RM-ART-lie.down-PST
   c. pto.?on.pi  ‘you go to bed right then’
      p-to?o?n -pi  2-lie.down-at.once
(3.132) naʔn
  'to go'
  a. pnaʔn
     'you go, you went'
     p-naʔn
     2-go

b. pʔa.naʔn-waŋ
    '[where] were you [yesterday]?'
    pʔ-al-naʔn-waŋ
    2-NM -go -PST

c. siy.naʔn.piʔl
    'they went towards [the water]'
    s-iy-naʔn-piʔl
    3-PL-go -DIR

(3.133) aktik?
  'to come to get something'
  a. kʔalaktik?
     'I have come for it'
     kʔ-al-aktik?
     1-NM -come.for.something

b. kʔalaktik.wun
    'I have come for them'
    kʔ-al-aktik.
    1-NM -come.for.something-PLO

(3.134) salaqwaʔy
  'secure, fasten, fix, trim, repair'
  a. siy.salagwaʔy
     'they secured [the child]'
     s-iy-salaqwaʔy
     3-PL-secure

b. siy.salaqwaʔy.wun
    'they fixed (arrows)'
    s-iy-salaqwaʔy-wun
    3-PL-fix -PLO

c. siy.salaqwaʔy.śiš
    '(the stars) arrange themselves
     into the same figures they
     were in long ago]'
    s-iy-salaqwaʔy-śiš
    3-PL-fix -RFL

58
In examples (3.128-132), the past tense morpheme, -waʔ, is added to the stem. When this happens, the final consonant-glottal stop pair of the stem is placed in coda position before a morpheme boundary, and thus loses its glottal articulation. The same process is seen in examples (3.131-134), when the glottal articulation is lost in coda position before the suffix -pi ‘at once’, the directional suffix -piʔl, plural object suffix -wun, the reflexive suffix -ʔiʔ, and the locative suffix -pi. This is what is expected given the application of [+cg]-Delink in particular and the stray erasure of non-licensed elements in general.

The glottal articulation is retained, however, if vowel-initial morphemes are suffixed. This is seen with agliʔl ‘to appear, be visible’ in (3.135), with naʔn ‘to go’ in (3.136), and toʔoʔn ‘to lie down’ in (3.137) below:

(3.135) agliʔl
...agliʔlin

(to be visible, appear)‘

[those which] appear to you’

(3.136) naʔn

/to go/

(it matters to me)‘

(3.137) naʔn

hi-3-go-

they want to bath
(3.137) toʔoʔn
    s-toʔoʔn -as
    3-lie.down-RP

to lie down; go to bed
he would go and lie
[there] again and again

In (3.135-137) above, the final glottal articulation in the stem is a moraic coda. However, since it does not occur before the morpheme boundary, it is not delinked by the rule [+cg]-Delink. In fast speech, it would become part of the onset to the vowel-initial morpheme. The rule [+cg]-Delink is quite productive in the phonology of Barbareño. However, there are examples which seem to violate this rule. As seen in (3.138-141) below, the glottal articulation remains in coda position before a morpheme boundary:

(3.138) agliʔl (3.135-137) noun
    hiʔlagliʔl.pi
    hi-l -? -agliʔl -pi

's to be visible, be seen; appear'

not a suffix

(3.139) sušaxaʔl
    sam-suʔsaʔxal.wun
    g-am -sušaxaʔl -wun
    3-PL-throw.away-PLO

'to throw away'

'they threw them away'

'to appear; be seen, be visible'

'they used to appear to them'

(3.140) kepleʔl
    siv. kep.leʔl.waŋ
    g-iy-kepleʔl -waŋ
    3-PL-go.to.bathe-FST

'to go to bathe'

'they went to bathe'

The glottalization in the words below is also lost with the suffix- PL-go.to.bathe-FST though the glottalization is not in stem-final position.
(3.141) si.ve.si.li.naʔn.waʔ  'they didn’t want to go’
s-i-y-e-sili-naʔn-waʔ 3-FL-Ν-DES -go -FST

In (3.138-141), the stem-final glottal articulation is retained in coda position before the morphemes -pi, -wun, and -waʔ, violating [+cg]-Delink. Example (3.138) remains baffling at this time. For the other examples, however, there may be an explanation. As seen earlier in this chapter, licit onset clusters often have a glide as the second member. Thus for (3.139-141), an alternative syllabification could be, respectively, ...xaʔ.lwun, ...leʔ.lwaʔ, and naʔ.nwaʔ in fast speech. In this case, though the glottal articulation is in coda position, it is shielded from the morpheme boundary, and as such is not affected by [+cg]-Delink.

Examples (3.135-137) showed that the stem-final glottal articulation is retained before a vowel-initial suffix. As seen below in (3.142), however, there is consistent evidence that such glottalization is not retained before the suffix -us, a suffix that is vowel-initial.

(3.142) aqliʔl  'to appear; be seen, be visible'
 sqi.liʔ-agli.lus.wun  ‘he used to appear to them’
 s-aqli-agliʔl-us-wun 3-HAB -appear-GL-PLO

The glottalization in the words below is also lost with the suffixation of -us, even though the glottalization is not in stem-final position:

61
(3.143) suveteg?en 'to dodge' (from Luisa Ignacio)

suvetegenus 'to dodge someone (or something)

3...predict that the aspiration would not occur before vowel-initial

(3.144) xu?wil 'to get angry'
xuwulius 'to make someone angry'

(3.145) yuxnuc? 'hummingbird'
yuxnuc? 'to carry on the back'

(3.146) sip? 'to carry on the back'
sip? 'to hold in word-final position. Third, glottal stop

(3.147) piztii?i? 'plaster; cloth awning'
piztii?i? 'plaster; cloth awning'

(3.148) gupu?let? 'rectum'
gupu?let? 'rectum'

(3.149) we?n 'to go to sleep'

(3.150) ku?w 'oak sp.'

(3.151) ?aqiwa?i?u? 'shade; shadow'

62

Likewise, the analog for agli?l 'to appear' is agli?l 'to appear to

the preceding section. Our expectations were given for
glottalization in certain verbs. It is not entirely understood at

this time, but the point is that it is not a phonologically

motivated phenomenon that needs to be accounted for in this study.

As with other coda clusters, it is only in word-final position

Third, glottal stop in the coda are given below:

No instances of final consonants with (distinctive) aspiration

(e.g., -ph) have been found. This is the predicted distribution,
does not occur in a word-final cluster. If, on the other hand, -ph constituted a single segment rather than a cluster, one would predict that the aspiration would be heard before vowel-initial suffixes. Its failure to appear could not be accounted for. This is further evidence that a consonant with distinctive aspiration patterns as a cluster of two consonants. There are two intervocalic clusters: gg and gg. In careful speech, these do not syllabify as

3.1.1.1.3.3 Glottalized or aspirated consonants as single segments.

In the preceding two sections, four arguments were given for considering glottalized or aspirated consonants as a cluster of two segments, rather than as a single segment. First, they pattern as regular clusters with respect to the onset position. As onsets, they always occur alone, respecting the constraint that allows no more than two consonants in onset position. Second, they pattern as regular clusters with respect to the coda position since (1) they are subject to the Complex Coda Constraint which prohibits consonant clusters from occurring as codas in non-word-final position, and (2) they occur alone in word-final position, since no more than two consonants are allowed in word-final position. Third, glottal stop + sonorant sequences syllabify like regular clusters in intervocalic position, since (in careful speech) the first member syllabifies as a coda and the second member as an onset. Finally, in particular regard to aspirated consonants, such consonants pattern as a cluster with respect to word-final position as well: they do not occur in word-final position because the segment h itself does not occur in word-final position.

There is, however, one reason for considering a subset of laryngealized sequences as one segment (e.g., ñ, ñ^h) rather than as

63
a cluster of two segments (e.g., $k\theta$, $kh$). Such clusters are always simultaneously articulated, even in careful speech. Thus they do not split up when they are intervocalic, as other clusters do. Normally, a two-consonant cluster splits up in intervocalic position; that is, the cluster syllabifies heterogeneously, as seen in (3.56) waš.nax.yit 'tomorrow'. In that example there are two intervocalic clusters: sn and xy. In careful speech, these do not syllabify as complex onsets, e.g., *wa.šna.xyit. A non-fricative obstruent and [?], or an obstruent and [h], always syllabify as a complex onset cluster, even in slow speech, for example:

(3.152) saw.moloc?in 'to smoothen, polish'
(3.153) wa.š?ex 'arm'
(3.154) saq.ni.krulë 'to be sad'
(3.155) mi.ti.p?in 'door; outside'. Clusters such as qi,
(3.156) no.g?oc? as single sequ'iron', i.e. [l], \x^t\ and \x^s\ respectively.
(3.157) na.mut?ey always syllabify as 'sister'.
(3.158) na.qi.wa.chu?y such as 'shade' and qi are always syllabified
(3.159) i.čha.xi as sequences, i.e. $q\theta$, and $\theta$ respectively. This
(3.160) ta.khuy the fact that 'to carry' does not split up in
(3.161) sa.pha.niš as in other 'village' etc.
(3.162) sa.gha.la.ian 'to holler'
(3.163) ?i.shuv representations 'to be a sign that, to mean'
(3.164) ?i.shuv representations 'public hair'

It has been shown that a *glottalised or aspirated consonant
keeps as a consonant cluster in Barbary. It was also shown that
One does not hear, for example, a form syllabified as *?a.mut. ?ey or
*a.gi.wa.chu?y in which a laryngeal onset follows an obstruent coda (or
a non-fricative obstruent coda in the case of a [?] onset). Instead,
an obstruent and the following glottal (with the above qualification) always syllabify homogeneously in a syllable. As seen earlier, this is not the case for glottal stop + sonorant articulations in careful speech, when the sequence appears in an intervocalic position. Also, fricatives ([s, š, x, h]) never syllabify homogeneously with a glottal stop in an intervocalic onset position, for example:  

(3.165) us.ʔia.'mon  
(to gather)  
(3.166) uš.ʔex  
(to spread)  
(3.167) uš.ʔi.'tap  
(to mix)  
(3.168) ex.ʔeč  
(to laugh)  
(3.169) ax.ʔi.'ʔi.ʔi?  
(to eat or drink too much)  

In terms of phonetic articulation then, clusters such as pʔ, tʔ, and cʔ are like single segments, i.e., ʔ, t, and ʔ respectively, in that they are always simultaneously articulated. Likewise, aspirated obstruents, such as ph, kh, and sh are always articulated the same as single segments, i.e., ʰ, ʰ, and ʰ respectively. This accounts for the fact that these clusters do not split up in intervocalic position as other clusters do.

3.1.1.1.3.4 The representation of glottalized or aspirated consonants in this thesis.

It has been shown that a glottalized or aspirated consonant in the nasal group (i.e., n, ng, m, mm, n̪, n̪, n̪, n̪) has patterns as a consonant cluster in Barbareño. It was also shown that a subset of this group also patterns as a single segment in terms of articulation. In this thesis, the glottalized consonants are represented in the same way as the nasal consonants, through phonetic notation.
articulation of such consonants has only one root node, as represented in Figure 3.9 below (higher prosodic structure is not shown): \[ \text{Root} \rightarrow \text{Laryngeal} \rightarrow \text{Place} \]

For example: \(\dot{t}, \ddot{t}, \kappa, \dot{g}, \ddot{g}, \dot{c}, \ddot{c}, \p^h, \k^h, \g^h, \i, \hat{i}, \h, \dot{w}, \text{and } \ddot{w}.\)

In phonotactic patterning, such sequences act as a consonant cluster with two root nodes: one dominating a Laryngeal node (for \(\ddot{t}\) and \(\hat{h}\)), and the other dominating a Place node, as represented in Figure 3.10 below: that dominates the Place node, resulting in glottalization or aspiration of the consonant (the root node that formerly dominated the left Root is then "grayed out"). The Laryngeal and Place articulations are simultaneous. Root Node selection occurs within or across phrase boundaries phonologically. Example: \[ \text{Figure 3.10. Cluster with glottal consonant.} \]

The Laryngeal node is on the left for ease of notation, and does not imply any precedence relation. This is the representation for clusters consisting of a glottal stop and sonorant, e.g., \(\ddot{z}, \ddot{m}, \ddot{n}, \ddot{w}, \text{and } \ddot{y},\) and clusters consisting of a glottal consonant and obstruent, e.g., \(\ddot{p}, \ddot{t}, \k, \dot{g}, \ddot{g}, \ddot{c}, \ddot{d}, \ddot{d}, \dot{h}, \ddot{h}, \ddot{g}, \ddot{q}, \ddot{sh}, \ddot{sh}, \ddot{v}, \text{and } \ddot{ch}.\)

In this thesis, the above two-node type representation is taken as the more fundamental, though somewhat abstract,
representation of a glottalized or aspirated consonant in Barbareño. As will be seen in 3.2, this representation holds in the lexical component. The one-node representation will apply in the postlexical component. The phonological reduction rule in Figure 3.11 below illustrates how a two-node cluster with a glottal consonant changes to a one-node glottalized or aspirated consonant.

![Figure 3.11. Root Node Reduction.](image)

By the rule Root Node Reduction, the Laryngeal node associates to the root node that dominates the Place node, resulting in a root node that dominates the Place node. Consequently, the root node that formerly dominated the laryngeal node is then strayed erased. The consequences of laryngeal and Place articulations are thus simultaneous. Root Node Reduction occurs within or across morpheme boundaries postlexically. Sylabically, it was observed that glottalized and aspirated examples (3.170) below illustrates Root Node Reduction within the consonant pattern as clusters, and are subject to the same onset form `ho?wo' 'still, yet' (the symbol '*' indicates a root node):

a. Root Node Reduction: 
   
   ![Root Node Reduction](image)

b. Postlexical syllabification:

   ![Postlexical Syllabification](image)
Example (3.171) illustrates Root Node Reduction across a morpheme boundary, with p?ap 'your house' < p- (second person) + ?ap 'house': grammatical vs. phonological stress location. By convention, all vowels are stressed in this language. These stages are exemplified for (3.171) syllabification of p?ap: 'your house' and p?ap 'house'.

a. Root Node Reduction:

```
[\[\] \[\]]
```

\[
\text{p ?ap}
\]

\[
\text{->}
\]

\[
\text{\[\[\]]}
\]

\[
\text{p?ap}
\]

b. Resyllabification:

- ** Syllable Projection

In this stage, the mora is attached to a syllable.

```
```

In section 3.1.1.1, Barbareño syllable structure was explored in detail. The syllable is maximally bimoraic, with an onset cluster of two consonants. Several constraints and rules were presented.

The consonantal onsets are selected as onset in syllable.

These were shown to affect the onset and coda positions of the consonants by are both allowed as onsets to the same syllable.

syllable. Finally, it was argued that glottalized and aspirated

This is allowable because the consonant is not syllabific to the

syllable pattern as clusters, and are subject to the same onset

preceding syllable, and a syllable may have up to two onset

and coda constraints as other clusters. All of these facts have

consequences for productive reduplication, as will be shown in

Chapter 4. The next section gives a detailed treatment of

syllabification, stress, and syllable weight.

3.1.1.2 Syllabification, stress, and syllable weight.

Syllabification is handled following the stages in Hayes (1989:259): syllable projection, adjunction of prevocalic consonants
(as onsets), and Weight by Position. Moraic structure does not need to be stated underlyingly for Barbareño, since this language does not have geminates or contrastive vowel length. By convention, all vowels are moraic in this language. These stages are exemplified for the syllabification of počøyi ‘lizard sp.’, wašnaxyít ‘tomorrow’ and agšwalaw ‘to like, want, love’ in (3.172) below. Root nodes are not indicated for ease of exposition.

(3.172)

for syllabification has been applied, other rules may apply as

a. Syllable Projection

In this stage, the moraic vowel projects a syllable.

\[
\begin{array}{c}
\sigma \sigma \\
\hline
\text{počøyi} \\
\hline
\end{array}
\quad
\begin{array}{c}
\sigma \sigma \\
\hline
\text{wašnaxyít} \\
\hline
\end{array}
\quad
\begin{array}{c}
\sigma \sigma \\
\hline
\text{agšwalaw} \\
\hline
\end{array}
\]

b. Onset Adjunction

The prevocalic consonant is selected as onset. In agšwalaw, the consonants ţw are both adjoined as onsets to the same syllable. This is allowable because the consonant ţ cannot syllabify to the preceding syllable, and a syllable may have up to two onset consonants, as shown in 3.1.1.1. There is no prevocalic consonant to adjoin as an onset for the initial syllable in agšwalaw. The rule Glottal Epenthesis I will be seen to apply, after syllabification, to remedy this situation.

\[
\begin{array}{c}
\sigma \sigma \\
\hline
\text{počøyi} \\
\hline
\end{array}
\quad
\begin{array}{c}
\sigma \sigma \\
\hline
\text{wašnaxyít} \\
\hline
\end{array}
\quad
\begin{array}{c}
\sigma \sigma \\
\hline
\text{agšwalaw} \\
\hline
\end{array}
\]
c. Weight by Position

Coda consonants become moraic via Weight by Position, and thus add weight to the syllable. Syllable weight affects stress assignment, as will be seen later. Two syllables in the word-final foot: Light syllables are monomoraic (with an onset); heavy syllables have more than one onset. The main stress always falls on the penultimate syllable, as in agáwalaw and wašnaryít, but syllables that are stressed are heavy, since neither falls on the final.

Once syllabification has applied, other rules may apply as necessary. (The ordering of rules is more fully discussed in part 3.2 and in Chapter 4.) These follow stage (c) above; they are not a part of Hayes' stages of syllabification, however. The exact placement of these stages in the derivation of a word will be shown in 3.2.

d. Glottal Epenthesis I

The initial syllable in agáwalaw did not receive an onset in which the subsequent syllable is heavy and the first onset during syllabification. If it did not otherwise receive an onset from a prefix, it would receive a default onset via the rule Glottal Epenthesis I, as shown below:

(Glottal Epenthesis II can not apply instead of this rule, yielding *hagáwalaw, because of ordering constraints in the lexical phonology. This is discussed in 3.2).
e. Stress

As will be seen more clearly in 3.2, stress is one of the rules that applies after syllabification. Stress assignment is determined by the weight of the two syllables in the word-final foot. Light syllables are monomoraic (with no coda); heavy syllables have a moraic coda. If either syllable is light, then main stress falls on the penultimate syllable, as seen in počoyny and aqáwalaw below. If both syllables are heavy, then stress falls on the final syllable, as in wašnaxyít.17 Harrington (33:0235) was the first to note the existence of ultimate and penultimate stress in Barbareño.18 Stress is shown in the words below:

\[ \text{počoyny} \quad \text{wašnaxyít} \quad \text{aqáwalaw} \]

In počoyny and aqáwalaw, the penultimate syllable is light. Examples in which the penultimate syllable is heavy and the final syllable is light are given below. This combination is notably rare for Barbareño except in loanwords:

(3.173) súlkú
\[ \text{furrow} < \text{Span. surco} \]
cf. sulkůw \[ \text{night} \]

Other examples include:

(3.174) kálpú
\[ \text{Carpio} < \text{Span. [personal name]} \]
cf. kalpás \[ \text{but; even} \]

(3.175) kální
\[ \text{meat} < \text{Span. carne} \]
(3.176) axtawayánpí 'shade' by scene (context): (3) 
< axtawayan 'to feel refreshed' + -pi (locative) or not the usual use final glottalization and (4) whether or not the final syllable (3.177) vínäí 'to be hot' has (5) in the ending. Stress is otherwise unpredictable, as in the 
(3.178) cępñí 'other, different'

3.1.1.2.1 Other factors of predictable stress.

As shown earlier, if either the penultimate or final syllable is light, then stress will fall on the penultimate syllable. If, however, the final syllable has glottalization in the coda, then stress will fall on the final syllable even when the penultimate syllable is light, as seen below:

(3.179) i-ro 'to roast (tr.)' in pimento (3.180) ašni-päq 'driftwood' projection, onset
(3.181) xí-xí 'cactus' is illustrated with
(3.182) a.p?i.t?í 'ladder' (< apit 'to climb')
(3.183) no.q?éc 'iron'

Also, final syllables that have [h] in the onset take final stress, as seen below:

(3.184) mu.hú 'owl sp.'
(3.185) mu.húw 'beach' (3.186) a.híy 'to be long'
(3.187) a.khúw 'to carry'
(3.188) a.phán 'to build'

Thus clusters syllabify homogeneously as a copies event in the
Thus predictable stress is determined by three factors: (1) syllable weight in the word-final foot; (2) whether or not the word has final glottalization; and (3) whether or not the final syllable has [h] in the onset. Stress is otherwise unpredictable, as in the rare examples below:

(3.189) ki.mi 'even' (conj.)
(3.190) k?ay.kë 'because; for'
(3.191) i?i ti 'to find'

In these cases stress must be lexically indicated.

3.1.1.2.2 Syllabification of clusters in which one member is a glottal consonant.

Syllabification of forms with glottal consonants proceeds in the same stages as given above: syllable projection, onset adjunction, and Weight by Position. This is illustrated with c?inowon 'hill', ?amut?ey 'sister', ?apa?niš 'village', and ho?wo 'still, yet' in (3.192) below:

This exemplifies lexical syllabification. In postlexical or word speech syllabification, Most Voice Reduction merges the glottal consonant sequences into one articulation. Syllabification and (3.192)

a. Syllable Projection

\[
\begin{array}{cccc}
\sigma & \sigma & \sigma \\
\mu & \mu & \mu & \mu \\
\end{array}
\]

b. Onset Adjunction

In the onset adjunction stage, the obstruent plus glottal consonant clusters syllabify homogeneously as a complex onset to the
same syllable. Intervocalic glottal plus sonorant clusters syllabify heterogeneously. c?inowon c?inowon
?amut?ey ?amut?ey

c. Weight by Position

This exemplifies lexical syllabification. In postlexical or
fast speech syllabification, Root Node Reduction merges the glottal

stress adjust as necessary, as seen below in (e) (root nodes are
shown explicitly in each stage for clarity):

e. Root Node Reduction
Root Node Reduction does not affect the overall postlexical syllabification of obstruent + glottal clusters, since these already syllabify as complex onsets in both lexical and postlexical syllabification. Root Node Reduction does affect the syllabification of glottal + sonorant clusters, however, as it allows the previous heterogeneously syllabified clusters to now syllabify as complex onsets.

3.1.1.2.3 Syllabification of extraprosodic consonants.

The final part of this section demonstrates syllabification with extraprosodic segments. Extraprosodic segments occur only at the initial and final edges of a word (both lexically and postlexically) in Barbaresco. Extraprosodic segments are enclosed in angled brackets (<>). In the word formation process in 3.2, I will use the term 'extraprosodicity' to refer to the extraprosodic status an edge consonant acquires when it fails to hook up to a prosodic unit during syllabification. Syllabification is shown first for extraprosodic onsets. Given in (3.193) below are pšoš 'gopher snake', sxa?min 'ocean', and kštapin 'yesterday':

(3.193) Syllabification with extraprosodic onsets

a. Syllable Projection

\[
\begin{array}{c|c|c}
\sigma & \sigma & \sigma \\
\hline
pšoš & sxa?min & kštapin \\
\end{array}
\]

75
b. Onset Adjunction

\[ \begin{align*}
\sigma & \quad \sigma & \quad \sigma \\
\text{påoš} & \quad \text{sxa?min} & \quad \text{kàtaphin}
\end{align*} \]

c. Weight by Position

\[ \begin{align*}
\sigma & \quad \sigma & \quad \sigma \\
\text{påoš} & \quad \text{sxa?min} & \quad \text{kàtaphin}
\end{align*} \]

d. Extraprosodicity

Extraprosodic codas are handled in a similar fashion. Given in (3.194) below are noqš ‘head’, na?n ‘to go’, and tupmekč ‘child’:

(3.194) Syllabification with extraprosodic codas

a. Syllable Projection

\[ \begin{align*}
\sigma & \quad \sigma & \quad \sigma \\
\text{noqš} & \quad \text{na?n} & \quad \text{tupmekč}
\end{align*} \]

b. Onset Adjunction

\[ \begin{align*}
\sigma & \quad \sigma & \quad \sigma \\
\text{noqš} & \quad \text{na?n} & \quad \text{tupmekč}
\end{align*} \]
c. Weight by Position

When the final segment is placed in medial position through suffixation, it loses its extraprosodicity and becomes syllabified if possible. This is seen in (e) below with the suffixation of the noun past -iwaš to noqš (to form noqšiwaš ‘skull’), and suffixation of the first person object pronoun -it to naʔn (to form naʔnit, as in hisnaʔnit ‘it matters to me’):

e. Affixation

f. Resyllabification

In (e) above, the vowels in the suffixed material project a syllable which requires an onset, hence in (f)
the extraprosodic consonant becomes a licensed onset. If, however, the extraprosodic consonant cannot be syllabified after being placed in medial position, it is stray erased and subsequently not phonetically realized. This is seen with the final -ʔ in aktikʔ. (3.195) shows the syllabification of aktikʔ below.

(3.195)

a. Syllable Projection

b. Onset Adjunction

The final, extraprosodic onsets are licensed word-finally in (d), once in medial position through affixation. However, it could have had to syllabify as either part of a complex onset or as part of a complex onset (e.g., -məməm, -wun-məm, etc.) in any word structure. The Complex Onset Constraint would prevent the syllabification of "aktikməm", and the long-sequent constraint would prevent the syllabification of "aktikwunməm".

c. Weight by Position

d. Extraprosodicity

Further treatment of extraprosodicity is given in part 3.1. Note that decreases in ipseuset all the lexical and phonological (The form would receive an epenthetic onset if it did not later receive an onset from a prefix or enclitic).

In (e), -ʔ is not syllabified upon the suffixation of -wun, and is subsequently stray erased when it does not hook up to a
syllable in (f):

Lexical phonology (Kiparsky 1981, 1995; Pulleyblank 1984)

e. Affixation two kinds of phonological rules: lexical rules and postlexical rules. Lexical rules operate only in the domain of the lexicon. The latter are used to be organized into a hierarchy of levels for analysis that are defined by derivational

f. Resyllabification case. These rules also operate at one or more levels in the word-formation process incorporating morphological information for word-formation in the phonology. Nouns consist of one or more cycles. A new cycle is started every time morphological information is added, as in affixation. Postlexical rules apply in the domain of syntax.

Cyclic rules refer to the internal structure of derived words.

The final, extraprosodic glottal stop was licensed word-

structure Preservation ensures that well-formedness constraints are 

finally in (d). Once it was put in medial position through 

preserved as the cyclic rules are applied. Structure Preservation in 

affixation, however, it would have had to syllabify as either part 

usually discussed in terms of exhibiting morphological evidence to 

of a complex coda (i.e., *an.tik.?wun) or as part of a complex onset 

the representation of the derived word. Following Kiparsky (1984) 

(i.e., *an.tik.?wun) to avoid stray erasure. The Complex Coda 

also applies to well-formedness constraints on syllables, such as the 

Constraint would prevent the formation of *an.tik.?wun, and the 

Complex onset Constraint in Barbareño, ensuring that such 

[+cg]~Onset Constraint would prevent the formation of *an.tik.?wun. 

constraints are not violated. Cyclic rules cannot apply across more 

The only alternative is stray erasure, therefore the glottal stop is 

synchronized. They are subject to lexical constraints, and may hence 

not phonetically realized.

Further treatment of syllabification is given in part 3.2, 

Postlexical rules, on the other hand, may not refer to the 

which demonstrates in greater detail the lexical and postlexical 

internal structure of words, but may apply across word boundaries, 

stages of word-building in Barbareño.

They are not subject to lexical constraints, and may not have 

exceptions to their application. In the postlexical phonology, 

structure Preservation no longer applies, and no syllable structures 

that do not conform to syllable constraints can be created.
3.2 Lexical Phonology.

Lexical Phonology (Kiparsky 1982, 1985; Pulleyblank 1986) distinguishes two kinds of phonological rules: lexical rules and postlexical rules. Lexical rules are cyclic, and apply only in the domain of the lexicon. The lexicon is assumed to be organized into a hierarchy of levels (or strata) that are defined by derivational and inflectional processes. The cyclic rules operate at one or more levels in the word-formation process, incorporating morphological information (or word-formation rules) in the phonology. Levels consist of one or more cycles. A new cycle is started every time morphological information is added, as in affixation. Postlexical rules apply in the domain of syntax.

Cyclic rules refer to the internal structure of derived words. Structure Preservation ensures that wellformedness constraints are preserved as the cyclic rules take effect. Structure Preservation is usually discussed in terms of prohibiting non-phonemic elements in the representation of the derived words. Following Itó (1988:12), it also applies to wellformedness constraints on syllables, such as the Complex Onset Constraint in Barbareño, ensuring that such constraints are not violated. Cyclic rules cannot apply across word boundaries. They are subject to lexical constraints, and may have lexical-based exceptions to their application.

Postlexical rules, on the other hand, may not refer to the internal structure of words, but may apply across word boundaries. They are not subject to lexical constraints, and may not have exceptions to their application. In the postlexical phonology, Structure Preservation no longer applies, and so syllable structures that do not conform to syllable constraints can be created.
This model of Lexical Phonology was amended in Booij and Rubach (1987), with the addition of another component of phonological rules, the 'post-cyclic' rules. Like cyclic rules, post-cyclic rules occur only in the domain of the lexicon. Post-cyclic rules, however, are not cyclic, though they apply only in the lexicon. They must apply after the cyclic rules, and before the post-lexical rules. The addition of the post-cyclic component of rules improves the model of Lexical Phonology by accounting for lexical-specific processes that are not accounted for by cyclic rules. A language does not necessarily have lexical, non-cyclic rules however. As seen in the discussion of Barbareño phonology to follow, lexical rules have only cyclic application.

In addition to Structure Preservation mentioned above, there are other principles in Lexical Phonology that regulate the application of rules. One is the Elsewhere Condition (Kiparsky 1982:136-7). The Elsewhere Condition holds that if two rules can apply in principle to the same representation, then the more specific or limited rule applies first. The more general rule applies 'elsewhere', i.e., wherever else the more specific rule cannot apply. For example, the Elsewhere Condition regulates the application of Glottal Epenthesis I (which inserts [ʔ]) and Glottal Epenthesis II (which inserts [h]), when both may in principle apply to a given form. It will be seen that Glottal Epenthesis I applies first, since it is more limited in its domain than Glottal Epenthesis II. As discussed earlier, the former rule applies only to onsets, and does not apply at Level 1.

Another principle is the Strict Cycle Condition (using the version in Kiparsky 1985:89) which prevents a phonological rule from
making structural changes to a non-derived or underlying form. Before a phonological rule can change the structure of a form, the form has to occur in a derived environment. A derived environment occurs when a form becomes changed or derived through derivational or inflectional processes (which most commonly involve affixation). For example, when the Level 1 input is underlyingly vowel-initial, like [ališwe?] ‘to sleep with’, one might expect Glottal Epenthesis II to apply to it immediately, making it *[hališwe?], since every syllable must have an onset. Yet this does not happen. Since the input is an underlying form, it is by definition non-derived. Thus a phonological rule that would change its structure (by adding an h-onset, for example) cannot apply to it at that stage. Syllabification can apply, however, since rules that build metrical structure are not considered structure-changing (Kiparsky 1985:92). When a morpheme such as the desiderative sili- is prefixed to [ališwe?] (at Level 3) the form is changed or derived into [sili[ališwe?]]. Since the onsetless syllable dominating [a... now occurs in a derived or changed environment, a glottal epenthesis rule can apply to it, as long as the rule applies on the same cycle. As will be seen later in this chapter, Glottal Epenthesis I applies to this derived form, yielding [sili?ališwe?].

Finally, another important principle is Bracketing Erasure, which erases internal brackets at the end of each level (Kiparsky 1982:140). (A pair of brackets is added each time affixation occurs in a given cycle.) For example, the form [sili?ališwe?] is derived at Level 3. It has one pair of internal brackets as well as external brackets. At the end of Level 3, the internal brackets will be erased, and the form will then look like [sili?ališwe?]. The effect
of bracketing erasure is that it erases information about internal morphological structure. Therefore rules that apply at subsequent levels are not supposed to be sensitive to morphological information that was encoded by internal brackets in previous levels.

3.2.1 Lexical and postlexical phonology of Barbareño.

Below is a sketch which pinpoints, in Barbareño phonology, the location of the rules discussed in part 3.1.

(3.196) Lexical and postlexical phonology of Barbareño

Lexical Component

Level 1

Morpheme examples (derivational suffixes):
-\(-y\) - characteristic of
-\(-y\) - verbal suffix
-\(-\) - resultative
-\(-\) - repetitive
-\(-\) - 'defunct; dead; former'

Rules:
Syllabification
Glottal Epentheses II
Extraprosodically
Stress

Level 2

Morpheme examples (derivational prefixes):
classifier prefixes
\(-m\) - causative
\(-\) - diminutive

Rules:
Syllabification
\(+cg\) - Delink
Glottal Epentheses I & II
Extraprosodically
Stress

Level 3

Morpheme examples (inflectional affixes):
-\(-\) - (past tense)
-\(-\) - (imperfective)
-\(-\) - (reflexive)
-\(-\) - (stativizer/nominalizer)

Presence in the lexical component as level 3 affixes. The presence of
affixes in level 3 affixes affects the lexical component in that the
rules can be applied to the internal prosodic stress.

\(-\) - (venitive)

83
sili- (desiderative)  sili- (habitual)

Rules:
Syllabification
[+cg]-Delink
Glottal Epenthesis I & II
Extraprosodicity
Stress

3.4.1.1 Derivations:

Postlexical Component
Morpheme examples (clitics): *see* lecture representative shape
-?] (emphatic glottalization)
\[a?\] (future)
\[e\] (negative)
\[al\] (subordinate)
\[am\] (indefinite)
\[iv\] (plural)
pronominal proclitics
\[l\] (article)
deictic proclitics
connectives \[hi\] , \[li\]

Rules:
Root Node Reduction
Syllabification
Glottal Epenthesis I & II
Extraprosodicity

Many details about Barbareño lexical phonology remain to be worked out. The sketch does not include all of the phonological rules and affixes of Barbareño. For example, rules regarding vowel harmony, sibilant harmony and phrasal stress are not listed.

As seen above, the affixes in Level 1 are derivational suffixes. The affixes in Level 2 are derivational prefixes. The prefixes in Level 2 are attested as having productively reduplicated. None of the inflectional prefixes in Level 3 are known to undergo that process. The lexical phonology would predict, however, that since reduplication occurs before the stem, reduplicated forms can receive Level 3 affixes. The postlexical clitics differ from the affixes in the lexical component in that the clitics can have as their scope the syntactic phrase.19

84
The examples in the following section illustrate, with the rules given in 3.1, how words are derived in the lexical and postlexical components.

3.2.1.1 Derivations.

In all examples to follow, lower case letters represent steps in the cycle. Also, for ease of exposition, root nodes are shown only when necessary, and syllabification will be shown as one step when sub-steps are not crucial to the discussion.

I follow Pulleyblank (1986) in explicitly entering the root (Pulleyblank uses the term 'stem'), on the first cycle. The root serves as the base for derivational and inflectional affixes, and may be historically simple or complex in morphology.

(3.197) Derivation of s\textit{xiiwhas} 'he would pitch lies'.

\begin{itemize}
  \item \textbf{Lexical Component}
  \begin{itemize}
    \item \textbf{Level 1}
    \begin{itemize}
      \item \textbf{Cycle 1}
      \begin{itemize}
        \item a. Input of root
        \begin{verbatim}
        xîwî 'to lie'
        \end{verbatim}
      \end{itemize}
    \end{itemize}
  \end{itemize}
  \item \textbf{Syllabification}
  \begin{itemize}
    \item Level 2 (no applicable rules)
    \begin{itemize}
      \item Level 3 (applicable rules)
      \begin{itemize}
        \item [xîwî]
      \end{itemize}
    \end{itemize}
  \end{itemize}
  \item \textbf{Stress}
  \begin{itemize}
    \item [xîwî]
  \end{itemize}
\end{itemize}

85
Cycle 2

a. Affixation

-æ (repetitive)

The input of the form, [[xiwi]], is marked with the affixation of -æ. After syllabification of the suffix, Glottal Epenthesis II (henceforth GE II) applies. This rule applies rather than Glottal Epenthesis I (henceforth GE I) because part of the description of the latter rule is that it cannot apply at level I. Since GE I does not apply, GE II: [[xiwi] as]

b. Syllabification of affix

The Glottal Epenthesis I (henceforth GE I) is bypassed because part of the description of the latter rule is that it cannot apply at level I. Since GE I does not apply, GE II: [[xiwi] as]

c. Glottal Epenthesis II after GE II, and takes account of the fact that the final syllable has [æ] in its context. Since the final syllable must receive the primary stress, it is rephrased in J. 1. 1. 3: An further rules apply until the penultimate segment. In the postlexical component, the stem receives the third position of the [[xiwi] has]

f. Stress

If the form is not syllabified, it is an allowed extraprosodic status since it is an edge component.

In [8.19], a global gap heen [xiwi] hes while no apply. The derivation is 8.199a, however, illustrates how the ejye cycle.

g. Bracketing Erasure

Condition may block the application of the glottal epenthesis rule.

\[\text{Postlexical Component} \]

\begin{itemize}
\item a. Cliticization
\item g- (third person)
\end{itemize}

\[\text{Extraprosodicity} \]

\[\text{Level 2} \ (\text{no applicable rules}) \]
\[\text{Level 3} \ (\text{no applicable rules}) \]

86
In (3.197) above, two cycles appear in Level 1. The first cycle appears with the input of the root, [xiwi]. All relevant phonological rules then apply to it. Cycle 2 is started with the suffixation of -as. After syllabification of the suffix, Glottal Epenthesis II (hereafter GE II) applies. This rule applies rather than Glottal Epenthesis I (hereafter GE I), because part of the description of the latter rule is that it cannot apply at Level 1. Since GE I does not apply, GE II must apply by the Elsewhere Condition. Stress applies after GE II, and takes account of the fact that the final syllable has [h] in its onset. Hence the final syllable must receive the primary stress (as discussed in 3.1.1.2).

No further rules apply until the postlexical component. At the postlexical component, the stem receives the third person clitic, g-. This form is not syllabified, but is allowed extraprosodic status since it is an edge consonant.

In (3.197) a glottal epenthesis rule was able to apply. The derivation in (3.198), however, illustrates how the Strict Cycle Condition may block the application of a glottal epenthesis rule.

(3.198) Derivation for saktit?oyin 'he came to lie down'.

Lexical Component
Level 1
Cycle 1

a. Input of root
   t?oyin 'to lie down'
   [t?oyin]

b. Syllabification

87
c. Stress

Level 2

(no applicable rules)

Level 3

Cycle 1 Cycle 1 of Level 3 in the above example, the first cycle

a. Affixation

contains the prefix [t?oyin], which would result in "akti-" or "t?oyin", respectively. Such structural changes become the

environment of the syllables dominating the initial vowel in [akti-

b. Syllabification of affix

is unmarked. That is, unmarkedly, a suffix in an initial

position, a position that was not derived either from an en or by the

syllabization of previous rules. This was [akti[t?oyin]]

(c. GE I (blocked by SCC)

in the suffix -ag was changed, from an unmarkedly initial

d. GE II (blocked by SCC)

environment to a medial environment, upon application to the root

e. Bracketing Erasure

Postlexical Component

a. Cliticization

g- (third person)

b. Root Node Reduction

s- aktit?oyin
c. Resyllabification

In Cycle 1 of Level 3 in the above example, the Strict Cycle Condition blocks GE I and GE II from supplying an onset to the prefix [akti-], which would result in *[ʔakti-] or *[ʔhakti-], respectively. Such structural changes are blocked because the environment of the syllable dominating the initial vowel in [akti-] is underived. That is, underlyingly, [a-] occurs in an initial position, a position that was not derived by affixation or by the application of previous rules. This was not the case in (3.197), when the environment of the syllable and mora dominating the vowel in the suffix -as was changed, from an (underlyingly) initial environment to a medial environment, upon suffixation to the root XÁVÁ. Since the environment was structurally changed, GE II was eligible to apply to it. A similar case is also seen in (3.199) below. Unlike (3.197) however, in (3.199) the epenthesis rule that applies is GE I, though it is first blocked by the SCC in an earlier part of the derivation.

(3.199) Derivation of aiyisiliʔališwevun 'they wanted to sleep with them'

Lexical Component
Level 1
Cycle 1

a. Input of root
ališwe? 'to sleep with' [ališwe?]
b. Syllabification

Level 2) (no applicable rules)
Level 3 Cycle 1
a. Affixation
   sili- (desiderative)
   \[ sili [\text{ali\&we}?] \]

b. Syllabification of affix
   \[ sili [\text{ali\&we}?] \]

c. Glottal Epenthesis I
   \[ sili [\text{ali\&we}?] \]
   \(+cg\)

d. Stress
   \[ sili [\text{ali\&we}?] \]
Cycle 2
a. Affixation

-wun (plural object) [\[\text{sili\{\text{\textbf{\textit{ali}}\text{\textbf{\textit{sw}}}\}}\text{\textbf{\textit{wun}}}\]]]

b. Syllabification of affix

-\[\text{sili\{\text{\textbf{\textit{ali}}\text{\textbf{\textit{sw}}}\}}\text{\textbf{\textit{wun}}}\]]

c. [+cg]-Delink

-\[\text{sili\{\text{\textbf{\textit{ali}}\text{\textbf{\textit{sw}}}\}}\text{\textbf{\textit{wun}}}\]]

d. Bracketing Erasure

-\[\text{sili\{\text{\textbf{\textit{ali}}\text{\textbf{\textit{sw}}}\}}\text{\textbf{\textit{wun}}}\]]

Postlexical Component
a. Cliticization

-gi\text{-} (3-PL-)

b. Syllabification of clitics

-\[\text{sili\{\text{\textbf{\textit{ali}}\text{\textbf{\textit{sw}}}\}}\text{\textbf{\textit{wun}}}\]]

91
In the example above, the initial syllable of the Level 1 input, [ališwe?], does not have an onset. But as seen in 3.1.1.1.1, the Obligatory Onset Constraint requires that each syllable have an onset. This environment fits the structural description of GE II, hence GE II attempts to apply in (c) of Level 1, so that the input would have an onset (and result in *[hališwe?]!). The SCC blocks this rule from applying, however, because the environment of the prosodic structure which dominates the initial vowel of the input is not a derived environment. (It will be recalled that syllabification does not make a derived environment, because rules that build metrical structure are not structure-changing (Kiparsky 1982:92)).

No applicable rules in Level 2 apply, but in Level 3 the form receives two affixes, sili- and -wun. The prefixation of sili- derives a new environment for the prosodic structure dominating the initial vowel of [ališwe?], such that the syllable is now in medial position. Since the syllable does not have an onset, it occurs in an environment that fits the structural description of GE I (which must apply before GE II by the Elsewhere Condition). And since the onsetless syllable occurs in a derived environment, the SCC does not block GE I from applying to it. With the suffixation of -wun, the final glottal stop is put in coda position before a morpheme boundary. This environment triggers [+cg]-Delink, which subsequently delinks it from that position. Since the glottal stop is no longer phonetically realized, it is strayed erased. Postlexically, the clitics s-iy- apply at once, followed by one sweep through the rules.

All the rules discussed in 3.1 have been illustrated in the derivations given above. The sketch in (3.196) shows that some of
the rules apply postlexically as well. When a rule applies postlexically, it is not supposed to have any exceptions to its application. This is a problem for Root Node Reduction as a postlexical rule, because it does not always apply. The glottal stop in the future prefix sa?- rarely undergoes Root Node Reduction, for example:

(3.200) ksa?-le.so.xal
  K-ssa?-lesoxal
  I-FUT-skin

(3.201) ?i-ka.e?ar-ti.ti
  ?i-ka-e?ar-ti.ti
  I-KA-3-FUT-bottom
  I-FUT-bottom

(3.202) hi-siy.sa?-wil
  hi-s?y-sa?-wil
  HI-3-PL-FUT-shoot

(3.203) ču-ka.nu.?e.g?ar.?wil
  čukanu-e-g-ssa?-wil
  so.that-N-3-FUT-be

Other times, however, the glottal stop in sa?- does undergo Root Node Reduction, as seen below:

(3.204) i.kal.sa?naq.san
  hika-l-ssa?-naq?an
  and would die from it
  ART-FUT-die.from

(3.205) ?i-bal.sa?mìx
  ri-bal-ssa?-mìx
  you are going to cry
  ?I-2-?al-ssa?-mìx
  ?I-2-NM-FUT-cry

93
(3.206) **hi.sh.a.wil**  
'it will be'  
**hi=sa?-wil**  
**HI-3-FUT-be**

Another example showing the variation in the application of Root Node Reduction includes a minimal pair, discussed at some length in Chapter 2 (example (2.74), given here again (without Harrington's diacritics) as (3.207)). In (3.207a) Root Node Reduction applies; in (b) it does not:

(3.207) a. **he.hi.po.l6.mol**  
'the mountains'  

b. **he7.ni.po.l6.mol**  
[same meaning]  
**he7-nipolomol**  
**FRX-mountain**

Other than with the glottalization in **sa?-** and in the deictic clitics **he?-** and **ho?-** however, Root Node Reduction appears to be rather consistent in its application. Further research is needed to determine what factors condition whether or not Root Node Reduction will apply with regard to these morphemes.

Finally, a common glottal morpheme that often shows up in productive reduplication is the emphatic clitic, **-2**. As discussed in Chapter Two, this clitic may glottalize the entire final syllable, adding emphatic stress and length to the final vowel. Other times the clitic may simply glottalize the onset or the coda, without any attending emphatic stress. The exact mechanism involved in affixing this morpheme requires further study. The derivation below
illustrates how this glottalization is handled in the word-building process.

(3.208) Derivation for sumo?wo?n ‘to sweeten a lot’.

Lexical Component
Level 1
Cycle 1

a. Input of root
sumo ‘sugar’

b. Syllabification


c. Stress

Cycle 2

a. Affixation
-on (verbal suffix)\(^2\)

b. Syllabification of affix

Level 2
Cycle 1

a. Affixation
-su (causative)
b. Syllabification of affix

1. The feature geometry of MacKay (1996a, 1996b) is reduced, also, redundant values for \( \hat{\sigma} \) and \( \hat{\eta} \) are omitted and \( \hat{\eta} \) expanded.  Hence, \[ su[[m\hat{\omega}w\hat{o}n]] \]

c. Bracketing Erasure

1. "\( \hat{\eta} \) and \( \hat{\sigma} \) are used hence as renewed advocates.  Hence, completion only.

Level 3 (no applicable rules)

Postlexical Component

a. Cliticization

-2\( \hat{\eta} \) (emphatic glottalization).  As stated that \( \hat{\eta} \) is 'added when a root-ending nasal adds a sound-consonant nasal' (MacKay 1996b).  To give the following at least a simple, no which have added an intonational phrase.

\[ sumo\hat{w}o?n \rightarrow sumo\hat{w}o?n \]

b. Root Node Reduction

Here wePosLexical are the essentials, however, that \( \hat{\eta} \) is an applicative affix.  First, it is removed only to work among in terminated sentence contexts.  Such contexts involve a deliberate effort, often directed at avoiding sentence repetition.  Hence, the inventory seems to be not lexicalized.

\[ sumo\hat{w}o?n \rightarrow su.m\hat{o}.\hat{w}o\hat{h} \]

In (a) of postlexical component, the emphatic glottal clitic is affixed, accompanied by the falling tone that often accompanies the affix.  As discussed in Chapter 2, the precise way in which this affixation occurs is not entirely understood, and requires further study.  In this thesis, the emphatic clitic is not shown linked to prosodic structure until Root Node Reduction occurs.

This section gave a brief examination of Barbaresco lexical and postlexical phonology.  Next, in Chapter 4, is an analysis of the word-building process with respect to Barbareño productive reduplication.
NOTES FOR CHAPTER 3:

1. The feature geometry of McCarthy (1988) is assumed. Also, redundant values for [?h] (e.g., [-cont] and [+cont] respectively) are not listed, assuming Radical Underspecification (Archangeli 1988).

2. 'C' and 'V' are used here as cover symbols for feature complexes only.

3. It is sometimes difficult, however, to hear a word-initial glottal stop.

4. Harrington (33:0225, 0295-0296) believed that there was another epenthetic consonant in Barbareso. He stated that 'l' is 'added when a vowel-ending stem adds a vowel-commencing ending' (33:0295). He gives the following as an example, to which I have added an interlinear gloss:

   kuš?e 'I dug it' -> kus?e-lus 'I dug him a grave'

   k-uš?e l-dig
   k-uš?e-l us

There is reason to suspect, however, that 'l' is an applicative morpheme. First, it suffixes only to verb stems in restricted semantic contexts. Such contexts involve a deliberate effort, often directed at someone or something. Second, this morpheme seems to have been lexicalized with various verb stems, with an evident change in meaning:

   kutiy
   kut?il 'to see'
   'to go and look'

   ušho
   ušhol 'to leave behind'
   'to leave (someone) alone;
   not harass (someone)'

   ikhit
   ikhil 'to bring'
   'to fetch; to go get and bring back'

   ušlawilpiy
   ušlawilpi 'to rub in, rub on'
   'to rub in hard'

I would include Harrington's example with the above list:

   uš?e 'to dig'
   uš?e-lus 'to dig something for someone,
   to dig for something'

Since the data suggests that 'l' is a morpheme, one that can appear stem-finally without a following vowel-initial suffix, I will not
include it with h and ṭ in the class of ephenthetic consonants.

5. The first consonant of a word-interior two-consonant cluster ends the preceding syllable, the second to the following syllable' (Harrington 33:0230).

6. In faster speech, these clusters seem to syllabify as an onset.

7. This restriction on the distribution of glottal stop + sonorant sequences is not particular to Barbareño. It occurs also in Yokuts (Newman 1944) and Nisga'a word-initially (Tarpey 1983, reported in Shaw 1987).

8. This is a positive constraint, following Archangeli (1991:52) in regard to Yavelmani Yokuts, which also has this constraint.

9. Harrington's form, agāpha, is probably syllabified the same way as ḍgāpha.

10. The term 'aspirated consonant' as used here refers to a consonant with distinctive aspiration (shown with an /h/). Distinctive aspiration must be included in the underlying form of a word, as in the words takhuy 'to carry' (cf. kuy 'to take, hold') and ḍaphan 'to build'. There is also non-distinctive aspiration (shown with a raised [ʰ]), of which I distinguish two types. The first results when two identical or similar consonants meet at a morpheme boundary, for example:

    ḍhutiˈyāh

    'I saw myself [in the mirror]'

    k-kutiˈy-śāh

    1-see -RFL

    ḍuphuć

    'It is full of earth'

    a-śuphuć

    3-be.full.of.dirt

The second kind of non-distinctive aspiration is heard in list intonation after a word-final consonant, and between two stops in a cluster. For example, the word kūt 'spider' is phonetically [kʰu̯tʰ]. Non-distinctive aspiration also occurs in loanwords, where for example Spanish /f/ → Barbareño /pʰ/, as in klapˈon

    'graphophone' (< Span. grafón).

11. One other word, agskʔikʔikő 'haunted house, etc.' to creak, squeak' has not been attested on tape, and so it is not certain whether the word syllabifies as ag.škʔi.kikő or as ags.kʔi.kikő. Either way, the syllabification of the cluster would be exceptional.

12. In Barbareño, ḍ is sometimes elided before n.

13. The phrase hisnaʔn- is part of a larger collocation meaning 'it does not matter to [me, you, him/her, etc.]', as in:
ssewilwáŋ hisnaʔnit

's it does not matter to me'

s-s-wil-waŋ hi-s-naʔn-it
3-N-be -PST HI-3-go -I0

14. This morpheme was originally described as a third person singular object suffix (Beeler 1976). In this thesis it is considered to be an applicative that promotes obliques to core argument status.

15. It is noteworthy that very few words in Barbareño have a fricative-glottal stop combination such as sʔ or kʔ, as in the examples provided.

16. This dual-natured patterning in laryngealized consonants is also reported for the Noctenes dialect of Mataco, a Macro-Guaicuruan language spoken in Bolivia (Claesson 1994).

17. Vowels in stressed syllables are usually lengthened, especially in open syllables. For example, počovi, 'lizard sp.' and ḋiŋwóʔn 'hair' are phonetically [počó-yi] and [ōq-wóʔn] respectively. Vowel length is not phonemic in Barbareño, however, and does not affect the weight of the syllable as does a moraic coda. Its occurrence is treated here as a non-distinctive consequence of primary stress.

18. 'The language has 2 stress accents, exemplified by the stresses of the first 2 cardinal numerals: páʔka, 1, and ḋiškóʔm, 2. The stressed penult accent is the commoner' (Harrington 33:0235).

19. Much research remains to be done on Barbareño grammar and discourse. The classification of these morphemes as seen in (3.196) reflects my current understanding of the nature of these morphemes, based upon my experience of having translated (morpheme-by-morpheme) 249 Barbareño narratives and several hundred elicited Barbareño sentences.

20. Vowel harmony, which appears to be involved in changing the verbal suffix -vŋ to -on, it is not treated here.
Chapter 4

Analysis of Productive Reduplication

4.0 Introduction.

In this chapter I give an analysis for each of the five types of productive reduplication outlined in Chapter 2. The analyses are based upon the theoretical background and characteristics of Barbareño phonology given in Chapter 3. A general overview of the productive reduplication process is given in 4.1. Then, in section 4.2, an analysis is presented for each of the five types of productive reduplication. Finally, section 4.3 presents several reduplication forms that are especially problematic.

4.1 Overview of the productive reduplication process.

My analysis generally assumes McCarthy and Prince (1986). In the explanation to follow, I use a diagram adapted from Kenstowicz (1994:625), which characterizes McCarthy and Prince’s (1986) view of reduplication in Ilokano. Ilokano reduplication is similar to Barbareño reduplication in that it prefixes a syllable to the base, and the syllable and base belong to different syllabification domains. McCarthy and Prince (1986) assumes Marantz’s (1982) basic premise, which is as follows. First, the base (in (4.1a)) receives a reduplicative affix, which is phonemically bare (4.1b):

\[
\begin{align*}
\text{(4.1) } & \quad \sigma \sigma \ldots \text{reduplication} \quad \text{(b) } \sigma \sigma \\
& \quad \text{[abcde...]} \quad \text{[abcde...]} \\
& \quad \text{[abcde...]} \quad \text{[abcde...]} \\
\end{align*}
\]

Though it will be assumed that these moves are different in a complex, the reader will discover that these moves are different in a complex.
Following McCarthy and Prince (1986), it is assumed that the template for the reduplicative affix is prosodically defined; that is, the template is defined in terms of prosodic categories such as the mora and the syllable, instead of sequences of segments or skeletal slots. For Barbareño, the template for productive reduplication is a bimoraic syllable ([µµ]10), which is prefixed to the base. Next, the bare affix triggers the base to copy its melody onto a different autosegmental tier as in (4.1c) below:  

(c) | a b c d e ... | the base of the segmental form of the prefix. In the following sub-sections I will show that, under a prosodic analysis, productive reduplicative reduplication results in one general form. A bimoraic syllable ([µµ]10), which serves as the template in  

The melody is then mapped or re-prosodized to the affix by the affixal skeleton as much as possible, as shown in (4.1d) below. The melody is mapped to the affix in a left-to-right direction for prefixes (McCarthy and Prince 1986:11).  

(d) | a b c d e ... | affixation across the boundary between the base and  

For ease of exposition, the derivations of the reduplications in this chapter will show prefixation and melody copying in a linear fashion, though it will be assumed that these occur on different tiers. Also, prefixation and melody copying will be shown in a single step instead of in two steps.) Since the affix is prosodically limited (for Ilokano as well as Barbareño) not all of
the melody can map to it. That part of the melody that does not map to the affix is stray erased when the tiers conflate into one as in (4.1e) above, though no special stage of melodic erasure is required (McCarthy and Prince 1986:96,97).

With this view of reduplication as a general model, I will analyze the five types of productive reduplication in 4.2.

4.2 Analysis of the five types of productive reduplication.

In Chapter 2, the five types of productive reduplication were differentiated on the basis of the segmental form of the prefix. In the following sub-sections I will show that, under a prosodic analysis, Barbareño productive reduplication results in one, general form. A bimoraic syllable ([pp]σ), which serves as the template for the reduplicative affix, is prefixed to the base. It will be seen that most of the variations in the segmental form of the copy are already accounted for by the facts of Barbareño phonology presented in Chapter 3.

Furthermore, it will be seen that reduplication in Barbareño prohibits syllabification across the boundary between the base and copy. The boundary is assumed to be opaque in this case. This has important consequences for reduplication. McCarthy and Prince (1986:16) note that some languages (e.g., Orokaiva) allow syllabification to cross the boundary between the copy and base. Reduplication for these languages involves the Onset Rule, in which a consonant from the copied melody can be taken to fill an empty onset position in the stem. In other languages (e.g., Ilokano and Barbareño), the stem and reduplicative prefix belong to separate domains of syllabification. Thus if the base has an empty onset, the
onset has to be filled by an epenthetic consonant. As will be seen, the rule Glottal Epenthesis I plays a crucial role in this regard.

The prosodic analysis of the five types will proceed in turn, beginning with Type One productive reduplication. In the examples, syllabification is shown as one step when sub-steps are not crucial. In the postlexical component, (re)syllabification is shown by a '.' unless otherwise necessary.

4.2.1 Type One productive reduplication.

As described in Chapter 2, Type One productive reduplication involves the prefixation of the first (C)V sequence of the base. In a prosodic characterization, the template for this prefix is a bimoraic syllable. Below are derivations for the reduplication of the following forms: (4.2) **yuxwown** 'to be high', (4.3) **klawax** 'piece; broken', (4.4) **ökalavax** 'trail, road', and (4.5) **şiyu** 'Indian'.

(4.2) Derivation for **yuxyuxwown** '(many) to be high' < **yuxwown** 'to be high'

Lexical Component

Level 1
Cycle 1 apply
a. Input of base

```
Level 1
Cycle 1 apply
a. Input of base

```

b. Syllabification

Reduplication occurs at Level 3 of the lexical component. The reason for this will become clear in 4.2.6, where it is shown that a

c. Stress

```n/a```
Level 2

we mentioned earlier that the template for the

Cycle 1

a. - c. Reduplication

a. Prefixed of syllabic template and copying of melody

\[ \text{[yuxwomw w o n]} \]

The fact that only one melody can map to the same position falls out

b. L -> R mapping of melody to template

Also, as seen in example (4.3), one can see that the y- is

[\text{[yuxwomw w o n]}]

d. Stray erasure and tier conflations

\[ \text{[yuxwomw w o n]} \]

d. Bracketing Erasure

Level 3

No rules apply

Postlexical Component

No rules apply

\[ \text{yux.yux.wó.won} \]

Reduplication occurs at Level 2 of the lexical component. The

reason for this will become clear in 4.2.2, where it is seen that a

Level 2 rule, Glottal Epentheses I, must apply to insert a glottal

stop onset into the base of the reduplicative form during syllabic

re-parsing.
It was mentioned earlier that the template for the reduplicative affix is a bimoraic syllable. In (4.2) above, only one melody (the -x in yuxwown) could be mapped to the coda position. The melodies xw could not map to the coda position together, even though xw can pair up word-medially in onset position, as seen in example (3.46) penxweg 'adolescent girl'. The fact that only one melody can map to the coda position falls out from the Complex Coda Constraint, which prohibits non-word-final complex codas.

Also, as seen in example (4.2), only one melody (the y- in yuxwown) was available to be mapped to the onset position of the template. The template will be maximized in the onset position, however, whenever possible. This is seen in the reduplication of klwaš 'piece; broken' in (4.3) below.

(4.3) Derivation for klawklašwaš 'pieces' < klawaš 'piece; broken'.

Lexical Component
Level 1
Cycle 1

a. Input of base

b. Syllabification

[klawaš]

c. Stress

[klawaš]
Level 2 Reduplication
Cycle 1
a. - c. Reduplication

a. Prefixation of syllabic template and copying of melody

The postlexical component shows the attachment of the linguistic stress
clitic onto clitics. As discussed elsewhere in this thesis, the
b. L -> R mapping of melody to template
specifically of the distribution of the glottalizer σ in this
clitic has yet to be figured out, but it is pertinent to
relevant to the actual mechanism of reduplication.

In 4.3, the template had a complex word [klawaš]. This is a
c. Stray erasure and tier conflation
syllabic structure, as noted in
Chapter 3. Likewise, aside from a glottal segment, a complex word
complex words, they can map to the template in the reduplication.
This is illustrated in (4.4) below.

d. Bracketing Erasure

For now, consider the syllabile [klawklawaš] ‘agree’ (again, need
analgesic Component
Level 2
Cycle 1
a. Input of Stem (Slawmáš)

Level 3
No rules apply
a. Syllabification

Postlexical Component
a. Cliticization
-2 (emphatic glottalization)

klašklawaš -?

klaškla?waš
b. Root Node Reduction

The postlexical component shows the affixation of the emphatic glottal stop clitic. As discussed elsewhere in this thesis, the specific rule for the distribution of the glottalization in this clitic has yet to be figured out, but it is not crucially relevant to the actual mechanism of reduplication.

In (4.3), the template had a complex onset kl-. This is a licit onset sequence in Barbareño syllable structure, as noted in Chapter 3. Likewise, since stop + glottal sequences are permitted as complex onsets, they can map to the template during reduplication. This is illustrated in (4.4) below.

(4.4) Derivation for ča?alčala?yaŋ 'trails' < ča?alayaŋ 'trail, road'

Lexical Component
Level 1
Cycle 1

a. Input of base
[ča?alayaŋ]

b. Syllabification

[ča?alayaŋ]

c. Stress

[ča?alayaŋ]
Level 2: Mode Reduction
Cycle 1

a. -c. Reduplication

a. Prefixation of syllabic template and copying of melody

As mentioned earlier, the syllabic template is added to the different domains of the base and reduplicative prefix. There are, however, a number of rules to be considered.

b. L → R mapping of melody to template
down, such that the onset of the reduplicative prefix becomes the onset, or part of the onset, of the base. We will exemplify this sub-type of Type One and Type Two construction. Some base terms, like khaba 'Indian', may have both variants. The variants given below are in 6.5. As will be seen, the variants differ in the phonological component.

c. Stray erasure and tier conflations
d. Bracketing Erasure

Lexical Component

Level 3: Postlexical Component
a. Cliticization

- the (emphatic glottalization)

Postlexical Component

No rules apply
b. Root Node Reduction

\[
\begin{array}{c}
\sigma \\
\mu \\
\mu \\
\mu \\
\end{array} \\
\end{array}
\]

As mentioned earlier, syllabification is sensitive to the different domains of the base and reduplicative prefix. There are, however, cases in which the boundary between the domains breaks down, such that the coda of the reduplicative prefix becomes the onset, or part of the onset, to the base. Such cases exemplify the sub-types of Type One and Type Two productive reduplication. Some base forms, like \textit{?inyu} 'Indian', may have both variants. Two derivations based on this form are given below in (4.5). As will be seen, the variation occurs in the postlexical component.

(4.5) Derivation for (a) \textit{?ihinyu?} and (b) \textit{?in.?inyu?} 'Indians'
< \textit{?inyu} 'Indian' (< Span. \textit{indio})

(The derivation for both forms is the same in the lexical component.)

Lexical Component
Level 1
Cycle 1

a. Input of base \textit{[?inyu]}

b. Syllabification

\[
\begin{array}{c}
\sigma \\
\mu \\
\mu \\
\end{array} \\
\end{array}
\]

\[
\begin{array}{c}
\sigma \\
\mu \\
\mu \\
\end{array} \\
\end{array}
\]

[?inyu]

C. Stress

\[
\begin{array}{c}
\sigma \\
\mu \\
\mu \\
\end{array} \\
\end{array}
\]

[?inyu]
Level 2
Cycle 1
a. - c. Reduplication

a. Prefixation of syllabic template and copying of melody

\[ \mu \sigma \uparrow \mu \sigma \uparrow \]

\[ \text{[qinyu [qinyu]} \]

b. L -> R mapping of melody to template

\[ \mu \mu \sigma \uparrow \sigma \]

\[ \text{[qinyu [qinyu]} \]

c. Stray erasure and tier conflation

\[ \sigma \mu \mu \uparrow \sigma \mu \mu \uparrow \mu \]

\[ \text{[sin[qinyu]} \]

d. Bracketing Erasure

\[ \sigma \mu \mu \uparrow \sigma \mu \mu \uparrow \mu \]

\[ \text{[sin[qinyu]} \]

Level 3
No rules apply

Postlexical Component
a. Cliticization
- ? (emphatic glottalization)

\[ \text{[qinyu -?] } \]

As seen in Chapter 2, it is not uncommon to find forms such as these that have both variants. Other forms, however, appear only in the variant exemplified by [jinya].
b. Root Node Reduction

(for (a) \textit{?\textbf{ihi}nyu?})

\begin{itemize}
\item \textit{\textbf{\textit{?\textbf{ihi}nyu?}}}
\end{itemize}

\[ (*n\text{\textit{?\textbf{ihi}nyu?}}) \]

In Harrington’s view, the correct plural, \textit{\textbf{\textit{?\textbf{ihi}nyu?}}}, is seen as

\[ (*n\text{\textit{?\textbf{ihi}nyu?}}) \]

(c. Resyllabification)

One could argue that reduplications like

\[ (*n\text{\textit{?\textbf{ihi}nyu?}}) \]

\textit{\textbf{\textit{?i.hin.yu?}}} are not productive reduplications. However, Type One and Type

\[ (*n\text{\textit{?\textbf{ihi}nyu?}}) \]

\textit{\textbf{\textit{?\textbf{ihi}nyu?}}} differ from each other and many homophone

\[ (*n\text{\textit{?\textbf{ihi}nyu?}}) \]

\textit{\textbf{\textit{?i.hin.yu?}}} similarly, only in the

\[ (*n\text{\textit{?\textbf{ihi}nyu?}}) \]

\textbf{\textit{?i.hin.yu?}}.

As seen with the form on the left, \textit{\textbf{\textit{?i.hin.yu?}}}, the initial \textbf{?} of the reduplicative stem associates to the root node of the coda of the reduplicative prefix during Root Node Reduction. The syllable that formerly dominated the \textbf{?} is then without an onset. When the form is resyllabified, the glottalized coda of the reduplicative prefix is simply re-parsed as the onset to the stem-initial syllable, because every syllable must have an onset. Root Node Reduction does not occur in the reduplicative form \textit{?in.?\textit{\textbf{ihi}}nyu?}, however, and so the initial \textbf{?} of the stem and the coda of the prefix, \textbf{\textbf{\textit{n}}}, are heterogeneously parsed.

As seen in Chapter 2, it is not uncommon to find forms, such as \textit{\textbf{\textit{?\textbf{ihi}nyu?}}}, that have both variants. Other forms, however, appear only in the variant exemplified by \textit{\textbf{\textit{?ihi}nyu?}}, where Root Node Reduction
and syllabification cross the boundary between the base and reduplicative prefix. For example, Harrington (33:0436) had this to say about the reduplication of ?eniq 'woman': for the reduplicative forms derived in 4.3.1, however, it will be seen that the template

Absolutely not *?en-?é·̃ñk. Imp. If you did not know the irreg. pl. you wd say *?en-?é·̃ñk.

In Harrington's view, the correct plural, ?eniq, is seen as

In an irregular reduplication. One could argue that reduplications like (4.6) below get no metrical feet but the reduplication of

??inyu? comprise a lexicalized class. However, I categorize such

derivations as being, I will discuss specific details below forms as a class of productive reduplication (for Type One and Type

Type Two), namely that leading the entire discussion until the end of

Two) for the following reason: such forms are found among loanwords

(e.g., ?inyu) as well as native words, and they differ from other

Type One and Type Two reduplications, respectively, only in the

postlexical Root Node Reduction and resyllabification.

To summarize, the four derivations given in this section all show that the prefixed copy is a bimoraic syllable. In each case the

prefix had an onset, which would be maximized to two melodies when

possible. Thus a base form like klavaá or ç?alavaá would provide a

complex onset, kl- and ç?- respectively, to the template, while a

form such as yuxxowon could provide only y-. However, many Barbareño

forms, especially verbs, are vowel initial underlyingly. In such

cases, the base can not provide a melody that can map to the onset

position of the template. Cases of this nature exemplify Type Two

productive reduplication, to which I now turn.

4.2.2 Type Two productive reduplication.

As described in Chapter Two, the reduplicative copy in Type
Two productive reduplication takes a shape that is either VC- or VVC-. It is VC- if it follows a consonant; it is VVC- if it follows a vowel or is word-initial. As was the case for the reduplicative forms derived in 4.2.1, however, it will be seen that the template for the copy is better described as a bimoraic syllable. What is different for Type Two, however, is that the rule Glottal Epenthesis I inserts a glottal stop as the base onset when the reduplicative form is re-parsed. Below are derivations for the reduplication of (4.6) exlelen 'to cry out' and (4.7) shak 'spirit'. (Since the derivations are long, I will discuss specific details where relevant, rather than leaving the entire discussion until the end of the derivation.)

(4.6) Derivation for sex?exlelen 'it cries out (continuously)' and sakti?ex?exlelen 'it comes to cry out (continuously)'
< exlelen 'to cry out'.

Lexical Component
Level 1
Cycle 1

(to derive sex?exlelen) (to derive sakti?ex?exlelen)

a. Input of base

[exlelen] [exlelen]

b. Syllabification

\[ \sigma \sigma \sigma \]
\[ uu uu uu \]
\[ [exlelen] \]
\[ \sigma \sigma \sigma \]
\[ uu uu uu \]
\[ [exlelen] \]

c. Glottal Epenthesis II

(blocked by the SCC) (blocked by the SCC)
d-2. Glottal Epenthesis I (for initial \( \sigma \) of prefix) (blocked by the SCC) (blocked by the SCC)

e. Glottal Epenthesis II (for initial \( \sigma \) of prefix) (blocked by the SCC) (blocked by the SCC)

f. Bracketing Erasure

In Level 2 (a - c), reduplication occurs. Once prefixation occurs in (a), the environment of the prosodic structure dominating the first vowel of the base is changed from initial to medial. Since this environment is derived, it is eligible for the application of GE I. (The coda of the reduplicative prefix cannot become the onset of the base, because the copy and base belong to separate domains of syllabification in Barbareño.) The stage showing the application of GE I is given in two parts, (d-1) and (d-2). In (d-1), GE I applies to the derived environment, supplying a \( \sigma \) onset to the base. There is another environment that fits the description of GE I as well: the syllable that dominates the initial vowel of the prefix, \( \text{ex} \), does not have an onset. However, the SCC blocks the rule from supplying an onset to the prefix, as seen in d-2, because the environment of the initial syllable and mora dominating the vowel in \( \text{ex} \) is not a structurally changed, or derived, environment.\(^1\) Since GE I is unable to apply in (d-2), the Elsewhere Condition requires the alternative rule, GE II, to attempt application. However, the
d. Stressal Epenthesis I

| [exielen] | [exielen] |

Level 2
Cycle 1

1. - c. Reduplication

a. Prefixation of syllabic template and copying of melody

| σμμ | [σ σ σ] | σμμ | [σ σ σ] |

In Level 2 (a - c), reduplicating occurs. Deals with prefixation.

b. L -> R mapping of melody to template

| σμμ | [σ σ σ] | σμμ | [σ σ σ] |

The base, before the copy, has been joined up at separate depths of

| [exielen [exielen]] | [exielen [exielen]] |

The base, before the copy, has been joined up at separate depths of

2. c. Stray erasure and tier conflation

| σ μ σ σ | [μ μ μ μ] | σ μ σ σ | [μ μ μ μ] |

These erasures that eliminate the entire base of the graphs, e.g.

| [ex[exielen]] | [ex[exielen]] |

Erasures that eliminate the entire base of the graphs, e.g.

3. d-1. Glottal Epenthesis I

| σ μ σ σ | [μ μ μ μ] | σ μ σ σ | [μ μ μ μ] |

Erasures that eliminate the entire base of the graphs, e.g.

| [ex/ exielen] | [ex/ exielen] |

Erasures that eliminate the entire base of the graphs, e.g.

| [+cg] | [+cg] | [+] | [+] | [+] | [+] |

Erasures that eliminate the entire base of the graphs, e.g.
SCC blocks GE II from applying for the same reason it blocked GE I from applying. This affixation puts the syllable containing the initial vowel in a special environment.

Level 3: Affixation

Cycle 1

a. Affixation

The affixation affixes the affix (venitive) akbi- after the verb. The affixed syllable is moved to the position occupied by the syllable containing the initial vowel.

b. Syllabification of affix

- Initial position

(c. Glottal Epenthesis I

- Syllabification

- At the position of the verb, the third person singular becomes to result in the forms during syllabification, which entail c-1. Glottal Epenthesis I (for initial σ of [akbi]) c-2. Glottal Epenthesis I (for initial σ of [akbi])

(d. Glottal Epenthesis II (for initial σ of [akbi])

(e. Bracketing Erasure

- Bracketing for the two forms for each verb.

116
In Level 3(a) above, the derivation on the right takes the prefix **akti**. This affixation puts the syllable dominating the initial vowel of the reduplicative prefix into a medial environment, making it subject to epenthesis in (c-1). Thus \textit{ex} \rightarrow ?ex. In (c-2) and (d), however, the epenthesis rules are blocked by the SCC from supplying an onset to the affix, **akti**, because the syllable dominating the initial vowel does not occur in a derived environment.

\textbf{c. Glottal Epenthesis II} (blocked by the SCC)

\textbf{Postlexical Component}

\textbf{a. Cliticization}

\textit{g-}'(third person pronoun')

\begin{align*}
\sigma & \sigma \\
\text{sex.} & \text{ex?exi?elen}
\end{align*}

\begin{align*}
\sigma & \sigma \sigma \\
\text{akti} & \text{ex?exi?elen}
\end{align*}

\begin{align*}
\sigma & \sigma \\
\text{s-} & \text{ex?exi?elen}
\end{align*}

\begin{align*}
\sigma & \sigma \\
\text{s-} & \text{ex?exi?elen}
\end{align*}

\textbf{b. Resyllabification}

\begin{align*}
\text{sex.} & \text{ex.lé.len} \\
\text{sak.ti.} & \text{ex.} \cdot \text{ex.lé.len}
\end{align*}

At the postlexical component, the third person clitic \textit{g-} becomes an onset to the forms during resyllabification, so Glottal Epenthesis I is not invoked to supply a default onset. This rule can, however, apply to reduplicated forms at the postlexical level, as seen in (4.7) below.


(The derivation for the two forms here is the same throughout the lexical component. For ease of exposition then, only one derivation will be shown in that component.)
Lexical Component
Level 1
Cycle 1

a. Input of base

b. Syllabification

\[
\begin{array}{c}
\sigma \\
\mu \\
\mu \\
\end{array}
\]

[ahaš]

(c. Glottal Epenthesis II (for initials blocked by the SCC)

(d. Stress

\[
\begin{array}{c}
\sigma \\
\mu \\
\mu \\
\end{array}
\]

[ahaš]

Level 2
Cycle 1

a. - c. Reduplication

a. Prefixation of syllabic template and copying of melody

\[
\begin{array}{c}
\sigma \\
\mu \\
\mu \\
\end{array}
\]

[ahaš [ahaš]]

b. L -> R mapping of melody to template

\[
\begin{array}{c}
\sigma \\
\mu \\
\mu \\
\end{array}
\]

[ahaš [ahaš]]

c. Stray erasure and tier conflation

\[
\begin{array}{c}
\sigma \\
\mu \\
\mu \\
\end{array}
\]

[ah[ahaš]]
d-1. Glottal Epenthesis I

\[ \sigma \sigma \sigma \\
\text{uh \ uh \ uh} \\
[\text{ah[\ ah\ ah]}] \\
[\text{+cg}] \]

d-2. Glottal Epenthesis I (for initial \( \sigma \) of prefix)

(blocked by the SCC)

e. Glottal Epenthesis II (for initial \( \sigma \) of prefix)

(blocked by the SCC)

f. Bracketing Erasure

\[ \sigma \sigma \sigma \\
\text{uh \ uh \ uh} \\
[\text{ah\ ah\ ah}] \]

Level 3

No rules apply

The difference in derivation for the two forms \textit{kah?aha\ah} (given below at right) and \textit{\textasciitilde ah?aha\ah} (below, left) is seen in the postlexical component:

Postlexical Component

a. Cliticization

\( k- \) (1st person pronoun)

\(-\text{\\textasciitilde} \) (emphatic glottalization)

\[ \sigma \sigma \sigma \\
\text{uh \ uh \ uh} \\
\text{ah?aha\ah} \text{-?} \]

\[ \sigma \sigma \sigma \\
\text{uh \ uh \ uh} \\
\text{k- \ ah?aha\ah} \text{-?} \]

\[ \downarrow \]

\[ \downarrow \]

119
Upon entering the postlexical stage, the form on the left does not receive an initial onset from an affix. This situation triggers Glottal Epenthesis I, which provides an initial /ʔ/-onset. GE I is not blocked by the SCC because the SCC does not apply in the postlexical component. The final consonant in each form, /â/, cannot
hook up to the final syllable, but becomes licensed through extraprosodicity.

Type Two reduplication has a sub-type of reduplication that undergoes the same postlexical process as seen for the sub-type of Type One reduplication shown in (4.5): the initial 2 of the reduplicative stem may merge with the coda of the copy during Root Node Reduction, with the result that the glottalized coda is reparsed as the onset to the stem. Since this process is the same for both sub-types, it will not be further illustrated here.

It is clear that reduplications in Type Two share the same prosodic pattern with reduplications in Type One: in both types, the template for the prefixed copy is a bimoraic syllable.

4.2.3 Type Three productive reduplication.

In the reduplications analyzed in 4.2.1 and 4.2.2, the coda of the syllabic prefix was a melody copied from the base. In Type Three, a melody from the base is, for various reasons to be explored, ultimately not available for the templatic coda. The coda position in the template must be filled, however, as required by the Template Satisfaction Condition discussed in 3.1. To accomplish this, one of the glottal epenthesis rules must apply. As will be seen, it is Glottal Epenthesis II which supplies a default coda, h (+spread)), in satisfaction of the bimoraic template. Below are derivations for reduplications involving the following forms: (4.8) cho 'to be good', (4.9) togošlog? 'round, round thing', (4.16) va? 'arrow', and (4.18) kik?i 'thing'. These examples illustrate different reasons why the base does not ultimately provide a coda for the template.
(4.8) Derivation for siyčohčho? 'they are good' < čho 'to be good'

Lexical Component
Level 1
Cycle 1

a. Input of base [čho]

b. Syllabification

In Level 2 [čho], the melody of the [čho] is copied, yielding [čho]. There is not enough material to apply a node for the template.

c. Stress
Places nothing below the node since the template plus have a certain code to be satisfied. The melody by the Template Satisfaction Condition, one of the explicit Template Rules, will

Level 2
Cycle 1

a. – d. Reduplication

a. Prefixation of syllabic template and copying of melody

b. L -> R mapping of melody to template

c. Glottal Epenthesis II

[čho]
d. Tier conflation

\[
\begin{array}{c}
\begin{array}{c}
\sigma \\
\downarrow u
\end{array}
\end{array}
\begin{array}{c}
\begin{array}{c}
\sigma \\
\downarrow u
\end{array}
\end{array}
\]

\[\text{[choh[chó]}\]

e. Bracketing Erasure

\[
\begin{array}{c}
\begin{array}{c}
\sigma \\
\downarrow u
\end{array}
\end{array}
\begin{array}{c}
\begin{array}{c}
\sigma \\
\downarrow u
\end{array}
\end{array}
\]

\[\text{[choh[chó]}}\]

In Level 2 (b), the melody of the base is copied, yielding \text{chó}. There is not enough material to supply a coda for the template, however, since nothing follows the vowel. Since the template must have a moraic coda to be satisfied (as required by the Template Satisfaction Condition), one of the glottal ephenthesis rules must supply the coda. As stipulated in Chapter 3, both rules can apply at Level 2, but GE I only fills onset positions. Thus GE II inserts \text{h} as the coda in (c). The Template Satisfaction Condition appears to override the Strict Cycle Condition such that GE II, normally a structure-changing rule, is not blocked from applying in the underived environment.

Level 3

a. Affixation

\[-? \text{(nominalizer)}\]

\[
\begin{array}{c}
\begin{array}{c}
\sigma \\
\downarrow u
\end{array}
\end{array}
\begin{array}{c}
\begin{array}{c}
\sigma \\
\downarrow u
\end{array}
\end{array}
\]

\[\text{[choh[chó] -?]}\]

b. Resyllabification
c. Bracketing Erasure

Postlexical Component
a. Cliticization
   s-iy (3-PL)
   [chohchoh?]
   s-iy-chohcho?

b. Root Node Reduction

   ****
   |   |
   |   
   siychohcho?

c. Resyllabification
   siychohcho?

The base in the derivation in (4.8) was a mono-syllabic, vowel-final root, cho. All such roots reduplicate with the epenthetic h coda, because the root is unable to provide a melody that can be mapped to the coda position of the template. What is most important about (4.8), however, is that the vowel-final root is itself the entire base for the copy. The Level 1 input in (4.9), togochlog?, is neither mono-syllabic nor vowel-final, yet it involves reduplication with h for the same reason: the base for the copy is vowel-final. The base for the copy in this case, however, is not the Level 1 root itself but the morpheme that is prefixed to it at Level 2, the causative affix su-.
(4.9) Derivation for siyusuhsutogoslogwun 'they keep rounding them off [the small pieces of shell]'

Lexical Component

Level 1
Cycle 1

a. Input of root
   togošlog? 'round'

b. Syllabification

   a a a

   [togošlog?]

c. Extraprosodicity

   a a a

   [togošlog<?>]

d. Stress

   a a a

   [togošlog<?>]

Level 2
Cycle 1

a. Affixation
   su- (causative)

b. Syllabification of affix

   a a a

   [su [togošlog<?>]]

125
Cycle 2

a. - d. Reduplication

a. Prefixation of syllabic template and copying of melody

\[
\sigma_{\mu} \quad [\sigma\sigma\sigma\sigma \\
\mu\mu\mu\mu \\
[su \quad [su\text{-togo\$\$\$\$\$<??>}]])
\]

b. L -> R mapping of melody to template

\[
\sigma \quad [\sigma\sigma\sigma\sigma \\
\mu\mu\mu\mu \\
[su \quad [su\text{-togo\$\$\$\$<??>}]])
\]


c. Glottal Epenthesis II

\[
\sigma \quad [\sigma\sigma\sigma\sigma \\
\mu\mu\mu\mu \\
[su \quad [su\text{-togo\$\$\$\$<??>}]])
\]

[+spread]

d. Tier conflation

\[
\sigma \quad [\sigma\sigma\sigma\sigma \\
\mu\mu\mu\mu \\
[su\text{-}su\text{-togo\$\$\$\$<??>}]])
\]

e. Bracketing Erasure

\[
\sigma \quad [\sigma\sigma\sigma\sigma \\
\mu\mu\mu\mu \\
[su\text{-}su\text{-togo\$\$\$\$<??>}]])
\]

Level 3

a. Affixation

-wun (plural object)

\[
\sigma \quad [\sigma\sigma\sigma\sigma \\
\mu\mu\mu\mu \\
[[su\text{-}su\text{-togo\$\$\$\$<??>}] -wun]]
\]

126
b. Syllabification of affix

\[
\sigma \sigma \sigma \sigma \sigma \sigma
\]

Then, the original syllable would be transcribed as:

\[
[\text{suhsutoqošloŋ}wũn]
\]

reduplication

"suhsutoqošloŋ" This does not happen, however, because the source

\[
[\text{suhsutoqošloŋ}wũn]
\]

is in brackets. Other examples of the copy process in brackets indicate that the bracketed source of the copy is included.

d. Stress

\[
\sigma \sigma \sigma \sigma \sigma
\]

The base is "hiding" (distributively)

\[
[\text{suhsutoqošloŋ}wũn]
\]

e. Bracketing Erasure

\[
\sigma \sigma \sigma \sigma \sigma
\]

"suhsutoqošloŋwũn"

Postlexical Component

a. Cliticization

s-\text{i》 (3-PL)

\[
\sigma \sigma \sigma \sigma \sigma
\]

"suhsutoqošloŋwũn"

You might argue that cliticization is (3-PL) - (transitive).

b. Syllabification of clitics

\[
\text{s-\text{iy-susutoqošloŋwũn}}
\]

As seen in Cycle 2 of Level 2, the base which supplies the melodic copy is the left-most morpheme, "\text{su-}'(causative)'. If the
entire melody of the derived stem were copied, then the copied melody would be *sutogoslog*. After left to right mapping, the affix would be *sut*, ultimately yielding the ill-formed reduplication *sutsutogoslog*. This does not happen, however, because the source for the copied melody is the left-most morpheme. Somehow the copying process is sensitive to the morpheme boundary information encoded by the brackets. Other examples of Type Three reduplication in which the sole source of the copy is the left-most morpheme include:

(4.10) nilog as 'to perforate, bore a hole' 

*ni-nilog as. The reduplication 'to bore a hole (distributively)' 

< ni- (transitivizer) + log 'hole' 

However, other reduplicated forms with this prefix show that a melody from the 

(4.11) wiwihatatan also copied 'to destroy; take apart' 

wihwihatata?niš 'pieces' 

< wi- 'of hitting, pounding' + *phatatan 'to fall apart' 

(4.12) lu?eqwaleš 'shape' 

lublu?eqweleš 'various designs' 

< lu- 'of growth, branching out' + eqwel 'to make' + -viš 

This variation may be influenced by the degree to which the prefix 

One might argue that the reduplications in (4.9 - 4.12) 

... on the stem have been lexicalized. A fully lexicalized form, like exemplify the copying of a core syllable, \( \sigma_c \), because the copies are 

\( \text{su}-, \text{ni}-, \text{wi}- \) and \( \text{lu}- \), respectively. Such an analysis, refusing to acknowledge boundaries drawn by the bracket, would fail to account for the reduplication of lexicalized forms such as \( \text{Nukeš} \) 'crop, 

planted place'. In lexicalized forms, the old morpheme boundaries
are opaque to the copying rule. The input at Level 1 is ūkešēšēšēšē.
When it reduplicates at Level 2, the copy is therefore ūku-, as seen in below:

3-prefix root. The derivation for this is given below:

(4.13) ūkešēšēšēšēšēšēšēšē

\[ \text{Lexical stem: } \text{ēšēšēšēšēšēšēšē} \text{ (plural)} \]
\[<\text{su- (causative) + kek 'to grow' + } \overset{\text{Vē}}{\text{Vē}}\text{ (resultative)}} \]

Classifier prefixes often show this type of variation in reduplication because, while they are productive, they also occur in lexicalized forms. The reduplicative affix in (4.11) above is wihi-:
\[ \text{wi- 'by hitting or pounding' + epenthetic } \overset{\text{h}}{\text{h}} \text{. However, other reduplicated forms with this prefix show that a melody from the original stem was also copied:} \]

(4.14) witwitsixen

\[<\text{wi- + tansix 'to press' } \overset{\text{Vn}}{\text{Vn}}\text{ (verbal suffix)} \]

(4.15) wissisicen

\[<\text{wi- + su- (causative) + gen (root) 'be off'}} \]

This variation may be influenced by the degree to which the prefix and the stem have been lexicalized. A fully lexicalized form, like ūkešēšēšē, would be expected to enter Level 1 as such, with its internal boundaries obscured. A morpheme that is more loosely bound, however, might be able to serve as the base by itself. More study is needed to determine what exactly characterizes a lexicalized form in Barbareño.
Another kind of base that reduplicates with an epenthetic h is typified by (4.16) ya? 'arrow'. In this case, the base is a monosyllabic, 2-final root. The derivation for this is given below.

(4.16) Derivation for yah?ya? 'arrows' < ya? 'arrow'.

Lexical Component
Level 1
Cycle 1
a. Input of base
   [ya?]

b. Syllabification
   σ
   μμ
   [ya?]

c. Stress
   σ
   μμ
   [ya?]

Level 2
Cycle 1
a. – e. Reduplication

a. Prefixation of syllabic template and copying of melody

[σμμ]

b. L → R mapping of melody to template

[ya? [ya?]]
d. Glottal Epentheses II

A third motivation for y apophthegm is the Obligatory Contour Principle (OCP; Chomsky 1971). McCarthy states the OCP as the following: all the melodic level, adjacent identical elements are prohibited (1995:709), and argues that it blocks any rule from applying if its application would create an OCP violation.

Furthermore, if two identical melodies are at different tiers, then

Level 3
No applicable rules

Postlexical Component

f. Bracketing Erasure

a. Cliticization occurs upon tier conflation, because tier conflation

would automatically merge the identical, adjacent elements. A follow

up (1995) is to make that this rule should be extended to include


can be identified, with the stage of tier conflation. Now tier has conflation and the elements are put aside as

seen, as illustrated in Fig. (1995:597):
The initial input in (4.16), \( \text{ya} \), is mono-syllabic with final glottalization. All such forms reduplicate with the epenthetic \( \text{h} \) in (4.17a), to the exclusion of (4.17b). Yip's view allows for rules of coda as seen above, because the melody that was originally mapped as \( \text{ya} \) may apply to representations like (4.17b). This derivation is the coda, \( \text{ya} \), was delinked from the mora by [+cg]-Delink. (The SCC necessary for derivations of certain reduplicative forms that does not block this rule from applying because the rule refers to cross-boundary information: the coda in the prefix, \( \text{ya} \), appears, by cross to the stage characterized in (4.17a). The stage in (4.17a) is definition of the reduplicative template, at the boundary before the stem.) A third motivation for \( \text{h} \) epenthesis is the Obligatory Contour Principle (OCP) (Leben 1973). McCarthy states the OCP as the following: 'At the melodic level, adjacent identical elements are prohibited' (1986:208), and argues that the OCP blocks any rule from applying if its application would create an OCP violation. Furthermore, if two identical melodies are on different tiers, then no OCP violation can occur. A violation occurs only if the identical melodies are adjacent on the same tier. McCarthy further argues that no violation can occur upon tier conflation, because tier conflation would automatically merge the identical, adjacent elements. I follow Yip (1988) in assuming that this view should be amended to include two stages of tier conflation. In (4.17a), the identical elements are in different tiers. (4.17b) shows the first stage of tier conflation. The tier has conflated and the elements are put side by side, as illustrated in Yip (1988:69):
In the second stage of tier conflation, the identical elements are not tiers (rather than a specific segment), such as Larryonde or h ephesis, because I will show that certain rules must critically the stage characterized in (4.17b). The stage in (4.17c) is not crucial to my analysis.

Before the derivation in (4.18) is given, however, it is necessary to stipulate a rule regarding the effects of the OCP in reduplication. As will be seen in the derivation to follow, a rule is needed to delete the melody in the template that becomes adjacent to an identical melody in the stem upon tier conflation. Following Yip (1988:74-5), the rule for Barbareño has the following form in (a). I have given an autosegmental version of the same rule in (b):

(a)

| Domain: word |
| Tier: root |
| Trigger: Delete first member |

(b)

```
\[
\text{Figure 4.1. Clash Deletion}
\]

Clash Deletion simply states where the OCP applies and what the outcome of its application is. The domain is the word (rather
than the syllable or the morpheme), for the following reason. One of the identical elements occurs in the coda of the reduplicative affix, the other occurs as the initial consonant of the base. Therefore the only domain they share is the word. The tier is the root tier (rather than a specific featural tier such as Laryngeal or Coronal), because the OCP effect is not limited in its application to any particular subset of features in this case. Yip states that trigger is left blank, to show that the rule (which deletes an element in this case) is triggered by the OCP only. Finally, the change that occurs by this rule is that the coda of the copy is deleted. The coda is the first member of the identical pair. The identical stem melody that is adjacent to it is spared.

The OCP effect is illustrated in the derivation below.

\[(4.18) \text{ Derivation for } \text{kihkiki} \text{ 'things'} < \text{ki}k\text{i} \text{ 'thing'} \]

\textbf{Lexical Component}

\textbf{Level 1}

\textbf{Cycle 1}

\begin{enumerate}
  \item \text{Input of base} \hspace{1cm} \{\text{kik}\text{i}\}
  
  \item \text{Syllabification} \hspace{1cm} \\
    \begin{tikzpicture}
      \node [shape=circle, draw] at (0,0) (a) {};
      \node [shape=circle, draw] at (0,1) (b) {};
      \node [shape=circle, draw] at (0,2) (c) {};
      \draw (a) -- (b);
      \draw (b) -- (c);
    \end{tikzpicture}
    \{\text{kik}\text{i}\}
  
  \item \text{Stress} \hspace{1cm} \\
    \begin{tikzpicture}
      \node [shape=circle, draw] at (0,0) (a) {};
      \node [shape=circle, draw] at (0,1) (b) {};
      \node [shape=circle, draw] at (0,2) (c) {};
      \draw (a) -- (b);
      \draw (b) -- (c);
    \end{tikzpicture}
    \{\text{kik}\text{i}\}
\end{enumerate}

\textbf{Level 2}

\textbf{Cycle 1}

\begin{enumerate}
  \item \text{Reduplication} \hspace{1cm}
\end{enumerate}
a. Prefixation of syllabic template and copying of melody

\[ \sigma_{\mu} \quad [\sigma \sigma] \]

\[ [\text{ki}\text{k}\text{i}] \quad [\text{ki}\text{k}\text{i}] \]

b. L \to R mapping of melody of template

\[ \sigma \quad [\sigma \sigma] \]

\[ [\text{ki}\text{k}\text{i}] \quad [\text{ki}\text{k}\text{i}] \]

c. Stray erasure and tier conflation

c. Syllabification

\[ \sigma \quad [\sigma \sigma] \]

\[ [\text{ki}\text{k}\text{i}] \]

d. Clash Deletion

OCP

The input, \text{ki}\text{k}\text{i}, is submitted to syllabification as soon. In Level 2 (\text{ki}), the entire melody is copied. In Level 3 (\text{k}), the template maps left to right to the correct place, assimilating the melody's \text{ki}. Upon tier conflation in \text{k}, the non-associated elements are strayed again. The template indicates assimilation of tier conflation, but on the same tier as the template \text{ki}. The end of the template, the first \text{ki}, is thus put in relevant position to the 2nd tier of the following level, \text{ki}\text{k}\text{i}. This movement fills the structural description of the OCP, which then proceeds to trigger the rule clash deletion if \text{k} is assimilated into the first member of the circuit identity. This rule can leave the template without a code, however. The template

e. Glottal Epenthesis II

\[ \sigma \quad [\sigma \sigma] \]

\[ [\text{ki}\text{k}\text{i}] \]

\[ [\text{ki}\text{k}\text{i}] \]

\[ [+\text{spread}] \]

f. Bracketing Erasure

Level 3

No applicable rules

135
Postlexical Component

a. Cliticization
-? (emphatic glottalization)

\[
\begin{array}{c}
\sigma \\
\sigma \\
\sigma \\
\text{kikhiki?i-?}
\end{array}
\]

b. Root Node Reduction

\[
\begin{array}{c}
\sigma \\
\sigma \\
\tau \\
\text{kihikik ?i?}
\end{array}
\]

c. Resyllabification

\[
\begin{array}{c}
\sigma \\
\sigma \\
\sigma \\
\text{kihkik ?i?}
\end{array}
\]

The input, kikhiki, is submitted to syllabification at Level 1 as usual. In Level 2 (a) the entire melody is copied. In Level 2 (b) the template maps left to right to the extent possible, associating the melodies kik. Upon tier conflation in (c), the non-associated elements are strayed erased. The templatic melodies are, by definition of tier conflation, put on the same tier as the root melodies. The coda of the template, the final \( \ldots k \), is thus put in adjacent position to the onset \( k \) of the following root, kikhiki. This environment fits the structural description of the OCP, which then proceeds to trigger the rule Clash Deletion in (d). The rule then deletes the first member of the illicit identical pair. This deletion leaves the template without a coda, however. The Template Satisfaction Condition demands that the template have a coda.
Glottal Epenthesis II applies in (e), supplying the default coda h in satisfaction of the template.

Below are other reduplications that have default h because of the OCP. Like the derivation in (4.18), the derivations for these reduplications would include the rule Clash Deletion as well.

(4.19) kek
   (plant) to grow, come up
   kehek?
   (plant) to be growing

(4.20) na?n
   'to go'
   nahn?
   [redup]
   nahnana?mu?
   'kind, type, sort, variety'

(4.21) nana?mu4
   'kind, type, sort, variety'
   nahna?mu?
   (plural)

(4.22) *nonoč
   'grandfather; ancestor'
   nohonočwaš
   (plural)

(4.23) nunašša?
   'animal, beast; devil'
   nuhunašši?išša?
   (plural)

The rule inserting the epenthetic h in (4.24) would be triggered by the rule [+cg]–Delink, since it can apply before tier-conflation; whereas the OCP would only be triggered upon tier-conflation: a arises in a result of an OCP violation. This happens when the root of the template does not to be identical to the other.

(4.24) ?o?
   'water'
   ?oh?o?
   'bodies of water; places of water'
As seen in Level 2 of (4.18), the identical melodies do not later coalesce to form *kikbik?i (syllabified as *ki.ki.k?i) with a medial aspirated k?. There is one example in the corpus, however, which seems to show this process:

\[(4.25)\] *suša?nan

*'to throw/toss (mass object)'  
(simplex not yet attested)

\[sušhùsa?nan\]

*'to be throwing/tossing (mass object)'

\[[su.ùhù.ùa.han]\]

*suša?nan < su- (causative) + šal- 'of mass object' + na?n 'to go'

If the copy is *šuš-, and the stem is *suša?nan, coalescence between the adjacent identical elements ..šš.. might have occurred after tier conflation, perhaps by a coalescence rule triggered by the OCP. Without more examples the analysis will have to remain speculative, however.

I have so far shown that h epenthesis in reduplication is motivated by three factors. First, if the base is vowel-final, as with the mono-syllabic root šho or the prefix su-, it cannot provide the base forms in (4.26) and (4.27) may or may not reduplicate with a coda for the template. It does not have enough melodies to supply the epenthetic h. The copy will sometimes have h, but other times not a coda. Second, if the base is ?-final, (e.g., va?), the ? melody will not. Since there is no syllabic difference in meaning, the coda that it provides for the coda will necessarily be delinked from the syllabification and the base forms in (4.26) and (4.27) may or may not reduplicate with a coda. As seen in Chapter 3, this rule is independently motivated elsewhere in the phonology, delinking ? whenever it is in coda position before a morpheme boundary. Finally, h epenthesis arises as a result of an OCP violation. This happens when the coda of the template is found to be identical to the onset of the following stem upon tier conflation. The coda is then deleted.
by Clash Deletion, a rule motivated only by the OCP. In each of the three scenarios, the template is left without a coda. GE I cannot apply since its structural description limits it to applying to onset positions only. GE II must then apply. As a result, an h coda is supplied and the requirements of the template are met:ing rule is seen.

Finally, there are three tokens of reduplications with h that pose a significant problem for analysis: no problems remain. First, one must show how supposedly obscured information about the morpheme

(4.26) klawaš preceded by the copying rule, 'piece; broken' silence to accompany the second 'pieces' stem (kla). One needs to show how each

(4.27) li?vik modification does not prevent the 'in the middle' klaklaš.

(4.28) tinus our productive reduplication, 'to call, name'

< ti 'name' + -(V)h (verbal suffix) + ue (applicative) copied, even though its counterpart in the case is glottalized or deleted. In

The base forms in (4.26) and (4.27) may or may not reduplicate with the epenthetic h. The copy will sometimes have h, but other times it will not. Since there is no discernible difference in meaning, the variation seems to be purely arbitrary. For example, the reduplication of klawaš 'piece; broken' may have a copy in the form of kla−, to form kla?klawaš, as seen in the derivation in (4.3).

On the other hand, its copy may be kla−, to form kla?klawaš. Both reduplicated forms mean 'pieces'. There is, however, a verb that may provide a clue to as to why klawaš can reduplicate as kla?klawaš.

The verb is kla? 'to be broken', which reduplicates as kla?klawaš 'to
be broken into several pieces'. This suggests that the root of the verb is *kla*-... The suffix -\text{\textasciitilde}a is doubtless the resultative, -\text{\textasciitilde}V\text{\textasciitilde}. The form in (4.28) \text{\textasciitilde}inus has a Level 1 suffix, -\text{\textasciitilde}Vn. The input into Level 2, where reduplication occurs, would be [tin] (from [[ti]Vn] in Level 1). If reduplication with \text{\textasciitilde}h can occur because the copying rule is sensitive to the old morpheme boundary, and therefore copies only the melodies of that old morpheme, then two problems remain: First, one must show how supposedly obscured information about the morpheme boundaries is accessed by the copying rule, since Bracketing Erasure is supposed to prevent such access. Second, if a root *kla- can be accessed one time to form kla\text{\textasciitilde}kla\text{\textasciitilde}wa\text{\textasciitilde}k, one needs to show how such internal information does not prevent the formation of kla\text{\textasciitilde}kla\text{\textasciitilde}wa\text{\textasciitilde}k. My analysis is unable to address these issues at this time.

4.2.4 Type Four productive reduplication.

In Chapter Two, Type Four reduplications were described such that the coda of the copy is not glottalized or aspirated, even though its counterpart in the base is glottalized or aspirated. In Chapter 3, I argued that glottalized or aspirated consonants should be analyzed as underlying clusters, instead of as single segments. As will be seen, this perspective affects how these consonants are to be analyzed in reduplication. I will first give derivations for stems involving an obstruent-glottal sequence such as \text{\textasciitilde}a and \text{\textasciitilde}kh. It will be seen that reduplication of stems with such sequences is not necessarily more complex than the derivations given for Type One reduplications. Following that, I will give derivations for stems involving a glottal stop-sonorant sequence, such as \text{\textasciitilde}m. Only one rule not used in deriving Type One reduplications is needed:
(+cg)-Delink. Below are derivations for the reduplication of the following forms: (4.29a) ič?alayaš 'one's own trail', (4.29b) pak?a 'one', (4.30a) takhuy 'to carry', (4.30b) ičhaxi 'enemy', (4.31a) lu?nan 'to grow' and (4.31b) t?e?m 'palm of hand; bottom of foot'.

(4.29) Derivations for (a) siyič?ič?alayaš 'their own trails' and (b) pakpak?a 'one by one'

Lexical Component

Level 1
Cycle 1

a. Input of root: \[ ič?alayaš \] [pak?a]

b. Syllabification

\[ ič?alayaš \] [pak?a]

(c) Glottal Epenthesis II

4.2. Glottal Epenthesis\( ^* \) of post\( ^* \) (not applicable)

\[ ič?alayaš \] [pak?a]

d. Stress

\[ ič?alayaš \] [pak?a]

Level 2
Cycle 1

a. c. Reduplication

a. Prefixation of syllabic template and copying of melody

\[ ič?alayaš \] [ič?alayaš] [pak?a] [pak?a]

141
b. L → R mapping of melody to template

\[ ič?alayaš [ič?alayaš] \quad [pák?a [pák?a]] \]

c. Stray erasure and tier conflation

\[ ič[ič?alayaš] \quad [pák[pák?a]] \]

d-1. Glottal Epenthesis I

\[ ič[ič?alayaš] \quad \text{(not applicable)} \]

\[ [+cg] \]

e. Glottal Epenthesis II (for initial \( σ \) of prefix)

\[ \text{(blocked by the SCC)} \quad \text{(not applicable)} \]

Type Two reduplication. These rules mapping occurs left to right. \( \tau \) in Level 2. reduplication occurs as it does in Type One and Type Two reduplication. Thus when mapping occurs left to right, \( \tau \) itself may be \( [+cg] \) as its code falls out from the fact that it has filled both the required vowel positions. Thus the template does not map \( \tau \) as its code falls out from the fact that it has filled both the required vowel positions.

f. Bracketing Erasure

Backlash structure is Chapter 1. The Occasion Code

\[ ič?alayaš \quad [pák[pák?a]] \]

Level 3: on the other hand, no exists. \( \tau \) or \( \tau \) would map as the No applicable rules

142
Postlexical Component

a. Affixation

\[ s-iy- \ (3-PL) \]

\[ \sigma \sigma \sigma \sigma \]

\[ \mu \mu \mu \mu \]

\[ s-iy- ič?ič?alayaš \]

(not applicable)

b. Root Node Reduction

\[ \sigma \sigma \sigma \sigma \]

\[ \mu \mu \mu \mu \]

\[ sičič?alayaš \]

\[ pakpak ?a \]

or:

\[ \sigma \sigma \sigma \sigma \]

\[ \mu \mu \mu \mu \]

\[ sičič?alayaš \]

(both forms are attested)

c. Resyllabification

\[ si.yič.?i.ča.la.yaš \]

\[ pakpa.ka \]

\[ or: si.yi.či.ča.la.yaš \]

In Level 2, reduplication occurs as it does in Type One and Type Two reduplication. Thus when mapping occurs left to right, it maps ič and pak to the template. It stops mapping after that because it fills both the required moraic positions. That the template does not map ča or kạ as its coda falls out from the facts about Barbareño syllable structure in Chapter 3: the Complex Coda Constraint prohibits non-word-final coda clusters. As argued in Chapter 3, ča and kạ constitute clusters underlingly, with separate root nodes. Thus by definition they cannot both map to the template as codas. On the other hand, as onsets, ča or kạ could map to the
template, because onset clusters of two consonants are allowed in syllable structure. This is why the copy for č?alavač ‘trail’ (in (4.4) is č?al- and not *čal- or *čal-.

One could argue, however, that if č? and k? were analyzed as underlying single segments, they could still map to the template as codas, with the same result: ič- and pak-. If the form *pak were mapped, for example, then [+cg]-Delink would apply, deleting the glottal articulation, yielding pak-. While such an analysis would work for glottalized segments, it would not work for single, aspirated segments such as gh or kh. The reason is that [+spread] is a licensed coda before a morpheme boundary. This is obvious since it is the default coda found in Type Three reduplication. An analysis would be at a disadvantage if it assumed ph or kh were underlyingly single segments, because it would be forced to create an ad hoc rule to explain the failure of [+spread] to reduplicate. This problem is not found with an analysis that treats these as underlying clusters, however. Under such an analysis, the derivations for the reduplicative forms of ičhaxi ‘enemy’ and takhuy ‘to carry’ would proceed as follows:

(4.30) Derivations for (a) siyičičhaxiči? ‘their enemies’ and (b) siqiliktakhuĩi ‘they (two) used to carry [their pistols]’

Lexical Component
Level 1 Initial Specification
Cycle 1

a. Input of root

\[ \text{ichaxi} \quad \text{takhuy} \]
b. Syllabification

```
\[ \sigma \sigma \sigma \\
 uu uu uu \\
 [ichaxi]
```

```
\[ \sigma \sigma \sigma \\
 uu uu uu \\
 [takhuy]
```

c. Stress

```
\[ \sigma \sigma \sigma \\
 uu uu uu \\
 [ichaxi]
```

```
\[ \sigma \sigma \sigma \\
 uu uu uu \\
 [takhuy]
```

Level 2
Cycle 1
a. - c. Reduplication

a. Prefixation of syllabic template and copying of melody

```
\[ \sigma \mu \]  \[ \sigma \sigma \sigma \]  \[ \sigma \mu \]
\[ [ichaxi] [ichaxi] \]  \[ [takhuy] [takhuy] \]
```

b. L -> R mapping of melody to template

```
\[ \sigma \sigma \sigma \]  \[ \sigma \sigma \sigma \]  \[ \sigma \]
\[ uu uu uu \]  \[ uu uu uu \]  \[ uu uu uu \]
\[ [ichaxi] [ichaxi] \]  \[ [takhuy] [takhuy] \]
```

c. Stray erasure and tier conflation

```
\[ \sigma \sigma \sigma \sigma \]
\[ uu uu uu uu \]
\[ [ichaxi] \]
```

```
\[ \sigma \sigma \sigma \]
\[ uu uu uu uu \]
\[ [tak[takhuy] \]
```

d-1. Glottal Epenthesis I

```
\[ \sigma \sigma \sigma \]
\[ uu uu uu uu \]
\[ [ich/ ichaxi] \]
```

```
\[ (+cg) \]
```

(not applicable)
d-2. Glottal Epenthesis I (for initial \( \sigma \) of prefix)  
(blocked by the SCC)  
(not applicable)

e. Glottal Epenthesis II (for initial \( \sigma \) of prefix)  
(blocked by the SCC)  
(not applicable)

f. Bracketing Erasure

\[
\begin{align*}
\sigma & \quad \sigma & \quad \sigma & \quad \sigma \\
\text{ič?ičaxi} & \quad \text{taktakhuy} \\
\end{align*}
\]

Level 3  
(no applicable rules for [ič?ičaxi])

a. Affixation  
\textit{qili-} (habitual)

\[
\begin{align*}
\sigma & \quad \sigma & \quad \sigma \\
\text{[qili [taktakhuy]]} \\
\end{align*}
\]

Some reduplication occurs in Level 2, the mapping of \( \text{qili} \) and \( \text{taktakhuy} \)  
occurs (in the same way as it does for \( \text{qili} \) and \( \text{taktakhuy} \))  
in [14.2]. \( \text{gili} \) (from the copy \( \text{gili} \)) in [14.3], and \( \text{gy} \) (from the copy \( \text{gy} \)) in [14.4]. This is expected under no analysis in which \( \text{gili} \)  

b. Syllabification

\[
\begin{align*}
\sigma & \quad \sigma & \quad \sigma & \quad \sigma \\
\text{[qili [taktakhuy]]} \\
\end{align*}
\]

c. Bracketing Erasure  

\[
\begin{align*}
\sigma & \quad \sigma & \quad \sigma & \quad \sigma \\
\text{[qilitaktakhuy]} \\
\end{align*}
\]
Postlexical Component

a. Affixation

\[ s-\text{iy}-(3-\text{PL}) \quad s-\text{iś}-(3-\text{DU}) \]

(emphatic glottalization)

\[ s-\text{iy}-\text{ič}?\text{ičaxi}?- \quad s-\text{iś}-\text{qilitaktakhuy} \]

b. Root Node Reduction

\[ s\text{iyič}?\text{ič háxi}? \quad s\text{iśqilitaktakhuy} \]

c. Resyllabification

\[ \text{siyič}?\text{ič čhax}?\text{i?} \quad \text{siśqili.takt.ta.khuy} \]

When reduplication occurs in Level 2, the mapping of \text{ič} and \text{tak} to the template (from the respective copies \text{ičaxi} and \text{takhuy}) occurs in the same way as it does for \text{vuux} (from the copy \text{vuwxwowon}) in (4.2), \text{pin} (from the copy \text{pinyu}) in (4.5), and \text{ex} (from the copy \text{exlelen}) in (4.6). This is expected under an analysis in which \text{čx}, \text{čh}, \text{kx}, and \text{kh} are clusters, because it would be predicted that the left-most element would have to map first, given that mapping occurs left to right. The second member of each cluster, \text{ž} and \text{h}, like the
second members of the clusters in yuxw.., tīny.. and exl.., are prohibited by the Complex Coda Constraint from mapping to the second mora of the template. There is therefore no need for ad hoc neutralization rules that would de-glottalize or de-aspirate the coda. Everything falls out as expected from the facts of Barbareño syllable structure.

Reduplications involving glottal stop + sonorant consonant sequences, such as ?n, require no additional rules, either. However, my analysis for such sequences assumes that mapping is continuous until all available melodies have been mapped to the template. As will be seen below, the main difference between the derivations in (4.31) and all derivations given earlier is that the mapping stage of reduplication must be shown explicitly. This and other details are further discussed at relevant points in the derivations below involving lu?nan ‘to grow’ and t?e?m ‘palm of hand; sole of foot’.

(4.31) Derivations for (a) si?lu?nan ‘it grows bigger and bigger’ and (b) st?emt?e?m ‘the bottom of his feet’

Lexical Component
Level 1: Selection of root and root melody as input to template
Cycle 1

a. Input of root

\[ \text{[lu?nan]} \quad \text{[t?e?m]} \]

b. Syllabification

\[
\begin{align*}
\text{[lu?nan]} & \quad \text{[t?e?m]} \\
\text{(melody not applicable)} & \quad \text{(sender)}
\end{align*}
\]

c. Extraprosodicity

\[
\begin{align*}
\text{(not applicable)} & \quad \text{[t?e?<m>]} \\
\end{align*}
\]
d. Stress

\[ \sigma \mu \mu \quad \sigma \]  
\[ [\text{lu?nán}] \quad [\text{t?é?}<\text{m}>] \]

Level 2
Cycle 1

a. – d. Reduplication

a. Prefixation of syllabic template and copying of melody

\[ \sigma \mu \mu \quad [\sigma \sigma] \quad \sigma \mu \mu \]  
\[ [\text{lu?nán} \ [\text{lu?nán}]] \quad [\text{t?é?m} \ [\text{t?é?}<\text{m}>]] \]

b. – g. L → R mapping of melody to template

b. Association of left-most melody as onset to template

\[ \sigma \mu \mu \quad [\sigma \sigma] \quad \sigma \mu \mu \]  
\[ [\text{lu?nán} \ [\text{lu?nán}]] \quad [\text{t?é?m} \ [\text{t?é?}<\text{m}>]] \]

c. Association of next left-most melody as onset to template

(d) (melody not available)  
\[ \sigma \mu \mu \quad [\sigma \sigma] \]  
\[ [\text{t?é?m} \ [\text{t?é?}<\text{m}>]] \]

d. Association of next left-most melody to 1st mora

\[ \sigma \mu \quad [\sigma \sigma] \quad \sigma \mu \]  
\[ [\text{lu?nán} \ [\text{lu?nán}]] \quad [\text{t?é?m} \ [\text{t?é?}<\text{m}>]] \]
e. Association of next left-most melody to 2nd mora

\[ \sigma \quad \sigma \quad \sigma \]
\[ [lu?nan \quad [lu?nan]] \quad [t?em \quad [t?em<m>]] \]

f. [+cg]-Delink

\[ \sigma \quad \sigma \quad \sigma \]
\[ [lu?nan \quad [lu?nan]] \quad [t?em \quad [t?em<m>]] \]

g. Association of next left-most melody to 2nd mora

\[ \sigma \quad \sigma \quad \sigma \]
\[ [lu?nan \quad [lu?nan]] \quad [t?em \quad [t?em<m>]] \]

h. Stray erasure and tier conflation

\[ \sigma \quad \sigma \quad \sigma \]
\[ [lu?nan \quad [lu?nan]] \quad [t?em \quad [t?em<m>]] \]

i. Bracketing Erasure

\[ \sigma \quad \sigma \quad \sigma \]
\[ [lu?nlu?nan] \quad [t?emt?em<m>]] \]

Level 3
(no applicable rules)
Postlexical Component: to associate to the template as an onset.

a. Cliticization

g- (third person)  s- (third person)  -? (emphatic glottalization)

\[ \sigma \sigma \sigma \]

\[ uu uu uu \]

s- lumnul?n\=an

\[ \sigma \sigma \]

\[ uu uu \]

s- t\=emt\=e?\<m>-?

b. Root Node Reduction

and associated on the first mora—since only vowels can associate

to the left child, but g-s are by-definition available at the end.

In (f), the fact that the root node associates a binary melody is

rightward, the node that associates the syllable sound is each

spelling in (f). The affix then proceeds to associate g as its onset. It

must do so, because there is an abstract meaning g as a syllable

coda. The rule (e) CB- clitE.r is then triggered in (f). It is

triggered because (a) it has been associated as a node to the preceding

in (b) - (g) of reduplication, template association

and (f) of derivation, the grammatical serial occurs before a-the

occurs. The explicit stages reflect the fact that the syllabic

sequence encoding. The structural description of the template

must associate melodies to its morae, and maximize its

onset if possible, associating melodies in a left to right

direction. Maximally, the Barbareño template can have a complex

onset (consisting of up to two melodies), a moraic vowel, and one

strobic melody have been exhausted. It therefore contains the

moraic coda. In (b), the template begins a left to right sweep to

rightward sweep in (g); mapping the respective melodies g and -?

map the first available melody as an onset. Since the left-most

morae have melodies, the requirements

melodies 1 and ? qualify, they are (respectively) mapped to the

of the template are satisfied and so the mapping procedure steps

template as onsets. But the template can have up to two melodies in

its realisation than follows in (b), and all the unassociated

its onset. Since it must be maximized when possible, it continues

its rightward sweep for the next available melodic onset in (c).

Since the next left melody in lumnul, y, is a vowel, it is by

contiuance of 'persistent' mapping is not an uncontroversial matter
definition not available to associate to the template as an onset. In previous morphology, selecting the affix is driven by the onset. Therefore the only melody to be the onset is ι. When the template of pronunciation of continuous melody has been overspecified and continues its rightward sweep over τ?η?m, however, it finds another available melody to associate as an onset, ι. The syllabic affix continues mapping. It further states that it continues rightward sweep in stage (d), to associate a melody to the first mora. It associates the melody y from the copied string lu?nan to its first mora. Likewise in τ?η?m, the affix comes upon e, and associates it to its first mora. Since only vowels can associate to the first mora, both y and e are by definition available to it.

In (e) the task is to associate a melody as a coda. Moving rightward, the next melody the affixal skeleton comes upon in each string is ι. The affix then proceeds to associate ι as its coda. It must do so, because there is no constraint barring ι as a syllable in dealing with the phonology. We single around the coda. The rule [+c] Delinking is then triggered in (f). It is triggered because (i) ι has been associated as a coda to the prefix; and, (2) by definition, the reduplicative prefix occurs before a morpheme boundary in a continuous context. Thus the structural description of the rule is met and it applies, delinking ι from the second mora. The template is now without a coda. It must have a coda however, so by the mapping of the effect of rendering melodies adjacent in the copy of Template Satisfaction Condition it must continue mapping until all morphemes have been exhausted. It therefore continues its rightward sweep in (g), mapping the respective melodies n and m to they are separated by a glottal stop in the stem, ιη. Not only the second mora. Since the morae all have melodies, the requirements of the template are satisfied and so the mapping procedure stops.

Tier conflation then follows in (h), and all the unassociated melodies, including ι, are thus stray erased.

I have described this mapping in detail because such
in Prosodic Morphology. McCarthy and Prince argue that the 'doctrine of persistence' (i.e., continuous mapping) has been overgeneralized from the pattern in Sanskrit, e.g. *druy- > DU-drův*, which shows continuous mapping. They further state that:

Aside from mapping to \( \sigma_c \), there are no other cases where nonadjacent melody elements are rendered adjacent by directional mapping to the template: loss occurs freely only when the mapping process is finished and the continuous substring left over disappears, as in ag-TAK(der)-takder, ag-DA(it)-daït, etc. ....

A plausible account of this finding is that mapping must always be continuous, except that under compulsion the head of a constituent such as onset can be taken for the whole thing. We will put off explicit technical development, however, since competing theories offer no advantage in dealing with the problem, and simply assume that skipping of melody elements is impossible outside accommodation to \( \sigma_c \) (1986:11-12).

The derivations in (4.31) and all such types of forms provide an exception to this contention. (Shaw (1987) also argues against this contention.) My analysis demonstrated that left to right mapping has the effect of rendering melodies adjacent in the copy even though they are not adjacent in the stem. Thus \( \epsilon \) and \( m \) are rendered adjacent in the reduplicative prefix, \( t\epsilon m- \), even though they are separated by a glottal stop in the stem, \( t\epsilon e\epsilon m \). Not only that, but these melodies are rendered adjacent through accommodation to a bimoraic syllable, with an onset that is maximized if possible, as in the prefix \( t\epsilon m \). If these melodies were accommodating a core syllable, the copy would look like \( ^*\epsilon \epsilon^- \).

The derivations in (4.31) also demonstrate that delinked glottal stop melodies are not 'skipped'. They are definitely mapped
and reprosodized by the affixal skeleton as codas. But when the mapping creates an environment that fits the structural description of [+cg]-Delink, the rule must then apply.

There is an additional reason the derivations in (4.31) are problematic for the view that mapping is not continuous (outside of association to \( \sigma_c \)). If mapping were not continuous, then one would have to show why a form such as \( \text{po\?n} \) would reduplicate as \( \text{ponpo\?n} \) in Level 2 and not as \( \text{*pohpo\?n} \). That is, if tier conflation and stray erasure took effect immediately upon the association of \( t \) as coda, with no chance for [+cg]-Delink to take effect until after conflation, then the copy would first appear as \( \text{*po?} \). [+cg]-Delink would then apply, followed by Glottal Epenthesis II which would insert \( \text{h} \), yielding \( \text{*poh?} \).^8

Finally, I should note that an alternative analysis has been proposed for the lack of glottalization in the coda of the template. Nisgha, like Barbareño, does not allow glottalization in the coda of the reduplicative affix. Shaw (1987) argues that prosodic and melodic headedness determines what can map to the second 'x' (the second mora in my analysis) of the template: 'it is the head branch, i.e. the SL node, of the glottalized segments which is mapped' (1987:302). Thus a single segment such as \( \text{p} \) or \( \text{w} \) necessarily maps as \( \text{p} \) or \( \text{w} \) respectively. She then argues that this reason accounts for the fact that a Nisgha form such as \( \text{t'\text{\textbarbaro}}? \) 'to clap' reduplicates as \( \text{t'\text{\textbarbaro}X-t'\text{\textbarbaro}}? \) and not \( \text{*t'\text{\textbarbaro}-t'\text{\textbarbaro}}? \). As seen in 4.2.3, and in the derivations in this section, this seems to parallel Barbareño reduplication to a great extent. But she also states that 'one would expect \([h]\) or \([X]\) to surface .... However, \([h]\) cannot be realized in coda position' (1987:303). As shown in 4.2.3, \([h]\) is the productive
coda in the Barbareño reduplicative prefix. It is heard distinctively from [x] in Beeler’s tapes. Since Shaw does not discuss the distribution of [?] and [h] with respect to general syllabic structure, I cannot determine to what extent the situation parallels Barbareño. It would be interesting to see whether Nisg̱a'a has the same constraints on the syllabic coda as found in Barbareño. For instance, the fact that consonant clusters are prohibited from occupying a non-word-final coda, or that [?] can occur as a coda but not before a morpheme boundary. I have argued that such facts about general syllabic structure are crucial to a proper, non-ad hoc analysis of productive reduplication.

4.2.5 Type Five productive reduplication.

As described in Chapter Two, base forms in Type Five reduplication typically have onset clusters, the first member of which is g-, ŋ-, q-, or š-, followed by a plain consonant. Two tokens, however, have a simple onset g-. Also, unlike the other four types, the stems seem to reduplicate via infixation rather than prefixation. I intend to show, however, that Type Five involves prefixing a bimoraic syllable as the copy, as is the case for the other four types. McCarthy and Prince (1986:44-45) discuss how reduplication that looks like infixation can actually be prefixation, if the stem-initial consonant is rendered extraprosodic and is subsequently strayed erased upon affixation. My analysis will follow their lead and assume that this is what is happening with Type Five reduplications. However, it will be seen that the analysis leaves problems that are not adequately accounted for. At the end of this section it will be argued that the forms listed as Type Five
actually comprise both a lexicalized and productive class of reduplications.

Derivations for the reduplications of the following forms are given in this section: (4.32) stapan 'round tule' (two reduplicative forms), and (4.33) čtiʔn 'dog'.

(4.32) Derivation for (a) stapatapʔan (Harrington) and (b) stapstapʔan (Beeler tape). Both forms mean (quantities of) round tule'.

Lexical Component

Level 1
Cycle 1

a. Input of root [stapan] [stapan]
   (for stapatapʔan) (for stapstapʔan)

b. Syllabification
   σ σ
   σ σ
   [stapan] [stapan]

[c. Extraprosodicity σ σ
   [stapan] (not applicable)

d. Stress
   σ σ
   σ σ
   [stapan] [stapan]

Level 2
Cycle 1

a. - c. Reduplication
a. Prefixation of syllabic template and copying of melody

\[ \sigma_{\mu} \quad [\sigma \sigma] \quad u \quad u \quad u \quad u \quad [\text{stapan} [<s>t\ddash\text{\textipa{a}p\text-\textipa{an}]}) \]

\[ \sigma_{\mu} \quad [\sigma \sigma] \quad u \quad u \quad [\text{stapan} [\text{st\ddash\textipa{a}p\text-\textipa{an}]}) \]

b. L \rightarrow R mapping of melody to template

\[ \sigma \quad [\text{stapan} [<s>t\ddash\text{\textipa{a}p\text-\textipa{an}]}) \]

\[ \sigma \quad [\text{stapan} [\text{st\ddash\textipa{a}p\text-\textipa{an}]}) \]

c. Stray erasure and tier conflation

\[ \sigma \quad u \quad u \quad u \quad [\text{stap[t\ddash\textipa{a}p\text-\textipa{n}]}) \]

\[ \sigma \quad u \quad u \quad [\text{stap[t\ddash\textipa{a}p\text-\textipa{n}]}) \]

d. Bracketing Erasure

\[ \sigma \quad \sigma \quad \sigma \quad u \quad u \quad u \quad u \quad u \quad u \quad [\text{staptapan}] \]

\[ \sigma \quad \sigma \quad \sigma \quad u \quad u \quad u \quad u \quad u \quad u \quad [\text{staptapan}] \]

In Level 1, the difference between the respective bases for

Level 3
No applicable rules: gl must have been affected for \textipa{t\text-\textipa{a}p\text-\textipa{an}]".

Postlexical Component
a. -? (emphatic glottalization)

\[ \sigma \quad \sigma \quad \sigma \quad u \quad u \quad u \quad u \quad u \quad u \quad \downarrow \quad \text{staptapan -?} \]

\[ \sigma \quad \sigma \quad \sigma \quad u \quad u \quad u \quad u \quad u \quad u \quad \downarrow \quad \text{staptapan -?} \]
b. Root Node Reduction

In Level 1, the difference between the respective bases for (4.32a) staptap?an and (4.32b) stapstap?an is that the initial consonant in (4.32a) is marked as extraprosodic. Thus when it is put in medial position through affixation of the copy, it is no longer licensed and is subsequently stray erased. The initial s in (4.32b) is not rendered extraprosodic, however, and so it is licensed in medial position and is not later stray erased.

An immediate problem arises in that there is little motivation in the syllable structure for rendering the initial s extraprosodic in (4.32a). As seen in Chapter 3, medial onset clusters in which a sibilant is followed by a stop do occur (though interestingly no tokens with a medial st onset have been attested for Yee).

The derivation in (4.33) below also exhibits initial consonant extraprosodicity. And, as in (4.32a), the initial extraprosodic consonant of the base is marked as prosodically unlicensed when affixation occurs, and is thus stray erased.
(4.33) Derivation for čtinti?n 'dogs' < čti?n 'dog'

Lexical Component
Level 1
Cycle 1

a. Input of root
[čti?n]

b. Syllabification

```
     σ
    / \
   /   \
[čti?n]
```

c. Extraprosodicity

```
     σ
    / \
   /   \
<br>čti?n<br><n>]
```

d. Stress

```
     σ
    / \
   /   \
<br>čti?n<br><n>]
```

Level 2
Cycle 1

a. - g. Reduplication

a. Prefixation of syllabic template and copying of melody

```
     σ
    / \
   /   \
[čti?n [br>čti?n<br><n>]]
```

b. - g. L -> R mapping of melody to template

b. Association of left-most melody as onset to template

```
     σ
    / \
   /   \
[čti?n [br>čti?n<br><n>]]
```
c. Association of next left-most melody as onset to template

\[ [\text{cti?n} [\text{<cti?n> JWT}]] \]

d. Association of next left-most melody to 1st mora

\[ [\text{cti?n} [\text{<cti?n> JWT}]] \]

\[ [\text{cti?n} [\text{<cti?n> JWT}]] \]

e. Association of next left-most melody to 2nd mora

\[ [\text{cti?n} [\text{<cti?n> JWT}]] \]

f. [+cg] - Delink

\[ [\text{cti?n} [\text{<cti?n> JWT}]] \]

g. Association of next left-most melody to 2nd mora

\[ [\text{cti?n} [\text{<cti?n> JWT}]] \]

h. Stray erasure and tier conflation

\[ [\text{cti?n} [\text{<cti?n> JWT}]] \]
i. Bracketing Erasure

Level 3
(no applicable rules)

Postlexical Component

a. Cliticization

-? (emphatic glottalization)

b. Root Node Reduction

C. Resyllabification

Čtin čtin tih

As in (4.32a), the initial consonant for the form in (4.33) is stipulated as extraprosodic at Level 1. When put in medial position through reduplication in Level 2, it thus becomes prosodically unlicensed and is subsequently stray erased. The initial extraprosodicity can be independently motivated for (4.33) čtin n, since there are no attestations of medial onset clusters beginning with č- or čč-. But it is not as motivated for another Type Five form like (2.110) speyv ‘flower’ (which reduplicates as speyv?e?v ‘flowers’), since the onset cluster sp is found medially in ogspolon ‘to slap yell’.
An explanation for such unexpected extraprosodicity in Type Five forms is possible, however. I would argue that the stems grouped under Type Five actually comprise two classes: a class of lexicalizations, and a class of forms that are productive in the sense that Mary Yee formed them by analogy to the lexicalized forms. First I will present the case for the lexicalized forms.

The lexicalized forms in Type Five have in common the fact that they are morphologically complex in the underlying representation. Forms of this class include:

(4.34) spe\textsuperscript{y}v
\textsuperscript{pl}
\textsuperscript{y}

compare: spe\textsuperscript{y}g
like the it blossomed\textsuperscript{9}
spe\textsuperscript{y}g
3-blossom

(4.35) sgap
\textsuperscript{pl}

compare: ghap\textsuperscript{a}g - khan\textsuperscript{a}g
‘to be thin’

(4.36) čtan\textsuperscript{i}w
\textsuperscript{pl}

compare: tan\textsuperscript{i}w
‘baby; child’

(4.37) su\textsuperscript{u}k\textsuperscript{u}
\textsuperscript{pl}

compare: sax\textsuperscript{u}kul\textsuperscript{u}
‘to be early in the morning; before dawn’

and probably also:
(4.38) saxkhit
    'wind; (wind) to blow'

saxʔaxkhitʔ
    'winds'

As seen above, these forms have a semantic connection to other forms, through a common root or stem. In (4.34), the word for flower, speʔy, is a lexicalization or fossilization of peʔy 'to blossom' and the third person pronoun g-. In (4.35), the root is probably *ghap, with a meaning embodying the concept 'thin'. (One would not expect the form *sghap instead of sgap, since the onset cluster sg- would violate the Complex Onset Constraint in the Barbareño lexicon.) In (4.36), the verb ħtaniw shows an obvious relation to taniw. In (4.37), the root in common is *ulkuw. The initial g- in sulkuw, like the initial g- in speʔy, sgap and saxkhit, is most likely the third person pronoun g-, but fossilized.

If the simplex forms in (4.34-4.38) represent lexicalized word formation processes, then so could the corresponding reduplicative forms. Otherwise (4.37) sulkuw 'night' would reduplicate as *suṣulkuw, which would be the productive pattern.

Not all of the forms in Type Five can be argued to be morphologically complex, however. If cweg 'grass' is morphologically simple, one would expect the initial consonant to be retained on the base, yielding a form like *cwegcweg. In fact, the earlier speakers Harrington worked with retained the cluster on the base for such forms. Yee's form is given in (a) of the examples, followed by forms from the earlier Barbareño speakers.

(4.39) a. cweg
    'grass'
cwegʔwegʔ
    '(quantities of) grass'
Luisa Ignacio:

b. cveq  'grass'
cwéqceq 'quantities of grass'

Juliana Ignacio:

c. cweqceq 'quantities of grass'

Juan de Jesus Justo:

d. cweqceq 'quantities of grass'

(4.40)

a. čtí'n
čtínti'n  (plural)

Thus the four final endings of Type Five are productive
reduplications that are formed by analogy to the appearance of the
secondary reduplications discussed in this section. If the first
component in a stem-initial cluster is g-, k-, q-, or ṭ-, and the
second member is plain, then in my analysis it becomes marked as
(4.41)
a. stapán 'round tule'

staptapán  '(quantities of) round tule'

Lucrecia Garcia  In each type, the copy is a hemiclty verb, that is

b. staptáp'an 'with. The analogy to 'quantities of) round tule' is

consequently reproduced or associated to the affix by the

(4.42)  skeleton. Mapping proceeds in a continuous, left to right

a. sníyní'y  with the reduplication of 'goose barnacle' has been set. If

(lexical reduplication)

the paradigm has exhausted the available alleles but cannot fill

Luisa and Juliana Ignacio: the Glottal Synthesis II will apply, and

b. sníyéní'y  could thus associate  as 'goose barnacle'

164
Examples (4.39 – 4.42) show that the earlier speakers retained the consonants g-, q-, and ḷ- on the base in the reduplicative form, whereas Yee did not. As would be expected for the underlyingly complex forms, however, the earlier speakers' forms parallel Yee's forms. For example, Lucrecia Garcia’s reduplicated form for (4.36) čtaniw is ctanta?niw. I would argue that Yee was re-analyzing reduplications involving clusters beginning with g-, q-, ḷ-, and ending in a plain consonant. She formed them by analogy to the many lexicalized reduplications involving such clusters. The fact that she could have both variations, as seen in stapan → stantap?an or stapstap?an, supports the conclusion that such re-analysis was occurring.

Thus the bona fide members of Type Five are productive reduplications that are formed by analogy to the appearance of the lexicalized reduplications discussed in this section. If the first consonant in a stem-initial cluster is g-, q-, ḷ-, or ḷ-, and the second member is plain, then in my analysis it becomes marked as extraprosodic, deleting upon prefixation of the copy as seen in the derivations in this section.

In this Chapter, all five types of productive reduplication were analyzed. In each type, the copy is a bimoraic syllable that is prefixed to the stem. The melody from the base is copied, and is subsequently reprodosodicized or associated to the affix by the affixal skeleton. Mapping proceeds in a continuous, left to right direction until the requirements of the template have been met. If the template has exhausted the available melodies but cannot fill its coda position, the rule Glottal Epenthesis II will apply, and the template would thus associate [h] as its coda. It was seen that
Type Five reduplication is notably different from the other patterns. Stems in Type Five have an initial cluster in which $C_1$ is $g-$, $k-$, $c-$, or $\hat{c}$- and $C_2$ is a plain consonant. The productive form is made by analogy to a lexicalized pattern, most tokens of which have an identical onset pattern to those in Type Five.

4.3 Problematic examples.

At the end of Chapter 2 there were listed several reduplications that are especially problematic. These are listed again below:

(4.43) $kala\hat{a}$  
\(\text{‘to breathe’}\)
a. $skala\hat{a}$  
\(\text{‘he breathed’}\)
\(g\)-$kala\hat{a}$  
3-breathe

b. $skalkala\hat{a}$  
\(\text{‘he is breathing’}\)
\(g\)-kal-$kala\hat{a}$  
3-R. -breathe

c. $k^{h}alk^{h}ala\hat{a}$  
\(\text{‘I am breathing’}\)
\(k\)-kal-$kala\hat{a}$  
1-R. -breathe

(4.44) $pa\hat{a}$  
\(\text{‘to vomit, to see’}\)
a. $\acute{\text{s}}pa\hat{a}$  
\(\text{‘he vomited’}\)
\(g\)-pa\hat{a}  
3-vomit

b. $\acute{\text{s}}pa\hat{a}pa\hat{a}$  
\(\text{‘he is vomiting’}\)
\(g\)-pa\hat{a}-pa\hat{a}  
3-R. -vomit-NM
c. pʰašpʰaʔ⁸

p-paš-paš  -?
2-R. -vomit-NM

(4.45) suʔnan

a. psuʔnan

p-suʔnan
2-continue

b. šun̪uʔnan

g-suʔnan
3-R. -continue

(4.46) šutowič

‘to be quick; soon’

a. ?alsuʔšutowič

?al-saʔ-šutowič
NM -FUT-soon

b. šuʔšutowič

‘he was very quick [in entering
the house].’ Initial consonant of the
base is the explanation Applegate (1976) gives for
this pattern in Inuktitut. Yet this would conflict with the status of
the nasal prefixes are similar to being in
the grammatical component. Reduplication precedes this, occurring at
the radical root ‘to look at, to see’

(4.47) kutiy

a. khutkhutiwin

k-kut-kutiy  -in
1-R. -look.at-20

b. nkutkutivid

p-kut-kutiy  -it
2-R. -look.at-10

167
Mary Yee:

a. pkutiywun
   p-kutiy-wun
   2-see -FLO
   'you see them'

b. ḵutiyšaæ
   k-kutiy-šaæ
   1-see -RFL
   'I saw myself [in the mirror]

c. ḵutḵutiv
   k-kut-kutiv
   1-R. -look.at
   'I am looking at [another dog]

In Barbareño, if two adjacent stops or sibilants are identical and are syllabified homogeneously (the latter qualification is important), they merge to form a single, corresponding aspirated consonant. Beeler (1976:253) gave the rule for this as $C_1 + C_1 \rightarrow C^h$. The above examples seem to show that a pronominal prefix can be reduplicated if it is identical with the initial consonant of the base. In fact, that is the explanation Applegate (1976) gives for this pattern in Ineseño. Yet, this would conflict with the sketch of Barbareño lexical and postlexical phonology given in Chapter 3. It will be recalled that pronominal prefixes are clitics that belong in the postlexical component. Reduplication precedes this, occurring at Level 2 of the lexical component. If pronominal prefixes could reduplicate, then such prefixes must be present at Level 2 of the word-building process, and must affix before reduplication occurs. Yet if this were allowed, one could not then explain why certain morphemes, affixed to the stem before the pronouns are affixed, are never reduplicated. These affixes include: (postlexical component)
dš- (dual), iv- (plural), am- (indefinite), e- (negative), saʔ- (future); (lexical component, Level 3) gili- (habitual), sili- (desiderative), and akti- (venitive). All of these clitics and inflectional morphemes are affixed to the stem after reduplication. Therefore the question that remains is how the pronominal clitics can reduplicate when their order of prefixation to the stem follows that of the above morphemes, which never reduplicate. As we have seen, the only morphemes (outside of the stem) that reduplicate are those morphemes that are prefixed to the stem at Level 2, where reduplication occurs. These include the classifier prefixes, the causative gu- and the diminutive kʔili-.

There are, in addition, two examples which contradict the pattern in (4.43) - (4.47). In (4.48) below, the third pronominal clitic g- does not reduplicate even though it is adjacent to the reduplicated form:

(4.48) šot
a. knišot
   k-ni-šot
   1-TR-skin
   'I skinned it'

b. ləšot
   'it got skinned'

c. ləšot šot?
   g-šot šot-
   3-get.skinned-2
   3-R.-get.skinned-NM

Example (4.48b) shows that the pronoun and the initial consonant of the verb merge to form ləš. This happens again in (c),
between the clitic and the initial consonant of the reduplicative copy. Clearly the clitic was not itself reduplicated, otherwise the reduplication in (c) would have been \( *\{h_{\text{ot}}.h_{\text{ot}}? \). Likewise, the example in (4.49) shows that the final consonant -\( \tilde{g} \) of the associative prefix -\( \tilde{g} \) is not reduplicated:

\[(4.49)\]
\[
a. \tilde{g}i? \quad \text{'}cliff\'
\]
\[b. \text{he?si\tilde{g}i\tilde{h}\tilde{h}?i?} \quad \text{'}the cliffs of (the mountains)\'
\]

One would expect \( \text{he?si\tilde{g}i\tilde{h}\tilde{h}?i?} \), in which the final consonant of the associative affix reduplicates with the base, given that an analogous pattern occurs with the dual prefix, \( \tilde{i} \), in the Ineseño and tecománcul languages. As expected there will occur the reduplication below (Applegate 1976:279):

\[(4.50) \quad \tilde{i} - \tilde{e} - \text{expec} \quad \text{'}they two are singing'\]

Given the forms in (4.48) and (4.49), which reduplicate as expected, it is uncertain at this time how an analysis would explain the patterns. It would be useful to investigate the reduplications in the pattern in (4.43) - (4.47). Since no other tokens have appeared in which a pronominal affix directly precedes a reduplicated form, it is uncertain to what extent the reduplications in (4.43) - (4.47) exemplify a productive pattern.
1. The rules by which the melody is copied and reprodosized by the templatic skeleton are not, I would argue, structure-changing rules, and thus do not 'derive' a new environment. Rather, such rules are structure-building, in that they build the structure of the underlying form of the reduplicative copy. To fulfill the Template Satisfaction Condition, the reduplicative template requires only that its morae positions be filled; the template does not require an onset, because onset consonants are irrelevant to the prosodic requirements of the template (Kenstowicz 1994:626). This is why GE I and GE II are never required to supply an onset in satisfaction of the template. The template (and therefore, the underlying form of the reduplicative prefix) acquires an onset consonant if and only if such is available from the copied melody, in accordance with the prosodic principle of maximality (i.e., as many of the copied melodies must be mapped to the template to the extent possible). In supplying an onset, GE I and GE II would change the structure of the underived, underlying form of the copy, thus the rules are blocked by the SCC in that environment.

2. This stem is unattested alone in Barbareño, but Applegate (1972:276) lists the meaning as 'to fall apart, disintegrate' for the Ineseño cognate.

3. In Barbareño, if two identical or similar obstruents are adjacent and homogeneously syllabified, an aspirated form will occur, for example:

\[s + s \rightarrow \text{SH}, \quad s + \text{SH} \rightarrow \text{SH}, \quad k + k \rightarrow \text{KH}, \quad k + q \rightarrow q\text{H} \text{ etc.} \]

Also, Harrington usually drew a ligature under adjacent sonorants, presumably signifying a unitary status. It is assumed here that a separate, OCP-triggered coalescence rule is needed to account for all of these merged forms. Such a rule would be ordered before the deletion rule I give in Figure 4.1. An exhaustive account of OCP-triggered rules in Barbareño is beyond the scope of this study.

4. Harrington writes that the medial \(\text{n}\) in \(\text{nana\text{\text{mu}}\)}\ is 'evidently from \(\text{nn}\)' (60:0389). It could be that OCP violations in reduplications earlier on in the language were handled by some sort of coalescence rule.

5. The initial vowel in \(\text{i\text{\text{\text{x}}}alaya\text{x}}\) seems to be a lexicalized reflex of the associative affix \(\text{i\text{x}}\), which imparts a meaning of alienable possession.

6. The pronominal prefix \(\text{s-}\) in \(\text{si\text{x}}\) is not a mistake for *\(\text{s-}\). Mary Yee's forms do not always show sibilant harmony where expected. Reasons for this are discussed in Mithun (1994).
7. In (a), the final melody <m> in [t6?<m>] is copied, even though it is extraprosodic. Regarding such melodic extraprosodicity, McCarthy and Prince state that:

The effect of this extrametricality is solely that the designated melodic element is detached from the skeleton of the base; it is still available for copying and association with the reduplicative affix (1986:45).

8. One might argue that this is exactly what happens when na?n ‘to go’ -> nahn?n ‘[redup]’. This is actually a result of the OCP, however, as explained in 4.2.3. The template maps L --> R as usual, but as soon as it maps 2, [+c-g]-Delink applies, delinking 2 from the mora. Mapping continues and associates the final n, yielding the copy nan-. Upon tier conflation, the result is [na{n][na?n]]. This environment violates the OCP, however, which then triggers Clash Deletion. Subsequently the coda n in the copy is deleted. Glottal Epenthesis II supplies an epenthetic ʔ to the copy, yielding the correct form nahn?

9. Harrington (33:0404) noted the relationship between these forms:

spēʔ, a flower. Sounds just the same as spēʔ, it blossomed.

10. The earlier speakers probably had forms retaining ʔ as the base as well, but I have not had an adequate opportunity to research Harrington's notes from these speakers and add such information to my database.

The analysis for the pronominal characterization of productive reduplication assumed the principles of the theoretical extrapolations in particular: Promodic Morphology and Lexical Phonology. Both theories were put to use in describing facts about Naxarese phonology that are pertinent to the phonology of productive reduplication.

The former, Promodic Morphology, was instrumental in revealing Naxarese syllable structure, and how such structure interacts with syllabification and stress. The assumptions of this theory were also called upon to demonstrate the fact that in all productive reduplications, the template for the copy is a bisyllabic syllable. Rules and constraints that apply to syllable structure overall were shown to apply to the syllabic copy as well, in keeping with the general character of the language.
5.1 Overview.

This thesis set out to describe and explain the productive patterns of reduplication in Barbareño Chumash. A preliminary task was to acknowledge the kinds of reduplication that occur in Barbareño. It was seen that two basic kinds occur: lexical and productive. These were differentiated by several criteria. It was concluded that there are seven types of lexical reduplication, and five types of productive reduplication. In a preliminary analysis, the five types of productive reduplication were classified according to the segmental form of the reduplicative copy. In a later analysis, it was seen that all five types fall under a unified, prosodic characterization: the template for the copy is a bimoraic syllable, prefixed to the stem.

The analysis for the prosodic characterization of productive reduplication assumed the principles of two theoretical orientations in particular: Prosodic Morphology and Lexical Phonology. Both theories were put to use in describing facts about Barbareño phonology that are pertinent to the phonology of productive reduplication.

The former, Prosodic Morphology, was instrumental in revealing Barbareño syllable structure, and how such structure interacts with syllabification and stress. The assumptions of this theory were also called upon to demonstrate the fact that in all productive reduplication, the template for the copy is a bimoraic syllable. Rules and constraints that apply to syllable structure overall were shown to apply to the syllabic copy as well, in keeping with the general character of the language.
As with Prosodic Morphology, the principles of Lexical Phonology were essential as well, demonstrating how words are formed in Barbareño. The theory was instrumental in revealing how the rules and constraints of the general phonology interact with the affixation of morphemes. It was seen that Barbareño has three levels of affixation in its lexical phonology, and that clitics are affixed postlexically. This general description of the Barbareño word-formation process was then applied to the formation of reduplicated forms in particular.

It was seen that productive reduplication occurs at Level 2 of the lexical phonology.

5.2 Avenues for further research.

This study has revealed a variety of problems and issues that could serve as avenues for further research. One important issue concerns the glottal stop and glottal fricative in Barbareño. It was seen that the epenthesis rules in Barbareño insert either [ʔ] or [h] as necessary to maintain syllabic wellformedness. A study into the structure of Barbareño distinctive features might determine why it is these two segments in particular that serve as the default option in Barbareño phonology.

There is also a matter concerning consonants that are glottalized or aspirated, and how the distribution of these in syllable structure compares cross-linguistically. For Barbareño, it was seen that these consonants seemed to be governed by the same constraints that govern consonant clusters in general. One could research the extent to which this is the case for other languages, especially languages like Nisga that exhibit similar phenomena in reduplication with respect to such consonants.
REFERENCES


Beeler, Madison S. 1954-1961. Tape recordings of Barbareño Chumash from Mary Yee. [Original recordings are in the language archives at the University of California at Berkeley.]


Appendix: Harrington’s Transcription of the Examples

The Barareño Chumash examples in this thesis were given in a regularized orthography as explained in note 2 of Chapter 1. Below they are given in Harrington’s transcription. Harrington used a variety of diacritics in his transcription. I have not underscored his forms in order to insure that his transcription is clear and that none of his diacritics are obscured.

Most of the examples in this thesis are roots or stems that were taken from narrative texts. These usually occur in a larger context, such as a fully derived word, which may have a number of clitics and affixes. I have included the whole context where applicable. I have put in bold type that part of the transcription upon which the corresponding thesis example is based. A free translation appears to the right of each transcription. The translation reflects the context in which the transcribed word appears.

Each form appears above the reel and frame number from which it was taken. The number to the left corresponds to the respective example number in the main body of the thesis. I have also provided, where possible, Harrington’s transcription of the examples that were heard on Beeler’s tapes. It should be noted that a word as transcribed in Harrington’s texts might not reflect the ‘reading intonation’ of the same word heard on Beeler’s tapes.

(2.1) hikumpɔp
59:0656
’a toad’

(2.2) sɔk’apɔp
59:0376
‘it is thin’

his’uk’apɔp
59:0376
‘he makes it thin’

(2.3) ɔɛ̃alɔmeymøy
60:0815
‘it does not easily get soft’

(2.4) sxulxml
59:0581
‘it is heavy’

(2.5) hiho’olow
59:0287
‘that lawlew’
(name of mythical creature)

(2.6) sulupiɔp
59:0549
(Chumash name for Pyramid Peak)

(2.7) tuki’tuk
59:0037
‘mournning dove’

(2.8) xelwulɔ-xul
59:0293
‘and the lobater’
(2.9) t̠̠u-siysiwa?woló-wol 59:0561  'so that they will get drunk'
(2.10) welé·vel 59:0037  'wild pigeon'
(2.11) hílnayá·n̄äy 59:0172  'a razor clam'
(2.12) N/A
(2.13) sk̪o-wokó-won 60:0331  'it is tilting'
(2.14) ima t̠̠i-siysiwelewé·lën 59:0457
   iswe·lën 59:0074  'when they would be swaying'  'an earthquake'
(2.15) gɔx̪x̪ononó-won 59:0334  '[as] it burned'
(2.16) hikašuologó·koyò·kôn 59:0513  'I shake it up well'
(2.17) N/A  'a long while'
(2.18) skwo̊-wön 60:0331  'it tilted'
(2.19) híwąșaxwe·wëk 59:0380  'as it dries'
(2.20) t̠i-k'u-šiś·wentë·tën 60:0756  'but they (two) are broad'
(2.21) hikašanatá·tan 59:0447  'and it smashes [the automobile]'  'it is good'
(2.22) ihorsmoló·lôn 59:0656  '[they take] the saliva of [a toad]'  'it is good'
(2.23) N/A
(2.24) ki·ki 59:0617  'thing; what'
(2.25) hinanó·ño 59:0253  'when [it was raining] too much'
(2.26) he?kiyñé·né 59:0562  'our grandmother'
(2.27)  mo·mọy  
59:0665
'jimson weed'

(2.28)  hilxəxə?  
59:0694
'a cactus [leaf]'

(2.29)  hispopōtā  
59:0569
'it hurts'

(2.30)  tā·kak  
59:0037
'quail'

(2.31)  kaho?̂s?axpi-iîl  
59:0554
'but its root'

(2.32)  ?ikaŝiš̂it̂-iîl  
59:0683
'[P. G.] was his younger brother'

(2.33)  t̂śil?onokōk  
59:0293
'and the lizard sp.'

(2.34)  sâk̂-men  
59:0427
'he is excessively [hungry]'

(2.35)  hî?alsâx̂-nōn  
59:0460
'that he might steal it later'

(2.36)  ?eĥy  
33:0432
'siyeyŝeĥy  
33:0432
'a long one'
'they are long ones'

(2.37)  ?eĥy  
33:0432
'reŝeĥy  
59:0163
'men'
'her future baby'

(2.38)  št̂ŝėś  
33:0556
'ksalt̂ćoh̄ō?  
59:0510
'[a rattlesnake] is what is best'

hilt̂cōh̄ō?  
59:0644
'the best'

(2.39)  siye-tip̂a·wil  
59:0221
'they do not talk'

tip̂a-tip̂a·wil  
59:0260
'[he is always] talking'
(2.40) ksa‘alá·làn 33:0584  'I gave one holler'
psa‘-k‘alk‘alalá·mushún 59:0089  'you holler at them'
ksa‘alK‘alalá·làn 33:0584  'I am hollering'
(2.41) hista’tsaktsaKtšiʔa 60:459  [exact meaning uncertain]
hista’tsaktsaK 59:0519  'a square [seat]'
(2.42) metšusʔanaʔipnás 59:0457  'perhaps it was beautiful'
huwaʔaqʔiyanaʔipnás 59:0615  '[until] they are of such fineness'
(2.43) hinapsumó·wón 59:0514  'when you sweeten [the decoction]'
Kepsumonó 59:0608  'and you sweeten it lots'
(2.44) ká·iʔ 59:0029  'I grasped it'  'I grasped [woman]'
Ruiliʔa 59:0029  'grasp it!'  'grasp it!
(2.45) histaʔniw 59:0631  'her embryo is helping'
hisʔaʔtá·niw 59:0631  'her future baby'
(2.46) ksm 59:0324  'after'
Ko‘m 59:0308  'long afterward [more]'  'long afterward [more]
(2.47) sʔip 59:0427  'he said'
hisʔipʔiʔp 59:0027  'that he is saying'

181
(2.48) kałiykilihikwûn
59:0149
hikhihikwûn
59:0433
'[all] that they used to do'
'[what] she is doing'

(2.49) ñmotâ
33:0575
ßmotßmotâ
33:0575
'it is colored'
'it is of different colors'

(2.50) hištuhûy
59:0636
himaññistiuhûy
59:0636
'it rains'
'when it was raining'

(2.51) hiš'arâpâpây
59:0258
hiñalnapâpây
59:0159
'it will rise'
'she was climbing'

(2.52) sêntiñ
59:0219
ihoñsinxintiñ-íwâñ
59:0456
'it is bad'
'the old-time bad [women]'

(2.53) siyetipâwil
59:0221
ßaltiñtipâwil
33:0585
'they do not talk'
'(someone) is talking'

(2.54) kiylesexôl
59:0482
ísìyñlesexôl
59:0479
'we weed [the beets]'
'they were weeding [the beets]'

(2.55) hiñallîlî-nân
59:0615
ísîllîlînán
59:0025
'that they are [worth] more'
'it is more and more'

(2.56) sišayuxwô-won
59:0611
holiyiyuxyuxwowonpi
59:0665
'it is kind of high'
'in the high [mountains]'
(2.57) hihoʔsiyáp
59:0334
hihoʔsiyápʔ?áʔp
59:0366
'in their house'
'to their houses'

(2.58) kám
59:0324
hulkemkáʔm
59:0662
'after'
'modern-day (people)'

(2.59) nóxá
33:0431
hoʔšnoxnóʔxá
59:0329
'nose; point of land'
'at points of land'

(2.60) ilxáap
59:0333
hoʔlxáapxáap?
60:0164
'a rattlesnake'
'the rattlesnakes'

(2.61) hihoʔlmwéy
60:0156
isíymweymwéʔy
60:01565
'at a wharf'
'their wharves'

(2.62) histá·niw
59:0631
ihóʔstantá·niw
59:0355
'her embryo'
'[little older than] her kids'

(2.63) iltsóyní
59:0481
hihoʔltsoytsóyní?
59:04806
'another [furrow]' '[ahead of] the other
 [Mexicans]'

(2.64) hisklá·wáš
59:0499
hisklawklá·wáš
60:0448
'a broken [bottle]'
'pieces of [abalone shell]'

(2.65) čsalá·yáš
33:0535
čáltsalá·yáš
33:0535
'(one) road'
(plural)
(2.66) ḋuké·keš
59:0413

‘planted place (with one crop)’

(2.67) hilkawā·yu
59:0468

‘planted place (with various crops); sown fields’

holkaykawāyu?
59:0098

‘horse [tamer]’

(2.68) [see (2.31)]

59:0387

‘the horses’

(2.69) hiho?lṭep
59:0350

‘but its root’

(nu?lṭep) (the other way)
59:0299

(2.70) hihe?ɡiyalilw
59:0461

‘the brush’

laralilw
59:0021

‘when [you are lying down] in the woods’

(2.71) ilének
59:0355

‘the woods’

ilenēnek
59:0355

‘the brush’

(2.72) ?iyalî·nyu
59:0088

‘the brush/chaparral’

hūlin·tinyu?
59:0594

‘in their language’

èlininyu?
59:0069

‘words’

‘you hear; his singing’

‘a woman’

‘[unmarried] women’

‘they are Indian’

‘the Indian [men]’

‘the Indians’
(2.73) hulali·šaw
59:0675
'[every] day'

hiyal·-zišša·w
59:0675
'the days'

reše·ziššališša·w
59:0429
'several days'

(2.74) a. hehipol6·möl
59:0391
'the mountains'

b. hehipol6·möl
59:0401
'the mountains'

(2.75) satikuy
59:0140
'he looks [to the right]'

sat·-ziššikuy
59:0526
'he looks [the other way']

(2.76) tšunassimiwa·wan
59:0089
'but when one is cut'

šiš·-ziššawawawia·nin
59:0053
'[the doctor] is cutting you'

(2.77) pelé·yep
59:0472
'you go along [the creek]'

hišel·-pelé·yep
59:0529
'he would go along [the trail]'

(2.78) keqetša
59:0348
'I sing'

hisex·-keqetša
59:0132
'[you hear] him singing'

(2.79) ?aluni·yiwa
59:0006
'it is necessary'

hina·-samunun·yiwa
59:0339
'when one is looking for (something)'

(2.80) hiliyušu·yepš
59:0264
'[things] that are changed'

hiliyušu·-rušu·yepš
59:0264
'different [people]'
(2.81) hisahâh
59:0302
'([a person's] spirit')

he?kahâh
59:0304
'my spirit'

?ah-?ahâ-?â
59:0304
'spirits'

hekah-?ahâ-?â
59:0304
'my spirits'

(2.82) hisiyap-?apitayašnî-pit
59:0224
'they go stepping'

meyišà?ap-?apixo?yo?y
59:0224
'they kind of fly off'

(2.83) keqelele
21:0184 (Luisa Ignacio)
nasex?exlé-lên
59:0009
'I cry out'

hisakti?ex-?exlé-lên
59:0010
'when it cries out
(continuously)'

(2.84) hinasi-won
59:0028
'when it howls'

?inasiw-?i-won
59:0227
'when it is hooting'

sakti?iy-?i-won
59:0226
'it comes to howl'

(2.85) sákhmil
33:0571
'he drank it'

hikiyalak-?akmil
59:0294
'what we are drinking'

sa?akmil
33:0571
'he is drinking'

(2.86) sákwêl
33:0581
'he makes it'

samek-?akwêl
59:0708
'[a canoe] is being made'

sêkakwêl
33:0581
'she is making it'

186
(2.87) kī·tāk
33:0580
siyit-ž1·tāk
59:0594
kītī·tāk
33:0580
'I heard it'
'they listen'
'I am listening to it'
'a [bad] person'
'the people'
'a bone'

(2.88) hılık
59:0277
eʔlukuʔkuʔ?
59:0424
(2.89) his'ē
59:0645
inesiyiš(ēhs'ē?
59:0025
'the vertebrae'
'[of the backbone]'
'it is good'
'[their] good [clothes]'
(2.95) sôtâ
33:0559
sôhôtâ
33:0559
'he is wet'

he is getting wet'

(2.96) skêk
33:0578
skêhkêk
33:0578
'it (barley) comes up'

'(the plant) is growing out'

(2.97) [see (2.24)]
lêhâkêkî?
59:0383
'thing; what'

'the things'

(2.98) kašamti·nûs
59:0009
hihe?katêhti·nus
60:0299
'"weeper" is what it is called'

'this was called [the boat's heart]'

(2.99) [see (2.64)]
hîsklahklâ·gâš
60:0446
'a broken [bottle]'

'pieces of [abalone shell]' their scales'

'in the middle'

'between [the vertebrae]'

'they take [the canoe] apart'

'the pieces'

'the shape [of the back]'

'their designs'

(2.100) hîli·yîk
59:0279
hîlihîli·yîk
59:0025
'between [the vertebrae]'

'the middle'

'the pieces'

'the pieces'

'smeared'

'the shape [of the back]'

'their designs'

(2.101) isiywik'atatâ·tan
60:0726
iho?lwhiwick'atatâ·tiš
60:0726
'between [the vertebrae]'

'they take [the canoe] apart'

'the pieces'

'the middle'

'the pieces'

'the shape [of the back]'

'their designs'

(2.102) hiho?gli?ewê·leš
59:0373
hihiyuluhi?ewê?iš
59:0616
'between [the vertebrae]'

'they take [the canoe] apart'

'the pieces'

'the middle'

'the pieces'

'the shape [of the back]'

'their designs'

(2.103) hîltokošlôŋk
59:0172
âiyusuhutokokošlokwaŋ
59:0615
'a knob [at its end]'

'they keep rounding them off'
(2.104) hilwe̱  
59:0187

' a rich [man]'  

hisamiswótwō-t  
59:0163

'[they had] chiefs'

(2.105) hihoʔlel  
59:0584

'the necklace'

hihoʔsiyel-ʔē-1  
59:0586

'their necklaces'

(2.106) hoʔspó̱n  
59:0581

'the stick of [the elder]'

hihoʔspó̱p̣oṇ-n  
59:0167

'the shafts of [the arrows]'s bigger'

(2.107) hilθo̱̱  
59:0535

'olivella shell'

koyk̩-y  
59:0535

'between [the missions]'  

'olivella shells'

(2.108) hus̩tæ̱n  
59:0033

'[your right hand] palm'

higiyteme̱-n  
59:0221

'and the beard sealed'

'their soles'

(2.109) tæ̱tí̱n  
33:0452

'[they attached] flint'

tæ̱tí̱ntí-n  
33:0452

'dog' the arrows'

(2.110) spé̱y  
33:0576

'their own trails'  

spé̱y  
33:0576

'flowers'

(2.111) [see (2.32)]

gitæ̱-ʔitæ̱-tæ̱  
59:0158

'[F. G] was his younger brother'

(2.112) hiná  
59:0104

'his younger siblings'

hinuknukáʔ  
59:0147

'somewhere'

' some places' to carry [brandy]'

' some places' to carry [guns/ pistols]'

189
(2.113) pā?ka
59:0485
'one'
pakpā?ka
59:0615
'one by one'

(2.114) ke-kiyptšē?
59:0295
'[so that we would vomit] and shit watery'
ke-spitšē?
59:0107
'[a boy vomiting] and shitting [blood]'

(2.115) įlunā·nas
59:0453
'(the hair) will [always] grow out again'
tšekasluňu·nun
59:0245
'and then it grows bigger and bigger'

(2.116) [see (2.100)]
hiliyli·yīk
59:0350
'in the middle'
hiliyli·yīk
59:0353
'between [the missions]'

(2.117) hile·nē
59:0535
'beach snail'
kal:něm?ē?
59:0535
'and the beach snails'

(2.118) hisnā·Rīl
59:0166
'[they attached] flint [to the arrows]'
hisnaknā·Rīl
59:0166
'[they attached] flint [to the arrows]'sick out'

(2.119) ihe?sitšalā·yaš
59:0447
'other train track'
hiho?giyitš–titšalā·yaš
59:0652
'on their own trails'

(2.120) hiwičeleni?
59:0667
'a chisel'
kasamvikičē·len
59:0668
'then they chisel all throughout [the inside]'

(2.121) giykičitak'gywāš
59:0662
'they used to carry [brandy]'
siškičitaktak'gy
59:0689
'they (two) used to carry [their pistols]'

190
(2.122) ihoʔpitś'á·xí
59:0541
'ihoʔsiyatś'itś'axʔí?
59:0644
'your enemy's fried) eggs'
'their enemies' (turkey) eggs'

(2.123) hiʔlap'á·niʔ
59:0661
hihoʔlapʔap'á·niʔʔa
59:0673
'a [large] rancheria'
'the villages' and only as driftwood'

(2.124) hitswéʔ
59:0497
hihoʔtswéʔk
59:0684
'grass' [pale]
'the (quantities of) grass'

(2.125) litštá·niw'as
59:0043
hitštánta·niw
59:0351
'a little [spook]'
'small [trails]'

(2.133) ?iylitštánta·niw
59:0363
'[when] they were little'

(2.126) spax
59:0399
spaxpáʔɪx
59:0181
'skins'
'the skins'

(2.127) hisgáʔp
59:0167
heráká̱pá·p
59:0167
'feathers [which stick out]'
'feathers [were called]
"arrow eyes"
'all of) their food'
'the tule'

(2.128) hihoʔstá·pán
59:0613
histapta·pán
60'0138
'[it was made of) tules'
'the wooden bowl'
'the wooden bowls'

(2.129) hihištuk
59:0649
hulstukčík
59:0649
'hands'
(2.130) histúwé:mu:na
59:0237
ihostutumwine
59:0669
'[two or three fried] eggs'
'[the whites of turkey] eggs'

(2.131) he?nicipär
59:0545
ušnipnicipär
60:0284
'driftwood [brought from the beach]'
'[we got redwood only as] driftwood'

(2.132) ištá-yit
59:0493
he?nštaytä-yit
59:0454
'willow [poles]'  
'the willow groves'

(2.133) hihe?sa:xk'(ét
59:0216
isax?sa:xk'(ét
59:0254
'the four winds'

(2.134) usulków
59:0644
N/A
'in the night (of a key)'

(2.135) hisiyúwé:mu:
59:0178
hisiyùw—?uwumow?
59:0590
hìiyùw—?uwumow?
59:0523
síy?uh?uwumow?
60:0714
'theirs food'
'[everything] they ate; all of their food'
'foods'
'[all of] their food'

(2.136) hil'tawíw  —  tawíw
59:0104  33:0452
tawíw'hawíw
59:0560
ilt'awíw'hawíw
59:0037
t'hawíw'hawíw
33:0452
t'hawíw'hawíw
33:0452
'bird'
'[the same kind] that cut (the wood)'
'[animals and] birds'
'[four kinds of] birds'
'birds'
'birds'
(2.137) ᕿेहे?giybulú·ya
59:0474
‘their finger’

hul·hulú·ya
59:0587
‘[like] fingers’

hiho?giybululyá·?
59:0586
‘[with] their fingers’

hul·hululuyá·?
59:0587
‘[like] fingers’

iho?xulxuluyá?
59:0254
‘[the slits of] her fingers’

(2.138) hulxák
59:0443
‘a large [buggy]’

hilxák
59:0320
‘a big [vineyard]’

hilxakáx
59:0704
‘big [boards]’

hilxakax
59:0625
‘big [locks and keys]’

hilxaxá?x
59:0463
‘[that you turn back]’

o?lxaxá?x
59:0491
‘big ones’

‘those big [cheeses]’

(2.139) giy·nli·kín
59:0209
‘[when] they cut [a tree]’

?isilokitswáš
59:0466
‘she was cutting [wood]’

hiliyaliló·kitá
59:0466
‘[Japanese] [wood-choppers’

o?ilokí·nwáš
59:0546
‘[the same man] that cut [the wood]’

isiilokinwáš
59:0546
‘he chopped [the wood]’

tšekasíililókitá
59:0546
‘to be chopping’

hiholilí·?ilokinwáš
59:0466
‘[chaparral] that they were cutting’

193
(2.140) hihoʔulalalām 59:0606  
heʔulalalām 59:0281  
keheikulkulalām 59:0457

'[near] the creek'
'[in] the arroyo'
'and the creeks'

(2.141) kagisʔononokok 59:0293
ilononokok 59:0031
ʔononokok 59:0022
ihonʔononononokok 59:0022
olomonononokok 59:0031

'it is the lizard [of the ocean]'  
'a lizard'  
'lizard'  
'the lizards'  
'the lizards'

(2.142) hipkuyawi-pi 59:0104
ʔiʔalkuukuwapsaš 59:0012

'that you turn back'
'he was coming home'

(2.143) keʔalekagisʔišnaniswaš 59:0694
ʔikʔuʔmekagisʔišnaniswaš 59:0431
isišnaniswaš 59:0008

'and it was not their custom'
'but that was their custom'  
'the customs [of their ancestors]'

(2.144) hilto 59:0583
iltohto 59:0583
hoʔiltohto 59:0329

'the mussel [shell]'  
'the mussel [shells]'  
'the mussels'

194
(2.145) a. ḡká-lāš
33:0452
b. ḡɔlká-lāš
33:0452
c. k'alká-lāš
33:0294

'he breathed'
'he is breathing'
'I am breathing'

(2.146) a. ?ipkutiywùn
59:0299
b. k'utiyšâš
59:0304
c. k'utk'ú-ti
33:0293

'you see them'
'I saw myself [in the mirror]' [astrology]
'I am looking at [another dog]'

(2.147) a. ḡpâš
33:0573
b. ḡpâšpáʔâš
33:0573
c. hip'âp(a)-ʔâš
59:0197

'he vomited'
'he is vomiting'
'you are vomiting'

(2.148) a. hîpsû-ñan
59:0278
b. g'unng'u-ñan
59:0220

'you continue'
'he would continue'

(2.149) a. hiʔalsâʔutô-witâ
59:0058
b. hiśekâš'utô-štô-witâ
60:0622

'it would be soon'
/he was very quick [in entering the house]/'

(3.1) [see (2.88)]

(3.2) hihoʔlnâ,
59:0664

'the flame'

(3.3) hilwô-Kô
59:0533

'asphalt'

(3.4) ilmuhô
59:0027

'an owl'

(3.5) snukû-âš
59:0185

'he brought back [a deer]'

(3.6) heʔlpotô-yî
59:0127

'the guico lizard'
(3.7) [see (2.142)]

(3.8) [see (2.15)]

(3.9) híkapuá?itá·pin
59:0510

(3.10) [see (2.85)]

(3.11) ge?oxnonononwañ
59:0664

(3.12) siysu?úñ?1·tápá
59:0598

(3.13) t?uskili?akmíl
59:0606

(3.14) histíhi·wañ
59:0135

(3.15) spuhútú
33:0358

(3.16) sswetáñ
59:0268°

(3.17) ho?kuñ·siñ?1·wañ
59:0088

(3.18) húsa?amíhi·wañ
59:0500

(3.19) sákam
59:0075

(3.20) biglék
59:0279

(3.21) [see (2.118)]

(3.22) spél
59:0599

(3.23) [see (2.128)]

(3.24) [see (2.14)]

(3.25) bigyép
59:0694

(3.26) [see (2.131)]

(3.27) [see (2.132)]

'and you mix with [tallow]'

'(the flame) died down'

'they made it the shortest
[into their food]'

'but she used to drink it'

'what his name was'

'(a tree) has a lot of
branches'

'he would pitch lies'

'my late (deceased) mother'

'her deceased older sister'

'waxed or curved ribbons;
the wing'

'she does not make a sound
a hole'

'it [really] takes the
taste of [hills]'

'wax is beneficial of;
is screened'

'time passes; that you went
here, melted from before'

'(cactus) leaf'

'is [smart] too!

you go into [place where
there is knowledge]
(3.28) [see (2.124)]
(3.29) [see (2.125)]
(3.30) [see (2.109)]
(3.31) [see (2.64)]
(3.32) híkawé·lú
59:0680
'a hide'

(3.33) hígamukłowé·wón
59:0651
'they made it the shortest
[way possible]'

(3.34) s′applé?
59:0092
'(the world) is going to end'

(3.35) hihe′sāmtraskilál
59:0484
'[when you see] one shear'

(3.36) ilxwápł
59:0577
'[they used to cut]
nettle plants'

(3.37) hikahó′sakpyún
59:0317
'and the breeze'

(3.38) szálkław
59:0104
'it flies down'

(3.39) kšesawpoló·lón
59:0559
'and he slap yells'

(3.40) hišampolówpoyomwón
59:0616
'twisted or cored [ribbons]'

(3.41) se′şámplú
59:0409
'he does not make a sound'

(3.42) šatšaktustóm
59:0245
'it [really] likes the
taste of [milk]'

(3.43) hihe′swotšúʔú
59:0616
'[he is boastful of]
his wealth'

(3.44) ipalaxkšawá·law
59:0394
'[the power] that you want'

(3.45) gamšexkwey
59:0336
'one melted [some grease]'

(3.46) hilxenxwey
59:0185
'a [smart] girl'

(3.47) pťaplíč
59:0540
'you go into [places where
there is smallpox]'
(3.48) ihoʔaʔokwóó 59:0098
’in her hair’; ‘sedative’

(3.49) hisiyslukú·mél 59:0520
‘their privilege’

(3.50) siyusʔismónwun 59:0515
‘they gather them’; ‘set’

(3.51) hikanaspeʔénwań 59:0592
‘and finally; (he her) beseeched’

(3.52) gamegKétá 59:0461
‘one asks’

(3.53) ?isagtí·pil 59:0350
‘(the brush) was thick’

(3.54) ?iškóm 59:0613
‘a couple [of days]’

(3.55) gwašlík 59:0202
‘he put in his appearance’

(3.56) huwaŋnaxyt 59:0096
‘until tomorrow; until the next day’

(3.57) ?alyunúšpíywań 59:0129
‘she was afraid of [Lino]’

(3.58) hiheʔkúkuštáy 59:0296
‘[I flashed] my flashlight [on you]’

(3.59) ihoʔaʔatíšwín 59:0234
‘[using] his charmstone’

(3.60) hoʔknenetáwás 59:0485
‘my deceased grandmother’

(3.61) N/A [attested on Beeler tape only] but he could smoke

(3.62) knéy 59:0028
‘fox’

(3.63) ikštá·píí 59:0260
‘[where were you] yesterday?’

(3.64) N/A [attested on Beeler tape only]

(3.65) ḡalaktík 59:0555
‘I have come to get [a bit of your root]’

(3.66) tšílpödë́ 59:0293
‘and the gopher snake’
(3.67) hilxúlapšán
59:0512
'[a bottle of] medicine'

(3.68) istapšiš
59:0395
'[wherever] she would visit'

(3.69) hisxil
59:0655
'[they used to fry] fat'

(3.70) hínavíšilí:lin
59:0018
'when (her left ear) buzzed'

(3.71) xéó?r
59:0667
'sycamore'

(3.72) [see (2.60)]

(3.73) soxšol'
59:0245
'[when] she urinates'

(3.74) ?i-?alaxšiš
59:0338
'it summons [the fat]'

(3.75) [see (2.88)]

(3.76) hilxóp
59:0706
'a [black] rock'

(3.77) [see (3.3)]

(3.78) hínavúsip
59:0425
'[once] another time you
and he answered'

(3.79) hulakí:wo
59:0217
'[he, too] was still [well]'

(3.80) syuntêkhpéy
59:0346
'a [tailed] star'

(3.81) tásasakkip'á
59:0400
'it sticks to [your mouth]'

(3.82) iltupméktá
59:0206
'so that he could smoke'

(3.83) hisamutí:kuks
59:0499
'we each teach one another'

(3.84) skí:kíkó
59:0357
'a [small] child'

(3.85) samesaknífúló
59:0412
'one [could] stub his toe'

(3.86) [see (3.36)]

(3.87) [see (3.31)]
(3.87) giynóká
59:0616
'their heads'

(3.88) ?alapatšákwís
59:0415
'it is unexpected'

(3.89) [see (2.59)]

(3.90) sakpaWá·mayá
59:0043
'it is dreadful'

(3.91) hiʔaséyt
59:0639
'[crude] oil'

(3.92) hímekasišyí?
59:0096
'and they both go home right then'

(3.93) hisKó?
59:0591
'[some people had] a pet [bear]'

(3.94) kantí?
59:0690
'I met him'

(3.95) pwišutípšé?
59:0541
'you [can] knock down [your enemy]'

(3.96) hiʔákwin
59:0603
'[yerba buena was] the one [she used] to boil'

hipalsaʔá·wín
59:0180
'[one crawfish] that you plan to boil'

(3.97) huhoʔwé
59:0139
'[he was] still [well]'

huhoʔo · wi
59:0708
'[it had not] yet [congealed]'

(3.98) a. [see (3.94)]

b. kiy-antiš
59:0690
'we met each other'

(3.99) a. hinasiyališwé?
59:0524
'they sleep with [a man]'

b. mémáʔigiysiliʔališwé·wún
59:0524
'Only they wanted to sleep with them'

(3.100) a. siyaxʔeʔaxág?
59:0490
'they eat much [whey]'

b. ihe·siyaxʔeʔaxág·waš
59:0491
'they ate too much [whey]'
(3.101) hîl'ênínô-wông
59:0215

'a hill'

(3.102) [see (2.65)]

(3.103) kîyáng
59:0602

'because'

(3.104) hígíyô-í-wêkang
59:0615

'they are worth [more]'

(3.105) mês-wông
59:0081

'(the creek) went dry'

(3.106) [see (2.144)]

(3.107) [see (2.90)]

(3.108) k'á\l
59:0476

'to loosen up'

(3.109) [see (2.89)]

(3.110) ?isya\ntâ\n
59:0685

'it is hot'

(3.111) sip-?iptôsiyô-wông
59:0297

'it sparkles'

(3.112) bísôKísí\n
59:0128

'the rainclouds'

(3.113) lâ\nshâ\n
59:0028

'a coyote'

(3.114) [see (3.80)]

(3.115) lâ\ntâ-tâ\n
59:0364

'the cold [ocean]'s

(3.116) hiyantô\ntâm
59:0272

'and it was visible'

(3.117) mâ\nsyék\nô'tê\n
59:0561

'your money'

(3.118) [see (2.2)]

(3.119) su\nkâ\nla\n
59:0707

'when he awoke'

(3.120) hi\l'è\n\tèlô\l\lôl
59:0212

'it is open' on bed right

201
(3.121) p'lolenti·nu
florenti·nu
59:0609
59:0088
'Florentino'

(3.122) isté·iën
59:0115
'[mountain lion] tail'

(3.123) se?memala?me
59:0483
'there isn't any[one]'s

(3.124) sxá?min
59:0494
'sea [water]'

(3.125) ?alka?netš
59:0530
'it is [only] about'

(3.126) hikano?no
59:0427
'and then [he thought it was] very [funny]'s

(3.127) ḱebelá·way
59:0263
'and the moon'

(3.128) a. giya'pítš
59:0698
'they refused'

b. giya'pítšwáš
59:0698
'they refused'

(3.129) a. gasmutakwáy
59:0623
'they surprised [a stranger]'s

b. nasmutakwáywas
59:0460
'when they surprised [a stranger]'s

(3.130) a. sáklí
59:0580
'it is visible'

b. kesáklí·lwáš
59:0579
'and it was visible'

(3.131) a. hikiyto?6n
59:0637
'we would go to bed [early]'s

b. hulito?6nwáš
59:0094
'the [dog] that was lying [there]'s

c. hísékapto?6mpi
59:0514
'and you go to bed right then'

202
(3.132) a. pnàñ
   59:0353
   'you went'

   b. ṭanæńtwâš
   59:0260
   '[where] were you [yesterday]?'

   c. hímékasiynanpîš
   59:0194
   'they went towards [the water]'

(3.133) a. [see (3.65)]

   b. ḥalaktîkwún
   59:0137
   'I have come for them'

(3.134) a. siysalákwyâ
   59:0551
   'they secured [the child]'

   b. ?i-siysalákwyâwûn
   59:0166
   'they fixed (arrows)'

   c. ?iisiysalákwyâšîš
   59:0263
   '(the stars) arrange themselves [into figures]'

   d. hîho?łìamsalsyalâkwyâpîš
   59:0599
   'from where they were fixing [the road]'

(3.135) îliyakîlî·lîn
   59:0539
   'those which appear to you'

(3.136) hîsímnît
   59:0363
   'it does not matter to me'

(3.137) sto?ó·ńàs
   59:0517
   'he would go and lie [there] again and again'

(3.138) hîlakîlî·lîpîš
   59:0616
   'in plain view'

(3.139) hîkâha?samšušaxâwûn
   59:0585
   'and they threw them away'

(3.140) isiykeplé·ńwâš
   59:0360
   'they went to bathe'

(3.141) siyesimínânwâš
   59:0698
   'they didn't want to go'

(3.142) akšîwa?xâlîluswûn
   59:0277
   '(the Devil) used to appear to them'

(3.143) k'asuwítekwên
   21:0016 (Luisa Ignacio)

   a. k'asuwítekwê·nûs
   59:0234
   'I dodge [a rock]'

   b. 'for dodging [a bear]'
(3.144) tšusexwā'il
59:0006
'lest (God) get angry'

?alsuxuwi·luŋ
59:0218
'it [just] made him angry'

(3.145) yuuxmūts
59:0560
'a hummingbird'

(3.146) hilrāp
59:0354
'[a person] carrying [a load] on his back'

(3.147) ?ixtxiŋ
59:0701
'a roof, cloth awning'

(3.148) hihpokupušče
59:0510
'[the boil of] your rectum'

(3.149) kasiywān
59:0408
'then they would go to sleep/go to bed'

(3.150) ?ixkūŋ
59:0543
'[the better wood] was oak'

(3.151) hihpoxakwats'ŋy
59:0127
'[he looks for] your shade'

(3.152) kasiygoxmolotšinwān
59:0615
'then they polish them'

(3.153) huswā·tšāx
59:0518
'her [own left] arm'

(3.154) [see (3.85)]

(3.155) hihpomitšpin
59:0249
'outside'

(3.156) lānokōts
59:0545
'its iron'

(3.157) ?atamū́ tēy
59:0500
'in its shade'

(3.158) [see (3.151)]

(3.159) [see (2.122)]

(3.160) [see (2.121)]

(3.161) [see (2.123)]

(3.162) [see (2.40)]

'his sister'

204
(3.163) ?i?alkas?is'y
59:0104
‘it is a sign that’

(3.164) iho?si?ůi
59:0451
‘her pubic hair’

(3.165) [see (3.50)]

(3.166) isiyu?éx?
59:0255
‘(the clouds) dissipated’

(3.167) [see (3.12)]

(3.168) siyex-?ex-?ēta
59:0595
‘they horse-laugh’

(3.169) hipax?e?eho?
59:0188
‘[they make] you eat much
 [more]’

(3.170) [see (3.97)]

(3.171) ihoṣap
59:0228
‘[when the coyote howls near] your house’

(3.172) [see (3.6), (3.57), and (3.44)]

(3.173) Isülku
59:0481
‘[another] furrow’

(3.174) [see (2.134), (2.94), and (3.‘night’)

(3.175) hiḵalp
59:0310
kalpāx
59:040
‘[he was the father of] Carpio’
‘even [a hill may change]’

(3.176) ulkānlē
59:0585
‘[ground] meat’

(3.177) hiho?saax awayānpi
59:496
‘in its shade’

(3.178) [see (3.110)]

(3.179) hišiyiš?
59:526
‘[it is said] that they roasted
 [some of it]’

(3.180) [see (2.131)]

(3.181) hilmexwâ?
59:0694
‘a cactus [leaf]’
(3.182) \( \text{hihe?lapiči} \)
\[59:0551\]
'[in the same] ladder'

(3.183) [see (3.156)]

(3.184) [see (3.4)]

(3.185) \( \text{imuhůw} \)
\[59:0331\]
'[not near] the beach'

(3.186) [see (2.36)]

(3.187) [see (2.121)]

(3.188) \( \text{hikasam?ap'á-mwùn} \)
\[59:0440\]
'and so they built them'

(3.189) \( \text{kimi} \)
\[59:0473\]
'even [dogs cannot smell him]'

(3.190) [see (3.103)]

(3.191) \( \text{ise?išṯi} \)
\[59:0060\]
'she didn’t find [anything]'

(3.192) [see (3.101), (3.157), (2.231), and (3.97)]

(3.193) [see (3.66), (3.124), and (3.63)]

(3.194) [see (3.87), (2.94), and (3.82)]

  (e) \( \text{tisnoxi'i-wáw̍} \)
\[59:0111\]
[see (3.136)]

  [see (3.133)]

(3.195) [see (3.133)]

(3.196) N/A

(3.197) [see (3.16)]

(3.198) \( \text{sakṯiṯ'yín} \)
\[59:0115\]
'he came to lie down'

(3.199) [see (3.99b)]

(3.200) \( \text{kga?lesoxal} \)
\[58:0476\]
'I am going to skin it'

(3.201) \( \text{tisx̱am'aṯé-ṯù} \)
\[59:0667\]
'it would be at the bottom of [the stuk]'

(3.202) \( \text{bisiyga?aw̍} \)
\[59:0520\]
'[it was their privilege] that they could shoot [a dog]'

206
(3.203) tāukanuʔes'awil
59:0668
'so that it would not be
[too thin]'

(3.204) ikalsahákšán
59:0030
'and would die from it'

(3.205) ṭipalsamíš
59:0252
'[it means that] you are going
to cry'

(3.206) his'awil
59:0122
'it will be'

(3.207) [see (2.74)]

(3.208) [see (2.43)]

(4.1) N/A

(4.2) [see (2.56)]

(4.3) [see (2.64)]

(4.4) [see (2.65)]

(4.5) [see (2.72)]

(4.6) [see (2.83)]

(4.7) [see (2.81)]

(4.8) siy-tš'óhtš'6?
33:0556
'they are good'

(4.9) [see (2.103)]

(4.10) kehakusamn1-lōk
59:0668
(or they perforate
[the stuk]'

siyhnih1-lōk
59:0538
'they bore [each piece]'

(4.11) [see (2.101)]

(4.12) [see (2.102)]

(4.13) [see (2.66)]

(4.14) switwitsam1-xen
59:0192
'he keeps chipping it off
pressing it [with a bone]'

(4.15) kasamwiswīse-kən
59:0668
'then they knock [stuff] off
throughout [the inside]'
(4.17) N/A

(4.18) [see (2.97)]

(4.19) [see (2.96)]

(4.20) [see (2.94)]

(4.21) šnanaː-ču
59:0545

hišnahnaná-ču?
59:0314

'[driftwood was of all] kinds of [wood]'  

'[the Indians had many] kinds of [seeds]'  

'[the customs of] their ancestors'

'animal, beast; devil'

(plural)

'[where] water [is deep]'  

'[cold places of] water'

'[they were throwing them up in the air]'  

(4.22) isiyo’hnonotswáh
59:0000

(4.23) nuná-šiš
33:0518

nuhunuṣʔi-ʔiš
33:0518

(4.24) ḥoʔ
59:0242

hilohoʔ-ʔi
59:0674

(4.25) siy-ʃuː’ušaːnəwun
59:0317

(4.26) [see (2.64) and (2.99)]

(4.27) [see (2.100) and (2.116)]

(4.28) [see (2.98)]

(4.29) [see (2.119) and (2.113)]

(4.30) [see (2.122) and (2.121)]

(4.31) a. [see (2.115)]  

b. hihoʔst’emceʔ-ʔi
59:0664

'[when you see] the bottom of his feet'

(4.32) a. [see (2.128)]

b. N/A [see (3.134)]

(4.33) [see (2.109)]
(4.34) [see (2.110) for 'flower' and 'flowers']
spéy
33:0404

'it blossomed'

(4.35) [see (2.127) and (2.2)]

(4.36) [see (2.125) and (2.62)]

iholtstantá?nw
55:0052 (Lucrecia García)

'[do not give them to] the little [wolves]'

(4.37) [see (2.134) for 'night']

sayûlkúw
59:0038

'[very] early in the morning'

(4.38) [see (2.133)]

(4.39) a. [see (2.124)]

Luisa Ignacio:

b. tswekæ
21:0495

Gary Tou: [see 2.146]
tswéktswé?æ
21:0495

Juliana Ignacio:

c. tswektswé?æ
21:0496

Juan de Jesús Justo:

d. tswek/tswekæ
21:0495

(4.40) a. [see (2.109)]

Luisa Ignacio:

b. tïtænæ
21:0487

(4.41) a. [see (2.128)]

Lucrecia García:

b. hostapstá?n
33:0090

'(quantities of) round tule'
(4.42) a. hiheʔmiyíníʔy
   59:0425°
   '[how do you eat]
   goose barnacles?'

Luisa and Juliana Ignacio:

   b. snəjʔsnəʔjə
   20:0391°
   'goose barnacle'

(4.43) [see (2.145)]

(4.44) [see (2.147)]

(4.45) [see (2.148)]

(4.46) [see (2.149)]

(4.47)
Lucrecia Garcia:

   kḥuʔkhuʔńiyn
   22:0025
   'I am looking at you'

   pkuːtkuːiʔit
   22:0027
   'you (sg.) are looking at me'

Mary Yee: [see (2.146)]

(4.48) a. kșiʔ-šot
   59:0152
   'I skinned it'

   b. š'ot
   33:0568
   'it got skinned'

   c. š'otš'ot
   33:0568
   'it got skinned in several places'

(4.49) a. hiholše
   59:0706
   '[inside] the cliff'

   b. həʔsiyìʔiʔhuʔíʔiʔi?i?:
   59:0441
   'the cliffs of [the mountains]'

(4.50) N/A

210